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The original manuscript for review is appended below.

Reviewer 1: Round 1
Date completed: 26 March 2025
Recommendation: Accept / **Revisions required** / Resubmit for review / Resubmit elsewhere / Decline / See comments
Conflicts of interest: None

Does the manuscript fall within the scope of SAJS?
Yes/No
Is the manuscript written in a style suitable for a non-specialist and is it of wider interest than to specialists alone?
Yes/No
Does the manuscript contain sufficient novel and significant information to justify publication?
Yes/No
Do the Title and Abstract clearly and accurately reflect the content of the manuscript?
Yes/No
Is the research problem significant and concisely stated?
Yes/No
Are the methods described comprehensively?
Yes/**No**
Is the statistical treatment appropriate?
Yes/No/Not applicable/Not qualified to judge
Are the interpretations and conclusions justified by the research results?
Yes/**Partly**/No
Please rate the manuscript on overall contribution to the field
Excellent/**Good**/Average/Below average/Poor
Please rate the manuscript on language, grammar and tone
Excellent/**Good**/Average/Below average/Poor
Is the manuscript succinct and free of repetition and redundancies?
Yes/No
Are the results and discussion confined to relevance to the objective(s)?
Yes/No
The number of tables in the manuscript is
Too few/**Adequate**/Too many/Not applicable
The number of figures in the manuscript is
Too few/**Adequate**/Too many/Not applicable
Is the supplementary material relevant and separated appropriately from the main document?
Yes/No/**Not applicable**

Please rate the manuscript on overall quality

Excellent/**Good**/Average/Below average/Poor

Is appropriate and adequate reference made to other work in the field?

Yes/No

Is it stated that ethical approval was granted by an institutional ethics committee for studies involving human subjects and non-human vertebrates?

Yes/**No**/Not applicable

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Yes/No

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Yes/No

Comments to the Author:

Firstly, I would like to commend the author(s) for the work they have done attempting determine the various funding sources for the financing the implementation of various strategic outcomes of the NPFNS in South Africa. The study also develops a database of the various fragmented spending including governmental and non-state actor contributions in various expenditure databases. The paper makes an important contribution in that it focusses on the financialization of the policy and specifically the funding gaps, which in the greater context provide important insight to reasons for policy failure of the food policy. Previous literature, in the main, took a siloed approach to the study of funding in either a department or specific level of government or particular strategic objective.

From the onset I just want to thank the authors for this endeavour. However, I do think there are some aspects that can be improved to make it a stronger paper with greater original contribution. Primary among them is the need to link the findings with implications as outlined on page 3, line 86-93. I do think the paper can benefit from a more extensive "discussion" section. However, it is just a recommendation. Lastly, in the discussion section also write it in a style that is suitable for a non-specialist.

Lastly, the reference to Interviews in the paper without an explicit ethics statement is something that must be addressed.

More detailed notes:

Page 2, line 5-63: suggest that there is clear integration/collaboration in the policy design level, however, there is research (Adeniyi et al., 2021; Termeer et al, 2018; Pereirra and Drimie 2016) that suggest that that there were initial framing issues and a monocentric approach. Perhaps provide some citations to qualify the assertions.

Page 2, lines 62-63 provide some citation here?

Page 3, line 64-78: it is clear that there are some gaps emerging and perhaps best outlined in line 71-73 and 76-78, however, I do think the paper could benefit from a clear research question(s) or objectives and a clear statement of the problem.

Page 12, lines 317-320: you refer to interviews and report it as part of your analysis and discussion. However, I did not see that as part of your methodology, which in the main is covered under "Funding data extraction, assembly, and analysis methods". You should also indicate the ethical clearance? Or are these media interviews or accountability meetings in parliament etc?

Page 15, the paper I think ends without proper discussion on the findings you have. Rather let me put it this way, from your abstract your aim is:

"To determine available funding sources, it builds a unique dataset based on historical spending information for 2018-22." (pp. 1- Line 11-12).

I would say in terms of the paper, you have achieved this but could benefit from more discussion. I think this is a shortcoming that could be addressed by discussing some of the questions you pose on page 3, line 86-93. You pose important questions about the implications for information systems, M&E, early detection and the learnings of your case for future spending etc. I think discussing and fleshing this out could add towards the contribution of the paper.

Author response to Reviewer 1: Round 1

Reviewer comment	Author response and manuscript improvements
However, I do think there are some aspects that can be improved to make it a stronger paper with greater original contribution. Primary among them is the need to link the findings with implications as outlined on page 3, line 86-93. I do think the paper can benefit from a more extensive "discussion" section. However, it is just a recommendation. Lastly, in the discussion section also write it in a style that is suitable for a non-specialist.	We applied our minds to this constructive recommendation because it is foundational in communicating scientific insights and highlighting our contributions. Both reviewers underscored the need to elevate what this means for policy. We've reworked the conclusion and added a paragraph with practical policy guidance from our contribution.
Page 2, line 5-63: suggest that there is clear integration/collaboration in the policy design level, however, there is research (Adeniyi et al., 2021; Termeer et al, 2018; Pereira and Drimie 2016) that suggest that that there were initial framing issues and a monocentric approach. Perhaps provide some citations to qualify the assertions.	We appreciate the recommended references, including one which we used and cited (Pereira and Drimie 2016) in our initial manuscript. It is unclear why the reviewer suggested we cite it again alongside another 2. Yet, given the scope and content of this manuscript, it is odd that the reviewer excluded Misselhorn and Hendricks (2017) from the recommendations, a food systems policy article we studied but considered repeating pre-2017 issues. Furthermore, articles cited advocate for governance reforms of the food system repeated in Temeer et al (2018), albeit from a different conceptual angle (such as Drimie & Ruysenaar (2010)).
Page 2, lines 62-63 provide some citation here?	These contextual paragraphs stimulated mixed interpretations from the 2 reviewers. One even suggesting they should be removed. It is a summary of policy intentions but also part of documented policy debates as elaborated in 3 references cited: Jacobs & Nyamwanza (2020); Parliamentary Monitoring Group, (2017); DNA Economics (2017).
Page 3, line 64-78: it is clear that there are some gaps emerging and perhaps best outlined in line 71-73 and 76-78, however, I do think the paper could benefit from a clear research question(s) or objectives and a clear statement of the problem.	It is unclear why the reviewer stopped before lines 79-93 where we define the research problem, manuscript purpose and objectives. In the revised manuscript, the narrative has been improved in the following way: (a) the problem and purpose stated upfront; (b), refined the questions; (c) added an outline of how the argument will unfold.
Page 12, lines 317-320: you refer to interviews and report it as part of your analysis and discussion. However, I did not see that as part of your	This manuscript does not deal with transcripts of the "key informant interviews" with a lot of details about the functionality of coordination structures.

