

ISSUES IN THE DESIGN & DELIVERY OF INTERVENTIONS TO IMPROVE RURAL DIETS IN LOW- AND LOWER-MIDDLE-INCOME COUNTRIES

ISSUE II: SEGMENTATION



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All photographs included in this document have been taken with consent for use in publications.

SUMMARY

The Global Alliance for Improved Nutrition (GAIN) and Wellspring Development designed and hosted a series of in-person and online consultations with partners of the Dutch Ministry of Foreign Affairs to examine challenges in improving the quality of diets of population groups living in rural areas of Low and Lower-Middle Income countries. These groups largely consume nutrient-inadequate, even unhealthy, diets and face heavy burdens of malnutrition. This second paper, out of six, looks specifically at the challenges of defining and understanding different groups of rural populations. The aim of the discussions was to explore a range of approaches used in defining segments and implications of chosen segments for programme design to help the organisations involved understand how to incorporate these ideas in future work. The bulk of the discussion reflected in this paper is from an online meeting held on 30 September 2024, with the participation of the Dutch Ministry of Foreign Affairs, Bopinc, CARE Netherlands, East-West Seeds, GIZ, the Netherlands Food Partnership, One Acre Fund, and the Wageningen Centre for Development Innovation.

KEY MESSAGES

- Rural populations are not homogeneous. Not everyone is a farmer. And not all rural areas are remote. Therefore, it is important to use a set of characteristics or variables – demographic, psychographic, behavioural, etc. - to define segments of rural populations.
- Such more detailed descriptions will help avoid confusion or misunderstanding caused through imprecise language. These more precise descriptions will also enable deepen understanding of the groups' needs and motivations, informing better design of solutions.
- Segments can represent consumers or businesses and can be useful for many types of interventions – including creating demand for nutritious foods, improving their supply, or targeting social protection.
- It is important to consider what is common rather than just focusing on the differences amongst population groups. Defining relatively large segments by focusing on commonalities is an important way to design for scale.

BACKGROUND AND OBJECTIVE

THE CHALLENGE OF IMPROVING THE DIETS OF RURAL POPULATIONS IN LOW- AND LOWER-MIDDLE-INCOME COUNTRIES

Despite decades of rapid urbanisation, it is still the case that 42% of the world's population—3.4 billion people—live in rural areas (1). In lower-middle-income countries, this proportion is somewhat higher (56%), and in low-income countries, nearly two-thirds of the total population live in rural areas. There are 2.4 billion people living in rural areas in these two groups of countries.

Healthy diets are the foundation of all nutrition outcomes—from undernutrition and micronutrient deficiencies to obesity. Many rural households struggle to access a nutritious diet, even though they live close to the land. Globally, and in almost all regions, rural households are more likely than urban households to report severe or moderate food insecurity (2). In Sub-Saharan Africa, the average prevalence of severe/moderate food insecurity is 60% in rural areas (2) and the cost of a healthy diet is no cheaper (or barely cheaper) in rural compared to urban areas (3). Throughout Sub-Saharan Africa, the value of food consumed from own production never exceeds 50% for rural households (4). As a result, African rural households are vulnerable to high food prices, perhaps counter to common perceptions. And in the 85 countries around the world for which the Global Diet Quality Project has collected data on dietary patterns (5), the average percentage of rural dwellers consuming all five major food groups on a given day is just 30%. Indicators of malnutrition in children are consistently worse in rural than in urban areas (6).

Over the last few decades, there has been a renewed focus on the critical role of agriculture and rural development in supporting adequate nutrition by way of promoting healthier diets. In the wake of the food price crisis in the early 2000's (7), 'community development' and 'integrated rural development' agendas both mobilised significant funding over many years. 'Food and nutrition security' has been an important theme and 'nutrition-sensitive agriculture' (8) has become a recognised priority for development. At the same time, many governments have developed national multi-sectoral nutrition plans, policies, and strategies that include or prioritise rural populations, and numerous international development partners have supported project and programme implementation in these areas.

