Science Forum South Africa (side event)

AFRICA FOOD SYSTEMS TRANSFORMATION

Leave no one behind: A case study for South Africa

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Report

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Overview

On 4 December 2023, the Human Sciences Research Council's (HSRC) Africa Institute of South Africa (AISA) in partnership with the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), the National Agricultural Marketing Council (NAMC), the South African Council for Natural Scientific Professions (SACNSP), and the Tshwane University of Technology (TUT), hosted the Science Forum South Africa (SFSA) side event session on *Africa's food systems transformation - Leave no one behind: A case study for South Africa.* The session began with an overview of the current state of food systems in Africa, highlighting the issues of food insecurity, malnutrition, poverty, and the impact of climate change. The case study of South Africa was presented as a microcosm of the broader African context, with its unique challenges and opportunities. The discussion then moved to the strategies for transforming food systems. The key strategies discussed included the need for significant investment in agricultural infrastructure, supporting policy reforms, prioritising multi-disciplinary research for development, strengthening the food control system coordination, strengthening capacity building, ensuring gender and social inclusivity, and fostering new technologies and innovation, particularly in food processing and distribution. The session concluded with a call to action for all stakeholders to work together to transform Africa's food systems. The need for a holistic approach, considering social, economic, and environmental aspects, was underscored. The session also emphasised the importance of leaving no one behind in this transformation, ensuring that the benefits reach all sections of society, particularly the most vulnerable. Various stakeholders, including government officials, academics, researchers, regulators, farmers and civil society representatives, attended the dialogue.

Introduction

In Africa, and specifically South Africa, the need for an inclusive food systems transformation that leaves no one behind is more urgent than ever. Firstly, it is crucial for achieving food security and improving nutrition across the continent, where a significant proportion of the population still suffers from hunger and malnutrition. Secondly, transforming food systems can play a pivotal role in driving economic growth and reducing poverty, inequality, and unemployment, as agriculture remains a key sector in many African economies. Thirdly, it is essential for the sustainable management of natural resources and climate change mitigation, as current agricultural practices often contribute to deforestation, water scarcity, and greenhouse gas emissions. Lastly, it is a matter of social justice and equity, as inclusive transformation can help to empower smallholder farmers, women, and youth, who are often marginalised in current food systems.

Therefore, addressing the underlying issues and challenges within the food systems, such as limited access to resources, inadequate infrastructure, lack of technological advancements, and vulnerability to climate change, is essential. Investing in research and innovation, promoting sustainable agricultural practices, and empowering local communities are also key components in driving meaningful change to the food systems. Hence, a holistic and multi-faceted approach is necessary to transform Africa's food systems and ensure long-term sustainability and prosperity.

Against this background, there is a need to foster dialogue and inspire action among policymakers, industry leaders, and other stakeholders to ensure that no one is left behind in Africa's food system transformation. This multi-stakeholder approach ensures that all perspectives are considered, leading to more comprehensive and inclusive solutions. It also fosters a sense of shared responsibility and ownership, which can significantly enhance the effectiveness and sustainability of the initiatives.

The current state of food systems in Africa - South Africa's context

South Africa's food system is complex and characterised by a dual agricultural economy. On the one hand, a well-developed commercial farming sector includes both large-scale and small-scale farmers who use modern technology and produce a surplus for the market. On the other hand, there is a subsistence-based sector in rural areas, where farming is mainly for household consumption.

Despite its agricultural potential, South Africa faces significant food security challenges. According to the World Food Programme, about 20% of South Africa's population is food insecure, meaning they do not have access to sufficient, safe, and nutritious food. This is due to a combination of factors, including high poverty levels, income inequality, and unemployment.

Furthermore, the country's food system is also grappling with the impacts of climate change, which is affecting crop yields and increasing the frequency and severity of droughts and floods. This is particularly problematic for smallholder and subsistence farmers, who are more vulnerable to these changes. Food waste and loss are also significant issues in the country, with substantial amounts of food being lost during production, post-harvest, and consumption stages. About 30% (9-10 million tons) of the agricultural output is wasted and lost. The cost of waste is high in fruits and vegetables, particularly during post-harvest handling and storage, processing, and packaging.

There are also positive developments in South Africa's food systems. The government and various organisations are implementing initiatives to improve food security, such as promoting sustainable farming practices, improving market access for smallholder farmers, and implementing social protection programs to support vulnerable households. In terms of technology, South Africa is one of the most advanced countries in Africa and has a relatively high level of internet connectivity.

