

LANDSCAPE REVIEW OF OVERWEIGHT AND OBESITY IN THE SADC REGION

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LANDSCAPE REVIEW OF OVERWEIGHT AND OBESITY IN THE SADC REGION

Southern African Development Community (SADC) Secretariat

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About SADC

The Southern African Development Community is an organisation founded and maintained by countries in Southern Africa that aims to further socio-economic, political, and security cooperation among its Member States and foster regional integration, in order to achieve peace, stability, and wealth. The Member States are: Angola, Botswana, Union of the Comoros, Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia, and Zimbabwe.

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List of abbreviations and acronyms

AGO	Angola
APA	American Psychological Association
AU	African Union
A&T	Alive and Thrive
BMI	Body mass index
BWA	Botswana
СОМ	Comoros
DBM	Double burden of malnutrition
DHS	Demographic and health survey
DRC	Democratic Republic of the Congo
EBF	Exclusive breastfeeding
EFSA	European Food Safety Authority
ESARO	Eastern and Southern Africa Regional Office
ESW	Eswatini
FAO	Food and Agriculture Organization
FANTA	Food and Nutrition Technical Assistance
FBDG	Food-based dietary guidelines
FCTC	Framework Convention on Tobacco Control
FOPL	Front-of-Package Labelling
FOPNL	Front-of-pack nutritional labelling
GBD	Global burden of disease
GDA	Guideline Daily Amount
GDP	Gross domestic product
HDDS	Household dietary diversity score
HFSS	High in fat, sugar, and salt
IHD	Ischemic heart disease
ICESCR	International Covenant on Economic, Social and Cultural Rights
LSO	Lesotho
MET	Metabolic equivalent
MDG	Madagascar
MOZ	Mozambique
MUS	Mauritius
MWI	Malawi
NAM	Namibia

NAFDL	Non-alcoholic fatty liver disease
NASH	Non-alcoholic steatohepatitis
NCD	Non-communicable disease
NGO	Non-governmental organisations
PA	Physical activity
РАНО	Pan American Health Organization
RDA	Recommended Daily Allowance
RISDP	Regional indicative strategic development plan
RVAA	Regional vulnerability assessment and analysis
SADC	Southern African Development Community
SADHS	South African demographic and health survey
SANHANES	South African national health and nutrition examination survey
SBCC	Social and behaviour change communication
SES	Socio economic status
SDG	Sustainable development goal
SSB	Sugar-sweetened beverages
SYC	Seychelles
T2D	Type 2 diabetes
T2DM	Type 2 diabetes mellitus
TZA	Tanzania
UNICEF	United Nations Children's Fund
UPF	Ultra-processed foods
WHO	World Health Organisation
SA	South Africa
ZMB	Zambia
ZWE	Zimbabwe

Executive Summary

Background

The global and regional projections of overweight and obesity prevalence are alarming, with estimates indicating a significant rise in the coming years. It is predicted that by 2035, 4 billion people globally will be affected by overweight and obesity. The SADC region is not exempt from this trend, with prevalence expected to increase rapidly, particularly among girls and women. A recent study revealed that the prevalence of overweight and obesity in the region has doubled in adults and increased significantly in children since 1990. This high burden of overweight and obesity coexists with undernutrition and micronutrient deficiencies, representing a triple burden of malnutrition in the region. The World Health Organization has called for urgent action to address obesity as part of achieving the SDG target to reduce premature mortality from NCDs. In response to this health challenge, SADC has committed to developing an obesity strategy to guide multi-sectoral efforts in preventing overweight and obesity.

Purpose, objectives and methodology

The purpose of this study is to provide essential information to guide the development of a strategy to address overweight and obesity in the SADC region. Specific objectives are to:

i. Determine the prevalence of overweight and obesity by sex in SADC countries.

ii. Understand the drivers of overweight and obesity at both individual and environmental levels in SADC countries.

iii. Map and comprehend the policy and legislative landscape related to overweight and obesity prevention globally, regionally, and within SADC countries.

iv. Explore interventions or best practices for overweight and obesity prevention in the SADC region.

v. Engage key stakeholders to gain insights on the essential components to be integrated into the SADC obesity and overweight strategy.

The landscape review involved a literature review and a survey of stakeholders. The literature review involved the analysis of sources from academic databases and grey literature sources, such as government and NGO reports. Quantitative data was also collected from recognised global databases and analysed to understand prevalence of overweight and obesity, related country risks and costs, food consumption and physical activity patterns, dietary intake and infant feeding practices. The stakeholder survey focused on understanding the perceptions and considerations of policy makers in the development of the strategy across each of the SADC member states.

Findings

Prevalence of overweight and obesity

All 16 countries in the SADC region are affected by overweight and obesity, with variations in adult prevalence ranging from 25% in Malawi to 55% in South Africa. Countries with the highest prevalences of adult overweight and obesity are South Africa, (55%), Botswana (45%), Namibia (42%), Lesotho (40%), Swaziland (39%), Zimbabwe (39%) and Seychelles (38%). There is wider variation in the prevalence of obesity (from 7% in Malawi to 31% in South Africa) compared to overweight (18% in Malawi to 24% in South Africa). In all SADC countries, overweight and obesity are higher among adult females versus adult males, except in South Africa where overweight was slightly higher among adult males in 2019. In all SADC countries, the prevalence of overweight and obesity have increased over the last two decades, except in South Africa where adult overweight was higher in 2010 than in 2019 (although obesity increased dramatically).

Overweight and obesity are prevalent in children and adolescents aged 5-19 years in all SADC countries, ranging from 12% in Democratic Republic of Congo (DRC) to 30% in South Africa. The countries with the highest prevalence of child and adolescent (aged 5-19 years) overweight and obesity are South Africa (30%), Seychelles (25%), Botswana (20%), Eswatini (20%), Namibia (19%) and Lesotho (19%). Overweight and obesity are present in children under five years in all SADC countries, but at much lower levels than in the 5-19 year age group, ranging from 2% in Madagascar to 12% in South Africa (12%), Botswana (12%), Seychelles (9%), Eswatini (8%), Mauritius (7%) and Lesotho (7%). In all countries overweight and obesity are more prevalent in girls compared to boys, and have increased over the last two decades.

Overweight and obesity are a growing problem in all SADC countries, with evidence of rapidly progressing epidemics in South Africa, as well as Botswana, Eswatini, Lesotho, Namibia, Seychelles and Zimbabwe. Strategies to prevent overweight and obesity are relevant for the entire region.

Impact of overweight and obesity

Obesity is a significant risk factor for non-communicable diseases (NCDs) such as type 2 diabetes, cardiovascular disease, and certain cancers. It also leads to social consequences such as stigma, discrimination, and reduced quality of life. NCDs accounted for 37% of deaths in the African region in 2019. Children with overweight and obesity face various health problems and are at higher risk of obesity in adulthood. The economic impact of obesity places a significant financial burden on individuals, families, healthcare systems, and economies, with the estimated economic costs of overweight and obesity in Africa projected to be USD50 billion per year by 2035. Costs of adult obesity per capita calculated for 2019 for SADC countries show that the highest costs are found in Mauritius (USD308), Botswana (USD136) and South Africa (USD130).

Drivers of overweight and obesity

Individual drivers

Individual drivers of overweight and obesity in SADC countries include maternal and paternal overweight and obesity and maternal undernutrition, and sub-optimal infant and young child feeding practices, unhealthy diets and insufficient physical activity. Countries with the lowest rates of exclusive

breastfeeding in SADC and those below the 50% target are Botswana (29% in 2018), South Africa (32% in 2016), Angola (38% in 2015) and Zimbabwe (43% in 2019).

Unhealthy diets often start in childhood and are characterized by regular consumption of foods high in fat, sugar, and salt (HFSS) and low in dietary fibre, including regular consumption of sugarsweetened beverages (SSBs). The limited data that exists on consumption patterns for SADC countries shows that children are regularly consuming SSBs and fast foods. There is also evidence that fruit and vegetable intake in many SADC countries is below 50% of the recommended intake, including Botswana, South Africa and Zimbabwe, indicating poor quality diets. Available data shows that insufficient physical activity is highly prevalent (over 80%) in all SADC countries where data is available including Zambia, Botswana, Namibia, Mozambique, Zimbabwe, Seychelles, Mauritius and Tanzania.

Obesogenic environments

Environmental factors create obesogenic food environments that increase the risk of overweight and obesity within SADC countries. Evidence from studies show dramatic increases in imports of unhealthy foods and drinks in SADC countries over the last three decades, the frequent purchasing of unhealthy foods and snacks by children during the school day and the frequent marketing of unhealthy foods and drinks to children. In some contexts, there is also evidence that cultural norms are influencing rising levels of overweight and obesity. In most countries in the SADC region in the earlier stages of their obesity epidemics, overweight and obesity are associated with higher socioeconomic status and urban dwelling. However, as national epidemics progress, this is predicted to shift towards overweight and obesity becoming evenly spread between urban and rural location and increasingly associated with lower socioeconomic status, as is seen currently in middle- and high-income countries.

Policy and strategy mapping

Multiple global and regional policies exist that aim to address obesity and related NCDs. Key global policies include the <u>Global Action Plan for the Prevention and Control of Noncommunicable Diseases</u> (NCDs); WHO Global Strategy on Diet, Physical Activity and Health; WHO Acceleration Plan to STOP <u>Obesity</u> adopted at the <u>75th WHA</u>; <u>The UN Decade of Action on Nutrition</u>; <u>Sustainable Development</u> <u>Goals (SDGs)</u>, and the <u>UNICEF Nutrition Strategy 2020-2030</u>.

Key regional policies include the <u>SADC Regional Indicative Strategic Development Plan</u> (RISDP) operationalizes the <u>SADC Vision 2050</u>; SADC <u>Food and Nutrition Strategy</u>; Regional SBCC Strategy to Support Nutrition Interventions in SADC: 2021-2026; SADC School Nutrition Guidelines; Action Framework to Improve the Diets of Young Children (6-23 months) in the Southern Africa Region; The SADC <u>Protocol on Health</u>.

Country level policies are more sporadic. Only seven SADC countries reported having a country policy that addresses obesity (Zimbabwe, Malawi, Tanzania, South Africa, Zambia, Eswatini, Namibia). Of the recommended regulatory frameworks and policies to address obesity (taxes on sugar-sweetened beverages; front-of-pack nutrition labelling (FOPNL); and restrictions on the marketing of unhealthy foods and beverages), eight SADC countries have introduced a SSB tax (Botswana, Comoros, Mauritius, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe); six have introduced or have draft regulation on FOPNL (Botswana, Seychelles, Tanzania, Zambia, South Africa and Zimbabwe); and only two have regulations or draft regulations on the marketing of unhealthy foods and beverages in place

(Botswana and South Africa). There are multiple gaps in the policy and regulatory environment in SADC countries that need urgent attention.

Interventions to prevent obesity

The WHO acceleration plan to STOP obesity recommends a package of evidence-based policies and regulations, including regulations to protect children from the harmful marketing of food and beverages; fiscal and pricing policies to promote healthy diets (including increasing taxes on SSBs); nutrition labelling policies (including front of pack labelling); and school-based nutrition policies (including initiatives to regulate the sales of products HFSS within and in close proximity to schools). Policies should also be strengthened that protect, support and promote breastfeeding and support active travel and physical activity in schools. A package of interventions is recommended by the WHO and UNICEF that includes actions within **health systems** to prevent, detect and manage overweight and obesity among the most vulnerable populations at each stage of the life course. Actions are also needed in multiple other systems to address obesogenic environments, including the **education, food, social protection, urban planning, sports and recreation, trade and industry and information and communication systems.** These should be tailor-made to country contexts and align with national priorities.

Stakeholder input

Government nutrition managers from 13 out of 16 SADC countries participated in an online survey to provide feedback on the development of a SADC obesity strategy. Participants identified various government departments, civil society bodies, academic institutions, international organisations, and the private sector as key influencers for implementing the strategy. Nutrition and physical activity-focused prevention strategies were emphasised, along with policy and regulations such as food labelling and taxation. Anticipated challenges included a lack of resources, political will, and resistance from different sectors, with potential interference from industry. To overcome these challenges, participants highlighted the need for political buy-in, leadership, adequate resources, and country-specific feasibility. Key sectors for successful implementation were identified as national policymakers, various government departments, fast food outlets, teachers, non-governmental organisation (NGOs), community leaders, and academia. The role of the food and beverages industry was not explicitly defined, suggesting the importance of involving departments/ministries of trade and commerce to develop legislation that aligns with effective government laws and regulations.

Conclusion and recommendations

The prevalence of overweight and obesity is rising at an alarming rate in the SADC region and is contributing to the growing burden of chronic diseases and increasing strain on healthcare systems and economies. The problem affects all SADC members states and is set to worsen dramatically without rapid, coordinated and preventive action. This requires the development of a comprehensive SADC obesity strategy to inform strategic actions across all member states. We have the opportunity to act and we must act now.

The report includes seven specific recommendations for the development of this strategy, which can be summarized as follows:

1. Engage widely with multiple stakeholders in the development of the strategy to secure political will, buy-in and a high-quality result. This includes engagement with multiple government ministries, partner organizations, the private sector and communities and population groups affected, including youth. Guidance is needed in engagements with the private sector to avoid industry interference.

2. **Prioritise policy and regulatory actions to support healthy food environments.** Develop a regional policy framework, based on the WHO recommended, evidence-based package of policies and regulations, including regulations to protect children from the harmful marketing of food and beverages; fiscal and pricing policies to promote healthy diets; nutrition labelling policies; and school-based nutrition policies. Policies to protect, support and promote breastfeeding and support active travel and physical activity in schools should also be included.

3. Support the development of country roadmaps for the prevention of obesity in all member states. This should include actions within health systems to prevent, detect and manage overweight and obesity among the most vulnerable populations at each stage of the life course. Actions should also be selected within multiple other systems, including the education, food, social protection, urban planning, sports and recreation, trade and industry and information and communication systems. This process should be highly collaborative.

4. **Strengthen capacities and systems for sustained change.** This should include capacity strengthening of SADC leaders and decision makers to become champions within their countries, and capacity building of sector workforces to support implementation.

5. Establish robust systems for data collection, monitoring and surveillance. This should aim to generate high quality data using a common monitoring framework and standardised protocols to support the comparability, accuracy and timeliness of data. Indicators should be integrated into national systems and the capacities of professionals built to support data collection, reporting and sharing.

6. Promote knowledge, learning, research and innovation. Platforms for knowledge sharing between SADC members states and other regions should be developed and utilized. Academic institutions and other stakeholders can be engaged to develop a research agenda, and partnerships developed to support the trialling of innovations. Communities, including youth, should be provided opportunities to feed into programme learning. Guidance is needed to avoid conflicts of interest in partnerships with the private sector to fund research.

7. **Ongoing advocacy and communication.** Ongoing advocacy is needed to support policy change and the securing of public finances to implement country roadmaps. This should build on regional and country policy opportunities and platforms and make use of champions. Strategies for ongoing community engagement and communication are also needed to reach affected communities with key messages, as part of overall social and behaviour change (SBC) strategies.

1. Background

Global estimates predict dramatic increases in levels of overweight and obesity in the coming years from 2.6 billion people in 2020 to 4 billion in 2035, representing a rise in prevalence from 38% of the world's population to 50% (World Obesity Federation, 2023). By 2030 it is predicted that 1 in 5 women and 1 in 7 men will be living with obesity (BMI ≥30kg/m²), equating to over 1 billion people globally (World Obesity Atlas, 2022). The rise is expected to be steepest among children and adolescents. Recent estimates suggest in 2021, 37 million children under five years and 340 million children and adolescents aged 5-19 years were overweight or obese globally (WHO, UNICEF and World Bank, JMEs, 2023; WHO, 2021).

Box 1: Definitions of overweight and obesity

Overweight and obesity refer to excessive body fat and are defined in different ways according to age.

For adults, overweight and obesity are defined according to Body Mass Index (BMI), which is defined as a person's weight in kilograms divided by the square of the person's height in meters (kg/m²). Overweight is defined as BMI greater than 25 kg/m², and obese BMI greater than 30 kg/m².

For children and adolescents aged 5 to 19 years, overweight is defined as BMI-for-age greater than 1 standard deviation above the WHO Growth Reference Median and obesity BMI-for-age greater than 2 standard deviations above the WHO Growth Reference Median.

For children under 5 years of age, overweight is defined as weight-for-height greater than 2 standard deviations above the WHO Child Growth Standards median and obesity weight-for-height greater than 3 standard deviations above the WHO Child Growth Standards median.

Source: World Health Organization

Africa is not exempt from this trend, where levels of overweight and obesity are also predicted to rise rapidly, particularly among girls and women (from 5% in 2020 to 14% in 2035 among women and 18% to 31% among girls) (World Obesity Federation, 2023). A recent study of the changes in BMI, overweight and obesity in the 16 SADC member states found the prevalence of overweight and obesity in 2019 to be 39.7% and 18.5% for women and 12.1% and 6% for girls aged 2-19 years (Gona et al., 2021). Overall overweight and obesity in SADC states was found to have doubled in adults since 1990 and increased 1.7 fold in children (Gona et al, 2021). Young children are not exempt from the problem. The 2022 SADC Regional Vulnerability Assessment and Analysis (RVAA) Synthesis Report estimated that 2.4 million children under 5 years are overweight across the 16 SADC member states, with the highest prevalence found in Botswana, Comoros, Mauritius, Seychelles, and South Africa.

Overweight and obesity in the SADC region exists alongside undernutrition (stunting and wasting) and micronutrient deficiencies, representing a triple burden of malnutrition. The 2022 SADC RVAA reported that an estimated 18.6 million children under five years in SADC countries are stunted (low height for age), 6.4 million wasted (low weight for age) and 1.7 million severely wasted, while one third of women of reproductive age are anaemic. Undernutrition in early life represents a risk factor for overweight and obesity in later life (Keino et al., 2014) and exists alongside overnutrition in the same countries, communities and even families (Harper et al., 2022).

The World Health Organization (WHO) has called for urgent action to address the problem of overweight and obesity in Africa, noting that tackling obesity is critical to achieving the Sustainable Development Goal (SDG) target 3.4: to reduce by one third premature mortality from NCDs by 2030 (WHO, 2023). WHO has called for multi-sectoral actions, health sector strengthening, political will and a clear plan of action to meet targets.

