



Fostering sustainable nutrition and well-being in rural Burundi: A community-led approach to malnutrition reduction

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Abstract

This article presents a comprehensive analysis of a community-led initiative that contributed to reducing malnutrition and improving dietary diversity in rural Burundi. It examines the implementation of the Sustainable Nutrition for All (SN4A) approach, which includes triggering and knowledge development, improving access to diversified food, providing technical follow-up through Groupes de Soutien aux Activités de Nutrition (GSAN), and recognising community efforts. The article analyses quantitative data from Kibere, Mubondo, and Kirama collines, complemented by qualitative insights from community members and local authorities. The findings underscore the critical role of contextualised strategies, collective responsibility, and continuous accountability in achieving lasting improvements in community health, well-being, and resilience. This study documents significant reductions in malnutrition rates across targeted collines in Makamba and Gitega provinces.

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1. Introduction

Malnutrition remains a pervasive global health challenge, disproportionately affecting people living in low-income countries. According to the World Health Organisation, childhood stunting, wasting, and micronutrient deficiencies contribute significantly to morbidity and mortality, impeding physical and cognitive development and perpetuating cycles of poverty ([WHO, 2023](#)). In Burundi, a country grappling with decades of socio-economic and political instability, the burden of malnutrition is particularly severe. Despite recent improvements, a significant percentage of children under five suffer from chronic malnutrition (stunting), and acute malnutrition (wasting) remains a public health concern, especially in rural areas where access to diverse foods, clean water, and adequate sanitation is often limited ([UNICEF, 2024](#)). These challenges are further exacerbated by insufficient knowledge of balanced diets, proper hygiene practices, and appropriate childcare, particularly for pregnant and lactating women.

Recognising the multifaceted nature of malnutrition, comprehensive and sustainable interventions are urgently needed. Traditional top-down approaches often fall short in fostering long-term behavioural change due to a lack of local ownership. This necessitates innovative models that empower communities to identify their own challenges and co-create solutions. It is within this context that the Sustainable Nutrition for All (SN4A) approach emerges as a promising framework. The SN4A approach advocates for a holistic perspective on nutrition, aiming not only to educate communities on dietary diversity but also to address the underlying socio-economic and environmental determinants of malnutrition through multisectoral engagement in multistakeholder platforms. It uses simple mnemonics like the fingers of the hand to remember the five food groups and practices a diverse diet.

This article outlines the implementation and impact of a rural Burundian nutrition intervention, a collaborative effort by SNV and its partners, utilising the SN4A framework. The project's core strategy centred on empowering local communities through behavioural change campaigns, ensuring the availability of diversified food, and overcoming economic challenges through solidarity groups, all guided by community leaders (government line agency workers and technical services at the collines level) organised into Groupes de Soutien aux Activités de Nutrition (GSAN). The primary objective of this article is to present compelling evidence of the project's success in significantly reducing malnutrition rates and improving hygiene practices in two distinct provinces of Burundi - Makamba and Gitega. By documenting the strategic components of this initiative, presenting robust quantitative data, and enriching the narrative with qualitative testimonials, this paper aims to inform and inspire other development actors. It demonstrates that this community-led, context-sensitive approach, which integrates agriculture and home garden promotion and strengthens multi-sectoral coordination, is both scalable and highly effective in fostering lasting positive change in vulnerable populations.

2. Methodology

The study was conducted in three distinct collines (hill communities), which serve as the primary administrative units in rural Burundi. Two collines, Mubondo and Kirama, are located in Makamba Province, in southern Burundi. This region is characterised by its agricultural economy and, at times, significant socio-economic vulnerability. The third colline, Kibere, is located in Gitega Province, in the central region of Burundi, also largely agrarian. These collines were selected based on their high baseline rates of malnutrition and their representation of typical rural Burundian socio-economic conditions, allowing for a robust comparative analysis of the intervention's effectiveness across different geographical contexts.

Data collection involved systematic quantitative screenings for malnutrition and qualitative insights gathered through interviews and direct observations.