Today we have a better understanding of what works for improving rural diets (9). However, while these approaches have achieved notable nutrition outcomes, evidence of large-scale, sustainable improvements in rural diets remains limited. Looking ahead, large-scale development projects may benefit from placing greater emphasis on dietary outcomes, rather than focusing solely on downstream health metrics for specific target populations.

CONVENING SERIES WITH PARTNERS OF THE DUTCH MINISTRY OF FOREIGN AFFAIRS

The Global Alliance for Improved Nutrition (GAIN), supported by Wellspring Consulting, designed and hosted a series of in-person and virtual meetings with a range of partners of the Dutch Ministry of Foreign Affairs, including: Bopinc, CARE Netherlands, East-West Seeds, the Netherlands Food Partnership, One Acre Fund, and Wageningen University & Research. The aim of these meetings was to share experiences and insights on the most

pressing issues that complicate the design and implementation of initiatives to improve rural diets and thereby to guide more impactful and sustainable project design and implementation in the future. The in-person meeting was held in May 2024 in Utrecht. The list of topics to be explored was developed by GAIN and Wellspring based on a preliminary non-systematic literature review and the initial in-person meeting; topics for which the evidence is weak or non-existent were prioritised for exploration. The selected topics, all of them referring to rural populations in low- and lower-middle-income countries, were:

1. **Dietary quality.** What does improving quality of diets mean in practice; specifically, what constitutes a meaningful increment in dietary quality in this context?
2. **Segmentation.** How can we define and understand the needs of different segments / groups of rural populations?
3. **Markets.** What are the different types of markets and their role in improving incomes, supply of nutritious foods, and quality of diets?
4. **Scale.** What does large-scale mean, and what is the role of financial viability / sustainability in such large-scale efforts?
5. **Orchestration.** Why is coordination (or orchestration) of different programme components and multiple partners so critical? How can it be done better?
6. **Trade-offs.** What are the synergies and trade-offs involved in combining different programme components? How can these be managed?

At least one detailed case study was presented in each meeting, and participants were invited to share other case studies and references. There was no attempt to force consensus around pre-determined or emerging conclusions. To produce the resulting convening papers, the transcripts of the discussions were synthesised and analysed using Artificial Intelligence (Claude 3.5), with output subsequently checked and editorialised by the paper's authors, who take responsibility for the final content.

TOPIC II: SEGMENTATION

This paper is the second in a series of six, covering each of the abovementioned topics. It examines the challenge of defining and understanding different groups of rural populations, while acknowledging that even the definition of 'rural' is complex.

Hawkes and colleagues (10) have convincingly argued the importance of considering 'the full picture of people's realities' when designing interventions to improve diets. They identify 12 realities that 'span the material, economic and psychosocial factors that people experience in their households, families, food environments, social interactions and cultures.' Although it could be argued that each individual's reality is different, marketers—whose job is to change consumption—typically try to *segment* populations in order to minimise within-group and maximise between-group differences. Segmentation is a balancing act: if segments are too broad, strategies may fail to reach or resonate with important sub-groups of the target population; if they are too narrow, implementation costs spiral because of the high costs of contextualisation and of reaching differentiated groups.

'Households living in rural areas of low- and lower-middle-income countries' is one example of a population segment defined based on geography. However, 'rural' is far from being a simple term. The definition of rural varies across countries, and recent work has shown how the *degree* of proximity to urban centres alters access to service (11). Rural households also differ markedly in their access to land, and this has been shown to impact consumption outcomes (12). Psychosocial segmentation—widely used in commercial marketing—may also be important in this context (13).

Commonly used approaches to segmentation include:

1. **Demographic** – based on traits like age, income, occupation, sex, life stage, etc.
2. **Geographic** – such as urban and rural; within rural, subsegments can be based on remoteness, or agro-ecological zones, etc.
3. **Psychographic** – based on attitudes, beliefs, values.
4. **Behavioural** – such as purchasing behaviours, media channels used, and digital solution preferences. For example, consumers who make online food purchases.