In response, SADC has committed to developing an obesity strategy to guide multi-sectoral responses within the 16 SADC member states to prevent overweight and obesity. This report presents the results of a comprehensive review of existing evidence and the current situation in the SADC region to inform this process.

2. Purpose, objectives and methodology

2.1 Purpose and objectives

The purpose of this review is to provide critical information to inform the development of a SADC strategy to address overweight and obesity in the Southern Africa region.

The objectives of the review are to:

i. Determine the prevalence of overweight and obesity by sex in SADC countries.

ii. Understand the drivers of overweight and obesity at both individual and environmental levels in SADC countries.

iii. Map and comprehend the policy and legislative landscape related to overweight and obesity prevention globally, regionally, and within SADC countries.

iv. Explore interventions or best practices for overweight and obesity prevention in the SADC region.

v. Engage key stakeholders to gain insights on the essential components to be integrated into the SADC obesity and overweight strategy.

2.2 Methodology

The landscape review consisted of a literature review and survey of stakeholders, as follows:

Literature review

A comprehensive literature review was undertaken in line with i to iv of the study objectives. The literature review involved searching academic databases and grey literature sources, such as government reports, policy documents, and non-governmental organisation (NGO) reports. UNICEF East and Southern Africa Regional Office (ESARO) assisted in identifying documents related to the promotion and marketing of food in the SADC region. Academic studies and papers produced by development partners and governments were used to inform analysis of how attitudes and practices, as well as social norms, impact dietary intake. To search the documents, a set of criteria based on current information available related to overweight and obesity was developed, and the documents were searched against the criteria.

Secondary data collection

Quantitative data were drawn from multiple sources, using the most up to date national survey data for each indicator.

- Global Nutrition Report (2021) which drew from <u>NCD Risk Factor Collaboration</u> data for overweight and obesity prevalence of adults and children and adolescents aged 5-19 years.
- <u>UNICEF, WHO and World Bank Joint Malnutrition Estimates (JMEs)</u> data for obesity among children aged under 5 years.
- <u>WHO Global Health Observatory Data Repository/World Health Statistics</u> for data on obesity risk, costs, food consumption and physical activity.
- <u>Tufts University. Global Dietary Database</u> for data on dietary intake.
- UNICEF. Global databases: Infant and young child feeding for data on exclusive breastfeeding.

Stakeholder survey

A survey was undertaken among national policy makers to explore country-level perceptions on obesity, key drivers, and priorities of member states in the development of a SADC obesity prevention strategy. <u>A simple eleven-question survey</u> was developed and distributed to key policy makers in each member state using google forms.

2.3 Data collection and analysis

All qualitative data were collated and analysed. Quantitative data collected from different data sources were collated for each of the 16 SADC countries across multiple years and analysed for trends. Data were disaggregated by age and sex to illustrate variations and highlight patterns. Data from the survey was collated and analysed for key themes.

2.4 Limitations

Insufficient data: In some datasets different indicators were used and data was collected from various demographic groups, making comparisons difficult. Additionally, limited disaggregated data posed challenges in making informed inferences about the prevalence of obesity in different sub-groups (age, rural/ urban location and socioeconomic status) to guide the targeting of interventions.

Limited studies on determinants: There is a lack of information on the determinants of obesity in the SADC region, particularly studies that explore the influence of social, economic, commercial and environmental determinants and factors.

Limited focus on vulnerable populations: Insufficient data and research are focused on vulnerable populations, such as women, children, who may be at higher risk for obesity and related health complications. In general studies focus on urban populations and there is less information about rural populations.

The survey was distributed to one representative from each of the 16 member states and therefore reflects a limited viewpoint.

3 Findings

3.1 Prevalence, trends and country differences

3.1.1 Prevalence of adult overweight and obesity

The prevalence of adult (aged 18 years and above) overweight and obesity in SADC countries according to data collected from the Global Nutrition Report (2021) is described in Figure 1. There are large variations in the prevalence of overweight and obesity (combined) across SADC countries, ranging from 25% in Malawi to 55% in South Africa. The countries with the highest prevalence of overweight and obesity are South Africa (55%), Botswana (45%), Namibia (42%), Lesotho (40%), Eswatini (39%), Zimbabwe (39%) and Seychelles (38%). The countries with the lowest prevalence of overweight and obesity are Malawi (25%), Madagascar (26%), Mozambique (27%) and Democratic Republic of Congo (27%). There is much less variation in the prevalence of overweight across SADC countries (ranging from 18% in Malawi to 24% in South Africa) compared to obesity, which varies widely from 7% in Malawi to 31% in South Africa).

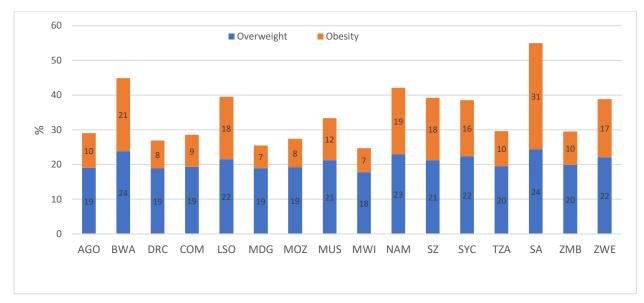


Figure 1: Prevalence of overweight and obesity among adults in SADC countries in 2019 (Source: Global Nutrition Report, 2021)

Figure 2 presents levels of overweight and obesity in SADC countries among adults disaggregated by sex. This shows that both obesity and overweight are higher in adult females compared to adult males in all 16 countries in SADC, aside from in South Africa where overweight is slightly higher among males versus females (25% versus 24%).

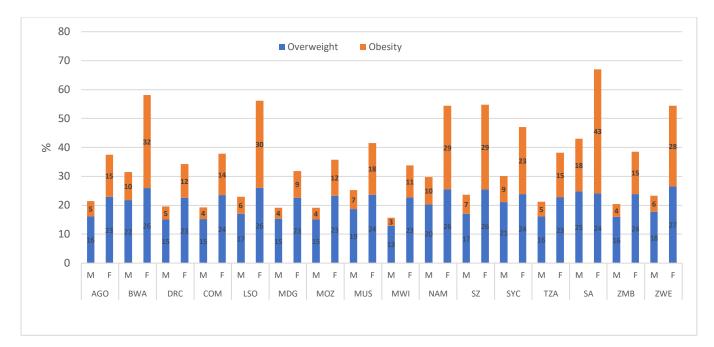


Figure 2: Prevalence of overweight and obesity among adult males (M) and females (F) in SADC countries 2019 (Source: Global Nutrition Report, 2021)

Figure 3 illustrates the prevalence of overweight and obesity in SADC countries by year. This shows that in all SADC countries the prevalence of overweight and obesity (individually and combined) increased between 2000 and 2010 and again between 2010 and 2019, with the exception of South Africa where the prevalence of overweight was slightly lower in 2019 compared to 2010.

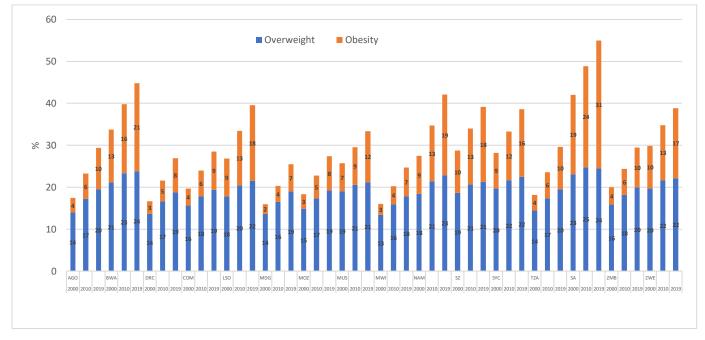


Figure 3: Prevalence of overweight and obesity among adults in SADC countries from 2000-2019 (Source: Global Nutrition Report, 2021)

Figures 4 and 5 show this data disaggregated by sex. Figure 4 shows that the prevalence of overweight and obesity increased in adult males between 2000 and 2019 across all SADC countries. Figure 5 shows that the prevalence of overweight and obesity increased in adult females in all countries between 2000 and 2019 aside from Botswana, Namibia, Eswatini, South Africa and Zimbabwe where levels of overweight among females were highest in 2010 and either declined or stayed the same in 2019.

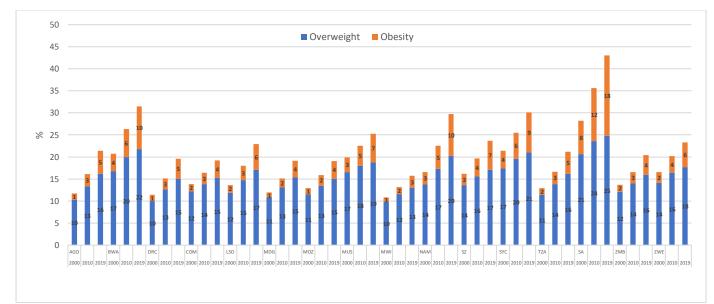


Figure 4: Prevalence of overweight and obesity among adult males from 2000 to 2019 (Source: Global Nutrition Report, 2021)

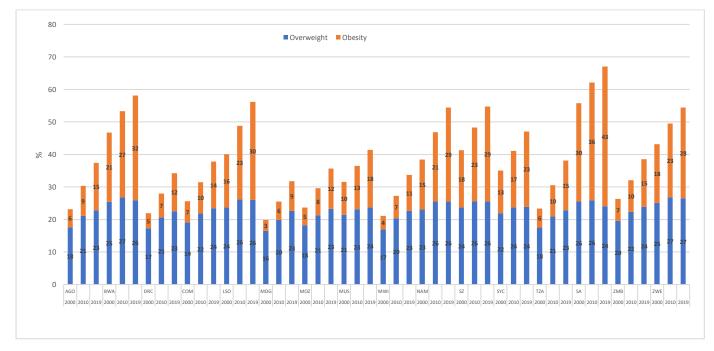


Figure 5: Prevalence of overweight and obesity among adult females from 2000 to 2019 (Source: Global Nutrition Report, 2021)

3.1.2 Prevalence of overweight and obesity in children and adolescents aged 5-19 years

The prevalence of child and adolescent (aged 5-19 years) overweight and obesity in SADC countries according to data collected from the Global Nutrition Report (2021) is described in Figure 6. The

prevalence of child and adolescent overweight and obesity (combined) varies across SADC countries, ranging from 12% in DRC to 30% in South Africa. The countries with the highest prevalence of child and adolescent overweight and obesity are South Africa (30%), Seychelles (25%), Botswana (20%), Eswatini (20%), Namibia (19%) and Lesotho (19%). The countries with the lowest prevalence of overweight and obesity are Madagascar (12%), DRC (12%), Malawi (13%), Angola (13%), Comoros (13%) and Mozambique (13%). The range of country prevalences is greater for child and adolescent obesity (2% in DRC to 15% in South Africa) compared to overweight (9% in DRC to 15% in South Africa).

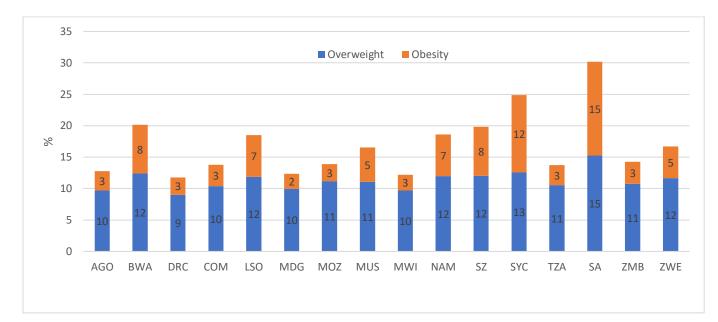


Figure 6: Prevalence of overweight and obesity among children and adolescents (5-19 years) in SADC countries, 2019 (Source: Global Nutrition Report, 2021)

Figure 7 shows sex differences in the prevalence of overweight and obesity among girls and boys aged 5-19 years. In all SADC countries, the prevalence of overweight and obese is higher among girls versus boys. The most notable difference in overweight and obesity between boys and girls are observed in Lesotho, Botswana, Eswatini and Zimbabwe.



Figure 7: Prevalence of overweight and obesity among boys and girls (age 5-19 years) in SADC countries in 2019 (Source: Global Nutrition Report, 2021)

Figure 8 shows country prevalences of child and adolescent overweight and obesity in 2000, 2010 and 2019. In all countries both overweight and obesity increased between 2000 and 2010 and again between 2010 and 2019. In South Africa, rates of overweight and obesity have increased at an alarming rate, from 6% in 2000, to 16% in 2010 and 30% in 2019.

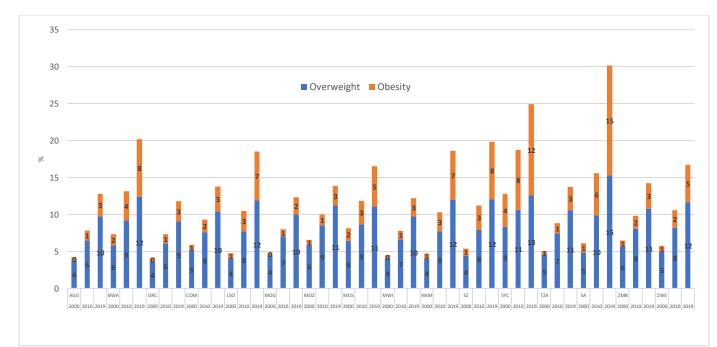


Figure 8: Prevalence of overweight and obesity among children and adolescents (5-19 years) from 2000 to 2019 (Source: Global Nutrition Report, 2021)

Figures 9 and 10 show the prevalence of overweight and obesity among boys (Figure 9) and girls (Figure 10) in 2000, 2010 and 2019. This shows that country prevalences in this age group have increased between 2000 and 2010 and again between 2010 and 2019 among both boys and girls, with dramatic rises seen in both sexes in South Africa.

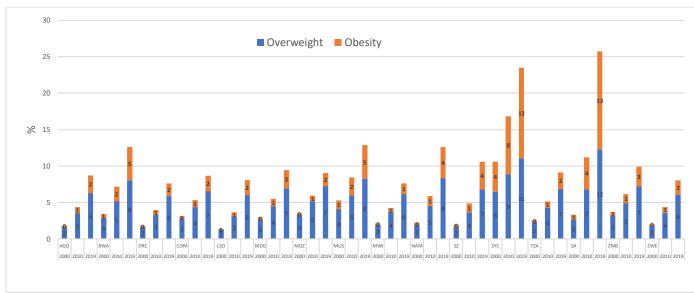


Figure 9: Prevalence of overweight and obesity among boys aged 5 to 19 years in SADC from 2000 to 2019 (Source: Global Nutrition Report, 2021)

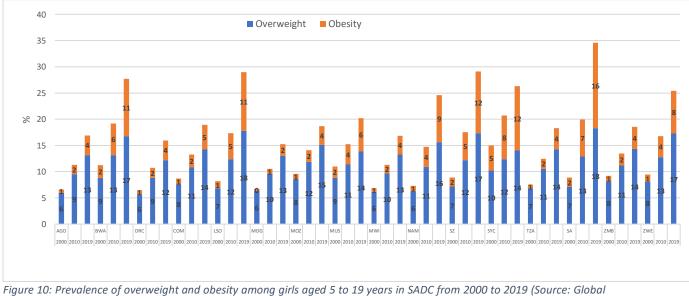


Figure 10: Prevalence of overweight and obesity among girls aged 5 to 19 years in SADC from 2000 to 2019 (Source: Gl Nutrition Report, 2021)

3.1.3 Prevalence of overweight and obesity in children under five years

Data on overweight and obesity among children under five years of age is drawn from the UNICEF, WHO, World Bank Joint Malnutrition Estimates (JMEs) as this data is not available from the NCD Risk Factor Collaboration (reported in the Global Nutrition Report) and is presented in Figure 11. This shows that levels of overweight and obesity are lower in this age group compared to the 5-19 year age group in all countries. Prevalence of overweight and obesity in children under five years in 2022 ranges from 2% in Madagascar and 12% in South Africa. Countries with the highest prevalence of under-five overweight and obesity are South Africa (12%), Botswana (12%), Seychelles (9%), Eswatini (8%), Mauritius (7%) and Lesotho (7%). Prevalence in this age group was lower in 2022 compared to 2012 in all countries except for Namibia and Angola.

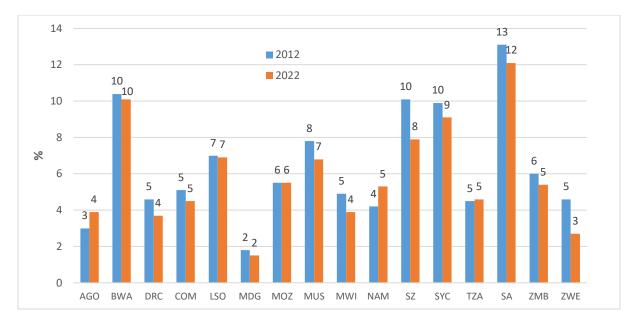


Figure 11: Overweight among children (under 5 years) in 2012 and 2022

3.1.4 Micronutrient status

While obesity is associated with excessive calorie intake and overnutrition, it also commonly coexists with inadequate intake or absorption of essential micronutrients. This paradoxical relationship arises because excessive calorie consumption is often associated with poor quality diets lacking in essential vitamins and minerals. Deficiencies in vitamin D, vitamin C, vitamin E, iron, zinc, magnesium and other micronutrients also negatively affect various physiological processes involved in energy balance, glucose metabolism, and fat storage, potentially contributing to the development and progression of obesity. For example, a higher body fat index has been found to be associated with an increased risk of vitamin D deficiency in adolescence (Lenders et al., 2009), increased risk of iron deficiency and anaemia (Tussing-Huphreys et al., 2012), increased prevalence of vitamin A deficiency among overweight children (Calcaterra et al., 2023). Figure 12 presents the prevalence of anaemia among women aged 15 to 49 years in SADC countries. This shows that even though anaemia levels in this group have decreased in most countries, levels remain very high in all SADC countries, ranging from 24% in Mauritius to 48% in Mozambique in 2019 (in many countries higher than the global average of 29.9%).

