CANALLS

AGROECOLOGICAL PRACTICES FOR SUSTAINABLE TRANSITION

Deliverable 2.8 Services for enhancing demand for agroecological products- final version

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Executive Summary

Driving agroecological transitions in the humid tropics of Central and Eastern Africa through traNsdisciplinary Agroecology Living LabS (CANALLS) is a four-year project designed with the overall objective of driving agroecological transitions in the humid tropics of Central and Eastern Africa through a multi-actor collaboration approach. The project is implemented across eight Agroecology Living Labs (ALLs) in the Democratic Republic of Congo (DRC), Burundi, Cameroon, and Rwanda, reaching over 20,000 farmers who co-create and benefit from context-specific blends of agroecological practices.

Objective 3 of the project focusses on Co-design services and marketing tools to enhance demand for agroecological food products as well as fair value propositions and business models to ensure financial viability and facilitate access to markets. To achieve this objective, we explored different approaches to enhance demand for products from agroecological practices. This led to the co-design of services and marketing tools that harness the potential of digital technologies to help farmers enhance their understanding of agroecological produce, target markets for products emanating from agroecology practices while improving their chances of accessing new markets. A key challenge addressed under this objective is the absence of a clear, globally accepted framework for defining, certifying, and labelling agroecological products, given the multidimensional, context-specific, and transition-oriented nature of agroecology. In response, CANALLS adopts a practical, participatory approach that assesses alignment with agroecological principles within the ALLs, rather than relying solely on formal certification systems.

Towards this end, the project team, led by AATF implemented activities under Task 2.4 “Design of support services to enhance demand for agroecological food products”. The task was implemented through (a) Literature review to identify the marketing channels through which Agro-ecology products move from producers (farmers) to the consumers, the consumer segments and the existing demand creation services/strategies ideal for the agroecology products (b) stakeholder engagement in co-creation workshops to validate and recommend local context specific actions to boost these demand creation services. These co-creation workshops were organized in each of the ALL, attended by 15 participants on average. The participants were drawn from critical stakeholders including farmers, extension service providers, produce aggregators, processors and policy decision makers. This report presents outcomes of these processes. For the purposes of this task, agroecological products are understood as products originating from the Agroecology Living Labs, where production systems have been assessed against agroecological principles using the project’s participatory methodology, including farms at different stages of transition.

In the Ntui and Bunia Agroecology Living Lab, where the target product was Cocoa, eight(8) demand creation services that are relevant for Agroecological Cocoa were identified: (i) Consistency in quality; (ii) Packaging the product in eco-friendly and unique materials; (iii) product promotion/advertising using traditional media; (iv) Consistency in quantity produced and supplied to the market; (v)Tailor made products for international markets availed at duty-free shops; (vi) Partnerships with renowned global brands publicized through marketing campaigns; (vii) Implementation of certification services and (viii) Local branding with health-conscious messaging.

In Giheta ALL, coffee is the focus crop. The participants ranked health-centric messaging in advertising and packaging, transparency and traceability as the most important strategies for

demand creation for agroecological coffee. These are critical aspects when considering that agroecological produce consumers are critically conscious of the health aspects of the produce and would need assurance that the products are indeed sourced from agroecological systems. Four factors were ranked moderately: store experience/sampling, lifestyle branding, taste and affordability balance and environmental sustainability. agroecological consumers would not be very concerned on the cost because their willingness to pay for premium attributes is relatively high. Finally, premium offerings, community engagement through coffee farming initiatives and subscription models for premium and limited-edition coffee were ranked least.

Similarly, in Kabare and Biega ALLs in DRC, which also promote agroecological coffee, the participants unanimously rated the proposed services as highly important. Just like the stakeholders in Giheta, premium offering was ranked as low priority as they emphasized the need to deal with foundational challenges such as establishing of local processing plants as well as infrastructure development before pursuing premium market offering.

The participants in Bujumbura which promotes agroecological maize were presented with seven services which they all rated as highly important in enhancing demand. They also proposed two additional services which were focused on strengthening awareness and promoting the adoption of agroecological inputs to enhance authenticity of the agroecological products. Stakeholders in Uvira ALL which promotes agroecological practices in rice and cassava were presented with services which they affirmed their importance in enhancing demand for these products. The rice workshop participants emphasized on product development through introducing aromatic varieties which have high preference among the consumers and then creating a very strong brand with an informative packaging on traits like traceability and production methods. On the other hand, cassava value chain actors in Kamonyi and Uvira ALL were presented with eight demand enhancement services. Promoting the right varieties which are optimal for processing as well as with long in-ground storability to ensure consistent supply were ranked as highly important. Interestingly, packaging cassava snacks for premium markets were ranked as low important as they emphasized that focus should be first having the right varieties.

Across all eight Agroecology Living Labs, participants observed that the implementation of demand-enhancing services for agroecological products remains low, with only a few showing moderate progress. They emphasized the need for deliberate efforts to scale up these services through targeted investments in producer and trader capacity building, establishment of quality assurance and certification systems, and promotion of effective branding and communication strategies. The insights generated from this process will inform the co-design of context-specific marketing tools and services that enhance the visibility, competitiveness, and market integration of agroecological products across CANALLS countries.

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1. Introduction

The Africa continent is home to more than 1.5 billion people[1], with the growth expected to hit 2.5 billion by 2050[2]. To cope with the growing food needs in the future, African food systems need to be positioned to drive enhanced food and nutritional security while steering inclusive and sustainable rural development. Agroecology practices offer solutions towards more sustainable farming practices, suitable for humid tropics and able to deliver good nutrition and income for communities, while conserving and restoring their ecosystems and the services provided by them. The Central and Eastern Africa Transdisciplinary Agroecology Living Labs (CANALLS) is a four-year project designed with the overall objective of driving agroecological transitions in the humid tropics of Central and Eastern Africa through a multi-actor collaboration approach. This approach brings together rural communities, advisory services, and governments to co-develop and implement agroecological tools tailored to the unique conditions of the humid tropics. These tools will be evaluated for socio-economic and environmental performance, fostering the sharing of best practices and the delivery of fair, inclusive, and sustainable business models which will facilitate market access and enhance demand for agroecological products. CANALLS is implemented across eight Agroecological Living Labs (ALLs) located in the Democratic Republic of Congo (DRC), Burundi, Cameroon, and Rwanda, focusing on key crops vital for both subsistence and economic development: cocoa, coffee, cassava, rice, and maize. The products are presented in Table 1. The project focuses on promoting well-tested agroecological practices tailored to the humid tropics of Central and Eastern Africa and gather evidence on their performance to inform decision and policy making in the focus areas as presented in Table 1.

Table 1: List of the Agroecology Products per Living labs for CANALLS Project

Country	Living Lab	Product	Product Category
Burundi	Giheta	Coffee	Agroforestry
Burundi	Bujumbura	Maize	Cash crop
DRC	Uvira	Rice/cassava	Food and cash crop
DRC	Bunia	Cocoa	Agroforestry
DRC	Biega	Coffee	Agroforestry
DRC	Kabare	Coffee	Agroforestry
Rwanda	Kamonyi	Cassava	Food crops
Cameroon	Ntui	Cocoa	Agroforestry

[1] https://www.worldometers.info/world-population/africa-population/

[2] https://www.statista.com/statistics/1224205/forecast-of-the-total-population-of-africa/

Among the specific objective of CANALLS is to co-design services and marketing tools to enhance demand for agroecological food products, along with fair value propositions and sustainable business models to ensure financial viability and facilitate market access. This involves co-designing services and marketing tools to enhance demand for agroecological food products as well as fair value propositions and business models to ensure financial viability and facilitate access to markets. To achieve this objective, it is imperative that different approaches to enhance demand for products from agroecological practices are explored. This will lead to the co-design of services and marketing tools that harness the potential of digital technologies to help farmers enhance their understanding of agroecological produce, target markets for products emanating from Agroecology practices while improving their chances of accessing new markets. Achieving this will need a clear understanding of Agroecology food products. One of the critical factors to consider in this definition is that agroecology fosters sustainable food systems by integrating ecological principles into farming practices, enhancing biodiversity, soil health, and food resilience for a healthier future.

Market driven production can encourage the adoption of promoted agroecological practices. In this regard, agroecological transitions could be accelerated through the establishment of certification and labelling systems for agroecological firms and products, thereby creating niche markets and incentivizing wider adoption of agroecological practices. However, a persistent challenge remains the lack of a clear and globally accepted framework for assessing the alignment of firms with the multidimensional principles of agroecology. This limitation constrains the effective development and implementation of certification and labelling schemes for agroecological firms and products.

The CANALLs project has sought to develop practical tools to assess and support agroecological transitions through a participatory approach. In doing so, the project acknowledges that an effective agroecological framework is inherently complex. This complexity arises from the multidimensional nature of agroecological principles, which lead to varied interpretations across contexts; the subjectivity of certain principles, such as equity, which are difficult to quantify; the context-specific nature of agroecology, which limits standardization; and the frequent confusion between agroecological and organic labelling. In addition, existing assessment tools present limitations: for example, the FAO's TAPE framework is often considered too complex for operational use, while other available tools have been developed primarily for European farming systems and do not support labelling, certification, or the tracking of farms' transitions over time, (CANALLS Consortium, 2025).

The proposed methodology introduces a traffic-light rating system to provide a clear, practical, and context-adaptable approach for assessing alignment with agroecological principles. Once tested, this system has the potential to support certification and labelling, enable monitoring of agroecological transitions over time, and inform policy and research while contributing to the development of clearer, context-specific definitions of agroecological products for market-facing and demand enhancement interventions, (CANALLS Consortium, 2025). For the purposes of this task, agroecological products are defined as products emanating from the established Agroecological Living Labs (ALLs) where production systems have been assessed against agroecological principles using the project's participatory methodology, including farms at different stages of transition.

2. Methodology

The task was achieved through a coordinated approach that blended literature review, document review and co-creation workshops to address the objectives.

2.1 Literature Review

A comprehensive review of existing literature was undertaken to identify suitable marketing channels for the distribution of agroecological products in the target Agroecological Living Labs (ALLs). This focused on studies that employ the Structure-Conduct-Performance (SCP) framework to analyse marketing channels for the selected crops. Emphasis was be placed on understanding how these channels operate and perform in similar contexts to inform the development of effective distribution strategies.