This has the potential to support the use of big data and other digital technologies in the food system, for example, to improve supply chain management, enhance agricultural productivity, and support decision-making for policy and planning. However, more effort is needed to ensure these technologies are accessible and beneficial to all parts of the food system, including smallholder and subsistence farmers.

Pathways to effectively transform agri-food systems

Various pathways can be explored to contribute to creating a more resilient and sustainable food system for the future as discussed below.

1. **Supporting food systems policy reform and implementation**

   The transformation concept has been overused in Africa, yet the progress made in food surety and nutrition is not necessarily about transformation. Therefore, the continent needs to change its food systems strategy. The dialogue calls for meaningful policy reforms and the need to sustain and invest resources to make existing policies and programs work in transforming food systems. For example, implementing South Africa's ***Agriculture and Agro-processing Master Plan*** must be supported as a testament to South Africa's commitment to leaving no one behind in its journey towards a transformed and resilient food system.

   At the continental level, the Comprehensive African Agriculture Development Programme (CAADP) policy which was established in 2003 by the African Union (AU), is important in transforming Africa's food systems because it provides a strategic framework for countries to prioritise and invest in agriculture and rural development. It encourages countries to allocate at least 10% of their national budgets to agriculture and to develop national agricultural investment plans. By focusing on sustainable agricultural practices, improving access to markets, and promoting agricultural research and innovation, the successful implementation of the CAADP policy could increase agricultural productivity, reduce poverty, and improve food security in Africa.

   The governance of the policy space is essential. The management of food systems is an ongoing challenge. Developing different programmes or solutions for different groups is essential because they have different challenges.

2. **Making significant investments in infrastructure**

   Infrastructure is a key determinant of Africa's food system transformation. It influences various aspects, such as production, storage, transportation, and food distribution. For instance, good road networks and transportation systems are essential for moving food from farms to markets. Similarly, efficient storage facilities reduce post-harvest losses and ensure food safety. Furthermore, access to reliable energy sources can enhance food processing and preservation, thereby extending the shelf life of food products. Additionally, irrigation systems and water management infrastructure investments can improve agricultural productivity and resilience to climate change.

   It was reported in the session that food waste and loss are the main challenges within the entire value chain in Africa (e.g., about 40% of post-harvest produce is lost, or 10,3 million tons of food go to food waste and loss). Therefore, investing in infrastructure development can significantly reduce food loss and waste in Africa's food systems. There is also a need to look at the issue of infrastructure distribution. For example, there are instances in South Africa where infrastructure is spread against agricultural potential. One of the reasons could be that stakeholders are not communicating with each other. Therefore, in line with South Africa's agriculture structure, the infrastructure investment needs to address equitable access to agriculture (to mainstream smallholder farmers) and global competitiveness and profitability (of the commercial farmers).

As identified by the New Growth Path (NGP) and assessment of Agro-logistics, infrastructure requirements need to include the following:

- Develop new infrastructure (multi-purpose freight solutions)
- Maintain and revitalise existing infrastructure
- Ensure efficient use of logistics infrastructure (reduce fragmentation)
- Improve access to existing infrastructure
- Enable access for emerging farmers
- The manufacture of components for the infrastructure programme
- Significant multiplier effects across the country

3. Strengthening the coordination of the Food Control System

South Africa's food control system is a multi-sectoral responsibility involving several government departments, including Health, Agriculture, and Trade and Industry. Therefore, it is important to have well-coordinated and integrated food control systems to ensure food safety, quality, and consumer protection. The food control system can also be seen as a multi-agency system consisting of legislation, structures, functions, and activities located in various competent authorities. As such, the food system is as good as its weakest link in the food control system. Ensuring that all aspects of the food control system are strong and effective is essential for a well-functioning and safe food system. Among other challenges, the costs of testing food to meet food safety standards are almost doubled, thus creating barriers. This hinders the achievement of the goal of leaving no one behind.

4. Strengthening capacity building and promoting multi-disciplinary research for development

Firstly, the curriculum for students needs to be aligned with the 21st century to produce well-informed graduates. To achieve this, we need an interdisciplinary approach. We need to produce graduates who do not aspire to be employees but who are future creators of employment opportunities in food systems. Secondly, prioritising multi-disciplinary research is crucial for making meaningful changes to Africa's food systems. By bringing together experts from various fields, such as agriculture, nutrition, economics, and social sciences, we can comprehensively understand the challenges and opportunities in the food systems. This interdisciplinary approach allows for innovative solutions and informed decision-making to drive positive change.

