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School Meals and Regenerative Agriculture

Exploring the transformative potential in East Africa

Briefing Paper 1 of 2

Content

The Food Systems Transformation through School Feeding project seeks to generate and apply country-specific, actionable evidence on the pathways for school meal program (SMP) and regenerative agriculture (RA) interventions to drive food systems transformation. Research teams in West and East Africa are leading this work.

In Kenya and Rwanda, stakeholders involved in country SMP initiatives recently convened to discuss and analyze pathways through which SMP and RA interactions may open opportunities for influencing and transforming national food systems. This brief shares findings from the two workshops.

Key Results

- In Kenya, SMP–RA integration is feasible in the ASAL regions, where RA can make crop–livestock systems more viable and sustainable; however, weak regime–niche relationships limit program effectiveness.
- Rwanda's strong regime–niche linkages already support progress toward integrating SMP-RA interventions, but decentralization and coordination are needed to overcome systemic constraints.

Intervention and Impact

During participatory workshops in Kenya and Rwanda stakeholders from national and local government, civil society, NGOs, farmer groups, and research institutions convened with the objective of discussing and analyzing SMP and RA interactions through a transition and transformation lens—applying a Multi-Level Perspective (MLP) (Box 1).

To achieve this objective, participants developed a set of scenarios, or narrative and visual constructs, that explored current and potential SMP-RA interventions (e.g. school farms), influencing factors (e.g. procurement policies), and external pressures (e.g. climate shifts). Within each scenario, participants explored the enabling and disabling factors that would make transition pathways more or less achievable. They also discussed the role of local and national governance to identify potential opportunities and recommended actions for policy engagement. This included discussing current and potential policies that impact SMP-RA interventions. A random selection of participants were also interviewed on topics related to school food procurement, supply, production, and governance.

Box 1.

WHAT IS THE MULTI-LEVEL PERSPECTIVE FRAMEWORK?

The MLP framework is widely applied to conceptualize sustainability transitions in research and specifically recognizes transitions in energy, transport, housing, and agri-food systems. The MLP includes three analytical levels: niche-interventions, socio-political-economic regimes, and landscape pressures. These analytical levels simultaneously interact with one another, creating linkages that both enable and disable transitions. In the context of food systems transformations and transitions, the framework can be a useful tool in characterising transition pathways, understanding dynamics, path dependencies, lock-ins, and opportunities for stakeholder engagement.

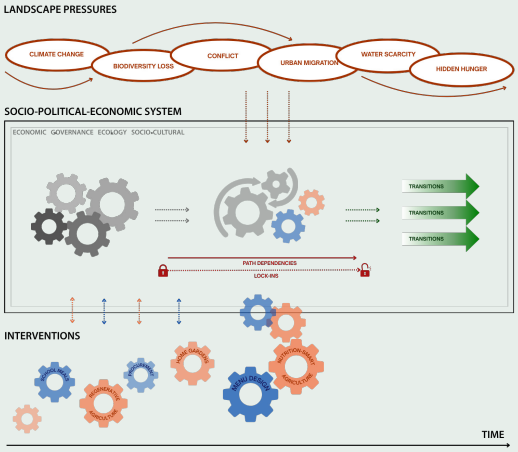

Fig. 1. Multi-level perspective on transitions related to school meal programs and regenerative agriculture (adapted from Geels and Schot 2007).

Kenya

The SMP in Kenya is currently implemented in the arid and semi-arid land (ASALs) regions, which occupy 84% of Kenya's land mass. The program is implemented by the Ministry of Education (MoE) through the National Council for Nomadic Education in Kenya (NACONEK). The government aims to reach 10 million children by 2030.

Two modalities are primarily used to distribute food: i) direct food provision by the government and ii) the home-grown school feeding program (HGSFP). In some cases, the national treasury transfers cash to participating schools through the MoE to purchase food commodities. Alternatively, the MoE procures food and delivers to primary schools in-kind. Food is mainly purchased from suppliers who source from local markets or cross border traders. For the HGSFP, schools receive cash to procure food from local communities and traders.

Workshop participants gathered in Nairobi, Kenya. Credit: Dr. Simon Omondi.