2.2 Actor Identification and Characterization

The key actors involved in each marketing channel were identified and characterized. This process examined their roles, relationships, and specific needs. The insights gained informed the design of tailored support services aimed at enhancing demand creation for agroecological products.

2.3 Co-creation workshops

Co-creation workshops were organized in each ALL to allow participants to validate the demand creation services/strategies identified during the literature review process. Validation was followed by the prioritization of the strategies and identification of actions that should be implemented to boost the services at the local level. The validation tool that was used during the co-creation workshops is presented in Annex1.
The participants in each workshop were strategically identified to represent the groups indicated in Table 1

Table 2: Description of Participants in the Co-creation workshops

ALL	No. of Participants	Groups represented
Ntui	13	Small-scale farmers who are also members of cooperatives, local traders/intermediaries, representatives of processing companies, exporters, researchers, policy makers and Government representatives and training and extension service providers
Giheta	15	
Bujumbura	15	
Kamonyi	15	
Uvira	13	
Bunia	10	
Kabare	12	
Biega	15	

2.4 Final determination of demand creation strategies/services

The outputs from the literature review and the co-creation workshops formed the basis for developing marketing strategies tailored to each identified consumer segment. These strategies will be promoted to enhance demand, address the unique characteristics of each segment, and promote sustainable business models.

3. Results: Marketing Channels and Consumer Segmentation

Marketing channels are the pathways through which agroecological food products reach consumers. These channels determine the accessibility, affordability, and visibility of products, directly influencing demand.

3.1 Cocoa Marketing Channel

The Agro-ecological Living Labs (ALLs) where cocoa is produced within the CANALLs project are Ntui in Cameroon and Bunia in DRC. Cocoa in both countries is mainly produced for the export market. The main export destinations for Cameroon cocoa are Netherlands, France, Malaysia, Indonesia and Germany while the main international destinations for Congolese cocoa are Malaysia, Indonesia, India, Netherlands and Belgium (FAOSTAT). The various marketing channels for cocoa in DRC and Cameroon are represented in the Figure below, adapted from USAID (2023) and Lenou Nkouedjo et al. (2020), respectively.

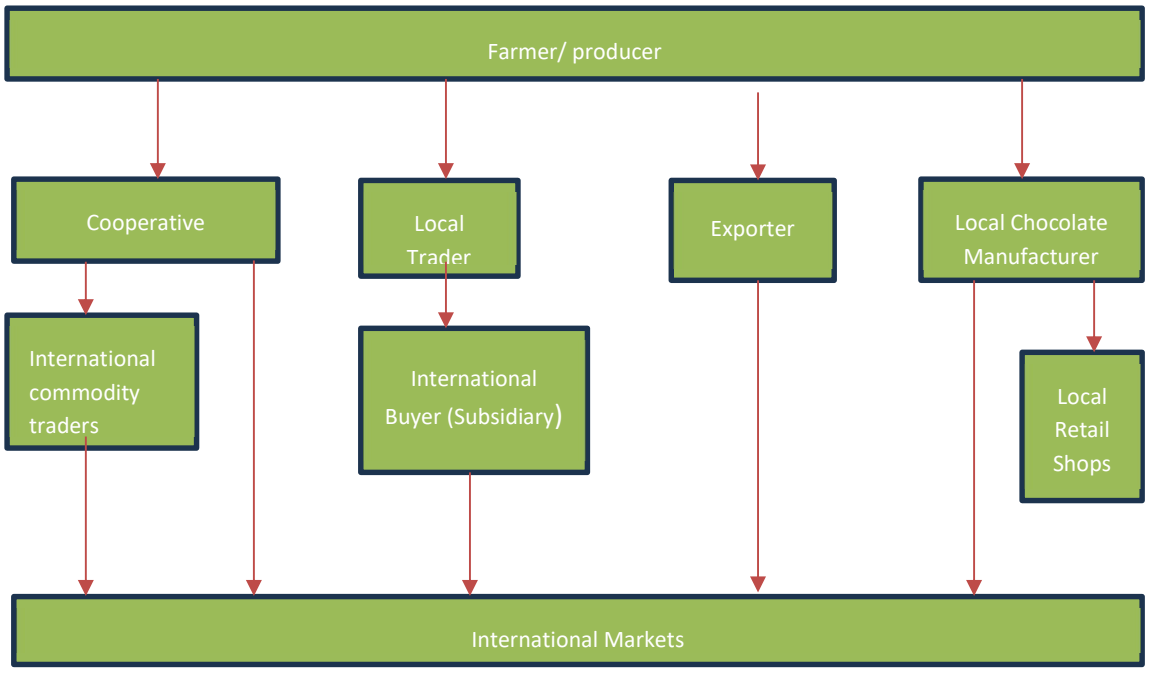

Figure 1 : Cocoa marketing channels in DRC

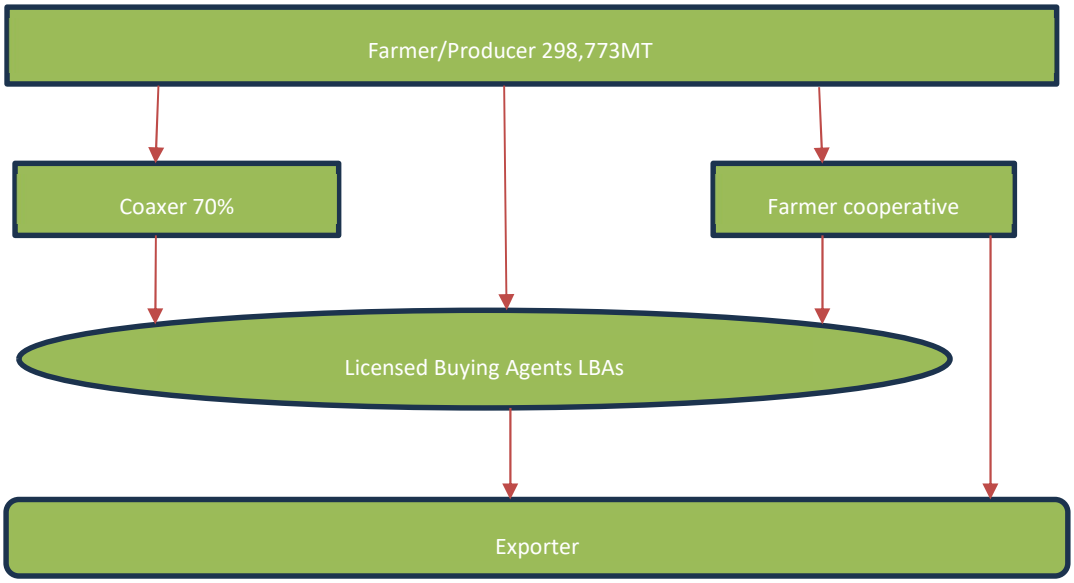

Figure 2: Cocoa marketing channels in Cameroon

3.1.1 Cocoa consumer segments in DRC and Cameroon

Consumer Segmentation is the process of dividing a broad market into smaller, more manageable groups of consumers with similar characteristics, preferences, or behaviours. These segments are typically based on criteria such as demographics (age, gender, income), psychographics (lifestyle, values, interests), geography (location, climate), or behavioural traits (purchase habits, brand loyalty, product usage), (Yazdi & Karbasi, 2024). This is a great marketing strategy for demand creation and enhancement as it can enable the cocoa producers and processors to tailor their marketing efforts to the specific needs and the distinct consumer segments. It can help in designing effective distribution channels which create a personalized feel for the consumers therefore enhancing their experience.

Most studies analysing the chocolate consumer segments have noted that there's a growing interest in reduced-sugar and organic chocolates in mature markets, where certifications (e.g., organic, fair trade) and ethical practices are becoming critical factors, particularly among European consumers (Sondhi 2016; Yazdi and Karbasi, 2024; García-Vidal et al., 2019). Chocolate consumers can be divided in two three basic groups based on psychographic segmentation as identified by Sondhi (2016).

- *Innovative national* - who is health conscious, is adventurous and open to new experiences and prefers local brands. They are frequent chocolate consumers and often buy it as a treat or self-reward and are highly responsive to advertising, in-store displays, and impulse purchase opportunities.
- *Conservative Patriot* – is also health conscious who is cautious and tradition-oriented and does not like to explore. They buy chocolate as gifts, favours national brands, and is influenced by traditional media like television, valuing products that evoke nostalgia or have familiar qualities.
- *Global Seeker*- this consumer is not very health conscious but is status-conscious, globally oriented, and indulgent, with a preference for international brands. This segment consumes larger quantities of chocolate, often buying it as a luxury snack or during travels and is influenced by peer recommendations and brand displays in high-end or duty-free shops.

3.1.2 Tailored Strategies for Demand Enhancement for ALL Cocoa Products

The demand enhancement services for agroecological markets may not differ significantly from that of conventional cocoa. However, these services may drive improvements in the way farmers produce and handle the produce to enhance the customer experiences especially for the segment of consumers that is increasingly conscious of how their food products are produced.

- **Collective action:** Organizing farmers into cooperatives, which will enable them to meet quality and quantity requirements, helping to keep the product consistent and familiar for local markets.
- **Capacity strengthening**: Training farmers in Good Agricultural Practices (GAP) and certification programs to meet the requirements of their international clients who demand for agroecological and organic products.
- **Packaging:** Offering eco-friendly and unique packaging that resonates with health-conscious consumers looking for sustainable options as well as packaging that is differentiated
- **Branding and Promotion**: Focus on local branding, health-conscious messaging, highlighting certifications that reflect quality and tradition, such as fair trade or single-origin labels.
- **International Distribution**: Expand into international markets with a strong presence in duty-free shops, high-end stores, and premium online platforms.
- **Collaborations with Global Brands**: Partner with renowned international chocolate brands to increase exposure in foreign markets, focusing on the product's exotic origins and premium quality.
- **Advertising:** Use traditional media like television and radio, focusing on familiar, national flavours and qualities that evoke a sense of nostalgia.

3.2 Rice Marketing Channel

Rice is a focus crop in Uvira ALL in the Democratic Republic of Congo (DRC), where 54.5% of households focus on paddy rice farming. DRC is a net importer of Rice with the domestic production serving 50% of consumption (Poisson et al., 2023) with the shortage being met through imports from countries such as Thailand, India, China, Pakistan, Uganda, South Africa, Zambia, Kenya, and Tanzania (ITC, 2024). Rice is distributed through four main marketing channels that connect producers to consumers, involving local breweries such as Bralima brewery outlets in Kinshasa, Lubumbashi, Kisangani and Bukavu, wholesalers, retailers, and supermarkets. These channels play a critical role in meeting the demand for rice within the local market, as noted by Poisson et al. (2023).