methodology, which in the main is covered under "Funding data extraction, assembly, and analysis methods". You should also indicate the ethical clearance? Or are these media interviews or accountability meetings in parliament etc?	During the interviews, we requested access to the databases and verified some data obtained from the National Treasury admin database. Yes, we obtained ethics approval for what in effect amounted to 'verification consultations' on food and nutrition expenditure data as detailed in the manuscript.
Page 15, the paper I think ends without proper discussion on the findings you have. Rather let me put it this way, from your abstract your aim is: "To determine available funding sources, it builds a unique dataset based on historical spending information for 2018-22." (pp. 1- Line 11-12).	Reminder highly appreciated. In addition to technical discussion of the tables in the applied section of the manuscript, we've added a synthesis with a higher-level discussion of what the findings mean in relation to the research questions.
I would say in terms of the paper, you have achieved this but could benefit from more discussion. I think this is a shortcoming that could be addressed by discussing some of the questions you pose on page 3, line 86-93. You pose important questions about the implications for information systems, M&E, early detection and the learnings of your case for future spending etc. I think discussing and fleshing this out could add towards the contribution of the paper.	This suggestion repeats a previous recommendation. Also, in this instance the reviewer found the 'important questions', but after line 78. However, pp10-15 or lines 256-370 offer a detailed discussion of findings and key insights from the analysis. This part of the paper answers the research questions. Upon further reflections and restructuring of the conclusion, we added a synthesis after Table 5.

Reviewer 2: Round 1

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Funding South Africa's food and nutrition policy: Estimates for the 2018-22 funding cycle

Abstract

Securing enough funds to roll out South Africa's National Food and Nutrition Security Policy (NFNSP) gained renewed momentum since 2017 when projections of cost to deliver on its outcomes were determined. Funding to implement the policy during the initial 5-years (2018-2023) also involved identifying sources from which to finance actual policy actions as well as strategies to close funding gaps. Against the backdrop of global debates on food assistance financing, this study uses an elementary funding gap equation for a systematic calculation of the funds needed for NFNSP. To determine available funding sources, it builds a unique dataset based on historical spending information for 2018-22. A key finding is that national and subnational government departments dominate funding sources for food and nutrition policy activities. Unlike poorer countries, non-state donors make ad hoc and smaller contributions, but this source of food and nutrition assistance is less accessible. Aggregation over all available funding sources reveals that authorities only met 50% of the Plan's funding needs after 4 years and thus fell short of meeting its 2017 target. Findings reinforce the case to urgently strengthen the principles, design and implementation systems for adequate food and nutrition policy spending.

Key words: food value chains, food assistance, funding gaps, food and nutrition policy

Introduction

In 2013, the South African cabinet adopted a new food and nutrition security policy, thus heralding a step forward when comparing its content and operational vision to that in previous policies it replaced (South African Government Gazette, 22 August 2014). Comparisons of the 2013 National Policy on Food and Nutrition Security (NPFNS) to the 2002 policy framework have highlighted compelling queries, such as questioning the intensity of grassroots participation in its development (Pereira & Drimie 2016) to its conceptual premises (Hendriks, 2014; Jacobs & Nyamwanza, 2020). Older food policy frameworks, such as the 2002 Integrated Food Security Strategy (IFSS) and a chapter in the

2012 National Development Plan (NDP), were rooted in total farm output thinking. It reduced food security to the quantity of primary agricultural production in the country. However, crop and livestock outputs from South African farms are increasingly exported, thus negating presumptions that domestic agrofood outputs would automatically ensure adequate food for everyone who resides in the country (FAO et al., 2024). Food policy reduced to the quantity of crops and livestock produced within the borders of the country is unrealistic, one-sided and constricting (Drimie & Ruysenaar, 2010; Jacobs & Nyamwanza, 2020). Furthermore, South African consumers eat foods that reach them through food system circuits that crisscross the country, with food retailers often selling food imported from faraway continents.

By contrast, the conceptual thinking embedded in the 2013 NPFNS embraces a more comprehensive approach to overcoming hunger and malnutrition. Whilst the NPFNS underscores the need to produce and enable access to enough healthy food, it also prioritizes food preparation, what people actually consume and the nutritional health outcomes of the right diets, and the roles of social protection receive attention (Jacobs & Nyamwanza 2020; Marivoet, Ulimwengu & Sedano 2019). Concerned with how to realize the food rights of people living in South Africa, the NPFNS reiterates the government's obligations in achieving this constitutional right. State financed social protection, which includes meal provision at public schools and other food delivery centers, has a vital role to play in this regard (DNA Economics 2017). Moreover, fiscal assistance to realise food and nutrition rights cannot overlook any node of food value chains.

The departments of social development and agriculture jointly tabled the NPFNS, two departments with core mandates that usually concentrate on opposite extremes of food value chains. The agricultural department oversees the full farming cycle that includes marketing and trade of farm outputs whereas the social development department delivers social safety nets, such as suites of cash grants and food parcels or vouchers. Regular and multilevel sub-national interactions among government departments involved in different food sector activities signal a convergence towards a unifying approach to food and nutrition security, with the potential to eliminate the inefficiencies of fragmented operations among stakeholders who ought to co-operate. Indeed, interdepartmental collaboration at the policy design level began to pave the way for institutionalized cooperation among state actors in implementing the NPFNS. Decisionmakers and implementers also started identifying the NPFNS financing needs and how to pay for it from state and non-state sources.