5. Allocating adequate resources for smallholders and emerging farmers

The current systems often fail emerging or smallholder farmers. These farmers face numerous challenges, such as limited access to resources, lack of market opportunities, and inadequate support services. As a result, they often struggle to compete with larger, more established players in the industry. It is, therefore, essential to address these issues and create a more inclusive and supportive food system that benefits all farmers, regardless of their size or level of experience. Resolving this challenge will also require restructuring the resource allocation imperatives. Most of the people in South Africa rely on social grants. We need to think about how finance and resource allocation happen. For instance, providing extension services to someone who is transitioning has to be incentivised. That is, we need to ensure adequate resource allocation.

Moreover, the timing of resource allocation is essential for transforming Africa's food systems. Allocating resources at the right time can ensure that the necessary investments and support are provided when most needed, leading to more effective and sustainable transformations in the food systems.

6. Empowering women and youth participation in agriculture and the food systems.

Women are quite central to agriculture and food systems because of their role throughout the value chain, from production to processing and preparing the food to selling and marketing it. In fact, according to FAO, women make up nearly 50% of Africa's agricultural labour force. However, you find that in key contributors of food production, women are underrepresented and, therefore, less empowered than their male counterparts. For example, in the case of land, a land audit by the Department of Rural Development and Land Affairs in 2015 identified that of the 39% of land that individuals in the country own, 17% is owned by women compared to the 47% owned by men (NPC Technical paper on Women and Gender for NDP Review, 2021)[1]. The rest of it is co-owned by men and women. The empowerment of women will strengthen not only our economic participation but also beyond the farm gate as more access to resources such as infrastructure, electricity, water, education, and innovation, and pay for female farm workers contributes to our other roles such as non-paid care work at homes in communities. Without any of these resources, children and their livelihoods will not be sustained. As such, more deliberate efforts of gender mainstreaming policy, such as meeting the 50% women target of the *Beneficiary Selection and Land Allocation Policy* along with the requisite support to make the land work, can help transform agriculture and the food system in South Africa and the continent.

On the other hand, attracting youth to agriculture is crucial for transforming Africa's food systems. An aging population currently dominates the agricultural sector in Africa, and there is a need to engage and empower the youth to ensure the sustainability and productivity of the sector. By attracting youth to agriculture, we can bring in fresh ideas, innovation, and technological advancements that can help improve productivity, efficiency, and profitability in the sector. Additionally, involving youth in agriculture can also address the issue of unemployment among young people in Africa, as it provides them with opportunities for income generation and economic empowerment. As per the aspirations of the NDP in South Africa, technology has been a catalyst for bringing new and especially young entrants into the sector's value chain. Thanks to technology, more and more young people are being attracted to the sector based on the ability to function farms even at small scales from their phones, including tracking the weather and pesticides, water levels, nutrient levels, and everything else through technology. There are emerging multiple youth-owned South African Agri-tech solutions that have successfully disrupted Agriculture and have gone on to attract multi-million investments globally:

- Nigel Agri: R83 million (Naspers)[2]
- Agricool: Between $50 000 - $100 000 (Google)[3]
- Khula!: Shares by ABSA & funding from Pepsi Kgodiso Development Fund

This indicates that empowering youth contributes to widening, futureproofing, and sustaining the food systems faster than many other pathways.

7. Strengthening SMEs and Township Food Systems Economy for Social Inclusions

Strengthening the role of Small and Medium Enterprises (SMEs) and Township Food Systems Economy is essential for ensuring the full participation of marginalised communities in transforming food systems. By empowering SMEs and supporting the development of local food economies in townships, we can create opportunities for marginalised individuals to actively participate in the food system and contribute to its transformation. This can increase economic empowerment, improve food security, and enhance community resilience.

[1] Nation Planning Commission, 2021. NPC Technical paper on Women and Gender for NDP Review. Republic of South Africa.
[2] https://www.naspers.com/news-insights/portfolio-updates/2022/naspers-foundry-leads-r83-million-round-in-agritech-company-nile
[3] https://www.news24.com/fin24/companies/young-agritech-startup-agrikool-makes-farming-cool-scores-google-funding-20220913

According to the Township Economic Alliance and Nedbank, 17% of township businesses surveyed to be affected by load shedding were in the food and beverage sector (the biggest sector). That indicates that policymakers and development practitioners need to have a sectorial approach to understanding the make-up of the township economy if we are to make a dent in better impacting the development of SMMEs in townships.