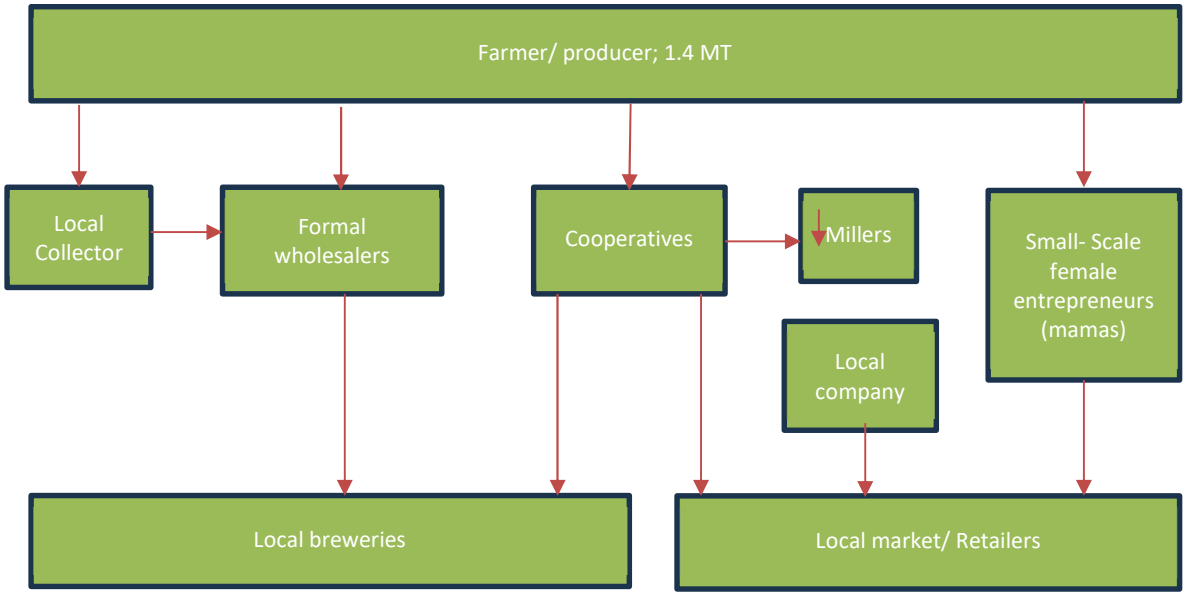

Figure 3: Rice marketing channel in Uvira

3.2.1. Rice Consumer segmentation

The DRC rice market can be categorized into four main consumer groups based on psychographic segmentation as noted by Mgendi et al, 2019.

- Consumers who want convenience and affordability- Price-sensitive, prioritizing affordability over other quality attributes.
- Consumers who received quality cues from the origin- they perceive the quality of rice based on the origin. The challenge with this segment is lack of traceability where all rice varieties from a particular place are branded the same making it difficult for the consumer to choose their preferred rice.
- Consumers who explored all quality aspects- they are concerned about attributes of cleanness of the rice, its aroma and absence of broken rice. This segment is prepared to pay a premium for rice that meets their quality expectations.
- Consumers who pursue aroma as the prime quality attribute- these consumers are more concerned with the rice aroma and are willing to pay a premium for it. They are mostly young people in urban areas, with low level of education and do not have much information on quality.

3.2.2 Tailored Strategies for demand enhancement for ALL Rice products

- Branding and Certification: Develop clear branding for rice varieties, including certified names, to improve traceability and help consumers identify their preferred types. This Builds trust in quality and origin, especially for the "origin as a quality cue" segment.
- Post-Harvest Practices: Invest in proper post-harvest handling, such as using advanced machinery to minimize impurities and breakage. This Satisfies quality-conscious consumers, especially those exploring all quality aspects.
- Research and Development of Aromatic Varieties: Encourage collaboration between research institutions and rice farmers to develop high-yielding aromatic rice varieties. This Captures the

aroma-focused segment, particularly younger urban consumers willing to pay a premium for aromatic rice.

- Affordable Options for Price-Sensitive Consumers: Implement cost-effective production methods to maintain affordability while ensuring acceptable quality. This Retains the price-sensitive consumer base without diluting product value.

3.3 Cassava Marketing Channel

The CANALLs project sites focusing on Cassava are Kamonyi-Rwanda and Uvira-DRC. In both countries, cassava is primarily destined for local markets, with the main traded products being fresh cassava roots, cassava leaves, and processed products such as micro-flakes, fermented fufu flour, unfermented flour, and starch. Cassava production in majority produced in conventional systems but with limited use of external inputs. DRC has however been driving a cassava transformation agenda that is transitioning cassava production, marketing and processing from traditional subsistence systems to industrial systems. The CANALLs project has been promoting the integration of agroecology practices that would therefore yield agroecology products.

3.3.1 Cassava Marketing in DRC

The Democratic Republic of Congo (DRC), a leading global cassava producer, has prioritized cassava as a key value chain in its agricultural development agenda (World Bank, 2023). Cassava in the DRC is distributed through four main channels to reach rural and urban markets. These markets operate during main market days and also involve retailers such as supermarkets, restaurants, canteens, and bakeries (Humpal et al., 2011).

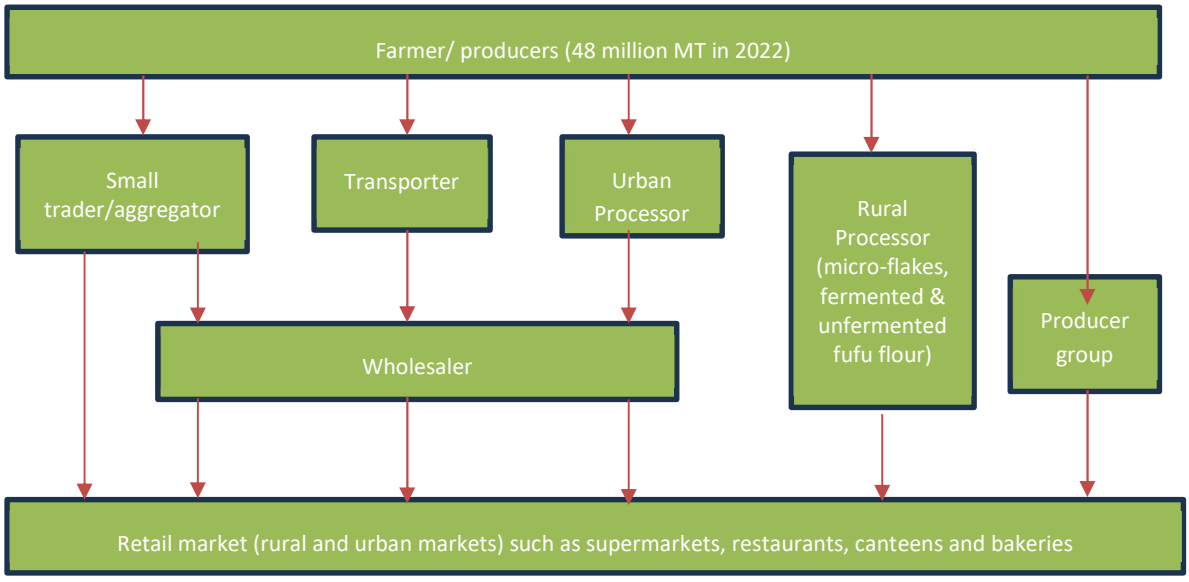

Figure 4: Cassava marketing channel in Uvira

3.3.2 Cassava Marketing in Rwanda

In Rwanda, cassava is one of the priority crops within the Crop Intensification Program (CIP) aiming at improving its productivity (Ndushabandi et al., 2018). Cassava trading is not very complex in Rwanda as it is mainly for the local market and with some traded across the country's borders. The main actors in the marketing channels include farmers, rural vendors, cooperatives, traders and processors. Cassava is marketed in various forms, including fresh roots, dried products, and processed flour as noted in USAID, 2009.

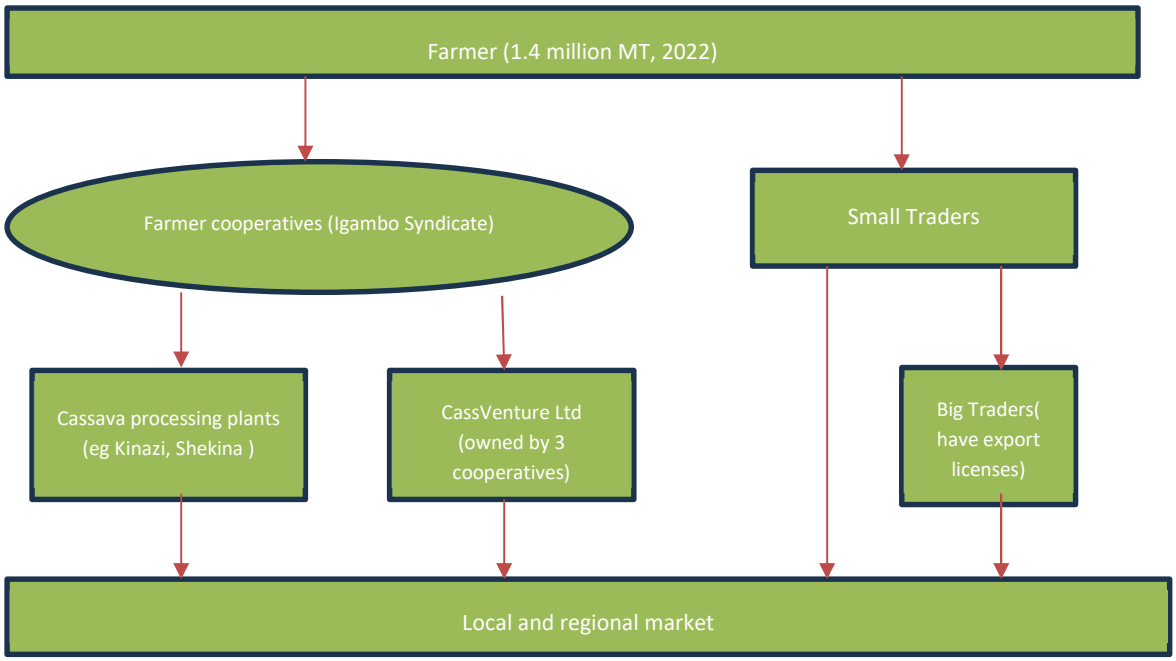

Figure 5: Cassava marketing channel in Kamonyi

3.3.3. Cassava Consumer Segmentation

Cassava consumer segments vary by product preferences such as gari, eba, boiled roots, or snacks and the key attributes they value in these products. These attributes can be leveraged by cassava players within the value chain to enhance product demand.

