Progress in the fight against malnutrition in Mozambique: A review of policies, action plans, and nutritional intervention programs

Progresso no combate à desnutrição em Moçambique: Uma análise das políticas, planos de ação e programas de intervenção nutricional

Avances en la lucha contra la malnutrición en Mozambique: Análisis de políticas, planes de acción y programas de intervención nutricional

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Abstract

Malnutrition is a public health problem in Mozambique, where 37% of children under five suffer from chronic malnutrition and 4% from acute malnutrition. Since national independence in 1975, action plans have been implemented to reverse this situation. Objective: To analyze the progress made in the fight against malnutrition through the policies, action plans and programmes implemented in the country since independence. Methodology: Documentary study, whose main data sources consisted of Demographic and Health Survey reports, Family Budget Surveys, SMART Surveys, Integrated Classification of Food Security Stages reports, information from FAO databases, as well as other studies on the nutritional situation in the country. The WHO and UNICEF classifications were used to describe the prevalence rates of malnutrition. Results: Except for acute malnutrition, which reduced from high to low between 1997-2023, the prevalence of chronic malnutrition had no statistically significant reductions and remains very high. Factors such as food insecurity, high illiteracy rates, armed conflict in northern Mozambique, poverty, unequal distribution of basic resources between provinces, weak monitoring and evaluation systems in the action plans implemented, poor investment in agriculture, covid-19, as well as the effect of climate change, which constantly affects the country, are the main causes. Conclusion: Despite efforts, malnutrition continues not to show significant reductions, which calls for further study and improvement of policies, as well as the control of risk factors. **Keywords:** Malnutrition; Prevalence; Health policy.

Resumo

A malnutrição é um problema de saúde pública em Moçambique, onde 37% das crianças com menos de 5 anos sofrem de desnutrição crónica e 4% desnutrição aguda. Desde a independência nacional em 1975, foram implementados planos de ação para inverter esta situação. Objetivo: analisar os progressos alcançados na luta contra a desnutrição através das políticas, planos de ação e programas implementados no país desde a independência. Metodologia: Estudo documental, cujo principais fontes de dados consistiram em relatórios do Inquérito Demográfico e de Saúde, Inquéritos aos Orçamentos Familiares, Inquéritos SMART, relatórios da Classificação Integrada dos Estádios de Segurança Alimentar, informação das bases de dados da FAO, bem como outros estudos sobre a situação nutricional no país. As classificações da OMS e do UNICEF foram usadas para descrever as taxas de prevalência da desnutrição. Resultados: Com exceção da desnutrição aguda, que reduziu de alta para baixa entre 1997-2023, a prevalência da desnutrição crónica não teve reduções estatisticamente significativas e continua muito alta. Factores como a insegurança alimentar, altas taxas de analfabetismo, conflito armado no norte de Moçambique, pobreza, distribuição desigual dos recursos básicos entre as províncias, fracos sistemas de monitoria e avaliação nos planos de

ação implementados, fraco investimento na agricultura, covid-19, bem como o efeito das mudanças climáticas, que afectam constantemente o país, são as principais causas. Conclusão: Apesar dos esforços, a desnutrição continua a não apresentar reduções significativas, o que exige um maior estudo e melhoria das políticas, bem como o controlo dos factores de risco.

Palavras-chave: Desnutrição; Prevalência; Política de saúde.

Resumen

La desnutrición es un problema de salud pública en Mozambique, donde 37% de los niños menores de 5 años sufren desnutrición crónica y 4% desnutrición aguda. Desde la independencia nacional en 1975, se han puesto en marcha planes de acción para revertir esta situación. Objetivo: Analizar los avances en la lucha contra la desnutrición a través de las políticas, planes de acción y programas implementados en el país desde la independencia. Metodología: Estudio documental, cuyas principales fuentes de datos consistieron en informes de Encuestas Demográficas y de Salud, Encuestas de Presupuestos Familiares, Encuestas SMART, informes de Clasificación Integrada de Etapas de Seguridad Alimentaria, información de bases de datos de la FAO, y otros estudios sobre la nutrición en el país. Se utilizaron las clasificaciones de la OMS y UNICEF para describir las tasas de prevalencia de la malnutrición. Resultados: Con excepción de la desnutrición aguda, que se redujo de alta a baja entre 1997-2023, la prevalencia de desnutrición crónica no tuvo reducciones estadísticamente significativas y se mantiene muy alta. Factores como inseguridad alimentaria, altas tasas de analfabetismo, conflicto armado en el norte de Mozambique, pobreza, distribución desigual de los recursos básicos entre provincias, debilidad de los sistemas de Control y evaluación, escasa inversión en agricultura, covid-19, y el efecto del cambio climático, son las principales causas. Conclusiones: A pesar de los esfuerzos, la malnutrición sigue sin mostrar reducciones significativas, lo que hace necesario un mayor estudio y mejora de las políticas, así como el control de los factores de riesgo.

