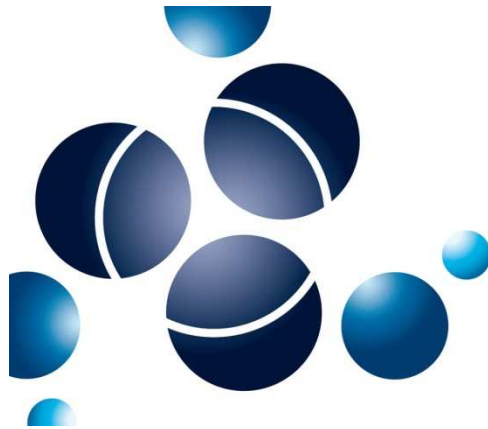


Making the provision of nutritious and affordable food a business

Two case studies of the intertwined processes of frugal innovation and
inclusive development in Ethiopia and Benin



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This work was supported by action research of the 2SCALE programme and PrC. 2SCALE (Toward Sustainable Clusters in Agribusiness through Learning in Entrepreneurship) offers a range of support services to private partners – companies and farmer groups – enabling them to produce, transform and supply quality food products to local, national and regional end-user markets, including Base of the Pyramid (low-income) consumers.

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PART I – INTRODUCTION

Access to nutritious and affordable food has been presented as one of the major challenges facing the global community today (International Food Policy Research Institute, 2016). The nutritional part of food provision has different forms, which include *acute malnutrition* (a lack of calories or, most simply, hunger), *chronic undernutrition* (insufficient intake and retention of crucial micronutrients such as iron or vitamin A), and *over nutrition* (a range of diseases stemming from over-consumption of calories and fats) (Humphrey & Robinson, 2015). Policymakers and development agencies increasingly focus on the role of agri-businesses in the process of reducing rates of chronic undernutrition and creating food security. A food secure situation refers to a situation in which “*All people, at all times, have physical and economic access to sufficient safe and nutritious food to meet their dietary needs and food preferences for a healthy and active life*” (World Food Summit, & Food and Agricultural Organization of the United Nations, 1996). The emphasis of this report is on access and affordability of nutritious food, and it particularly examines the roles of small and medium enterprises in providing this.

The report strongly focuses on affordability, which relates food provision to the growing interest into frugal innovation. Frugal innovation is broadly understood as the (re)design of products and related business models in order to provide high user value and affordable solutions for relatively low-income customers (Leliveld and Knorringa, 2018). The process of frugal innovation involves “*product and process development wherein companies, in partnership with users who face extreme affordability constraints, (re)design products, co-create new business models, or reconfigure institutional arrangements in value chains*” (Bhatti, 2012). Following Leliveld and Knorringa (2018), the report explores whether product development and food provision by two business entities in Ethiopia and Benin may offer novel development opportunities and alter the conditions for inclusivity.

Accordingly, the report broadens the scope by connecting the development of frugal food products to an interest in inclusive development, in particular the terms of access to affordable food products and the terms of inclusion of the suppliers of the raw materials, specifically smallholder farmers. It presents two case studies of agri-businesses that manage both the terms of inclusion and the terms of access and consequently create conditions for addressing food insecurity by enabling affordable food provision. The case studies of specific innovation and business practices provide insight into major challenges for companies providing nutritious food products to the poorest and most vulnerable.

For unravelling the process of inclusive food provision to lower-income consumers, the report adopts the 4A framework proposed by Thorpe and Reed (2016), which looks at whether food products are:

- *geographically available* (especially a concern for rural consumers);
- *financially affordable* (consumers are willing and able to pay);

- *qualitatively appropriate* (in terms of food safety, nutritional value, and branding);
- *socially and culturally acceptable* (meaning that a consumer for example accepts the products' taste, knows how to prepare and consume them, or is aware and convinced of the products' nutritional value. In short, this factor determines whether consumers are able and willing to fit and integrate food products into their daily consumption behaviour).

These four product characteristics, the 4A's, translate into specific business model challenges for food processing companies (Humphrey and Robinson, 2016). The presented case studies follow this perspective and particularly describe how both agri-businesses address the following two business challenges:

- ✓ *How to organise and control access to an uninterrupted supply of high quality raw materials.* When sourcing raw materials from the open market, food processors often face difficulties (e.g. issues in relation to quality, transaction risk, and delivery time) in controlling the quality and the quantity of raw material supplies.
- ✓ *How to organise and control access to lower-income markets while securing product affordability.* Wholesalers and retailers often drive up product prices significantly in food value chains, thus making it difficult for food processors to reach their end-users via existing distribution channels.

Pittore (2016), reflecting on the work of authors using the 4A's (Thorpe & Reed, 2016; Humphrey & Robinson, 2016), states that it is very challenging for businesses, and close to impossible in some rural contexts, to ensure that nutrient-rich foods have all the above 4A product characteristics. “*While there are solutions to address each one of these challenges individually, these often involve a trade-off with other product characteristics*” (Pittore, 2016:1). These trade-offs push agri-businesses to rethink and redesign their business models and open up the boundaries of their firms to collaborate more directly with third parties. This can also be observed in the case studies. At the producer interface, the two agri-businesses engage smallholder farmers more closely after starting a business relationship with cooperative unions. At the consumer interface, both businesses collaborate closely with (networks of) women retailers who interact with the end-consumer directly. Consequently, the empirical focus of the report is on what happens in-between these two interfaces, in order to reveal the processes underlying innovation and inclusion in food provision (see Figure 1).

This brings us to the main research question of this report: How do food-processing businesses find new ways to *leverage* and *manage* scarcely available resources in their endeavours to serve lower-income consumers with affordable food products in a *sustainable* and *scalable* manner?

The following sub-questions further unpack the intertwined processes of frugal innovation and inclusive development:

- How do agri-businesses define and manage the terms of inclusion when they are incorporating actors outside their firm (networks of farmers and retailers) into their business (model)?

- How do agri-businesses manage the new interface that arises when they are incorporating actors outside their firm (networks of farmers and retailers) into their business (model)?
- To what extent do the companies proactively organise and control the producer and consumer interfaces, and make use of feedback in a process of co-creation?
- How do other actors, including both private and public actors, take steps to align with the evolving frugal innovation process?

Reflections on frugal innovation processes in general and on these sub-questions in particular are presented in Part V of this report.