Aliber and Hall (2019) assembled South African public spending information on 'food availability' that throw some light on how much the state invests in crop and livestock farming. The Aliber-Hall study updates and extends a previous publication in an edited volume that examined fiscal investments in Southern Africa in accordance with the 2003 Maputo Declaration on agricultural assistance (Aliber and Hall 2011). Although this collection of studies documented the amount and categories of fiscal allocations for food output (or bolstering the capacity to produce enough staple foods), almost all countries fell short of meeting their 2003 commitments (Nyagah et al., 2011; AfDB., 2016). These studies prioritize budgetary support for household subsistence and smallholder farmers, thus restricting itself to the production dimension of food and nutrition security. In 2013, National Treasury commissioned a Performance and Expenditure Review (PER) aimed at assessing the 'value for money' from state spending on nutrition and food security for children under 5. Despite the technical mapping of spending along an input-activity-outcome cycle of project programming, substantively, the review did not go beyond costing nutrition interventions (National Treasury, 2015) from a health outcome view for a vulnerable sub-population.

This article contributes to research on feasible practices of delivering better food and nutrition outcomes for all people in South Africa. It argues that pro-poor solutions to hunger and greater responsiveness of policy to local realities must start from a holistic food value chain viewpoint. Since the nascent conceptualization of this new policy, food policy stakeholders have acknowledged that getting implementation right hinges on securing enough funding to operationalize the NPFNS. In 2017, the efforts to translate the NPFNS into a funded implementation plan culminated in forecasted costs over an initial cycle for 2018-2023 (DNA Economics, 2017). At that time, total implementation costs of the NPFNS for the 5-year period amounted to R86,6 billion but this costing exercise did not address tough questions on where the money would be sourced from. If the state is the source of funding, then how will this be divided between national and subnational spheres of government? What are the implications for information systems and mechanisms to monitor and detect a shortfall or surplus in spending on food and nutrition activities to proactively mitigate funding gaps? What do learnings about funding to realize the aspirations of the NPFNS for the 2018-2023 period mean for costing and spending in future?

Financing Food and Nutrition Assistance: Purposive Global Synthesis

This section situates South Africa's policy-induced investments in food and nutrition assistance in a larger global context. An overarching question guiding this rapid and selective synthesis is: what insights can be harvested and distilled from the global studies on financing food and nutrition policy for impactful rollout? Any systematic comparison of South Africa's food and nutrition policy financing patterns with worldwide experience will require the same criteria and measures as a reference point. Using a standardized and uniform yardstick is sensible but also foundational in testing the usefulness of comparative methods. Without such a yardstick, similarities and differences detected between South African data and that for comparable countries is highly likely to lack consistent and reliable explanations. Globally, explanatory inconsistencies across countries arise due to the absence of a coherent database with indicators on funding for food and nutrition that will pass basic methodological criteria and tests at present (Marivoet et al 2019; Lentz & Barret 2013).

Even though an appropriate cross-country dataset does not exist, studies to close this gap have progressed along exploratory tracks with crucial lessons for South Africa. Conceptually, methodologically and technically, extant investigations differ in terms of the analytical principles that underpin them. These studies exploit purposeful and discretionary techniques that balance the need for funds with the potential or available funding sources. As a minimum, a comparative analysis demands ingredients such as reliable and up-to-date data on funding with meaningful and compatible variables measured in the same way for a large enough number of countries. Despite these gaps, ad hoc measurements of financing needs and resources continue to evolve. Analysts have opted for different definitions of what is being monitored and measured, and then customize the empirical methods in line with the content and scope of variables and underlying information (Lentz & Barret, 2013; Swinnen & Kosec, 2023; Marivoet et al.,2019; FAO et al., 2024).

Financing food and nutrition policies straddle multiple categories, such as the direct costs of nutrition food, the costs of administrative governance and grassroots delivery and an integrated data management system that is fit-for-purpose. While the monetary value of providing consumable items is a major and dominant element of food aid and anti-hunger interventions, it has been acknowledged as but one category of financing food and nutrition assistance (Swinnen & Kosec 2023). Lentz & Barret (2013) show that food and nutrition policy goals coupled with the food needs of the vulnerable when hunger emergencies break out drive the demand for public investment in food and nutrition safety nets.

To understand the adequacy of nutrition financing in the Rajasthan state of India, Ghai, Rana, Ahmad, and Clift (2016) examined funding requirements against available resources. This was done by conducting a gap analysis through comparing costs of core nutrition programmes in Rajasthan with funding available for 'nutrition-specific' programmes from state plans and budgets. The analysis found a 69% funding gap in the financial resources needed for fully scaling up the 13 fundamental nutrition interventions in 2016-17. In addition, Ghai, et al. (2016) established that government financing of nutrition interventions has been steadily declining, with a 3% reduction from 2014-15 to 2016-17. This resulted in the funding gap growing to 69% in 2016-17, from 66% in 2014-15. Coile et al. (2021) studied national multisectoral nutrition plans (MSNPs) of 26 countries to assess their effectiveness in planning and implementation of nutrition interventions. Alongside how to implement and manage the MSNP in sampled countries, the review also zoomed in on financial issues such as budgets and costs for the years 2014 through 2020 (Coile et al., 2021).

The analysis found that significant gaps were common across the reviewed plans, including lack of properly designating each nutrition action among responsible agencies, inadequate consideration and planning for risks to the implementation plan and required mitigation strategies, lack of specific mechanisms to organize and manage research, and lack of financial gap assessments and specified procedures to track allocation of financial and other resources. Of the 26 MSNPs assessed by Coile et al. (2021), only seven estimated the funding gaps for the costed interventions, six described the criteria for allocating resources while four included the mechanism for financial tracking including allocations and expenditures as well as state and non-state funding.

