

**THE EFFECTIVENESS OF THE NATIONAL SCHOOL NUTRITION  
PROGRAMME (NSNP) IN ALLEVIATING HUNGER AMONGST QUINTILE 1  
SCHOOL LEARNERS IN TZANEEN CIRCUIT**

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## **DECLARATION**

“I Selaelo Emanuel Leshabana declare that the coursework Master’s Degree mini-dissertation that I herewith submit for the Master’s degree qualification in Development Studies at the University of the Free State is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education”.

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## **ABSTRACT**

The fight against hunger is globally envisaged by the second Sustainable Development Goal (SDG) which talks about ending hunger by 2030. The National Development Plans (NDPs) of many countries, including South Africa, further conform to the SDG's aims of promoting the end of hunger among children and women. The Constitution of South Africa Act No. 8 of 1994 further endorsed the children's rights. As a result, school feeding as one of the programmes to alleviate short term hunger was resuscitated. The SDG 2 gave impetus to the school feeding programme in South Africa and in other countries. The NDPs were launched in different countries with a focus on ending hunger and promoting the welfare of the people (development of the people). The feeding programme in South Africa was relaunched in 1994 and it was called the National School Nutrition Programme (NSNP).

The study focused on the effects of the NSNP in alleviating the hunger of the school learners in the Tzaneen Circuit. The schools are quintile 1 as they are located on the farms around the Tzaneen town. The study employed the utilitarian and the theory of change concepts which align with the intervention programme for the happiness and the well-being of most people. The majority of the learners are from disadvantaged homes and are found in the quintile 1 schools. Thus, the programme is crucial for this cohort of learners as most of their parents cannot afford proper meals. The school meals remain the hope of these children, by keeping them happy and well in their school journey. The decentralised model was piloted at the farm schools in the Tzaneen Circuit, and it was preferred by the schools over the centralised model. The latter is not favoured due to the challenges such as the late deliveries, the delivery of low-quality products and the lack of flexibility.

On the one hand, through the decentralised model, the schools buy, save money, choose suitable food items, and terminate contracts with retailers where necessary. As a result, the school learners benefit greatly as when there are leftovers the needy identified learners get food parcels to take home for the holidays. The model strides critically to alleviate these learners' short term hunger challenges to ensure their well-being.

The introduction of a decentralised model in phases will increase the rollout of the school feeding programme as the programme will end in six years. The rigorous monitoring of the programme will ensure its success and it will guard against any mischievous usage of the resources. The role of the NSNP was crucial during the Corona Virus Disease (COVID-19) peak, as the children were able to access food even though there was no schooling. The organisations such as Section 27, the Equal Education Law Centre and Equal Education ensured that the children's rights were safeguarded. They ensured that the children who were not at school or those who were learning at home due to COVID-19 also received food. They approached the high court, which enforced the offering of meals to the learners by the Department of Basic Education. Scholar transport also adds great value to the children's

education and to their access to the school meals. Without scholar transport, many learners may not be able to go to school and they will not be able to access meals as they are from poor backgrounds. Most learners rely on the school meals as their parents cannot afford food. Therefore, the DBE and the Provincial Departments partnerships with the stakeholders such as the other departments, the Non - Governmental Organisations (NGOs), the Private Sector and the Community Based Organisations (CBOs) is crucial for the success of the NSNP.

## **KEYWORDS**

The school meal programme, school learners, well-being, short term hunger, nutrition, participants, decentralised model

## **LIST OF ABBREVIATIONS AND ACRONYMS**

AIDS	Acquired Immune Deficiency Virus
ARV	Antiretroviral Drugs
CBO	Community Based Organisations
CGF	Conditional Grand Fund
COVID-19	Coronavirus Disease 2019
CPESDP	Coordinating Programme of Economic and Social Development Policies
DAFF	Department of Agriculture, Forestry and Fisheries
DBE	Department Basic of Education
DME	Department of Monitoring and Evaluation
DoE	Department of Education
DoH	Department of Health
DoRA	Division of Revenue Act
DPE	Directorate of Primary Education
EE	Equal Education
EELC	Equal Education Law Centre
FAO	Food and Agriculture Organisation of the United Nations
FUEL	Feed, Educate, Uplift, Lead
GAIN	Global Alliance For Improved Nutrition
GSFP	Ghana School Feeding Program
HACCP	Hazard Analysis Critical Control Point

HREC	Human Research Ethics Committee
HIV	Human Immunodeficiency Virus
IFSS	Integrated Food Security Strategy
LBW	Low Birth Weight
LPDE	Limpopo Provincial Department of Education
MDSs	Millennium Development Goals
MoPME	Ministry of Primary and Mass Education
MTPs	Medium Term Plans
NDP	National Development Plan
NGOs	Non-Governmental Organisations
NGSFP	Non-Government School Feeding Programme
NPC	National Planning Commission
NPFNS	National Policy Food National Security
NSNP	National School Nutrition Programme
PED	Provincial Education Department
POPIA	Protection of Personal Information Act
PSAM	Public Service Accountability Monitor
PSNP	Primary School Nutrition Programme
RDA	Recommended Daily Alliance

RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
SDGs	Sustainable Development Goals
SFP	School Feeding Programme
SGB	School Governing Body
SMME	Small Medium and Micro-Enterprises
ToC	Theory of Change
UFS	University of the Free State
UN	United Nations
UNICEF	United Nations International Children's Educational Fund
VFHs	Volunteer Food Handlers
WFP	World Food Programme
WHO	World Health Organisation

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## **INTRODUCTION**

### **1.1 Background**

On September 25, 2015, the Sustainable Development Summit established the 2030 Agenda, a set of 17 sustainable development goals. A set of Sustainable Development Goals (SDGs) was established with the goal of eliminating poverty, combating injustice and inequality, and addressing climate change by 2030. New global goals were established to address the root causes of poverty and the universal need for development that benefits everyone, both in developed and developing countries. The new international goals are the Sustainable Development Goals (United Nations Development Programme (UNDP), 2015; Abubakari, Asamoah & Agyemang, 2018).

South Africa, as part of the global world, was also affected by the 2030 agenda and thus it had to customise its programmes to be in line with the global goals. As a result, the SDGs presented an opportunity for exploiting the many benefits of a global agenda and the partnerships to drive proper development through the equitable and sustainable utilisation of the country's resources. It was thus critical for South Africa to apply the lessons learned from the Millennium Development Goals (MDGs) and incorporate them into the national and global agendas in order to reduce poverty and inequality (Statistics South Africa, 2015; UNDP, 2015).

By 2011, South Africa had already introduced the National Development Plan (NDP) to eradicate poverty and lower inequality by 2030. One of its priorities is to reduce the acute effects of poverty on the millions of South Africans over the short term, and the plan proposes, among other things, to introduce a nutrition programme for pregnant women and young children and to extend the early childhood development programmes for the children who are under five (National Planning Commission, 2010). The ending of hunger features well in the NDP. In the same vein, a programme to end short term hunger, especially with the children from the poor backgrounds in the South African schools, was already introduced.

In South Africa, the National School Nutrition Programme (NSNP) has been identified as one of the programmes aiming to thwart hunger, realise food security, boost nutrition, and uphold sustainable agriculture by 2030 (UNDP, 2015). When the NSNP first began, it had a dual focus on nutrition and education in South Africa's growth. The dual focus included supporting essential health growth by lowering hunger, offering nutrition education to learners, and improving nutritional status through micronutrient supplementation (RSA, 1994). The second SDG gave a broader perspective on ending hunger. The NDP gave a national directive on ending hunger in South Africa. On the one hand, the NSNP focused on alleviating the hunger of the school learners in South Africa.

This study was undertaken in this context to assess the effectiveness of the NSNP in alleviating hunger among quintile 1 school students in the Tzaneen Circuit. Furthermore, the study elected to better understand the effectiveness of the NSNP in alleviating hunger among school students by investigating the dynamics and uniqueness of the focus area, in order to extract useful information and gain new knowledge

## **1.2 Problem statement**

The lack of inquisitiveness in the quintile 1 schools, particularly in the predominantly rural farms of the Tzaneen area, prompted a study of this nature. The effectiveness of the NSNP was explored through this study.

The NSNP helps to improve the well-being of school communities by reducing hunger among students. According to Govender (2016), the NSNP has ascertained that learners get a meal at school by meaningfully supporting learners to attend school regularly and by reducing child impoverishment within the school atmosphere. According to the NSNP's 2013/2014 annual report, the Department of Basic Education (DBE) concurs that hungry students make teaching and learning inefficient. Education on nutrition education, as a core of the NSNP, fosters a healthy lifestyle and the advancement of an extensive eating plan among students and school populations. The children's rights to food are preserved in the constitution (Bill of rights of the constitution of the Republic of South Africa, 1996).

Section 18 of the 1996 Constitution, which displays the principles of the School Feeding Programme (SFP), endorses the right to food for children. Subsection 28 elaborates on providing basic education as a right that should be available to everyone. To that end, the NSNP seeks to improve educational standards by increasing learning capacity, learner presence and keeping at schools, thereby reducing short-term hunger (Govender, 2016; Buhl, 2010). Other than the above aspects, the ineffectiveness of the NSNP borders on several other aspects.

Paulos (2013) states that regardless of the trained principals allotted with guidelines of running the programme, the challenges continue to derail the food programme, and the schools continue to be beset by drawbacks. The drawbacks encompass but are not restricted to the food not supplied, the learners not offered food, the food being offered after 12h00, and the absence of monitoring and support.

United Nations International Children's Fund (UNICEF) (2008) found that the principals and the educators that are entrusted with the NSNP do not have sufficient time to maintain the proper recording of ingredients and, the controlling of the received food items. They also do not supervise food preparation. This absence of capacity in administration leads to the unsuccessful realisation of the NSNP.

According to Public Service Accountability Monitor (PSAM) (2010), the infrastructure challenge causes food to be stored outside of the school grounds. Burglaries have also been blamed for the shortage of ingredients. The PSAM also mentions that the food from a neighbouring school was mixed in with the food from the other because it was stored in the same location. Some food was stored at the homes of the School Governing Body (SGB) members or principals. There was a significant gap in the food that was kept at the homes of those who could provide storage. As a result, those who provide storage may use the food. These factors have an impact on the NSNP's effectiveness. The core of this work, however, centred on the quintile one (1) schools.

The Department of Education employed statistical data to support a quintile system for identification of school feeding programme recipients. Preference is set for the school with the greatest need which are primarily farm and rural schools, with some provinces getting more funding than others (Buhl, 2010). Most of the schools in the Tzaneen circuit are in rural poor communities. The effectiveness of the NSNP in these schools is critical and should be evaluated. Malongoane and Mbhenyane (2017) emphasizes the importance of a more continuous nutritional assessment of students receiving meals through the NSNP to properly evaluate the programme's effectiveness.

The lack of information on the effectiveness of the NSNP in specific areas, particularly in the Quintile 1 schools in Tzaneen, complicates a clear assessment of the NSNP's effectiveness in these areas. Moreover, though some studies on the NSNP were conducted on areas such as poverty and hunger alleviation, the findings may not be identical as each area has its dynamics and uniqueness. Therefore, even the possibility to view, perceive and interpret the NSNP from different perspectives exists. As a result of these various aspects and points of view, this study aimed to add to the existing body of knowledge. The study gathered data that would reveal the NSNP's ineffectiveness in the Tzaneen Circuit and develop mitigation factors to add value to the NSNP by improving its effectiveness. As a result, the study focused on investigating the effectiveness of the NSNP in alleviating hunger among the Tzaneen Circuit's quintile 1 schools.

### **1.3 Aim of the study**

This study aimed to explore the effectiveness of the NSNP within the Tzaneen Circuit, in the Mopani West District, of the Limpopo Province, with a particular focus on the quintile 1 schools in terms of alleviating hunger as well as ensuring the appropriate nutritious benefits to the learners.

### **1.4 Research questions**

#### **1.4.1 Main research question**

Is the NSNP perceived at the schools as effective in alleviating hunger of the school learners in the Tzaneen Circuit?

#### **1.4.2 Sub-questions**

- Is the food provided through the NSNP at the schools considered adequate for the learners?
- Does the food provided through the NSNP meet the set standards as required at schools?
- Is the food provided through the NSNP considered to have a nutritional value for the learners?
- Does the food provided through the NSNP enhance the teaching and learning of the learners at schools?

#### **1.5 Objectives**

- To establish whether the food provided through the NSNP is considered adequate for the learners at schools.
- To explore whether the food provided through the NSNP meets the set standards as required at schools.
- To establish whether the food provided through the NSNP have a nutritional value for the learners.
- To provide recommendations for the Limpopo Department of Education (LDoE) to improve the implementation of the NSNP in the schools.

#### **1.6 Significance of the study**

The information on the effectiveness of the NSNP in the specific areas, such as the Quintile one and two in Tzaneen, is lacking and therefore it complicates a clear assessment of the effectiveness of the NSNP in these areas. The study enhanced the existing knowledge and it found new information as per the study area's dynamics and uniqueness. Through these, the study hoped to strengthen the implementation of the NSNP and the ways of accomplishing the NSNP. The recommendations and the findings will enhance the implementation of the NSNP, thus adding value to the Provincial Department of Education and the lives of the learners.

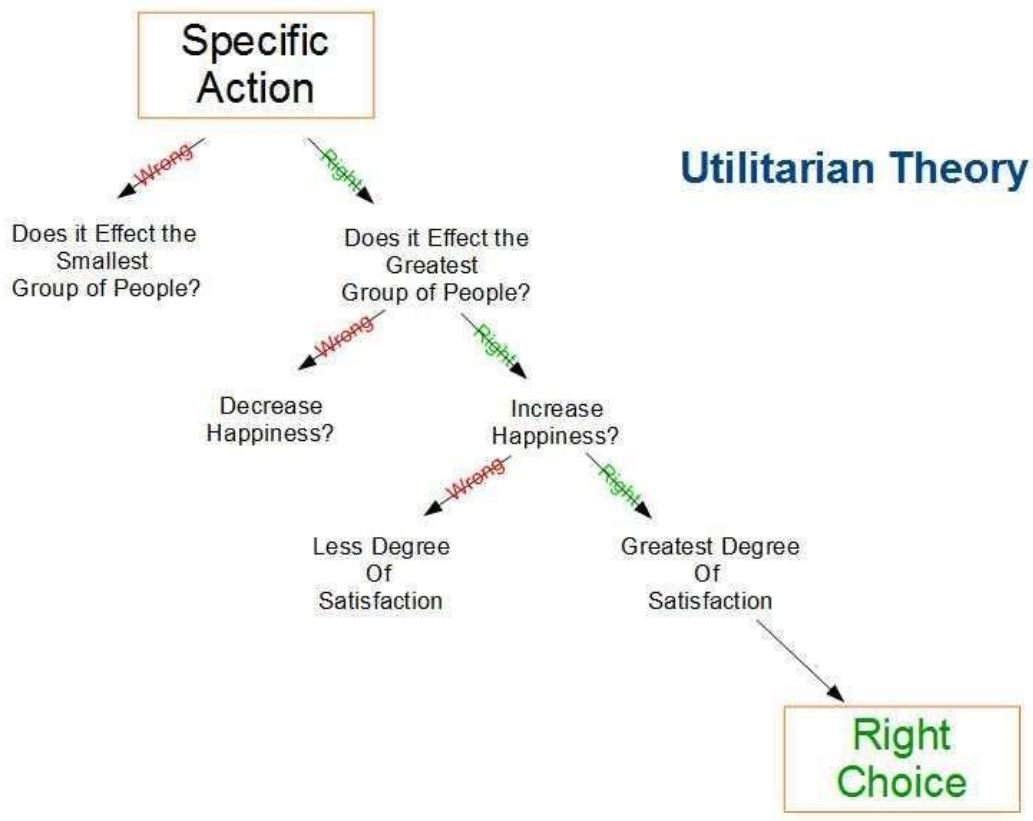
#### **1.7 Theoretical Framework**

A theoretical framework, according to Labaree (2009), is a formation that can maintain or back up the theory of a research study. The theory in this regard, is introduced and described through explaining the reason the research is in existence. Furthermore, theories are developed to clarify, forecast, and comprehend a circumstance, and in various levels, to contest and broaden the present information within the limitations of crucial binding viewpoints.

##### **1.7.1 Utilitarian theory**

The utilitarian theory advocates doing what is primarily beneficial to the majority of people. Eggleston (2012) confirms that the theory is about doing the "greatest good for the greatest number" and it entails

people acting in a way that contributes to their well-being. The well-being is associated with intimacy for happiness.



**Figure 0.1: Illustration of utilitarian theory**

Source: Pace (2016)

Based on the utilitarian theory, Figure 1 asserts that making the right choice and actualising the right choices would increase happiness for all those that are affected by the action. Therefore, the wrong action would bring about undesired results (Pace, 2016). Implementing the school feeding scheme is the correct decision to lower the short-term hunger of the majority of school students in poor rural communities.

Similarly, utilitarianism asserts that making a decision that provides the greatest good is based on making the best choice for the greatest number of people, or at least providing the greatest degree of satisfaction to those who are affected by a specific decision (Klein, 2011).

The utilitarian theory, which has a specific action, is based on analysing the consequences for society or a human group. The "right" decisions would thus be those that increase a group's or society's utility, happiness, and pleasure (McShane & Von Glinow, 2005). Kabir and Islam (2018: 11) further confirm that through maintaining the school nutrition programme, the consumer group which are the students “— are very happy to have khichuri as a midday meal; additionally, the biscuits and sometimes fruit given on the last day of every week makes them more happy” (Sanousi, 2019). The right intervention, which is the provision of the meals, makes school children happy and it enhances their well-being.

The decision to provide meals to schoolchildren is correct. According to the World Food Programme (2013), the meal that the children receive serves as an incentive for them to attend class. Offering children food daily during their development stages helps them stay in school and is a strong instrument for accomplishing educational goals. It is an asset in the child's prospect to ensure that the meals provide the nutrition required for learning and growth. The school meals prepare the children to utilise the advantages that come with learning opportunities where quality education is available. The resource deficit, in this case, is food which is a basic human need (Bundy *et al*, 2018). Therefore, provision of food leads to the children's well-being, which leads to their happiness in studying. In the long run, their welfare which is their future is further enhanced through education. In this case, the NSNP is the catalyst to bring utility and welfare for the children, especially as the greatest number of the people, who are children from a disadvantaged background. The NSNP continues to alleviate short term hunger in the schools, thus it is enhancing utilitarianism.

Mill (1863), as the pioneer of the utilitarianism theory further, confirms that when the theory exists, it should be followed by action. The pioneer indicates that one utility would prescribe, first, that the rules and the social engagements should put the happiness, or the interest, of every person, as closely as in a pleasing situation with the good that is all-inclusive; and secondly, that education and opinion, which commands great authority on the humankind qualities, should utilise the authority to create in the intellect of every person an unending connection between this happiness and the good entirely inclusive. Furthermore, it is imperative that a straight stimulus to uphold the overall good could be one of the routine intentions of a deed in every individual.

This study drew heavily on the utilitarian theory. The theory necessitates action in the form of the law, as well as in the policy and the systems to be developed. In this case, the NSNP was introduced due to the need for the entire well-being of others, particularly the children. The provision of the meals

contributes to their well-being so that they can learn happily while preparing for their prosperous future. The utilitarian theory is also closely related to the Theory of Change.

### **1.7.2 Theory of change (ToC)**

The theory of change also envisages the people's well-being as sacrosanct through the intervention of the social programmes for development. A brief background, the definitions by the different scholars and an illustration through the school feeding program, all feature for the articulation of the ToC.

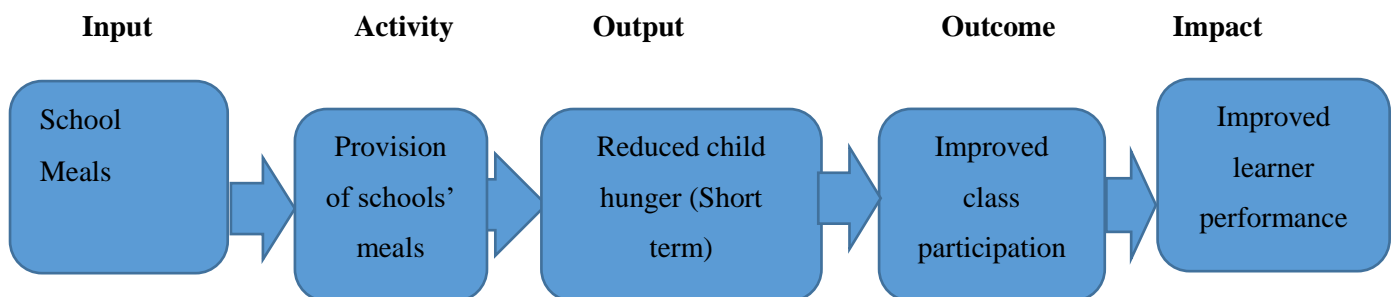
The ToC approach was developed in the 1990s in the United States, with the goal of enhancing the theory of evaluation and practice in the area of community projects. The first draft of the ToC was created in 1995. Weiss (2018) defines the ToC as a theory that explains in what way and reasons an invented project functions. The theory can be interpreted as a means of clarifying the viewpoints that describe the little stages that point to a long-term goal and the nexus between the deeds and the results of an involvement or a programme. When it is effected, the school feeding programme is projected to have a desirable influence.

Stein and Valters (2012) defines the ToC in terms of the link between the activities and the outcomes, articulating this link as a critical component of the ToC process. The link is better articulated on the view that societal programmes are reliant on direct or indirect theories about what way and reasons the programme will work. Furthermore, this theory can be articulated fully as a means to support the set of viewpoints that clarify both the little steps that lead to a lasting goal and the nexus between the actions and the effects in pursuance of successful influence.

When a specific resource's deficits impair people's well-being, a social programme is required. The fundamental premise is that providing these resources, such as school feeding, will improve well-being. (Sanousi, 2019). When development interventions are implemented, they intend to accomplish a predetermined set of desirable changes in the lifetime of those targeted. The interventions incorporate an implicit or explicit change theory. People's well-being is harmed by specific lacks or shortcomings. As a result, offering tailored benefits to affected individuals will lessen these constraints and advance their well-being. The effects of the assessments intend to determine if the theory of change is firm in its application. The intervention must genuinely advance the well-being as projected. To meet the expectation, the relevant well-being indicators should be identified and measured before and after the intervention. Thus, if the intervention's goal is to lower child hunger, the nutritional position should be reviewed both before and after the intervention. If the children's nutritional status improves during this time, the intervention appears to have been successful, which looks to confirm the theory of change (Devereux & Roelen, 2015).

The intention, in theory, must influence the selected aspects of well-being by providing the appropriate means to people whose well-being is viewed to be flawed due to a lack of these resources can be attributed to other factors such as the schooling learning environment (Devereux & Roelen, 2015).

In this case, the school meals provided to the learners are the appropriate means, these meals provided to the children reduce child hunger, thereby leading to better class participation, and improving learner performance. Therefore, the intervention is for the well-being of the people who are the children at schools. Sanousi (2019) also concurs with Devereux and Roelen (2015) through the illustration that follows (Figure 1.2):



**Figure 0.2: Theory of Change of a school feeding programme**

Source: Sanousi (2019)

### 1.8 The scope of the study

The current study focused on the effectiveness of the NSNP in alleviating the hunger of the learners in the quintile 1 schools in the Tzaneen circuit. The schools are located on the farms around the town of Tzaneen, in the Limpopo Province. The sample is representative of the schools where the learners are from poor backgrounds, and the NSNP is an essential programme. The indicated sample was assumed to be entirely representative and suitable for this study.