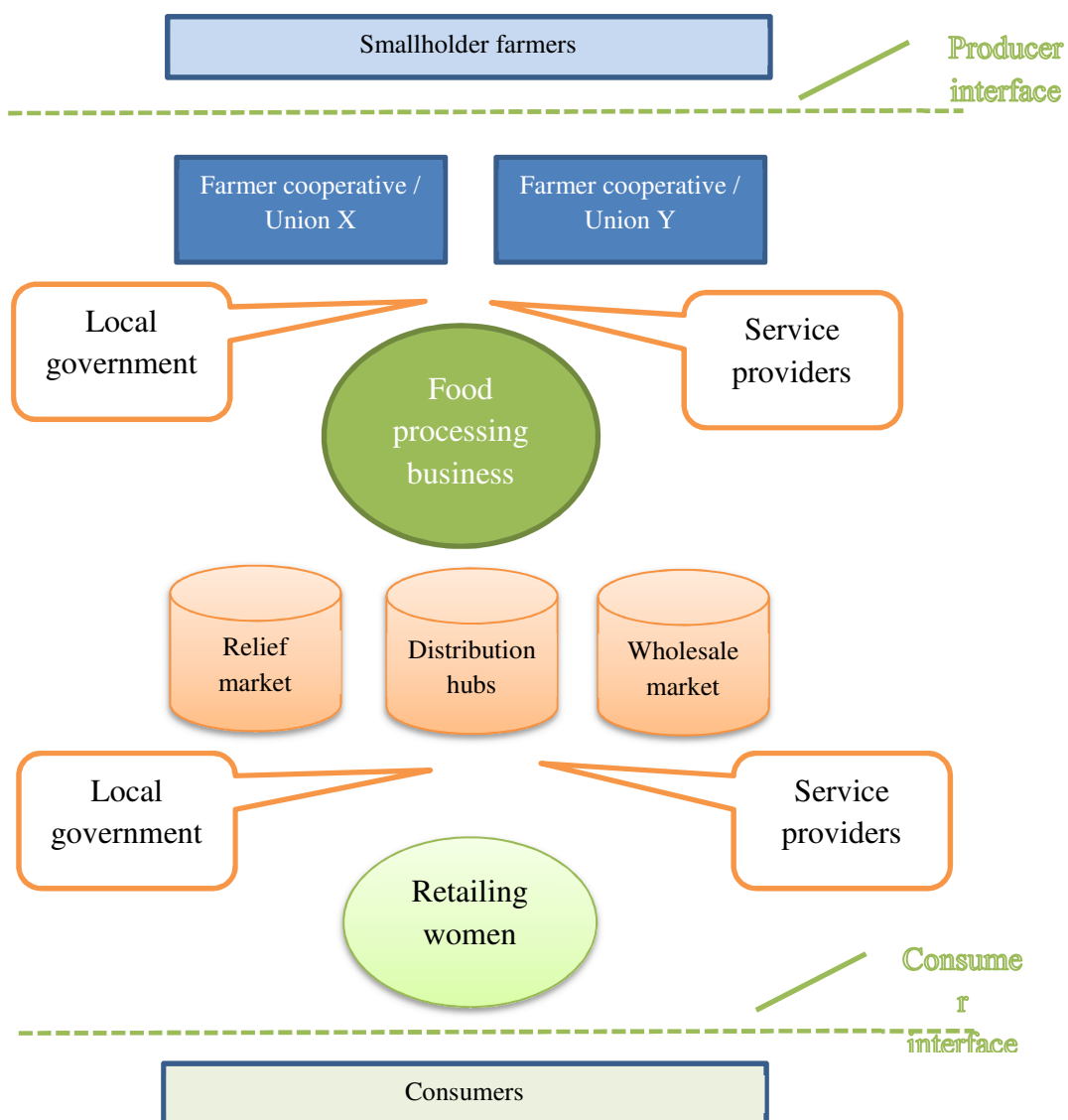


Figure 1 – Research focus in between the producer and the consumer interface

PART II – RESEARCH DESIGN

The two agri-businesses studied are GUTS Agro Industry PLC (GUTS) in Ethiopia and the Coopérative de Transformation d'Approvisionnement et d'Écoulement de Soja (CTAE) in Benin. Although these two food processors differ in terms of scale, institutional context, and location in the world, they are highly similar in the entrepreneurial challenges they face. In their endeavours to produce and deliver nutritious and affordable food products to lower-income consumers, both companies are occupied with the following business operations:

- Organising and controlling access to raw materials. Over time, both agri-businesses decide to engage smallholder farmers more directly through collaboration with their cooperative unions.
- Organising and controlling access to markets. Both agri-businesses rely on women retailers who distribute and sell their products to the end-consumer.
- Embedding marketing and/or distribution activities. Both agri-businesses start marketing new food products that need to be embedded in local markets.

Multiple sources of information were used in both case studies to (a) identify how the businesses execute these operations and (b) discover the rationales underlying the relevant business interventions and partnerships. The case studies were conducted in cooperation with the 2SCALE programme, and particularly its implementing partners International Fertilizer Development Centre (IFDC) and the BoP Innovation Centre.

For the GUTS case study, documents and written or spoken statements (from websites, newsletters, and videos) were used to construct a time path of events, activities, and important decisions over the lifespan of GUTS' business. Documents included business plans, 2SCALE project reports, partnership agreements, and website texts. In cooperation with IFDC Ethiopia, semi-structured interviews were planned and held with 13 key informants, including amongst others three LIKIE sales agents, three LIKIE coordinators or supervisors, three support service providers, and GUTS' CEO (see Annex I). All interviews were extensively summarised and used to validate the first preliminary data and provide further details on identified constructive events, activities, and decision-making processes.

The CTAE case study was executed in the same manner. After a desk study of relevant documents and written or spoken statements, a preliminary time path and stakeholder overview was developed. In cooperation with IFDC Benin, interviews were planned and held with 10 key informants, including four employees and members of CTAE, one farmer, one wholesalers, one retailer, and three support service providers (see Annex II). These interviews were summarised and used to validate and further elaborate the first preliminary data.

PART III – THE CASE OF GUTS AGRO INDUSTRY PLC

1. Introducing GUTS

1.1 What is the business? Product portfolio and affordability

GUTS Agro Industry PLC (from now on called GUTS) is a food processing company founded by two Ethiopian entrepreneurs in 2005. GUTS' head office is situated in Addis Ababa, whereas its manufacturing facilities are located at industrial zones in Bishoftu town (for salt production) and Hawassa city (for production of the other products below). GUTS currently offers the following range of food products:

- M. Amole Salt: an iodised and purified table salt.
- Yanet Shiro powders: two types of mixes of (chick)peas and spices used to make *shiro*: a sauce served with the Ethiopian staple *injera* (pancakes made from teff, a flavoursome and nutritious fine grain).
- LEMBO Snacks: corn chips that come in either spicy or sweet flavours. Besides the commercial market, GUTS has school-feeding contracts for this product line.
- CSB+ (Corn-Soy Blend Plus): a fortified porridge product intended as a supplementary food for children, pregnant women, or lactating mothers. This contract-led relief product, which is distributed to Ethiopia's drought-affected areas, consists of a mix of maize and soybeans and is fortified with around 20 sorts of vitamins and minerals.
- Supermom: a market-led cereal targeting children from 6 months old, pregnant women, and lactating mothers. In terms of content, the product is the same as CSB+ except for a little added sugar.
- LIBDEL Baby Cereal: a baby cereal product currently in the product-development stage. GUTS will soon introduce LIBDEL to the market.