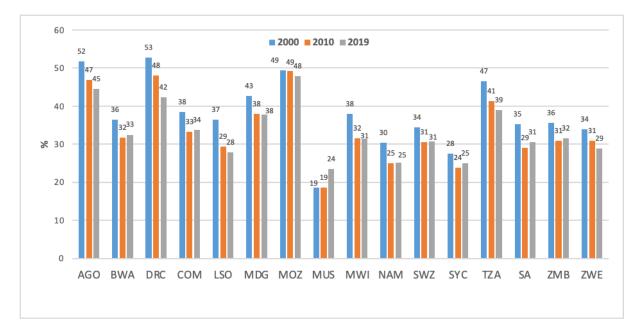


Figure 12: Prevalence of anaemia among women pregnant and non-pregnant aged 15-49 years

3.1.5 National obesity risk

The Global Obesity Observatory defines *national obesity risk* as the likelihood of a country's population being affected by obesity. A national obesity risk composite score is created for each country based on obesity prevalence, rate of increase, level of treatment, and child stunting. A childhood obesity risk indicator score is also created to determine the estimated risk of each country having or acquiring a major childhood obesity problem during the 2020s, taking into account current child prevalence levels and future risk based on infant stunting, maternal obesity, maternal smoking and breastfeeding rates. Figure 13 presents national and child obesity risk by SADC country. Results show that the highest risk for national obesity is found in Botswana, Lesotho, and South Africa, and the highest risk for childhood obesity is found in Botswana, Mauritius, Namibia, South Africa, and Zimbabwe.

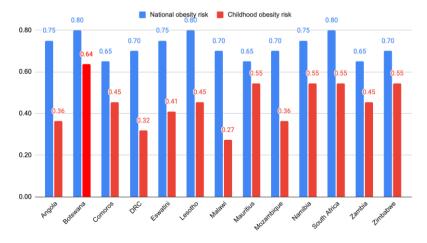


Figure 13: National obesity risk and childhood obesity risk

Overall, all SADC countries are experiencing growing rates of overweight and obesity among adults and children aged 15-19 years. The concept of the 'obesity transition' (Jaacks et al, 2019) suggests that as the obesity epidemic progresses in countries, the prevalence generally moves from being highest among women compared to men and in adults compared to children (stage one), to increasingly rapidly in adults and somewhat rapidly in children, with an evening out between the sexes (stage two). When results are interpreted in the light of this concept, data suggests that most countries in the SADC region remain in stage one of the 'obesity transition' with highest rates of overweight and obesity within adult females, with evidence that South Africa is moving into stage two (an evening out of the sexes, rapidly growing rates of obesity in adults and somewhat rapid increases in children). Signs of progression towards stage two are also evident in Botswana, Namibia, Lesotho, Eswatini, Zimbabwe and Seychelles.

3.2 Impacts of overweight and obesity

The increasing prevalence of obesity is a significant public health and economic concern for SADC member states due to health and social consequences and associated economic costs. These can be outlined as follows:

3.2.1 Health and social consequences

Obesity is a risk factor for many NCDs, including type 2 diabetes, cardiovascular disease, and certain types of cancer (Box 2), the risk of which increases with increasing BMI. Obesity can also have adverse social consequences, such as stigma, discrimination, and reduced quality of life. These conditions can lead to premature death and disability and place a significant burden on healthcare systems and the economy. Overall, NCDs were estimated to be responsible for 37% of deaths in 2019 in the African region.¹ Deaths from ischaemic heart disease (IHD), stroke and type 2 diabetes alone attributable to high BMI in SADC countries were estimated to have increased between 2.5 and 3.5-fold between 1990 and 2019 (Gona et al, 2021).

Children with overweight and obesity have increased risk of health problems during childhood and adolescence, including gastrointestinal, musculoskeletal and orthopaedic problems and sleep apnoea, as well as low self-esteem, stigmatization, depression and lower educational attainment (UNICEF, 2019). Children who are overweight and obese face an increased risk of becoming overweight and obese adults, along with the associated adverse health consequences described.

As the 'obesity transition' progresses, obesity generally disproportionately affects marginalised communities and can, therefore, also exacerbate health inequalities, leading to even greater disparities in health outcomes.

Box 2: Health consequences associated with obesity

Cardiovascular Diseases, such as heart disease, high blood pressure, and stroke. Excess body fat can contribute to the development of atherosclerosis (hardening of the arteries), increase blood pressure, and impair heart function.

¹ Deaths from noncommunicable diseases on the rise in Africa. (n.d.). World Health Organisation, Africa Region. <u>https://www.afro.who.int/news/deaths-noncommunicable-diseases-rise-africa</u>

Type 2 Diabetes: Excessive fat tissue can interfere with insulin action, leading to insulin resistance and impaired glucose metabolism.

Certain Cancers, including breast, colorectal, endometrial, kidney, and pancreatic cancers: The exact mechanisms are not fully understood, but factors such as hormonal changes, chronic inflammation, and insulin resistance likely play a role.

Respiratory Problems, such as sleep apnoea, asthma, and decreased lung function: Excess weight can put pressure on the airways, leading to breathing difficulties.

Musculoskeletal Disorders, including osteoarthritis: Excessive strain on the joints and bones caused by excess weight can increase the risk of musculoskeletal disorders, including osteoarthritis and back pain.

Non-alcoholic Fatty Liver Disease (NAFLD): Fat accumulation in the liver can lead to NAFLD, which can progress to more severe liver diseases, such as non-alcoholic steatohepatitis (NASH) and cirrhosis.

Mental Health Disorders: Obesity is associated with an increased risk of mental health disorders, including depression and anxiety. The psychosocial impact of obesity, such as societal stigma and low self-esteem, can contribute to these mental health conditions.

Sources: Capuccio et al., 2008; Must et al., 1999; WHO, 2021; Chin et al., 2023

3.2.2 Associated economic costs

The high costs of treating obesity-related illnesses place a significant financial burden on individuals, families, and healthcare systems. Additionally, obesity can diminish workforce productivity and increase absenteeism, exerting additional adverse effects on economic growth. The economic costs associated with overweight and obesity were estimated to be USD1.96 trillion globally in 2020, with a predicted increase to USD4 trillion in 2035 (World Obesity Federation, 2023). This represents an increase from GDP of 2.4% to 2.9% from 2020 to 2035. In Africa alone, the economic impact is likely to reach USD50 billion per year by 2035, or 1.6% of the region's GDP.

The impacts of obesity on economies can be estimated as a proportion of total Gross Domestic Product (GDP). The Global Obesity Observatory estimated the economic impact of obesity to be 1% of GDP across the Africa Region, estimated to rise to over 2% by 2060. Table 1 and Figure 14 present actual and projected associated costs of obesity and overweight as a % of GDP for each of the SADC countries. This shows significant variation in costs between countries, with by far the highest costs estimated by 2060 for Mauritius (8.89%), followed by Zimbabwe (5.23%), Botswana (4.91%), South Africa (4.83%), Lesotho (4.46%) and Eswatini (4.42%).

	2019	2030	2040	2050	2060
Mauritius	2.78%	4.60%	6.20%	8.02%	8.89%
Zimbabwe	1.77%	2.38%	3.20%	4.14%	5.23%
Botswana	1.88%	2.89%	3.73%	4.57%	4.91%

Table 1: Projected costs to the country as a percentage of GDP²

² No data available for Seychelles

South Africa	1.96%	2.80%	3.45%	4.16%	4.83%
Lesotho	2.05%	2.97%	3.58%	4.15%	4.46%
Eswatini	1.52%	2.29%	2.98%	3.79%	4.42%
Namibia	1.19%	1.89%	2.50%	3.13%	3.66%
Madagascar	1.06%	1.43%	1.91%	2.46%	3.00%
Comoros	0.79%	1.08%	1.45%	1.91%	2.41%
Malawi	0.78%	1.26%	1.27%	1.54%	1.73%
DRC	0.84%	0.96%	1.21%	1.49%	1.70%
Zambia	1.01%	1.26%	1.39%	1.50%	1.53%
Mozambique	1.47%	1.57%	1.65%	1.66%	1.52%
Angola	0.71%	1.08%	1.27%	1.41%	1.45%
Tanzania	1.03%	1.17%	1.30%	1.40%	1.38%

Source: Global Obesity Observatory

The chart below (Figure 14) illustrates the rising projected costs to GDP in 15 SADC countries.

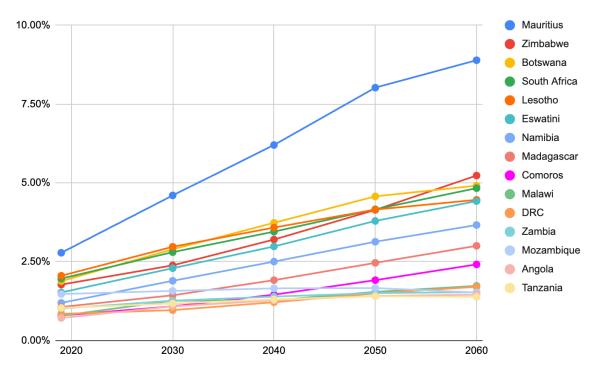


Figure 14: Projected costs as a percentage of GDP

Costs can also be estimated by cost per capita, which considers the size of the population to express costs per person. Costs of adult obesity per capita calculated for 2019 for SADC countries are

presented in Table 2 and Figure 14, which show that the highest costs by far are found in Mauritius (USD308), followed by Botswana (USD136) and South Africa (USD130).

	Adult prevalence of obesity (%)	Total economic cost per capita (USD)
Mauritius	19.10	308.00
Botswana	11.80	136.00
South Africa	26.20	130.00
Namibia	8.40	60.00
Eswatini	20.50	59.00
Lesotho	11.50	23.00
Zimbabwe	7.70	23.00
Angola	6.80	19.00
Zambia	7.50	13.00
Comoros	13.50	11.00
Mozambique	9.10	7.00
DRC	5.80	5.00
Malawi	18.50	5.00

Table 2: Prevalence of obesity and total economic cost per capita (2019)

The chart below (Figure 15) illustrates the combination of high per capita costs in relation to prevalence rates.

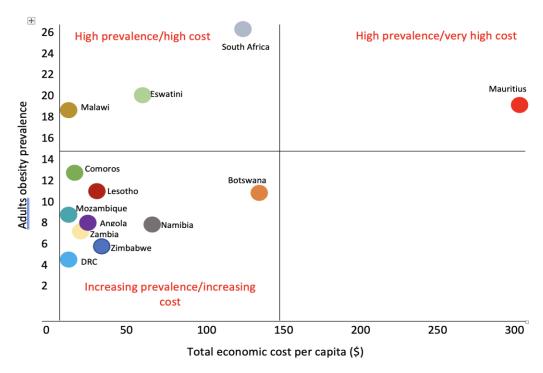


Figure 15: Cost per capita and prevalence on a comparative matrix

The Global Obesity Observatory predicts that the biggest increases in global economic costs of overweight and obesity over the next 30 years will be concentrated in low- and middle- income countries where costs will increase 12-25 times by 2060, compared to a 4-fold increase in high-income countries. Reducing projected overweight and obesity prevalence globally by 5% annually from current trends or keeping it at 2019 levels will translate into savings of USD430 billion or USD2.2 trillion in costs, respectively, every year between 2020 and 2060.

3.3 Individual drivers of overweight and obesity

There are multiple drivers of overweight and obesity at the individual level. Drawing from global and regional literature, these can be summarised as follows:

3.3.1 Maternal and paternal nutrition status

A child is more likely to be overweight or obese and/or experience NCDs later in life if their mother was overweight or obese or had diabetes before or during pregnancy (Mitanchez and Chavatte-Palmer, 2018). Paternal overweight and obesity during conception can also increase risk of overweight in children (Soubry et al., 2016). A child whose mother was undernourished before and during pregnancy is also more likely to experience overweight and obesity later in life. This is because maternal undernutrition before and during pregnancy increases the risk of poor foetal growth and low birth weight. Additionally, low birth weight, particularly when followed by a period of rapid growth after the first two to three years of life, increases the risk of subsequent overweight and obesity (UNICEF, 2019).

3.3.2 Breastfeeding and complementary feeding practices

A meta-analysis found that being breastfed reduces the risk of childhood and later-life overweight by an estimated 13% (Horta et al., 2015). Another recent study found that exclusive breastfeeding for a minimum of four months was associated with a two-fold decrease in the risk of maternal and child overweight and obesity within 2-5 years post-delivery (Mantzorou et al., 2022). The protective role of breastfeeding for children is linked to the nutrient profile of breastmilk and satiety patterns related to breastfeeding (Victora et al., 2016). Additionally, for mothers, breastfeeding contributes to controlling maternal weight gain (Mantzorou et al., 2022).

In the SADC region, the rate of exclusive breastfeeding was estimated to be 38% in 2014, which is below global targets of at least 50% by 2015 (SADC Food and Nutrition Security Strategy 2015-2025). Between 2001 and 2011, only five SADC Member States had exclusive breastfeeding rates of 50% and above.

GNR (2022) data on exclusive breastfeeding shows an upward trend in exclusive breastfeeding for infants under 6 months of age in most SADC countries between 2000 and 2019 (Figure 16). However, many countries remain below the global 2025 target of 50%. Countries with the highest most recent rates are Zambia (70% in 2018), Malawi (60% in 2015), Lesotho (58% in 2018), Tanzania (56% in 2015), DRC (56% 2017) and Madagascar (51% in 2018). Countries with the lowest rates and those below the 50% target are Botswana (29% in 2018), South Africa (32% in 2016), Angola (38% in 2015) and Zimbabwe (43% in 2019).

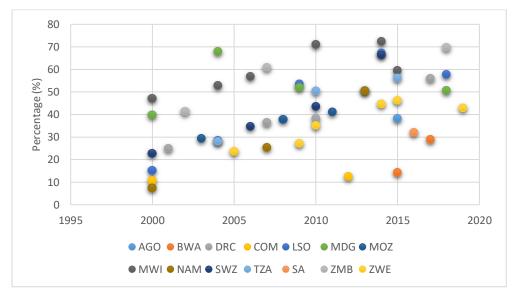


Figure 16: Exclusive breastfeeding trends (2000-2019)

Complementary practices also influence dietary practices in later life. Poor diets that do not secure minimum dietary diversity for young children and that are high in foods high in fat, salt and sugar (HFSS) predispose children to poor diets later on. For example, a study by Switkowski et al. found that breast milk and delayed introduction of sweets and fruit juice positively influenced children's dietary intake at about three years of age, as these children has a lesser preference for sweet-tasting food and drinks in early childhood.

3.3.3 Unhealthy diets

Regular consumption of unhealthy foods is a major driver of overweight, obesity and NCDs at individual level. This often starts in childhood. Adolescents are particularly vulnerable to unhealthy diets, as they are often impulsive, subject to peer influence and less likely to follow healthy eating guidance (Fitzgerald et al., 2013; Ochola and Masibo, 2014). High-risk diets include the regular consumption of foods high in sugar, salt and fat (HFSS) and low in dietary fibre, including regular consumption of sugar-sweetened beverages (SSBs) (Dubois et al., 2007; Johnson et al., 2007). Regular consumption of ultra-processed foods (UPFs)³ is also associated with a higher risk of obesity and related NCDs such as hypertension, diabetes, dyslipidaemia, and certain cancers (Hall et al., 2019; Vandevijvere et al., 2019; Schnabel et al., 2018) with the strongest associations between consumption of UPFs and mortality found in low- and middle-income countries (Dehghan et al., 2023).

Comparable data on consumption patterns for SADC countries is limited. The Global Obesity Observatory provides data on the average daily consumption of healthy and unhealthy food and drinks for 6 out of the 16 SADC countries. Figure 17 presents available data for these countries. This shows that on average children consume more than one carbonated soft drink per day in Seychelles, Mozambique, Namibia and Tanzania. Figure 18 shows the average levels of frequency of fast food consumption each week for children in the same countries, showing that average consumption climbs to 1.8 for children in Seychelles.

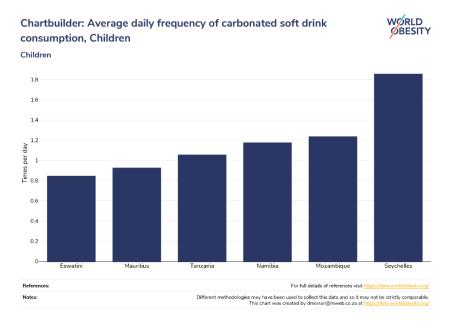


Figure 17: Average daily frequency of carbonated soft drink consumption (Source: Global Obesity Observatory)

³ UPFs are defined by the NOVA food classification system as "formulations of ingredients, mostly of exclusive industrial use, that result from a series of industrial processes." Examples of UPFs are confectionary, packaged snacks, ready-made infant foods, breakfast cereals and reconstituted meats (Monterio et al, 2019)

Chartbuilder: Average weekly frequency of fast food consumption, Children

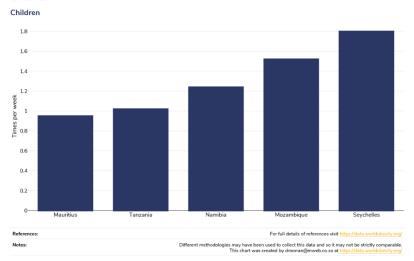


Figure 18: Average weekly frequency of fast food consumption (Source: Global Obesity Observatory)

Global Dietary Database (2019) provides a comprehensive analysis of food consumption globally. Table 3 below summarises the average food consumption in SADC countries in relation to the recommended daily allowance (RDA) of various food groups, including fruits, vegetables and red meat. Results show that fruit and vegetable intake is low, with many countries below 50% of the recommended intake, including Botswana, South Africa and Zimbabwe. Botswana recorded the lowest consumption of fruit (25%) and vegetables (37%). Consumption of red meat is also well above daily recommended allowances in 14 out of 16 SADC countries, with the highest rates in South Africa, Mauritius, Zambia and Zimbabwe.