Palabras clave: Malnutrición; Prevalencia; Política de salud.

1. Introduction

Malnutrition is the pathological state resulting from deficient intake and/or absorption of nutrients by the body. Acute malnutrition (wasting) is manifested through low weight for height and/or bilateral oedema and chronic malnutrition (stunting) through low height for age (Amaro et al., 2018).

In Mozambique, approximately 37% of children under the age of 5 suffer from chronic malnutrition, 4% have acute malnutrition and 3% are overweight, meaning a very high prevalence for stunting and a low prevalence for wasting according to the classification of the World Health Organization and UNICEF (INE, 2021).

Malnutrition has been recognized as a major public health problem on the African continent and particularly in Mozambique (Amaro et al., 2018). Thus, international initiatives like the Millennium Development Goals (MDGs) and subsequent UN Sustainable Development Goals (SDGs) have significantly influenced our nation's approach to combating malnutrition. For instance, the Alma Ata declaration of 1978 emphasized urgent action by governments and global organizations. Similarly, the Ottawa Charter in 1986 reinforced the need for health promotion worldwide. These directives catalyzed specific strategies post-1975, leading to tangible improvements in our nation's malnutrition rates (INS, 2019). It should be noted that Mozambique also made a commitment during the World Food Summit, held in Rome in 1996, to reduce the number of malnourished people by 50% by 2015 (MoH, 2010). This led to the incorporation of Nutrition into the agenda of the country's Economic and Social Plans (PES), as well as the design and implementation of various policies, action plans and intervention programs in Nutrition. Plans such as the Action Plan for the Reduction of Absolute Poverty (PARPA) 1 and 2, 2001-2005 & 2006-2009, respectively, the Food and Nutrition Security Strategy and Action Plan 2008-2015 (ESAN), the Multisectoral Action Plan for the Reduction of Chronic Malnutrition 2011-2015-2020 (PAMRDC), the Nutritional Rehabilitation Program (PRN), were developed and implemented in addition to various interventions and standard normative response policies carried out during the emergency events that hit the country.

To monitor these interventions, nutritional status assessment reports have been and continue to be developed through monitoring systems and reported through Demographic Health Surveys (DHS 1997, 2003, 2011, 2022-23), Family Budget Surveys (FBS), SMART Surveys, Multiple Indicator Cluster Surveys (MICS), IPC results for food insecurity and acute malnutrition, FAO's "FAOSTAT" database as well as various other data sources at national and international level.

Despite the various interventions carried throughout the years, Mozambique has not made significant progress in reducing the prevalence of chronic malnutrition (mainly), a fact that worries the government, NGOs, academics, and civil society in general, since the consequences of chronic malnutrition constitute barriers to the country's good economic development (MoH, 2010). With these principles in mind, this study seeks to analyze the progress made in combating malnutrition through the policies, action plans and programs implemented in the country since independence in 1975.

2. Methodology

An exploratory and descriptive study was carried out, which involved a bibliographical survey. According to Gerhardt and Silveira (2009) cited by Costa e Castigo (2021, p. 03), an exploratory study aims to provide greater familiarity with the problem.

The main data sources consisted of Demographic and Health Survey reports, Family Budget Survey (FBS), SMART Surveys, Integrated Classification of Food Security Phase (IPC), Economic and Social Plans (PES), FAO database (FAOSTAT), as well as other studies of the nutritional situation in the country. WHO and UNICEF classifications were used to describe the prevalence rates of malnutrition.

The analysis was carried out essentially in two periods, considering before and after the year 2000, where policies were evaluated as well as the results of the nutrition indicators reported in these periods. Data was processed using Excel 2016.

3. Results and Discussion

3.1 Nutritional situation before the year 2000

Before the year 2000, the prevalence of malnutrition in Mozambique remained very high for stunting and high for wasting according to the results of the DHS 1997 and some studies, data presented in Table 1.

YearType of malnutritionPrevalence (%)SourceWasting11DHS 19971997Stunting42DHS 1997Stunting35.9Culpa, et al.

Table 1 - Nutritional status (wasting and stunting) of children under 5 in 1997.