GUTS is the first Ethiopian company to start producing *shiro* powders, fortified cereal products, and iodised and purified salt in-factory and on an automated basis. Economies of scale give GUTS the advantage of being able to produce its food products at a low cost and sell at lower price points than its competitors. However, sub-optimal conditions within Ethiopia's distribution networks have made it difficult for GUTS to reach its target group: lower-income consumers. To secure the affordability and increase the availability of its products to poorer Ethiopian consumer, GUTS discovered that it was necessary to innovate on its distribution model. In late 2014, GUTS adopted, and prepared for the implementation of, a micro-franchise distribution model, which they branded LIKIE (meaning: just the right size). An organised network of sales women (also called: LIKIE ladies or LIKIES) buy GUTS' products at one of the LIKIE distribution hubs (or in the case of Hawassa city directly from the factory) and sell these door-to-door to households and retailers located within the specific sales area assigned to them by GUTS. The LIKIE model shortens the supply chain and reduces costs for consumers as it eliminates mark-ups by middlemen (wholesalers, retailers, and potential distributors in between). Not only is the LIKIE channel shorter than conventional routes to market, it is also distinct from other channels as it is solely controlled by GUTS.

1.2 Who is involved?

GUTS has a central position in multiple value chains. With its maize-, soybean-, and chickpea-based food products, it connects with many farmers and different distributors who deliver its products to the end-consumers. GUTS' mission statement is: 'Nutrition for all'. In pursuit of this mission, GUTS links with many other parties. The most important actors are introduced below (for an overview, see Figure 2).

1.2.1 Enterprise level

Owners	The two Ethiopian founders of GUTS (Engidu Legesse and Yosef Amare) hold all the shares in the company.
Employees	GUTS employs lower-income Ethiopians as factory workers. In Hawassa for example, GUTS employs around 160 factory workers (144 on a contract basis) who are picked up and dropped off by a large bus that goes around the city in the morning and the afternoon.
LIKIE	LIKIE is GUTS' independent distribution channel. The LIKIE infrastructure and brand are owned by GUTS. Women are contracted as independent sales agents to sell GUTS' products door-to-door. The LIKIE distribution channel currently accounts for 5% of GUTS' total revenue, and GUTS aims to scale this sales percentage to 50%.
2SCALE	A partnership between IFDC (International Fertilizer Development Centre), ICRA (International Centre for development oriented Research in Agriculture), and BoP Innovation Centre, which supports GUTS with its challenges in the interfaces described in sections 1.2.2 and 1.2.3.

1.2.2 The interface with producers

Producers	GUTS sources its maize, soybeans, and (chick)peas from smallholder farmers via second-level (or secondary) farmer cooperative unions: the overarching body of several first-level (or primary) farmer cooperative unions (PCs). GUTS offers these farmers a secure output market and aims to build up long-term business relationships.
IFDC	IFDC Ethiopia facilitates the partnership between GUTS and the maize- and soybean farmers' cooperative unions.
Government	IFDC's partnership facilitators and cluster coaches work together with local government offices and extension service providers from the secondary farmer cooperatives unions.

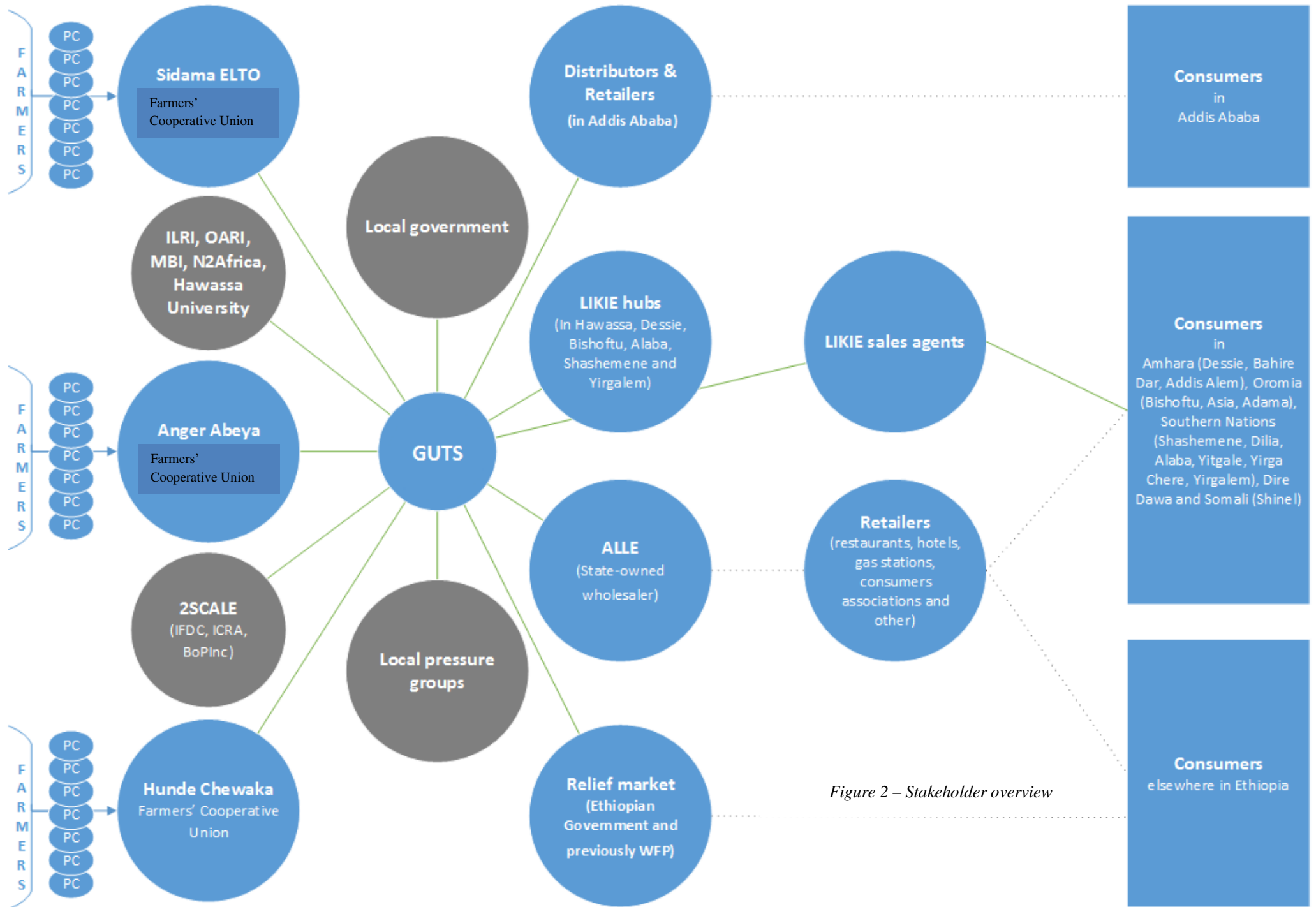


Figure 2 – Stakeholder overview

1.2.3 The interface with consumers

ALLE	A state-controlled wholesaler of foods and fast-moving consumer goods that targets restaurants and retailers.
LIKIES	Women entrepreneurs who work as independent sales agents. The women are provided materials (branded shirts, caps, bags, tricycles) and training by GUTS to go out on the streets and sell GUTS' products door-to-door. Currently there are over 80 women running their own LIKIE business.
LIKIE hubs	Currently there is the Hawassa factory, a pharmacy (in Dessie), a consumer association (in Bishoftu), and three private retailers serving as GUTS' distribution hubs where LIKIES can access the products.
Government	GUTS works together with local government representatives (from the Women and Children Affairs department or Small and Medium Enterprise department) at sub-city level in, amongst other things, the LIKIE recruitment process.
Consumers	Many lower-income consumers buy GUTS' nutritious food products. So far, over half a million products have reached consumers via LIKIE.