Pomeroy-Stevens et al. (2016) assessed how nutrition is prioritized and funded in Uganda through the Uganda Nutrition Action Plan (UNAP) between the 2013-2014 and 2014-2015 fiscal years. They pointed out that data on expenditure is not always there for all funding means. As a result of gaps in data, it was not possible to identify and compare funding from projects in government budget or non-state actors. Pomeroy-Stevens et al. (2016) also found that funding allocations for the UNAP seemed to be more than adequate for the projected costs for 2014 to 2015 as they were roughly 10 times the planned cost for the year. However, they observed that alignment between funding allocations and the priority for the respective objective in the costing exercise did not always exist. A comparison of funding allocations to the cost requirements of the five UNAP objectives showed some discrepancies in relative proportions.

One standout learning from this quick and purposeful synthesis is that low- and middle-income countries wrestling with high levels of food and nutrition insecurity often lack the fiscal space to provide food assistance to hungry populations (FAO et al., 2024; AfDB., 2016). Poor countries that experience protracted food deficits coupled with tight fiscal constraints usually depend on external aid to meet their food and nutrition needs. Direct food assistance is one form of this external aid delivered by agencies such as the World Food Programme (WFP) and private donors mainly based in Europe and North America. Food aid can also be in the form of financial donations in which case the transferred money is conditional on its exclusive use to buy and distribute food. External development assistance, whether in the form of ringfenced money or not, is a prominent source to help realize the sustainable development goals (Swinnen & Kosec, 2023). Yet upper middle-income countries like South Africa may not always qualify for multilateral or private financial donations, itself increasingly scarce and stringently allocated on the basis of narrow economic criteria. Developing countries in this group, however, also battle to stretch constrained public budgets across competing human well-being priorities in the context of growing public debt burdens, fiscal deficits, macroeconomic crises and sociopolitical conflicts that further hamstrung their limited capacity to fund all components of food and nutrition assistance (FAO et al., 2024).

Funding data extraction, assembly and analysis methods

Estimating the gap in funds for the implementation of food and nutrition activities tied to the 2013 policy is a complex task because the data is scattered across hard-to-access systems of distinct government departments. Gaps in funding the NPFNS refer to shortfalls or surpluses in available funds relative to the projected implementation costs of food and nutrition activities. Framing this in elementary accounting terminology means that a funding gap is the difference between forecasted costs and allocated or spent funds. This study uses the high-level implementation cost framework and projected monetary values for 2018-2022 but does not recalculate the 2017 financing targets. Data on funds actually spent on food and nutrition activities have been gathered from expenditure databases of state and non-state stakeholders.

The cost of the implementation plan was done at different levels of aggregation, layered in a base-to-apex pyramid. The overarching cost of the plan at the apex can be traced to lower levels that display more detailed costing information. Base-level cost estimates show the highest level of detail and disaggregation. It comprises micro-level costs to engage in

activities (like food and nutrition awareness campaigns) and deliver outputs (such as meals served to school children smallholder farmers' production assistance, datasets, etc.). The most meaningful mid-level aggregation is costing for each Strategic Objective defined in the original plan.

Planned implementation costs, estimated for disaggregated variables, do not perfectly match the expenditures of stakeholders on NPFNS priorities. The main reason behind this mismatch is the non-existence of a decentralized spending monitoring tool with indicators that correspond with the costing dimensions captured in the 2017 Plan. If a proper spending monitoring tool had existed, it would have helped to document the flow of funds in real time. Over the middle range of aggregation, however, expenditure categories are well-defined and correspond with 'variables' in the 2017 costed plan.

Past expenditure is a useful benchmark for the funds that stakeholders are likely to have available in future, assuming that everything else remains constant. We exploit the benefits of historical spending data, processed and audited spending.

Information on the funds that stakeholders have committed in support of food and nutrition security is not stored in one centralized data repository but kept in reporting systems of multiple agencies. Our study has accessed and combined documented expenditures from diverse stakeholders.

A funding gap [FG] is simply the difference (shortfall) between a desired or planned spending target and actual expenditure. In this study, the goal is to estimate the FG for each National Food and Nutrition Security (NFNS) Plan Strategic Objective (SO) as well as the sum total for all SOs. A simplified way to express the aggregate funding gap (FG_T^A) is:

$$Y_T - X_T = FG_T^A$$

where Y_T is the DNA target expenditure in ZAR for all years (subscript $T = 5$, or $(\tau 1, \dots, \tau 5)$);

where X_T is the actual state and non-state expenditure in ZAR for all years (subscript $T = 5$);

where superscript A denotes the aggregate figure for all SOs($A = \alpha 1, \dots, \alpha 7 = \forall \alpha$).

Given the value of Y_T, then as $\tau \to T$, FG_T^A depends on the value of X_T. However, the aggregate value of X_T is as important as its composition $\forall \tau$, made up of diverse state and non-state sources, which can be defined as:

$$X_T \equiv X_T^S + X_T^{NS}$$

where $...^S$ includes all expenditures of the state sector for $\tau 1, \ldots, \tau 5$ or $\forall \tau$

where$...^{NS}$ includes all expenditures of the non-state sector for $\forall \tau$

Following the aggregate expenditure relations outlined above, the funding gap per strategic objective (superscript: $\alpha 1, \ldots, \alpha 7$ or $\forall \alpha$) can simply be written as:

$$FG_T^{\alpha 1} = y_T^{\alpha 1} - 1(x_T^{S(\alpha 1)} + x_T^{NS(\alpha 1)})$$

where $...^{\alpha 1}$ denotes SO#1, and so forth $\forall \alpha$.

2017 funding needs: DNA Costing Estimates

When DNA Economics initially costed the NFNS Plan, they looked at the cost drivers and offered best "guestimates" on quantifiable benefits, such as support for smallholder food production and delivering nutritious food to school children. In addition to the direct nutritional and health benefits, they also attempted to quantify cost savings due to the reduced prevalence of lifestyle diseases that flow from nutritious and healthier diets.