In 2017, an NPC study revealed that one of the top limitations of SMME success in townships was the lack of innovation, research, and development, and we could add manufacturing to that. For example, Babelegi Industrial Park was once the source of over 20,000 jobs for the community of Hammanskraal through multiple sectors in the 90s. Now, the food sector is only 4% of the industrial park (i.e., Nestle), resulting in a depreciation of secondary agriculture jobs in that township community. Looking at the 1 million jobs that the NDP envisages creating through agriculture, over 300,000 are in agro-processing. Therefore, township-based agro-processors need to be better supported through innovative manufacturing platforms (i.e. aggregator models) as well as to re-skill them for future agro-processing sectors.

The cost of compliance for township SMMEs needs to be addressed. For example, it takes a long time for SMMEs to acquire food safety certification from municipalities. On the other hand, nutrition testing by a government SABS testing lab is twice as expensive as a private sector testing lab, which is not equitable. Better ways of developing and supporting township SMMEs, start with understanding the nuances of each (in this case, food & beverage) sector based on multiplier effects of how the sector can positively contribute to the community, and that is holistic in nature without unnecessary red tape.

8. Data-Driven Solutions: Harnessing the Power of Big Data Science and Technology to Transform Africa's Food Systems

Given the several challenges facing Africa's food systems, integrating technology is vital for transforming them. Technology can help in various ways, such as improving agricultural practices, enhancing supply chain efficiency, reducing food waste, and providing valuable data for decision-making. For instance, precision farming technologies can help farmers optimise their resources like water and fertilizer, thereby increasing productivity and sustainability. Similarly, digital platforms can connect farmers with markets, reducing intermediaries and ensuring fair prices. Furthermore, technologies like blockchain can enhance traceability in the food supply chain, ensuring food safety and reducing fraud. Lastly, data analytics can provide insights into consumption patterns, crop yields, and market trends, aiding in policy-making and planning. However, it's important to note that successfully implementing these data-driven and technological solutions in transforming Africa's food systems requires overcoming certain challenges.