### 1.9 Structure of the study

After the introduction and the background to the study, a conceptual or a theoretical framework is outlined. The remaining part of the study is outlined as follows: The Literature review is outlined using the funnel approach. The literature review further outlines the SDG on hunger, the NDP, the methodology applied to undertake the research is highlighted and discussed. In addition, the population of the study, the sampling methods, the demographic characteristics of the sample, and the data collection strategies are presented and discussed. Furthermore, the research findings are presented for

analysis, and discussion. The conclusion and the recommendations are also outlined on how to improve and implement the NSNP and consider future studies on the NSNP.

## **LITERATURE REVIEW**

### **1.10 Introduction**

The literature review centres on the global and the national programmes that are concerned with people's livelihood in developed and in underdeveloped countries. Millions of people are still entrapped globally in the abyss of hunger. Therefore, the intervention programmes had to emerge to mitigate the challenges. In their quest to improve the people's livelihoods, the SDGs and the national plans also put the alleviation of hunger as part of their priorities. The children, especially the learners from the disadvantaged backgrounds, feature prominently in this study. The topics under review include the SDG 2, the NDPs and the school feeding programmes of the selected countries in the study. The global and the other nations' programmes through this literature ultimately steer into the NSNP in South Africa, which is the main focal area of the study. The NSNP's topics that are under discussion include the NSNP and its objectives, the background and the nutritional status of learners, funding, the role of the stakeholders, the meal quantities and the serving portions, the nutrition set standards, the nutritious value, the cognitive and learning performance as well as special demands.

### **1.11 SDG 2**

Goal 2 is one of the 17 SDG goals. SDG Goal 2 is centred on ending hunger, thereby accomplishing food security and advanced nutrition. Perhaps the big question is, why zero hunger matters? Severe hunger and undernourishment remain the obstacles to sustainable progress, and they ensnare most people in an abyss that is difficult to escape. As a result of hunger and malnutrition, there will be less productive individuals. Such individuals will likely be more prone to disease and thus they will be incapable of earning more and bettering their livelihoods. Most of the nearly 800 million people suffering from hunger globally are in developing countries (UN, 2018).

Hunger and food security are intimately associated with poverty and inequality. Reducing or eliminating inequality in the policy and in the legal fraternity should advance food and nutrition security and the sustainable agricultural production. Malnutrition prevails as one of the main contributors to the global disease burden, which is prominently in sub-Saharan Africa (WHO, 2016). In the same vein, undernourishment in any form leads to significant risks to health and well-being. Quality food and the nutrition status are essential and imperative drivers for health and well-being (Mollier *et al.*, 2020).

SDG 2 seeks to "End hunger, achieve food security and improved nutrition, and promote sustainable agriculture,". The SDG 2 is inseparably linked to society, the economy, and the environment, and it is the key to the success of the whole SDG agenda (Food and Agriculture Organisation (FAO), 2016). Despite the fact that developing countries tend to rely heavily on agriculture, food production and consumption are central to any economy and pervade every society. The success of SDG 2 tends to

advance multiple synergies and trade-offs with the other SDGs across temporal and spatial scales, eventually emphasising the SDG plan's intimate nature. To eliminate hunger, the SDG-2 targets and indicators must be aligned with the four pillars of food security, which are availability (have enough food obtainable, which its constant producing rate that also relies on a healthy atmosphere), access (with a nutritious diet obtainable through economic and physical means), utilisation (with enough dietary intake and the ability to absorb and utilise nutrients in the body), and stability (safeguarding the three pillars reliably) (FAO, 2008). The three problems of undernourishment, namely the concurrence of malnutrition, micronutrient defect, and nutrition evident in overweight and obesity, is an increasing universal issue (Gil *et al.*, 2018).

For the realisation of the SDGs, it is therefore essential for each country to have a specific programme to achieve some of the goals as envisaged by the United Nations (UN) (UN, 2018). Osborn, Cutter and Ullah (2015) confirm this by pointing out that all the SDGs are appropriate, and their effects are common in all the countries. In spite of this, the ways and the balances of the issues they represent will differ in distinctive national settings as the following statement purports.

*“With regards to implementation, various countries ought to provide different degrees of attention and effort to the different goals and targets, depending on where they stand concerning them at present, their differentiated responsibilities and their different capabilities and resources. The balance between the social, economic, and political efforts needed to deliver the different objectives is also likely to be different in different countries.”* (Osborn *et al.*, 2015).

With the introduction of the SDGs, it is anticipated that each country will make significant undertakings to guarantee environmental viability and management, economic progress and development, and social promotion of the inhabitants (Abubakari *et al.*, 2018).

To further address the challenges regarding hunger and societal matters, as well as nutrition and education, the countries launched their National Development Plans. Some plans preceded the sustainable development goals; however, they had to be realigned to the SDGs. It should be noted that in the Sub-Sahara, most of the countries did not have the funds to sponsor the programmes fully. Therefore, they had to develop clear NDPs as informed by the international organisations, such as the UN, and the WFP to assist with finance and other resources. In this case, the focus of the study on the NDPs is on education, food security, nutrition, and other related social aspects.

### **1.12 A snapshot of the National Development Plans**

The development plans include a strategy or series of strategies to direct the government's development effort, and clearly written statements of the development objectives. The countries strive for long-term

growth and development. Planning, regulation, control, and guidance are crucial features of the development course in order to attain growth and development (Abubakari *et al.*, 2018). The development plans were geared towards a vision of nations owing to the challenges and the mechanisms that prevailed. Most of the development plans had the target for achievement that was set for the end of 2030, hence it was called vision 2030 (Ghana National Planning Commission, 2015).

A vision is actualised through the crafting of the NDPs for implementation. The NDPs are crucial in the performance of the feeding programmes. They set out the guidelines for implementing the initiatives a government plans to implement. A snapshot of the vision and the NDPs of Bangladesh, Ghana, Kenya, and South Africa is outlined in the study.

South Africa's National Planning Commission (NPC) was established in 2010. The NPC was entrusted with creating a vision and a strategic plan for the country. The Commission was also tasked with guiding the government on issues affecting long-term development. The NPC ensured the participation of all stakeholders' representatives' added value the development of mutual understanding across the stakeholders' partnership. For appropriate coordination, there was a need for a budget. The NPC acknowledged the SDGs' nutrition, social protection, and environmental welfare (Hendriks, 2018). In addition, the NPC presented an opportunity to adhere to the SDGs' ethos for alignment to attain sustainable development. Therefore, it ensured the international commitments that were entrenched in the constitutional obligations to the food rights into an all-embracing food and nutrition security- "food goal". Among the food goals are the transformation of the food environment, climate change relief, and social security (Kennedy *et al.*, 2021). As a result, a sudden review of the National Policy Food National Security (NPFNS) was required to reflect the SDGs and the relation between monitoring and evaluation processes (Kushitor *et al.*, 2022). As a result of these developments, the National Development Plan was adopted in 2011.

By 2030, the National Development Plan targets eradication of poverty and reduction inequality. There is a disparity in South African society, with most people surviving in poverty and a very limited number with employment. Most black students receive insufficient education in school. Furthermore, apartheid's legacy is ongoing to affect huge number of people's life opportunities. The NDP objectives and actions help to expound on the NDP's goals. As a result, the emphasis in this case was on school feeding and the children's welfare or well-being.

The NDP had several objectives for developing South Africa for a long time. Among those objectives were:

- To guarantee that the children adore the services and the benefits that facilitate access viability to nutrition, health care, education, social care, and safety;

- To attend to problems such as hunger, malnutrition and the micronutrient defects that affect physique and cognitive development, particularly among the children;
- To advocate that the social protection systems must respond to the growth of temporary and part-time contracts;
- To increase self-employment's importance and to establish the mechanisms to cover the associated risks;
- To ensure that the civil society should complement the government initiatives;

The objectives are in tandem with:

- The need for social protection systems to adapt to the rise of temporary and part-time work (NPC, 2010).

The NDP actions were as follows:

- Identify the main components of a far-reaching food security and nutrition approach and unveil a campaign;
- Increase the present public employment programmes to create opportunities for the unemployed; and
- Pilot mechanisms and inducements to help the jobless to find way in the employment space.

(the same child at school is the same child without food at home). The same parents gain employment opportunities through school feeding incentives (NPC,2010).

In January 1972, the Bangladesh Planning Commission was entrusted with fostering a long-term vision for development planning. The primary goal of Bangladesh's government policy is to lower poverty and lift the majority of people out of poverty, thereby improving their quality of life. The national vision 2010-2021 is carried by the perspective plan. To achieve its goal, the government implemented The Perspective Vision Plan (2010-2021). The vision plan will be realised through the execution of two five-year plans, The Sixth Five Year Plan (2011-2015) and The Seventh Five Year Plan (2016-2020). The objectives of the perspective plan are to eradicate poverty before 2014 and after 2014. The plan targeted the attainment of 100% of gender parity and specific steps to address the enrolment problem, particularly of the girl child (Ahsan, 2015).

Similarly, the Commonwealth Governance (2012) states that the Perspective Plan 2010-21 aims to create a resilient, productive, innovative, and prosperous nation with a caring, healthy, happy, and well-educated population. Broad-based growth, food security, and a caring society are among the priorities

of the Perspective Plan 2010-21 (Commonwealth Governance, 2022). The government's vision considers the interest in education and food security. In a country such as Bangladesh, most children are from poor backgrounds. With the National Development Plan emphasising the value of education, providing meals to vulnerable children is also prioritised. The provision of the meals will enhance the nutritional position of the children. It will encourage and attract the learners to enrol and attend school.

Kenya had more than nine development plans from 1966 to 2008. The Grand Coalition Government launched Kenya's Vision 2030 in 2008. The Economic Recovery Strategy for Wealth and Employment Creation was successful in the economic growth of 7.1% in 2007, thereby leading to the long-term development-Vision 2030. The development plan was implemented in five-Year Medium-Term plans (MTPs), and they were adjusted accordingly. The first MTPs covered 2008-12, which formed the basis for the 2012-2017 plan. Vision 2030 was to make Kenya a middle-income country, thereby offering a high-quality life to all its citizens in a clean and secure environment (Commonwealth Organisation, 2022; Nduati, 2011).

The Kenya Vision 2030 overall goal is to offer universal valuable education, training, and research development in order to lower illiteracy, enhance the advancement scale from primary to secondary schools, and elevate the quality and significance of education. As a result, the government committed to affording education that ensures every learner's right to a quality and appropriate education.

Vision 2030's social component aims to eliminate poverty and hunger while also reducing social exclusion and all forms of social inequity. The importance of developing human and social capital through education and skill development, as well as comprehensive and improved nutrition, was emphasised. The improvement of the situation of the children and the empowerment of adolescent girls and boys is key (Kiilu & Mugambi, 2019). School attendance is part of education. Hungry children cannot survive schooling. They will bunk school and ultimately drop out. For quality education to be realised, providing food to children is crucial. The Kenya Vision 2030 did take into cognisance the aspect of education and the alleviation of hunger (Bekidusa, 2020).

Ghana also had many National Development Plans before and since its independence in 1957. Initially, the development plans were aligned with the millennium development goal, which preceded the SDGs. The SDGs were adopted in 2017 and they were also known as Agenda 2030. The National Planning Commission of Ghana was founded on several existing laws, policies, and reports, and international frameworks such as the United Nations' 15-year SDGs and the African Union's 50-year Agenda 2063. Ghana, as a member of the UN and the AU, is required to incorporate the goals of its frameworks into national development plans and to report on them on a regular basis. The commission proposed a 40-

year plan which will be implemented through 10 four-year medium-term plans by the serving government until 2057. (Ghana National Planning Commission, 2015; Abubakari *et al.*, 2018).

To carry out the NDPs, various Coordinated Programmes of Economic and Social Development Policies (CPESDPs) were introduced. The long-term goal of the CPESDP 2010-2016 is to establish a just, free, and prosperous society. In this long-term goal, forms of severe limitations such as hunger, vagrancy, and poverty are eradicated, health care is obtainable and reasonable, education prepares people for a focused life, and all citizens partake in and share the benefits of development equally (Commonwealth Governance Organisation, 2022). SDG 2 is embodied in the NDPs' emphasis on hunger and education. As a result, the interests of the children will be considered through feeding programmes in the quest to alleviate short-term hunger and keep them in school.

The NDP of Ghana further received a boost for alignment with the SDGs when Akufo-Addo, a proponent of Agenda 2030, was appointed as president. As a result, the CPESDP, 2017-2024, articulates the coherent integration of the SDGs into Ghana's Development Plan (Government of Ghana, 2019). Ending children's hunger while education is receiving dire attention forms part of the plan in Ghana. Therefore, an SDG that is informed by Ghana's Development Plan would drive the school feeding programme in the right direction.

### **1.13 School feeding schemes in sub-Saharan Africa and South Asia**

To address SDG 2, "ending hunger," school feeding programmes aim to alleviate short-term hunger by providing food to learners. School feeding were introduced in South Africa as early as the 1940s, and large-scale school feeding programmes were implemented in China in the 1970s and 1980s. Over the last two decades, several organisations have worked with the UN to achieve the Millennium Development Goals (MDG), and now there are Sustainable Development Goals (SDG) relating to health, hunger, and poverty. Numerous studies have shown that school feeding can both grow enrolment and curb dropout. According to Bangladesh's Directorate of Primary Education (DPE), the net enrolment rate in schools increased from 74% in 1992 to 98% in 2008. Dropout rates, on the other hand, fell slightly from 35 to 33% during a similar period (Afroze *et al.*, 2013; Kabir & Islam, 2018). The focus of the school feeding programmes was on the selected sub-Saharan Africa and South Asia countries below.

Sub-Saharan Africa is made up of African countries located south of the Sahara. Forty-nine sub-Saharan African countries are located south of the Sahara, out of 54 African nations. Sub-Saharan Africa is known for having the world's most severe cases of malnutrition, with nearly 17 000 children dying from infections every day (Fanzo, 2012; Monala, 2018). According to the World Bank (2016), Sub-

Saharan Africa accounts for a large proportion of the world's extreme poverty. South Asia continues to have the highest concentration of undernourished people.

Besides South Africa, the study considered the school feeding schemes of the sub-Saharan countries, Ghana, and Kenya. In addition, Bangladesh, which is in South Asia, was considered in terms of its feeding scheme.

### **1.13.1 Bangladesh**

Approximately half of Bangladesh's population is regarded as food insecure, and several children do not go to school on a regular basis, if at all. As a result, a programme like school feeding is essential. It is a problem throughout the country's most impoverished areas to ensure school enrolment and attendance of school-aged children. Poverty-stricken families struggle to prioritize their children's education. Instead of going to school, the girls usually stay at home to work or help. Food distribution in schools in Bangladesh began in 2002, when the UN World Food Programme (WFP) joined forces with the government to introduce the *school feeding programme* in the country's less food-secure areas. This programme focused on dealing with short-term hunger enhance performance in the classrooms. Therefore, children enrolled in the school feeding programmes are given cooked meals and fortified biscuits to help them cope with the negative effects of short-term hunger (Afroze *et al.*, 2013; Kabir & Islam, 2018). As a result, the biscuit-based feeding and school meal pilot programs in Bangladesh were both discussed.

The Bangladesh government introduced the biscuits pilot feeding programme with the collaboration of the European Union. The programme was introduced in 10 disadvantaged sub-districts. In these sub-districts, there was the daily distribution of biscuits to school children aged 6-11 years. Apart from short term hunger, the intervention of this programme aimed also to bolster the nutritional status of the children (Adams *et al.*, 2017).

Three million students receive fortified biscuits through the programme. The pre-primary school and the primary students receive biscuits six days per week in the form of a 75g packet of biscuits and a 50g packet of biscuits, respectively. The taste of the biscuits is changed from time to time. From the biscuits, the pre-primary school children get 225 Kcal/day, whereas the primary school children get 338 kcal per day. The micronutrient content is enough for an average of 67% of the children's daily micronutrient requirements. The children, the parents and the other community members also receive learning packages through the school feeding programme. These include establishing school vegetable gardens and teaching lessons on water, sanitation and hygiene, health, nutrition, and social issues (such as dowry, early marriage, and pregnancy). The government also provides children with deworming tablets

(WFP, 2018). The biscuit feeding programme positively impacted micronutrient fortification and children's health. The contribution was acknowledged by both teachers and students.

The daily consumption of fortified biscuits by primary school children had a substantial constructive effect on iron, folic acid, vitamin B12, retinol, and vitamin D levels, even after controlling for sex, baseline deficiency status, CRP, and H. pylori. Anaemia and vitamin D deficiency levels were also significantly reduced. The biscuit programme was generally well received (Adams *et al.*, 2017). Adams *et al.* (2017) further attest to the benefits of the fortified biscuits programme. Many positive outcomes were associated with the consumption of the biscuits. Through body mapping techniques, the children indicated that they felt strength in their hands and legs. They felt the urge to run and play. The children felt content in their stomachs and had an increased appetite. The teachers indicated that diarrhoea, abdominal pain, and fever decreased among the children. The children's energy levels increased, and they generally lived in the classroom. Cognitive and psycho-motor skills are imperative in children; therefore, the contribution of the biscuit programme was remarkable. As the above explanation confirms, the health impact of the biscuits feeding schedule also increased the learners' enrolment and attendance.

An increase in the enrolment of the learners between 2014 and 2017 was accredited to the biscuits feeding programme. According to the parents and the teachers, there was growth in enrolment and attendance between 2014 and 2017. According to the parents and teachers, the school meals had a helpful effect on increasing the children's attendance and regular attendance. School attendance increased from 56% in 2013 to 80% in 2016.

In contrast to the previously mentioned increase, the WFP also reported an increase in enrolment from 2012 to 2014, but this was followed by notable drop from 2014 to 2017, effectively cancelling out the earlier growth. However, the reason for the drop in enrolment and attendance is unknown (WFP, 2018: 8-10). According to Adams *et al.* (2017) when there was an interruption in the distribution of biscuits, there was a dropout of the students. When the intervention of the biscuits programme was resumed, the students' dropouts ceased. In one incident, there were 300 students, which increased to 475. With the dropout ceasing, the interest in attending was also boosted by the resumption of the biscuits programme, where the interruptions occurred. Besides the fortified biscuit feeding programme in Ghana, the cooked meals feeding programme was also introduced.

Cooked hot meals were introduced in some of the schools in two upzilas in October 2013. In collaboration with the Ministry of Primary and Mass Education (MoPME) and the DPE, the Pilot Committee investigated the prospects and procedures for school feeding. Except for Thursday, when they had fortified biscuits, the schools received a hot meals (WFP, 2018).

The Upazilas are units of a sub-district. There are criteria for choosing schools that should gain from the school feeding programme. The schools that are the most nutritionally vulnerable in the most disadvantaged Upazila were covered by the school feeding programme thereby making sure that the students are certainly a nutritionally poor group. The meals for the school children are provided six days a week. On a Friday, being a government holiday, there is no meal provision (Kabir, 2018).

There are precise guidelines on the daily meal quantity that are acceptable to the consumer group in addition to the selection criteria. The food is served according to varied dietary patterns. Vegetables and eggs are included in the midday meal to break up the monotony. The SMC divides into two groups, one serving every day and the other being in charge of meal distribution. The unique requirements on the vegetables from the women growers must be adhered to. The purchasing committee guarantees the quality and purchases things at fair market value. The purchased meals cannot be randomly served and must follow a meal plan.

According to Kabir (2018), meals are provided following the meal plan, which calls for a cooked meal like khichuri to be served five days a week (Saturday through Wednesday) and a snack on Thursdays when school hours are shorter. The prepared lunch includes khichuri, a popular and well-liked dish in Bangladesh. The ingredients in khichuri can easily be changed depending on the season and what is readily available.

The staple ingredients of khichuri are rice, pulses, and vegetable oil, to which various new periodic ingredients are added, including leafy and non-leafy vegetables. Khichuri has adequate protein to enhance children's growth and provides vitamins and minerals to reduce micronutrient deficiencies. It is socially acceptable and uses readily available and affordable ingredients to the poor. The dish is made with fortified rice, a blend of regular polished rice and processed kernels made from crushed rice enriched with six essential micronutrients: folic acid, iron, zinc, vitamins A, B1, and B12. This was created in collaboration with the government by the WFP (WFP, 2018). The meals reduce short term hunger, provide nutrients for the school learners, and contribute to teaching and learning (Mtapuri, Kekana and Thabethe, 2015).

The government introduced school feeding programmes as a two-pronged intervention. The first is to inspire children to enjoy and remain in school, as well as to reduce hunger in the classroom so that students can be attentive and learn more effectively. According to reports, the net enrolment rate in schools increased from 74% in 1992 to 98% in 2008, while dropout rates decreased slightly from 35 to 33% during the same period (Kabir, 2018).

According to Sanousi (2019), Ahmed (2004)'s studies attest to the feeding programme having a positive impact in Bangladesh. According to the study, 1 648 Grade 5 students from the treatment group were tested to determine the effect of school meals on academic performance. Because the learners had not completed Grade 5 at the time of the study, they were all tested using the Grade 4 test. The exam consisted of three sections: English, Bengali, and Arithmetic. According to the survey, total test scores improved by 15.7% in the treatment group, with Arithmetic improving by 28.5%, English improving by 22.2%, and Bengali scores improving but statistically and not significantly.

Another component that affects the future well-being and the performance of the learners at school is the background of the children and their parents, particularly the mothers (Fahim *et al.*, 2021). The occurrence of underweight learners and wasting is still high among the children from the families with less education and in the poorest wealth quintile. Maternal nutritional status, body composition before conception, complications during pregnancy, food habits, foetal growth during pregnancy, and pregnancy weight gain are significant predictors of Low Birth Weight (LBW) and malnutrition during the early years in Bangladesh. With this background, the school feeding programme thus comes in handy. The initiative or intervention was required to reduce the short-term hunger of children from low-income families. It had to improve the nutrition status even more by including relevant ingredients in the meals for the learners' well-being. As a result, these children's energy levels increased and became better learners.

It was noticed through interactions with parents and teachers that the likelihood of disease has decreased since the school meal initiative began. The students eat healthy meals regularly and with discipline. Furthermore, the parents investigated the effect of the school meal initiative on the children. It demonstrates that both parents and teachers agree that the school meal initiative had a positive effect on increasing children's school attendance as well as regular attendance. School attendance increased to 80% in 2016 from 56% in 2013. Student enrolments have also increased over time. The students were more attracted to the different Khuchuri meals and expressed their happiness (Kabir & Islam, 2018).

The feeding programme, though it was assumed to be a pilot project, is continuing through a partnership of the government with the other organisations. The government must eventually take over and make the programme permanent. This will only be possible if the necessary resources are made available. As long as there are still poor communities, the programme will be in demand.

### **1.13.2 Kenya**

In 1966 the government of Kenya, through the Ministry of Education, established the national school feeding programme to implement the school feeding programme. Through the school feeding

programme, the school children received a supplementary mid-day meal for the boarding primary schools. The aim was to present children with an opportunity to attend school regularly. Through the years, different interventions continued in parts of Kenya. The vulnerable children in underprivileged communities were given the priority to curb disparity. The mobile schools were introduced for pastoral communities so that the children could attend while grazing fields. The success of the school feeding programme varied, and the retention as expected was not a success. The Kenya Cooperative Creameries, which supplied milk, collapsed in 1979 due to the cost of milk and due to the lack of funds. This adversely affected the school feeding programme as the milk came twice on Mondays and Fridays (Katumbi, 2018). More intervention was necessary to put the programme on sound footing. The government of Kenya could not run the programme alone without external assistance.

The Kenyan Ministry of Education has partnered with the WFP to implement school feeding in Kenya since 1980. In Kenya, education is challenging due to extreme poverty and nomadic livelihood patterns. School feeding improves free primary education by offering a meal at school to children whose household cannot afford plenty food.. As a result, the children need not miss attending school instead of searching for food. As a result, school feeding programme encourage more disadvantaged girls to attend school. However, gender ratios in all schools remain below parity (Buhl, 2010). Thus, if not for the contribution of the school feeding programme, the balance could have been much lower.