The DNA model fits costing parameters for the inputs, activities, outputs and outcomes tied to each strategic objective. To populate the DNA costing model with relevant monetary data, the research team conducted in-depth interviews and workshops with officials that implement and manage the food and nutrition mandates of government departments and non-state stakeholders (DNA Economics 2017).The framework defined priorities to implement the NFNSP and then estimated what it will cost to execute these activities, including assumptions and forecasted costs, by calculating the cost to host a meeting to coordinate the Plan (SO#1) or distribute nutrition supplements and food to women and babies through local clinics (SO#4) as summarized in Table 1.

Table 1 sums up that in 2017, DNA Economics and Cornerstone estimated the overall costs of implementing the Plan amounted to $(Y_T = R86{,}8bn)$ over the five-year period from 2018/19 to 2022/23. However, not all the SOs contribute equally to the Plan's overall costs. For example, SO#2(R68, 8bn), SO#3 (R11,1 bn) and SO#4 (R7bn) account for 99.16% of the total costs between the three of them, whilst the other three objectives contribute just 0.84%.

Table 1: Cost Estimates per Strategic Objective (SO)		
Strategic Objective (SO#): Title	SO purpose descriptor	Financial Value/Targeted Cost **(RMillion)** (Y_T)
SO#1: Multisectoral governance and leadership structure	Establish national and sub-national structures to coordinate implementation; operationalize this through national, provincial and district governance structures; participating government structures should absorb implementation costs.	R18.76
SO#2: Inclusive local food value chains	Support smallholder production capacity in key agrofood commodities, including costs of land acquisition, farming inputs and training; operationalize through certification of smallholder farmers; ensure enough qualified extension officers; cooperate with non-state actors where necessary and feasible.	R67 879.39
SO#3: Targeted social protection measures and sustainable livelihoods	Efficient information systems to full coverage of child support grant and provision of meals through Early Childhood Development (ECDs) centres; number of people being provided with meals through Community Nutrition and Development Centres (CNDC) and the NSNP; strengthen inter-departmental data collection, storage, analysis and use (DSD, Basic Education and Health);	R11 156.17
SO#4: High-impact nutrition interventions	Deliver targeted nutritional assistance across the life cycle; heavily focused on health departments, emphasis;	R7 024.92
SO#5: Informed food and nutrition decisions (Communications Strategy)	Food and nutrition communication strategy, coupled with awareness raising circulars targeted at low-income consumers; use well-integrated communication and media platforms for maximum geographic reach;	R703.79
SO#6: NFNS Plan M&E Unit (Data Platforms)	Establish a dedicated FNS M&E Unit within the DPME focused on information integration across state	R23.70

	and non-state agencies; collaborate with StatsSA and other M&E directorates	
Source: DNA Economics Study (2017)		

Funding gaps: Systematic Calculations

(a) 2018/19-2021/22 fiscal spending

The administrative database on public spending secured from NT allows for estimates that are closer to the NFNSP's SOs because the database stipulates the primary objective of itemized expenditures. Strengths of this dataset include the separation of programme management spending from public funding to support the food system in the provinces and at a national level.

In table 2 there is no information on spending by DPME, the Office of the Deputy President, Offices of Premiers towards the establishment of food and nutrition security councils. The NFNSP estimated a cost of R18.76 million over the period 2018/19 to 2021/22 towards the establishment of the multisectoral food and nutrition security councils. This is probably due to the lack a reporting template to document the spending of stakeholder departments in the Plan's administration costs.

Department of Agriculture Land Reform and Rural Development (DALRRD) is the Department in charge of everything under SO#2. With this emphasis on agrofood value chain development, DALRRD committed 60% of the CASP grant to the promotion of smallholder value chain participation through accessing more profitable agrofood markets (Parliamentary Monitoring Group, 2016). Closer scrutiny of DALLRD strategic documents and annual reports indicated that Japan International Cooperation Agency (JICA) supported aspects of SO#2, reflected in the non-state funding sources in Table 3.

The Departments of Health, Home Affairs, Basic Education and Social Development drive SO#3. The figure reported in Table 8 falls short of the cost estimated by DNA Economics for the five-year period from 2018/19 to 2022/23. Improved access to high impact nutrition for vulnerable groups makes up the bulk of costing for SO#4.

DPME has developed the advocacy and communication strategy with the assistance of United Nations Children's Fund (UNICEF), but this advocacy and communication strategy has not

been implemented significantly. Available information shows that the only funding towards this SO#5 subtheme is from UNICEF, totaling R6.07 million over the period 2018/19 to 2021/22. Therefore, the funding gap for this strategic objective is equal to R619.53 million. The Department of Basic Education (DBE) spends a proportion of the National School Nutrition Programme (NSNP) Grant towards nutrition education (including deworming and hygiene practices) in schools over the years. Specifically, according to the NSNP grant framework, the Department was allowed to spend a maximum of 0.5 per cent in 2018, 0.4 per cent in 2019 and 2020 and 0.2 per cent in 2021 and 2022.

Nevertheless, nutrition education in ECD centres has not yet been implemented as the process of migration of the responsibility for ECD centres from the DSD to the DBE is still underway. Other nutrition education programmes that are aimed to create awareness about the importance of eating healthy and about obesity among consumers include: The National Nutrition Week and the National Obesity Week (NNOW) are coordinated by the DBE, Department of Health (DOH) and Department of Social Development (DSD), in collaboration with other players: Nestlé, Milk Producers Organisation (MPO) and Consumer Education Project (CEP) of Milk South Africa. However, the costs of these campaigns are not available.

SO#6 entails, among other tasks, harvesting food and nutrition security indicators from national surveys (such as the General Household Survey), including a customized FNS survey. An amount of R45 million from the Ilima/Letsema Programme had been transferred to the HSRC to conduct the National Food and Nutrition Security Baseline Assessment for the food and nutrition security survey towards SAVAC.