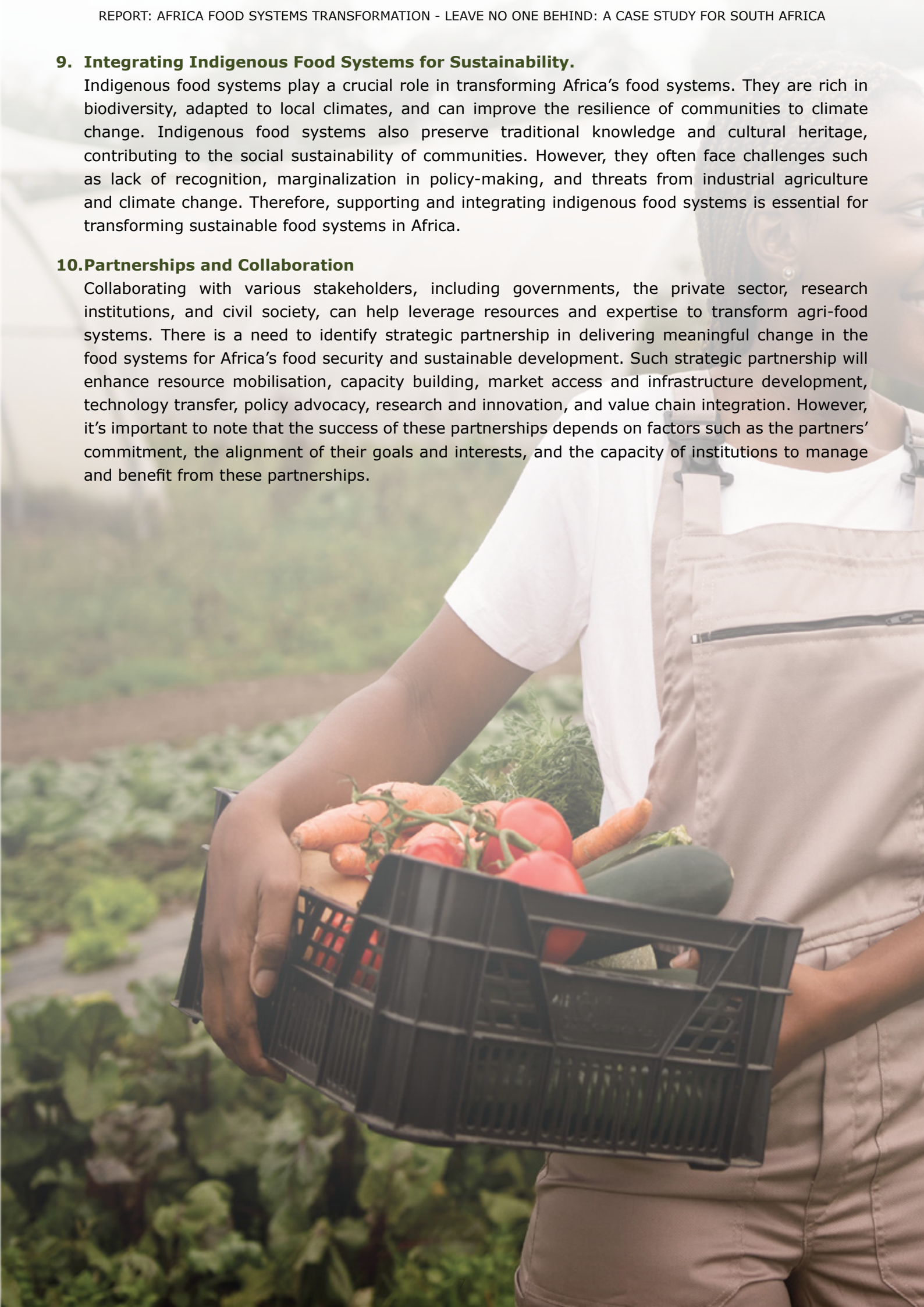
- **Issue of infrastructure** – Many parts of Africa lack the necessary technological infrastructure, such as reliable internet connectivity, to support the use of big data (this includes some parts of rural South Africa).
- **Challenge of data collection** – In many African countries, data on food systems is not systematically collected or is of poor quality. This makes it challenging to apply big data techniques effectively.
- **Issue of skills and capacity** – There's a shortage of trained professionals who can analyse and interpret big data meaningfully to transform food systems.
- **Challenge of policy and regulation** – Many African countries lack the necessary policies and regulations to support using big data in agriculture. This includes policies on data ownership, privacy, and security.
- **Issue of cost** – Implementing big data solutions can be expensive, and many African countries lack the necessary financial resources.

9. Integrating Indigenous Food Systems for Sustainability.

Indigenous food systems play a crucial role in transforming Africa's food systems. They are rich in biodiversity, adapted to local climates, and can improve the resilience of communities to climate change. Indigenous food systems also preserve traditional knowledge and cultural heritage, contributing to the social sustainability of communities. However, they often face challenges such as lack of recognition, marginalization in policy-making, and threats from industrial agriculture and climate change. Therefore, supporting and integrating indigenous food systems is essential for transforming sustainable food systems in Africa.

10. Partnerships and Collaboration

Collaborating with various stakeholders, including governments, the private sector, research institutions, and civil society, can help leverage resources and expertise to transform agri-food systems. There is a need to identify strategic partnership in delivering meaningful change in the food systems for Africa's food security and sustainable development. Such strategic partnership will enhance resource mobilisation, capacity building, market access and infrastructure development, technology transfer, policy advocacy, research and innovation, and value chain integration. However, it's important to note that the success of these partnerships depends on factors such as the partners' commitment, the alignment of their goals and interests, and the capacity of institutions to manage and benefit from these partnerships.



Conclusion and Way forward

The session concluded with a call to action for all stakeholders to work together to transform Africa's food systems. The need for a holistic approach, considering social, economic, and environmental aspects, was underscored. The session also emphasised the importance of leaving no one behind in this transformation, ensuring that the benefits reach all sections of society, particularly the most vulnerable. However, the session also acknowledged the complexities and challenges involved in this transformation, including the need for significant investment, policy reforms, and capacity building. It is also important to note that a single solution does not fit all the challenges; therefore, we need to learn to diversify solutions. We also need to pay attention to the transformation of food systems at the grassroots level. The session ended on a hopeful note, with a shared commitment to work towards a sustainable and inclusive food system in Africa.