This discussion aimed to identify perspectives on, and experience of, using segmentation for fine-tuning implementation strategies among partners of the Dutch Ministry of Foreign Affairs .

INSIGHTS FROM THE MEETING

Participants agreed that rural populations are not homogenous. By having clearly defined groups, all stakeholders engaging with them should be able to work from a common understanding and avoid misunderstandings.

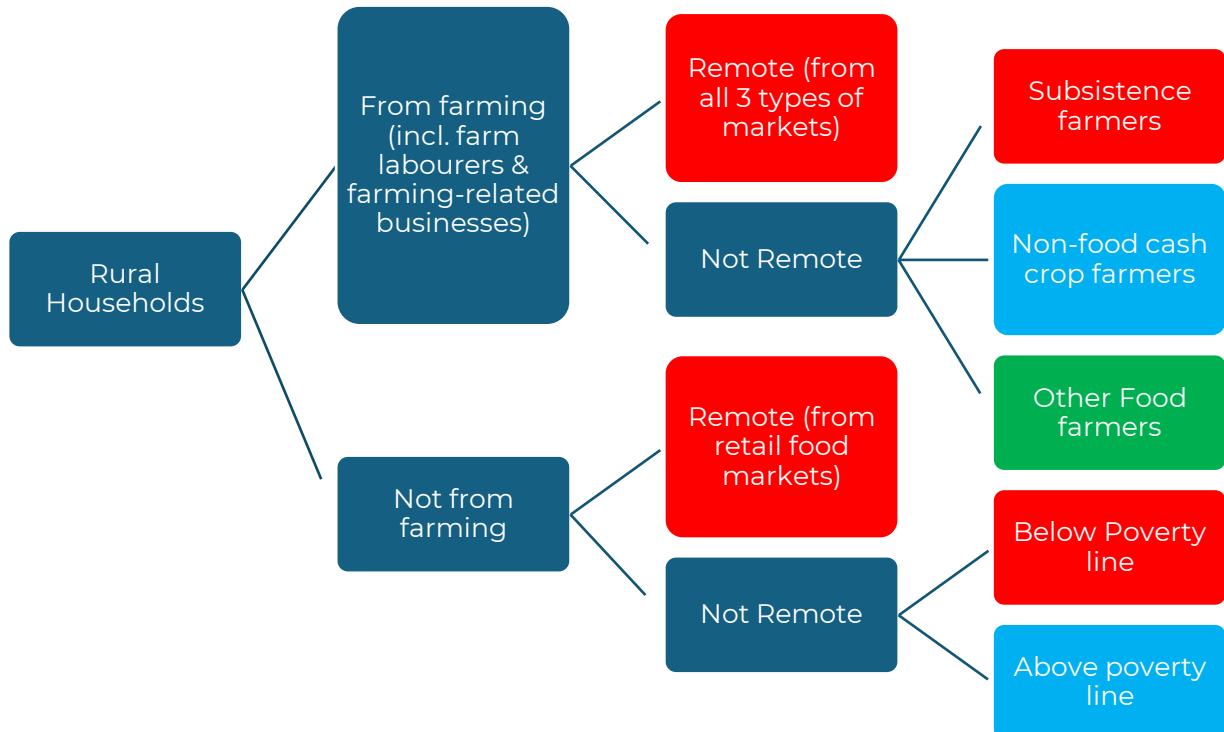


Figure 1. Initial hypothesis on segmentation in rural diets work

A simple framework based on sequential use of the rural population characteristics discussed during the Utrecht workshop was offered for discussion (Figure 1):

- **Primary income source** (farming vs non-farming), since not all rural residents are farmers. Many rural residents might be entrepreneurs (e.g., shopkeepers) or teachers, or have mixed income sources but rely mainly on non-farm income.
- **Remoteness** from markets (agricultural input, output, and retail food markets) – which creates distinct challenges for programme implementation and must be explicitly considered in programme design, as it may entail different approaches are needed. Remoteness means difficulty in accessing markets and is influenced by distance, physical infrastructure, and access to transportation.
- Different **types** of farming households (e.g., subsistence, cash crop producers).
- **Income level** for non-farming households, because purchasing power matters since these households will be buying all their food from markets.