In addition, Jamison (2006) argues that the food for education can lower short-term hunger and the deficiency of micronutrients that will boost the working of the mind and prevent infections. Erukudi and Edabu (2020) affirm that the school children are exposed to short term hunger, particularly where there is the consumption of poor-quality diets. In the countenance of poor diets, food diversification is employed. It is meant to enhance dietary responsibility, routine access and the intake of vitamins and minerals that are rich in risk micro-deficient groups. The diversification of food focuses on the dietary behaviour of the groups. On the one hand, food modification is utilised to increase the amount of food in the diet or bioavailability (WFP, 2013; Bekidusa, 2020). The distribution of the amount of food in Kenya differed. In certain cases, there was no uniformity in the distribution of food.

Food distribution is according to the number of students in a school. The schools with great student numbers receive a large amount of food. The food is distributed to schools at the beginning of every school term. During the short break time, the pupils are offered a small quantity of food, such as porridge and snacks. During lunch break, the pupils are offered large quantities of food until the end of the school day. Similar quantities of food are offered to the learners equally without discrimination. As indicated above, the pre-schools in Turkana Central Sub County are a good example of schools where pupils received food (Erukudi & Edabu, 2020). Buhl (2010), on the other hand, claims that the energy and

nutritional content of the meals offered to the beneficiary children varied in the elite schools. Because there were no established well-defined guidelines, the prescribed daily intake levels of specific nutrients were not followed. Children in WFP-assisted schools, on the other hand, receive a daily meal mixed with oil and salt that contains 703.25 calories, 13.5 grams of protein, and 5 grams of fat, which is a necessary macronutrient for growth.) The globally accepted standards are recommended for daily intake to measure individual and population deficiencies. The absence of nationally established nutrition guidelines for school feeding programme resulted in variations in programme implementation in schools. The nutritional and energy content of the meals offered to the beneficiary children varied.

The school feeding programme in Kenya had differing degrees of success as the implementation was also not uniform. In the WFP-assisted schools, the implementation was consistent, and it followed the globally required standards. Though there was a lack of clear guidelines, the school feeding programme impacted the school learner turnout, the learning, and the nutritional status of children (WFP, 2020).

The National School Feeding Council of Kenya's school feeding programme improved the nutritional status of the partaking children (Meme *et al.*, 1998). The factors such as nutritious meals and the quality of milk affect the pupils' retention. The nutritious meals encourage the enrolment of more pupils in schools significantly in the lower classes, and it influences the age entry of the pupils to enhance enrolment in the primary schools (Bakidisa, 2020). Reuben (2017) attests that according to the pupils and the teachers, the termination of the school feeding programme by the WFP affected the turnout rates. A total of 9% of the pupils concurred that the ending of the school feeding programme reduced the turnout rates, while 10% indicated that the school feeding programme did not affect the learners' turnout rates. Moreover, 85.7% (30) of the teachers opined that the termination of the school feeding programme reduced the attendance rates, while 14.3% (5) had a central view that the school feeding programme did not affect the attendance rates. In addition, a head teacher at the school showed that since the introduction of the school feeding programme in 2009, there was a growth in the number of pupils going to schools as the meals lured most pupils to schools. Kilu and Mugambi (2019) infer that the provision of food in school significantly affects child retention. Therefore, the school's feeding programmes help to retain the pupils, thus reducing the dropout rates and absenteeism. The availability of food enhances enrolment and attendance remarkably. The parents are keener to offer their children for schooling if they know that they will get a solid meal. As a result, the children can concentrate on their lessons and not worry about food (Bekidusa, 2020).

The school feeding programme in Kenya had its challenges, such as the termination of the milk feeding scheme due to a lack of funds. The enrolment and the attendance were adversely affected by dropouts as the number school going children decreased. The success of the school feeding programme differed from county to county due to the absence of clear procedures in Kenya. The contribution of the WFP is

significant in the sustenance of the programme and its correct rationing of food to children in line with the global nutritional guidelines. The government of Kenya could not have succeeded without the donors and external aid. The SFP remains a pillar for the well-being of the children, which will be the whole country's well-being in the future.

### **1.13.3 Ghana**

In Ghana, school feeding began in 2005. It was carried out as part of the Ghana School Feeding Programme (GSFP), which aimed to reduce poverty and increase food security in Ghana (Ghana School Feeding Programme, 2010). The Ghana feeding scheme has three goals: to reduce hunger and malnutrition by providing nutritious meals to kindergarten and primary school students every day of the school year. The goal is to grow school enrolment, attendance, and retention while also encouraging national food production by purchasing meals locally. The GSFP's goals, which include poverty, hunger, and primary education, are also considered Millennium Development Goals by the UN. The GSFP is the offspring of Ghana's government and the Dutch government (Ghana School Feeding Programme, 2010; Tshisakawe, 2017). The Government of Ghana, as in the case of Kenya, did not have enough resources to run the SFP. As a result, there are two feeding schemes in Ghana; GSFP and the Non-Government School Feeding Programme (NGSFP).

The GSFP was developed as part of the New Partnership For Africa, which embraced the 'Home Grown' School Feeding Programme concept. The GSFP's aim was to produce food locally to feed the children and reduce hunger and malnutrition by offering hot meals to primary school and kindergarten students (Owusu *et al.*, 2017). Gelli *et al.*, (2016) confirm the GSFP's two-pronged nature. Some schools received direct GSFP benefits, while others were used to test the home-grown school feeding programme. The home-grown school feeding programmes are complicated interventions. Thus, a raised need for school feeding produces and services to community-based stakeholders, including smallholder farmers and women's groups can be linked. In the same vein, the strategy helped to alleviate short term hunger and to enhance food production and security.

The GSFP was adversely affected when the economy collapsed in 2012. Ghana requested a bailout from the International Monetary Fund (IMF) financial aid. This resulted in the government introducing fiscal austerity measures in 2015 to conform to the IMF conditions (Mohammed, 2022). The economic distress also affected the service providers of the GSFP. The service providers had to use their discretion and autonomy to cope with their financial challenges. The quality of the meals that were offered to the pupils was compromised due to the joint discretionary authority. The service providers thus knowingly tempered the quality of the meals by taking away critical ingredients and instead cooking other cheap meals (Mohammed, 2021).

Service providers resorted to surviving strategies to undermine the intent and the public goal to provide services equally to the beneficiaries and at pre-set standards. The unauthorised surviving strategies further eroded the broad objectives of the GSFP of increasing school enrolment and reducing children's hunger and malnutrition. Food was provided on all the school days besides Fridays. Friday was left out to the choice of the service providers. The non-delivery of food and the poor ingredients made the GSFP unattractive to the children (Mohammed, 2021).

According to Owusu et al. (2016), the GSFP did not meet any of the World Health Organisation (WHO) or FAO energy or macronutrient requirements. Bigson *et al.*, (2019) confirm that the nutrient quantity of school meals in 20 GSFP schools (12 in Wa and 3 in Cape Coast municipalities) did not meet pre-set standards. The nutritional quality of meals in both municipal schools did not meet FAO/WHO (2004) nutrient recommendations. (Tette and Enos, 2020). Unlike the GSFP, the NGSFP was better organised, and it followed the nutritional guidelines of the WFP.

There was no fixed menu for the NGSFP. The menu was prepared each week while considering the seasonal availability of the food. In the NGSFP, the meals that were offered to the children met the recommendations of the energy levels of the WFP. The meals were typical of the school feeding meals in Ghana. A carbohydrate portion which was either yam, rice, cassava, or a corn-based meal of a stew with vegetables and a protein source, was served in the schools (Awusu *et al.*, 2016: 6).

The micronutrient quantity of the NGSFP and the GSFP were insignificant. It was unexpected, given the huge variance in portion size offered by the two programmes. The differences in micronutrients may be explained by similar mean dietary diversity scores (3.2 0.4) and food groups. To lower malnutrition among schoolchildren, the WFP that school meals should comprise of at least four food groups or multi-fortified foods (WFP, 2013). Despite the insignificant differences in micronutrient content between these meals, the iron and zinc quantities were almost within recommended limits (Parish and Gelli, 2013). The calcium and vitamin A quantities were lower than the minimum requirement of 30% for all the school feeding programmes. Vitamin A and iron quantities are very low in the school feeding meals in Ghana.

Similarly, micronutrients such as vitamin C, iron, zinc, and calcium account for less than 30% of children's nutrient requirements in Nigeria's Osun state. Despite limited resources, the GSFP is trying hard to reach the nutritional needs of schoolchildren. However, there is still room for improvement regarding both macronutrients and micronutrients provided to children to confirm sufficiency (Owusu *et al.*, 2016).

The study has looked into the school feeding programmes of other countries, Bangladesh, Kenya, and Ghana. The school feeding schemes have been explored concerning the quality, the set standards, the nutritional value, and the value of the children's education. So, it is evident that the degree of success differed from country to country. In these countries, the school feeding programme also differed from area to area. Though different challenges existed, the school feeding programme impacted the lives of the children and their education. The countries could not run the programmes as expected as they did not have the resources. These countries rely on external aid; amongst others, the WFP featured prominently in partnership with the nations. The school feeding Programme in South Africa remains the main focal area of this study.

#### **1.14 Global and constitutional obligations of South Africa**

South Africa, as part of the global world, was also affected; thus, it had to customise its programmes in line with the global goals. As a result, the SDGs present an opportunity for exploiting the many benefits of a worldwide agenda and the partnerships to propel proper development through the equitable and sustainable utilisation of the country's resources. It is also imperative for South Africa to employ the lessons learned from the MDGs and integrate them into the national and global agenda to reduce the levels of poverty and inequality (Statistics SA, 2015). The endorsement of the will of South Africa to conform to the global standards for the reduction of hunger and the well-being of the children was confirmed through the signing of treaties and the implementation of the school feeding programme.

According to Esakov and Vally (2010), South Africa has also signed international human rights treaties such as the African Charter on the Rights and Welfare of the Child and the United Nations Convention on the Rights of the Child, committing the state to ensure that children receive adequate nutrition. South Africa is required by law to ensure that every child in the country receives sufficient nutrition as well as the right to quality education:

- South Africa's Constitution- Bill of Rights: Section 27(1)(b) — Everyone "has the right to adequate food and water."
- South Africa's Constitution- Bill of Rights: Section 28(1)(c) — "Every child has the right to basic nutrition."
- South Africa's Constitution- Bill of Rights: Section 29 (1)(a) — Everyone "has the right to a basic education."

Ramkissoo (2018) affirms that in South Africa, Section 27(1)(b) of the Constitution declares that 'everyone has the right to have access to sufficient food and water. Section 27(2) clarifies the onus on the state, which indicates that 'the state must take reasonable legislative and other measures, within its

available resources, to achieve the progressive realisation of these rights. Section 28(1) (c) expands the right to food as a right to essential nutrition for children.

### **1.15 Background of the NSNP in South Africa**

The South African Primary School Nutrition Programme (PSNP) was announced in May 1994, followed by its first implementation in September 1994. The programme focused on dual developmental objectives, improving the South African children's health and the educational outcomes. It was elucidated as a component of the Integrated Nutritional Programme and, as a result, it was further clarified under the purview of the National Reconstruction and Development Programme (RDP) (Labadarios *et al.*, 2008).

The Department of Health (DoH) was in charge of overseeing the programme's administration, which included developing nutritional targeting guidelines and communicating them to provincial governments (Kallman, 2005). The provincial departments were in charge of the procurement systems and specific menu options (Meaker, 2008). The first format of the policy was prompted by information indicating widespread malnutrition among South African children, revealing the nature and scale of the gap in providing fundamental human rights (Montgomery, 2012). The PSNP was renamed the NSNP in April 2004, and the DoE took over the management of the programme. This change moved the attention from the PSNP's broad objectives, which included enhancing micronutrient effects and parasite control, to a policy aimed squarely at enhancing educational outcomes through protein-energy based nutritional interventions. As a result, onwards the name NSNP became synonymous with school meals.

### **1.16 The National School Nutrition Programme**

The NSNP was introduced in 1994 as one of the presidential lead projects of the reconstruction and development programme. The NSNP was introduced as a strategy for feeding the needy learners in the schools, thereby enhancing education through the curriculum, and improving nutritional knowledge, perceptions, attitudes, and healthy eating amongst the learners, as well as their parents and educators, with the sole aim of alleviating short-term poverty, (Tshisikhawe, 2017; Nomakhushe, 2018).

There are various aspects of the NSNP, as stated above; therefore, this study undertook to focus on the effect of the NSNP in alleviating the hunger of the school learners within the schools of the Tzaneen Circuit in the Mopani West District.

#### **1.16.1 Objectives of the NSNP**

The primary objective of the NSNP is to provide nutritious meals to the targeted students in the hopes of increasing school attendance and active learning competence. The NSNP is divided into three

thematic areas: daily meal provision, nutrition education, and sustainable food production in schools. The programme is an educational and poverty-reduction initiative with the following primary objectives (Rendall-Mkosi, Wenhold and Sibanda, 2013):

The key objectives of the NSNP are as follows:

- To offer better learning competence through school meals;
- To bolster nutrition education in schools;
- To stimulate viable food production initiatives (Department of Education, 2010);
- Creating partnerships to improve the programme (DBE, 2011).

For a programme to succeed, partnerships are very imperative. One such partnership is between the DBE and the DAFF for the Zero Hunger initiative in line with SDG 2 through the NSNP. Rendall-Mkosi *et al.* (2017) highlight that the DBE partnership with other departments is crucial in ending hunger. The DAFF has the Zero Hunger Programme, a Brazilian system model aimed at improving the food production capacity of households and under-resourced farmers to improve citizens' nutritional security and operationalise the Integrated Food Security Strategy (IFSS).

The Zero-Hunger framework's strategic objectives are outlined as follows (Rendall-Mkosi *et al.*, 2017):

- Ensure food access for the poor and vulnerable members of society;
- Advance food production capacity of households and poor resource farmers;
- Improve citizens' nutrition security;
- Foster market networks through vast government procurement of food connected to the budding agricultural sector; and
- Promote partnerships with relevant stakeholders within the food supply chain.

The Zero Hunger Programme utilises short-term feedback to emergency situations with medium and long-term feedback to assist generate conditions for people to advance their food security. The institutions such as hospitals and schools are better placed to buy food products from the small-scale farmers. As a result of this initiative, the NSNP thus is a benefactor of this partnership in ending hunger.

### **1.17 NSNP funding**

The NSNP's success is dependent on the availability of resources. In this regard, the availability of funds is critical. According to Nhlapo (2013), the NSNP is funded through a provisional grant transferred to provinces per the Division of Revenue Act (DoRA) and DBE directives. The DBE

coordinates and oversees the programme, ensuring compliance with policies and relevant legislation. The goods and services are thus procured by the Provincial Education Department while ensuring compliance with the grant framework. The schools are categorised according to the quintiles. These are schools in poor communities that qualify for the programme. The DBE ranks the schools based on socio-economic circumstances, such as the inequality and poverty of the learners and the schools. The targeted schools are those that are in quintiles 1 to 3. Quintiles 1 and 2, which are the lowest ranks, receive more funding per norms and standards. The programme needs proper management to realise its aims and objectives to benefit the learners.

A conditional grant is allocated to the Provincial Education Departments (PEDs) in accordance with the DoRA. The grant is conditional, and rules such as the submission of approved business plans and the minimum feeding requirements as outlined below (National Treasury, 2015) must be followed.

- Provision of nutritious meals to all learners in quintile 1-3 primary and secondary schools, as well as identified special schools, on all school days;
- Average cost per meal per learner per day (inclusive of cooking fuel and honorarium) of o R 2. 85 for primary and identified special schools and o R 3. 60 for secondary schools;
- Adherence to approved food specifications and an approved menu of meals containing starch, protein, and fresh vegetables/fruit.

The PEDs are responsible for developing a feeding calendar for the funding period outlining the feeding days, the school holidays, and the public holidays. In addition, the actual feeding plans need to follow the business plans of each province, and the days can be adapted subject to the budgets or the number of children who qualify for feeding (National Treasury, 2015). For the PEDs to receive funds, they must submit a draft business plan to the NSNP Directorate for comment. The Directorate returns the comments to the provinces which in turn re-submit their plans timeously for approval by the Director General. The budget allocations are defined in the Conditional Grand Fund (CGF) in line with the following values (National Treasury, 2015):

- School feeding and the purchase of cooking utensils should consume at least 96% of the budget;
- Administration should consume at most 3.5%;
- Deworming should consume at most 0.5%. Volunteer Food Handlers (VFHs) should be paid R960 per month as an honorarium.

Besides the above stated costs, there are other costs that are related to the programme which the CGF does not cover. Among other things, funds are not offered for the personnel needed to manage and implement the programme; additionally, the personnel needs vary significantly across the provinces.

Poswell and Leibbrandt (2006), content that the NSNP should be costed in each province, hereby embracing “management (national and provincial spheres); food acquisition (different menu options); food processing (preparation and cooking); distribution (a number of alternatives that are currently being used); oversight of funds expenditure and food quality”. (DME, 2016: 15). With the provision of the fund in place, there are still processes that have been undertaken for the school feeding programme implementation. For the provision of the meals to the school learners, procurement is one of the most important processes to be mindful of.

### **i) Procurement models in South Africa**

The NSNP has two implementation models which are centralised and decentralised models. The two models were implemented by various provinces with the goal of providing nutritious meals to learners. The model is a mode for the procuring of food.

### **ii) The centralised and the decentralised procurement model in South Africa**

The Provincial Education Department (PED) appoints service providers for the entire province in the centralised model. To procure and deliver food to schools, service providers enter into service-level agreements with the PED (DPME/DBE, 2016).

Bundy *et al.*, (2016) indicate that, in the centralised model, funds are accounted for at the provincial level. The funds from the Feed Uplift Educate Love (FUEL) and the Provincial Education Departments are deposited directly into the school account. The tendering system uses a point system to score the bids. In terms of race, gender, and disability, the system favours historically disadvantaged people (Rendall-Mkosi *et al.*, 2013 as cited in Mafugu, 2018). In the Gauteng province, for example, a centralized procurement model is used to procure food items, with contracts advertised in the National Gazette and awarded with the support of the Gauteng Department of Finance (DBE, NSNP Annual Report, 2013/2014).

Some provinces use a decentralised model in which the funds are assigned to the schools to procure the food items in line with the provincial menu (Mumba & Kesa, 2020). In the decentralised model, the schools appoint local service providers, who may be the women's own Small Medium Micro Enterprises (SMMEs), to procure and deliver food and utensils to schools. Thus, in the two models, the payment of funds, contracting of service providers and the procurement of goods and services are different (DPME/DBE 2016).

Furthermore, Devereux *et al.* (2018) state that in the decentralised procurement model, the bulk of the food for school meals, particularly starches and proteins, is purchased by schools from local branches of large national supermarkets. Farmers provide small quantities of vegetables and fruits.

The Eastern Cape, the Free State, the Northern Cape, and the North West all use a decentralised procurement system. The provincial office deposits funds into the schools' accounts to pay for gas and stipends for volunteer food handlers. Mafugu (2018) agrees with Rendall-Mkosi *et al.* (2013) that a school must have "Section 21" status under the Schools Act of 1996 to receive procurement funding.

### **1.18 Role of stakeholders**

The Public Service Commission (2008) states that active community involvement is essential for the success of the NSNP. The teachers, the parents and the learners are important stakeholders within the school community (Qila & Tyilo, 2014).

#### **1.18.1 NSNP officers**

The deficiency of high nutritional food value is one of the several aspects that affect the general well-being of the primary school children. The National School Nutrition Programme (NSNP) was launched to assist in offering suitable nutrition and in advancing the children's wellbeing (DoBE, 2014; Gresse, Nomvete and Walter, 2017). Personnel such as the NSNP officers are tasked to ensure the well-being of the learners through carrying out their NSNP bound duties.

Officers of the NSNP act as liaisons between the schools and the suppliers. They train food handlers and staff development instructors on NSNP-related topics. The NSNP officers also guarantee that the schools receive the menus for the various meal periods. In addition, they assist with awarding contracts, administering funds, and coordinating with other agencies, such as the agricultural department, to develop school gardens. The NSNP officers oversee the schools by visiting them. The review of the school's records revealed that the NSNP monitored the implementation of the programme and included their results. The monitoring reflected, among other things, an emphasis on the files for records of what was occurring in the kitchens, the kind of food prepared, the quantity, and the nutrients. In addition, health and safety concerns are evaluated, including the presence and condition of a garden. The primary objective was to make school gardens available for domestic consumption of agricultural and other locally produced food items (Tshisikhawe, 2017).

The district offices should, among other things, follow the implementation guidelines (DoE, 2004).

- Provide school training;
- Maintain regular contact with schools; and

- Produce monthly NSNP reports.

Similarly, districts should visit five schools each day and call every other school in the district to monitor the state of feeding. The District should also 'collect' monthly monitoring reports from the schools that show the number of students fed in each school daily (Paulus, 2013).

According to Rendal-Mkosi *et al.* (2013), the District NSNP staff is assigned to visit and monitor the schools. Owing to a large number of schools in each district, the frequency may be limited to once per year per school. In the Eastern Cape, for example, a lack of transportation for monitors to travel to schools may be an issue. The principals reported that district staff visited more frequently than provincial staff and that these visits were not regularly. As a result, proper implementation was not guaranteed in some cases because monitoring could not reach all of the schools. Another critical aspect was the training of NSNP personnel.

According to Mafugu and Maphosa (2018), departmental officials agreed with one of the suppliers that training is conducted every three months in accordance with the policy. However, district nutrition officials stated that training was not carried out as planned. In September 2017, a district official demonstrated the significance of Feed, Educate, Uplift, and Lead (FUEL). FUEL, a non-governmental organization, collaborates with the NSNP to improve monitoring. According to the official, FUEL conducts regular training. The NSNP officials train the food handlers. The food handlers change yearly as they enter into a one-year contract with the DoE. As a result, the workshops are very crucial. The teacher coordinators are trained using policy documents. It was also revealed that training did not occur quarterly as expected.

On the one hand, the officers could not visit schools as expected every quarter due to transport challenges. Besides the provincial level, the NSNP officers are placed at circuit and at district levels in a province such as Limpopo. They are thus responsible for their level of jurisdiction in ensuring the proper implementation of the NSNP. The collaboration between the districts, the circuits and the schools is indispensable for the success of the NSNP. The schools are at the last most crucial implementation level of the NSNP in alleviating short-term hunger and ensuring balanced meals for the school learners. The schools that are well led by their principals should be seen as safe guarding the well-being of the school learners through the NSNP.

### **1.18.2 Principals**

The principals are the accounting officers who ensure that the program's books are balanced and that the activities are conducted following the policy. Their duties include accounting for the use of government grant funds and enforcing school-based regulations. They ascertain that meals are served

according to the daily plans, that all students are served, and that they receive food deliveries during the school holidays. Tshisikhawe (2017).

Tshisikhawe (2017) adds that as the overseer, the principal is permitted to taste the food. The principal should continuously motivate food handlers to prepare meals properly and may advise them on deviations. The principal must remind the teachers of their responsibility to assist the students during feeding times, and they must monitor the completion of this exercise. The principals must detect signs of problems and immediately report them to the circuit managers or the NSNP officer. Moreover, the principal should ensure that the class teachers properly monitor the feeding to ensure that the learners are fed and adhere to the time schedules. They must accurately mark the daily feeding registers and collaborate with the food handlers to ensure that they perform their duties as needed to assist them in making an accurate measurement. At the schools affected by the NSNP, the principal is responsible for the programme's success. (Tshisikawe, 2017). The principals play a key role in ensuring the success of the NSNP. Once principals are effective managers, hunger relief, proper nutrition standards, and the value of the NSNP to teaching and learning can be realized. As a result, a well-managed environment will ensure the learners' holistic well-being at a school.