Source: DHS Moz (1997), Culpa et.al (2022).

As can be seen in the table above, in 1997 the national prevalence of acute malnutrition or (wasting) was high while that of chronic malnutrition or (stunting) was very high. These findings may have been influenced by the weak national nutritional policies in that period and the fact that the country was still consolidating actions to reverse the current scenario (Machava, n.d.).

In the post-colonial period, the medical services that Portuguese colonialism set up in Mozambique were part of the system of colonial oppression and exploitation to which the Mozambican people were subjected for five centuries. The dominant characteristic of these medical services was their high discriminatory nature: economic, racial, and geographical discrimination. Although this situation still prevails today, it was worse before the year 2000 (Maíra & Morais, 2014).

According to SETSAN (2008), the nutritional situation has not improved significantly since 1998, revealing that access to adequate food is still not always guaranteed to the population, and there may be cyclical pockets of transitory food insecurity, due essentially to the occurrence of climatic and economic shocks, particularly in rural areas.

3.2 Nutritional situation after the year 2000

Between 2000 and 2023, several policies were implemented to reverse the situation, but the prevalence of chronic malnutrition remained very high and was marked by oscillations within very high parameters (Santos & Salvucci, n.d.). As for acute malnutrition, although it didn't become very low, there was a reduction from high to low. Table 2 shows the national prevalence of chronic and acute malnutrition in the period 2000-2023.

Survey/year DHS **MICS FBS** DHS BASELINE SETSAN **FBS FBS** DHS 2014-2022-2003 2008 2008-09 2011 2013 2019-20 15 23 41,0 43,7 46,4 43,0 43,0 43,0 38 37 Stunting 4 4 6,6 6 7 4,5 4,6 4 Wasting

Table 2 - National prevalence of chronic and acute malnutrition in the period 2000-2023.

DHS - Demographic Health Survey. MICS - Multiple Indicator Cluster Surveys. FBS - Family Budget Survey. Source: Culpa et al (2022).

According to the Table 2, between 2003 and 2023 the prevalence of stunting fell by 4%, from 41% in 2003 to 37% in 2023, increasing by 2.7% between 2003 and 2008, remaining stationary at 43% between 2011 and 2015 and then falling to 38% in 2019/20. For wasting, it increased by 3%, from 2003 to 2013, and then decreased again to 4% in 2023. These results show a very high current prevalence for stunting and a low prevalence for wasting, not changing significantly between all those years (INE, 2021). The following table (Table 3) shows the prevalence rates of malnutrition according to the WHO and UNICEF classification.

Table 3 - Prevalence thresholds (%) for severity of malnutrition among children under 5 years.

Labels	Prevalence thresholds (%) for:			
	Wasting	Overweight	Stunting	
Very low	<2.5	<2.5	<2.5	
Low	2.5 - <5	2.5 - <5	2.5 - <10	
Medium	5 - <10	5 - <10	10 - <20	
High	10 - <15	10 - <15	20 - <30	
Very high	≥15	≥15	≥30	

Source: UNICEF & WHO.

Chronic malnutrition rates in Mozambique are among the highest in the world (UN, 2013), and factors related to basic, underlying, and immediate causes condition these findings. According to Mozambique's Ministry of Health (2010) through the PAMRDC, the basic causes act at the level of society as a whole and reflect the potential resources available, both natural, technological, and human, as well as the political structure and cultural identity. At the immediate level, malnutrition can be caused both by inadequate food intake and by the onset of infections. At the underlying level, there are three types of causes: food insecurity, the lack of health and hygiene services, as well as environmental sanitation and adequate maternal and childcare. In the Cabo Delgado province, which has the highest rates of stunting, IPC 2019/20 identified high illiteracy among women, inadequate access to treatment for malnutrition, poor hygiene conditions and low health service coverage as the main causes of malnutrition. Other contributing factors identified include poor food consumption (quality and quantity), acute food

insecurity caused by food crisis and the armed conflict which destroys health infrastructure and limits access to humanitarian aid (Cinquenta et al., 2022).

The graph below (Chart 1) shows the prevalence of chronic malnutrition by provincial regions of the country, where the following provinces belong to the northern zone: Nampula, Cabo Delgado and Niassa; Centre Zone: Zambezia, Manica, Sofala, Tete and South Zone: Gaza, Inhambane, Maputo Province and Maputo City.