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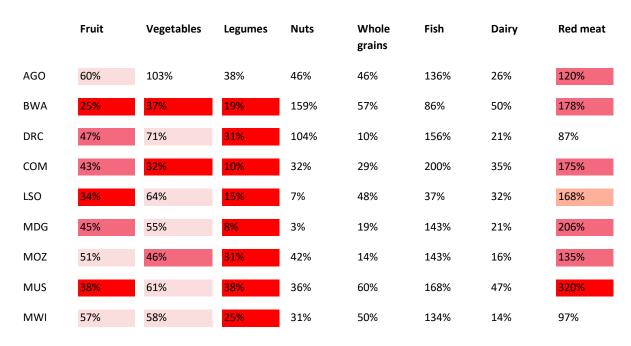


Table 3: Dietary intake for 2018 among SADC countries.4

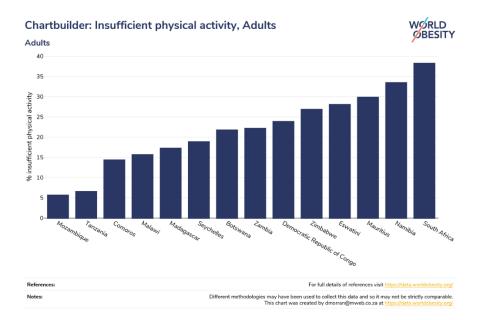
⁴ Tufts University. Global Dietary Database. Published online 2019. Available at: https://www.globaldietarydatabase.org/data-download.



3.3.4 Lack of physical activity

Lack of physical activity, driven by lack of physical space or opportunity for physical exercise and sports, as well as increased sedentary behaviours and screen time for children and adolescents, are another important individual driver of overweight and obesity in this age group. It is important to note that sedentary behaviour is distinct from physical inactivity, as individuals can engage in regular exercise but still have prolonged periods of sedentary behaviour throughout their day. Sedentary behaviour is defined as "any waking behaviour characterised by an energy expenditure less than 1.5 (\leq 1.5) metabolic equivalents (METs), while in a sitting, reclining or lying posture" (Tremblay et al., 2017). The most common sedentary activities include watching television, using computers, playing video games, other activities which consume screen time, reclining, socialising while sitting, deskbased work or schoolwork and non-active transport (Pate et al., 2011; Tremblay et al., 2017).

The Global Obesity Observatory provides data on the percentage of the population with insufficient physical activity. While comparability may vary, Figures 19 and 20 show that the prevalence of insufficient activity among adults is above 25% in South Africa, Namibia, Mauritius, Eswatini and Zimbabwe. Moreover, for all countries with available data on children (Zambia, Botswana, Namibia, Mozambique, Zimbabwe, Seychelles, Mauritius and Tanzania) the prevalence is above 80%.





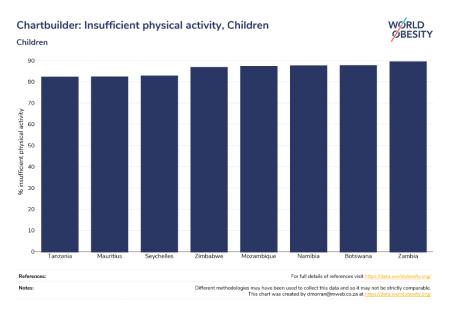


Figure 20: Insufficient physical activity, children

3.4 Obesogenic environments

Obesogenic environments are a major driver of unhealthy dietary behaviour. This includes environmental factors that affect the availability, accessibility, desirability and affordability of healthy foods and that influence how individuals engage in physical activity (UNICEF, 2019). Aspects contributing to obesogenic environments in SADC are as follows.

3.4.1 Food environments

People's choices regarding the acquisition, preparation, and consumption of food are influenced by the food environment. The food environment encompasses the physical, socio-cultural, economic, and political context in which individuals interact with the food system (Swinburn et al. 2013). Countries across the globe have been facing worsening food environments with the increase in

availability of cheap, energy-dense, nutrient-poor foods, exacerbated by attractive marketing messages delivered by profit-driven multi-national food and beverage companies that often encourage consumers to choose unhealthy foods over healthier alternatives (Driessen et al., 2014). In sub-Saharan Africa, the increased consumption of packaged, industrialised UPFs and SSBs is fuelled by the increasing availability of HFSS foods in local markets (Choukem et al., 2020). Thow et al. (2015) analysed food trade data from the Food and Agriculture Organization's FAOSTAT database to determine if the availability of unhealthy foods was a contributory factor to poor diets in the SADC. The authors found that imports of soft drinks increased by 76% into SADC countries between 1995 and 2010 and processed snack foods by 83%. They also found that diets and disease burden in the SADC have changed since the 1990s and that this change corresponded with trade and investment liberalization.

Environments where children gather, particularly the school food environment, plays an essential role. A study by Mukanu et al (2022) assessing the influence of the school food environment on adolescents' food choices in Zambia revealed that healthy foods such as fruits were inaccessible and unaffordable to most adolescents. In contrast, unhealthy food was readily available within and around the school. A cohort study of adolescent eating patterns in South Africa found that 85% of adolescents aged 13-17 years purchased food during school hours, with 65% opting for unhealthy choices such as candies, crisps, SSBs, fried chips and white bread (Feeley et al., 2012).

3.4.2 Advertising and marketing of unhealthy foods

Unhealthy dietary choices are also driven by the promotion of energy-dense, nutrient-poor foods by the food and beverage industry through different marketing channels such as advertising and marketing, product placement, sponsorships, and in-store promotions. These marketing strategies encourage consumers for the repeat purchase and consumption of foods that do not meet nutritional guidelines (Cairns et al. 2008, 2013).

The WHO report "<u>Protecting Children from the Harmful Effects of Food and Drink Marketing</u>" (2014) highlights the major role that food and drink marketing plays in the global obesity epidemic, particularly among children. The report outlines how marketing techniques are designed to appeal to children, including the use of celebrities, toys, and popular media characters, and how this marketing influences children's food preferences, consumption patterns, and ultimately, their health outcomes.

Television advertisements are often used to promote energy-dense, low nutrient foods to children during children's or family TV programmes, based on the belief that children will pressure their parents to purchase advertised items ("pester power") (Nichols & Cullen, 2004).

Industries' strategic focus on children is evident, supported by data showing that the global fast-food industry spends over USD 5 million per day to market unhealthy foods to children.⁵ As most of the food advertised are HFSS foods, this practice has been implicated in fuelling childhood obesity globally (WHO; Boyland et al., 2016; Halford et al., 2004). Yamoah et al. (2021), who investigated the extent and nature of advertising unhealthy versus healthy food and beverages to children on South African TV channels, found an increased exposure of children to unhealthy food advertisements, with unhealthy food advertising outweighing the advertisement of healthy alternatives.

⁵ https://www.ftc.gov/reports/marketing-food-children-adolescents-review-industry-expenditures-activities-self-regulation-federal

3.4.3 Cultural environments

Obesogenic environments encompass a range of social and cultural factors that shape food choices and dietary practices. Specifically, children face an environment at high risk of overweight and obesity, characterized by low levels of knowledge about healthy eating among caregivers, inadequate nutrition knowledge among school-age children, adolescents and teachers, and unhelpful social norms around body image (UNICEF, 2019).

Despite the health and economic burden associated with obesity, there are long-standing perceptions across the region that larger body size represents wealth, health, strength, status, and fertility (BeLue et al. 2009, Georgina et al. 2019). A study conducted in Dar es Salaam, Tanzania, to determine the prevalence of overweight and obesity and assess the perception of body weight among middle-aged adults, reported an obesity prevalence of 13% among men and 36% among women. Researchers found notable sex differences in perception of body weight with only 22% of overweight men recognizing themselves as overweight/obese compared to 38% of overweight women who perceived themselves as overweight/obese (Muhihi et al., 2012).

In a nationally representative survey of anthropometric factors conducted in South Africa and based on the 1998 SADHS, Puoane et al. (2002) identified higher rates of obesity among South African black adult females compared to white adult females. A noteworthy disparity was observed in the way women perceived their body weight, revealing that white women were more likely to recognize themselves as overweight or obese than black women. There is also evidence from a recent systematic review of adolescent girls' preference for 'modern' foods (i.e., fast foods, ultra-processed snacks) in low- and middle-income countries with adolescents citing that these foods help them to feel empowered (Trübswasser et al 2021).

3.4.4 Socioeconomics and urbanisation

Jaacks et al. (2019) put forward in the Lancet the conceptual model of the 'obesity transition', which describes the stages that countries appear to shift through. In stage one, there is a higher prevalence of obesity in women compared to men, in those with higher socioeconomic status compared to those with lower socioeconomic status, and in adults compared to children. In stage two, usually in higher-income countries, the prevalence of obesity increases rapidly in adults (and somewhat rapidly in children); there is a narrowing of the difference in obesity levels between sexes and socioeconomic status among women. In the third stage, the prevalence of obesity is higher among people with lower socioeconomic status and prevalence among women with high socioeconomic status and children plateaus.

Evidence suggests that many countries in Sub-Saharan Africa are currently in stage one of the transition (Jaacks et al., 2019), characterized by the highest levels of overweight and obesity in females and urban populations and populations with higher socio-economic status (Choukem et al., 2020; Sartorius et al., 2015; Kruger et al., 2012). This is highly linked to urbanisation, during which rural migrants have increased exposure to cheap, processed foods and the marketing of these foods, more passive modes of transportation, less recreational space and increased uptake of sedentary jobs (Wrotniak et al., 2012; Maruapula et al., 2011; Cockx et al., 2019). The links between overweight and obesity and high socioeconomic status and urbanisation in Sub-Saharan African countries were confirmed in a 2020 systematic review, likely linked to increased sedentary behaviours and increased access to packaged foods high in sugars and saturated fats (Choukem et al, 2020).

There is evidence, however, that some countries in the SADC region with higher Gross Domestic Product (GDP), such as South Africa, are moving into stage two of the obesity transition, characterized by declining differences in rates of obesity between rural and urban populations (Nglazi and Ataguba, 2022) and higher prevalence of overweight and obesity in both adults and children (Mbogori et al., 2020). As the obesity transition continues, we can expect to see a greater prevalence of overweight and obesity within poorer populations, as is the case in other countries and regions (UNICEF, 2019).

Policy and strategy mapping

This section maps key global, regional and country policies, legislation and plans related to the prevention of obesity. Alignment of the planned SADC strategy with these will ensure consistency and coherence of the response in SADC countries, will support SADC members in meeting international obligations and will help to identify resource and partnership opportunities to support implementation.

3.4.5 Global policy

Global Action Plan for the Prevention and Control of Non-communicable Diseases

All 16 SADC member states are signatories to the <u>Global Action Plan for the Prevention and Control of</u> <u>Noncommunicable Diseases (NCDs)</u>, adopted by the World Health Assembly (WHA)6 in 2013. The main goals of the action plan are to:

- Reduce premature mortality from NCDs by 25% by 2025 as part of the Sustainable Development Goals (SDGs).
- Halt the rise in obesity and diabetes prevalence.
- Achieve a 30% relative reduction in the prevalence of tobacco use in persons aged 15 and over.
- Reduce the harmful use of alcohol by 10%.
- Increase access to affordable and essential medicines and technologies for NCDs.
- Strengthen health systems' capacity to deliver integrated, people-centred care for NCDs.
- Monitor and evaluate the trends and determinants of NCDs and the progress made in their prevention and control.

WHO Global Strategy on Diet, Physical Activity and Health

The <u>WHO Global Strategy on Diet</u>, <u>Physical Activity and Health</u>, adopted in 2004, aims to promote healthy diets and physical activity to prevent and control NCDs, including obesity. The three main goals of the strategy are:

- i. To reduce the prevalence of risk factors for NCDs, such as unhealthy diets and physical inactivity.
- ii. To increase awareness and understanding of the importance of healthy diets and physical activity.
- iii. To develop, strengthen and implement global, regional, national, and local policies, guidelines, and action plans to promote healthy diets and physical activity.

⁶ The World Health Assembly is the decision-making body of the World Health Organization (WHO) and is held annually to discuss global health issues, set policies, and make decisions regarding the organization's priorities and activities.

The strategy emphasises the importance of addressing the underlying social, economic, and environmental determinants of health to create supportive environments for healthy lifestyles. A set of recommended policy actions are included for countries to implement at national, regional, and global levels. As signatories to the Global Strategy, SADC member states have committed to implementing these to ensure an environment that supports healthy behaviours and reduces the risk of NCDs.

The WHO Acceleration Plan to STOP Obesity

The WHO Acceleration Plan to STOP obesity, adopted at the <u>75th WHA</u> meeting in 2022, introduced new recommendations for the prevention and management of obesity. Member States endorsed both the plan and its accompanying recommendations. The plan aims to stimulate and support multi-sector country-level action. As part of the priority actions identified, the plan recognizes that health services to prevent, treat and manage obesity must be universally available, accessible, people-centred, affordable and sustainable. The plan encompasses 5 workstreams:

- i. Identify priority actions for greater impact on the prevention and management of obesity throughout the life course.
- ii. Support implementation of country actions.
- iii. Communicate rationale for action, advocate for the adoption of WHO recommendations and targets and acknowledge progress.
- iv. Promote the engagement of multiple stakeholders in support of country action.
- v. Monitor progress towards global obesity targets.

The plan includes a <u>health service delivery framework</u> to build capacity in health systems to deliver services to prevent and manage obesity. 'Frontrunner' countries have been identified that demonstrate strong political commitment, resource allocation, and a comprehensive approach to tackling obesity at the country level. In the SADC region, frontrunner countries were identified as Botswana, Mauritius, Eswatini, Seychelles, and South Africa.

UN Decade of Action on Nutrition 2016-2025

<u>The UN Decade of Action on Nutrition</u> is a commitment by United Nations Member States to undertake 10 years of sustained and coherent implementation of policies, programmes and increased investment to eliminate malnutrition in all its forms, everywhere, leaving no one behind. Specific goals are to:

- Eliminate malnutrition in all its forms, including undernutrition, micronutrient deficiencies, overweight and obesity, and diet-related non-communicable diseases.
- Achieve measurable improvements in maternal, infant, and young child nutrition.
- Increase investment in effective interventions to improve nutrition.
- Strengthen and enhance nutrition governance and multisectoral collaboration.
- Improve the quality, coverage and effectiveness of nutrition programmes and services.
- Improve food systems for optimal nutrition.
- Reduce the burden of diet-related non-communicable diseases through prevention and control.
- Promote the nutrition rights of vulnerable and marginalised populations, including children, adolescents, women, the elderly, and people living in humanitarian crises.
- Monitor and evaluate progress and strengthen accountability for action on nutrition.

Actions Networks have been established for sharing experiences, promoting improved coordination and building political momentum to scale up global action linked to the <u>Nutrition Decade work</u> <u>programme</u>. The secretariat is led by Food and Agriculture Organization (FAO) and WHO encourages governments to fulfil commitments made.

Sustainable Development Goals (SDGs)

The <u>Sustainable Development Goals (SDGs)</u>, adopted by the United Nations General Assembly in 2015, include a set of 17 goals and 169 targets to promote sustainable development and address global challenges. SDGs 2 and 3 are particularly relevant. <u>SDG2</u>, also known as **Zero Hunger**, aims to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. Specific objectives are:

- Eradicating hunger and malnutrition, including undernourishment, stunted growth, wasting, and micronutrient deficiencies.
- Increasing agricultural productivity and sustainability by promoting sustainable agricultural practices, increasing yields, and enhancing the resilience of agricultural systems.
- Ensuring equitable access to food by ensuring everyone has access to safe, nutritious, and sufficient food, regardless of their income, location, or other factors.
- Supporting small-scale farmers by promoting the viability and resilience of small-scale farmers, who often face significant challenges in accessing markets and resources.
- Promoting sustainable food systems that support healthy diets, biodiversity, and environmental sustainability.

<u>SDG3</u> aims to ensure healthy lives and promote well-being for all at all ages. This includes objectives to reduce maternal and child mortality; combat communicable diseases like HIV/AIDS, malaria and tuberculosis; reduce NCDs; strengthen health systems and infrastructure; and achieve universal health coverage, including financial risk protection and access to quality essential healthcare services, medicines and vaccines. Specifically, SDG 3.4 aims to reduce premature mortality from NCDs by one-third by 2030, and SDG 2.2 seeks to end all forms of malnutrition, including overweight and obesity, by 2030.

UNICEF Nutrition Strategy 2020-2030

The <u>UNICEF Nutrition Strategy 2020-2030</u> sets forth UNICEF's strategic intent to support national governments and partners to uphold children's right to nutrition and end child malnutrition in all its forms, including undernutrition, micronutrient deficiencies and overweight and obesity. The goal of the strategy is to protect and promote diets, services and practices that support optimal nutrition, growth and development for all children, adolescents and women. This is to be realised through programmes that focus on prevention first in all contexts and then treatment where prevention fails. UNICEF programming is organized into six results areas of early childhood nutrition; nutrition in middle childhood and adolescence; maternal nutrition; nutrition and care for children with wasting; maternal and child nutrition in humanitarian action; and partnerships and governance for nutrition.

Fundamental to the strategy is supporting a systems approach to activate actions across the five systems with the greatest potential for nutrition impact - food, health, water and sanitation, education, and social protection.

Other key policy documents

Other relevant international agreements and conventions that most SADC countries have signed up to or ratified include:

- <u>World Health Organization Framework Convention on Tobacco Control (WHO FCTC)</u>, which aims to protect present and future generations from the devastating health, social, environmental, and economic consequences of tobacco consumption and exposure to tobacco smoke.
- International Covenant on Economic, Social and Cultural Rights (ICESCR), which recognizes the right of everyone to the highest attainable standard of physical and mental health and obliges states to take steps to prevent, treat, and control epidemic, endemic, occupational, and other diseases.
- <u>African Union Malabo Declaration</u> commits African Union member states to accelerate agricultural growth and transformation for shared prosperity and improved livelihoods.
- <u>Agenda 2063: The Africa we want</u>, specifically Goal 3, Aspiration 1, emphasises the importance of nutrition as a key component of health and well-being in Africa and recognises the need to address malnutrition and improve the nutritional status of individuals across the continent. The aspiration aims to ensure that all Africans have access to adequate and nutritious food to prevent and control nutrition-related diseases and highlights the need for a comprehensive approach to nutrition that integrates agriculture, food security, health systems, and education to improve nutrition outcomes for all Africans.