Mawela and Van den Berg (2018) point out that the principals were clear about their roles and responsibilities concerning the NSNP. The school principals mainly mentioned the whole management of the programme, including the controlling of the coordinators and food handlers among other things. A different principal mentioned their roles as implementing the NSNP, ensuring that the school governing body appoints the food handlers for the learners' preparation of food. At the school, a nutrition coordinator supervises the food handlers, places orders, checks food quality and shortages, ensures food security, and ensures that every learner, particularly the needy learners, get food daily. Above all, one principal stated that the principals need to follow NSNP policy when overseeing the nutrition programme.

Other roles are not specified in addition to the ones specified in the guidelines. Mawela and Van den Berg (2018) attest that one of the principals believes that there are various roles that the principal would like to fulfil but cannot do so due to time constraints. For example, engaging learners in discussions about food allergies because the menu does not accommodate or address such issues. One can conclude that some principals may go above and beyond what is specified in the policy. They believe that the learners are best served by the NSNP, no matter what it takes. The learners' well-being is thus promoted in this regard.

Rehle, Mushaphi and Mabapa (2010) confirm that the role of upholding the learner's well-being appears to rest incredibly with schools. As a result, the well-being of the learners plays a part in the child's

education, and those psychological and physical healths are the right critical necessities. The essential needs are vital in those schools that are located in the poorest communities. There are close links between well-being, health, and education. The principals in these schools are responsible for ensuring the learners' well-being through the NSNP. Similarly, no wonder the cohort of the principals are urged to manage the programme to its zenith/culminating point as they clearly understand the role of the NSNP broadly.

### **1.18.3 The nutrition coordinator**

The NSNP school coordinator is an administrator in charge of the NSNP's operations. The NSNP school coordinator is in charge of the programme's day-to-day operations. These activities include receiving and recording stock, keeping an up-to-date record of all invoices, meals served, and the number of learners fed daily. All critical training workshops must be attended (DoE, 2009). The nutrition coordinator is a full-time teacher that is appointed by the principal and supports the principal's role.

The nutrition coordinator ensures that food handlers follow the NSNP menu and manages the feeding of indigent learners. The coordinator also ensures that the food is stored safely and that food parcels are distributed to underprivileged students (Mawela & Van den Berg, 2018; PSC, 2008; DoE, 2009; Qila & Tyilo, 2014). Many school principals and nutrition coordinators are affected by the dearth of a clear plan for managing nutrition programmes. The teachers believe that administering the school nutrition programme while also teaching is overwhelming and hinder their schoolwork progress (Mawela & Van den Berg, 2018).

Despite their training, the teacher coordinators had conflicting feelings about their knowledge, according to Mafugu and Maphosa (2018). Some of the trained teacher coordinators stated that they lacked knowledge. It was clear when their knowledge of monitoring the programme was rated on a three-point scale of reasonable, adequate, and poor. One teacher coordinator had a below average knowledge rating. According to one indication, there is a need for additional training on how to examine the food for quantities and other expectations.

Mawela and Van den Berg (2018) attribute the coordinators' lack of commitment to a lack of adequate knowledge. A principal expressed concern about the appointed nutrition coordinator's lack of commitment, citing the program's status as unpaid extra work. Another coordinator agreed, stating that completing the syllabus, supervising food handlers, and ensuring healthy meals for the learners is challenging. Thus, covering the curriculum and teaching learners is regarded as their utmost central task at school. On the one hand, some nutrition coordinators frequently left their classes unattended in to ensure the availability of the food and observe in what way the food handlers prepared meals.

Mawela and Van den Berg (2018) agree on the nutrition coordinators' responsibilities. The majority of nutrition coordinators were clearly altering teaching and nutrition coordination. During the interaction with the nutrition coordinators, it was also expressed that the load on a nutrition coordinator require a full-time person because there is a lot that is overlooked concerning compliance to the NSNP menu by food handlers and ensuring that all learners eat daily.

#### **1.18.4 Volunteer food handlers**

The food handlers employed in the schools receiving the NSNP from the two districts were the research target population in their study, which was conducted in the Vhembe and Mopani Districts. According to Ramugondo, Mushaphi, and Mabapa (2021), food handlers are entrusted with the preparation of meals for schoolchildren and averting of food-borne diseases in schools by following food safety guidelines. According to the WHO (2013), food handlers have a vital role in food safety and hygiene regulations. Similarly, Rahman (2012) asserts that a lack of adequate food safety knowledge among school feeding food handlers and tuck shop food handlers could result in a severe outbreak of the food-borne disease in the schools.

As a result, the SGB should assist schools in identifying suitable unemployed community members to serve as Volunteer Food Handlers (VFH). The VFHs will be in charge of preparing and serving meals as well as documenting the process (PSC, 2008; DoE, 2009; Nhlapo (2013) agrees with Ramugondo *et al.*, (2021) that foodstuffs should be handled in a way that preserves the safety and nutritional quality of the foods.

Food handlers must ensure that meals are prepared in full compliance with the day's menu. They must begin with their duty early to let learners to eat on time and prevent the feeding process from interfering with teaching and learning. Food handlers must clean, wash their utensils, keep the cooking area neat, and join workshops organised for them. Food handlers should also ensure that the students practise hygienic practices by washing their hands before and after meals and using clean plates. Paper used to serve food should be avoided at all costs. Food handlers must be well-organized and orderly during meal times for the process to run smoothly (Tshisikhawe, 2017). Food handlers must first be trained to do their jobs properly.

In their study, Sibanyoni, Tshabalala, and Tabit (2017) revealed that approximately 91.4% of the NSNP food preparation areas/facilities did not have basic Hazard Analysis and Critical Points (HACCP), and 93.2% of the food handlers did not know HACCP. Furthermore, 60% of food handlers had not received food safety training, particularly on sanitising utensils and washing cutting surfaces/boards after handling raw meat. Before being assigned to handle food, food handlers must be trained in areas such

as personal hygiene, storage, chemical storage, pest control, equipment, cleaning procedures, and food safety procedures (Monala, 2018).

Although the food handlers were paid a stipend, many participants felt it was insufficient. "I don't think food handlers are happy about the stipend," one of the participants said. It is insufficient because it is less than R1 100. Yes, they prepare one meal per day, but R1100 for 21 days is insufficient. It makes perfect sense to me. "At least R 1600 to R 1800 would be preferable." Another participant contended that the stipend for food handlers was adequate given that they only prepared one meal and that the payment complied with the policy (Mafugu, 2018).

The food handlers were not trained, according to Langsford (2012). According to the in-depth interviews, some food handlers were unaware of the quantities of food items to cook for a specific number of learners, despite the fact that the quantities to prepare for each food item per learner per day were indicated on the menu. The district office provided the menu quantity schedule to the schools. The food handlers' low literacy level was a major concern because they couldn't understand the menu, which specified the quantities for each food item to be prepared per learner per day to determine the quantities required by the school. However, if they had shared their lack of insight of the quantities, the teacher coordinators or principals could have assisted them. It was also discovered that 213 food handlers had not been exposed to the Mnandi 4 sure recipe book, which showed the quantities of food, the items to be prepared for a specific number of learners, as well as how to prepare food such as soya mince, with which they were unfamiliar (Department of Basic Education, 2016). Similarly, Mafugu (2018) and Quila and Tyilo (2014) agree that the National School Nutrition Programme stakeholders in South Africa were untrained and struggled to carry out their responsibilities.

In contrast, the Department of Basic Education (2009) claims that, despite being workshopped in hygiene, food handlers found it hard to uphold hygiene because they were inadequately supported. On the one hand, most food handlers lacked uniforms and muslin caps, in contrast to Rendall-Mkosi *et al.* (2013) studies in the Eastern Cape and Mpumalanga, where all food handlers wore uniforms. All food handlers must wear uniforms to help improve hygiene. Furthermore, safety standards were not followed because some schools' gas tanks and gas stoves were in the same room and were not maintained, which was the same as the observations made by Rendall-Mkosi *et al.*, (2013); Langsford (2013). This violated the NSNP's gas safety guidelines, which state that gas cylinders must be stored outside the kitchen in a locked steel cage. Adhering to the guidelines was critical to avoid gas leakages, fires, explosions, and carbon monoxide poisoning (Department of Basic Education, 2016). Mafugu and Maphosa (2018) agree with the compromise of the NSNP guidelines and the apparent dangers associated with them in terms of hygiene and other gas risks.

A lack of knowledge and support from the relevant stakeholders to support food handlers, severely hampered the NSNP's implementation. Aside from the threat of disease outbreaks caused by negligence, a disaster in the form of air pollution and gas explosions loomed. It is thus by chance that no incidents occurred in the aforementioned environments.

### **1.19 Background and the nutritional status of the learners**

Different factors affect the general well-being of primary school children, of which the lack of foods of high nutritional value from the National School Nutrition Programme (NSNP) was established to assist in providing proper nutrition and in improving the children's well-being (DoBE, 2014) as cited in Gresse, Nomvete & Walter, 2017).

It seems that the children's background and nutrition status are closely related. Therefore, the intervention of programmes, such as the NSNP, is crucial to bolster the nutrition status of such children. The Department of Basic Education (2011) points out that the enormous contributions of the people concerning the first draft of the 2010 Action Plan depend on the strategies that the schools can embrace to enhance the well-being of the learners. The concept of well-being, ideally, should be linked with aspects of belonging to some space, either to a community or a country.

Accordingly, policymakers use the school feeding programme strategies to distribute food to children from food insecure households (Buhl, 2010). The most undernourished children are reported to be from the rural and the peri-urban areas with caregivers who lack strong educational backgrounds and the children who are from the low-income households with poor living conditions (Iversen *et al.*, 2011). These reports co-occur with common micro-nutrient deficiencies, such as iron, vitamin A, and zinc deficiencies (Maunder *et al.*, 2015). Furthermore, (Naicker, Mathee and Teare, 2015) maintains that the children from the insecure households consume more affordable meals which are high in carbohydrates such as bread, maize meal, samp as well as fewer fruits and vegetables. Thus, the school feeding programmes contribute to the significant recommended nutritional support that increases the nutrient intake of primary school children (Gresse *et al.*, 2017; Monala, 2018).

In addition, a more concerning finding is the high number of underweight school children on the school feeding programmes compared with the schools where the children did not have school feeding programmes. The children in the feeding programmes are expected to receive additional food meant to enhance their nutrition. This result certifies the results of a study in which the food offered through the school feeding programme did not satisfy the approved energy from the macronutrient intake as set by the World Food Programme. This could be due to a high level of poverty in the communities that were chosen for the feeding programme, as one of the aims of the feeding programme was to target communities that had inadequate means to offer for their school age children (Vohra *et al.*, 2011). In

contrast to the notion of the poor background, the children from the impoverished backgrounds were not doing well in terms of balanced nutrition and their appearance. The study also found some learners who were overweight and obese who came from well off and higher socioeconomic groups or families. The children from the well-off homes may have more fat and protein components in their diet while neglecting physical activity. Too much consumption of calories from the carbohydrate intake by these children could contribute to their overweight status. As a result, their energy intake is more than the recommended energy, hence the addition of fat (Vohra *et al.*, 2011).

In other cases, the children of parents who are not at work daily were found to be well-fed as opposed to those with parents who are away due to work commitments. The ones with children around closely took charge of feeding their children. On the one hand, the others were not receiving proper meals as the parents lack the time to feed them properly.

The background of the children before they enter school is also a precursor for their well-being when they enter schooling. Thus, universal food fortification ensures that the children enter school with an improved nutritional status. A longitudinal study of the South African pre-schoolers found that the learners' nutritional status affected schooling. The children of at least normal height happen to start school earlier, and they finish more grades, and repeat fewer grades. This relationship was particularly noticeable in girls. Upon entering school, the school feeding programmes may be viable means for distributing fortified food products in a quest to improve the micronutrient status of the schoolchildren (UNICEF, 2010; Buhl, 2010).

There is considerable evidence that investing in early nutrition has intense results for later development, early development, as well as school performance. Comparably, the preventable early deficiencies have long-term negative consequences. As a result, providing food to school-age children cannot reverse the damage of the early nutritional deficiencies. A school child who is short for their age was stunted by insufficient nutrition earlier, and an early nutrition intervention would have been necessary to address this. Although the most recent systematic review shows that offering meals at schools can have a noteworthy effect on the development of school children (Kristjansson *et al.*, 2007), the effect is small and possibly cannot reverse the consequences of the earlier malnutrition (Bundy *et al.*, 2009). In ensuring that the short-term hunger of the children is arrested at an early age, the serving of suitable meal quantities and portions need to be considered.

### **1.20 Meal quantities and serving portions**

The number of meals and the portions that are served to the children remain essential. Specific quantities are required; however, they must have relevant ingredients. Once the quantities are compromised, the required nutritional value would be affected.

The Recommended Daily Allowance (RDA) of the meals that are served by the NSNP are specifically designed to meet at least 25–30% of the RDA (DoBE, 2008). However, many schools in certain provinces only meet 15% of the recommended daily allowance, according to Kloka's (2009) study. The DBE (2011) shows that reaching the appropriate RDA relies entirely on the proper use of measuring utensils and the availability of ingredients during meal preparation. In the KwaZulu-Natal District Draft Policy (DoBE, 2011), the report points out at the immense distress and hardship to the school children in the KwaZulu-Natal rural and peri-urban areas, who are denied their right to get proper and recommended portion sizes. It was observed during the serving time that the portions get more minor as the queue for the school meals becomes longer, so the portions lessen to ensure that all the school children receive food (Monala, 2018).

The WFP (2010) attests that child nutrition can be enhanced by ensuring that the children are offered correct dietary nutrient ratios and that the portions that are suitable for the children are served accordingly. Therefore, it is imperative to establish and enforce the strict measures for the nutrient ratios and the proper portion sizes to improve the school feeding programmes in ascertaining the value of nutrient sufficiency (Galloway, 2010). According to the WFP (2010), the recommended rations for the primary school children should consist of 120g-150g of cereal, 30g-40g of pulses, 10g of fortified oil, 10g of iodised salt and, most importantly, the meals should be combined with micronutrient powders to ensure proper dietary intake results (Monala, 2018).

Nhlapo *et al.* (2015) point to ten schools in Bloemfontein that were randomly chosen, and their meals were examined for their nutritional content concerning the needs of the children aged 7-10 and 11-18 years. Nhlapo *et al.* (2015) further show that according to the September 2016 DPME/DBE Report on the evaluation of the national school nutrition Programme, the meals did not comply with the nutrient criteria for carbohydrates and for the energy contents for either age group. On the one hand, the Protein standards were met by 90% of meals for individuals aged 7–10 years but only 40% for those aged 11–18. Only 10% of meals met the standards for calcium and zinc, while 80% and 30% met the iron standards for those aged 7–10 years and 11–18 years, respectively. The lipid and the vitamin C contents were within standards (Nhlapo *et al.*, 2015). The analysis of the vitamin A and E content produced unnoticeable results for both. There was a high disparity in the nutrient content of the meals with the same ingredients, and this could be the result of prolonged storage periods or the exposure to light and oxygen, which led to the deterioration of the foodstuffs (DPME, 2016).

The quantity of the meal served needs to be equivalent to the recommended nutrients. Thus, serving a nutritious meal on time every day is the crucial output of the NSNP. Moreover, 96% of the conditional grant is devoted to school feeding. The nutritional value of the meals relies on the nutritional content of the prepared food and on the execution of the evaluation of the national school nutrition programme. In

addition, it depends on whether the right quantities of each food group are being prepared and served relative to the number of the learners who eat the meals (DPME/DBE, 2016).

The learners confirmed that they liked the food that was offered through the NSNP. In the Northern Cape, in particular, 64.2% of the learners stated that they liked the food, while only in Gauteng and the Eastern Cape, less than 50% of learners indicated that they enjoyed the food offered at the school. The other main reason the learners indicated for eating the NSNP meals was that they were hungry, thereby attesting to the value of the meal in alleviating hunger (DPME/DBE, 2016). The meals are meant to reduce hunger while providing nutritional value to the learners' holistic well-being. Thus, it is also essential that the quantity is adequate and tasteful for the learners to enjoy.

Similarly, some learners expressed satisfaction with the quantity of food. Regarding the quantity of food in some quarters, for most learners, the amount of food offered was reported to be sufficient. 62.8% of learners said they were satisfied after the NSNP meal they ate on the day of fieldwork. A total of 24.8% of the learners signalled that they still felt hungry after finishing their meals, a larger part came from the Eastern Cape (35.5%), the Free State (29.3%), and the least was from KwaZulu-Natal (26.3%). It was recorded during fieldwork that in some instances there were food ran out, thereby resulting in reduced portion size, with some learners not receiving all food groups, and some learners not receiving any meals (DPME, 2016).

In Gauteng, the NSNP has been mostly successful. The director asserts that the programme has reached most of the learners in the province (DBE, 2009). Gauteng is also distinctive since it is one of the only two provinces in the country that is providing two school meals daily. The specific situation results from the partnerships the department has developed with the corporates that sponsor one of the two meals, which is breakfast.

In their study, Mumba, and Kesa (2020) looked at food quantity from another angle which is the cause of food wastage. The focus was on the amount of food and the specific food items that were wasted according to the participants. The aim was to establish the comparisons with literature and to identify if the respective schools currently have a preventative waste management programme. Most participants indicated that only a minimal amount of food was wasted daily. Further interaction revealed that any leftover food on the day was usually given to the needy learners to take home or to the staff members, such as the VFHs themselves or to the security guards. As a result, it removed the need to throw away any extra food. In a report published by the Department of Planning, Monitoring, and valuation (DPME) and the DBE (2016), it was noticed that the food wastage varied daily because not all the learners would consume the NSNP daily. Therefore, the food that was prepared as approved by the official would differ

from the actual number of learners that were present to consume the food. As a result, the VFHs could either under-prepare or over-prepare the food leading to wastage (Mumba & Kesa, 2020).

Mafugu (2021) indicates another aspect that affects the quantity of meals which is the delayed payment of the service providers. Kwatubana and Makhalemele's (2015) study and Overy's (2010) study affirmed the problems related to the delayed payment of the food suppliers and poor monitoring. They discovered that food was sometimes inadequate, and the vegetables were not always fresh. The older vegetables are cheaper than the fresh ones because the prices of the perishable commodities decrease as they lose their freshness. If the service providers are not paid on time, they may opt for more affordable, older vegetables to meet the programme's demands. According to the regulations, the provinces must comply with the minimum norms and standards regarding nutrition quality, quantity, and food safety.

### **1.21 Nutrition set standards**

Because nutrient-based guidelines failed to significantly influence dietary patterns in South Africa, food-based dietary guidelines were developed and are widely used. Similar to the RDA in the United States, previous nutritional recommendations were criticised in South Africa for being overly complicated or meant solely for the population eating.

The food-based dietary guidelines are made up of ten messages that are intended to be more realistic, affirmative and culturally thoughtful in their approach to helping South Africans over the age of five in selecting a proper but credible diet. The procedures are based on eating locally grown foods. They intend to address nutrition-related public health issues among consumers of various ethnic backgrounds in rural and urban areas. Some of the intends are Enjoy a variety of foods, be active, make starchy foods the basis of most meals, eat plenty of fruits and vegetables, dry beans, peas, lentils, and soya frequently, meat, fish, chicken, milk, and eggs can be eaten every day, and fats should be consumed sparingly. Use salt with caution, and drink plenty of clean, safe water. Drink responsibly if you consume alcohol (Buhl, 2010).

According to the DBE, school menus should provide delicious and adequate meals that meet at least 30% of the learners' daily nutritional needs per meal. More importantly, a well-balanced meal should include:

- Protein, which includes soya products, dried beans, lentils, nuts, and dried peas; or
- Animal protein, which includes meat, milk, eggs, and fish (depending on affordability);
- Starch, which includes maize meal, samp, mealie rice, rice, bread, and potatoes; and

- Vegetables, which include at least one green and one red, yellow, or orange vegetable per meal. Fats and oils must be used sparingly (DBE, 2009: 4).

The district prescribed specific items for the school menu in accordance with the NSNP provisions, which had to be followed. According to the participants, the district provided no flexibility in the implementation of local policies or in the menu. As a result,<sup>39</sup> the International Journal of Environmental Research and Public Health (2022) indicates that the menu provided by the district was not sufficiently consistent with the provisions of the NSNP. Furthermore, in order for the NSNP to be accommodating, the following "fundamental" aspects were identified:

- Selected menus should be socially acceptable;
- Indigenous food use in menus is encouraged;
- Specifications for new menu option inclusions are available from the District/Circuit NSNP officer;

(Nomatshila, Apalata & Mabunda, 2022; DBE 2009).

It is best practice to develop menus in consultation with nutritionists, taking into account local preferences, habits, and cultural practices (Bundy et al., 2009; Kristjansson *et al.*, 2016). Bundy et al. (2009) state that the recommended energy content of meals is dependent on the length of the school day. Thus, if the students are at school for half a day, the meals should meet 30-45% of their energy needs, and if they are at school all day, the meals should meet 60-75% of their daily needs. The authors also recommend that fortified ingredients be included in the meals, as school meals may not provide adequate micronutrients without them.

The PEDs are responsible for developing the NSNP menus in through engagement with the DoH, and they are sanctioned by the DBE. The menus are revised and restructured on an annual basis, with the goal of meeting 33% of the RDA of energy prerequisites for children aged 7 to 10. (DBE, 2010). The menus stipulate the type and quantity of food that should be cooked daily, and the "school-specific menus" show how much each school should prepare for the number of students authorised for NSNP meals.

Rendall -Mkosi *et al.* (2013) discovered that the nutritional value of the NSNP menus provided the learners with approximately 15% of the RDA of energy and 26% of the protein quotas. DBE recipe books containing quotas of dry goods to be cooked were not noticed in use in any of the schools visited for this study, indicating that the portions may not be exact. It was discovered that as serving progressed, meal sizes shrank, ensuring that all students received some food. This indicates that the recipe books'

instructions are not strictly followed. As a result, serving food portions are compromised, which affects the recommended nutrient content. As a result, the reduced quantity of food provided to students has an impact on the intended quality for consumption. Although the recommended quality and quantity are critical, the taste of the meals is also critical.

As a result, the meals should be appealing and delicious for the students to enjoy, hence the intervention via an introduction to the "Mnandi 4 sure" (Department of Basic Education, n.d.). The "Mnandi 4 sure" recipe book provides specific food selection guidelines to ensure variety. It specifies the minimum and maximum rate with which certain food items should be served and includes traditional foods. The meal plan is the same for primary and secondary schools, but the portion sizes differ. The measurements are integrated into the recipe book for planning purposes, showing how much food handlers should use for a specific number of learners. There are measurements for the dry ingredients and the serving size (Rendall-Mkosi *et al.*, 2013). The "Mnandi 4 sure" is adaptable because it allows for the use of traditional foods. Traditional food is allowed as long as it is correctly placed within food groups; for example, mashonzha (mopane worms) in the Limpopo province's Vhembe district can be used as a high protein food. Meals can also include morogo (traditional spinach) and amadumbe (traditional potato) (Esakov & Salim Vally, 2010).

Despite the fact that the NSNP has established provincial food menus and a recipe book with valuable nutritional advice, many schools do not adhere to these guidelines. The recipe book was not on sight or cited in any of the school-level interview, and none of the schools observed used specific measuring equipment other than familiar cups and spoons. Similarly, it was detected that as the dishing took place, the portions became smaller so that all the children in the queue received some food. Aside from individual and cultural differences in food preferences, one possible explanation is that this menu option was deemed the "most satisfying" (Rendall-Mkosi *et al.*, 2013).