Specifically, this article seeks to answer the following research questions:

- To what extent did the Projet d'Appui au Développement Agricole pour la Nutrition et l'Entrepreneuriat (PADANE) project, through its SN4A approach, contribute to the reduction of malnutrition rates in the targeted collines of Makamba (Mubondo and Kirama) and Gitega (Kibere) provinces?
- What were the key components of the SN4A approach, including the GSAN and Groupements de Solidarités strategy and the triggering & knowledge development that served as primary drivers of intervention success?
- How did the empowerment of local actors, particularly the GSAN, facilitate the widespread adoption of sustainable nutrition and hygiene practices within the communities?
- What critical lessons can be extracted from this intervention that are transferable and scalable to other contexts facing similar development challenges?



3. Project design and intervention model: The SN4A approach

The PADANE project adopted a comprehensive, multipronged approach rooted in community participation and empowerment, aligning with the principles of the Sustainable Nutrition for All (SN4A) framework. This approach included triggering and knowledge development, household-level nutrition education, and regular follow-ups.

Triggering and knowledge development

The intervention began with a crucial triggering process that prepared communities for action, including the formation of GSAN (Community Health and Nutrition Groups). A central part of this triggering was *a participatory assessment*, where communities collectively identified their own opportunities and challenges for optimal nutrition. This process fostered a powerful emotional realisation of malnutrition's devastating impact on children, a critical factor in mobilising and empowering the community. Local facilitators, chosen from within these communities, were then trained on essential aspects of food security, particularly dietary diversification, community health, and hygiene, ensuring culturally sensitive and contextually relevant knowledge dissemination.

This multisectoral triggering proved to be a critical differentiator. While malnutrition rehabilitation wasn't initially an SN4A focus, it was adapted for Burundi, leading to the formation of GSAN and Maman Muco (community leaders) to oversee the rehabilitation of malnourished children and support Foyers d'Apprentissages et de Réhabilitation Nutritionnelle (FARN). At the FARN, Maman Muco provided care for children with moderate acute malnutrition, preparing nutritious meals over 12 days and teaching parents to replicate these at home and cultivate local foods for availability and diversity. As Patricia, a GSAN from Kibere, put it, *"It was a great surprise that whatever they need to cure the malnutrition were things they have in their households,"* highlighting the power of practical, resource-appropriate demonstrations. The combined experience of triggering and FARN sessions significantly contributed to positive behavioral changes within these communities.

Household-level nutrition education

Beyond broad community awareness, the project tailored nutrition education to the household level. This involved forming and supporting household-specific community action plans, encouraging families to set realistic goals for improving their dietary and hygiene practices. Regular community meetings included demonstrations of proper feeding and hygiene behaviours, offering practical, visual examples easily replicated at home. Habonimana Joseph, Chef de Colline of Kibere, underscored the necessity of this foundational education: *"The colline had so many cases of malnutrition. They lacked basic knowledge on staple foods, on ways of having diversified and nutritious food, and proper hygiene for the well-being of their families."*

Follow-ups

The SN4A approach actively promoted and supported the establishment of vegetable gardens, small animal husbandry (e.g., chickens, rabbits), and fruit tree plantations. These initiatives aimed to diversify food sources and increase access to animal proteins. Regular follow-up visits by GSANs were crucial for verifying proper infrastructure use and reinforcing new hygiene behaviours.

Certification and celebration of model collines

To foster sustained engagement and community pride, the project implemented a system of recognition and certification for "model collines" that demonstrated significant improvements in nutrition and hygiene indicators. Public recognition and celebration cultivated a strong sense of ownership and pride within communities, encouraging continued improvements beyond the project's direct intervention. This component served as a powerful motivator for sustained adherence to learned practices.

4. Groupement de solidarité (Solidarity group)

Many targeted collines faced significant economic challenges. To address these, the project advocated for the establishment of Groupements de Solidarité as a mechanism to mobilise funds and overcome economic barriers to achieving nutrition goals. These self-organised community groups served as platforms for collective action, mutual support, and resource mobilisation, directly addressing socio-economic constraints that prevented families from implementing learned practices (e.g., affording basic necessities like toilets or diverse foods). These groups fostered a culture of shared responsibility.

Kibere colline model

Sibomana Violette, a GSAN member from Kibere, described how groups of 10 to 15 people saved 500 BIF (approximately \$0.16 USD) per person per week. This collective saving allowed them to purchase small animals (e.g., hens) for each family, providing access to essential protein sources. Kibere also innovated by creating two specialised groups: one for pregnant women and another for breastfeeding mothers. These groups contributed funds to support women with necessities (food, clothing, transport) during critical periods and provided a continuous platform for education on maternal nutrition and childcare.