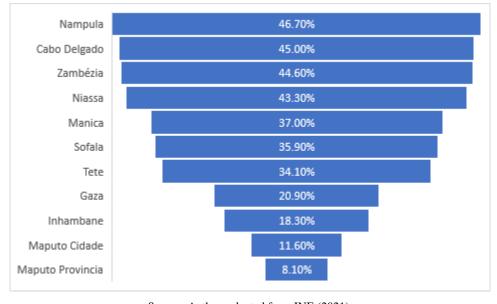


Chart 1 - Prevalence of Chronic Malnutrition by Province.

Source: Author, adapted from INE (2021).

In Mozambique, malnutrition rates exhibit significant regional disparities. The North and Centre zones of the country, especially provinces like Nampula and Cabo Delgado in the north, and Zambézia in the Centre face significantly higher rates (INE, 2021). In contrast, the Southern provinces including Maputo (the Country's capital) experience varying rates from low malnutrition in Maputo to Medium rates in Maputo City, Inhambane and high rates in Gaza.

For the southern part of the country, the SETSAN's baseline in 2013 showed a reduction in the prevalence of stunting resulting from factors related to better illiteracy rates, as well as access to health infrastructure by children (Republic of Mozambique - Ministry of Planning and Development, 2010). Research has shown that the prevalence of chronic malnutrition decreases with increasing maternal education level and socioeconomic status. (Maíra & Morais, 2014). In adittion, the prevalence of chronic malnutrition is twice as high in the lowest income quintile compared to the highest (UN, 2013). In Mozambique, regional differences in the prevalence of malnutrition have always tended to be the same, which calls for greater attention on the part of policy makers when distributing resources to the provinces, since this represents and justifies the higher rates in the northern and central provinces to the detriment of the south. For example, regarding illiteracy rates, which was 38.3% of the national average in 2022, the northern provinces had a prevalence rate of more than 50%, with Cabo Delgado standing out with 61.1% (country's highest prevalence), and the southern provinces (especially the capital Maputo) had the lowest rates in the country (INE, 2023). Similarly, in terms of access to drinking water sources, the 2022 family budget survey (FBS) report states that, more than 80% of families in the south had access, compared to less than 50% of families in the entire north and less than 70% of families in the Centre of the country (Chart 2). Similar scenarios are observed in terms of access to electricity as described in the same report. This once again highlights the prioritization of most of the resources for the southern part of the country, contrary to the real population needs of the country, since the northern and central areas are the

country's largest population centers and most in need of humanitarian assistance at all levels, aggravated by terrorism in Cabo Delgado (Cinquenta et al., 2022).

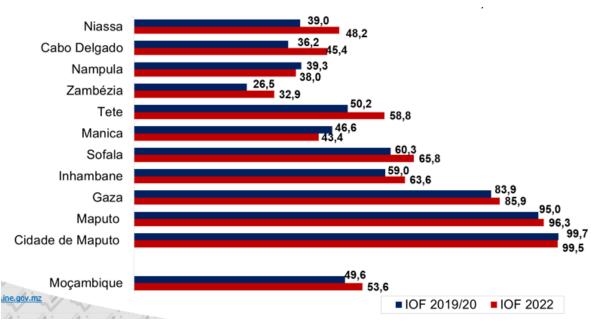


Chart 2 - Households using drinking water sources, by province.

Source: INE (2021).

3.3 Relevant intervention plans and their results (lessons learnt)

Despite much effort to reverse the scenario, based on the implementation of various programs with greater emphasis from 2000 onwards, which aimed to control the factors that could cause malnutrition, prevalence remains very high although some other indicators have shown improvements, for example acute malnutrition, which was high in 1997 but has been low since 2014 (Culpa et al., 2022). When left untreated, chronic malnutrition has lifelong consequences, which reduces the human capital index, making it difficult for the country to reach high levels of development (Maputo City Government, 2010). The costs of chronic malnutrition were estimated at 110 million dollars a year in 2004, and this figure may be much lower than the real costs, as some authors have estimated that, in Mozambique, productivity losses are in the order of 2-3% of Gross Domestic Product, or between 300 and 500 million dollars a year (MoH, 2010). The table below shows an example of the very relevant action plans in the history of public health policies in the country, designed to reverse the Chronic Malnutrition situation. These interventions also aimed to improve the living conditions of the population by improving food security, education, health, economic growth, and poverty alleviation, and have been implemented since the year 2000. These include, for example (with its abbreviations in Portuguese), PARPA, ESAN, PAMRDC and various other normative policies applied in nutritional emergency situations (not shown in Table 4).

Table 4 - Main public health policies implemented in the 1st and 2nd decade of the year 2000 in Mozambique.