The time for meals is sacred in order for school meals to satisfy short-term hunger and provide nutritional value. The NSNP national rules state that meals should be dished by 10:00 a.m. every school day. Breakfast is served at 07h00 and the cooked meal at 11h00, which is unusual for Gauteng. If a province chooses to deviate from the basic plan, a letter should be submitted to the national DBE along with the business plan each year (Department of Basic Education, 2010; Conditional Grant Framework 2012/13; DPME, 2016).

In contrast, Isakov and Vally (2010) argue that the first meal should be served as early as possible because the department's set time of 10 a.m. is too late. They claim that many children arrive at school hungry and unfed; thus, they must be fed early to ascertain that they have enough energy to learn and participate in school activities.

Overy (2010) opines that all feeding should be completed before 10 a.m. to minimize school disruption and to fuel students for the day ahead. The author asserts that it is especially important for students who did not eat breakfast before arriving at school or who have to walk long distances to school. If the students do not eat a meal early in the day, their energy levels and ability will suffer. Contrary to popular belief, meal servers at 20 schools reported that feeding usually took place after 10 a.m. The food was served after 10 a.m., according to 60% of these meal servers, because their respective school principals decided to serve the food during the midmorning break. Furthermore, 25% of the meal servers claimed that they could not complete their cooking commitments before 10 a.m. The remaining 15% said the food arrived late and was served late.

Nomatshila *et al.*, (2022) continue to emphasize the importance of an earlier meal, particularly breakfast, in their study. According to their research, the South African NSNP should be redesigned and better costed to include breakfast in the form of a boiled egg and a glass of milk. Breakfast is thought to keep children from being passive in class and to keep them from collapsing from hunger and performing poorly in school. Other advantages of including breakfast in the school nutrition programme include lowering the impact of missing breakfast, which is a threat for non-communicable diseases such as cardiovascular disease and diabetes. According to Bundy *et al.* (2009), short-term hunger is common in children who do not eat before going to school, as they struggling on paying attention and carrying out complicated tasks, even if the child is otherwise well fed. Mumba and Kesa (2020) emphasize the importance of the breakfast meal. They state that some schools receive additional food assistance from private organisations in the form of one-time donations or partnerships. The National Department of Education has collaborated with a food corporation, "Tiger Brands Foundation," as well as the province and district, to identify some schools that will benefit from this food corporation through an in-school breakfast programme.

According to Professor Hettie Schönfeldt, the school meal should offer children with daily protein, according to Banda (2021) of the Daily Maverick. "The program was designed to meet one-third of the nutritional needs of children, and that is exactly what it does." (Banda, 2021).

The school feeding schemes' meals meaningfully add on the beneficiaries' daily energy and nutrient needs. The government allots no more than two nutritionists per province to create a school menu centred on South African food-based dietary guidelines. To foster conformity, the annual district awards were initiated in 2010 in association with the Tiger Brands Foundation. The awards recognise the best district that meets the minimum requirements of the programme in terms of brilliance, invention, and the number of schools that have applied it within the district. Tiger Brands offers the winners with equipment and in-school breakfast programmes (Banda, 2021). Entering into a partnership to provide supplement meals to schools demonstrates the importance of providing students with two meals per

day. Ironically, the award acknowledges that noncompliance exists to some extent. On the one hand, a serious concern is that compliance is required by encouraging schools to comply through the Tiger Brands partnership. These efforts were made to ensure that the nutritional worth of the meals offered to the students was also adhered to.

### **1.22 Nutritional value**

Malnutrition is a widespread phenomenon that disrupts schoolchildren's nutritional well-being and has a negative impact on their ability to develop both physically and mentally, mainly in academic achievements (Fleming & Robinson, 2013). Nutritional meals for learners' nourishment are a non-negotiable requirement.

A lack of Vitamin A has been shown to harm the immune system, whereas a deficit of iodine and iron lowers mental aptitude and causes exhaustion and dizziness. Similarly, educators agree that hungry students sleep in class and are unable to concentrate or participate academically during learning (WFP NSNP Report, 2010). These learners are generally withdrawn, inferior, and physically stunted, while they are irritable, fussy, and difficult to get along with (Mtapuri *et al.*, 2015)

Most South Africans use iodised salt in their cooking; however, schoolchildren are said to have insufficient iodine intake (WHO, 2016). According to Rendall-Mkosi *et al.* (2013) The most key nutrient deficiencies in South Africa are vitamin A, iodine, and iron (Mafugu, 2018).

Additionally, UNICEF, the Micronutrient Initiative, and the Global Alliance For Improved Nutrition (GAIN) also assisted the government in implementing new food fortification regulations in 2004. This culminated in the government mandating the mandatory fortification of maize meal and wheat flour with two minerals (iron and zinc) and six vitamins (vitamin A, thiamine, riboflavin, niacin, folic acid, and pyridoxine) identified as the most deficient in the South African diet. The provision of these ingredients through meals accounts for approximately 25% of the approved daily allowance for people aged ten and older. Because these staples are commonly consumed, it was decided that fortification would offer a national resolve to micronutrient defects without needing dietary changes. The development has been a critical breakthrough in meeting all South Africans' nutritional needs, and more than 30 million people of all ages consume these fortified products (Buhl, 2010). In South Africa, maize meal and flour are staple foods. As a result of a national dietary study that revealed severe micronutrient deficiencies, fortification of flour and maize meal has been mandated since 2003 (Okeyo *et al.*, 2016, DPME, 2016).

Food should be as nutritious as possible in schools. Improving nutritional standards and schoolchildren's health leads to improved learning. Food fortification with micronutrients means that nutrition is

improved for the child's health. School feeding activities improve the diet and increase the amount of energy obtainable for the child. Similarly, school feeding concentrates on the micronutrient deficiencies that are well known among school-age children, which are far-reaching in developing-world countries, causing them vulnerable to infectivity, no-attendance at school, retarded learning, and cognition. Food fortification with micronutrients, specifically vitamin A, B, iodine, and iron, improves cognitive and learning capacity (Solon *et al.*, 2003).

### **1.23 Cognitive worth and learning ability**

According to Rehle *et al.* (2010), happiness, health, and education are all linked. Furthermore, an individual's well-being and a healthy mind result in effective learning. Thus, better educated people are thought to be better positioned to contribute to their own emotional and physical health in some way. As a result, the role of school meals in nourishing the body eventually nourishes the mind for cognitive well-being.

A learner who consumes three essential nutrients in one meal develops optimal brain functioning. This results in higher academic achievement than a learner who does not receive this meal. The learner whose brain is well supplied with these nutrients is more likely to pay close attention to school activities in class, as they have increased cognitive ability, and their behaviour becomes more responsible, which is more acceptable to educators. These encourage and improve academic achievement (Mtapuri *et al.*, 2010).

A learner who receives food at school is enticed to attend class daily. Furthermore, the learner enjoys being at school for a longer period of time than a hungry learner. Educators believe that students who receive meals at school are less likely to rush home when school is out and instead stay for afternoon study (DoE, 2011: ). These students have more time and energy to devote to schoolwork than those who do not have school meals. As a result, it is critical to alleviate childhood hunger by providing nutritious meals during school hours (Mtapuri *et al.*, 2010). Indeed, because of the nourishment, they can stay in school for lengthier periods of time.

Uduku (2011) points out that school feeding programmes that involve the serving of cooked nutritious meals to primary school-aged students during the first hour or school break period of the school day have a significant impact on childhood nutrition and development. Brain cells that consume such nutrients can grow and develop properly, resulting in optimal brain functioning. This promotes effective learning and subsequent educational attainment, demonstrating that the NSNP improves cognition and educational outcomes in children (Mtapuri *et al.*, 2015). Breakfast appears to have such a significant impact that Tshisikhawe (2017) confirms that missing breakfast can interrupt learning even in well-nourished children. Several studies have realised that better participation in school breakfast

programmes is linked to higher academic test grades, daily attendance, and class participation. It is also linked to fewer absences and slowness (Bundy *et al.*, 2018). Furthermore, the findings suggest that missing breakfast has a greater impact on performance in children with low nutritional status. Another trial's findings show that chronically undernourished school-age children have lower cognitive special endeavours. Similarly, Graham *et al.* (2015) agree that children who received breakfast performed better at both points than those who did not receive breakfast or those who attended NSNP-only schools. Although school performance is affected by a variety of factors and cannot be attributed solely to the interventions, it is clear that children who receive meals during the day perform better.

In some cases, a lack of nutrients affects the brain. In one study, a few food handlers in Mopani (3.5%) and Vhembe (9.4%) identified brain damage as the most dangerous effect on children's health if they do not get enough iodine (Ramugondo, Mushapi & Mabapa, 2021). As things stand, brain damage is linked to cognitive impairment in children.

Thus, nutrition has an impact on the effectiveness of educational programs. As a result, adequate nutrition is essential during the school-age years because nutrition and health have an impact on a child's cognitive development (Ramugondo *et al.*, 2021). Similarly, according to The National Governors Association Centre for Best Practices (2000), numerous studies have revealed a direct relationship between nutritional intake and academic performance. Short-term hunger caused by missed meals and moderate malnutrition can impair cognitive development and school performance.

The concern with the presence of children in school is for children to learn, and school feeding programs can help with this. Poor health and nutrition among school-age children impair cognitive performance either physiologically or by limiting their ability to partake in learning experiences, or both (Bundy *et al.*, 2018). School feeding programmes can also help learners stay in school by growing enrolment and decreasing absenteeism. When the children are in school, the programme can help them learn by reducing hunger and improving intellectual aptitudes. These effects are clear by congruent actions, particularly deworming and micronutrient provision (Bundy *et al.*, 2009; Graham *et al.*, 2015).

Bundy *et al.* (2009: 21) go on to say that improving participation and cognition will be dependent on endogenous factors like teaching quality and textbook availability. Once this order is in place, it is guaranteed that the meal program will result in improved educational outcomes. Increasing children's ability and availability to learn will not improve educational achievement unless it is accompanied by quality education. One agrees while emphasizing the importance of providing nutritious meals. The other endeavours are complementary to the development of a holistic, nurtured individual who is a school learner.

Sanousi (2019) agrees with Bundy *et al.* (2009) that launching a school feeding programme without considering other associated factors may not improve students' nutrition and performance. These factors include, but are not limited to, food quality and quantity, delivery, sanitation, and the supply side. Furthermore, they attest that the quality and quantity of food provided have varying effects on the learners' nutritional status as well as their cognitive development or performance.

The meals have an effect on the children's health. A discussion with parents and teachers revealed that the likelihood of disease has decreased since the school meal program began. Students who eat healthy meals on a regular basis are disciplined (Kabir & Islam 2018). The children behave in a specific way because if they are hungry and unhealthy, they will exhibit restlessness.

#### **1.24 Special contributions and the demands for the NSNP**

The children in the schools are vulnerable to circumstances that are either inherited or unexpected. In this case, the emphasis is on the NSNP in the event of High Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS ) and COVID-19 affecting school-aged children.

Nutrition is especially important in HIV/AIDS children. If the children do not receive adequate nutrition, their already fragile immune system weakens, making them more vulnerable to illness. A nutritious diet is essential for children taking antiretroviral drugs (ARVs) because it helps the drugs work better, reduces side effects, strengthens the immune system, and protects against opportunistic infections. Children with HIV/AIDS or other illnesses frequently require proper nutrition (Esakov & Vally, 2010).

The negative impact of HIV cannot be ignored, according to Statistics South Africa (2012), one of the consequences of a society with a high rate of HIV infection is a lack of consideration for several orphans, particularly children. Due to the prevalence of HIV/AIDS in South Africa, an estimated 18.8% of children have lost one or both caregivers (South African Statistics, 2016). The situation is difficult because the majority of the children affected come from low-income households with unemployed and uneducated caregivers, as well as guardians (UNICEF, 2010). According to the Sustainable Development Goals Progress Sheet (2015), an estimated 13.6 million people were enrolled in antiretroviral therapy by 2014. HIV-related infections had decreased by 38% since 2001, but by 2014, an estimated 35 million people in South Africa were living with HIV, and 240,000 children were born infected with HIV (Monala, 2018). The prevalence of HIV remains real, and the role of school feeding in children's well-being is critical.

School feeding is important in HIV prevalence situations in schools because it has the potential to increase enrolment, attendance, and the progression of orphans and other vulnerable children. UNESCO

and UNICEF regard schools as centres of care and support for vulnerable children; thus, increased enrolment of orphans and vulnerable children would be viewed as a specific benefit of school feeding (Bundy *et al.*, 2009).

The COVID-19 pandemic also hit South Africa, catching many departments, including the DBE, off guard. The NSNP was suspended as a result of the hard lockdown, leaving millions of children without the essential school meal/s on which they rely five days a week. The NSNP director stated that the program is intended to operate within the confines of the school. However, the department was forced to find alternative methods of delivering school meals to children who were not in school. The program resumed nearly three months after the first lockdown, in June 2020. Because the meals were so important, civil society took the department to court. The first order was not carried out, and the second was issued in response to civil society pressure. Equal Education (EE) and two Limpopo school governing bodies, represented by Section 27 and the Equal Education Law Centre (EELC), filed the new court order against the DBE and the MECs of eight provincial education departments for failing to ensure that the NSNP reaches every qualifying learner (Section 27).

The court order was a significant victory for the 9 million children who rely on the NSNP for up to two meals per day. The NSNP directorate made significant progress in resolving the numerous COVID-19-related issues it encountered. The NSNP directorate was able to provide food, particularly for children who attended school on alternate days and for those who did not attend school. The program devised novel approaches, such as distributing monthly food parcels to children during the COVID-19 wave when the risk level was adjusted, resulting in school closures, and allowing children who live far from their schools to be served at the nearest school (Zembe-Mkabile, 2021)

Aside from South Africa, some countries provided in-school meals and take-home rations to particularly vulnerable students, such as girls and children affected by HIV, in order to significantly impact school enrolment and retention rates, as well as to close gender and social gaps (Bundy *et al.*, 2009).

The programme's concern for exceptional cases demonstrates the NSNP's significance. A profound understanding of the gravity of hunger among disadvantaged communities is also remarkable. Civil organizations understand that the majority of children come from impoverished families and that school meals are their only hope for filling their empty stomachs. More importantly, children will perform better in school if they understand that their meals contribute to their physical well-being.

## **1.25 Conclusion**

The information from the literature review denotes that the vision to alleviate short term hunger by 2030 still stands. The UN, through the SDGs, strives to guide the national development plans to envisage the

ways to end hunger through their school feeding programmes. The role of the NSNP is still paramount in providing nutritious meals and enhancing the educational achievement of the learners. The role of the stakeholders capacitated with proper knowledge would lead to the expected outcomes. However, the lack of knowledge culminates in many discrepancies that might jeopardise the programme's objectives. One more critical aspect is the initial nutritious background of the learners, which indicates that the schools should serve two meals instead of one. The early meals or the breakfast will come in handy for the children from poor backgrounds, which is essential as the effects of missing meals early during the childhood's early stages are irreversible. This does not relegate the importance of upholding the quantity and the quality set standards for providing meals to the school learners throughout. The success of maintaining the set standards differed. Compliance is still critical. The challenges still exist; therefore, they are underlined to improve the NSNP to benefit the school learners. The special recognition of circumstances such as HIV and COVID-19's vulnerability of children highlighted the critical importance beyond the known common aspects that affect the learners.

## **RESEARCH DESIGN AND METHODOLOGY**

### **1.26 Introduction**

Research design describes how data will be generated, collected, coded, analysed, and interpreted. This allows the researcher to make warranted, descriptive, explanatory, or interpretive inferences, where the warrant is calculated to strike a balance between competing virtues, where the standard of a warrant may vary slightly, but it is based on a core set of virtues for each type of inference (Bellamy, 2012).

This chapter discusses the research design and the methodology that was used to collect data for this study. This study employed a qualitative approach by using an exploratory strategy to extrapolate information from the participants. The study employed a semi-structured interview schedule with open-ended questions for the participants according to their respective roles in the NSNP. The study used purposeful sampling to identify the participants from the schools and from the education offices in the Tzaneen Circuit, in the Limpopo Province. The document analysis and the observation strategies were included to augment the information through the interviewees' responses. The research ethics such as openness, anonymity, confidentiality, and informed consent were taken care of throughout the study. In addition, this chapter discusses data analysis such as coding, categorising, and thematic analysis.

### **1.27 Research design**

Cresswell (2014) defines qualitative research as a method for investigating and comprehending the importance that individuals or groups assign to a social or human issues. According to Bricki and Green (2007), qualitative research is distinguished by its goals, which relate to knowledge of certain parts of social life, and its methods, which create words as data for analysis rather than numbers. These methods seek to answer questions about a phenomenon's "what," "how," and "why." A qualitative approach is appropriate when the aim is to know how a society or persons view a specific problem.

Because it is exploratory and strive to clarify the 'how' and 'why' of a specific phenomenon or programme, the qualitative research design is suitable for this study. Local knowledge and understanding of a given issue or programme and people's experiences, meanings and relationships, social procedures, and contextual factors such as social norms and cultural practices that influence a programme are frequently investigated in qualitative research (Open University, n.d.). As a result, the study's research method was exploratory research.

### **1.27.1 Exploratory research**

Exploratory research strives to offer novel clarifications that have been initially disregarded, and it can do so through the active engagement of researchers in the process of strengthening their conceptual instruments to allow them to raise new queries and to provide further explanations of a given reality from a new angle (Reiter, 2017).

Exploration further endeavours to redefine, adapt, or change the initial explanation in an itinerary process of applying other explanations to the observation in a back-and-forth approach between theory and reality (Reiter, 2017). This study used exploratory research to collect qualitative data, which included conversations between the researcher and the participants and the participants' experiences. The exploratory research approach is primarily flexible, with no formal structure intended to elicit more information from participants (Rehle *et al.*, 2010). Swanson (2015) confirms that this approach is appropriate for exploring and eliciting relevant information because it can be adapted to extract data from participants. This is because of the adaptable discourse. It provides answers to the exploratory "why" questions. It provides nonverbal or face-to-face indicators. Therefore, this study looked at the NSNP through the eyes of the learners in the Mopani West District.

### **1.28 Population and sampling process**

The population should be defined in terms of its characteristics, particularly those relevant to the research study, in order to be sampled. It is critical to consider the relevant aspects and the context in which those characteristics may be found (Matthews & Ross, 2010).

Because it may not be possible to interview the entire population, only the sampled members of the population were interviewed. According to Bertman and Christiansen (2014), this includes deciding which persons, sceneries, or conducts to include in the study. The researchers must determine the number of individuals, groups, or objects that need to be observed.

Purposive sampling allows the researcher to select cases based on the research questions. This method is commonly related to small, in-depth studies with research designs that focus on gathering qualitative data and exploring and interpreting experiences and perceptions. This sampling technique allows the researcher to make the best use of their time and resources (Matthews & Ross, 2010).

In research, the population refers to the total number of people or groups in an organization who could be studied. Although school children are an important stakeholder group for effectively assessing the situation, this may complicate matters, increase the sample size, and have time constraints; thus, this group was omitted for the dissertation. However, because the participants work at school, where they interact with and observe the students during the school day, the chosen participants were able to

provide answers for the study. Furthermore, their involvement in the NSNP approved them to be part of the study and provide information based on their knowledge.

According to Bless *et al.* (2006), the sample, as a population subset, should have properties that represent the entire population. It is critical to establish samples that best represent a population in order to allow for generalization. The group is referred to as a representative sample. It is justified that the specified sample was completely representative and appropriate for this study.

This study used a representative sample of 7 out of 11 quintile 1 schools in the Tzaneen Circuit, of the Limpopo Province. In this sub-sample of targeted schools, the principals were interviewed. Also, at each school, the educator that is responsible for the NSNP was included in an interview and one voluntary food handler per school was also interviewed. Some schools qualified to have a school-based monitor and the others did not have an NSNP Coordinator. In some schools, the NSNP school-based monitor and the NSNP coordinating educators exist. As a result, the school-based monitors were also included and interviewed. In addition, the district and the circuit officials that are responsible for coordinating the NSNP were interviewed. These bring the sample to a total of 24. Table 0.1 illustrates the sample data of the participants in a coded form below:

**Table 0.1: Sample data of participants**

NO.	School	Principal	NSNP Coordinator (School level)	Voluntary Food Handler	NSNP District Official	NSNP Circuit Official	Total
1	SCH A	PA	NSNP CA	VFH A	NSNP DC	NSNP CC	5
2	SCH B	PB	NSNP CB	VFH B	-	-	3
3	SCH C	PC	SBM C	VFH C	-	-	3
4	SCH D	PD	NSNP CD	VFH D	-	-	3
5	SCH E	PE	NSNP DE	VFH E	-	-	3
			SBM E				1
6	SCH F	PF	NSNP CF	VFH F	-	-	3
7	SCH G	PG	NSNP CG	VFH G	-	-	3
Total of Participants		7	8	7	1	1	24

**CODE KEY:** SCH A-G= School A-G, PA-PG= Principal A-G, NSNP CA-CG=NSNP School Coordinator A-G, VHF A-G= Voluntary Food Handler A-G, SBM C& E= School Based Monitor, NSNP DC= NSNP District Coordinator, NSNP CC= NSNP Circuit Coordinator

### 1.29 Data collection strategies

The data collection steps include establishing the study's limits, gathering information through unstructured or semi-structured observations and interviews, acquiring documents and visual materials, and establishing the procedure for recording information (Creswell, 2014). The study used qualitative data collection strategies to extrapolate the information. Data was collected using the semi-structured interviews, observations, and document analysis while adhering to ethical guidelines.

#### 1.29.1 Semi-structured interviews

To collect data for this study, semi-structured interviews were used. When the researcher is concerned with the people's experiences, behaviour, and understanding how and why people experience and understand the social world in this way, these interviews are typically associated with collecting qualitative social data. The researcher is interested in both the information the participant can provide about the research topic and the manner in which the participant discusses their experiences and

attitudes. As a result, the researcher is interested in both the content of the interview and the manner in which the participant expresses themselves (Matthews & Ross, 2010).

Matthews and Ross (2010) further ascertain that semi-structured interviews can be used for exploration as one of the research strategies. The semi-structured interviews permit the researcher to learn what people reflect about the social experiences they are familiar with. It could be a service, a new policy, or a proposed plan. The semi-structured interview format allows the researcher to explore and identify various aspects of the social experiences with the participant. A semi-structured interview allows the participant to discuss their experiences, perceptions, and values. As a result, the semi-structured interview is ideal for this study, which aims to investigate the effectiveness of the NSNP in reducing hunger among quintile 1 school learners in the Tzaneen Circuit.

The participants were chosen on purpose because they play important roles in the implementation of the NSNP. The following factors were considered when conducting a semi-structured interview study to gather relevant information. The participants were identified based on their roles in the NSNP implementation program at the district office, circuit office, and schools. Prior to the interview, the researcher visited the schools and presented them with permission letters from the Limpopo Provincial Department of Education (LPDE) and the University of the Free State (UFS) to conduct the research. Participants were also informed that their districts and circuits were aware of the research, and the researcher was given consent to conduct the study. The participants were notified three days before the interview and given the research information document to familiarize themselves with the information before the interview. An informed consent form was attached to help them understand that if they participate, they must sign the form. The district and circuit officials were interviewed in their respective offices. The principal's office was where the participants at the schools were interviewed. It was also ensured that an agreement with the principals did not disrupt the school's operations. The researcher went over the study information leaflet with each participant prior to the interview. The interviews lasted between 14 and 30 minutes, depending on how the participants responded to the questions and probing by the researcher.