Mubondo colline model

Ndayishimiye Emilienne, a GSAN and community health agent (umuremeshakiyago) from Mubondo Colline, explained their approach involved smaller groups of five families. These families collectively cultivated one member's field, with each family contributing 500 BIF. This shared labor and financial contribution then extended to other necessities, such as acquiring small animals for protein.

The "*Groupements de Solidarités*" thus evolved organically based on the specific priorities and socio-economic realities identified by each community, proving a flexible and powerful tool to address economic challenges.

5. Results

The data unequivocally demonstrates a significant and sustained reduction in malnutrition rates across all targeted collines, alongside profound improvements in household hygiene and dietary diversity.

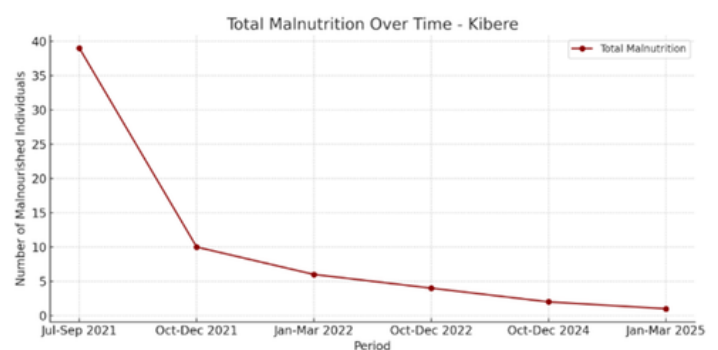
Baseline malnutrition rates (July-September 2021)

At the project's inception (Triggering: July - September 2021), both Kibere and Mubondo collines exhibited concerning levels of malnutrition:

- **Kibere Colline:** Out of 145 children screened, 39 were identified as malnourished (28 moderate, 11 severe), representing a total malnutrition prevalence of 26.9%.
- **Mubondo Colline:** From 512 children screened, 86 were malnourished (69 moderate, 17 severe), indicating a total malnutrition prevalence of 16.8%.

Evolution of malnutrition rates in kibere colline (Gitega)

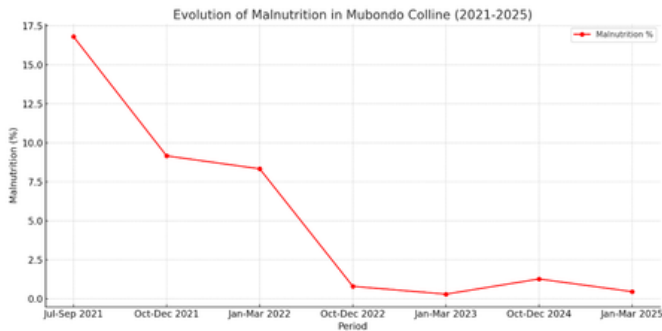
Figure 1 illustrates the dramatic decline in malnutrition prevalence in Kibere Colline from the project's initiation to early 2025.



Kibere Colline experienced an exceptional reduction in malnutrition. From a baseline of 26.9% in July-September 2021, the prevalence decreased to 0.6% by January-March 2025. This represents a reduction of over 97% in the total number of malnourished children. Crucially, severe malnutrition cases decreased from 11 at baseline to zero by October-December 2024, a testament to the effectiveness of the FARN model and diligent GSAN follow-up. The rapid decline between the triggering phase (26.9%) and Trim2 (7.2%) highlights the immediate impact of initial awareness campaigns and subsequent formation of solidarity groups.

Evolution of malnutrition rates in Mubondo colline (Makamba)

Figure 2 demonstrates a similarly impressive trajectory of malnutrition reduction in Mubondo Colline.



Mubondo Colline also experienced a substantial decline in malnutrition. Starting at 16.8% in July-September 2021, prevalence decreased to 0.46% by January-March 2025. The reduction in severe cases from 17 to zero by October-December 2022 is particularly noteworthy, highlighting the rapid impact of the intervention. While there was a slight fluctuation in October-December 2024 (1.27%), the overall trend remained strongly downward, demonstrating the resilience and sustained impact of community-led initiatives in addressing new or emerging cases. The dramatic drop from 16.8% to 0.8% in just over a year (by Oct-Dec 2022) signifies the rapid absorption and application of the project's teachings.