The next section briefly presents an overview of the major developments in GUTS' business over time. The following sections then elaborate more in depth on three general processes with which GUTS is occupied, namely, organising and controlling access to raw materials (section 3), organising and controlling access to markets (section 4), and the process of embedding LIKIE in Ethiopian markets (section 5).

2. The story behind GUTS

2.1 Start-up stage (period up to 2008)

Before founding GUTS, Engidu Legesse (GUTS' current CEO) gained experience in the milling sector where he supported small-scale millers with preventive maintenance and other technical services. After a while, he started his own business and gained entrepreneurial experience as he started importing and distributing food processing equipment, wheat flour mills, and water bottling and biscuit production lines. He joined the Addis Ababa Chamber of Commerce and was given the chance to extend his business network internationally. Then in 2005, Engidu Legesse and his partner Yosef Amare (a former client and owner of a wheat flour mill) invested a start-up capital of around 11 million Birr (nearly US\$ 0.5 million) to found the private limited company, GUTS Agro Industries. The construction of GUTS' first factory in Hawassa started in 2006, and the factory went into production in 2008.

2.2 First growth (period 2008–2014)

GUTS started with the production of LEMBO snacks and the CSB+ product. The United Nations became the first big customer, as GUTS became a registered supplier of the World

Food Programme (WFP) in 2008. Over the period 2008–2014, GUTS delivered several thousands of quintals of CSB+. It collaborated with thousands of Ethiopian farmers from which it annually sourced around 100,000 quintals of maize and soybeans. Initially, GUTS purchased any raw material from the open market. For various reasons (issues in relation to quality, transaction risk, and delivery time delay), this did not work. GUTS was thus pushed into considering working with farmers more directly, and it started collaborating with the Mancheno Alaba Farmers' Cooperative Union in 2009. As explained in more detail in section 3, this first business relationship with a farmers' cooperative union did not last long.

In 2012, GUTS started producing iodised and purified table salt at its new factory in Bishoftu. That same year, GUTS was one of the companies that signed a letter of intent in The New Alliance for Food and Nutrition Security at the G8 summit held in Washington DC in May 2012. In June 2013, GUTS joined the Scaling up Nutrition (SUN) business network at the Global Nutrition for Growth Compact in London. In response to these commitments, a chickpea-based ready-to-use supplementary food was developed with and for the WFP. During this time, GUTS started developing its chickpea-based Yanet Shiro products, which were introduced to the market in April 2014. The Yanet Shiro products, just like the LEMBO Snacks and the salt, were distributed to Ethiopian supermarkets, traders, and kiosks. Under a USAID-facilitated Memorandum of Understanding, GUTS worked with Becho Woliso, Tulu Bolo, and Lome Adama cooperative unions in the Oromia region for the procurement of the chickpeas. USAID facilitated this cooperation and covered the costs of the chickpea seeds and their distribution to the roughly 52,000 smallholder farmers involved.

2.3 GUTS diversifies and sustains its markets (period after 2014)

In 2014, the WFP stopped its cooperation with GUTS, and the Ethiopian government became GUTS' new customer for the CSB+ relief product. CSB+ production is based on orders or batches of 10,000 quintals, and GUTS realised that these short-term relief contracts were not reliable for the sustainable growth of its business. Moreover, GUTS saw an attractive potential in CSB+ commercialisation for the Ethiopian consumer market and started to explore this option.

In 2012, 2SCALE and GUTS explored opportunities for partnership. During the first discussions, 2SCALE made suggestions on interventions in the raw materials supply chain. GUTS, however, also articulated and stressed its distribution issue: how to keep its products affordable for lower-income consumers within the Ethiopian distribution landscape where many intermediaries drive up product prices. A formal partnership agreement was signed in May 2014, and the partnership started to materialise as IFDC assessed different maize and soybean farmers' cooperatives and facilitated the process towards partnership agreements between GUTS and (1) the Sidama Elto Farmers' Cooperative Union (October 2014) and (2) the Hunde Chewaka Farmers' Cooperative Union (December 2014). Regarding the distribution issue, the BoP Innovation Centre (BoPInc) facilitated a business workshop (July 2014) on the marketing aspects and different potential distribution strategies for CSB+ commercialisation. Thus, GUTS discovered how international parties like JITA Bangladesh or Living Goods use the micro-franchise model to serve lower-income consumers, and it decided to pursue this

strategy to reach the Ethiopian low-income consumer market. With some further assistance from 2SCALE (BoPInc facilitated follow-up workshops in November 2014 and January 2016), GUTS developed the Supermom brand and the LIKIE model, which were officially launched in July 2015 in Hawassa. A time line and an overview of GUTS’ development are provided in Figures 3 and 4.