3.4.6 Regional Policies

SADC Regional Indicative Strategic Development Plan (RISDP) 2015-2030 and SADC Vision 2050

The <u>SADC Regional Indicative Strategic Development Plan</u> (RISDP) operationalizes the <u>SADC Vision</u> <u>2050</u>, which is a long-term ambition by SADC that sets out aspirations for the region up to 2050. The RISDP provides a comprehensive 15-year roadmap that aims to deepen Southern Africa's regional integration and foster development towards SADC's strategic goals. Both the RISDP and SADC Vision 2050 are organized around six pillars, pillar three of which is 'social and human capital development'. Included under this pillar are strategic objectives to strengthen and harmonize health systems for the provision of standardised and accessible health services to all citizens and enhanced investment in nutrition to address all forms of malnutrition (outcomes 1 and 2 under strategic objective one); and improved food and nutrition security for the socioeconomic wellbeing of people in the region (strategic objective two).

SADC Food and Nutrition Strategy 2015-2025

The overarching goal of the <u>Food and Nutrition Strategy</u> is to significantly reduce food and nutrition insecurity in the region by 2025. The vision of the strategy is the attainment of universal physical, social and economic access to safe, healthy and nutritious food to ensure economic wellbeing of all the peoples of Southern Africa. Specific objectives are to: (i) promote the availability of food through improved production, productivity and competitiveness. (ii) improve access to adequate and appropriate food in terms of quality and quantity; (iii) improve the utilisation of nutritious, healthy, diverse and safe food for consumption under adequate biological and social environment with proper health care. (iv) To ensure stable and sustainable availability, access and utilisation of food.

A SADC Steering Committee on Food and Nutrition Security is responsible for coordinating and facilitating the implementation of the Strategy, comprising coordinators of food and nutrition security from all the Member States and key partners.

Regional SBCC Strategy to Support Nutrition Interventions in SADC: 2021-2026

The Regional Social and Behaviour Change Communication Strategy is aimed at addressing infant and young child feeding (IYCF) and improving nutrition outcomes in the Southern African Development Community (SADC) region. The strategy seeks to operationalise evidence-based, best-practice SBCC nutrition programming across the region, and emphasizes building technical and organisational capacity, fostering participation and ownership among regional partners, and promoting engagement in IYCF activities. The strategy aims to enhance resource sharing, simplify the adaptation of IYCF materials, and drive transformative changes in nutrition programming. The strategy also emphasises the importance of monitoring, evaluation, learning, and adaptation, as well as regional integration and collaboration to achieve improved nutrition outcomes.

SADC School Nutrition Guidelines

The majority of SADC Member States have implemented school nutrition programmes with varying implementation models and intervention packages. While the primary goal of these programmes is to enhance learning outcomes, there is increasing recognition of their potential for multi-sectoral benefits, including agriculture, health and nutrition, and social protection. However, there is a lack of consistency in national standards for food modalities, with variations that may not align with programme objectives. To address this, the <u>SADC school nutrition guidelines</u> aim to provide Member States with fundamental principles to consider when revisiting or updating their programmes. Additionally, these guidelines fill the gap of a regional best practices document, offering Member States a framework for optimising the implementation of school nutrition programs and establishing a common monitoring and evaluation system. This document is a direct response to the request made by Member States for comprehensive guidelines on school health and nutrition programmes.

Action Framework to Improve the Diets of Young Children (6-23 months) in the Southern Africa Region

The <u>Action Framework to Improve the Diets of Young Children</u> focuses on four enabling systems: food availability and accessibility, health and nutrition services, water, sanitation and hygiene, and social protection services. The framework outlines SADC areas of influence to support countries in improving children's access to nutritious, safe, affordable and sustainable diets at the policy level, institutional level and the community, household or individual level.

The Protocol on Health in the Southern African Development Community (1999)

The <u>Protocol on Health</u> commits State Parties in the region to collaborating and addressing health challenges through effective regional cooperation. The objectives of this cooperation include improving population health, coordinating efforts in disease prevention and control, promoting the development and utilisation of health personnel and facilities, establishing a mechanism for tertiary care referrals, fostering cooperation with international organisations, enhancing laboratory services, addressing the health needs of women and vulnerable groups, achieving equivalence in health services provision, and collaborating with other relevant sectors within the region. These objectives aim to improve the overall health outcomes and well-being of the population in the region through coordinated and collaborative efforts.

3.4.7 Country policies

The <u>UNICEF programming guidance document</u> on preventing overweight and obesity in children and adolescents provides an overview of key interventions that should be taken. Three general interventions are recommended:

- 1. A *national or sub-national strategy* on the prevention of NCDs and/or overweight and obesity, including in children and adolescents (this can be a standalone document or embedded in a larger (sub-)national strategy)
- 2. *Capacity building of policymakers* on the causes and consequences, including economic factors, of childhood overweight and obesity and relevant actions for its prevention
- 3. *Advocacy and dialogue* with policymakers and regulatory bodies on the adoption and implementation of regulatory frameworks and for the prevention of childhood obesity and incorporation of overweight prevention in urban planning

The specific regulatory frameworks recommended include:

- Policies and standards on food, nutrition and physical activity in preschools, primary and secondary schools and the sale of foods and beverages in and around schools
- Legislation and policies on parental leave and maternity protection (including maternity leave and breastfeeding breaks for women working outside the home)
- Implementation of the Code⁷
- Implementation of the Guidance on Ending the Inappropriate Promotion of Foods for Infants and Young Children
- Implementation of the set of recommendations on the marketing of foods and non-alcoholic beverages to children
- Adoption of health-related food taxes, such as increased taxes on sugary and sweet beverages and 'junk food' and subsidies for healthy foods
- Reformulation of processed foods including portion sizes
- Adoption of labelling requirements that identify foods high in salt, sugar and fats

Of 13 countries that participated in the stakeholder survey, seven reported having a country policy that addresses obesity. This includes the Food and Nutrition Security Policy and National Health Strategy 2021-2025 in Zimbabwe; the National Nutrition Policy and 'eat well to live well' guide in **Malawi**; the National Multisectoral Nutrition Action Plan 2021/22 - 25/26 and National Strategic Plan for Prevention of NCD 2021-2026 in **Tanzania**; the National Policy on Food and Nutrition Security for the Republic of **South Africa**; multiple related strategies in **Zambia**; the NCD strategic plan 2021-2023 in **Eswatini**; and the Revised National Food and Nutrition Security Policy 2021 in **Namibia**.

To reduce the impact of unhealthy diets on the populations, WHO has urged its member states to implement comprehensive food environment regulations and policies. Evidence-based policies include taxes on sugar-sweetened beverages; front-of-pack nutrition labelling (FOPNL); and restrictions on the marketing of unhealthy foods and beverages (Gakidou et al., 2017; WHO Report of the Commission on Ending Childhood Obesity, 2017; UNICEF, 2019).

⁷ WHO. International Code of Marketing of Breast-Milk Substitutes. Geneva: WHO, 1981.

Tax on sugar-sweetened beverages

Sugar-sweetened beverages (SSBs) are increasingly associated with obesity (Malik et al., 2010; Morenga et al., 2014) and independently related to the development of NCDs such as diabetes, some cancers and cardiovascular diseases (de Koning et al., 2012; Drouin-Chartier et al., 2019; Singh, 2016). Imposing taxes on SSBs is one way to reduce their consumption by increasing their price to make them less affordable so as to influence consumer choice (Andreyeva et al., 2010; World Cancer Research Fund, 2021). This can be particularly effective among consumers from low socio-economic backgrounds who are sensitive to price rises (Sassi et al., 2018).

Studies that evaluated the impact of implementing a tax on SSBs in the USA, UK, and Mexico showed that they were effective in reducing the purchasing and consumption of SSBs, increasing the purchasing and consumption of healthier alternatives such as water or zero-sugar drinks, and incentivised industry to reduce sugar content through reformulation (Bandy et al., 2020; Colchero et al., 2017; Falbe et al., 2020; Pell et al., 2021; Powell and Leider, 2020; Scarborough et al., 2020). In Mexico, the greatest reduction was achieved among low-income groups and those with the highest consumption (Colchero et al., 2017). In South Africa, SSBs led to reduced mean sugar intake, reduced taxed beverage sales and increased selection of untaxed beverages such as milk, bottled water, 100% fruit juice and alcohol (Stacey et al., 2021). Economic theory suggests that larger tax and price changes are likely to induce more considerable changes in consumption, with a 17.5-20% increase in price likely to lead to detectable change (WHO, 2022).

The following SADC countries have implemented SSB taxes:

Botswana started applying an SSB excise tax of 2 thebe (cents) per gram of sugar on 1st April 2021 (far below 20%).

Comoros introduced an <u>excise duty</u> of 25 FC per liter on sugary drinks, on customs duty and on locally produced sweetened drinks in 2017 for the benefit of non-communicable diseases.

Mauritius has levied excise duty on sugar-sweetened non-alcoholic beverages since 2013. Since July 2020, an excise duty of six cents per gram of sugar content has been levied on sugar-sweetened non-alcoholic beverages, whether imported or locally produced. It is understood this will is also being extended to non-staple sweetened food products.

Seychelles applied an SSB excise tax on 1st April 2019. This applies to drinks containing sugar exceeding 5 grams per 100ml, including flavoured milk. Fresh local fruit drinks and plain milk are exempt.

South Africa has introduced a <u>health promotion levy (HPL) on sugary beverages</u> to decrease diabetes, obesity and other related diseases in South Africa. The levy applies to beverages with >4g sugar per 100 ml.

United Republic of Tanzania has introduced an <u>excise tax</u> in July 2018, imposing varying rates on nonalcoholic beverages, including imported fruit juices (TZS232 or USD0.092 per litre) and other nonalcoholic beverages containing added sugar, sweetening matter, or flavourings (TZS61 or USD0.02 per litre).

Zambia introduced an <u>excise tax on all non-alcoholic beverages except water</u> in January 2019 at a rate of K0.30 (USD0.02) per litre to assist in reducing the prevalence of NCDs such as diabetes.

Zimbabwe has proposed implementing a <u>levy</u> of USD0.02 per gram of sugar in beverages, excluding water, starting from January 1, 2024.

Front of package food labelling

There is evidence that Front-of-package labelling (FOPL) that summarises nutritional information of packaged foods can empower consumers to make healthier choices about foods purchased and consumed. These are often placed at the back or sides of the package and aim to provide a quick and easy method to communicate nutrition information to consumers (Cecchini and Warin, 2016; Hawley et al., 2013). Consumers can find more detailed nutrition facts difficult to interpret and confusing. Therefore, to be effective, FOPL must be simple and easy to understand to assist consumers of all educational levels to easily identify unhealthy products at a glance. For example, a systematic review by Cecchini and Warin (2016) found that labels that interpret the nutritional quality (interpretive) rather than state the nutrient levels (reductive) are more effective in assisting consumers identify unhealthy products. Possible strategies and resources to inform these are summarised in Box 2.

Box 2: Possible front-of-pack labelling strategies

Possible strategies:

Traffic light system, which uses red, yellow, and green colour coding to indicate the levels of key nutrients such as fat, sugar, salt, and calories. Red signifies high levels, yellow represents moderate levels, and green indicates low levels. This approach helps consumers quickly identify healthier options by looking at the colours.

Nutrient-specific labelling focuses on highlighting specific nutrients or components that are of concern, such as added sugars, sodium, or saturated fats. It may include symbols or text indicating the presence or amount of these nutrients in the product.

Warning labels, which use bold text or symbols to indicate products that are high in certain nutrients or contain ingredients that may be harmful or have negative health effects. These labels aim to alert consumers to potentially unhealthy choices.

Health star rating system, which assigns a star rating to foods based on their overall nutritional quality. Higher star ratings indicate healthier options, while lower ratings suggest poorer nutritional quality.

Hybrid systems: Some countries have adopted hybrid systems that combine elements from different FOPL strategies to provide a more comprehensive overview of the product's nutritional quality. These systems may use a combination of colour coding, nutrient-specific labelling, and GDAs.

Resources to support decision-making and implementation:

WHO Tackling Food Marketing to Children in a Digital World: Trans-disciplinary Perspectives provides insights into the impact of food marketing on children's health and includes discussions on front-of-package labelling strategies.

Pan American Health Organization (PAHO) Nutrient Profile Model provides a nutrient profile model to guide for front-of-package labelling and framework for identifying products that are high in nutrients of public health concern, such as salt, sugar, and unhealthy fats.

<u>FAO handbook on food labelling to protect consumers</u> provides guidance on different aspects of food labelling, including front-of-package labelling.

World Cancer Research Fund International NOURISHING Framework is a comprehensive resource that includes evidence-based policy actions to promote healthy diets and reduce obesity, including front-of-pack labelling.

There is growing evidence of the positive impact of FOPL and warning labels in particular. A scoping review to assess the effects of FOPL nutrient warnings on consumer behaviours reported that FOPL nutrient warnings were clearly seen by consumers, easy to understand, helped consumers identify products high in nutrients of concern, and discouraged them from purchasing unhealthy products (Taille et al., 2020). Another study found that consumers, including children, were better able to identify unhealthy products, understand excess nutrient content, and were more inclined to limit purchases of SSBs and other ultra-processed foods when confronted with a food warning label as compared to other types of labels (Arrúa et al., 2017; Khandpur et al., 2018). A study of consumer perceptions of front-of-pack warning labels on unhealthy foods and drinks in South Africa found that consumers were positive about the warning labels and felt that they would help reduce purchases of unhealthy foods (Bopape et al., 2021).

The following SADC countries have implemented FOPL:

Botswana: <u>Labelling of pre-packaged foods regulation</u>. Mandatory labelling requirements for pre-packaged food imported into, sold, distributed or manufactured in Botswana, adopted in April 2003.

Seychelles: Mandatory national labelling guidelines for pre-packaged food were approved by the Minister Of Family Affairs and adopted in March 2019.

Tanzania: <u>Tanzania Food, Drugs and Cosmetics Act (Food Labelling)</u>: Mandatory national labelling guidelines for pre-packaged food approved by the Minister of Health and Social Welfare and adopted in July 2006.

Zambia: <u>Food and Drugs Act</u>. Mandatory national labelling guidelines for pre-packaged food with a health claim approved by the Government of Zambia and adopted in 1972.

South Africa: <u>The Foodstuffs, Cosmetics and Disinfectants Act: Regulations relating to the labelling</u> <u>and advertising of foodstuff</u>. The Foodstuffs, Cosmetics and Disinfectants Act mandates nutritional information requirements when a claim is made. General nutritional information when no claim is made is voluntary. The National Department of Health, South Africa, recently introduced a new draft regulation on labelling and advertising of foods, which will come into effect by 2025. The new regulation stipulates the use of a mandatory black-and-white warning-label system for pre-packaged foods high in sugar, salt, and unhealthy fats, which are known to increase the risk of obesity, T2D, and some cancers. (Sulcas, 02 Feb 2023Daily Marverik).

Zimbabwe: <u>Food and Food Standards (Food Labelling) Regulations</u>: In Zimbabwe, mandatory national labelling guidelines for pre-packaged food with a health claim and adopted in October 2002.

Marketing restrictions on unhealthy food and beverages

Numerous persuasive marketing techniques are used by food and drink manufacturers to influence children's food attitudes, preferences, and consumption, and these have been found to be a major contributor to dietary intake and preferences for energy-dense, low nutrition food and beverages (Smith et al, 2019; Sadeghirad et al., 2016). This includes the use of digital and online marketing (Alruwaily et al, 2020; Perrin, 2015).

In 2016, the government of Chile introduced the Food Labelling and Advertising Law as part of a broader strategy to address high rates of obesity in Chile (Mediano et al., 2019; Carpentier et al., 2020; Parajea et al., 2021; Ministerio de Salud SdSP, Chile, 2020). The law placed marketing restrictions on products high in fat, sugar and salt (HFSS) or calories. This included banning the use of child-directed

marketing techniques on the packaging of unhealthy foods, such as cartoons, animations, toys or any other content that could attract the attention of children under 14 years old. Unhealthy food advertising is also prohibited on television programs aired between 6 am and 10 pm. Several studies have reported a positive impact of the law in terms of reduced exposure of children to television food advertising (by 35% for pre-schoolers and 52% for adolescents) (Carpentier et al., 2020); the reduced proportion of cereal packages using child-directed marketing techniques (36% pre law versus 21% post law) (Mediano Stoltze et al., 2019), and reduced consumption of nutrients of concern among children and adolescents at school (Fretes et al., 2023). Studies also found that, contrary to industry claims, there has been no observable impact on industry labour market outcomes, including aggregate employment and average real wages (Parajea et al., 2021; Global Food Research Program, 2021). In the UK, a ban on the scheduling of HFSS food and beverage advertising during children's television airtime and around programmes with a high child audience in 2009 resulted in a 52% reduction in children aged 4-9 years viewing HFSS advertising (OfCom, 2010).

SADC Countries that have marketing restrictions in place include:

Botswana: <u>Marketing of Foods for Infants and Young Children Regulations</u>. Advertising aimed at children and young people shall not encourage or condone excessive consumption of foods and beverages containing substances, the excessive consumption of which is not recommended, such as fats, trans fatty acids, salt or sodium and sugars. Adopted by the Government of Botswana in 2005. (Available only in the English language)

South Africa: <u>South Africa Pledge on Marketing to Children</u>. Companies participating in the South African Marketing to Children Pledge publicly commit to restrictions on marketing communications to children twelve years old and under with a view to promoting healthy dietary choices and healthy lifestyles. However, studies repeatedly demonstrate the ineffectiveness of the pledge, with advertisements persisting during both child and family television viewing hours (Boachie et al. 2023, Mchiza et al. 2013, Yamoah et al 2021) and within school environments (Erzse et al. 2021). Draft regulations on the marketing of unhealthy foods to children are now in draft.

3.4.8 Gaps in the policy and legislative environment

A summary of policy and regulatory actions that SADC countries have implemented are summarised in Table 4, using data sourced from the Global Obesity Observatory.