Earlier iterations of the NFNSP confined itself to six strategic objectives (SO1-SO6) without any explicit provision for entrepreneurship across agrofood value chains. Real and/or potential contributions of small-scale entrepreneurial activities under the auspices of the DSBD were thus excluded from the 2018-2023 costing of the national plan. The introduction of Pillar 7 (SO#7) elevates the role of entrepreneurship through connecting the implementation and delivery on the NFNSP with the Small, Medium or Micro Enterprise (SMME) Support Plan. Relative to the scope of funding needs, enterprise loans and subsidies cover a small amount to purchase some fixed assets (like infrastructure and machinery) as well as pay for operational activities.

Table 2: Strategic Objective Spending excluding Provincial food and nutrition spending (R'000), 2018/19-2021/22

Strategic Objective Descriptor	2018/19	2019/20	2020/21	2021/22	Total per SO (R'000) (X_T)
SO#1: Multisectoral governance and leadership structure	R0	R0	R0	R0	R0
SO#2: Inclusive local food value chains	R1 284 766	R1 179 103	R1 799 796	R3 683 622	R7 947 287
SO#3: Targeted social protection measures and sustainable livelihoods**	R90 811	R103 121	R460 967	R74 858	R729 757
SO#4: High-impact nutrition interventions	R6 847 417	R7 233 309	R7 706 314	R8 160 768	R29 947 807
SO#5: Informed food and nutrition decisions (Communications Strategy)	R4 140	R3 308	R0	R0	R7 448
SO#6: NFNS Plan M&E Unit (Data Platforms)	R5 113	R51 408	R0	R0	R56 522
SO#7: Entrepreneurial Skills in Food and Nutrition (Pillar 7) ***	R0	R0	R0	R322 267	R322 267
Total (R'000)	**R8 232 247**	**R8 570 249**	**R9 967 077**	**R12 241 515**	**R39 011 088**

Notes: **DSD Spending Database (See Annexure 3); *** SEFA funding approved for food sector entrepreneurial ventures.

With this snapshot of spending history extracted from administrative databases, exploratory, interviews also probed the adequacy of funds relative to what is needed, expenditure in the pipeline and the certainty of access to available sources of finance beyond 2023. Interviews proved invaluable to interpret past spending patterns and think through the prospects for financing the Plan in the period ahead.

Interviewees from government departments also confirmed receiving support multilateral donors and non-state organizations. Donor support consists of a mix of administrative assistance, distribution of food and nutrition supplements to vulnerable populations, the promotion of healthy eating and dissemination of statistical information about food and nutrition.

While donors use different technical categories of their support, their accountability and reporting systems require that they document the monetary value of all donations. Categorizing these investments in terms of the Plan shows that donors render assistance in

SO4 (high impact nutrition interventions) and SO5 (informed food and nutrition decisions across the lifecycle) and SO6 (data management & M&E). Table 3 shows that the total contributions from non-state funding sources came to R28,2 million which is relatively small in relation to financing needs and resources for all strategic objectives in the Plan.

Table 3: Donor spending on FNS interventions (Rand), 2018-2022

Donor Agency	2018	2019	2020	2021	2022	Total
FAO	R 3 600 000,00	R 3 600 000,00	R 3 600 000,00	R 3 600 000,00	R 3 600 000,00	R 18 000 000,00
UNICEF	R 123 556,00	R 1 342 179,00	R 551 345,00	R 2 610 748,00	R 1 462 599,00	R 6 090 427,00
WHO	R 910 125,00	R 1 289 570,00	R 645 173,00	R 434 338,00	R 230 488,00	R 3 509 694,00
JICA			R 475 180,00			R 475 180,00
CHAI SA			R 128 810,00			R 128 810,00
Total	R 4 635 699,00	R 6 233 768,00	R 5 402 528,00	R 6 647 107,00	R 5 295 109,00	R 28 204 111,00

Notes:
FAO: Food and Agricultural Organisation of the United Nations
JICA: Japan International Cooperation Agency
UNICEF: United Nations Children's Fund
WHO: World Health Organisation

(b) 2018/19-2021/22 *subnational spending*

The NFNS Policy and Plan recognize the necessity for subnational coordination and implementation of food security programmes because hunger is unevenly distributed across different localities. Targeted food and nutrition assistance usually combines food poverty status with its prevalence in a province, municipality or town. Localities with higher numbers of hungry people should also receive a higher proportion of food assistance funding, especially funds allocated in national and provincial government budgets.

Table 4 summarizes the public funding given to provinces to finance their food and nutrition activities. Provinces received R35,2 bn for food and nutrition activities from 2018/19-2021/22. Figures include transfers based on Government's equitable share formula and conditional grant transfers for the delivery of services such as food assistance to vulnerable populations. The NSNP is an example of such transfers and makes up 88% (±R30,9 bn) of the total spending for this period.

Clearly, subnational government spending on food and nutrition activities cannot be excluded from resources available to cover the 2017 cost estimates. In light of the foregoing discussion on fiscal transfers to provinces, caution must be exercised when determining the funds

available to implement the NFNSP. It is important to avoid double counting and apply the rules of equitable shares and conditional grant transfers, especially the NSNP.