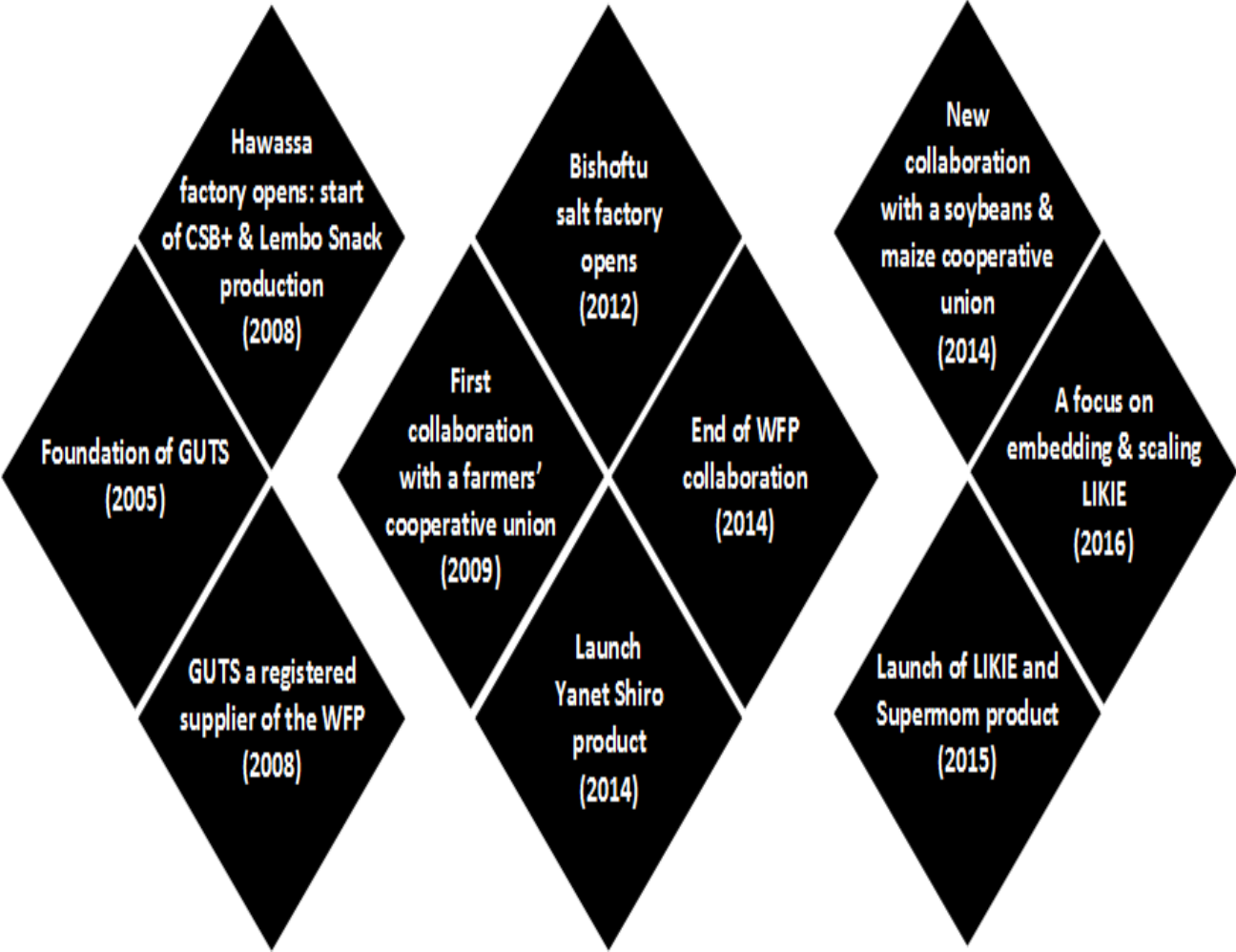


Figure 3 – Milestones in GUTS’ timeline

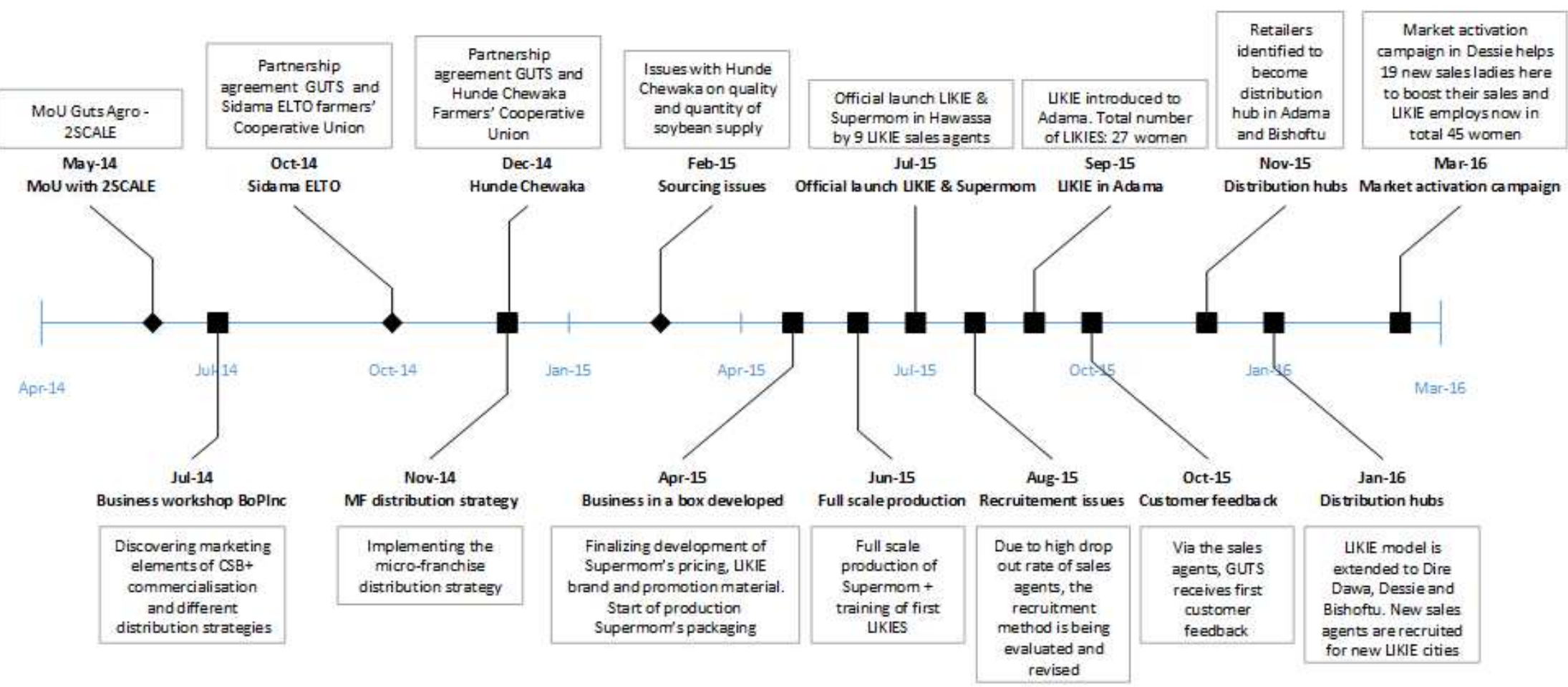


Figure 4 – A rough overview of GUTS' recent history

3. Organising and controlling access to raw materials

3.1 Linking to producers

GUTS initially sourced its raw materials from traders and wholesalers on the open Ethiopian market (with a conventional supply chain where raw materials are moved from farmer to trader, trader to distributor, distributor to market). With this procurement method, GUTS struggled to realise an uninterrupted supply line of raw materials of standard quality. This pushed GUTS to involve farmers more directly in its business, and, in 2009, GUTS started to work with Mancheno Alaba Farmers' Cooperative Union. Again, because of the poor quality of raw materials, this business relationship did not succeed. *“We [GUTS] were trying to absorb whatever loss came out of that quality issue, but, at some point, we couldn't do it, we couldn't go that way, so we had to stop it. There was no one that intervened or could compensate whatever loss we faced”* CEO GUTS; interview 2.