Policies / regulations	Countries that have this in place	
Food Labelling		
Front-of-pack labelling (FOPL)	SYC, TZA, SA, ZMB, ZWE, BWA	
Back-of-pack nutrition declaration	SYC; SA; ZMB; ZWE	
Colour coding warning label	None	
Regulations and marketing		

Table **4**: Gaps in SADC policy and legislation related to obesity

Policies / regulations	Countries that have this in place	
Tax on unhealthy food	None	
Tax on SSBs drinks	BWA; MUS; SYC; SA; TZA; ZMB; ZWE; COM	
Subsidy on fruit and vegetables	None	
Subsidy on other healthy products	None	
Mandatory limit or ban on trans fats	SA; Forthcoming: BWA; MUS; NAM; ESW; SYC; TZA; ZMB	
Mandatory policies or marketing restrictions on the promotion of unhealthy food and drink to children	BWA, SA	
Mandatory standards for food in schools	None	
Mandatory nutrient limits in manufactured food products	SA; Forthcoming: LSO; NAM; TZA; ZMB; ZWE	
Nutrient standards for public sector procurement	None	
Political will and support		
National obesity strategy	SA	
National childhood obesity strategy	None	
Comprehensive nutrition strategy	DRC; LSO; MOZ; MUS; MWI; SYC; TZA; SA; ZWE	
Comprehensive physical activity strategy	MOZ; MUS; TZA	
Evidence-based dietary guidelines	NAM; SYC; SA; ZMB	
National targets for reducing obesity	BWA; LSO; MOZ; NAM; SYC; TZA; SA	
Guidelines/policy on obesity treatment	None	
Promotion of breastfeeding	BWA; DRC; COM; LSO; MDG; MOZ; MWI; NAM; ESW; SYC; TZA; ZMB; ZWE	
Monitoring and surveillance		
Monitoring the prevalence and incidence of the main obesity-related NCDs and risk factors	BWA; DRC; COM; LSO; MDG; MOZ; MUS; MWI; NAM; ESW; SYC; TZA; SA; ZMB; ZWE	
Multi-sectoral national coordination mechanism for obesity or nutrition	LSO; MDG; NAM; ESW; YZA; SA	

The table reveals multiple gaps and the need for support for SADC countries to put policies and regulations in place to create an enabling environment for the prevention of overweight and obesity. Figure 21 illustrates where policies exist across countries in the SADC region in relation to this recommended basket of prevention measures.

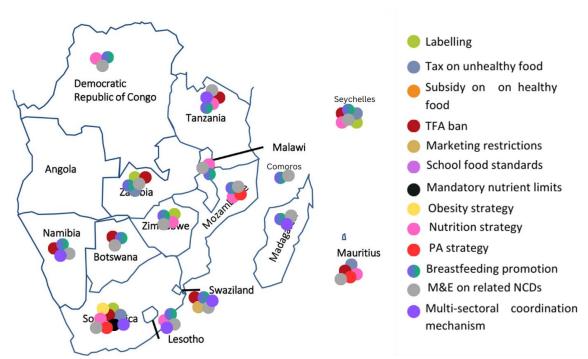


Figure 21: Countries where policies and regulations are in place for the prevention of overweight and obesity

3.5 Recommended interventions to prevent overweight and obesity

The WHO acceleration plan to STOP obesity urges Governments, supported by stakeholders, to take responsibility for ensuring the availability of healthy sustainable food at locally affordable prices, for embedding safe and easy physical mobility into the daily life of all people and for enabling and enforcing an adequate legal and regulatory environment. At the same time, an effective health system response must be mobilized to help prevent, treat and manage obesity.

Interventions addressing the social determinants of obesity should:

- 1. Focus on changing the **enabling environment**, as well as behaviour change. (Kumanyika, 2019)
- Be multi-sectoral and multi-level using a comprehensive and coordinated approach to address the diverse and wide-ranging determinants of overweight and obesity (Scott et al., 2017, Figure 22).
- 3. Take a **life course approach** to address different stages of vulnerability across the life course. This should include targeting feeding behaviours in infancy, early childhood, and adolescence to **prevent overweight and obesity**. (Hawkins and Gillman, 2018)
- 4. Target **women and girls** as a vulnerable group and, increasingly, as the obesity transition progresses, populations with lower socioeconomic status. (Kral, 2004))

5. Seek to achieve **sustainable impact** since obesity is a chronic condition requiring long-term management. (Lakerveld et al., 2012)

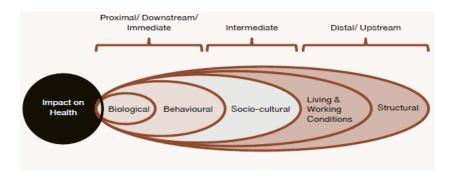


Figure 22: Framework for the determinants of health

Source: Scott, 2017

The WHO acceleration plan recommends a technical package of evidence-based, impactful and costeffective actions. This includes evidence-based approaches to the implementation of regulations to protect children from the harmful marketing of food and beverages; fiscal and pricing policies to promote healthy diets and nutrition labelling policies; school-based nutrition policies (including initiatives to regulate the sales of products high in fats, sugars and salt in close proximity to schools); protecting, supporting and promoting breastfeeding; and standards and regulations on active travel and physical activity in schools. At the same time, an effective health system response must be mobilized to help prevent, treat and manage obesity. This is summarized in Figure 23.

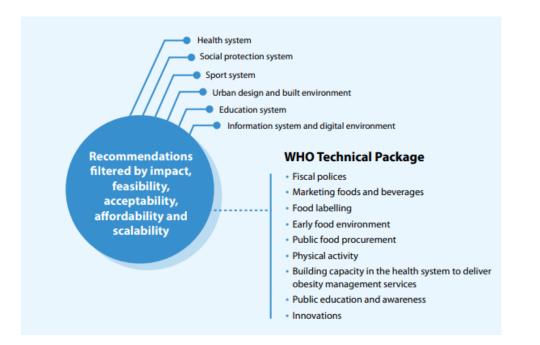


Figure 23 Actions across multiple settings and scale up of impactful interventions (WHO acceleration plan to STOP obesity)

The UNICEF programme guidance on the prevention of overweight and obesity in children and

<u>adolescents</u> gives greater definition of this package including general policies, regulatory frameworks and interventions targeted across the life cycle. These are described as follows:

Table 5 UNICEF recommended actions for prevention of overweight and obesity in children (2019)

General actions

Develop a national or sub-national strategy on prevention of NCDs and/or overweight and obesity, including children and adolescents (stand along or embedded in larger strategies)

Capacity building of policymakers on the causes and consequences of overweight and obesity and relevant actions for its prevention.

Advocacy and dialogue with policymakers and regulatory bodies on the adoption and implementation of regulatory frameworks, and for the prevention of obesity and incorporation of overweight prevention in urban planning.

Specific regulatory frameworks

Policies and standards on food, nutrition and physical activity including in preschools, primary and secondary schools and the sale of foods and beverages in and around schools.

Legislation and policies on parental leave and maternity protection (including maternity leave and breastfeeding breaks for women working outside the home).

Implementation of the Code.

Implementation of the Guidance on Ending the Inappropriate Promotion of Foods for Infants and Young Children.

Implementation of the set of recommendations on the marketing of foods and non-alcoholic beverages to children.

Adoption of health-related food taxes, such as increased taxes on SSBs and 'junk food' and subsidies for healthy foods.

Reformulation of processed foods including portion sizes.

Adoption of labelling requirements that identify foods high in salt, sugar and fats.

Interventions over the life course for the prevention of overweight and obesity			
Preconception and	Early childhood	School-age (5-9 years of	Adolescents (10-19 years
pregnancy	(under five years)	age)	of age)
pregnancy - Promote eight antenatal care (ANC) visits (contacts) - Nutrition counselling (including capacity building of staff)	 Protection, promotion & support of breastfeeding Support for appropriate complementary 	 age) Creation of a healthy, non-obesogenic environment in primary schools (including policies and capacity building of staff) Nutrition literacy and physical education in primary schools Promote and support physical activity in communities School food and nutrition programmes to promote healthy eating School health programmes for screening and referral for management of obesity 	 of age) Creation of a healthy, non-obesogenic environment in secondary schools (including policies and capacity building of staff) Nutrition literacy and physical education in secondary schools Promote and support physical and nutrition literacy activity in communities Promote messages through peer group approach, social networks, sports clubs, youth networks etc. Screening and referral for management of obesity

Actions are also described according to the delivery system, as follows:

 Table 6 Recommended actions by delivery system (adapted from UNICEF programme guidance 2019)

Policies	Strengthened regulatory frameworks on a healthy school and community environment, the marketing of breast milk substitute (BMS), the marketing of unhealthy foods to children, food labelling, health-related taxes and reformulation.	
Food system	Promote adequate availability of and access to healthy foods including through public procurements.	
Health system	Optimal ANC including: nutrition counselling, nutrition education, energy and protein supplementation in undernourished populations, iron and folic acid supplementation, weight monitoring, iron and folic acid supplementation, and counselling on adequate levels of physical activity.	
	Protection, promotion and support for breastfeeding during ANC and in maternity facilities	
	Infant and young child nutrition counselling	
	Weight and length/height measurements of children under five	
	Screening and referral for management of overweight	
Water and sanitation system	Promotion and support for increased availability of free and safe drinking water in communities, schools and health facilities, as a key component of a healthy diet.	
Education system	School food and nutrition programmes including nutrition literacy in preschools, primary and secondary schools, for both children and parents, and implementation of policies for the prevention of overweight and obesity	
	Improving the school food environments through the promotion of fruit, vegetables and water, and reducing access to sweetened beverages and large portions of high-fat snacks	
	Physical activity; physical education	
	Provision of safe drinking water	
	Screening and referral for management of overweight	
Social protection system	In social protection programmes, ensure the promotion and support of a healthy diet (including 'do no harm').	
	Discourage subsidy of unhealthy foods; consider subsidy of healthy foods where relevant.	
Communities	Promotion of and support for ANC contacts	
	IYCF counselling	
	Social mobilization and social and behaviour change.	
	Communication for families and adolescents on healthy diet and physical activity through a range of channels such as social networks, peer groups and social media	
	Promotion and support for a healthy, non –obesogenic environment	
Private sector	Hold the private sector to account	
	Identify appropriate opportunities to engage with private sector actors, such as ICT and finance sectors, to explore novel ways to promote healthier diets and incentivize better business behaviour so that healthier foods are more available, affordable and accessible.	

The WHO acceleration plan also recommends actions across the sports, urban design and built environment, information and digital environment and trade and commerce sectors and systems. The acceleration plan also recommends that countries develop and implement country-specific datadriven incremental strategies for slowing and reversing obesity trends and use the WHO impact cycle to unlock solutions and deliver progress (Figure 24).



Figure 24 WHO impact cycle (WHO acceleration plan to STOP obesity)

3.6 Stakeholder feedback on the development of the SADC obesity strategy

Stakeholders from the 16 SADC countries were invited to participate in an online survey to understand country priorities for the development of a SADC obesity strategy. Participants were nutrition managers in Government and Ministries responsible for Health and nutrition. Of the 16 countries, nutrition managers from 13 member states participated (Botswana, Democratic Republic of Congo, Eswatini, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe), providing a response rate of 81%. No responses were received from Angola, Comoros, and Madagascar.

3.6.1 The influence of stakeholders in implementing a strategy

To understand more about the stakeholder landscape, participants were asked, "In your opinion, which stakeholders are in a position to influence the implementation of a regional obesity strategy?" Most participants named various government departments, although several also mentioned civil society bodies, academic institutions and international organisations, indicating a need for a multi-sectoral response. The following were named:

- All Ministries
- Ministries of Health, Sports, Education, Commerce and Industry, Agriculture and Food Security, Nutrition, Youth
- Food and Nutrition Coordinating Office, National programme of Nutrition
- Political leaders in different countries
- All healthcare workers (community and facility)

- Bilateral and multilateral stakeholders such as UNICEF, WHO, WFP, FAO, International Labour Organization, USAID, European Union, SIDA, GIZ
- Local and international NGOs
- Religious bodies
- Health care workers
- Civil Society
- The private sector.

The respondents from member states mentioned several stakeholders, mainly government ministries, health care workers, International agencies, local and international NGOs, political leaders and religious bodies. Interestingly, there was no mention of organisations whose primary role is to fight obesity, such as the World Obesity Federation.

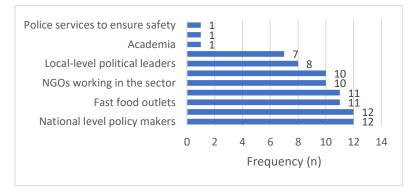


Figure 25: Stakeholders most likely to influence strategy implementation

То

gain insight into the kinds of strategies that could be included in the SADC obesity strategy, participants were asked, "What prevention strategies do you think should be included in the SADC obesity prevention strategy?"

The respondents mentioned numerous prevention strategies focusing on nutrition and physical activity. They also reported policy and regulations as some prevention strategies, including banning advertising, food labelling, food-based dietary guidelines, taxation of foods and identification of country champions to steer the strategy. Table 6 below summarises these inputs.

Table 7: Obesity prevention strategies identified by stakeholders

Main Themes	Sub-themes
Physical activity related	Behaviour focused - Physical exercise promotion - Promoting physical education - Physical education in school - Ways to encourage physical activity and limit sedentary behaviours - Mandate physical education in primary to secondary schools, Environment focused - - Infrastructure including construction of side road paths for cyclists and pedestrians - Creation of accessible, affordable and safe environment for physical activity (building of outdoor recreational parks/gyms)

Main Themes	Sub-themes	
Nutrition- related	Behaviour focused a. Promote and support breastfeeding b. Nutrition education Environment-focused - - Regulating the sale of non-healthy foods - Strategies focusing on encouraging healthier food environments - Promotion of local and fresh foods - Access to healthy food	
Policy and regulations	 Policies that promote the consumption of natural foods Implementing SINTAX Earmark a champion to lead the obesity prevention strategy Ban advertising of unhealthy foods Measures to help reduce the cost of healthy foods Policy restrictions (2) Development and implementation of the Food-Based Dietary Guidelines (2) Food labelling (front-of-pack labelling) (2) 	
School	 Regulations on school canteens including mandatory sale of healthy food in all educational institutions Nutrition education in schools Restricting marketing of unhealthy foods in schools 	
Worksite	- Availability of affordable worksite healthy food outlets	
Health facility	 Routine screening of obesity and other NCDs Better screening and counselling services Integration of obesity management into the existing public health programs 	
Knowledge focused	 Wellness campaigns (2) National public education and awareness campaigns (2) Education and mobilisation (1) 	
Other	 The biggest one is on social behaviour change communication (SBCC), especially among the elite group 	

3.6.2 Anticipated challenges to the implementation of the obesity strategy

To work towards successful implementation of a strategy, participants were asked, "What challenges do you anticipate in implementing the SADC obesity prevention strategy?" Challenges mentioned included a lack of resources and political will, poor involvement, and support from the different sectors. Resistance to the implementation of the strategy, cultural barriers and beliefs were also identified. Inputs are summarised in Table 7 below. The interference of industry is another challenge to implementing public policy that has not been mentioned. It has been well documented that the tobacco, alcohol, food and beverage industries interfered with public policy development when governments introduced strict measures against NCD risk factors (Tangcharoensathien et al., 2019). There is, therefore a need for commercial actors to reduce harmful practices and products and implement regenerative business models by ending the opposition to health regulatory policies (Friel et al., 2023).

Main theme Sub-themes	
Lack of political will	Limited political commitment Political buy-in Competing national priorities Lack of commitment, Lack of consensus, Lack of leadership and ownership Creation of Sin tax
Lack of skills	Technical capacity
Cultural barriers	Cultural perceptions such as "Huge is better than lean bodies", and "processed foods are superior to traditional foods"
Implementation Inadequate policy restrictions. Apart from those meant for breast milk substitute is not much for children above five years, way up to adults.	
Availability of Availability and choice of foods healthy food	

3.6.3 Conditions for member states to adopt and implement the strategy

To understand ways to overcome the potential barriers to implementation, participants were asked, "What do you think it would take a Member State to adopt and implement the strategy?" Political will and leadership were the most frequently mentioned requirement, and the availability of adequate resources and ensuring the strategy is feasible and country-specific were also mentioned on more than one occasion. As mentioned previously, the interference of industry should be included as it has the potential to hinder policy implementation. Therefore, member states could include pre-conditions for implementation, such as conflict of interest. Table 8 summarises inputs from participants.

Table 9: Conditions for successful implementation

Main theme	Relevant statements	
Political will and leadership	 The obesity prevention strategy should be a government priority with strong leadership, strong advocacy at the ministerial level and effective support from SADC secretariate. Leadership and political buy-in and ownership of strong political will from the implementer's side Launch of strategy at the highest level (ministers' conference), then it will trickle down to the country policy level for implementation with relevant departments. Don't know, but politicians have their attention drawn away from this kind of concern. 	
Effective resource allocation	- Prioritization and financing of nutrition programmes	

	-	Availability of resources
Country specific approaches	-	By influencing MS to adopt the strategy and localise it to fit their context. It's not one size fits all. The interventions should be feasible.
Evidence-based programmes	-	Data on increasing obesity
Multisectoral approach	-	Using a multisectoral approach
Advocacy and knowledge dissemination	-	Strong advocacy from the side of the people presenting the strategy and wellness campaigns, screening and education
Policy	-	Policy restrictions

3.6.4 Key sectors for the successful implementation of the Obesity Strategy

To further understand the sectors that might be most likely to ensure a strategy is implemented, participants were asked, "Which sectors will be key in the successful implementation of the strategy at a national level?" Numerous sectors were identified as key actors in the implementation of the obesity strategy, as set out in Figure 25 below. Most frequently cited actors included National policymakers and government sector departments (education, sports and recreation, social development, etc.) (n=12), fast food outlets (n=11), teachers and councillors (n=11), NGOs working in the sector (n=10), and community leaders (n=10). Academia and influences in the nutrition sector were the least mentioned sectors.

Respondent perceptions of the food and beverage industry's role in the obesity strategy remains unclear. This highlights the need to increase awareness among policy makers of how to ensure transparent private sector engagement and limit conflicts of interest to ensure that population health is prioritized over profit.