ACTION PLAN	TARGET	ACHIEVEMENT	CURRENTLY
PAMRDC	Reduce stunting in children under 5 from 44% in 2008	Decreased in	37% suffered stunting
(2010-2020)	up to 30% in 2015 and 20% in 2020	10%	
ESAN II	Reduce the incidence of absolute poverty with	7.3% Economic	41-46% absolute poverty;
(2008-2015)	a focus on education, health, agriculture and rural	growth between	Slowing
	development, basic infrastructure, good governance and macroeconomic and financial management	2003-2015	growth
PARPA (2001-2005 &	Ensuring Food Security on the Human Rights to Adequate Diet - DHAA	Growth	39.6% Food Insecurity
2006-2009)		not relevant	

Source: PAMRDC (2010), ESAN (2008-2015), PARPA II (2006-2009), Maquenzi (2021), Santos & Salvucci (s.d).

Although these actions brought instant good results, in the end they did not solve the main problem. Factors such as hidden debts in the country, armed conflicts between the Governmental Armed Forces and RENAMO, have led to reduced economic growth and low investment in Agriculture, which is the mainstay of the majority of the population, both rural and urban (Maquenzi, 2021; Abbas, 2022). Other factors such as Covid-19 pandemic, natural disasters that have plagued the country, including various cyclones faced in the last 5 years (Cyclone Freddy in 2023, Gombe and Ana in 2021, Eloise in 2021, Idai and Kenneth in 2019), and the armed conflicts in Cabo Delgado since 2017 have also been contributory factors (World Bank, n.d).

Other important factors include the weak monitoring and evaluation (M&E) systems implemented alongside many policies and/or action plans, as was identified in ESAN II, which noted that the strategy lacked adequate monitoring and evaluation mechanisms to review targets, assess progress and take corrective measures. Furthermore, the reporting systems were weak and outdated and not compatible with the targets, so it was difficult to verify whether they were being achieved to assess the overall evolution of the programme (Republic of Mozambique, s.d). The same fact was raised as a recommendation in the National Institute of Statistics (INS) study on projection of interventions for the reduction of chronic malnutrition in Mozambique from 2010 to 2020, where it was clarified that for the reduction of chronic malnutrition among children under 5 years of age by the year 2020, there is a need for using more realistic targets such as those set by the multidisciplinary and multisectoral panel from the Women and Child Health & Nutrition Platform of the National Health Observatory (INS, 2019). An example today is the renamed SUSTENTA program, which was launched in 2017, with great expectations to revolutionize the agrarian system in Mozambique, but in an analysis of the progress, constraints and challenges of the agrarian programme by Costa and Castigo in 2021 and published in the Brazilian journal Research, Society and Development (rsd), warned that the programme was not on track to meet its objectives and that one of the biggest constraints was the lack of transparency in the monitoring and evaluation system, as well as in the selection of beneficiaries, the lack of agricultural infrastructure and accessible communication routes in rural areas, and the lack of guaranteed availability of funds to meet the programme's goals until 2024 (Costa & Castigo, 2021).

4. Final Considerations

Malnutrition continues to be a public health problem in Mozambique. The nutritional and public health policies implemented since independence in 1975 have reduced the rates of acute malnutrition but have not significantly reduced the rates of chronic malnutrition, which statistically is still very high (37%). Despite this, the country remains on course to reverse the situation.

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As a suggestion, we recommend the following to policy makers:

• Ensure an equitable distribution of resources to all provinces and between rural and urban areas; control the situation of peace and stability throughout the national territory; Invest in agricultural technology policies, increase the number of hospitals with a focus on rural areas, establish strengthening policies on climate change and finally bet on a robust and realistic M&E system in the public policies created.

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References

Abbas, M. (2022). Evaluation of the Report on Acute Food and Nutrition Security in Mozambique. Rural highlight no 151, OMR.

Amaro, M., Magunjo K., Pereira, A. S., Santos, P., Azambuja, G., Olumene, C. V., et al. (2018). Nutritional Treatment and Rehabilitation Manual Volume I: 0 to 14 years. Reference Book.

Brito, L., et al. (n.d.). Poverty, inequalities and vulnerability in Mozambique. Communications presented at the 2nd Conference of the Institute of Social and Economic Studies; IESE.

Cinquenta, A., Buanamade, E. C., Abdulkarim, S., & Ramos, I. C. (2022). Assessment of the nutritional status of children aged 6-59 months: the case of internally displaced persons from Cabo Delgado, Northern Mozambique. *Research, Society and Development*, 11(17), e293111739412. https://doi.org/10.33448/rsd-v11i17.39412.