New business relationships with farmers' cooperatives were established over time (for an overview see Figures 3 and 5) and in 2SCALE GUTS found a party that could help it manage its relationship with farmers. In 2014, with the support of 2SCALE and particularly IFDC, GUTS linked up with both Hunde Chewaka Farmers' Cooperative Union for the procurement of soybeans and Sidama Elto Farmers' Cooperative Union for the procurement of maize. As one of its first activities, IFDC identified potential interventions along the maize and soybean value chains. In the case of Sidama Elto, it invited all maize farmers from Hawassa and Sidama district to GUTS' factory for a diagnostic and design (D&D) workshop. The discussions with the farmers on the prevailing issues along the chain (e.g. agronomic or post-harvest handling issues) led IFDC to develop an action plan with interventions that aim to help the maize farmers meet GUTS' quality and quantity requirements. 2SCALE cluster coaches, local government offices, and extension service providers from the cooperative agencies themselves jointly worked on the action plan and executed the scheduled activities. So, besides technical support, IFDC supported management-wise. As a third neutral party, it had (and still has) a leading and facilitating role in settling finance, quality management, and other emerging issues. Sections 3.2 and 3.3 provide more details on this.

3.2 Setting prices and contracts

Each year before harvest time (September–October), GUTS sits down with the secondary farmers' cooperative unions to negotiate a contract. For the maize and soybean negotiations, IFDC joins these meetings. Together, they make time calculations, plan sourcing activities, and conclude a price deal. Fixed produce volumes and fixed prices per kg raw material are agreed upon in these contracts and set for one or two months. The contract also includes agreements about delivery time and produce quality. The deliveries must be pest and bacteria free and the maize and soybeans must have a certain weight, moisture level, protein content, and fat percentage. That these contracts are not 100% fixed or legally binding was proven in 2015. GUTS went to Sidama Elto to, as per agreement, buy its maize. When the GUTS' staff arrived however, Sidama Elto refused to sell as they had found a new buyer who was offering a better

price, namely, the WFP (GUTS' former customer). Because of this situation, GUTS had to shift to Anger Abeya Farmers' Cooperative Union to procure its maize for that year.

Financial arrangements are also agreed in contracts. Management-wise, this is an important aspect in GUTS' efforts to control and stabilise access to raw materials. Payments in GUTS' soybean and maize supply chains currently occur as follows. First, primary farmers' cooperatives collect and pay for farmers' produce. These primary cooperatives weigh the raw material, check its quality, and re-bag and stock it, for which they charge farmers a fixed price per bag (10 Birr per quintal). Then, the overarching farmers' cooperative union (secondary cooperative) comes to collect the stock and pays the different primary cooperatives. Again, the secondary cooperative checks on quality and reloads the stock into its storage facilities (for the same fixed price per bag). The central issue here is that, if the primary cooperatives do not have cash in hand to pay the farmers in time for their produce, the farmers might choose to sell to traders on the open market. Such side-selling happens in all three unions and is not easy to prevent. One way in which GUTS tries to minimise this is by making clear payment arrangements. Table 1 provides an overview of GUTS' financial arrangements with the various secondary cooperative unions. As a neutral party, 2SCALE plays a role in this by educating farmers on the advantages of selling on a cooperative basis over selling to private traders. One of these advantages is the transparency of the pricing system. As all price agreements are in the contract, farmers know (i) the processing cost of the primary and the secondary cooperative, (ii) the transportation cost to GUTS's manufacturing facility, and (iii) the price GUTS pays per quintal of raw material. Whereas open-market prices may fluctuate per day, at the cooperatives unions farmers are assured of a stable price for their produce.

Table 1 – Financial arrangements with the secondary farmers' cooperative unions

Secondary farmers' cooperative union	Payment method	Description
Hunde Chewaka	Delivers based on prepayments	Hunde Chewaka gets 30% of its payment in advance to be able to pay the primary cooperatives who collect the farmers' produce. The union receives the remaining 70% after delivering all raw materials to GUTS.
Sidama Elto	Delivers based on cash-after-delivery	Sidama Elto is paid in cash 7 to 10 days after it delivers its produce to GUTS.
Anger Abeya	Delivers based on credit and cash-after-delivery	Anger Abeya arranges a loan from a bank to pay the primary cooperatives. The union charges GUTS for the bank interest, and GUTS pays 70 to 90 days after delivery in cash.

When maize and soybean deliveries arrive at GUTS' factory in Hawassa, the produce is checked on all the different quality requirements. When provided with the right inputs (e.g. seeds, fertilisers) and training and if they are seriously committed to meeting the quality requirements, farmers do not find it too difficult to attain these standards. However, these conditions are not always met (at once), and unforeseen situations or risks mean that quality is

often still a point of tension. *“Quality standards; we often have a fight about this. And sometimes I fight with my own people. This last time, the maize, it was very bad. I was forcing them [own employees] to accept it. Because for us it means a long-term result. We want to show them [the farmers’ cooperatives], we want to teach them, we send them a message that we will stop [buying], but actually we never did that”* CEO GUTS; interview 2. In line with this quote, the below two examples from the soybean chain display how GUTS engages in ‘give and take’ to keep the cooperative unions committed to the agreed quality standards.

In 2015, the soybeans from Hunde Chewaka were affected by rust. Because of this bacterial disease, the seedlings did not mature enough, and therefore at harvesttime the soybean particles were smaller than usual. This presented a problem for GUTS, as these smaller particles are burned (instead of roasted) in the roaster and therefore are basically just wastage. For every kg of soybeans delivered, GUTS could utilise only around 95%. It therefore imposed a 5% penalty on Hunde Chewaka and initially paid only 95% of the agreed price. At a later stage, GUTS released the last 5% payment, thereby reminding Hunde Chewaka that this was ‘serious business’ and that they should adhere to the agreed quality standards. With the use of inoculant, the rust issue did not recur in the following year (2016).

GUTS found red weevils on Hunde Chewaka’s 2016 soybean delivery. In fact, that year’s maize developed weevils and, due to storage issues, they were transmitted to the soybeans. GUTS stopped and returned the shipment of 10,000 quintals of soybeans at its factory gate and sent the trucks to another storage facility in Hawassa. There was a serious conflict about this situation, and GUTS initially stated that it would reject the delivery. The issue arose because of the failure to provide appropriate storage, for which Hunde Chewaka was responsible. GUTS nevertheless decided to absorb the cost of renting the temporary storage facility and the treatment and cleaning of the soybeans, trusting that Hunde Chewaka would learn from the situation and prevent it from happening again in the future.

4. Organising and controlling access to markets

4.1 Overview of distribution channels

Ethiopia’s distribution landscape is controlled mostly by private companies. This formed and still forms a challenge for GUTS in several ways. Private wholesalers are not easily convinced to work with local food processors like GUTS. They often already distribute similar (imported) products and perceive sales of new (local) products as risky, as they are not assured of, but are particularly interested in, high product turnover. As a result, these private parties often take high margins on new products. Another disadvantage that GUTS faces is that private wholesalers do not monitor or control what further retailers in the chain charge their customers. For these reasons, GUTS’ products could not reach lower-income customers via the conventional distribution channels. Therefore, GUTS initially distributed its commercial-led products directly to supermarkets, consumer associations, and kiosks. Later (around 2014), GUTS linked up with ALLE: a state-controlled wholesaler of foods and fast-moving consumer goods that targets restaurants and retailers. ALLE works on a membership basis and is intended

for businesses only. It takes reasonable margins and provides recommended selling prices to its retailing customers.