- Gari Consumers- Prefer gari that is dry, bright/shiny, white, sweet, dense, fine, with a cooked aroma. The Preferred cassava attributes: non-woody, non-decaying roots with white flesh, low moisture, minimal chaff, and high dry matter content (Osunbade et al, 2023).
- Eba Consumers- prioritize textural properties such as smoothness, firmness, stickiness, elasticity, and mouldability (Ndjouenkeu et al., 2021).
- Boiled Cassava Root Consumers- Preferred attributes: Softness of boiled roots, in-ground storability, and non-bitter taste (Iragaba et al., 2020).
- Cassava Snack Consumers- Products Considered: Cassava chips, crackers, opak, and twui rice. Price and flavour are the most important factors influencing purchase decisions, while convenience and packaging are important for supermarket purchases (Unteawati et al., 2018).

3.3.4 Tailored strategies for demand enhancement for ALL cassava products

- Proper Processing of Gari to attain desired attributes (White Color, dry, sweet taste and aroma)
- Choice of the right varieties (with low moisture content, non-woody texture, and white flesh for optimal processing quality)
- Consistent supply through varieties with long in-ground storability, offering flexibility in harvesting schedules.
- Taste considerations (Prioritize fresh cassava roots with a non-bitter taste for direct consumption and processing)
- Competitive pricing (targeting low income rural and urban consumers)
- Appealing flavours
- Attractive packaging especially for urban consumers
- Diversified and convenient formats, especially snacks targeting supermarket consumers

3.4 Maize Marketing Channel

Maize is a key crop under the CANALLs project, particularly in Bujumbura, Burundi. Most of the maize produced is for domestic consumption, with approximately 70% used as food and only about 10% processed into animal feed (Nijimbere & Suprunov, 2021). Maize is commonly marketed in two forms: as fresh maize or processed into flour. In Burundi, there are three primary maize marketing channels, as illustrated in the figure below, adapted from USAID (2010).

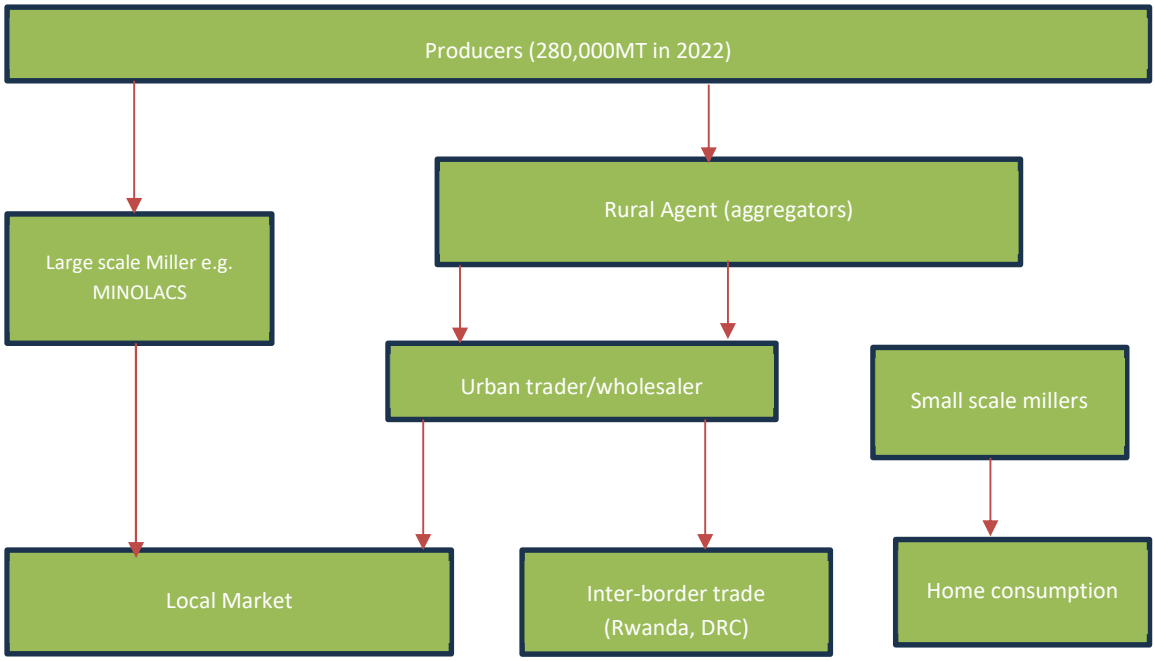

Figure 6: Maize marketing channel in Bujumbura, Burundi

3.4.1 Maize Consumer Segmentation

Maize consumers are classified according to the outlets in which they access the maize and maize products such as flour as follows (De Groote & Kimenju, 2012).

- Posho mill consumers- these are mostly in the third marketing channel who buy maize through the open-air markets and process it to flour in the small-scale millers. This group are not interested in brand and packaging. They prefer ordinary, whole meal maize product mainly due to nutrient quantity and price. Their most preferred traits for maize products are freshness, nutritional value, taste, and smell.
- Supermarket consumers- mostly in the first marketing channel. They tend to be higher income, formally employed, and university graduates. This group prefers industrial maize flour, both plain (61.7%) and fortified (17.5%), valuing convenience (time saving), brand, and packaging more than price and nutrient quality. Just like the posho mill consumers, their preferred maize products traits are freshness, nutritional value, taste, and smell.
- Kiosks consumers- They represent a mix of demographics, typically skewing towards lower- to middle-income individuals who primarily buy industrial maize flour (65.7%) but also purchase grain and grain for milling in smaller amounts. They focus on convenience, price, and cleanliness, particularly among those with lower education.

3.4.2 Tailored strategies for demand enhancement for ALL maize products

- Consumer Awareness Campaigns- Highlight the unique qualities of ALL maize products, focusing on traits like freshness, nutritional value, and taste.
- Quality Assurance- Ensure consistent product quality to build and maintain consumer trust across all segments.
- Innovative Distribution- Use digital platforms or mobile apps for product ordering and delivery to enhance convenience and accessibility.
- Affordable Options- Provide small, affordable packaging sizes for industrial maize flour to cater to lower-income buyers.
- Brand Development- Create and promote a strong, recognizable brand for ALL maize flour products, focusing on premium quality and consistent taste.
- Packaging Innovations- Use attractive, convenient, and resealable packaging to appeal to busy, higher-income consumers.
- Quality improvement through fortification: Expand options for fortified maize flour to cater to health-conscious consumers. Highlight these benefits on packaging and through supermarket promotions.

3.5 Coffee Marketing Channel

3.5.1 DRC Coffee Marketing Channel

In the DRC, coffee is categorized as either organic/agroecologicalor conventional, with distinct marketing channels due to certification requirements and varying consumer demand. Organic-certified coffee is predominantly sold to premium international markets in the U.S and Europe, where the demand for certified organic products is high. Conventional coffee, on the other hand, is

marketed through standard channels, targeting domestic, regional, and some international markets (Wilkins & RDC , 2019).

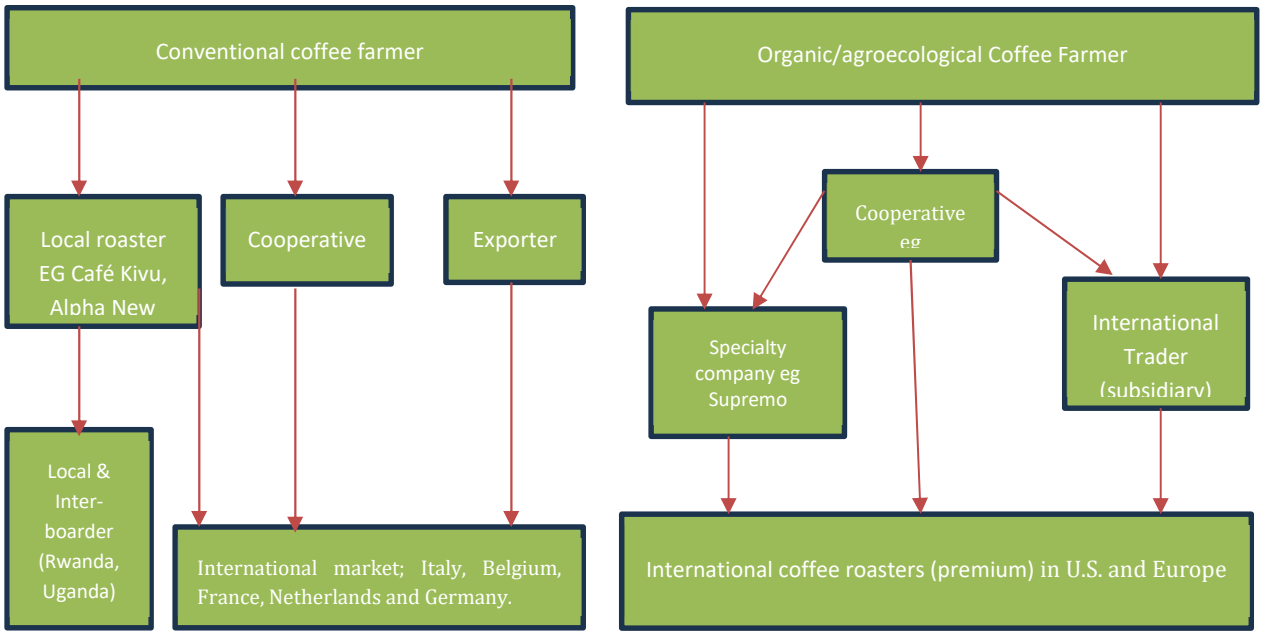

Figure 7: Coffee marketing channel in Rwanda

3.5.2 Burundi Coffee Marketing Channel

In Burundi, coffee plays a crucial role as a major foreign exchange earner, contributing approximately 80% of the country's foreign exchange revenue (Lenaghan & Clay, 2018). Coffee in Burundi is marketed through three primary channels, catering to both local and international markets. For the local market, it is typically sold as roasted coffee, while green coffee is primarily exported to international markets (USAID, 2010, Bamber et al., 2014).