Segments must be broad enough for scale and should have meaningful differences amongst them. The solutions that are developed to target various segments should be adaptable to local contexts and consider practical implementation constraints and the balance between depth versus breadth of the intervention.

CASE STUDIES

Emile Schmitz (Bopinc) outlined examples from Bopinc projects that used three distinct types of characteristics to segment and understand rural populations for the purposes of project implementation.

Three case studies from Bopinc projects were presented, two Business-to-Business (B2B) and one Business-to-Consumers (B2C), in which segmentation was used to better understand and serve the needs of different groups in Nigeria, India, and Myanmar. The case studies demonstrated how segmentation approaches needed to balance practicality and scalability while remaining meaningful enough to inform differentiated interventions. See Box 1 for two of these case studies.

Anthony Wenndt from GAIN presented case studies from various social protection programmes to illustrate how segmentation in rural populations is approached in social protection systems. In social protection contexts, segmentation is often embedded in *targeting* efforts that distribute benefits to those who need them most. Social protection programmes aim to reduce poverty and vulnerabilities in rural areas, with coverage often concentrated in areas with limited access to basic services and interventions designed to address seasonal and informal income patterns. Common interventions include cash transfers (conditional and unconditional), in-kind transfers (e.g., of food, seeds, fertilisers), work programmes with benefits, and social insurance schemes. See Box 2.

BOX 1. B2C & B2B CASE STUDIES

Nigeria (Olam Cocoa Farmers – B2B):

The Olam case study demonstrated how segmentation principles could be applied to nutrition training in farming communities. Working in Nigeria's Cross River and Ocean States, the programme targeted cocoa-farming families, with the goal of improving household nutrition. The research phase identified several key demographic characteristics that influenced programme design, including gender, family composition, and whether households included pregnant or lactating women. Geographic location and language emerged as critical factors, as did the distinction between Olam farmers and other households in the same communities.

Through a co-creation process involving Olam staff and local nutritionists, the team developed a comprehensive farmer training toolkit. The programme needed to balance the desire for detailed segmentation with practical implementation requirements. This led to the development of eight core training modules, with specific additional modules created for households with infants and young children. These specialised modules covered topics like complementary feeding and breastfeeding practices. The case illustrated how segmentation could be practical and scalable while maintaining meaningful differentiation in programme delivery. It demonstrated the value of creating flexible frameworks that could be adapted to different contexts while maintaining core nutrition-related messages.

Myanmar (Garment factory workers – B2C):

The Myanmar case study focused on promoting fortified rice to female garment workers in peri-urban areas of Yangon. The project, conducted in partnership with PATH and funded by LIFT, aimed to increase fortified rice consumption through commercial marketing and distribution strategies.

Initial research revealed distinct attitudes toward food, particularly rice, among the target population. The research team discovered that these attitudes varied based on whether workers were individually or socially oriented, their security preferences, and their openness to new experiences. Their social networks and information sources also played crucial roles in their food decisions. Through extensive research, the team identified four distinct 'opportunity platforms' for marketing fortified rice. Each platform represented a different psychological orientation toward food and health. These platforms became the foundation for developing targeted marketing approaches. The team developed specific marketing materials for each opportunity platform. For example, one platform focused on the 'tasty energizer' aspect, while another emphasised immunity benefits and caring aspects. They created different animations and training materials for sales points, adapting the message to each platform's unique value proposition.