Comparison of malnutrition reduction across collines

Kibere and Mubondo, including Kirama which adopted a similar model, showed remarkable success in reducing malnutrition. Despite Kibere's higher initial prevalence (26.9% compared to Mubondo's 16.8%), both areas converged to an impressive malnutrition rate of under 1% by the observation period's end. Furthermore, even though the initial assessment occurred during the lean season - a period typically prone to acute malnutrition - qualitative data from subsequent interviews and observations confirmed no significant seasonal spikes in malnutrition after the project began. This sustained improvement highlights the communities' increased resilience. As Nahinkuye Godelieve from Kirama shared, *"The project sensitised on the lean season; initially, we didn't prepare because we used to sell our products rather than keeping them for that season. Today, we learned to keep food aside for that season, and in case it is not enough, we are using solidarity groups to contribute."*



Qualitative evidence of dietary changes

Beyond quantitative figures, compelling qualitative evidence highlights a profound transformation in household hygiene practices and dietary habits.

Dietary diversification

The "five fingers" of the SN4A approach (animal proteins, vegetable proteins, fruits, carbohydrates, and lipids) were actively promoted and adopted. Joseph, Chef de Colline Kibere and a GSAN, observed a radical shift: "We used not to cultivate vegetables, forget about eating them. With PADANE education, they started having jardin potagers (kitchen gardens) and having veggies in each meal they take in a day." Similarly, Nshimirimana Leonard noted that households with fruit trees, which previously sold all their produce, now ensure that "each meal has at least one fruit and they understood the importance of cultivating and eating fruits." The "Groupements de Solidarité" played a crucial role in making diverse foods accessible, as Sibomana Violette (Kibere) mentioned, enabling families to acquire small animals for protein.



Hygiene transformation

Nshimirimana Leonard, a GSAN member from Kibere, emphatically stated, "The hygiene has improved in the community." Project observations during household visits confirmed a visible increase in the presence of dedicated washing areas (fyonda nkarabe) and modern toilets. Previously, families often practised open defecation (aller dans la brousse) due to lack of facilities and awareness.

Impact on maternal and child health

The project's holistic approach extended its benefits to maternal and child health outcomes. Alexis Nijimbere, Responsable Santé Nutrition in the Provincial Health Bureau of Makamba, provided a powerful testament: "The screening of pregnant women done in Makamba in 2023, the collines of Kirama and Mubondo where PADANE was intervening didn't have any woman struggling with malnutrition." This indicates a fundamental shift in the health status of pregnant women, a critical factor for healthy birth outcomes. Furthermore, Nshimirimana Leonard from Kibere highlighted a significant reduction in maternal mortality: "Currently, there is no mortal accidents of women giving birth from home due to the education they get from the groupement de solidarité." This points to improved knowledge about antenatal care, safe delivery practices, and perhaps increased ability to access professional medical services and diversified food, as sensitised in their solidarity groups.

6. Key drivers of success and scalability

The remarkable success achieved by the PADANE project in reducing malnutrition and improving well-being in rural Burundi can be attributed to several interconnected and mutually reinforcing strategies within the overarching SN4A framework. These drivers highlight a model that is inherently scalable and relevant for broader application in development initiatives.

The power of local actors: The GSAN structure

A fundamental distinguishing factor of the PADANE project was its strategic investment in and empowerment of local community leaders through the Groupes de Soutien aux Activités de Nutrition (GSAN). As Patricia Mushikiwabo, a GSAN member from Kibere, observed, "The triggering was powerful, but an added value for PADANE project, it was an inspection in the households... what made it work was the accountability for the GSAN group to set an example of the changes they want to see in the community." This insight is critical: while awareness campaigns can inform, it is the tangible example set by trusted local leaders and their accountability that drives widespread adoption.

This approach contrasted sharply with previous interventions in Kibere, which, as Habonimana Joseph, Chef de Colline, noted, "didn't change or reduce the numbers of malnutrition cases." The key difference lies in coupling public awareness with a focused targeting of the GSAN. Once these influential community members adopted the approach, it became significantly easier to hold the rest of the community accountable, as they were learning from and being guided by their own respected peers. This community-led enforcement fostered genuine ownership rather than passive compliance.

"Groupements de Solidarités": A strategic enabler for addressing socio-economic barriers

The "Groupements de Solidarités" were not merely a supplementary component but a transformative strategy that bridged the gap between knowledge and implementation, especially in contexts of extreme poverty. While educating communities on the importance of diverse diets and proper hygiene is crucial, many organisations overlook the practical barriers of affordability and access.