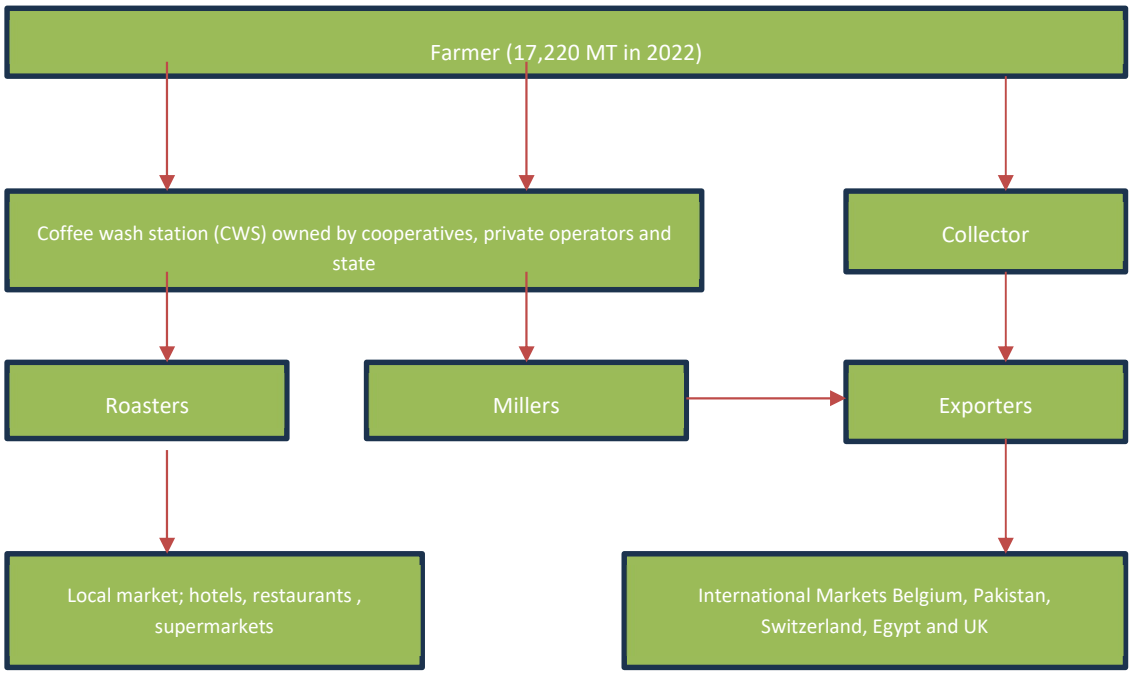

Figure 8: Coffee marketing channel in Burundi

3.5.3 Coffee Consumer Segmentation

Coffee consumers in local, regional, and international markets are increasingly prioritizing sustainability, emphasizing values such as environmental protection, fair trade practices, and ethical production (Maciejewski et al., 2019). These preferences provide an effective basis for segmenting consumers and enable players along the ALL-coffee marketing channel to tailor their products and strategies to meet specific needs. A study by Maciejewski et al. (2019) utilized cluster analysis to identify six distinct coffee consumer segments based on sustainable consumer values.

- Responsible, Aspiring Connoisseurs: balanced gender distribution, primarily individuals under 35 from smaller towns, with a lower household income. values sustainability and eco-friendly practices, favouring Fairtrade-certified coffee and reusable or economical packaging. They prioritize freshly roasted coffee and often check producer details before purchasing.
- Loyal Coffee Enthusiasts: - primarily older women aged 45+ with moderate incomes, values quality coffee and prefers whole beans for home grinding to ensure freshness. They are less concerned about sustainability but are loyal to specific brands and experts.
- Pragmatic Users: often rural males under 35 years with a relatively lower household income. Are royal to their brand and indifferent about sustainable values mostly preferring ground or instant coffee. They prioritize accessibility over brand or sustainability, and they form the largest coffee consumer segment.
- Coffee Laypersons: consists of older people with over 45 years and are royal to their coffee brands but have limited knowledge about coffee market. They prefer convenient coffee options like quick to prepare hence their choice for instant coffee. They are not so much into sustainable values but they prioritize environmentally friendly and economical packaging.
- Sophisticated Connoisseurs: - constituted of younger women from urban areas, with higher household incomes. This segment values the coffee taste and presentation and are keen on how it was prepared. They highly aligned to sustainable values and prioritize freshly roasted coffee.

- Consumerists, Connoisseurs, but Not at Any Price: These consumers are not loyal to any brand and are guided by cost effectiveness hence buying the brand that is currently on offer. They are not willing to pay more for sustainability like fair trade certification and re-usable packaging. They prefer ground or instant coffee and are more price-sensitive, prioritizing value over brand loyalty. This segment has slightly more men, many aged 35-44, living in urban areas with moderate incomes.

Agroecological coffee consumers are often more health-conscious, which influences their preferences and trade-offs. These consumers can be segmented into three distinct groups (Daraboina et al,. 2024).

- *Health-Conscious Consumers (Benefit-Oriented):* This segment prioritizes the health benefits of coffee, seeking options that are organic, natural, and free from additives. Key attributes include natural content, health benefits, and environmental sustainability, with secondary importance given to packaging, taste, and price. These consumers may also favour sustainably sourced coffee produced using environmentally friendly methods.
- *Taste and Value-Conscious Consumers*: Consumers in this group prioritize taste and packaging, followed closely by price. While they recognize the health benefits of organic coffee, taste is the most influential factor in their purchasing decisions. They seek a balance between quality and affordability, often switching brands if prices increase significantly. This segment values coffee with a strong flavour profile but is not particularly brand loyal.
- *Image-Oriented Consumers:* This segment values the social prestige and brand image associated with agroecological coffee. Price is less of a concern, as these consumers are drawn to coffee that reflects a particular lifestyle or status. Premium and specialty coffees are especially appealing, as exclusivity and luxury are key motivators for this group. Health and environmental considerations are secondary to the image and prestige associated with their choice.

3.5.4 Tailored Strategies for Demand Enhancement in ALL Coffee Products

Conventional coffee

- Diversity through provision of products in various formats (e.g., instant, ground, whole beans) to suit consumer preferences and preparation habits.
- Availability of products in diverse retail channels, including supermarkets, kiosks, and online stores
- Offering a range of price points to cater to various income levels availing affordable options
- Availing premium products
- Offering discounts and loyalty programs to encourage repeat purchases across segments.
- Quality assurance across all products, ensuring freshness, appealing taste, and consistent standards.
- Highlight freshness through "roast date" labels and transparent production practices.
- Ensure attractive, informative, and practical packaging and that aligns with the preferences of various consumer segments.

- Health-centric messaging in advertising and packaging emphasizing on the organic and natural aspects of the coffee, such as being additive-free, pesticide-free, and rich in antioxidants to appeal to health-conscious consumers
- Environmental Sustainability: Promote eco-friendly farming practices, such as water conservation and biodiversity protection and invest in sustainable packaging (e.g., biodegradable) to attract environmentally conscious consumers.
- Transparency and Traceability: Provide detailed information about the coffee's origin, production methods, and certifications (e.g., USDA Organic, Fairtrade). Eg using QR codes or online platforms to allow consumers to trace the product's journey from farm to cup.
- Premium Offerings: Create limited-edition or specialty organic coffee lines to appeal to image-oriented consumers
- Taste and Affordability Balance: Ensure that organic coffee products have a strong flavor profile, balancing taste with health benefits and offer different price points, from premium options to more affordable, entry-level organic coffees.
- Lifestyle Branding: Partner with health-focused influencers or wellness events to create brand visibility.

4. Validation of Demand Creation Services

In line with the objective of co-designing the services and marketing tools to enhance demand for agroecological food products, the outcomes of the literature review presented in Chapter 3 were subjected to stakeholder validation during the co-creation workshops. The validation workshops aimed at refining the proposed strategies and ensure they meet local needs effectively. This section presents the outcomes of the validation exercise as implemented in each ALL.

4.1 Validation results for Ntui Agroecological Living Lab (ALL), Cameroon

In the Ntui living lab, seven demand creation services (as presented in Section 3.1) were presented to the participants in the co-creation workshops. One additional demand creation service was suggested by the participants, namely, Feedback to Customers on the Cocoa byproducts consumed. The factors ranked as the most important were Consistency in quality, ensuring that consumers are always availed with high quality products, Packaging the product in eco-friendly and unique materials and advertising using traditional media like television and radio, focusing on familiar, national flavours and qualities that evoke a sense of nostalgia. These three factors relate to strong product development and solidifying consumer experiences through better packaging and promotion.

The factors that were granted moderate ranking included: Consistency in quantity ensuring that consumer demand is always satisfied; Tailor made products for international markets availed at duty-free shops, high end stores and premium online platforms and Partnerships with renowned global brands publicized through marketing campaigns or special product lines. Lastly the least ranked factors included: Certification services to ensure products are agroecologically produced; Local branding with health-conscious messaging highlighting certifications that reflect quality and tradition, such as fair trade or single-origin labels and feedback of customer on the Cocoa byproducts

consumed. The less preferred aspects relate to product certification and preference on health benefit communication that mostly relate to consumer consciousness on the nature of products that they purchase.