When GUTS introduced LIKIE in July 2015, this became its second main distribution channel next to ALLE. The major difference between the ALLE channel and LIKIE is that, with LIKIE, GUTS can control the activity of products all the way to the end-consumer. In areas where GUTS introduced LIKIE, it stopped distributing its products to supermarkets and kiosks in order to leave the market for their new sales agents. Only in Addis Ababa (where LIKIE is not present) is GUTS still involved as a wholesaler distributing directly to retailers. *“We are losing lots of money because of this [transition], but I hope that it will change because you need to sacrifice something to reach that point in the future when a good result will come. Currently, we have to absorb such losses”* CEO GUTS; interview 2.

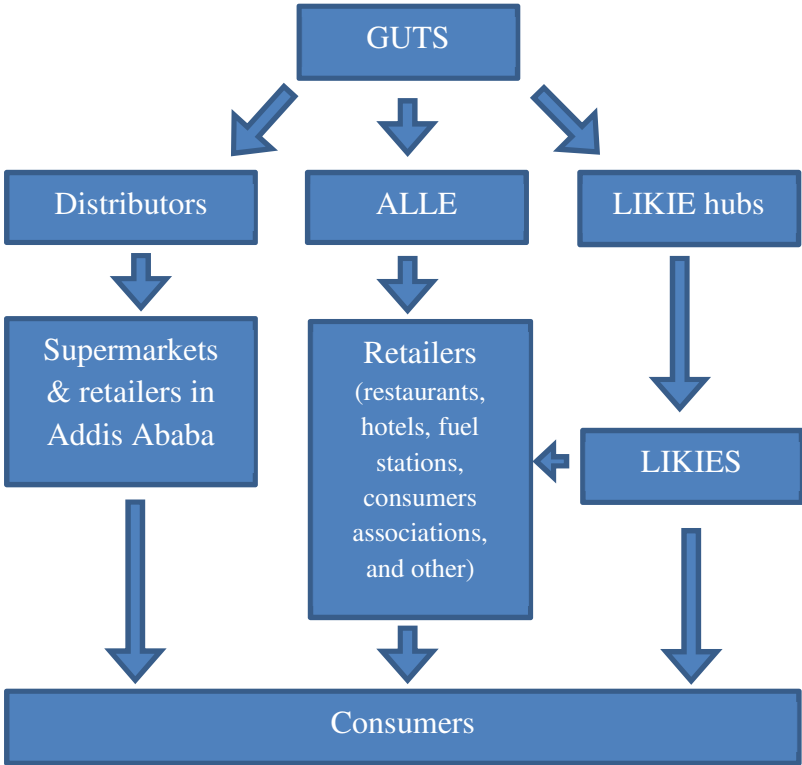


Figure 5 – GUTS’ distribution channels

After its introduction in Hawassa in July 2015, LIKIE was introduced to other cities in the states of Amhara (Dessie, Bahir Dar, Addis Alem), Oromia (Bishoftu, Assela, Adama), Southern Nations (Shashemene, Dilia, Alaba, Yirga Chefe, Yirgalem), Dire Dawa, and Somali (Shinel) (see Figure 6).

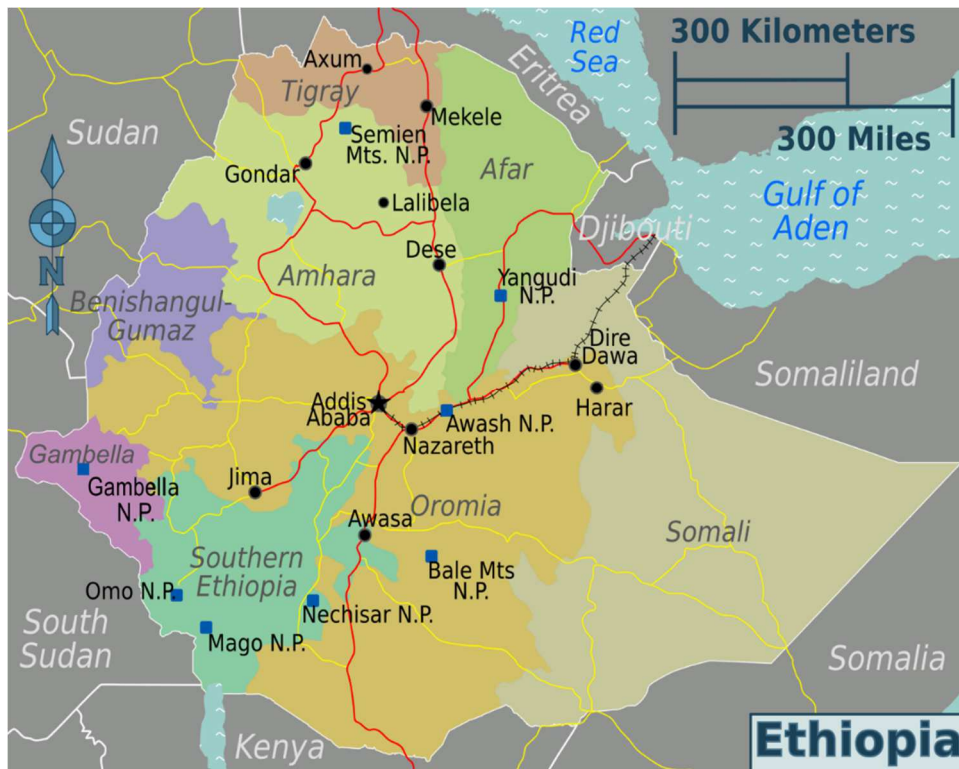


Figure 6 – Map showing Ethiopia’s regional states and major cities
(source: www.commons.wikimedia.org)

4.2 Arranging the interface with LIKIE retailers

4.2.1 LIKIE governance

In every LIKIE city, GUTS has a supervisor organising and overseeing the group of sales agents working there. For every LIKIE group, there is one government supervisor and a committee of LIKIE representatives (a chairman, a secretary, and a treasurer). The LIKIE supervisor, the government representative, and the sales agents come together every week (or every fortnight, depending on agreements made within the group) at the hub for a group meeting. Here, they discuss ongoing developments and emerging issues. See Figure 7 for a representation of LIKIE’s governance structure.

4.2.2 Recruitment of LIKIE sales agents

GUTS has a standard procedure for the recruitment of its sales agents. It starts the process by arranging a meeting with the respective city mayor of the new LIKIE area. It proposes the model and, with the approval of the city mayor, GUTS continues by approaching representatives of either the Women and Children Affairs department or the Small and Medium Enterprise (SME) department at sub-city level. These departments are provided with a list of selection criteria and are asked to come up with a list of women that fit the criteria and are interested in starting a LIKIE business. GUTS organises an orientation meeting for these women at the sub-city hall where it presents and explains the nature of the work.