In Burundi, where affording meat and fruits can be challenging for many families, and building a toilet might seem an insurmountable cost, the solidarity groups provided a practical solution. The diverse approaches within these groups (e.g., collective farming in Mubondo to generate resources, or weekly savings for animal acquisition in Kibere) demonstrate their inherent adaptability to local contexts and identified priorities. As Ndayishimiye Emilienne, a GSAN from Mubondo, candidly stated, "*It was hard for some families to get 500 BIF (\$0.16) to contribute.*" Yet, the collective effort, even of small sums, accumulated into meaningful capital.

These groups not only facilitated financial contributions for critical needs like building toilets or purchasing protein sources but also served as platforms for continuous learning and social cohesion. Patricia, a GSAN from Kibere, emphasised this dual function: "*The time for Groupement de Solidarité is not only for saving and sharing funds, but time to learn things, especially, on breastfeeding, eating balanced food, how to treat pregnant women, etc.*" This integration of financial empowerment with ongoing education is a powerful model for sustainable change.



Contextualised education and practical demonstrations

The *Foyer d'Apprentissage et de Réhabilitation Nutritionnelle* (FARN) model and broader culinary demonstrations provided a highly effective means of transferring knowledge through practical application. By focusing on locally available ingredients and culturally appropriate cooking methods, these sessions demystified healthy eating. The surprise expressed by Patricia, a GSAN from Kibere, that "*whatever they need to cure the malnutrition were things they have in their households,*" highlights the disconnect that often exists between community perceptions and the reality of local resources. The FARNs and cooking classes effectively closed this knowledge gap. This hands-on learning, coupled with the rehabilitation of malnourished children, provided tangible proof of the new practices' efficacy, reinforcing adoption. The transformation of kitchen gardens and the conscious consumption of fruits rather than solely for sale, as observed by Joseph, Chef de Colline Kibere, are direct outcomes of this practical education.

The Role of accountability and follow-up

The PADANE project successfully leveraged internal accountability mechanisms, primarily through the GSAN. While entrusting the GSAN with leadership, the project maintained a consistent system of follow-up. This accountability was not punitive but supportive, aiming to uphold standards and reinforce commitment. Bernard, a GSAN and conseiller collinaire from Kirama, noted, "*The follow-ups they did for GSAN in our colline pushed us to do the same for other community members.*"

This cascading effect of accountability was crucial. By holding GSAN members to high standards, they, in turn, felt responsible for guiding and monitoring the wider community, ensuring consistent adoption of new practices and sustained impact. This localised system of peer-to-peer accountability proved more effective than external enforcement.

Integration of local government and institutional support

The explicit involvement and recognition by local government structures significantly enhanced the project's legitimacy and sustainability. Alexis Nijimbere, Responsable Santé Nutrition in the Provincial Health Bureau of Makamba, praised the approach, noting that "*the approach PADANE used to utilize the community actors and local government permitted the rapid changes within those communities.*" This endorsement at the provincial level is critical for long-term integration of such initiatives into public health strategies.

Furthermore, Bernard, GSAN member from Kirama, shared that "*the local administration has been asking members of the GSAN from Kirama to help other collines from Makamba provinces,*" indicating direct government recognition of the project's success and its desire to replicate the model. This governmental buy-in provides a pathway for wider replication and institutionalisation of the successful strategies.

7. Conclusion

The PADANE project's intervention in Kibere, Mubondo, and Kirama collines in Burundi stands as a compelling testament to the transformative power of a community-led, holistic approach to combating malnutrition. The dramatic and sustained reduction in malnutrition rates, coupled with observable improvements in dietary practices and hygiene, provides strong evidence of its effectiveness. By empowering local actors through the Groupes de Soutien aux Activités de Nutrition (GSAN), strategically utilising "Groupements De Solidarités" to address socio-economic barriers, and employing practical, context-sensitive education via the Foyer d'Apprentissage et de Réhabilitation Nutritionnelle (FARN) and other culinary sessions, the project has not only achieved remarkable health outcomes but also fostered sustainable behavioral change. The success of this initiative offers a vital blueprint for development practitioners seeking to address complex challenges like malnutrition in resource-constrained settings, emphasising the invaluable role of local ownership, adaptability, and integrated solutions in achieving lasting positive impact.





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