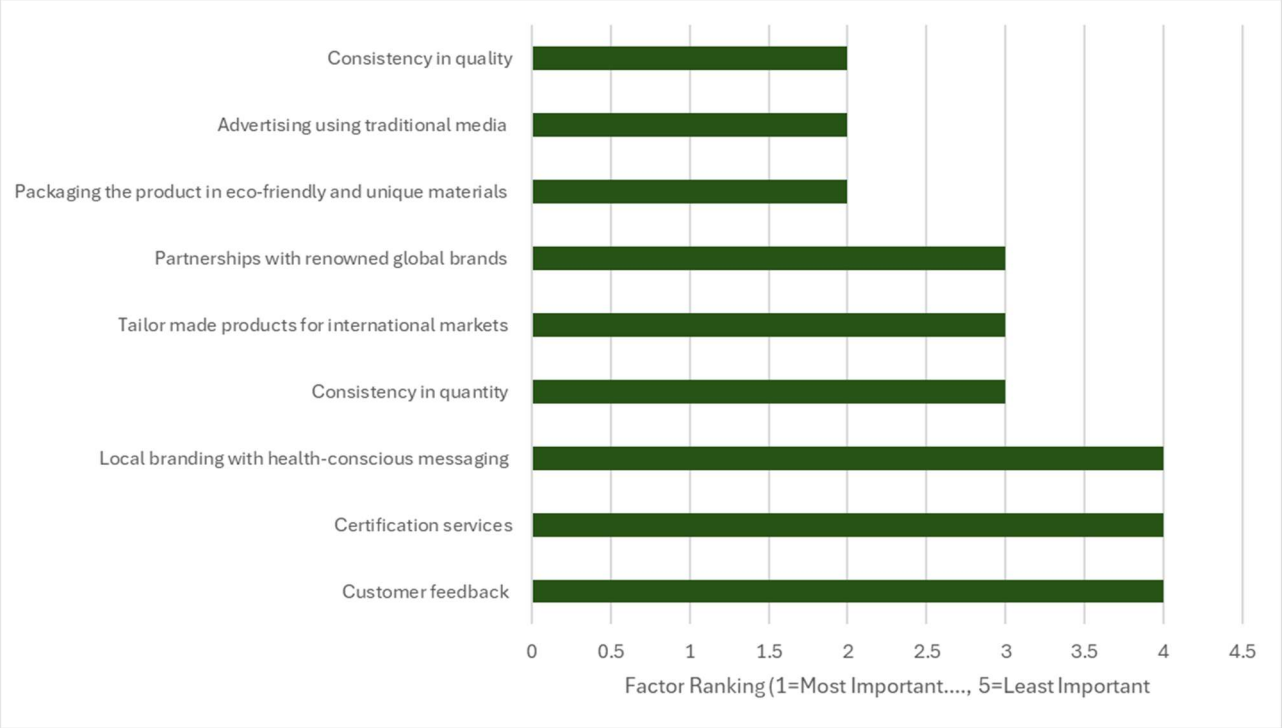

Figure 9: Validation and Prioritization of Demand Creation Services for Cocoa in Ntui ALL

Towards improving consumer experiences and enhance demand creation services in the local context, the participants proposed the following actions:

1. To ensure consistency quality of products, it was suggested that the dedication of agroecology farmland should be enhanced. Further, the deployment and promotion of hybrid varieties with enhanced quality traits would be intensified for widespread adoption by farmers.
2. The collaboration with ANOR (Normalization and certification services in Cameroon) can help having a specific agroecological label for various products especially cocoa beans and byproducts (butter, powder, chocolate).
3. The Government should facilitate the importation of eco-friendly and unique packaging materials. To further complement the importation, local research institutes and innovation hubs should develop prototypes for the use of local materials to manufacture eco-friendly packaging materials.
4. Support and facilitate the certification of products through Private Public partnerships PPP to facilitate the certification and recognition of local products.
5. The government should create appropriate shops for “made in Cameroon” products at all ports of entry. The project should create an online marketplace for agroecological food products (cocoa)
6. Create a platform where cocoa buyer and farmers can meet to discuss about the quality and the price of cocoa quality.

During the workshop, participants noted that the cocoa market in Ntui is well organized locally with the coordination of local authorities. For example, all cooperative societies and cocoa buyer companies must send their price offers to the authorities for validation at least 5 days before the market. Farmers are free to sell their cocoa beans to the companies of their choice. This strategy protects the farmers from market intermediaries and exploitation. Through this method, farmers have control over the prices they sell their produce. To improve farmers' experiences, there is need for market linkages, particularly with chocolate companies to buy directly to farmers or through cocoa buyer exporters. Data collection tools for farmers will help to boost accountability. A training on digital marketing tools is also important for cooperative societies dealing with agroecological cocoa. Currently, Brading services are not accessible to farmers and other stakeholders in Ntui, but only in distant cities such as Yaoundé and Douala. The only communication done around the products is during limited occasions such some fair like bio agricultural fair, agroecological fair, or agropastoral shows organised annually by the government. It also reveals that, chocolate companies have no difference of price on agroecological cocoa compared to cocoa beans produced within the conventional systems, because it is difficult to differentiate the beans by mere appearance. The last note from discussion is about the access to agroecological inputs and material.

4.2 Validation results for Bunia Agroecological Living Lab (ALL), DRC

Just like in Ntui ALL, stakeholders in Bunia were presented with seven proposed services aimed at stimulating demand for agroecological cocoa. Unlike in Ntui where some services were rated moderately important, the participants in Bunia rated all the services as very important (rating = 1) in driving demand. However, the level of implementation of these services was found to be low to moderate, which could hinder their effectiveness.

Key recommendations to address this gap focused on strengthening the entire value chain. This includes extensive farmer training on agroecological practices, transparency and traceability and post-harvest practices, alongside critical investments in foundational infrastructure. Specifically, stakeholders emphasized equipping cooperatives applying agreed agroecological practices with fermentation and drying centers (dryers, fermentation boxes, warehouses), establishing local processing factories and packaging facilities. This would enable product differentiation, quality control, traceability and documentation allowing agroecological cocoa to be clearly identified and marketed as such.

By linking agroecological production practices with quality control, traceability and localized value addition, these services are expected to strengthen market recognition hence contributing to increased demand for agroecological cocoa. Once these foundations are in place, complementary marketing efforts such as mass awareness campaigns, product fairs, and online platforms can enhance the effectiveness of the proposed services in accelerating demand as presented in table 9.

Table 3: Validated services and recommendations for enhancing their effectiveness in demand creation for cocoa in Bunia ALL

Demand enhancement service	Stakeholder recommendation
Consistency in quality, ensuring that consumers are always availed with high quality products	Standardize post-harvest quality by investing in critical infrastructure, including local processing facilities and equipping fermentation and drying centers with modern fermentation boxes, mechanical dryers, and certified warehouses for centralized processing. These facilities should support collective processing, reduce contamination risks, and preserve intrinsic quality without chemical additives linked to agroecological production.
Consistency in quantity ensuring that consumer demand is always satisfied	Establish local processing facilities linked to agroecological producer groups to enhance product availability and stabilize prices. Implement cooperative- and corporate-led governance mechanisms to regulate informal buyers, reduce theft, and strengthen supply chain integrity, key to sustaining farmer participation in agroecological systems.
Certification services for agroecological production	Facilitate peer-to-peer learning and exchange programs between cooperatives to share best practices in agroecological production, internal control systems (ICS), and participatory certification approaches, lowering barriers to certification and reinforcing collective compliance.
Eco-friendly and distinctive packaging	Encourage the use of biodegradable, locally sourced packaging materials aligned with agroecological values of reduced environmental footprint. Support cooperatives in developing sustainable packaging solutions that reinforce the ecological identity of agroecological cocoa products.
Local branding with health-conscious messaging	Develop a strong local brand identity that communicates health, environmental stewardship, and social values, using certification seals (e.g. organic, fair trade, single-origin). Support this with regular product fairs to enable direct consumer engagement, education, and trust-building.
Tailor made products for international markets availed at duty-free shops, high end stores and premium online platforms	Establish premium pricing structures for agroecological and organic cocoa products. Develop digital traceability tools (e.g. QR codes) that communicate provenance, production practices, and social impact, alongside e-commerce platforms targeting duty-free shops, high-end retailers, and premium online markets.
Advertising using traditional media like television and radio, focusing	Organize targeted radio and television campaigns that highlight national identity, traditional production systems,

on familiar, national flavors and qualities that evoke a sense of nostalgia.	and agroecological values, linking nostalgia with sustainability, quality, and cultural heritage.
Partnerships with renowned global brands publicized through marketing campaigns or special product lines	Pursue partnerships with global brands, ethical buyers, and health-conscious influencers to amplify agroecological messaging, demonstrate market credibility, and position agroecological cocoa within premium and values-driven market segments.

4.3 Validation results for Giheta Agroecological Living Lab (ALL), Burundi

The co-creation workshop was attended by stakeholders representing small-scale farmers who are also members of cooperatives, local traders/ intermediaries, representatives of processing companies, exporters, researchers, policy makers and Government representatives and training and extension service providers. The participants ranked health-centric messaging in advertising and packaging, transparency and traceability as the most important strategies for demand creation for agroecological coffee.

While local and export markets differ in scale and access channels, these strategies were identified as critical across both markets to meet consumer expectations and differentiate agroecological coffee. Insights from exporters and traders participating in the co-creation workshop were used as proxies for end-consumer preferences in international markets, while local traders reflected domestic market dynamics. These aspects are particularly important given that agroecological produce consumers are highly conscious of the health attributes of the produce and would need assurance that the products are indeed sourced from agroecological systems. Four factors were ranked moderately: store experience/sampling, lifestyle branding, taste and affordability balance and environmental sustainability. Agroecological coffee consumers are generally less sensitive to price, given their willingness to pay for premium attributes. Finally, premium offerings, community engagement through coffee farming initiatives and subscription models for premium and limited-edition coffee were ranked least.

Figure 10: Validation and Prioritization of Demand Creation Services for organic coffee in Giheta ALL

Towards boosting these strategies in the local context, the following suggestions were provided by the participants:

1. Invest in targeted campaigns through digital and physical platforms (e.g., social media, health magazines, fitness events). The target is to local health-conscious consumers to raise awareness of Giheta agroecological coffee while also engaging intermediaries and retailers who supply export markets to ensure that Giheta agroecological coffee meets buyer expectation
2. Provide consumer education on the health benefits and certifications (Organic, Fair Trade).
3. Increase the use of sustainable packaging and highlight the environmental impact of farming methods. Collaborate with environmental NGOs for stronger certification and promotion on sustainability platforms.
4. Enhance traceability by integrating innovative technologies (e.g., blockchain) and improving the user experience with easy-to-access online portals on packaging for deeper consumer engagement.
5. Develop exclusive, single-origin or limited-time coffee offerings with storytelling that highlights unique flavours and the ethical practices of Giheta. Collaborate with high-end coffee shops and specialty retailers.
6. Conduct taste tests to refine and develop a diverse range of flavour profiles.
7. Offer coffee in different packaging sizes and price points to accommodate a wider range of consumers, from premium to budget-conscious buyers.
8. Identify and partner with influencers in the health and wellness space, particularly those focused on sustainable living. Participate in wellness events, expos, and local organic product markets to increase visibility.