**Table 0.2: Semi-structured interview schedule**

NO.	SCHOOL/OFFICIAL	PARTICIPANTS	DATE
	DC	NSNP DC	24/03/2022
	SCH A	PA, NSNP CA, VHF A	04/05/2022
	SCH B	PB, NSNP CB, VHF B	11/05/2022
	SCH C	PC, SBM C VHF C	18/05/2022
	SCH D	PD, NSNP CD, VHF D	14/06/2022
	SCH E	PE, NSNP CE, VHF E	23/06/2022
	SCH F	PF, NSNP CF, VHF F	18/08/2022
	SCH G	PG, NSNP CG, VHF G	19/08/2022
	CC	NSNP CC	22/08/2022

According to Jamshed (2014), recording the interviews is a good way to ensure that the interview data is properly captured, but it is sometimes a matter of mutual understanding between the researcher and the respondent. Handwritten notes during an interview can be unreliable because the researcher may miss or omit important information. The interview recording allows the researcher to focus on the interview content and verbal prompts.

Face-to-face interviews were held. The researcher took notes on some key points while listening to each participant during the interviews. It was also made clear to the participants that a voice recorder would be used. The only goal was to make certain that no information was overlooked during the interview. All of the participants agreed to the interview processes because they were aware that their contribution to the NSNP's implementation was highly valued.

### **1.29.2 Observation**

According to Ciesielka and Bostrom (2018), one of the qualitative methods that can be either the primary method in a project or one of several complementary qualitative methods is observation. It is direct observation when an observer looks at the events in front of their eyes at the time they occur. A researcher can get closer to the field of study by using direct non-participant observation while remaining an outsider or guest. The qualitative observation methods show a relatively low level of

control over the field of study. The researcher adjusts to the context and the interaction, attempting not to influence the course of events and exerting minimal influence on the environment, often encountering unexpected situations. As a result, this study used direct non-participatory observation as a complementary method. According to Jamshed (2014), observational data can be used to supplement or confirm primary research.

An observation was carried out in accordance with a schedule. The schedule concentrated on food preparation, serving food, menu adherence, surplus food, food storage and health protocols, feeding times, vegetable garden support, and the quantity and quality of food served. The researcher remained an objective observer and did not interrupt the participants. The researcher took notes and commented on what was observed during the process. The kitchens, storerooms, school surroundings, and participants were all observed. At the targeted schools, the observation took place before, during, and after the meal.

### **1.30 Research ethics**

Morality is also related to ethics. They refer to adhering to a set of principles through behaviour. The following ethics are intended for both the researcher and the participants:

#### **1.30.1 Trustworthiness and professional ethics**

Professional ethics research is referred to as the epistemic imperative of science by Mouton (2001). This also relates to scientists' moral commitment to discovering truth and knowledge. When conducting research, the researcher's main guiding principle will be ethics.

Throughout the research project, the researcher worked hard to maintain objectivity and integrity. As a result, the researcher demonstrated his areas of knowledge and expertise in a clear and accurate way. The findings represent all of the processes, including the methods, designs, and theories. The data recording is genuine and unaltered. As a result, the data presented is trustworthy.

#### **1.30.2 Moral considerations**

According to Patton (2003), there are ethical issues due to the type of the inquiry, which is open-ended. There will be direct contact between the researcher and the participant. The researcher should clarify the purpose of the study, make promises, and ensure mutuality, gauge risks, maintain confidentiality, offer advice, understand the data collection boundaries, and understand the ethical versus legal obligations as all of this may be useful for the investigation. The study was approved by the Limpopo Provincial Department of Education (LPDE) and the University of the Free State (UFS). The study was ethically overseen and approved by the UFS Human Research Ethics Committee (HREC) and assigned the Ethical Clearance number which is UFS-HSD2020/1468/21.

### **1.30.3 Transparency and confidentiality**

Science as research must consider society. In this case, accountability is critical. The rights of the rest of the community were prioritized above all else.

There is no need for any secret or covert research. It is critical to be truthful and genuinely support the study's goal. Because the research is not intended for confidential or classified information, the society must be made aware of its goals. The research will be presented to the scientific community. This will be according to the principle of transparency. As a result, the research findings will be subjected to scientific scrutiny (Mouton, 2001).

The researcher was accessible throughout the study, and participants were free to express any concerns. The researcher stressed the importance of keeping the information obtained from the participants private and strictly confidential.

### **1.30.4 Confidentiality and autonomy**

According to the Research and Enterprise Development Centre (2014), the ethical principles, which include the society's standards, values, and aspirations, should be at the centre.

Another important consideration for research is autonomy. Individuals were given the right to determine their own desires and plans in this study, which used autonomy. As a result, willing readiness was never coerced, and participants gave their consent to participate in the study voluntarily. The participants' freedom and informed consent were taken into account. According to the Research and Enterprise Development Centre (2014), three important elements are information, voluntariness, and comprehension. The participants in the study were given sufficient information about the nature of the research and the procedures. This included the study's objectives, potential risks, and benefits.

The participants were informed that their participation was entirely voluntary and that they could opt out at any time. However, the researcher also informed the participants that they are highly valued and that their information will benefit the school feeding program; thus, their participation is required. The participants were fully aware of their rights as they went through all of the processes of freedom and informed consent. As a result, the participants' consent was well informed. The researcher assumed that the information provided by the participants was correct. As a result, the participants' autonomy is guaranteed in this study.

The importance of confidentiality in research cannot be overstated. According to the Research and Enterprise Development Centre (2014), the privacy and confidentiality provisions of the Ethics and Data Protection Act (1998) should be respected. Participants should be encouraged to make suggestions

to improve the research procedures. They should also receive a summary of the research findings. The researcher should also express their gratitude by saying thank you and, if possible, offering a small gift (Mouton, 2001).

The researcher assured the participants that confidentiality was of the utmost importance in the study. The participants were informed that the names of the schools and their own would not be included in the report. As a result, they are anonymous, with only codes used to identify the participants. The recent Protection of Personal Information Act (POPIA) (Section 58(2) Gazette44383 of 1 April 2021) gazetted in South Africa also supports participant protection.

### **1.30.5 Giving informed consent**

According to Walsh (2001), a researcher must ensure that research participants give their consent to participate in the study. The participants should have a thorough understanding of the research. They should be aware of the research's objectives as well as any risks associated with participation in the study. They should also be aware of what they must do or experience during the research investigation. Rose (2017) states informed consent is "a freely given agreement to participate in research." It is more than just a signed form; it is a process through which the subject understands the research and its risks. Informed consent is required both before and after enrolling a participant ". The informed consent form should include the study's title, purpose, study procedures, risks, benefits, confidentiality, compensation, contact information, voluntary participation consent, participant signature, and the researcher's signature date.

Before the research began, the researcher distributed the document to all participants. Before interviewing the participants, the researcher read and explained the contents of the research document to them. The researcher and the participants signed the informed consent form, acknowledging the participants' voluntary participation.

### **1.30.6 Data examination**

Data analysis (specifically content analysis), according to Mutton (2001: 108), entails breaking the data down into manageable themes, patterns, trends, and relationships. The analysis seeks to comprehend the various constituent components of one's data. The analysis is carried out by inspecting the relationships between the concepts, constructs, or variables to see if any patterns or trends can be identified and isolated, or to identify the themes in the data.

Thematic data analysis was used in the study to analyse and interpret the qualitative data. The information was organised around the main themes. The additional themes and concepts discovered were used to extend the explanation during the formal analysis. During the final analysis, all of the

information gathered was categorised into one category under a theme or concept. The categories were compared in order to determine the differences in meaning and the connections between the themes. Theories were developed in order to interpret the observations or data. The information was also interpreted. According to Mouton (2001), the main goal is to integrate the themes and concepts into a theory that provides precise, comprehensive interpretation. As a result, the other competing explanations and data interpretations were considered for preferred interpretation. To ensure a detailed and accurate analysis of the data, the thematic data analysis was carried out using the NVIVO software Release 1.6.1 (1137) version..

### **1.30.7 Conclusion**

The research design as well as the methodology used to collect data for this study were discussed. The study explained why a qualitative approach was used with an exploratory strategy. It went on to discuss how semi-structured interviews with open-ended questions, purposeful sampling, document analysis, and observation strategies were used. The study explained research ethics concepts such as openness, autonomy, confidentiality, and informed consent. Furthermore, the ethics legislation, particularly the POPIA, was cited for stamping adherence to the code of ethics. The study also covered data analysis techniques like coding, categorizing, and thematic analysis.

## **RESEARCH FINDINGS: PRESENTATION AND DISCUSSION**

### **1.31 Introduction**

The findings were organised through NVIVO by importing the files and by creating codes that translate into themes and sub-themes. The results considered the adequate food, the set standards, the nutritious value, and the contribution of the NSNP to teaching and learning. In addition, the themes and the sub-themes with selected contents provide answers to the study as transcribed and captured from the participants' responses. The observations and the document analysis results further augment the information from the participants' responses.

### **1.32 Findings from the participants**

The participants responded to the study, thus making it possible to analyse data. Therefore, it is essential to present and explain the demographic information of the participants before presenting and discussing the other findings. The details of the components of the participants are mentioned in 1.27 and also illustrated through Table 0.1 in the Research design and methodology section.

Table 0.3 indicates four categories which are gender, position, number of years in the position and the NSNP. Most of the participants in the NSNP were females as 85,7 % of the participants in this study are females. The participants who had more than 10 years in their position made 41,6 whereas 37,5% had less than a year in their position. In the 2 to 10 years category there were 20,8% of the participants. Most of the food handlers were in the category of 6 months to 1 year as they were appointed at the start of the year and their contracts are for 12 months. Principals and the NSNP Coordinating Educators made 41,6% of those who had roles in the NSNP for more than 10 years.

Thus, with the accumulated experience they share their knowledge on the effectiveness of the programme. The study suggests that the food handlers should be appointed at the end of the year, and they must be trained early, so that they already know what to do when the year starts. Again, the Limpopo Department of Educators (LDoE) should appoint more personnel to specifically deal with the nutrition programmes, especially as some nutrition coordinators reported as mentioned in the literature review that they had to leave classes unattended to the monitor food handlers.

**Table 0.3: Demographics of participants**

Descriptive Variable	Total No. = 24	Percentage
<b>Gender</b>		
Female	21/24	87,5
Male	3/24	12,5
<b>Position</b>		
Principals	7/24	29,1
VFH	7/24	29,1
SBM	2/24	8,3
NSNP DC (District Coordinator)	1/24	4,1
NSNP CC (Circuit)	1/24	4,1
NSNP C (Coordinating educators)	6/24	25
<b>Years in a position</b>		
6 months to 1 year	9/24	37,5
2 – 5 years	2/24	8,3
6 – to 10 years	3/24	12,5
More than 10 years	10/24	41,6
<b>Years in NSNP</b>		
6 months – 1 year	10/24	41,6
2 – 5 years	3/24	12,5
6 – to 10 years	2/24	8,3
More than 10 years	9/24	37,5

### 1.32.1 Adherence to the NSNP menu

The menu is a guideline for the type of food to be served to the learners daily per week. The schools follow the menu as prescribed by the Provincial Department of Education. At the start of 2022, the first menu was not favourable, especially on Mondays, because the samp and the beans had to be soaked. On weekends the educators and the food handlers are at home. As a result, the preparation of this food would take longer due to soaking. This would affect the learners who had not eaten or those who had eaten less during the weekends. When the interview was conducted at School B, the principal indicated that the menu was a challenge due to the type of food that is served to the learners on Monday, as indicated above. The school had to deviate so that the learners were served food on time in the morning. The principal of school B responded as follows:

*“Samp and beans need to be soaked first on Monday, and some learners come to school having not eaten on Saturday and Sunday, so the Monday menu was through discretion, altered” (PB)(Sic).*

The first menu was changed. This was confirmed by the VHF D during the interview. The food handler was able to recite the menu and the response that matched the menu.

*“..... Monday learners eat rice, tin fish and butternut; Tuesday learners eat stamp and cabbage; Wednesday eat Pap and milk; Thursday eat Pap and soup” (VFH D) (sic).*

Even in cases where the schools could purchase the food by themselves, they had to follow the menu. The purchase followed what the menu prescribed so that the learners are served food according to the menu. The NSNP coordinating educator at school E attested that:

*“.....We have been piloted by the department. so we are decentralised, so we buy food for ourselves, so when buying food every month, before the first of each month, we follow the menu, we follow the menu as prescribed by the department” (NSNP CE) (sic).*

The menu contains the names of the type of food for each day and the ingredients or nutrients in that food. Therefore, by following the menu, the nutritious value is considered. Thus, ensuring the well-being of the school learners through providing proper food.

There is a need for at least two meals a day for the learners at the schools. Therefore, two different official menus are essential. Other schools improvise by providing soft porridge before the official meals are served. The Department should look for a way to provide the meals by increasing the budget. In case of the budget constraints, the partnerships with the private sector and the NGOs are encouraged. The creation of a favourable atmosphere for companies to operate in is critical. Viable options need to

be created. An example is the partnership of the Gauteng and the Eastern Cape Departments of Education with Tiger Brands Foundation (see Literature review). It is essential to ensure that the specifications, as prescribed by the department, are also adhered to.

### **1.32.2 Adherence to the specifications**

The Department prescribes the specifications for the food that is acquired and served at the schools. The specifications are closely related to the menu. The specifications guide the schools on what is suitable to be procured by the service providers or what is to be purchased by the schools from the retailers or the stores. The NSNP district official confirmed that specifications are followed. According to the official, the specifications come from the province. The schools send their enrolments to the districts and eventually to the province. The province uses the enrolment to determine what to specify and how much foodstuffs must be delivered to the schools. The service providers deliver the foodstuffs according to the specifications.

The specifications are so important. They ensure that the proper food is delivered at the school. While the food delivered, it is aimed at alleviating short-term hunger, and it should at the same time be nutritious hence the specifications. The schools should ensure that the food that is delivered meets the required specifications, whether it was procured or bought. The NSNP official indicated how the specifications are considered, particularly when the food is delivered to the schools.

*“..At schools, the specifications are checked against what is delivered. Delegated educators, SBMs and food handlers are trained to identify food delivered. The principal can also receive food if others are unavailable. During holidays, Principals, in most cases, receive food” (NSNP DC) (sic).*

The NSNP district official further maintained that there are specifications that are to be followed. The schools are aware of the amount of food to be delivered. The perishable food is delivered every week. The non-perishable food is sometimes delivered on a fortnight basis.

The specifications should thus be checked to ensure that they conform to the standards that are set by the department. With the training that is indicated by the NSNP district official, the personnel at the school can check correctly and thwart any deviation by the service providers or by the stores. They can identify what is suitable for consumption as the specifications dictate that. Not everybody can be trusted, hence the need and capacity to check. Below the NSNP district official attested to the need to check for the specifications compliance as there may be a deliberate non-compliance by the service providers.

*“..After checking, if the food is not according to the set standards, the deliveries will be rejected. Service providers know but may take chances, although they know specifications” (NSNP DC) (sic).*

In the same vein, as necessary as the specifications are, it is equally important to consider the food that is problematic to the learners.

### **1.32.3 Food learners do not seem to like**

The provision of the food will only serve its purpose if the learners also like the food that they are served with. The learners are from different backgrounds, and they may not be comfortable with some food either due to socio-cultural circumstances or due to health problems. They may need to be encouraged to eat some type of food, especially the food that is suitable for their consumption as prescribed by the departmental dieticians. The principal of School B confirmed that the learners need to be encouraged to eat some types of food.

*“..There are learners who are not eating and I ask them, why they are not eating, and they will give me reasons and those reasons that I can attend to, I can even talk to them, and some will even say, like I don't even eat this at home. I will just say let us taste together, then we taste together, and they end up eating” (PB) (sic).*

At School D, the learners preferred other food than others. The NSNP coordinating educator pointed out that on the day when soya bean stew with samp is served, there are no queues as on the other days. For instance, most of the learners do not queue on the day. The learners prefer porridge in particular and rice. According to the educator, these are the foods that one will see the learners enjoying. The learners also do not like porridge with milk. They take the porridge and buy relish such as chakalaka, stew and beetroot from the hawkers at school. Tinned fish, butternut and rice are favourite meals for the learners. One can notice that the learners still need more food when their favourite meals are served.

The principal of School C lamented the first menu of 2022, whereby milk came twice a week, on Wednesday and Friday. The principal confirmed that the learners do not like milk. Milk makes them nauseous and vomit. Some learners indicated that they do not consume the four-legged animals, of which, in this case, the product is milk. Everyone had their own story to tell. Some of the learners have chronic diseases and are not supposed to have diarrhoea and they must not lose weight. So, these learners cannot be encouraged to consume milk as this will cause health problems for them.

The principal of School G also confirmed that milk is not liked, or it has adverse health effects for the learners. As a result, when milk is served, vegetables or soup replaces it. School G's NSNP coordinating educator also confirmed that milk is replaced by soup or soya mince on Wednesday.

The schools should be encouraged to use the “Mnandi For Sure” recipe book, as mentioned in 1.18.4 of the literature review, to make food tastier and more attractive for the learners. This will entice the learners if the meals such as soya beans stew are better cooked and mixed with other ingredients.

It is also, therefore, rational for the schools to replace milk with other products to ensure that the learners who do not like milk, also eat something. Therefore, the learners’ interests are safeguarded against hunger, thus ensuring their well-being in the quest for their education. Likewise, mealtime is crucial in the quest to alleviate short-term hunger meaningfully.

#### **1.32.4 Mealtime and its impact**

According to the recommendation of the department, mealtime is from 9h30 to 10h00. However, there are different times of serving the meals owing to the different circumstances at the schools. Some schools offer soft meals to learners early in the morning to arrest the hunger of the learners. The schools had to improvise due to the learners’ poor backgrounds and their compelling circumstances such as chronic illness. The NSNP coordinating educator from School G highlighted the below.

*“..We have suggested that we should have breakfast at 7h00 before the learners can start. As we have realised that some of the learners come to school hungry. Then we have started that programme of having breakfast, a soft porridge in the morning but it goes on uhm on Tuesday and Thursday” (NSNP CG) (sic).*

In addition, the principal of School G pointed out that another reason was to avoid taking some medication by the learners without eating. At this school, the learners receive two meals a day. The school applied for the deviation, and the education authority approved it.

There are varying times of the starting of the mealtimes. Four of the seven schools start with serving meals to learners from 9h30 to 10h00. The other three start at 9h00, 9h45 and 10h00, respectively. All the participants had the same reason why there should be a meal for the learners in the morning, except for School C. They pointed out that the learners go to school hungry, and they must be fed to avoid hunger-related consequences. In contrast, School C indicated that it is for the learners to eat and play after that. The principal of School E stated that:

*“At 09h00 in the morning, the reason being that, so as quintile 1 schools, we know the learners, most of them come to school without breakfast. So, at 9h00 is their breakfast time, and then we need them to concentrate after eating breakfast, otherwise, we know they will be sleeping and some will be crying more especially in the foundation phase, they cry and say we are hungry” (PE) (sic).*

The impact of the meal programme intervention is enormous; and equal is the consequences of not having breakfast. In Chapter 2, it is confirmed that the damage that is caused by the lack of breakfast is irreversible. The mealtime in the morning is therefore very essential. The improvisation by some schools and the partnership as shown above in 1.31.1 is essential, however, the food quality must be ensured.

### **1.32.5 Quality of food**

The food should not just be food to fill up the stomach. It should be of good quality, and it must be attractive and, above all nutritious. The nutritional elements are crucial for the development of the children at their early stages. The NSNP Circuit official concurred this when stating that the learners are receiving a nutritious meal as it is not a matter of just eating and filling their stomachs.

In an interview on SAFM on hunger, malnutrition, and food security, Dlamini Nomusa (2022), a Principal Research Scientist in food sciences and technology, said,

*“Hunger and nutrition go hand in hand In brief..... Hunger, which is lack of food, we have what we call hidden hunger, is when you do not get all the nutrient you need for a healthy life”.*

The account above means one can be fed but still have hidden hunger. The NSNP circuit official also supports this account. The official stated that it should be ensured that the meals have three groups; which are protein, starch and fruit or vegetable. The learners must always eat food in these three groups. It is according to the policy, and this must not be compromised. That is why it is called a balanced meal.

The NSNP district official further indicated that the people receiving the foodstuff at the schools are work-shopped to check the food quality. These are the delegated educators. They check the deliveries and ensure that the fruits are not too small. The medium-sized fruits and vegetables are acceptable. The milk should be packed and pasteurised. The maize meal type is special, and it should be checked if it is the correct formula. When the deliveries arrive, the delegated educators must ensure that quality foodstuffs are delivered. In schools where there is an SBM, the SBM assists the delegated educators. The delegated educators that are mentioned by the officials are referred to as the NSNP coordinating educators in this study.

Similarly, the NSNP coordinating educator of School A further attested to the quality assurance of the foodstuffs.

*“The meals should have both proteins and carbohydrates. The food is also checked to be suitable for eating; if not, the food is returned to the store. We check and assist in determining whether the food is*

*suitable for consumption or eating, checking dates when the food arrives, and sometimes the food might not be fine, and we have to check the food itself. Sometimes we may check the date and only find that inside the food is not suitable for eating” (NSNP A) (sic).*

It is critical for the LDoE to intensify the means to monitor, and quality assure the food that is provided to the learners. This will keep in check the unscrupulous activities that may arise. While quality should be assured, the right quantity of food should be served to the learners.

### **1.32.6 Quantity of food**

The quantity of food refers to the amount or portions of food that are supposed to be offered to the learners. It is imperative to ensure that the food that is served is adequate in relation to the required standards.


The NSNP district coordinator confirmed by indicating that:

*“There are specifications for each daily menu, and there are calculations of food rations, and the monitoring tools also have provision portions for the food.” (NSNP D) (sic).*

It is not just a matter of portions that are served to the learners only but following the required set standards is key. These set standards are determined by the personnel with the relevant expertise and the dieticians in consultation with the department. The principal of School B indicated that the quantity of food is checked to ensure that the correct measurements are done. The principal further indicated that the measurements are small, as breakfast is not supposed to be heavy, because the learners may be passive, or they might sleep in class. Therefore, the quantity that is offered takes into account the time of serving the meals and the purpose of the activity to be undertaken. The learners should eat acceptable levels so that they are comfortable, and they can participate in learning and teaching at the school.

Similarly, the NSNP coordinating educator of School A indicated that the measurement in grams is used to detect how much food the learners should be given. The department allocates the quantity, and a feeding tracker is used. The tracker is in excel. The number of learners is punched into the tracker, and the tracker allocates the amount that must be offered per learner. The tracker referred to in this case is the calculator.

**Table 0.3: Daily meal preparation quantity calculator**

LIMPOPO NSNP - DAILY MEAL PREPARATION QUANTITY CALCULATOR							
Number of learners eating on the day in the highlighted cell for the relevant school type							
		Primary		Secondary		Combined / Intermediate schools ONLY	
		0		0		No. of learners (Grade R to 7)	
		0		0		No. of learners (Grade 8 to 12)	
		0		0		Total learners	
		0		0		0	
PRODUCT	UNIT	QUANTITY TO PREPARE		QTY TO PREPARE		One protein option will be selected per day with a starch and a fruit/veg	
Maize meal, samp	kg	0,0 kg	0,0 kg	0,0 kg			
Rice	kg	0,0 kg	0,0 kg	0,0 kg			
Sugar beans	kg	0,0 kg	0,0 kg	0,0 kg			
Soya mince	kg	0,0 kg	0,0 kg	0,0 kg			
Pilchards	400 g tin	0 tins	0 tins	0 tins			
Pilchards	425 g tin	0 tins	0 tins	0 tins			
Milk	Litre	0 litres	0 litres	0 litres			
Fresh vegetable	kg	0,0 kg	0,0 kg	0,0 kg			
Fruit in season	Each	0	0	0			

Source: Limpopo Department of Education (2022)

On the one hand, the principal of School E maintains that measuring food is ensured at the school.

“.....even the quantity to be cooked per day. So, I make it a point that he before...a day before we weigh everything. We have got a scale in the office; we have got measuring jugs in the office. Before we go home, we measure the ration for tomorrow so that the food handlers mustn’t misuse the ration of the day” (PE) (sic).

The school-based monitor of School C upheld the use of the calculator to measure the correct quantity of food.