4 Conclusion and recommendations

The prevalence of overweight and obesity is rising at an alarming rate in the SADC region and is contributing to the growing burden of chronic diseases and increasing strain on healthcare systems and economies. All SADC member states are affected, with the prevalence of overweight and obesity rising rapidly in adults, children and adolescents in all member states, with highest prevalence among females, urban-dwellers and households with high socioeconomic status. The problem is likely to worsen over time among adults and children of all ages and is predicted to gradually shift as countries develop, towards an even spread between females and males and urban/rural location and highest concentration among households with low socioeconomic status. Rapid, coordinated and preventive action is needed to turn the tide of this problem to protect the health and wellbeing of the SADC population.

This report has outlined the complex causes of overweight and obesity in the SADC region, including multiple drivers at the individual level and, critically, obesogenic environments that people are increasingly living in. While some progress is being made in individual member states to develop

policies and regulatory frameworks to address this problem, there is much further to go in all SADC member states, with a need for coordinated action across the region.

A comprehensive SADC obesity prevention strategy is needed that prioritises the WHO recommended package of policies and regulatory frameworks in all member states, and the development of country roadmaps with selected actions across multiple systems, based on country evidence and national priorities. This should be supported by regional and national level advocacy, engagement and communication with government sectors, partners, communities and the private sector, and should include provisions to protect against industry interference in policy, planning and implementation. Strategic actions are also needed to create robust regional and national data and surveillance systems to generate evidence and enable the tracking of progress; support research and innovation; and foster learning, collaboration and partnerships between members states. The process of developing a successful strategy requires political commitment, wide engagement, and the allocation of sufficient resources.

By addressing the obesity epidemic in the SADC region comprehensively and collaboratively, we have an opportunity to make a significant impact on the health and well-being of the SADC population. Efforts to prevent and manage obesity will not only reduce the burden of chronic diseases but also improve the overall quality of life and contribute to sustainable development. This is a shared responsibility that requires collective action and long-term commitment towards a healthier future for the SADC region.

Recommendations

Recommendations towards the development of a SADC obesity strategy are as follows:

1. Engage widely with multiple stakeholders in the development of the strategy: The strategy development process should enable ample engagement with multiple stakeholders at every stage to secure political will, buy-in and a high-quality result. Key groups to engage include multiple government ministries (health, food, education, social protection, urban planning, sports and recreation, trade and industry, and information and communication), partner organizations, the private sector and communities and population groups affected by overweight and obesity, including youth. Clear guidance in engagements with the private sector is needed to avoid industry interference in the strategy development process.

2. **Prioritise policy and regulatory actions to support healthy food environments:** The SADC strategy should put a strong emphasis on the development and strengthening of regional and country policies and regulatory frameworks to support healthy food environments in member states. A regional policy framework can be developed for the SADC region, based on the WHO recommended, evidence-based package of policies and regulations, including regulations to protect children from the harmful marketing of food and beverages; fiscal and pricing policies to promote healthy diets (including increasing taxes on SSBs); nutrition labelling policies (including front of pack labelling); and schoolbased nutrition policies (including initiatives to regulate the sales of products high in fats, sugars and salt within and in close proximity to schools). Policies should also be strengthened that protect, support and promote breastfeeding and support active travel and physical activity in schools. These are relevant in all SADC member states as key preventive actions, not just those with the highest levels of overweight and obesity.

3. Support the development of country roadmaps. The strategy should also prioritise the development of country roadmaps for the prevention of obesity in all member states. Countries should select evidence-based interventions that target vulnerable populations, respond to country-specific evidence of drivers, and support national priorities. Actions within health systems should be selected to prevent, detect and manage overweight and obesity among the most vulnerable populations at each stage of the life course. Actions should also be selected within multiple other systems to address obesogenic environments, including the education, food, social protection, urban planning, sports and recreation, trade and industry and information and communication systems. The process of developing country roadmaps should be highly collaborative and should engage communities in the design of interventions that affect them, including youth.

4. **Strengthen capacities and systems for sustained change.** Actions should be included that aim to strengthen the capacities of SADC leaders and decision makers within each sector to create champions within different sectors to support the formation and implementation of policies and interventions and in-country advocacy. Capacity building plans may also be needed to support the development of different sector workforce capacities where this is lacking.

5. Establish robust systems for data collection, monitoring and surveillance. Quality data is needed to inform policy decisions, target and design effective interventions, track country and regional progress, inform course corrections and evaluate impact. The focus should be on generating high quality data on overweight and obesity prevalence, diets, food consumption patterns and physical activity, disaggregated by age, sex, geographic location (urban/rural) and socioeconomic status and to inform indicators in country roadmaps. A common framework and standardised protocols will ensure consistent data collection methods (including standardised measurements, definitions and survey instruments) to support comparability, accuracy and timeliness of data. Indicators should be integrated into national systems and the capacities of professionals built in the collection and reporting of data. Repositories and platforms will also be needed to support data sharing.

6. Promote knowledge, learning, research and innovation. There is much opportunity to support learning between SADC member states in this emerging area and between SADC and other regions, to inform country actions and approaches and contribute to the knowledge base. Platforms for sharing knowledge and learning should be developed and utilized. To fill information gaps, academic institutions and other stakeholders can be engaged to develop a research agenda, and partnerships developed to support the trialling of innovations. Communities, including youth, should be engaged and given opportunities to feed into programme learning processes. Guidance is needed to avoid conflicts of interest in partnerships with the private sector to fund research.

7. **Ongoing advocacy and communication.** Ongoing advocacy is needed with government decisionmakers and country and regional stakeholders to support policy change and the development of regulatory frameworks, and to ensure public finances are committed to the implementation of country roadmaps. This should build on regional and country policy opportunities and platforms and make use of champions. Strategies for ongoing community engagement and communication are also needed to reach affected communities with key messages, as part of overall social and behaviour change (SBC) strategies.

Bibliography

Andreyeva, T., Long, M.W., Brownell, K.D. (2010). The impact of food prices on consumption: a systematic review of research on the price elasticity of demand for food. Am. J. Public Health 100, 216–222. https://doi.org/10.2105/AJPH.2008.151415

Arrúa, A., Curutchet, M.R., Rey, N., Barreto, P., Golovchenko, N., Sellanes, A., Velazco, G., Winokur, M., Giménez, A., Ares, G., (2017). Impact of front-of-pack nutrition information and label design on children's choice of two snack foods: Comparison of warnings and the traffic-light system. Appetite 116, 139–146. <u>https://doi.org/10.1016/j.appet.2017.04.012</u>

Alruwaily, A., Mangold, C., Greene, T., Arshonsky, J., Cassidy, O., Pomeranz, J.L. and Bragg, M. (2020). Child social media influencers and unhealthy food product placement. Pediatrics, 146(5).

Bandy, L.K., Scarborough, P., Harrington, R.A., Rayner, M., Jebb, S.A. (2020). Reductions in sugar sales from soft drinks in the UK from 2015 to 2018. BMC Med. 18, 20. <u>https://doi.org/10.1186/s12916-019-1477-4</u>

BeLue, R., Okoror, T.A., Iwelunmor, J., et al. (2009). An overview of cardiovascular risk factor burden in Sub-Saharan African countries: a socio-cultural perspective. Global Health, 5, 10. doi: 10.1186/1744-8603-5-10

Ben-Shlomo, Y., & Kuh, D. (2002). A life course approach to chronic disease epidemiology: Conceptual models, empirical challenges and interdisciplinary perspectives. International Journal of Epidemiology, 31(2), 285–293)

Boachie MK, Goldstein S, Kruger P, Ng SW, Hofman KJ, Thsehla E. (2023). Beverage industry's advertising expenditures and airtimes in South Africa from 2013 to 2019 target children and families. *Journal of Public Health Research*. 2023;12(2). doi:<u>10.1177/22799036231168207</u>

Bopape, M., Taillie, L.S., Frank, T., Murukutla, N., Cotter, T., Majija, L. and Swart, R. (2021). South African consumers' perceptions of front-of-package warning labels on unhealthy foods and drinks. PloS one, 16(9), p.e0257626.

Boyland, E. J., Nolan, S., Kelly, B., Tudur-Smith, C., Jones, A., Halford, J. C., & Robinson, E. (2016). Advertising as a cue to consume: A systematic review and meta-analysis of the effects of acute exposure to unhealthy food and nonalcoholic beverage advertising on intake in children and adults. The American journal of clinical nutrition, 103(2), 519-533. <u>https://doi.org/10.3945/ajcn.115.12002</u>

Cairns G, Angus K, Hastings G, Organization WH. (2008). The extent, nature and effects of food promotion to children: a review of the evidence to December 2008 [Internet]. World Health Organization; 2009 [cited 2022 Sep 9]. Available from: <u>https://apps.who.int/iris/handle/10665/44237</u>

Cairns G, Angus K, Hastings G, Caraher M. (2013). Systematic reviews of the evidence on the nature, extent and effects of food marketing to children. A retrospective summary. Appetite. 2013 Mar;62:209–15.

Calcaterra, V.; Verduci, E.; Milanta, C.; Agostinelli, M.; Todisco, C.F.; Bona, F.; Dolor, J.; La Mendola, A.; Tosi, M.; Zuccotti, G. (2023). Micronutrient Deficiency in Children and Adolescents with Obesity—A Narrative Review. Children 2023, 10, 695. Capuccio, F., Kerry, S., Adeyemo, A., Luke, A., Amoah, A., & Bovet, P. (2008). Body size and blood pressure: an analysis of Africans and the African diaspora. Epidemiology. Epidemiology, 19(38).

Carpentier, F. R. D., Correa, T., Reyes, M., & Taillie, L. S. (2020). Evaluating the impact of Chile's marketing regulation of unhealthy foods and beverages: pre-school and adolescent children's changes in exposure to food advertising on television. *Public health nutrition*, *23*(4), 747-755.

Cecchini, M., Warin, L. (2016). Impact of food labelling systems on food choices and eating behaviours: a systematic review and meta-analysis of randomized studies. Obes. Rev. Off. J. Int. Assoc. Study Obes. 17, 201–210. <u>https://doi.org/10.1111/obr.12364</u>

Chin, K.Y., Ekeuku, S.O., Chew, D.C.H. and Trias, A. (2023). Tocotrienol in the Management of Nonalcoholic Fatty Liver Disease: A Systematic Review. Nutrients, 15(4), p.834.

Choukem, SP., Tochie, J.N., Sibetcheu, A.T. *et al.* (2020). Overweight/obesity and associated cardiovascular risk factors in sub-Saharan African children and adolescents: a scoping review. *Int J Pediatr Endocrinol* 2020, 6 (2020). https://doi.org/10.1186/s13633-020-0076-7

Cockx, L., Colen, L., De Weerdt, J., & Paloma, G. Y. (2019). Urbanization as a driver of changing food demand in Africa: Evidence from rural-urban migration in Tanzania. World Development, 117, 221-238. <u>https://doi.org/10.1016/j.worlddev.2019.01.015</u>

Colchero, M. A., Molina, M., & Guerrero-López, C. M. (2017). After Mexico implemented a tax, purchases of sugar-sweetened beverages decreased and water increased: difference by place of residence, household composition, and income level. *The Journal of nutrition*, *147*(8), 1552-1557.

Daily Maverick, 2 February 2023. Draft regulations aim to make warning labels on unhealthy foods mandatory by 2025. https://www.dailymaverick.co.za

de Koning, L., Malik, V. S., Kellogg, M. D., Rimm, E. B., Willett, W. C., & Hu, F. B. (2012). Sweetened beverage consumption, incident coronary heart disease, and biomarkers of risk in men. *Circulation*, *125*(14), 1735-1741.

Dehghan, M., Mente, A., Rangarajan, S., Mohan, V., Swaminathan, S., Avezum, A., Lear, S. A., Rosengren, A., Poirier, P., Lanas, F., & Lopez-Jaramillo, P. (2023). Ultra-processed foods and mortality: Analysis from the Prospective Urban and Rural Epidemiology study. The American journal of clinical nutrition, 117(1), 55-63. <u>https://doi.org/10.1093/ajcn/nqaa363</u>

Drouin-Chartier, J.-P., Zheng, Y., Li, Y., Malik, V., Pan, A., Bhupathiraju, S.N., Tobias, D.K., Manson, J.E., Willett, W.C., Hu, F.B., (2019). Changes in Consumption of Sugary Beverages and Artificially Sweetened Beverages and Subsequent Risk of Type 2 Diabetes: Results From Three Large Prospective U.S. Cohorts of Women and Men. Diabetes Care 42, 2181–2189. <u>https://doi.org/10.2337/dc19-0734</u>

Erzse, A., Christofides, N., Stacey, N., Lebard, K., Foley, L., and Hofman, K. (2021). Availability and advertising of sugar sweetened beverages in South African primary schools following the voluntary pledge by a major beverage company: A mixed methods study. Global Health Action, 14:1, DOI: 10.1080/16549716.2021.1898130

Feeley A, Musenge E, Pettifor JM, Norris SA. (2012). Changes in dietary habits and eating practices in adolescents living in urban South Africa: the birth to twenty cohort. Nutr Burbank Los Angel Cty Calif. ;28(7–8):e1–6.

Fitzgerald A, Heary C, Nixon E et al. (2013). Self-efficacy for healthy eating and peer support for unhealthy eating are associated with adolescents' food intake patterns. Appetite, 2013; 63: 48–58. 38 Stead M,

Fretes, G., Corvalán, C., Reyes, M., Taillie, L.S., Economos, C.D., Wilson, N.L. and Cash, S.B., (2023). Changes in children's and adolescents' dietary intake after the implementation of Chile's law of food labeling, advertising and sales in schools: a longitudinal study. International Journal of Behavioral Nutrition and Physical Activity, 20(1), p.40.

Georgina, S. (2019). Body size perceptions of women and obesity in urban Uganda. African Study Monographs, 40(1), 1-21.

Gona, P.N., Kimokoti, R.W., Gona, C.M., Ballout, S., Rao, S.R., Mapoma, C.C., Lo, J. and Mokdad, A.H. (2021). Changes in body mass index, obesity, and overweight in Southern Africa development countries, 1990 to 2019: Findings from the Global Burden of Disease, Injuries, and Risk Factors Study. Obesity Science & Practice, 7(5), 509-524. doi: 10.1002/osp4.522

Halford, J. C., Gillespie, J., Brown, V., Pontin, E. E., & Dovey, T. M. (2004). Effect of television advertisements for foods on food consumption in children. Appetite, 42(2), 221-225. https://doi.org/10.1016/j.appet.2003.12.003

Hall, K. D., Ayiketah, A., Bernstein, S., et al. (2019). Ultra-processed diets cause excess calorie intake and weight gain: A one-month inpatient randomized controlled trial of ad libitum food intake. Psychological Bulletin, 126(5), 619-628. <u>https://doi.org/10.1037/bul0000203</u>

Hawkins, S.S., Oken, E. and Gillman, M.W., (2018). Early in the life course: Time for obesity prevention. Handbook of life course health development, pp.169-196

Hawley, K. L., Roberto, C. A., Bragg, M. A., Liu, P. J., Schwartz, M. B., & Brownell, K. D. (2013). The science on front-of-package food labels. *Public health nutrition*, *16*(3), 430-439.

Horta, BL, Loret de Mola C, Victora CG (2015). Long-term consequences of breastfeeding on cholesterol, obesity, systolic blood pressure and type 2 diabetes: a systematic review and metaanalysis. Acta Paediatr, 2015; 104(467): 30-7

Jaacks, L. et al. (2019) The obesity transition: stages of the global epidemic. The Lancet Diabetes and Endocrinology, 7(3), 231-240.

Khandpur, N., de Morais Sato, P., Mais, L.A., Bortoletto Martins, A.P., Spinillo, C.G., Garcia, M.T., Urquizar Rojas, C.F., Jaime, P.C. (2018). Are Front-of-Package Warning Labels More Effective at Communicating Nutrition Information than Traffic-Light Labels? A Randomized Controlled Experiment in a Brazilian Sample. Nutrients 10. <u>https://doi.org/10.3390/nu10060688</u>

Kral, J.G., (2004). Preventing and treating obesity in girls and young women to curb the epidemic. Obesity research, 12(10), pp.1539-1546.

Kruger, H.S., Steyn, N.P., Swart, E.C., et al. (2012). Overweight among children decreased, but obesity prevalence remained high among women in South Africa, 1999–2005. Public Health Nutr, 15, 594–599. doi: 10.1017/S1368980011002214

Kumanyika, S.K., 2019. A framework for increasing equity impact in obesity prevention. American Journal of Public Health, 109(10), pp.1350-1357.

Lakerveld, J., Brug, J., Bot, S., Teixeira, P.J., Rutter, H., Woodward, E., Samdal, O., Stockley, L., De Bourdeaudhuij, I., van Assema, P. and Robertson, A., (2012). Sustainable prevention of obesity through integrated strategies: the SPOTLIGHT project's conceptual framework and design. *BMC public health*, *12*, pp.1-7.

Leepile, Tebogo T., Kaelo Mokomo, Maitseo M. M. Bolaane, Andrew D. Jones, Akira Takada, Jennifer L. Black, Eduardo Jovel, and Crystal D. Karakochuk. (2021). "Anemia Prevalence and Anthropometric Status of Indigenous Women and Young Children in Rural Botswana: The San People" *Nutrients* 13, no. 4: 1105. https://doi.org/10.3390/nu13041105

Lenders, C. M., Feldman, H. A., Von Scheven, E., Merewood, A., Sweeney, C., Wilson, D. M., ... & Gatcomb, P. M. (2009). Relation of body fat indexes to vitamin D status and deficiency among obese adolescents. American Journal of Clinical Nutrition, 90(2), 459-467.

Malik, V. S., Popkin, B. M., Bray, G. A., Després, J.-P., & Hu, F. B. (2010). Sugar-sweetened beverages, obesity, type 2 diabetes mellitus, and cardiovascular disease risk. Circulation, 121, 1356-1364. https://doi.org/10.1161/CIRCULATIONAHA.109.876185

Mantzorou, M., Papandreou, D., Vasios, G. K., Pavlidou, E., Antasouras, G., Psara, E., ... & Giaginis, C. (2022). Exclusive breastfeeding for at least four months is associated with a lower prevalence of overweight and obesity in mothers and their children after 2–5 years from delivery. Nutrients, 14(17), 3599. <u>https://doi.org/10.3390/nu14173599</u>

Maruapula, S.D., Jackson, J.C., Holsten, J., et al. (2011). Socioeconomic status and urbanization are linked to snacks and obesity in adolescents in Botswana. Public Health Nutr, 14, 2260–2267. doi: 10.1017/S136898001100.