9. Launch programs that invite consumers to engage with the coffee production process via virtual farm tours, or visits, offering educational workshops on agroecological farming. Highlight community efforts in marketing via social media and online marketing
10. Organize tasting events or pop-up stands at local coffee shops, markets, or eco-friendly events to create direct experiences with the coffee. Educate consumers on the product's quality and ethical production practices.

In addition to the validation of the services, the participants noted that it is crucial to communicate sustainability in a way that resonates with both ethical and eco-conscious consumers. The coffee's environmental impact, from cultivation to packaging, needs to be a central part of the brand story. The certifications (e.g., Organic, Fairtrade) should not only be highlighted on packaging but also through educational content across various platforms. Many consumers still do not fully understand the significance of these certifications. In the current market, where consumers are increasingly looking for transparency and deeper connections with the brands they support, digital platforms (website, social media, and apps) should be leveraged for traceability and storytelling. Finally, marketers should consider offering coffee in smaller, more affordable packages that can cater to a wider range of incomes. This will help attract entry-level customers without compromising the premium appeal of the product.

4.4 Validation results for Bujumbura Agroecological Living Lab (ALL), Burundi

Focus group discussions were conducted to validate the proposed demand enhancement services for agroecological maize. Participants reviewed seven services, all of which they ranked as highly important for stimulating demand. However, they observed that the current level of implementation remains low and insufficient to effectively generate demand for agroecological maize. Consequently, they suggested several actions to improve the effectiveness of each service, as summarized in Table 3 below. Additionally, participants proposed two new services focused on strengthening awareness and promoting the adoption of organic inputs in agroecological maize production.

Table 4: Validated services and recommendations for enhancing their effectiveness in demand creation for maize in Bujumbura ALL

Validated Service from Literature	Stakeholder recommendation to enhance effectiveness
Consumer awareness campaigns	•Training administrative officers / extension agents on the locally defined principles, production practices, and distinguishing attributes of agroecological maize (e.g. input use, soil health practices, environmental benefits, and food safety aspects). This would enable consistent messaging and inform consumer awareness campaigns.
Quality assurance, fortification	Provide training and peer learning on agroecology-aligned post-harvest management practices that

	preserve grain quality and food safety while minimizing chemical preservatives. Facilitate access to energy-efficient processing equipment suitable for smallholder agroecological systems. Ensure availability and proper use of locally appropriate, safe nutrients for fortification of value-added maize products..
Innovative distribution	Train farmers and cooperatives on digital platforms for agroecological advisory services, traceability, and direct marketing, strengthening producer–consumer linkages.
Affordable options through different and attractive packaging sizes	Training on maize processing techniques, promoting local production of packaging materials.
Collective marketing and organization	Establish cooperatives of agroecological maize producers to strengthen collective action, knowledge exchange, and market bargaining power, consistent with agroecological principles of social equity and cooperation. Organize trade fairs and experience-sharing visits to showcase agroecological maize production and marketing models.
Brand development	Provide branded uniforms and visual identity for sellers of agroecological maize to enhance recognition, trust, and product differentiation. Establish an official registry of agroecological maize producers, supporting traceability, credibility, and future certification or labelling efforts.
Promoting knowledge and adoption of biological inputs	Conduct laboratory analysis to validate the quality, safety, and nutrient composition of biological inputs, ensuring farmer and consumer confidence. Encourage integrated crop–livestock systems to close nutrient cycles through on-farm manure production, reinforcing soil fertility and reducing reliance on external inputs.

Overall, the validation exercise in Bujumbura highlighted a strong alignment among stakeholders on the relevance of the proposed demand enhancement services for agroecological maize. However, participants emphasized that the limited implementation and awareness at the community level continue to constrain market growth. The proposed solutions therefore focus on strengthening farmer and extension capacity through targeted training, promoting value addition and branding to improve product visibility, and enhancing access to organic inputs and processing technologies. Collectively, these actions are expected to increase consumer trust, stimulate local demand, and contribute to the sustained growth of the agroecological maize value chain in Burundi.

4.5 Validation results for Uvira Agroecological Living Lab (ALL), DRC

Within the Uvira ALL, the project promotes two key agroecological value chains: rice and cassava. To ensure context-specific strategies, separate validation workshops were conducted for each product, engaging distinct groups of stakeholders directly involved in their respective value chain activities including production, processing and marketing.

The stakeholders in the rice value chain were presented with five pre-identified demand enhancement services for agroecological rice, derived from the literature review. In a strong show of consensus, participants unanimously ranked all five services as highly important (Priority Level: 1), validating the initial selection as essential for stimulating market demand.

While affirming the importance of these core services, Participants provided specific, actionable recommendations to enhance the effectiveness of each service. Furthermore, they expanded the list by co-creating four additional services (Multi-size packaging, Stronger market linkages, Policy support for local producers, Capacity building for farmers) deemed vital for success in the local context, moving beyond marketing to address systemic barriers as presented in the table below.

Table 5: Validated services and recommendations for enhancing their effectiveness in demand creation for rice in Uvira ALL

Validated Service from Literature	Stakeholder recommendation to enhance effectiveness
Establish a clear & recognizable brand for easy consumer identification	•Obtain official quality validation from state services (e.g., Ministry of Commerce) with branding that reflects agroecological production attributes. • Participate in agricultural fairs for direct marketing and visibility.
Highlight origin for traceability	•Develop labels that highlight the product's specific origin (e.g., "Made in Kamanyola") linking source to agroecological practices, local knowledge, and territorial identity to build consumer trust.

Minimize impurities with advanced processing (processing quality enhancement)	•Acquire advanced, integrated processing machinery (e.g., hullers with built-in de-stoners, de-dusters, and sorters/calibrators) to significantly elevate product purity. •provide proper drying facilities that rely on energy-efficient or low-emission technologies to minimize grain breakage and maintain quality.
Improve availability of aromatic varieties	•Collaborate with research institutes to introduce and trial new aromatic varieties beyond the current standard (e.g., Mugwiza) prioritizing varieties that are resilient, locally adapted, and suitable for agroecological production systems.
Maintain affordable pricing while ensuring acceptable quality	Training farmers on commercial production and value-added products such as snacks and rice flour that reduce dependency on external inputs while maintaining affordability and quality.
Suggested additional services	
Multi-size packaging	Offer product in various sizes (1kg, 5kg, 10kg, up to 50kg) to improve accessibility for all consumer income levels while supporting inclusive and local market participation.
Stronger market linkages	Strengthen connections to formal/structured market systems. A critical enabling factor is the improvement of road infrastructure to facilitate transport.
Policy support for local producers	Establish policy instruments that recognize and protect agroecologically produced rice, including safeguards against unfair competition from low-priced imports and incentives for sustainable local production.
Capacity building for farmers	Train farmers on marketing techniques leveraging on production using agroecological practices and value addition activities that enhance resilience, profitability, and market participation.

In summary, the co-created demand enhancement strategy for agroecological rice in Uvira is built around three interconnected pillars. Market-Oriented Services which include creating a trusted brand, emphasizing origin traceability, and offering multi-size packaging to meet diverse consumer needs. Quality and Product Development focusing on minimizing impurities through improved processing, upgrading drying facilities, and introducing aromatic varieties and value-added products such as flour and snacks. Systemic Enablers which form the foundation, incorporating stronger market linkages, better rural infrastructure, supportive policy advocacy, and capacity building in

marketing and business skills. Collectively, these pillars provide a clear roadmap for strengthening the rice value chain and unlocking its market potential.

4.6 Validation results for Cassava Value chain in Uvira in DRC and Kamonyi in Rwanda ALL

Cassava production under agroecological systems in the CANALLs project is promoted in Uvira and Kamonyi ALLs. The crop plays a central socio-economic role in these countries as a major source of household income. Two distinct validation workshops were held in the two country's ALLs where stakeholders were presented with eight demand enhancement services identified in the literature review. Participants in Uvira rated two services as most critical for boosting demand for cassava agroecological products: selecting optimal processing varieties and ensuring high-quality processed gari that meets consumer preferences.

Services such as ensuring consistent supply through varieties with long storability and prioritizing fresh, non-bitter roots for direct consumption were rated as moderately important. Interestingly, the development of packaged cassava snacks for supermarkets was considered of low importance, as stakeholders emphasized focusing first on improving the basics such as access to the right varieties to meet minimum market standards before targeting premium segments.

Additional demand enhancement services were also proposed, including leveraging secondary markets such as cassava leaves ("Sombe") and cassava stems for firewood, which were rated moderately important, while commercializing cassava cuttings as planting material was rated of low importance due to its highly seasonal demand.

On the other hand, stakeholders in Kamonyi ALL ranked all the services as very important except for developing packaged cassava snacks and competitive pricing which were ranked as moderately important. They also suggested marketing using radio and social media as an additional demand enhancement service.

Stakeholders in the two ALLs further noted that while these services were important in enhancing the demand for cassava agroecological products there are several challenges that could hinder the effectiveness of these services and provided recommendations, summarized in the table below.

Table 6: Validated services and recommendations for enhancing their effectiveness in demand creation for cassava in Uvira and Kamonyi ALL

Validated Service from Literature	Stakeholder recommendation to enhance effectiveness of this service
Proper processing- ensure high-quality processed Gari (white, dry, sweet, aromatic) to meet consumer preferences	Introduce modern, hygienic processing machinery (e.g., retting and milling) to standardize quality while improving food safety, reducing post-harvest losses, and supporting environmentally responsible processing practices. High demand exists, but traditional processing compromises hygiene, nutrition, quality, and quantity.
Choice of the right varieties- which optimize	Introduce new locally adapted, high-yield, disease-resistant varieties that perform well under low external input conditions. The dominant

the processing quality (low moisture, white flesh, non woody texture)	V8 variety is degenerating, leading to reduced yields. Other varieties such as SawaSawa, Liyayi, and local types have been lost to root rot and cassava mosaic disease.
Consistent supply through varieties that can remain in the ground for long periods, offering flexible harvest schedules.	Develop and promote varieties with longer in-ground storage to enhance flexibility and reduce post-harvest losses and strengthen resilience of agroecological production systems. V8 deteriorates after 8–12 months in the ground. Previous varieties like "Nayunde" allowed longer in-field storage but were wiped out by disease.
Taste considerations- Prioritize non-bitter (sweet) cassava roots for direct consumption and processing.	Develop community-based strategies to secure and protect plots of sweet varieties from theft to capitalize on their higher profitability for fresh markets. Sweet cassava is more profitable than processed cassava and serves urban markets like Bukavu and occasionally Rwanda. However, theft increases production costs.
Leverage on secondary markets especially cassava leaves (Sombe)	Develop dual-purpose varieties resistant to leaf harvesting or high-biomass leaf varieties to tap into this lucrative market supporting diversified production and nutrient use efficiency. Cassava leaves are a promising market opportunity for Uvira and Bukavu, but harvesting leaves reduces tuber yields.