Main Findings: Current Scenario

As illustrated below, there are several factors constraining SMP-RA interventions at the niche, regime and landscape levels, which have created a scenario where children are being fed less than 50% of the expected days per year. These factors include:

- **Challenges in obtaining birth certificates in rural regions** that lead to discrepancies in enrollment and create a scenario where the government is funding the SMP at a lower rate than required to meet the actual number of children enrolled.
- **Inadequate program data architecture and procurement support** that causes the SMP to be underfunded payments to be delayed. Thus, caterers cannot purchase and provide adequate, diverse, and nutritious meals.
- **Depleted soil due to the use of traditional practices**—such as over-grazing, and use of indigenous livestock breeds and local crop varieties—leading caterers to prioritize purchasing school food from large food traders.
- **Restrictive procurement policies** that limit participation of smallholder and women farmers in the SMP market.
- **Human-to-human and human-to-wildlife conflict over resources** caused by droughts and floods that result in thorny shrubs and invasive plant species, water and land scarcity.
- **Poor infrastructure** (road network, schools, and markets) which further reduces grazing lands and disincentivizes crop production.
- **Women's inability to own land,** limiting smallholder farmer participation in the SMP market.

Deeply rooted food culture in the ASALs which often limits crop production and slows the uptake of RA practices.

High urban-rural migration amongst the youth which causes labor gaps, low crop and livestock production, and limited uptake of RA practice.

Main Findings: Envisioned Scenario

In the envisioned scenario, SMP-RA interventions could be enabled by proven technologies, innovations and management practices (TIMPs) developed by the private and public sector. This scenario includes:

- **Implementing new RA practices,** including agroforestry, silvopasture through fodder trees establishments, cover crop and mulching, integrated livestock management, integrated soil fertility management, and integrated pest and disease management.
- **Deploying required and widespread community training and capacity building strategies** such as the development of school gardens and 4K clubs.
- **Establishing nutrient-dense school gardens to support SMP food supply** by supplementing high-iron beans, fruits, vegetables and livestock products on school menus.
- **Promoting RA TIMPs** for adoption in the school gardens and communities.
- **Adopting a participatory monitoring and evaluation framework** to evaluate the impact of RA practices on productivity, soil health, water retention, and biodiversity.
- **Leveraging current agriculture policies** to enable the utilization of TIMPs to support regenerative school gardens and 4K clubs in schools.
- **Developing policies to address the major water and land concerns** that result in a scenario of poor productivity, loss of livelihood, and low incomes in Kenya's ASAL regions.
- **Establishing monitoring and evaluation and program coordination officers** to support SMP implementation.
- **Encouraging benchmarking and peer learning.**

Policy Recommendations

During the MLP workshop in Kenya, participants agreed that SMP-RA integration is feasible in the ASALs. They highlighted that RA will be vital in making crop-livestock systems economically viable, environmentally sound, and socially responsible by ensuring that today's food production does not compromise the ability of future generations to feed themselves, especially in this region. The current scenario depicts a poor relationship between regime and niche levels that has resulted in children being fed less than the optimally recommended days per school year. The envisioned scenario reflects a stronger regime-niche relationship that leverages existing technology to enable niche-level interventions. Both scenarios will require regime-level action, guided by niche-level insights, to address landscape-level pressures that threaten the long-term effectiveness of the program. The following policies were recommended.

- Integrate value add and food preservation principles into primary school curriculum.
- Promote school-level digital documentation and data systems (e.g. school meals dashboard) for caterers and farmers to utilize at the community level.
- Implement behavioral change and community sensitization components to positively promote crop and livestock integration in the region.
- Develop an RA policy framework at the county and national government levels to draw the attention of all stakeholders for collective action.
- Address policy gaps regarding land demarcation for school gardens.
- Develop policies with integrated approaches that combine climate adaptation, community-based involvement, regenerative land practices, and long-term investment in resilient water systems.
- Involve a Communities of Practice (CoP) to align cultural values with RA practices to support the SMP through inclusive, community driven approaches.

Rwanda

In Rwanda, the SMP was officially governed by the National School Feeding Policy in 2020 and scaled across all public schools. In 2025, the SMP will be delivered to 4.3 million children in all provinces, requiring a budget over 130 billion Rwandan francs.

To deliver the SMP in Rwanda, parents and the government contribute food or funds, while school and community gardens produce nutrient-rich crops and small livestock. School kitchens, staffed by trained cooks, prepare meals based on nutrition-focused menus tailored to students' dietary needs. Institutional mechanisms support scale and consistency. Cooperatives and public-private partnerships facilitate procurement. From 2025, a decentralized procurement system will allow schools to source from local suppliers, and logistics and training centers will ensure proper food distribution and enhance the skills of school cooks.