Table 4: Public spending on food and nutrition activities (R'000) by provincial governments (excl. NSNP), 2018/19-2021/22

Province	2018/19	2019/20	2020/21	2021/22	Grand total
Eastern Cape	R183 801	R210 546	R282 208	R260 561	R937 116
Free State	R12 917	R12 055	R48 096	R20 308	R93 376
Gauteng	R188 580	R196 006	R259 744	R236 621	R880 950
KwaZulu-Natal	R239 004	R397 143	R341 533	R402 813	R1 380 494
Limpopo	R11 576	R10 131	R57 858	R87 045	R166 609
Mpumalanga	R76 859	R72 727	R65 079	R82 537	R297 203
Northern Cape	R16 871	R17 529	R44 591	R17 652	R96 644
North West	R4 313	R1 843	R31 287	R19 383	R56 826
Western Cape	R59 889	R71 898	R166 213	R102 088	R400 089
Total (without NSNP)	**R793 811**	**R989 878**	**R1 296 609**	**R1 229 009**	**R4 309 306**

Source: National Treasury (2018-2022), electronic

Table 5 summarizes the overall funding gap and for each strategic objective, following the gap equations 1 and 2 above. Itemized expenditures in National Treasury's database (which is not in the public domain) make it possible to trace food activity spending and connect it to spending activities in each SO. Careful analysis and piecing together expenditure on food and nutrition items reveal that the state actually spent R39 billion on Plan-related priorities since 2017. Compared to the 2017 cost target, this leaves a funding gaps R47,6 billion. This includes provincial spending distributed through equitable share and conditional grant transfers to provinces.

Funds that subnational state structures and non-governmental agencies spent do not form part of Table 5. Provincial spending on food and nutrition security activities not counted in equitable share or conditional transfers (to avoid counting the same amount in both national and provincial expenditures) amounted to R4,3 billion as reported in Table 4. Expenditures of

provinces marginally cut the funding gap ($FG_T^A = Y_T - X_T = R43{,}3bn$), which means that since 2018 roughly 50% of needed resources were secured.

Table 5: Funding gap of planned vs actual spending per SO in R Million, 2018-2022

Strategic Objective (SO)	**DNA Cost (RMillion)** (Y_T)	**Spending (2018/19-2021/22)** (X_T)	**Funding Gap (excess)** $(Y_T - X_T)$
SO1	R18.76	R0	R18.76
SO2	R67 879.39	R7 947.29	R59 932.10
SO3	R11 156.17	R729.76	R10 426.41
SO4	R7 024.92	R29 947.81	**(R22 922.89)**
SO5	R703.79	R7.45	R696.34
SO6	R23.70	R56.52	**(R32.82)**
SO7 **	00	R322.27	**(R322.27)**
Total Cost	**R86 806.72**	**R39 011.09**	**R47 795.63**
*Notes:** Entrepreneurial Skills in Food and Nutrition Security Programme (Expression of entrepreneurship in delivery mechanisms is a shared responsibility between state and non-state actors)*			

Conclusion

Starting from 2017, the estimated costs for an initial 5-year cycle (2018-2023) of the NFNSP amounted to ($Y_T = R86{,}8bn$). This article assembled fragmented food spending information and explored how state and non-state sources can be tapped to meet these funding needs. Whilst resources exist in the state and non-state sectors to cover the financial needs of the NFNS Plan for the period 2018-2023, authorities only met 50% of the Plan ‘s funding needs. Options to cover the shortfall ($FG_T^A = R43{,}3bn$) require that coordinators of the NFNSP rethink its conceptual design and how to finance its effective and efficient execution. The size of the FG_T^A for this initial costing cycle means the assumption among decisionmakers that enough public funding should be available to cover the forecasted spending lack reliable evidence. Insights from selected case studies and a systematic funding gap analysis to track funding flows have revealed that funding South Africa’s food and nutrition policy interventions almost exclusively rely on national and provincial budgets. Expenditures of multilateral donors and other non-state agencies account for less than 5% of the NFNSP spending targets, restricted to costs of administration and awareness campaigns. Without a comprehensive food value chain

perspective of fiscal support for food and nutrition policy, its funding imperatives will continue to elude the SA government.

References

African Development Bank (AfDB)., (2016)., *Feed Africa: Strategy for Agricultural Transformation in Africa 2016-2025*, May 2016. (Accessed: 19 May 2023)

Aliber, M and R. Hall. (2011) 'The case for re-strategising spending priorities to support small-scale farmers in South Africa' in L. Nyagah (ed.) *Seeds of Growth: Financing Smallholder Farming in Southern Africa*. Cape Town: Institute for Democracy in South Africa.

Aliber and Hall (2019). Support to smallholder farmers in South Africa: Challenges of scale and strategy. In *Equitable rural socioeconomic change: land, climate dynamics, and technological innovation* edited by Jacobs, P., Cape Town; HSRC Press

Coile, A., Wun, J., Kothari, M. T., Hemminger, C., Fracassi, P., & Di Dio, D. (2021). Scaling up nutrition through multisectoral planning: An exploratory review of 26 national nutrition plans. *Maternal & Child Nutrition, 17*(4), 1-13.

DNA Economics., (2017). NFNS Plan Costing Chapter (Report Commissioned by the Department of Planning, Monitoring and Evaluation). 17 October 2017. Pretoria:DNA Economics

Drimie, S., & Ruysenaar, S. (2010). The Integrated Food Security Strategy of South Africa: An institutional analysis. *Agrekon*, *49*(3), 316–337. https://doi.org/10.1080/03031853.2010.503377

FAO, European Union, CIRAD and DSI-NRF Centre of Excellence in Food Security (CoE-FS). 2022. *Food Systems Profile – South Africa. Catalysing the sustainable and inclusive transformation of food systems*. Rome, Brussels, Montpellier, France and Bellville, South Africa. https://doi.org/10.4060/cc0071en (Accessed 24 May 2022)

FAO, IFAD, UNICEF, WFP and WHO. 2024. *The State of Food Security and Nutrition in the World 2024 – Financing to end hunger, food insecurity and malnutrition in all its forms*. Rome: FAO. https://doi.org/10.4060/cd1254en

Ghai, K., Rana, Y., Ahmad, N., & Clift, J. (2016). *Nutrition financing in Rajasthan: Trends and gaps in 2016-17.* Rajasthan: Results for Development Institute (R4D). Retrieved from https://r4d.org/wp-content/uploads/Rajasthan-Nutrition-Financing-Policy-Brief- 2016-17.pdf

Government of South Africa., (2014). *The National Policy on Food and Nutrition Security for the Republic of South Africa*. Government Gazette, No. 37915, 22 August 2014. Pretoria: Government of South Africa.