Mbogori, T., Kimmel, K., Zhang, M., Kandiah, J., & Wang, Y. (2020). Nutrition transition and double burden of malnutrition in Africa: a case study of four selected countries with different social economic development. AIMS Public Health, 7(3), p.425. doi: 10.3934/publichealth.2020038

Mchiza ZJ, Temple NJ, Steyn NP, Abrahams Z, Clayford M. (2013) Content analysis of television food advertisements aimed at adults and children in South Africa. *Public Health Nutrition*. 2013;16(12):2213-2220. doi:10.1017/S136898001300205X

Mediano Stoltze F, Reyes M, Smith TL, Correa T, Corvalan C, Carpentier FRD (2019). Prevalence of Child-Directed Marketing on Breakfast Cereal Packages before and after Chile's Food Marketing Law: A Pre- and Post-Quantitative Content Analysis. Int J Environ Res Public Health. 2019;16(22).

Mialon, M. (2020). An overview of the commercial determinants of health. Globalization and Health, 16(1), 74. <u>https://doi.org/10.1186/s12992-020-00607-4</u>

Micha, R., Wallace, S. K., & Mozaffarian, D. (2020). Red and processed meat consumption and risk of incident coronary heart disease, stroke, and diabetes mellitus: A systematic review and meta-analysis. Circulation, 141(9), 781-793. <u>https://doi.org/10.1161/CIRCULATIONAHA.119.043938</u>

Mitanchez, D., & Chavatte-Palmer, P. (2018). Review shows that maternal obesity induces serious adverse neonatal effects and is associated with childhood obesity in their offspring. Acta Paediatrica, 107(7): 1156-65.

Monteiro, C. A., Cannon, G., Moubarac, J. C., Levy, R. B., Louzada, M. L. C., & Jaime, P. C. (2017). The UN Decade of Nutrition, the NOVA food classification and the trouble with ultra-processing. Public Health Nutrition, 21(1), 5-17. <u>https://doi.org/10.1017/S1368980017000234</u>

Morenga, T.A, L.A., Howatson, A.J., Jones, R.M., Mann, J. (2014). Dietary sugars and cardiometabolic risk: systematic review and meta-analyses of randomized controlled trials of the effects on blood pressure and lipids. Am. J. Clin. Nutr. 100, 65–79. <u>https://doi.org/10.3945/ajcn.113.081521</u>

Muhihi, A.J., Njelekela, M.A., Mpembeni, R., Mwiru, R.S., Mligiliche, N., & Mtabaji, J. (2012). Obesity, overweight, and perceptions about body weight among middle-aged adults in Dar es Salaam, Tanzania. International Scholarly Research Notices, 2012, 1-6. doi: 10.5402/2012/367071

Mukanu, M. M., Thow, A. M., Delobelle, P., & Mchiza, Z. J. R. (2022). School Food Environment in Urban Zambia: A Qualitative Analysis of Drivers of Adolescent Food Choices and Their Policy Implications. International Journal of Environmental Research and Public Health, 19(12), 7460.

Must, A. and Strauss, R.S. (1999). Risks and consequences of childhood and adolescent obesity. *International journal of obesity*, 23(2), pp.S2-S11.

Nichols, A. J., & Cullen, P. (2004). The child-parent purchase relationship: 'pesterpower', human rights and retail ethics. Journal of Retailing and Consumer Services, 11(2), 75-86. https://doi.org/10.1016/S0969-6989(03)00039-9

Nglazi, M.D. and Ataguba, J.E. (2022). Socioeconomic inequalities in intergenerational overweight and obesity transmission from mothers to offsprings in South Africa. SSM-Population Health, 19, p.101170.

Ochola, S, Masibo PK. (2014) Dietary intake of schoolchildren and adolescents in developing countries. Ann Nutr Metab, 2014; 64(suppl 2): 24-40.

Ofcom (2020). HFSS Advertising Restrictions. Final Review. https://www.ofcom.org.uk > hfss-review-final

Parajea. G., Colchero. A., Wlasiukc. J.M., Sota. A.M., Popkin. B.M (2021). The effects of the Chilean food policy package on aggregate employment and real wages. Food Policy. 2021;100.

Perrin, A. (2015) Social Media Usage: 2005-2015. Pew Internet & American Life Project, Washington DC.

Puoane, T., Steyn, K., Bradshaw, D., Laubscher, R., Fourie, J., Lambert, V., & Mbananga, N. (2002). Obesity in South Africa: the South African Demographic and Health Survey. Obes Res, 10, 1038–1048. doi: 10.1038/oby.2002.141

Sadeghirad, B., Duhaney, T., Motaghipisheh, S., Campbell, N. R. C., & Johnston, B. C. (2016). Influence of unhealthy food and beverage marketing on children's dietary intake and preference: a systematic review and meta-analysis of randomized trials. *Obesity Reviews*, *17*(10), 945-959.

Sartorius, B., Veerman, L.J., Manyema, M., Chola, L. and Hofman, K. (2015). Determinants of obesity and associated population attributability, South Africa: Empirical evidence from a national panel survey, 2008-2012. PloS one, 10(6), p.e0130218.

Sassi, F., Belloni, A., Mirelman, A.J., Suhrcke, M., Thomas, A., Salti, N., Vellakkal, S., Visaruthvong, C., Popkin, B.M., Nugent, R. (2018). Equity impacts of price policies to promote healthy behaviours. Lancet Lond. Engl. 391, 2059–2070. <u>https://doi.org/10.1016/S0140-6736(18)30531-2</u>

Schnabel, L., Buscail, C., Sabate, J.M., Bouchoucha, M., Kesse-Guyot, E., Alles, B., Touvier, M., Monteiro, C.A., Hercberg, S., Benamouzig, R. and Julia, C. (2018). Association between ultra-processed food consumption and functional gastrointestinal disorders: results from the French NutriNet-Santé cohort. Official journal of the American College of Gastroenterology ACG, 113(8), 1217-1228

Scott, V., Schaay, N., Schneider, H., & Sanders, D. (2017). Addressing social determinants of health in South Africa: The journey continues. South African Health Review, 2017(1), 77-87.

Singh, G.M. (2016). Sugar sweetened beverages are associated with greater incidence of diabetes but there is a paucity of evidence on healthfulness of artificially-sweetened beverages and fruit juices. Evid. Based Med. 21, 35. <u>https://doi.org/10.1136/ebmed-2015-110283</u>

Smith R, Kelly B, Yeatman H, Boyland E. (2019). Food Marketing Influences Children's Attitudes, Preferences and Consumption: A Systematic Critical Review. Nutrients. 2019;11(4).

Soubry A, Guo L, Huang Z et al. (2016). Obesity-related DNA methylation at imprinted genes in human sperm: results from the TIEGER study. *Clinical Epigenetics*, 2016; 8: 51.

Stacey, N., Edoka, I., Hofman, K., Swart, E. C., Popkin, B., & Ng, S. W. (2021). Changes in beverage purchases following the announcement and implementation of South Africa's Health Promotion Levy: an observational study. *The Lancet Planetary Health*, *5*(4), e200-e208.

Sulcas, A. (2023). Draft regulations aim to make warning labels on unhealthy foods mandatory by 2025. Daily Maverick. Available at: <u>https://www.dailymaverick.co.za/article/2023-02-02-draft-regulations-aim-to-make-food-warning-labels-mandatory-by-2025/</u> (3 May 2023)

Switkowsk, KM., Gingras, V., Rifas-Shiman, SL, Oken, E. (2020) Patterns of Complementary Feeding Behaviors Predict Diet Quality in Early Childhood. Nutrients, 12(3):810. doi: 10.3390/nu12030810. PMID: 32204442; PMCID: PMC7146403.

Taillie, L.S., Hall, M.G., Popkin, B.M., Ng, S.W., Murukutla, N., (2020). Experimental Studies of Frontof-Package Nutrient Warning Labels on Sugar-Sweetened Beverages and Ultra-Processed Foods: A Scoping Review. Nutrients 12. https://doi.org/10.3390/nu12020569

Thow, A.M., Sanders, D., Drury, E., Puoane, T., Chowdhury, S.N., Tsolekile, L. and Negin, J. (2015). Regional trade and the nutrition transition: opportunities to strengthen NCD prevention policy in the Southern African Development Community. Global health action, 8(1), p.28338.

Trübswasser U, Verstraeten R, Salm L, Holdsworth M, Baye K, Booth A, Feskens EJM, Gillespie S, Talsma EF. (2021). Factors influencing obesogenic behaviours of adolescent girls and women in low- and middle-income countries: A qualitative evidence synthesis. Obes Rev. 2021 Apr;22(4):e13163. doi: 10.1111/obr.13163. Epub 2020 Dec 6. PMID: 33283419; PMCID: PMC7988604.

Tussing-Humphreys, L. M., Pusatcioglu, C., Nemeth, E., & Braunschweig, C. (2012). Rethinking iron regulation and assessment in iron deficiency, anemia of chronic disease, and obesity: introducing hepcidin. Journal of the Academy of Nutrition and Dietetics, 112(3), 391-400.

Vandevijvere, S., De Ridder, K., Fiolet, T., Bel, S., & Tafforeau, J. (2019). Consumption of ultraprocessed food products and diet quality among children, adolescents and adults in Belgium. European Journal of Nutrition, 58, 3267-3278.

Victora, CG, Bahl R, Barros AJD et al. (2016). Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. Lancet, 2016; 387(10017): 475-90.

World Obesity Federation (2023). World Obesity Atlas, 2023.

Wrotniak, B. H., Malete, L., Maruapula, S. D., et al. (2012). Association between socioeconomic status indicators and obesity in adolescent students in Botswana, an African country in rapid nutrition transition. Pediatric Obesity, 7, e9-e13.

Yamoah, D.A., De Man, J., Onagbiye, S.O. and Mchiza, Z.J. (2021). Exposure of children to unhealthy food and beverage advertisements in South Africa. International Journal of Environmental Research and Public Health, 18(8), 3856.

UNICEF / WHO / The World Bank Group joint child malnutrition estimates: key findings of the 2021 Report.

World Health Organisation (WHO). (2021). Overweight and obesity (Fact sheet). <u>https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight</u>

World Health Organization (WHO). (2023). WHO acceleration plan to stop obesity. <u>https://cdn.who.int/media/docs/default-source/obesity/who-accelertaion-plan-to-stop-obesity-briefing.pdf</u>

Country reports, websites and news reports

Botswana Multi-sectoral strategy for the prevention and control of non-communicable diseases 2018-2023. (n.d.). Republic of Botswana Ministry of Health and Wellness. <u>https://www.iccp-portal.org/system/files/plans/Botswana%20NCD%20Strategy%20Final.pdf</u>

Chile Ministry of Health, B. del C., 2015. Biblioteca del Congreso Nacional | Ley Chile [WWW Document]. www.bcn.cl/leychile. URL https://www.bcn.cl/leychile (accessed 5.30.21).

Controlling the obesity epidemic. (n.d.). World Health Organisation. https://www.who.int/activities/controlling-the-global-obesity-epidemic

CountryNutritionProfiles.(n.d.).GlobalNutritionReport.https://globalnutritionreport.org/resources/nutrition-profiles/africa/southern-africa/botswana/

Deaths from noncommunicable diseases on the rise in Africa. (n.d.). World Health Organisation, Africa Region. <u>https://www.afro.who.int/news/deaths-noncommunicable-diseases-rise-africa</u>

FoodandNutritionSecurityStrategy2015-2025.(2014).SADC.https://www.nepad.org/publication/sadc-food-and-nutrition-security-strategy-2015-2025

Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020. (2013). WHO.

https://apps.who.int/iris/bitstream/handle/10665/94384/9789241506236 eng.pdf?sequence=1

Global Food Research Program, 2021. Marketing. URL https://globalfoodresearchprogram.web.unc.edu/resources/ (accessed 5.30.21)

Global Strategy on Diet, Physical Activity and Health - 2004. (2004). WHO. <u>https://www.who.int/publications/i/item/9241592222</u>

Israel Ministry of Health, 2017. Food Label and Nutritional Labeling [WWW Document]. Smart Nutr. URLhttps://www.health.gov.il/English/Topics/FoodAndNutrition/Nutrition/Adequate_nutrition/Page s/labeling.aspx (accessed 5.30.21).

Ministerio de Salud Pública Uruguay, 2018. Ministerio de Salud Pública [WWW Document]. Minist. Salud Pública. URL https://www.gub.uy/ministerio-salud-publica/sites/ministerio-saludpublica/files/documentos/publicaciones/MSP_MANUAL_APLICACION_ROTULADO_FRONTAL_ALIME NTOS.pdf (accessed 5.30.21).

Ministerio de Salud SdSP, Chile. Informe de evaluación de la implementación de la Ley Sobre Composición Nutricional de los Alimentos y su Publicidad. Available at: https://www.minsal.cl/wpcontent/ uploads/2017/05/Informe-Implementaci%c3%b3n-Ley-20606junio-2017-PDF.pdf. Accessed April 22, 2020.

Ministry of Health Peru, 2018. Aprueban Manual de Advertencias Publicitarias en el marco de lo establecido en la Ley N° 30021, Ley de promoción de la alimentación saludable para niños, niñas y adolescentes, y su Reglamento aprobado por Decreto Supremo N° 017-2017-SA-DECRETO SUPREMO-N° 012-2018-SA [WWW Document]. URL http://busquedas.elperuano.pe/normaslegales/aprueban-manual-de-advertencias-publicitarias-en-el-marco-de-decreto-supremo-n-012-2018-sa-1660606-1/ (accessed 5.30.21).

Monteiro CA, Cannon G, Levy RB, et al (2019). Ultra-processed foods: what they are and how to identify them. *Public Health Nutrition*. 2019;22(5):936-941. doi:10.1017/S1368980018003762

Mozambique Country Report. (2020). National Library of Medicine, V.31 (4 Suppl)(Cardiovasc J Afr). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9562838/

National Multi-sector Nutrition Policy 2018-2022. (2018). Government of Malawi, Department of
Nutrition,Nutrition,HIVandAIDS.https://extranet.who.int/nutrition/gina/sites/default/filesstore/MWI 2018 National-Multi-Sector-
Nutrition-Policy.pdf

National Multisectoral Strategic Plan for Prevention and Control of Non-Communicable Diseases (NCDs) in Namibia 2017/18 – 2021/22. (2017). Ministry of Health and Social Services Primary Health Care Directorate Family Health Division. <u>https://www.afro.who.int/sites/default/files/2019-04/Namibia%20NCDs%20Multisectoral%20Strategic%20Plan%20FINAL_For_PRINT_2018.pdf</u>

National Noncommunicable Diseases Prevention And Control Policy 2016. (n.d.). WHO. <u>https://www.iccp-</u>

portal.org/system/files/plans/SWZ_B3_Swaziland%20National%20NCD%20Policy%202016.pdf

National Strategic Plan For The Prevention And Control Of Non-Communicable Diseases 2020-2025. (Department of Health South Africa). <u>https://www.sancda.org.za/wp-content/uploads/2020/05/17-</u> May-2020-South-Africa-NCD-STRATEGIC-PLAN For-Circulation.pdf Nutrition for Every Child: UNICEF Nutrition Strategy 2020-2030. (2020). UNICEF. https://www.unicef.org/media/92031/file/UNICEF%20Nutrition%20Strategy%202020-2030.pdf

Obesity rising in Africa, WHO analysis finds. (2022, March). World Health Organisation, Africa Region. <u>https://www.afro.who.int/news/obesity-rising-africa-who-analysis-finds</u>

Obesity: Preventing and managing the global epidemic (WHO Technical Report Series 894). (2000). [Report of a WHO consultation]. World Health Organisation. https://apps.who.int/iris/handle/10665/42330

Protecting children from the harmful effects of food and drink marketing. (2014). WHO. <u>https://www.who.int/news-room/feature-stories/detail/protecting-children-from-the-harmful-</u><u>effects-of-food-and-drink-marketing</u>

Regional Indicative Strategic Development Plan 2020-2030. (2020, October). Southern African Development Community; Towards a Common Future. <u>https://www.sadc.int/pillars/regional-indicative-strategic-development-plan-2020-2030</u>

Secretaría de Economía, 2020. Fue aprobada la modificación a la NOM 051 sobre etiquetado de
alimentos y bebidas [WWW Document]. gob.mx. URL
https://doi.org/10.1017/CBO9781107415324.004 (accessed 5.30.21).

Southern African Development Community Vision 2050. (2020). SADC. https://www.sadc.int/sites/default/files/2021-08/SADC Vision 2050..pdf

Stronger focus on nutrition within health services could save 3.7 million lives by 2025, WHO (2019) [Press release]. <u>https://www.who.int/news/item/04-09-2019-stronger-focus-on-nutrition-within-health-services-could-save-3.7-million-lives-by-2025</u>

Synthesis Report on the state of food and nutrition security and vulnerability in Southern Africa. (2022). [Programme report]. SADC Regional Vulnerability Assessment and Analysis Programme. https://www.sadc.int/sites/default/files/2022-08/SADC RVAA Synthesis Report 2022-ENG.pdf

UN Decade of Action on Nutrition 2016-2025. (2016). United Nations System Standing Committee on Nutrition. <u>https://www.unscn.org/en/topics/un-decade-of-action-on-nutrition</u>

United Nations Children's Fund (UNICEF) (2019). Prevention of overweight and obesity in children and adolescents: UNICEF programming guidance, New York: UNICEF, 2019.

World Cancer Research Fund, 2021. Ambitious, SMART commitments to address NCDs, overweight and obesity. WCRF Int. URL https://www.wcrf.org/policy/our-publications/ambitious-smart-commitments-to-address-ncds-overweight-obesity/ (accessed 5.30.21).

ZAMBIA NATIONAL HEALTH STRATEGIC PLAN 2017 – 2021. (n.d.). Zambia Ministry of Health. https://www.moh.gov.zm/?wpfb_dl=3