“We count learners and use a menu calculator to ensure we give the correct quantity of food to the learners” (SBM A) (sic).

According to the principal of School E, it is crucial to check everything until the dishing of the food is done. After that, it must be ensured that no learner is discriminated against concerning the portion of food that is served. All the learners should receive equal portions of food. With the correct portions of food that is served to the learners, the value that is attached to the meal programme for the learners will be maintained.

### 1.32.7 Background and benefits to learners

The value that the meal programme has on the learners is indispensable. Moreover, considering the background of the learners, the vicinity and the quintile of the schools are important. The Principal of School G substantiates the above account by stating that:

*“... since now I am aware that the socio-economic of this community is very very low. Since now some of the parents, some of them they depend on grants, some of them are working in the farms. They didn't earn a lot. This is attributed to the fact that some of them cannot even provide a type for a learner to show that the socio-economic activity of this community is very low. So, this thing helps a lot. It alleviates hunger to this village.” (PG)(sic).*

Similarly, the NSNP circuit official concurred with the utterances of the school's principal by stating that the learners' benefit, especially considering that the parents of the learners are poor farm dwellers. The meal that the learners receive is so crucial for each day. As a result, the department has come up with the correct solution to alleviate hunger through the programme. This description attests to the programme's value in alleviating the short-term hunger of the learners while simultaneously relieving the parents to some extent as they cannot adequately provide for their children.

The NSNP district official also pointed out that most learners rely on this food entirely. Some learners turn out to school without having eaten breakfast. During the peak of the COVID-19 pandemic, there were no lessons at school, but food was cooked for the learners to come and eat.

The NSNP circuit official continued to demonstrate the value of the meal programme as it provides food at the critical moments in the lives of the school learners. The learners might be sick, but during meals, they go to school to eat and leave for home to rest thereafter. The learners rue the holidays because they lack food once they are away from school. The principal of School A confirmed the attitude of the learners that even though these learners receive food parcels during the school holidays, they do not look forward to the holidays as they miss an opportunity for these meals. It can be seen from their faces that they are not happy when it is time for the school holiday. The condition of some of these learners' uniforms also tells a sad story.

The NSNP coordinating educator for School E pointed out the meal's significance and how the learners behaved. The educator thus related the experience with the learners over the years.

*“Because is long that i have been in this field so especially here in the farm, in the farms so many kids Uhm...,they are suffering them, in our case if a learner is absent he or she is sick but they enjoy coming to school , especially during feeding time Uhm...you will hear lot of noise and with the deviation of money we just deviate from the measurement given by the department” (NSNP E) (sic).*

The noise in this regard points to the happiness of the learners when they are receiving the meals. At the school they are able to add more food in respect of the portions and other additional food products

as the school affords to buy. The vegetable gardens assist more when functionality is ensured at the schools.

### **1.32.8 Vegetable gardens**

The school food gardens serve as a tool for disseminating information on food production, fostering a culture and a love of food gardening, and connecting it to nutrition. The launching of school food gardens is linked to changes in children's skills and attitudes that are favourable to increasing vegetable and fruit consumption, advanced knowledge about vegetables and fruit toward meaningfully influencing children's dietary habits at a young age, and changes in food behaviour (Laurie, Faber & Maduna, 2017).

The school gardens are crucial as they augment the food that the schools receive from the service providers or from the retailers. Furthermore, the garden vegetables or the fruit are full of nutrients for a good learner's diet. The schools must have vegetable gardens as one of the pillars of the NSNP. The NSNP circuit official pointed out that gardening is encouraged; and the monitoring of the school garden is also included. With a productive garden, the schools may be able to even sell the vegetables to the supplier.

The principal of School G indicated that the school has a garden, but it is not what they expected as there are animals that crawl under the fence and feed themselves. The purpose of having a garden is for the diversity of vegetables and for supplementing food. The service providers provide cabbages and pumpkins. The school augments this by producing beetroot, carrots, and spinach.

At School A the principal stated that the school has a vegetable garden, but it was not active during COVID-19. The garden is being revived. Before COVID-19, the school was not buying some vegetables as they were available. The functionality of the garden saved money, as the school did not buy some of the vegetables. At School B, the principal indicated that there is no vegetable garden because of the monkeys and the porcupines that eat the crops before they can grow into consumable vegetables. At School D, the principal pointed out that there is a vegetable garden, but it is not much effective due to the geographical location, as the monkeys are rampant, and they can destroy the vegetables which are meant to supplement the food for the learners.

The NSNP coordinating educator of School E indicated that the school has a vegetable garden, and it has produced many vegetables. The vegetables are sold to buy cleaning materials and food utensils. The broken utensils are replaced with the money that is acquired from selling the vegetables. The principal also confirmed the nutritious value of the vegetables that are produced from the school garden.

*“We save a lot because we give them free vegetables, we don’t put manure there, and they are so organic. So, it is benefiting the learners with nutrition as we do not supplement we have got eh, our soil is very rich, ya, we know that they are getting organic food supplement” (PE) (sic).*

The partnership with the Department of Agriculture for sustainable vegetable garden projects at school should be enhanced. The schools with the problems of the animals that destroy their crops, should, in the meantime identify the crops that the monkeys do not consume as one school did. The Department can look into the use of the whole mesh net or agriculture netting to protect the crops from the animals. As schools can save money through the decentralised model, they can plan and save for the erection of the whole mesh fencing. In addition, the liaison of the LDPE with the Department of Agriculture will harness the learners’ skills so that the school gardening project becomes a vehicle for transferring the skills from generation to generation. Therefore, the school gardens are essential for food productivity, for the imparting of skills, as well as for enhancing teaching and learning activities at the schools.

#### **1.32.9 Contribution to teaching and learning**

The contribution to teaching and learning by the NSNP is immense and remarkable. The principal of School A pointed out that food is important. The food helps the learners to concentrate. The learners seem not to be well fed when they return to school after the weekends. The food provided at the schools contributes to teaching and learning. In addition, the NSNP coordinating educator for School A further indicated that some learners were weak on Monday, and they complain about stomach aches and headaches because they will not be getting enough food during the weekends. The learners cannot participate when they are hungry or when they are sick.

Thus, hunger has dire consequences that adversely affect the learners’ health, education and, eventually their holistic well-being. When the learners are hungry, they may not be at school, but because of the meal that is served at a school, they are attracted to the school. The food alleviates short hunger and contributes to the well-being of the learners. The NSNP coordinating educator for School D stated that:

*“Yes, because learners spend most of their time here and come from far, they arrive early at school and reach their homes at 5 in the afternoon. Some learners are from poor families. Due to the food that the learners get food at school, the learners are able to concentrate and pay attention. If there is no food, the learners complain” (NSNP CD) (sic).*

In addition, the principal for School C attested that the learners could concentrate, however, these learners from the poor backgrounds benefit greatly from the nutrition programme. The principal of School D further shows how the project is alleviating short term hunger, while contributing to the education of the learners. It is clear that when learners are hungry their concentration is affected.

*“The project in itself is beneficial given the fact that learners are from different backgrounds, you have learners from well to do families and those who are from families which are living under or below poverty levels per labour policy. These learners are benefiting, and they are able not to concentrate in the teaching and learning. The project on itself is so beneficial and helpful to our education system” (PD)(sic).*

Most of the learners rely on the nutrition programme as part of their day-to-day meals during the school days. With some schools being able to serve surplus food to the learners, more significance is added in alleviating short-term hunger.

### **1.32.10 Surplus food**

In Limpopo, the NSNP is destined to offer a meal once in the early hours of the day. However, some schools can serve the learners with surplus food owing to their enabling situation or their deviation provisions of the Department of Education. The food handler for school A pointed out that if there is a surplus during a short break, the learners are offered food. Some learners need surplus food as they do not have enough food at home. Similarly, the NSNP coordinating officer for School A indicated the following:

*“During the first break, food is offered, and remnants are offered during a long break. During another short break, those who still feel hungry are given food. Learners from the poorest families are selected. They come with containers and allocate the remaining food. Even learners in need, for instance, those in need while waiting for transport” (NSNP CA) (sic).*

Indeed, some schools do offer a second meal due to their enabling circumstances. These schools serve the second meal to the learners, but they may not offer surplus food to take home. The food handler for School A confirmed this by stating the following:

*“There is often surplus food when some learners are absent from school, learners are given some more of the surplus and when all learners are present, there is no surplus food” (VFH A) (sic).*

The food handler for School D maintained similar circumstances by stating that no surplus food was left behind. The food handlers serve food to the learners, and they call them to have a second meal if they feel that they have not eaten enough. No food is left to take home as the learners enjoy the food.

In some instances, it is not all the learners who receive surplus food. Surplus food is reserved for the most vulnerable children at a school. The school-based monitor for School D attested to this by

indicating that they keep the registers, and they give food to the learners from poor backgrounds. They inform the learners to come with containers to school so that they can take food home.

The meal programme thus alleviates the short-term hunger of the learners at school and even at home. The benefit of the NSNP extends beyond the school situation and it helps the parents who do not afford enough food for their children. Holistically, it is a mutual benefit that thwarts the threat of hunger and malnutrition, thereby ensuring the well-being of the learners. In the same vein, the department ensures that the learners receive food at schools, and the decentralised and centralised models are used to procure foodstuffs.

#### **1.32.11 Decentralised and centralised models**

The model for schools to obtain food contributes to adding more food for the school learners. The schools are allowed to deviate; therefore, they might add and supplement food in respect of the quantity and put more nutritious products. As a result, the kind of model for food distribution enables the schools to provide more food than prescribed. The NSNP district official pointed out that the reason that the Tzaneen Circuit is having the centralised and decentralised models is that the circuit is piloted by the department on the decentralised model. In a decentralised model, the department deposits money into the school account. The school sources food on their own and they may negotiate the best price for the food. The schools are thus able to save money. With the saved money, the schools are able to supplement their menu and also offer breakfast. For instance, in one school there were chicken livers in the refrigerator to add to the menu.

The NSNP district official continued and indicated that in the centralised model, the department issues a tender. The suppliers bid for that tender to supply food to the schools. The supplier that gets the contract delivers food to the schools. On this model, the schools do not have any means to negotiate the price because they only receive food from the service providers.

Out of the seven sampled schools, only two schools are on the centralised model. Most of the schools in the Tzaneen circuit reverse the decentralised than the centralised model. The NSNP coordinating educator for school D attested to this by pointing out that the department deposits money into the school account and the school buys by itself. There were no problems, but there were times when the retailers brought fruit (bananas) and vegetables (cabbage) that were not fresh. The school goes to the supermarket and checks whether the fruits and vegetables are fresh, if not the school will not buy them. The school manages the funds and submits monthly reports to the circuit.

The principal for School A affirmed the advantages that are associated with the decentralised model. The department deposits money into the school's National School Nutrition Programme (NSNP)

account and the school buys the food for itself. The school saves money by purchasing and sourcing food by itself as compared to receiving food through the service providers. It is better than the tender system.

The model favours the schools, and the schools are able to avert the problem of the delivery of stale vegetables and fruits. This ensures the delivery of fresh products which upholds the quality of the products thereby equally preserving the nutritious value. The NSNP circuit coordinator also maintains positivity with the decentralised model.

*“With the decentralised system, there are no challenges. For six months the school receives trenches in these periods. Challenges might be at school, contracts should be at least 3 to 6 months so that if the retailer does not provide foodstuff accordingly, they may terminate the contract” (NSNP CC) (sic).*

The approval of the decentralised model for the NSNP at the schools is also recommended. The model is working well as the schools can cut costs, buy more fresh food, and they save money. Currently, 10% of the schools are on the decentralised model. The decentralised model can be introduced gradually over six years while piloting and putting necessary measures in place. Eventually, the rigorous routine monitoring and the other audit mechanisms are implemented to avoid misappropriating funds and other resources that are meant for the NSNP.

### **1.32.12 Considerations of health and safety**

The considerations on health took in the sub-theme’s considerations on chronic diseases, food safety and the role of meals during COVID-19.

#### **i) Considerations on chronic diseases**

The considerations in respect of chronic diseases such as HIV-AIDS need to be factored. The learners with chronic diseases are identified at the schools through collaboration with the parents or the guardians. These learners need to be monitored and supported without their rights being infringed.

The principal for School G indicated that there are some children who are HIV positive. Their parents have passed on. Their guardians neglect them and use their grant money for gambling. The intervention of the social workers was sought. The school applied to the circuit for permission to serve soft porridge to the learners in the morning. Soft porridge is served on Tuesday and Thursday. It is this case of children that amongst others prompted the school to serve soft porridge. The schools such School G are allowed to improvise and serve soft porridge to take care of the medical conditions of the learners. The

serving of soft porridge takes place before the official mealtime. The aim is to alleviate short term hunger while ensuring the medicinal well-being of the learners.

The NSNP coordinating educator for School G affirmed the principal indicating that for the school to utilise the savings an application was made to the department. The approval was granted. The school serves breakfast to the learners because it was also discovered that some learners have chronic medical conditions. The learners bring along medication to school and end up taking their medication without food. The school introduced soft porridge breakfast as a response to the anomaly.

## **ii) Food safety**

Hygiene and cleanliness are paramount. The food that is served to the learners should by no means be contaminated. The principal for School G confirmed this by indicating that,

*“Yes, my role is to Check whether the food they are given is hygienic and well-cooked food and making sure that there is no learner who does not get food” (PG) (sic).*

The food handler for School B indicated that as food handlers they wash the food utensils and place them in the correct place where the learners usually place and get them after feeding. They make certain the learners do not eat before washing their hands. In the same vein, the school’s principal pointed out that the delegated teachers monitor the learners during feeding to ensure that they are properly fed and that the learners are made to follow protocols such as washing hands before eating and rinsing food utensils after use. The food handler for School D wrapped up by including that the cleaning apparatus is used for proper cleaning and hygiene.

*“To clean we use mops, pine gel and sunlight dishwashing liquid to clean food utensils to promote hygiene and learners come with food utensils which they use to eat from when sitting under trees or their preferred place” (VFH D) (sic).*

The place where food is stored, cooked, and served should be very safe. The food handler for school D affirmed that after cooking, they cover the food, and one food handler is left to monitor and guard the food if one is to move out. They also relentlessly check the expiry dates of the food. The NSNP coordinating educator for school A concurred with the above affirmation by the food handler of that school. The coordinating educator indicated that the food is packaged inside the baskets and not everyone is allowed access to the kitchen, as only the selected people who are responsible for The NSNP are permitted to enter the kitchen. Concerning the safety of the food, the challenge is burglary and theft.

These were reported at Schools C and G. However, the acts of burglary and theft are rampant at School C as indicated by the principal.

### **iii) The role of school meals during COVID-19**

The role of the NSNP was so immense during COVID-19. After the court ruling as indicated in Chapter 2, the department had no choice but to put in place the logistics for the provision of food to the needy learners. Though teaching was not taking place, the learners had to be provided with food at school.

The NSNP district official confirmed that during the peak of the COVID-19 pandemic, food was cooked for the learners to come and eat.

The NSNP district official further indicated that the schools had to make food packages for a week. The learners who used scholar transport were transported for the purpose of eating. The coordination with scholar transport made this possible.

In addition, the principal for School B attested that during COVID-19, food was packed and transported to the learners. The parents were very happy. The learners served at the schools enjoyed soya mince and could go for second servings. This meant that the call for the alleviation of hunger for the school learners during the COVID-19 pandemic was considered significant. The happiness of the children and their holistic well-being was prioritised in this regard.

Most of the studies were conducted before COVID-19 and they do not have the role that the NSNP contributed to the well-being of the learners. The study received approval during the peak of COVID-19 in 2021. Therefore, the study also made findings on the contribution of the NSNP during that period. Apart from the findings from the participants, it is imperative to also consider the results from the observations.

### **1.33 Findings from observations**

In most of the schools that were observed there are no proper kitchens. Food is prepared in open makeshift kitchens. Firewood is used to cook the food. Big three footed pots or large aluminium pots are used for cooking food. Only one school, which is School B uses gas to cook food while one school, School G uses both firewood and gas. At the schools, the food handlers are entrusted with the cooking of the food. At Schools C and E, the SBMs helped with measuring the quantity of the food and ensuring that the right quality is prepared and served. At the other schools without the SBMs, the NSNP coordinating educators assisted in ensuring that the learners receive the right number of well-cooked meals.



**Figure 0.3: Firewood**



**Figure 0.4: Gas cylinder**



**Figure 0.5: Makeshift kitchen**

All the food that was served was according to the menu for that day. The menus were displayed in the makeshift kitchens in some schools, whereas in the others they were displayed in the storerooms. In some of these makeshift kitchens such as in Schools A, C, D and E, there is no place to attach menus as they could be blown away by the wind. The containers with taps and soap water are placed in front of the classes for the learners to wash their hands before receiving their meals. According to the department protocols, the learners should eat in the classrooms. Many schools followed this except one school where the learners ate outside the classrooms. The surplus food is served to most needy learners at Schools A and E. the learners are also given food parcels to take home at these schools. There was no surplus food at the other schools.



**Figure 0.6: Food on shelves**



**Figure 0.7: Students holding food parcels**

The food in most schools was stored in storerooms with burglar proofs and it was placed on shelves. In School C, the food is stored in a strong room. The common problem is the safety of food due to constant burglary and theft in School C as indicated above during the interviews. The food in all the schools was served to the learners in washed utensils. The learners washed their hands with soap and water. The food handlers at the schools wore caps on their heads, they washed their hands and also wore masks to observe health and the COVID-19 protocols. The food utensils were washed by the food handlers after the learners have eaten.



**Figure 0.8: Food handlers washing dishes**



**Figure 0.9: Washed food utensils**

According to the department's prescriptions, the official mealtime the schools have to follow start from 9h30 to 10h00. It was observed that the schools have different mealtimes. At Schools A, B, C and G, the meal time started from 9h30 to 10h00. At School D, the mealtime started from 09h45 to 10h30. At School E, the mealtime started from 10h00 – 10h40. The School G learners received their meals from 9h30-10h00. The School F learners were served their meals at 10h00 as opposed to the indicated time of 9h30. The interview clarified the contrast. At School F, usually the learners are served with meals at 9h30. The samp was not soaked, and it took a long time to cook as usually it is soaked a day before to be ready for cooking. The food handler attended an NSNP meeting a day before hence the non-soaking on time.

The schools should have vegetable gardens for food productivity, as well as for supplementing and nutrition. Only School E has a functional school garden with green vegetables. School A is reviving the school garden while School G has a garden, but it is not good looking.



**Figure 0.10: New school garden**



**Figure 0.11: School vegetable garden**

### **1.34 Analysis of documents**

The documents that were obtained from the department and the schools provided information on the NSNP and they allowed the researcher to make some verifications. The documents such as the menu, the policies, the school budget, the monitoring tools, the learners' food registers, the logbook entries, the food handlers' registers, and the 7 pack, "Mnandi for sure", timetables were among the others that

were analysed for the purpose of this study. The researcher compared and contrasted the information as informed by the documents that they interacted with. The information obtained from the documents was also integrated with the findings.

### **1.35 Discussion and interpretation of findings**

The schools conformed to the menu but the others due to circumstances had to augment the first menu. The first menu of 2022 was not compatible with the diet of some of the learners. Milk came twice in a week, and it was problematic to many learners. Even though at a later stage the milk was served once per week, there were still some learners who were allergic to milk. Milk should be served at least once a week as ingredients such as calcium are important for the growth of the learners. However, there should be a choice or a supplement product. Some schools supplemented milk with fruits or vegetables. The other schools replaced milk with soup or soya mince. On Wednesdays, the schools had no choice but to deviate for the sake of the wellness of the learners. The records for School G show that an environmental health practitioner visited the school to monitor the NSNP and for inspection. The practitioner collected 1 milk sample for laboratory analysis to check the quality of the milk product. The incident attests that the monitoring of the implementation of the NSNP is not only from the officials of the Department of Education. The quality of food is, therefore, well ensured when there is also three-pronged monitoring from outside the school which is from the circuit, the district and from the health officials.

Out of the sampled schools, it is only the mealtime for School C which starts from 10h00 to 10h40. The mealtime is the latest for serving food to the learners out of all the schools. In contrast, the principal indicated that there are learners who become very weak due to hunger before food could be served. Some educators do offer some food they carried along for themselves to the learners. Based on experience, the food could be served earlier to the learners instead of serving food at 10h00. Moreover, the mealtime is not in line with the departmental one, which is from 9h30 to 10h00. There is also an extra 10 minutes that is added to the mealtime. It does not conform to the set standards of the school meal programme.

The schools are allowed to deviate, however, with permission that is granted by the department. For instance, School G serves soft porridge at 7h00 in the morning because of the learners with chronic conditions. The conditions gave an advantage to the other learners as the soft porridge is served to all the school children. It also minimised the exposure of the status of the children with chronic conditions. With their dignity protected the happiness of the children was ensured.

One school that uses gas for cooking does not have a housing for the gas cylinder, it is used as it is exposed in Figure 4 and it is stored in another room by the school principal's office which is used as a

kitchenette. The standard procedure is not complied with in this regard, thus compromising the safety protocols of gas usage.

The decentralised model is favourable for the NSNP implementation at the schools. The schools piloted for this model save money, buy more food and plan for purchase of other NSNP items. These schools are also able to offer surplus food or food parcels for the learners to eat at home. Through this model, the schools have more authority as they may decide to purchase or withdraw if they are not satisfied with the products or the service. The programme should be upheld. Monitoring should be strongly implemented to avoid the misappropriation of the funds or fraudulent activities. This model is cherished by the schools that have been piloted. Through the model, the alleviation of short-term hunger is exercised on a large scale than when applying only the centralised model.

The schools operating on a centralised model do not have a choice to purchase but to live with what service the providers offer, though there's a need of more food for the learners. In some instances, the learners may need some more food, but this is not possible. Some schools are able to improvise by serving soft porridge to the learners in the early mornings. Some schools deviate from the time prescription which is 9h30 to 10h00. When the schools offer food to learners at 9h00, it is rational as they do it because of learners who come to school hungry or due to medicinal reasons, so that the learners do not take medication on empty stomachs.

Many schools do not have vegetable gardens. With active vegetable gardens, the schools could supplement food, thereby meaning more nutritious food to also take home. Thus, the schools without gardens miss the opportunities to augment the meals and to choose from their own produce. On the other hand, the opportunity for the learners to have skills for self-produce is also lost. School gardening is one of the programmes that should concurrently run with the school meal programme because it is one of its pillars.

The food handlers were not yet formally trained. In one of the schools, the previous food handlers were used to orientate the new ones. The new food handlers had no experience of cooking in the formal sector except at home. Only one food handler had worked at a lodge and gained experience in the preparation of food. However, the food at the schools looked well cooked. According to the records, the food handlers who did not adhere to the rules are held accountable. Formal proceedings are held, and minutes are recorded. This ensured adherence to the set standards and maintaining quality while safeguarding the well-being of the school learners.