Workshop participants gathered outside the University of Rwanda. Credit: Savannah Dysard

Main Findings: Current Scenario

School gardens have emerged as localized RA interventions, providing vegetables, fruits, and staple crops to schools in the country. However, several factors still constrain SMP-RA interventions at the niche, regime and landscape levels, including:

- **Poor school garden management guidelines** which lead to poorly utilized and maintained gardens and less food cultivation.
- **Poor food storage and delivery guidance** that causes many schools to store food in non-ventilated rooms, resulting in pest infestations and spoilage.
- **Centralized procurement processes** that lead to mismatched deliveries and duplication of services.
- **Gender roles** that result in women providing unpaid labor for cooking and related tasks.
- **Delayed payment cycles** which cause heavy reliance on traders and middlemen, rather than cooperatives and create a scenario where schools lack control over food acquisition and supply.
- **Bad procurement guidelines** which base meal portion sizes on the weight of uncooked food, resulting in portions that do not match the actual amount of food available after cooking.
- **Economic instability and climate-induced agricultural disruptions** causing food prices to increase and threatening program stability.
- **Rigid government procurement rules** that exclude smallholder farmers and youth cooperatives from the SMP market.
- **Economic instability** which creates a major bottleneck in promoting quality and local sourcing.

Main Findings: Envisioned Scenario

In the envisioned scenario, SMP-RA interventions could alleviate the constraints of the current system through the utilization of digital procurement systems and encouragement of deeper parent and community engagement. This scenario includes:

- **Funding SMP community engagement campaigns** so parents become economically empowered to contribute to the program.
- **Establishing school and community farms** to provide nutrient-rich foods (e.g. sweet potatoes, spinach, eggs, and small ruminants) through a regenerative farming system, and involve parents to encourage engagement.
- **Developing digital food procurement systems** to ensure transparency and traceability.
- **Co-creating school menu plans** with a school nutrition committees and training cooks and storekeepers on nutrition and food safety.
- **Introducing policies to support and enable the decentralization and digitization (e.g. digital procurement platform) of procurement practices,** empowering schools to engage with local suppliers directly.
- **Establishing a robust monitoring, evaluation, and learning (MEL) framework** run by district-level MEL officers who oversee regional hubs with clear feedback loops from schools to ministries.
- **Ensuring integrated financial support,** aligning school feeding with resilient agriculture and social protection goals, through multi-sector engagement.
- **Mainstreaming climate-smart agriculture into production systems and trade policies**—such as solar-powered cold storage, water harvesting tanks, and clean cooking stoves.
- **Establishing nutrition scorecards** for procurement audits to institutionalize accountability.

Policy Recommendations

During the workshop in Rwanda, participants agreed on the potential for SMP-RA interventions to feed children while also nourishing the systems that surround them—such as education, agriculture, health, and community governance. The current scenario illustrates a relatively strong regime–niche relationship, reflected in the planned decentralization of the SMP procurement system. However, this relationship could be further strengthened to enhance the impact of niche interventions, while also addressing persistent landscape-level pressures and historic lock-ins that hinder SMP–RA integration. In contrast, the envisioned scenario overcomes current system shortcomings by reinforcing regime–niche linkages and mitigating landscape-level constraints. Based on these insights, the following policies were recommended:

- Link procurement and nutrition guidance to ensure alignment between seasonal production and meal planning and prioritize fortified and bio-fortified food items.
- Encourage women-led cooperatives and youth enterprises to participate in the supply chain by promoting inclusive economic growth in procurement policies.
- Conduct decentralized menu planning backed by regional nutrition data and micro-surveys conducted at the school level to diversify district-level food baskets.
- Digitize school food procurement to monitor SMP procurement timelines and seasonal variations, cost-effectiveness, and nutritional content.
- Integrate RA into school education systems by leveraging the school feeding system as the learning platform (e.g. school based gardens).
- Develop a national Community of Practice (CoP) on regenerative school feeding and food systems to create a dynamic space for advocacy, research, and adaptive learning that can support the SMP strategy across the country.

Conclusion

The findings from this study highlight the need for developed, structured national learning platforms around school meals, nutrition and food systems, for researchers and practitioners. This study also identified path dependencies and policy issues that must be addressed to enable intervention success in the long-term. Building on this experience, we need to fine tune and apply the MLP framework through multiple approaches for a more granular understanding of the transition process. This will also help identify and prioritize policy actions to address some persistent lock-ins.

This analysis will contribute to wider evidence that aims to develop a food systems transformation theory grounded in SMP and RA evidence.

About this policy brief

This project brief is part of a series aiming to convey the results and progress of the Food Systems Transformation Through School Feeding Project, funded by the International Development Research Centre (IDRC) and the Rockefeller Foundation. The full series can be found at www.regenerativefoodsystemsalliance.org.

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