Hendriks, S. (2014). Food security in South Africa: Status quo and policy imperatives,*Agrekon*, 53(2): pp 1-24

Jacobs, P. and Nyamwanza, A. (2020). Stronger policy coordination for better food and nutrition security outcomes. Pretoria: HSRC. https://repository.hsrc.ac.za/handle/20.500.11910/15229

Lentz, E.C and C B. Barrett., (2013). The economics and nutritional impacts of food assistance policies and programs. *Food Policy* 42 :pp 151–163 https://dx.doi.org/10.1016/j.foodpol.2013.06.011

National Treasury., (2015). Nutrition And Food Security for Children Under Five Years Old-2015, Performance and Expenditure Review (PER), Health Sector. Commissioned Research Report (Cornerstone Economic Research and consultants), October 2015. Pretoria: National Treasury

Nyagah., L. (ed). (2011). *Seeds for Growth. Financing Smallholder Farming in Southern Africa*. Cape Town: Institute for Democracy in South Africa (IDASA).

Marivoet, W., Becquey, E. & Van Campenhout, B. (2019). How well does the Food Consumption Score capture diet quantity, quality and adequacy across regions in the Democratic Republic of the Congo (DRC)? Food Sec. 11, 1029–1049 (2019). https://doi.org/10.1007/s12571-019-00958-3

Pereira, L & S. Drimie (2016) Governance Arrangements for the Future Food System: Addressing Complexity in South Africa. *Environment: Science and Policy for Sustainable Development* 58 (4): pp18-31, DOI: 10.1080/00139157.2016.1186438

445 Pomeroy-Stevens, A., D'Agostino, A., Adero, N., Merchant, H. F., Muzoora, A., Mupere, E.,
446 Du, L. (2016). Prioritizing and funding the Uganda nutrition action plan. *Food and nutrition*
447 *bulletin*, *37*(4_suppl), S124-S141.

448 Swinnen, J. and Kosec, K. (2023). The Road to Resilience: Rethinking Responses to Food
449 Crises. In: International Food Policy Research Institute. (2023). 2023 Global Food Policy
450 Report: Rethinking Food Crisis Responses. Washington, DC: International Food Policy
451 Research Institute. https://doi.org/10.2499/9780896294417

Annexure 1– Department of Social Development Direct food and nutrition spending by province

The authors assembled the data below from actual provincial spending records supplied by DSD. Corresponding data tracked in National Treasury's database are incomplete and thus less reliable than the amounts tabulated below. In order to be consistent with the objectives and scope of this article, spending included in calculations is restricted to 2018/19 through 2021/22, adding up to R729.8 million.

Table A.1.: DSD Spending on Poverty Alleviation, Sustainable Livelihoods and Food Supply, 2017/18-2021/22

Province	DSD Spending Category	2017/18	2018/19	2019/20	2020/21	2021/22	Total
Eastern Cape	Poverty Allev. & Sust. Lvlhoods	R -	R -	R -	R -	R -	**R -**
	Food Supply (Grocery)	R 9 117 258,32	R 8 971 413,36	R 10 153 689,16	R -	R 4 851 984,02	**R 33 094 344,86**
Free State	Poverty Allev. & Sust. Lvlhoods	R -	R -	R -	R 34 332 150,00	R 2 912 715,00	**R 37 244 865,00**
	Food Supply (Grocery)	R -	R -	R -	R 5 462 195,55	R 60 958,00	**R 5 523 153,55**
Gauteng	Poverty Allev. & Sust. Lvlhoods	R -	R 36 317 523,72	R 42 902 608,18	R 229 228 835,16	R 22 623 835,38	**R 331 072 802,44**
	Food Supply (Grocery)	R -	R -	R -	R 5 615 071,92	R 6 935 615,54	**R 12 550 687,46**
KwaZulu-Natal*	Poverty Allev. & Sust. Lvlhoods	R -	R -	R -	R -	R -	**R -**
	Food Supply (Grocery)	R -	R -	R -	R -	R -	**R -**
Limpopo*	Poverty Allev. & Sust. Lvlhoods	R -	R -	R -	R -	R -	**R -**
	Food Supply (Grocery)	R -	R -	R -	R -	R -	**R -**
Mpumalanga*	Poverty Allev. & Sust. Lvlhoods	R -	R -	R -	R -	R -	**R -**
	Food Supply (Grocery)	R -	R -	R -	R -	R -	**R -**
Northern Cape	Poverty Allev. & Sust. Lvlhoods	R -	R 22 194 688,00	R 20 168 058,00	R 19 815 304,20	R 21 911 044,68	**R 84 089 094,88**
	Food Supply (Grocery)	R -	R 16 589 926,91	R 11 792 847,63	R 78 329 028,77	R 5 219 603,12	**R 111 931 406,43**
North West	Poverty Allev. & Sust. Lvlhoods	R -	R 1 125 000,00	R 11 305 000,00	R 12 376 000,00	R -	**R 24 806 000,00**
	Food Supply (Grocery)	R -	R 5 613 000,00	R 6 799 000,00	R 50 777 000,00	R -	**R 63 189 000,00**
Western Cape	Poverty Allev. & Sust. Lvlhoods	R -	R -	R -	R 14 688 969,00	R 5 830 274,00	**R 20 519 243,00**
	Food Supply (Grocery)	R -	R -	R -	R 10 342 264,00	R 4 511 990,00	**R 14 854 254,00**
Total (SA)		**R 9 117 258,32**	**R 90 811 551,99**	**R 103 121 202,97**	**R 460 966 818,60**	**R 74 858 019,74**	**R 738 874 851,62**

**Direct follow up with relevant DSD directorates in Kwazulu-Natal, Limpopo and Mpumalanga to obtain the missing information yielded no responses.*

Source: The Authors compiled from emailed spreadsheets