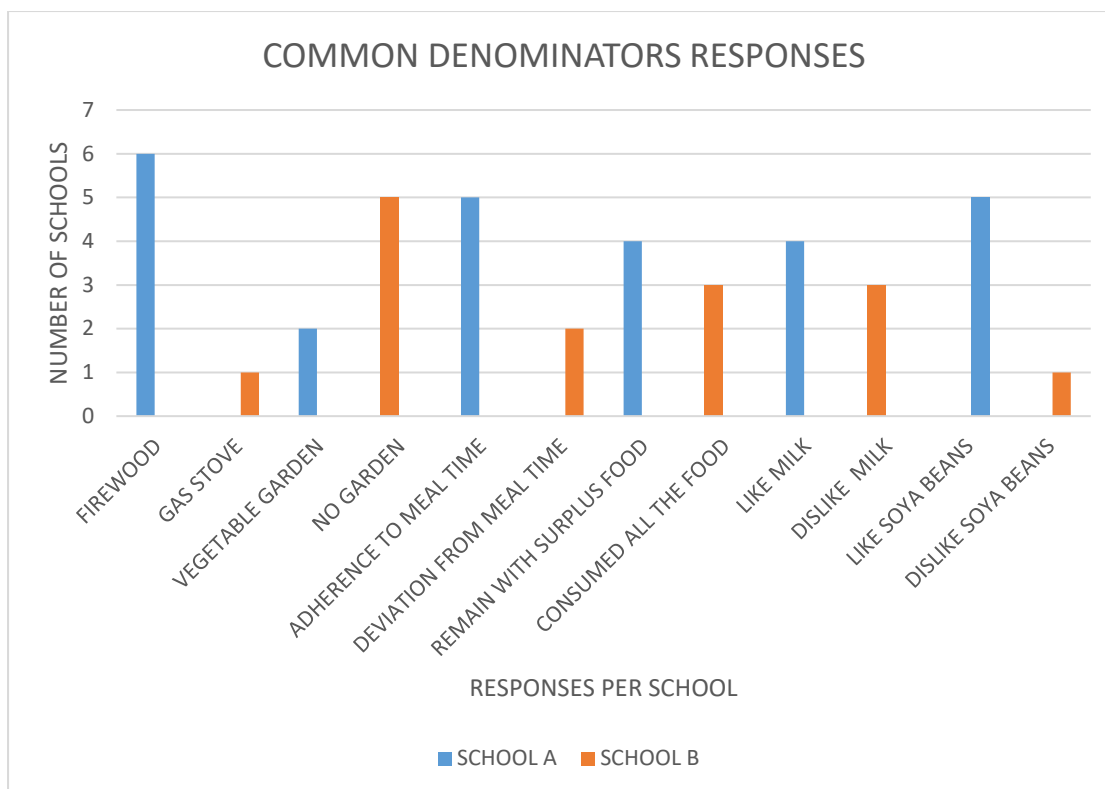
The "Mnandi For Sure" is a NSNP recipe book that is recommended by the department. It is evident from the findings that some learners do not like certain types of food, such as soya beans stew. To make

the food more attractive to the learners, the recipes can be utilised at the schools. It seemed the circuit official was not aware of the recipe book during the interview session. It is thus imperative to encourage the schools to utilise the “Mnandi For Sure” recipes.

The infrastructure at the schools is a serious challenge, especially the kitchens. There are no kitchens, and this may compromise hygiene or the quality of the food as the makeshift kitchens are utilised at the schools. The food can be contaminated, and the utensils may be blown away or may be filled with dust because of improper structures. At one school, the monkeys were so naughty, and they even disturbed the food handlers. However, the food handlers always cover the food before and after cooking. All the schools have running water, which made it possible to maintain hygiene. The learners eat in cleaned utensils. Germ’s disinfectants are used to clean the kitchen and food utensils. The learners in most schools eat in the classes while in one school the others ate in the class whereas the other learners eat outside the classrooms. In one school, the learners alternate in grades for meals due to accommodation constraints as a result of the schools merging. The school strives for the convenient seating of the learners during mealtime, while on the one hand, it needs more efforts from the school personnel to keep up with the scheduled time for the meals.

The situation is dire at these schools that are under the study. The contribution to learning and teaching is very valuable. It is impossible for the learners to concentrate while they are hungry. Most of the learners attend school hungry. During weekends, the learners move to homes where there is not enough food. When they return to school, they become happy because at home they struggle to get fed. The programme overlaps to the weekend and to the holidays at other schools that have the capacity to offer food parcels. Well balanced meals are crucial for the physical and cognitive growth of the learners. These meals at the schools were scheduled in quantity and quality by the dieticians. Thus, their nutritious value can be guaranteed. The learners get settled and learn at schools due to the provision of food through the school meal programme. Therefore, the permanent damage to the cognitive growth of the children is averted by the intervention of the school meal programme.

The role of scholar transport is significant in the roll-out of the school meal programme. Most learners would not be able to access the meal without this special project from the Department of Education. The parents of the learners whose residential areas are far from school would not afford transport fees as they are very poor, unemployed, or earning meagre salaries. The project contributes to enabling the meal programme to alleviate short term hunger and to the well-being of the learners.



**Figure 0.12: Response of schools per common denominators**

The above figure shows the common denominators per school, and they provide a summary for those aspects that are illustrated. The common dominators refer to the activities or to the items the school has or needs to have for the implementation of the NSNP. Of the seven schools, six use firewood to cook whereas one school uses gas to cook. Only two schools have a vegetable garden. Out of the two schools, only one has a well-maintained vegetable garden and five schools have no vegetable gardens. The findings from the participants and the observations provide detailed information in 1.31.8 and 1.32. Three schools adhere to the official scheduled time for serving meals which is 9h30 to 10h00, while the other schools have their own different times as shown in 1.31.4. Three schools have the means to provide surplus food to the learners unlike the other four schools. There are types of food that the learners do not like. Three schools indicated that milk is not a favourite for some learners due to health reasons as explained in 1.31.3. One out of the six schools reported that some learners do not like soya beans. The schools need to adhere to the mealtimes to avoid deviation as the school can manage time whether the food remains for the learners. The food that the learners do not like can be supplemented as shown by the participants in 1.31.3. Only a few schools remain with surplus food. The reality is that most learners do not have enough to eat at home. Therefore, the provision of two meals daily to the learners will further alleviate the short-term hunger.

### **1.36 Conclusion**

The responses of the participants were used to provide the answers for this study. The responses backed up the presentation of the findings as first-hand information or evidence. The observations was presented, and they further enriched the information that was gathered already. The figures and the tables illustrated the presentations and they further provided concrete clarity and evidence on the NSNP. The documents that were obtained further concretised the interpretation of the information through their integration in the findings.

## **CONCLUSION AND RECOMMENDATIONS**

### **1.37 Introduction**

This chapter presents the conclusions that were drawn based on the previous chapters. The study also acknowledges that there were limitations that were discovered in the process. For enhanced contribution to the NSNP, the study has come up with recommendations for improvement and further research.

### **1.38 Summative remarks**

The utilitarian theory and the theory of change were used in this study. The two theories are closely related. They are both the upholders of the interventions which bring about the happiness and well-being of the people. The NSNP is that intervention in the lives of the majority of the people who are the school learners from the disadvantaged or from the poor backgrounds. This intervention alleviates short term hunger, by bringing happiness to the children while pursuing education, and focusing on their sustainable future well-being. The two theories live throughout the study.

The role of the NSNP during the peak of COVID-19 was a new phenomenon. This study brought a new dimension to how the rights of the learners cannot be excused during a disaster or a pandemic. As shown in the literature review chapter of this study, the Constitution, and the learners' rights were upheld. The civil society, through a high court order, ensured that short term hunger is alleviated, thus safeguarding the wellbeing of the learners. The chronic diseases and the role of the NSNP are also underlined in this study. The programme contributes to the physical and to the cognitive aspects of the learners. It is through the meals that these developments in the children can be realised. The soft porridge that is improvised by the schools adds value to the school meal programme. The school meal programme further ensured that the children received food to alleviate hunger while considering their medical conditions.

The nexus between the scholar transport and the NSNP further enables the alleviation of short-term hunger. The nexus also contributes to teaching and learning. Without scholar transport, it would be impossible for some learners to reach school for their meals and education. The contribution of the meal programme to teaching and learning could not have been better realised without the role of the scholar transport.

The schools are situated on the farms in the Tzaneen area, which is rich in vegetation. The farm schools are in the bushes that are surrounded by plants, especially blue gum trees. The vegetable gardens cannot be viable with certain vegetables because of animals such as monkeys and porcupines that eat the plants. However, some school gardens thrive by growing the vegetables that the monkeys do not eat. The other studies suggest fencing as a solution; however, the standard fencing is not very appropriate for naughty

animals such as monkeys. Meanwhile, planting the crops, as indicated above, can provide temporary solutions.

The teachers complain that they cannot control the daily feeding register for the learners. They state that they are overburdened by the other work they have to do at the school. The SA-SAMS register can be used to distribute the meal portions to the learners. Likewise, the correct measurement of food for the learners will be ensured accordingly.

The food is not wasted. Most schools had no leftovers. The piloted decentralised schools afford to purchase more food for the learners to take home. However, some schools on the centralised model manage to serve extra meals outside the provision of the NSNP, with permission from the Department of Education. The soft porridge meal was introduced due to the learners with medical conditions. However, as most learners at the school are so needy, the meal is served to the entire learner school population.

Though most food handlers were not yet trained, they understood their responsibilities well. The state of the cleaning of the kitchens and the food utensils attested to their commitments. Moreover, the quality of the food was satisfactory, as the food was well cooked.

The study employed the qualitative research approach. It is assumed that through the data collection methods, as articulated in the research design and methodology chapter, credible information has been acquired for meaningful contribution to the NSNP. As a result of the data that was collected in the previous chapters, this study has noted limitations and recommendations.

### **1.39 Limitations**

The study sample included 24 participants, 22 from the schools and two NSNP officials, and it excluded the learners. The study had limited time frames, and the inclusion of learners could have added to the time constraints. The ethical consent process which includes the parents' permission, could have also prolonged the timeframe, therefore adding to time constraints.

The food handlers had just been appointed when most of them were interviewed. They had no experience regarding the programme as most had one to two months of experience. Though they were able to provide some information, it is assumed that with more duration in the programme, they could have done better.

The school coordinator at one of the schools gave an impression of having more knowledge in the programme. During the briefing before the interview, the school coordinator expressed confidence and

vast experience in the running of the NSNP. However, during the interview the school coordinator's responses were just fair, and they were not responding to the questions at times. In this regard, the information was not helpful as expected.

The study bordered on the qualitative approach. However, more valuable information was garnered through the approach. As a result, the intensive statistical information data which is quantitative does not fully appear in the study. The data could have augmented the discussions through intensive statistical illustrations.

#### **1.40 Recommendations**

Targeted recommendations for implementation are as follows:

- Appropriate additional funding for infrastructure improvement at the schools especially the building of proper kitchens;
- Revisiting procurement and supplier monitoring systems;
- Launching awareness programmes amongst the NSNP beneficiaries regarding safe food;
- Fostering more partnerships with the NGOs, the private sector and the other government departments for aid and sponsorship to augment the efforts of the DBE and the provincial departments;
- Collaboration with other departments and other NGOs for contribution to the programme;
- Timely appointment and training of the voluntary food handlers before starting with work.

##### **1.40.1 Recommendations for further studies**

- The effect of the nexus between the scholar transport and the NSNP in the reduction of short-term hunger of school learners;
- The benefits of the provision of two meals daily for the learners at the schools;
- The role of the availability of resources for developing sustainable food gardens in the schools;
- The contribution of functional food gardens to the welfare of the learners and their communities.

#### **1.41 Conclusion**

The importance of the theories applied in this study was underlined. The impact of the NSNP during COVID-19 was very critical, while the scholar transport and the civil action gave impetus to the school feeding programme. On the one hand, the limitations were acknowledged to clarify some of the study's gaps. In addition, the recommendations are aimed at improving the implementation of the NSNP.

Likewise, the recommended topics for research will further enhance the implementation of the NSNP in alleviating the short-term hunger of the school learners in the quest for their education.

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APPENDICES

APPENDIX A: LETTER FROM LANGUAGE EDITOR

**LET'S EDIT**

**EDITING CERTIFICATE**

30 November 2022

TO WHOM IT MAY CONCERN

**DECLARATION: Editing of Mini-dissertation**

I confirm that I have done language editing for **S. E. Leshabana's** Master's Degree in Development Studies mini-dissertation titled: **THE EFFECTIVENESS OF THE NATIONAL SCHOOL NUTRITION PROGRAMME (NSNP) IN ALLEVIATING HUNGER AMONGST QUINTILE 1 SCHOOL LEARNERS IN TZANEEN CIRCUIT**. The mini-dissertation now conforms to the University of the Free State's language editing standards.

The editor will not be held accountable for any later additions or changes to the document that were not edited by the editor, nor if the client rejects/ignores any of the changes, suggestions or queries, which he/she is free to do. The editor can also not be held responsible for errors in the content of the document or whether or not the client passes or fails. It is the client's responsibility to review the edited document before submitting it for evaluation.

*Edited by:*

*Moyo*

**Lynn Moyo**

*BA Honours Degree in English & Linguistics  
qualification and Member of the Professional  
Editors' Guild*

*Reviewed by:*



**Khomotso Bopape**

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*Let's Edit is a Level 1 EME B-BBEE Contributor (Procurement Recognition Level = 135%)*

Address: **570 Fehrsen Street, Brooklyn Bridge Office Park, Brooklyn, Pretoria, 0181**  
Tel No.: **012 433 6584**, Fax No.: **086 267 2164** and Email Address: **editor@letsedit.co.za**

## **APPENDIX B: SEMI-STRUCTURED INTERVIEW SCHEDULE**

### **A. SEMI-STRUCTURED INTERVIEW FOR VOLUNTARY FOOD HANDLERS**

1. How did you learn to prepare and serve food for learners?
2. Does the school have the menu guidelines?
3. How do you follow the guidelines on how to prepare food for learners properly?
4. How do you make sure that the learners are offered the right food every meal day?
5. Is there surplus food left after mealtime?
6. What do you do with surplus food after serving the learners?
7. How do you ensure that the food is safe and of good quality for eating by the learners?

### **B. SEMI-STRUCTURED INTERVIEW FOR PRINCIPALS**

1. What is your role in ensuring compliance with the menu roster by food handlers?
2. What is your role during mealtime when learners are offered food?
3. When does feeding takes place in your school and what is the reason?
4. Does your school have a school vegetable garden? Is the school garden active? If no why?
5. If yes, what is the role the vegetable garden have for your school?
6. What is your view in respect of the contribution of the food offered in improving teaching and learning of the learners?
7. How does the school acquire food for learners?

### **C. SEMI-STRUCTURED INTERVIEW FOR NSNP COORDINATING EDUCATORS**

1. How do you ensure that learners are offered adequate food?
2. What do you do to ensure that surplus food is not wasted or in the wrong hands?
3. How do you ensure that learners are offered food with nutrients as required?
4. What is your role in vegetable gardens at your school?
5. How do you ensure the safety of the food items in your school?
6. When you are not around who takes your role?
7. During breaks what do you do?

### **D. SEMI-STRUCTURED INTERVIEW FOR DISTRICT NSNP COORDINATOR**

1. What is your role in ensuring that service providers deliver food as per set standards?
2. How do you ensure that service providers purchase from reputable suppliers?
3. How do you ensure that adequate food is delivered to schools?

4. How do you ensure that there are no deviations by the service providers from the set standards?
5. What benefits of the school meals do you associate with teaching and learning of school learners?
6. Do learners like or enjoy the food? Can you elaborate?

**E. SEMI-STRUCTURED INTERVIEW FOR CIRCUIT NSNP COORDINATOR**

1. How often in a year do you monitor the NSNP at schools, why?
2. How do you ensure that schools comply with the set standards?
3. How do you ensure that learners are offered adequate food?
4. What informs you that the food with the right ingredients is served to learners?
5. In your view, how do learners benefit from the NSNP at schools?
6. How useful is the programme to teaching and learning?
7. Can you elaborate on advantages of decentralised school feeding models in schools?

## APPENDIX C: CONSENT TO PARTICIPATE IN THIS STUDY



### CONSENT TO PARTICIPATE IN THIS STUDY

I, the undersigned,

\_\_\_\_\_ (participant's full names to be included), (the  
"Participant")

confirm that I voluntarily agree to participate in the research study referred to as the "**Master of Development Studies**") in relation to *The effectiveness of the National School Nutrition Programme (NSNP) in alleviating hunger of school learners in Tzaneen Circuit* and which Study is being conducted by *Selaelo Emanuel Leshabana*, (the "**Researcher**").

I, the undersigned Participant, further confirm that–

1. the Researcher has explained the nature, procedure, potential benefits, and anticipated inconvenience of my participation in the Study;
2. I have read (or had explained to me) and understood the Study as explained in the attached information sheet;
3. I have had sufficient opportunity to ask questions and am prepared to participate in the Study;
4. I understand that my participation in the Study is entirely voluntary and that I am free to withdraw at any time without penalty (if applicable);
5. I voluntarily provide the UFS and the Researcher with my personal information and consent to the UFS and the Researcher collecting, disclosing, and processing my personal information in order to conduct the Study and any related activities in relation thereto;
6. I hereby acknowledge and confirm that I understand the purpose for which the UFS and the Researcher may collect, store, use, delete, destroy, outsource, transfer or otherwise process, as the context and circumstances may require and as contemplated in terms of POPIA, my personal information as set out herein;
7. I am aware that the findings of the Study will be anonymously processed into a research report, journal publications and/or conference proceedings and that my personal information will be aggregated and deidentified at such stage;
8. I also give the UFS permission to share, without notification, the collected data with other researchers at the UFS or other Higher Education Institutions. This permission is dependent on the same principles of ethical research practices, anonymity/confidentiality, safekeeping of information, and other issues listed above applying.

I, the Participant, agree to the recording of the *semi-structured interview question*

Full Name of Participant: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name(s) of Researcher(s): \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

205 Nelson Mandela Drive/Ryalaan, Park West/Parkwes, Bloemfontein 9301, South Africa/Suid-Afrika

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## APPENDIX D: ETHICS COMMITTEE APPROVAL



### GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

08-Dec-2021

Dear Mr Selaelo Leshabana

#### **Application Approved**

Research Project Title:

**The effectiveness of the National School Nutrition Programme (NSNP) in alleviating hunger amongst Quintile 1 school learners in Tzaneen Circuit**

Ethical Clearance number:

**UFS-HSD2020/1468/21**

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. Furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Yours sincerely

**Dr Adri Du Plessis**

**Chairperson: General/Human Research Ethics Committee**

**Dr Adri  
du  
Plessis** Digitally signed  
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## APPENDIX e: LIMPOPO DEPARTMENT OF EDUCATION: PERMISSION



LIMPOPO  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
**EDUCATION**  
CONFIDENTIAL

Ref: 2/2/2

Enq: Makola MC

Tel No: 015 290 9448

E-mail: MakolaMC@edu.limpopo.gov.za

Leshabana S  
P.O Box 864,  
Duiwelskloof  
0835

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

1. The above bears reference.
2. The Department wishes to inform you that your request to conduct research has been approved. Topic of the research proposal: "THE EFFECTIVENESS OF THE NATIONAL SCHOOL NUTRITION PROGRAMME (NSNP) IN ALLEVIATING HUNGER AMONGST QUINTILE 1 SCHOOL LEARNERS IN TZANEEN CIRCUIT"
3. The following conditions should be considered:
  - 3.1 The research should not have any financial implications for Limpopo Department of Education.
  - 3.2 Arrangements should be made with the Circuit Office and the School concerned.
  - 3.3 The conduct of research should not in anyhow disrupt the academic programs at the schools.
  - 3.4 The research should not be conducted during the time of Examinations especially the
  - 3.5 During the study, applicable research ethics should be adhered to; in particular the principle of voluntary participation (the people involved should be respected).
  - 3.6 Upon completion of research study, the researcher shall share the final product of the research with the Department.

REQUEST FOR PERMISSION TO CONDUCT RESEARCH :LESHABANE S Page 1

Cnr 113 Biccard & 24 Excelsior Street, POLOKWANE, 0700, Private Bag X 9489, Polokwane, 0700  
Tel:015 290 7600/ 7702 Fax 086 218 0560

***The heartland of Southern Africa-development is about people***

- 4 Furthermore, you are expected to produce this letter at Schools/ Offices where you intend conducting your research as an evidence that you are permitted to conduct the research.
- 5 The department appreciates the contribution that you wish to make and wishes you success in your investigation.

Best wishes.



Mashaba KM  
DDG: CORPORATE SERVICES

  
Date

REQUEST FOR PERMISSION TO CONDUCT RESEARCH :LESHABANE S Page 2

APPENDIX F: LIMPOPO NUTRITION MENU- PRIMARY SCHOOL



LIMPOPO 2021/2022 PROVINCIAL MENU, PRIMARY

DAYS	MEAL PLAN	FOOD GROUP	PRODUCT	QUANTITY TO PREPARE
Monday	Sugar bean stew with samp and yellow vegetable in season	Protein	Sugar Beans	35 g
		Starch	Samp(Fortified)	40 g
		Vegetable/Fruit	Yellow Vegetables	60 g
		Seasoning	Cooking Oil	2 ml
			Iodised Salt	1 g
			Onions	5 g
			Carrots	3 g
Tuesday	Soya mince with pap and a green vegetable in season	Protein	Soya Mince	30 g
		Starch	Maize meal	45 g
		Vegetable/Fruit	Green Vegetables	60 g
		Seasoning	Cooking Oil	2 ml
			Iodised Salt	1 g
			Onions	5 g
			Carrots	3 g
Wednesday	UHT Milk with pap and fruit in season	Protein	Milk (UHT)	200 ml
		Starch	Maize Meal (Fortified)	45 g
		Vegetable/Fruit	Fruit In Season	1 each
		Seasoning		
Thursday	Sugar bean stew with samp and yellow vegetable in season	Protein	Sugar beans	35 g
		Starch	Samp (Fortified)	45 g
		Vegetable/Fruit	Yellow Vegetables	60 g
		Seasoning	Cooking Oil	2 ml
			Iodised Salt	1 g
			Onions	5 g
			Carrots	3 g
Friday	UHT Milk with pap and fruit in season	Protein	Milk	40 g
		Starch	Maize meal	45 g
		Vegetable/Fruit	Fruit in season	1 each
		Seasoning		

Ultra High Temperature (UHT) Milk should be approved in line with Dairy Standards set by Milk South Africa  
 Soya Mince must comply with NSNP specification and should be procured from manufacturers that have an approved certificate

**LIMPOPO 2021/2022 PROVINCIAL MENU, PRIMARY**

DAYS	MEAL PLAN	FOOD GROUP	PRODUCT	QUANTITY TO PREPARE	
Monday	Pilchards stew with rice and yellow vegetable in season	Protein	Pilchards in Tomato	400 g	40 g
					425 g
		Starch	Rice		40 g
		Vegetable/Fruit	Yellow Vegetables		80 g
		Seasoning	Cooking Oil		2 ml
			Iodised Salt		1 g
			Onions		5 g
			Carrots		3 g
Sugar			1 g		
Tuesday	Soya mince with pap and a green vegetable in season	Protein	Soya Mince	30 g	
		Starch	Maize meal	45 g	
		Vegetable/Fruit	Green Vegetables	60 g	
		Seasoning	Cooking Oil		2 ml
			Iodised Salt		1 g
			Onions		5 g
Carrots			3 g		
Wednesday	UHT Milk with pap and fruit in season	Protein	Milk (UHT)	200 ml	
		Starch	Maize Meal (Fortified)	45 g	
		Vegetable/Fruit	Fruit In Season	1 each	
		Seasoning			
Thursday	Sugar bean stew with samp and green vegetable in season	Protein	Sugar beans	35 g	
		Starch	Samp (Fortified)	45 g	
		Vegetable/Fruit	Green Vegetables	60 g	
		Seasoning	Cooking Oil		2 ml
			Iodised Salt		1 g
			Onions		5 g
Carrots			3 g		
Friday	Pilchard stew with pap and yellow vegetable in season	Protein	Pilchards in Tomato	400g	40 g
					425g
		Starch	Maize meal		45 g
		Vegetable/Fruit	Yellow Vegetables		60 g
		Seasoning	Cooking Oil		2 ml
			Iodised Salt		1 g
			Onions		5 g
			Carrots		3 g
			Sugar		1 g

Ultra High Temperature (UHT) Milk should be approved in line with Dairy Standards set by Milk South Africa  
 Soya Mince must comply with NSNP specification and should be procured from manufacturers that have an approved certificate