These results highlight the significant potential of cassava agroecological products to enhance actor livelihoods, supported by strong market demand for its diverse products from gari flour and fresh roots to leaves (Sombe) and planting materials. However, this potential is constrained by a nexus of challenges primarily at the production and post-harvest stages. The assessment reveals that the degeneration and limitations of the dominant V8 variety are a fundamental bottleneck, limiting yield, quality, and harvest flexibility. Consequently, Stakeholders emphasized the need for developing and promotion of higher-yielding, disease-resistant varieties with improved processing traits and longer in-ground storage.

Beyond varietal improvement, unlocking this potential is contingent on modernizing the value chain. Introducing hygienic processing machinery is critical to standardizing product quality and safety for existing markets. Once these foundational issues are addressed, the value chain can advance towards higher-value opportunities, including the development of packaged cassava-based snacks for premium markets such as supermarkets.

4.7 Validation results for Kabare and Biega Agroecological Living Lab (ALL), DRC

Agroecological coffee production is being promoted in both the Biega and Kabare Agroecological Living Labs (ALLs). Separate validation workshops were conducted in each ALL to define demand enhancement services, involving distinct groups of stakeholders. The results, however, showed significant alignment, indicating that the proposed services are broadly applicable across both regions. Stakeholders unanimously rated the services derived from literature as highly important for stimulating demand for their agroecological coffee. The only exception was the concept of premium

offers, which was considered a low priority. In Kabare, participants emphasized the need to first address foundational challenges such as infrastructure development before pursuing premium markets, while in Biega, stakeholders opposed the idea, noting it conflicted with their values of accessibility and equity. Furthermore, actors in the Kabare ALL specifically proposed the establishment of a local processing and roasting plant as a critical step to enhance demand.

Across both ALLs, stakeholders rated the current implementation of these services as low to moderate and provided targeted recommendations, with particular emphasis on addressing infrastructure gaps to enhance the effectiveness of the proposed demand enhancement services as detailed in the table below.

Table 7: Validated services and recommendations for enhancing their effectiveness in demand creation for coffee in Biega and Kabare ALL

Validated Service from Literature	Stakeholder recommendation to enhance effectiveness of this service
Health-centric messaging in advertising and packaging to appeal to health-conscious consumers	Organize mass awareness campaigns (radio, demonstration days, field visits) and strengthen extension services to communicate health benefits derived from agroecological coffee production, including reduced chemical use, soil and water stewardship, and safer consumption.
Promote eco-friendly farming practices and invest in sustainable packaging to attract environmentally conscious consumers.	Invest in locally produced biodegradable packaging. Disseminate on-farm techniques aligned with agroecological principles (e.g., biodiversity conservation, water efficiency, shade-grown coffee) to reinforce environmental sustainability in both production and marketing.
Transparency and traceability in terms of origin, production methods and certifications	Establish a digital traceability platform (e.g., QR code system) linking consumers directly to agroecological farms, highlighting locally adapted practices, environmental stewardship, and cooperative-based production systems.
Premium offers like Creating limited edition or specialty agroecological coffee ranges	**Kabare ALL:** Increase production capacity using agroecological practices to meet specialty market demand while maintaining ecological integrity. **Biega ALL:** Maintain focus on accessibility and inclusivity to align with community values and equitable access to agroecological coffee.
Taste and Affordability balance	Implement a multi-tiered pricing strategy that considers farm-level input efficiency and agroecological production costs, ensuring agroecological coffee is accessible without compromising agroecological practices. Strengthen consumer awareness campaigns to highlight both taste and sustainable production.

Lifestyle branding to create visibility	Develop a strong online presence and consider billboard or local media campaigns that communicate agroecological values, origin, and producer stories, linking lifestyle branding with sustainable and ethical production principles.

The path to creating demand for agroecological coffee in these regions requires a sequenced approach from investing in foundation infrastructure such as local small-scale processing, roasting and biodegradable packaging facilities. This should be followed by strategies for establishing trust and traceability such as supporting cooperatives in obtaining agroecological certifications and in developing simple, accessible traceability systems such as QR codes and a basic online platform.

After these core foundations are established, then targeted marketing efforts can be rolled out including launching awareness campaigns where we can disseminate clear messaging around health benefits and environmental practices using radio, training days, and on-packaging information. A multi-tiered pricing strategy can then be established to ensure accessibility for a broad range of consumers. Finally, a digital presence can be cultivated through social media to tell the compelling story of the coffee, the farmers, and their agroecological practices. This logical, phased strategy ensures the consistent delivery of a high-quality and verifiable product, which is essential for building sustainable market demand.

5. Conclusions

Task 2.4 successfully identified, validated, and contextualized a range of demand creation services that can strengthen the visibility, competitiveness, and market integration of agroecological products across the CANALLS Agroecology Living Labs. The findings demonstrate that while awareness of agroecological products is growing, the effective implementation of demand enhancing services remains limited and uneven across countries and value chains.

A critical cross-cutting observation from this task is the challenge of defining what constitutes an agroecological product. While demand creation services were designed to promote such products, the lack of a clear, context-specific definition of agroecology complicates consistent messaging, certification, and consumer awareness campaigns. The current efforts through the ongoing work in Ntui ALL of developing and implementing participatory assessment tools provides a foundation for operationalizing definitions, rating agroecological transitions, and informing market-facing interventions. For the purposes of this task, agroecological products are defined as those emanating from the established ALLs.The co-creation workshops provided valuable multi-stakeholder insights that grounded the proposed services in local realities. The validation exercises across the Agroecological Living Labs confirmed that while specific priorities differ by crop and context, several cross-cutting themes consistently emerged. Stakeholders emphasized the need for: (i) foundational/systemic enablers such as supportive policies, reliable infrastructure, and strengthened market linkages; (ii) quality and product development through improved varieties, processing, packaging, and certification to ensure consistency and consumer trust; and (iii) market-oriented services that build strong branding, traceability, and consumer engagement.

The validation process also revealed that demand enhancement strategies must be tailored to specific crop contexts: for instance, branding and traceability emerged as priorities for commercial crops, coffee and cocoa. In contrast, for staple crops, packaging innovation and consumer

awareness were important for maize and varietal improvement and hygienic processing for cassava and rice. In addition, services such as premium offerings, subscription models, and packaged snacks while acknowledged as useful, were consistently ranked lower priority. Stakeholders across several ALLs (Ntui, Kabare, Biega, Uvira) stressed that the value chains must first overcome basic production, infrastructure (roads, storage), quality and favorable policies hurdles before shifting attention to niche or high-end market segments. Similarly, certification and health-conscious branding were sometimes ranked lower for staples, where affordability and availability remain stronger drivers.

A critical finding across all ALLs and value chains was the significant gap between the recognized importance of these services and their current level of implementation. This gap highlights a major area for intervention and investment, as stakeholders repeatedly stressed that while priorities are clear, the translation into tangible support and delivery mechanisms remains weak. Overall, the results highlight a shared recognition that building consumer trust and strengthening local market systems are central to stimulating demand for agroecological food products. Moving forward, the insights from this task will directly inform Task 5.4, which will focus on operationalizing the validated demand enhancement services through the co-design and implementation of marketing tools and digital platforms, as well as the provision of hands-on support to value chain actors. These activities will aim consolidate producer–consumer linkages, promote fair value propositions, and foster inclusive and sustainable market growth for agroecological products across Local, regional and international markets.

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7. Annex 1 Sample Tool used in the Co-creation workshop

Driving agroecological transitions in the humid tropics of Central and Eastern Africa through traNsdisciplinary Agroecology Living LabS (CANNALS)

Co-creation Workshop/ Validation tool

for

Task 2.4: Design of support services to enhance demand for agroecological food products

Agroecological Living Lab (ALL)	**Ntui in Cameroon**
Product/Value chain	**Cocoa**

Background

One of the objectives of CANALLS project is to co-design services and marketing tools to enhance demand for agroecological food products. This will be achieved through analysis and segmentation of consumer segments for food products produced using agroecological practices and then developing the demand enhancement services for each consumer segment. This exercise is aimed at engaging stakeholders through co-creation workshops to refine the proposed strategies and ensure they meet local needs effectively. These segments are typically based on criteria such as demographics (age, gender, income), psychographics (lifestyle, values, interests), geography (location, climate), or behavioural traits (purchase habits, brand loyalty, product usage). This consumer segments is based on psychographics (lifestyle, values, interests) criteria. Through this Focus Group discussion, participants are expected to validate the services identified from the literature.

The Following services have been identified as important in supporting demand creation for varied cassava products, namely: Gari, Eba, Boiled roots and Cassava Snacks. Please evaluate each of these services guided by the specific questions.

	Demand creation services[3] *Please suggest any other 2-3 additional services that you feel may be missing*	On a scale of 1-5 how important is this service? **(1=Most important; 5=Least Important)**	To what extent has this service have already been implemented in creating **demand** for this product? 1=Low 2=Moderate 3=High	What **further actions** do you recommend for implementation to enhance the effectiveness of this service?
	Target: Innovative nationals (health conscious, adventurous, open to new experiences and prefers local brands)			
1	**Consistency** in quality, ensuring that consumers are always availed with high quality products			
	Consistency in quantity ensuring that consumer demand is always satisfied			
2	**Certification services** to ensure products are organically produced			
3	**Packaging the product** in eco-friendly and unique materials			
4	**Local branding with health-conscious messaging** highlighting certifications that reflect quality and tradition, such as fair trade or single-origin labels.			
5	**Tailor made products for international markets availed at** duty-free shops, high end stores and premium online platforms			
6	**Advertising using** traditional media like television and radio, focusing on familiar, national flavors and qualities that evoke a sense of nostalgia.			
7	**Partnerships with renowned global brands** publicized through marketing campaigns or special product lines			
	Other strategy (Specify)			

Additional observations/Notes

[3] Demand creation services refer to targeted actions designed to align with the specific preferences and needs of different consumer segments, aiming to stimulate interest and increase demand for agroecological food products.