The case demonstrated both the potential and limitations of detailed psychographic segmentation in challenging circumstances. While the segmentation provided valuable insights for marketing and communication, external factors significantly impacted implementation. This highlighted the importance of building flexibility into segmentation-based programmes to adapt to changing circumstances while maintaining core strategic approaches. The Myanmar example particularly illustrated how segmentation strategies need to balance ideal theoretical frameworks with practical realities, especially in volatile environments where external factors can dramatically affect programme implementation.

BOX 2. SOCIAL PROTECTION CASE STUDIES

Kenya's Hunger Safety Net Programme, which targeted households in drought-prone regions, defined its target beneficiaries through six specific criteria: inability to meet basic needs, lack of sufficient income even in good years, vulnerability to deeper poverty during shocks, likelihood of engaging in harmful coping strategies, presence of elderly or disabled members, and inability to participate in income-generating activities. This programme approached segmentation of potential beneficiary households by considering a combination of factors, such as economic status, vulnerability, and household composition.

To better understand the relative strengths and weaknesses of different segmentation approaches, **Indonesia's Direct Cash Assistance Programme** compared two different approaches to identifying eligible and ineligible segments of the population. The study contrasted community-based targeting with proxy means testing (measuring income and assets). While the proxy means test better identified households below the official poverty line (USD 2 per day), the community-based approach was more effective at identifying self-reported poor households. The community method incorporated additional factors like earning potential and vulnerability, demonstrating how different segmentation approaches could yield different results.

Bangladesh's social protection system was used as an example to highlight key challenges in balancing the trade-offs between coverage and adequacy. A programme's approach to this trade-off can substantially influence which segments of the population, and how many people across eligible segments, become eligible for social protection benefits and services. In the example given, the programme increased social protection coverage and maintained consistent coverage over time but was constrained by relatively low benefit values focused on old age allowances and similar schemes. As a result, it only achieved a 2% reduction in poverty headcount (2016). The case illustrated how expanding coverage while maintaining low benefits may not achieve meaningful poverty reduction. The programme prioritised reaching more people over providing adequate support to fewer beneficiaries.

It was noted that while segmentation is often based on considerable research at the beginning of an intervention, regular reviews or feedback loops are needed in the process to make sure the interventions remain relevant. Moreover, it was noted that social protection administrators often face significant challenges in identifying the most eligible individuals to receive benefits; in such cases, community-based targeting approaches can be used to direct benefits toward the most vulnerable people.

The use of segmentation on the basis of health or nutritional status was investigated and the group discussed the practical aspects of introducing this into programme design. The nuances in farmer segments were also highlighted, distinguishing between farmers who sell/buy due to income or sustenance necessity versus those who regularly engage with markets for more discretionary diet diversification. Cash crop farmers typically also grow subsistence crops like maize, and it was suggested that market proximity influences household food buying behaviour. The distinction between segmentation and targeting in the context of social protection was addressed. Social protection administrators also often use a number of criteria to divide rural populations into segments. Targeting is then about

deciding which of the identified segments to include as recipients of the given social protection intervention.

INSIGHTS FOR DEVELOPMENT PARTNERS

The session emphasised that while no universal segmentation solution exists, understanding different approaches helps develop more effective, targeted interventions.

On segmentation approaches, there is a need to balance broad versus narrow segmentation and consider both demographic and psychosocial factors, with factoring in remoteness as a critical variable. It is important to test and refine approaches based on learning during implementation.

On implementation, solutions must be tailored to local contexts, consider practical limitations of scale, and balance coverage versus adequacy in social protection programmes.

Practical applications include starting with segments that are ready or able to engage before expanding, using flexible implementation approaches, and considering resource constraints.

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ABOUT GAIN

The Global Alliance for Improved Nutrition (GAIN) is a Swiss-based foundation launched at the UN in 2002 to tackle the human suffering caused by malnutrition. Working with governments, businesses and civil society, we aim to transform food systems so that they deliver more nutritious food for all people, especially the most vulnerable.

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