Integrated Classification of Food Security Phase - IPC. (2023). IPC Analysis of Acute Food Insecurity: November 2022 - March 2023.

Integrated Classification of Food Security Phase - IPC. (2021). IPC Analysis of Acute Malnutrition: February 2021 - January 2021. Situation of Acute Malnutrition in Cabo Delgado Province.

Costa, J. I. M. da, & Castigo, P. (2021). Analysis of the progress, constraints and challenges of the "Sustenta" agrarian programme in Mozambique. *Research, Society and Development,* 10(14), e244101421682. https://doi.org/10.33448/rsd-v10i14.21682.

Culpa, M., et al. (2022). Child malnutrition and its immediate, underlying, and basic determinants in Mozambique: an analysis of its evolution from 1997 to 2015. Doi: 10.35953/raca. v3i2.138.

Maputo City Government (2015). Multisectoral Action Plan for Reducing Chronic Malnutrition - Maputo City.

INE. (2023). Mozambique Demographic and Health Survey 2022-23: Key Indicators Report. www.ine.gov.mz.

INE. (2023). Family Budget Survey - IOF 2022: Final Report.

 $INE.\ (2021).\ Demographic\ and\ Health\ Survey\ 2003.\ MOZ-INE-IDS-2003-v01.\ mozdata.microdatahub.com/index.php/catalog/4/datafile/F2/V799.$

INE. (2021). Family budget survey 2019/20. Retrieved from https://mozdata.ine.gov.mz/index.php/catalog/88.

INE. (2012). Mozambique Demographic and Health Survey 2011: Preliminary Report.

INE. (2009). Progress and challenges in child survival and development, education, gender equality, child protection and AIDS. Multiple Indicator Cluster Survey 2008.

INE. (2011). Final report of the Family Budget Survey - IOF 2008/9.

INE. (2016). Final report of the Household Budget Survey - IOF 2014/15.

INS. (2019). Projection of interventions for the reduction of chronic malnutrition in Mozambique from 2010 to 2020. Abstract 01 - Volume 02.

INS. (2019). RMCS-V5_2019.

Machava, J. (n.d). The poverty situation in Mozambique: regional differentiations and main challenges. Geographical Studies, Rio Claro, 5(1): 27-46, 2007 (ISSN 1678-698X).

Maíra, C., & Morais, G. (2014). Casa de Oswaldo Cruz-FIOCRUZ Postgraduate Programme in the History of Science and Health.

Maquenzi, J. (2021). Poverty and inequalities in Mozambique: A case study in six districts. Rural highlight no. 113, OMR.

Republic of Mozambique (n.d.). Action Plan for the Reduction of Absolute Poverty, 2001-2005. Final Version Approved by the Council of Ministers April 2001.

Research, Society and Development, v. 12, n. 12, e107121244053, 2023 (CC BY 4.0) | ISSN 2525-3409 | DOI: http://dx.doi.org/10.33448/rsd-v12i12.44053

Republic of Mozambique Ministry of Health (2010). Multisectoral action plan for the reduction of chronic malnutrition in Mozambique 2011-2015 (2020). MISAU: Nutrition Department.

Republic of Mozambique - Ministry of Planning and Development. (2010). Poverty and well-being in Mozambique: third national assessment.

Santos, R., & Salvucci, V. (n.d). Poverty in Mozambique: significant progress but challenges remain. United Nations University.

SETSAN. (2007). Food and nutrition security strategy and action plan.

2008-2015: Food and Nutrition Security, a Right for a Hunger-Free and Healthy Mozambique.

SETSAN. (2014). Report of the 2013 food and nutrition security baseline study in Mozambique.

The World Bank (n.d.). World Bank assistance has evolved from aid aimed at stabilizing the economy to close collaboration with the government, development partners and civil society. https://www.worldbank.org/pt/country/mozambique/overview.

UNICEF. (2021). The Situation of Children in Mozambique: Summary Report. p11.

UNICEF. (2023). Child Malnutrition: Stunting has declined steadily since 2000 - but faster progress is needed to reach the 2030 target. Wasting persists at alarming rates and overweight will require a reversal in trajectory if the 2030 target is to be achieved.

United Nations (2013). National Policy Analysis Impact of agricultural and food systems on Nutrition Mozambique August 2013: Case study of the United Nations System Standing Committee on Nutrition for the Second World Summit on Nutrition.