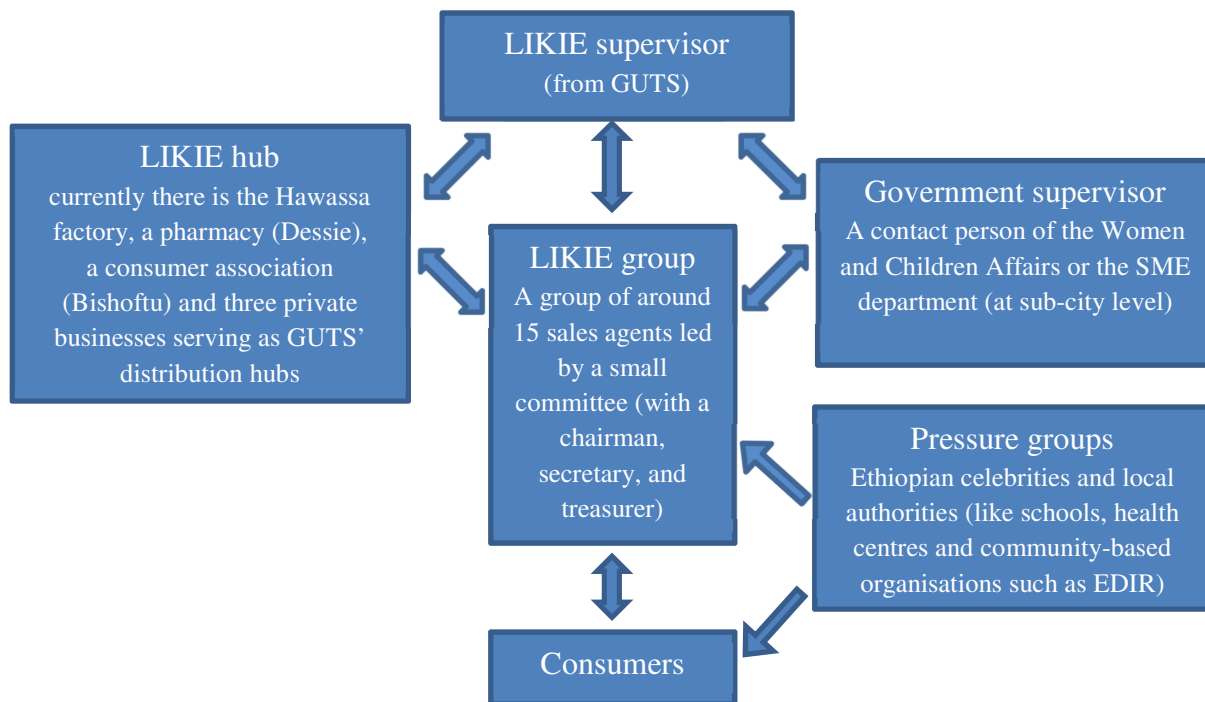


Figure 7 – LIKIE’s governance structure

After this first orientation, women decide whether to pursue the job. Interested women are further screened by GUTS using certain selection criteria: age (women must be aged between 18 and 40); eagerness and motivation; ability to read and write; physical health; investment capital (300 Ethiopian Birr as first working capital: about US\$ 14); and prior sales experience. The women selected from the sub-cities (see Figure 8 for the sub-cities in Hawassa) are then provided with a half day of training. They are trained on (amongst other things): the LIKIE vision (‘food and nutrition for all’), GUTS’ products, how to approach customers, and general saving and book-keeping. Then, GUTS assigns and shows the women (they are literally driven around) their sales area and gives them the branded LIKIE materials (a cap, a shirt, and a bag). After signing their contract with GUTS, the women are ready to start their business.



Figure 8 – On the left: a satellite map of Hawassa (source: google maps). On the right: a map with the sub-cities of Hawassa covering 32 kebelles (lowest administrative unit), each having their own administration offices (source: www.hawassaonline.com)

Recruitment of women without starting capital and with no prior saving or sales experience led to many dropouts in the beginning. From the first batch of 18 sales agents who started in Hawassa in July 2015, only three women are still active. There were three main reasons for this high drop-out rate. Firstly, some LIKIES soon lost their money. They spent too much of their first profits (on things for their children for example) and therefore did not have sufficient working capital to buy new products. Other LIKIES found the work too physical. This was especially a concern for some older women. Others started with great motivation but were disappointed as their LIKIE business did not bring quick results. They lost their appetite for work and did not have the patience needed to gradually expand their sales business. These issues led GUTS to add investment capital and prior sales experience to its selection criteria. It changed its training materials and decided to invest more gradually in the LIKIES as they committed themselves more to the job over time. Whereas GUTS initially provided full training to women straight after their introduction by the government, it then decided to build up such investment more gradually in terms of time and training provision.

The major lesson that GUTS learned over time regarding recruitment is that not every woman is fit for the job, as LIKIES need to have certain skills and a certain entrepreneurial attitude. This makes recruitment a vital, but also a very difficult, process. *“The hardest thing is of course finding the right ‘Yewegnesh’ [one of the best performing LIKIE agents] for the business. They are not easy to find”* LIKIE project facilitator; interview 8.

4.2.3 Arrangements between GUTS and LIKIES

In order to make the LIKIE model work as intended, GUTS needs to make certain arrangements with the sales agents. Amongst other things, LIKIES are compelled to: come to group meetings, use GUTS’ pricelists, and stick to their appointed sales areas.

At group meetings, but also every time LIKIES come to the hubs to buy their products, supervisors informally discuss ‘how things are’. They ask the women about their sales, the interest in products, ‘how things are going with their money’ (status quo of their working capital), and whether they are happy and satisfied. *“It is about encouraging them in their job and stimulating their working attitude; to face the challenges and shape their entrepreneurial mind”* LIKIE coordinator; interview 6. Together, they raise pointers on current progress, problems, and threats, and *“any feedback we freely discuss with the LIKIES, in front of the group. ‘This is OK, we like this, we don’t like that, we accept this, we don’t accept that’”* LIKIE coordinator; interview 4. Therefore, GUTS can quickly anticipate and control emerging issues. A good example of this is how LIKIES once put through customers’ complaints about the higher price of GUTS’ salt compared with that of competitors. The reason for this is that GUTS produces purely iodised salt, whereas competitors do not have a full refining system and do not purify their product. In response to the LIKIES’ feedback, the supervisors prepared and distributed some samples of salt residue (the brownish salt that is filtered out) to the hubs and LIKIE groups. The LIKIES used these to educate customers about purification and showed them the difference between their salt and that of the competition. Thus, LIKIES were able to convince their customers of the quality difference and make salt LIKIES’ bestselling product.

Pricelists are provided by GUTS to prevent LIKIES from selling at higher prices. For all eight products (Lembo Snack, Shiro 250 gram and 500 gram, Salt 300 gram, 450 gram, 700 gram, and 1 kilogram, and Supermom 200 gram), fixed buy and sell prices are set. LIKIES' profit margins on these products vary between 25 cents and 2 Birr (US\$ 0.01 to 0.08) per product sold. Without fixed pricing and margins, there would be competition amongst LIKIES, and the affordability of GUTS' products for consumers could be affected. Therefore, LIKIE supervisors make random checks with customers to ensure that LIKIES stick to the rules. *"We [do] notice sometimes they will make some changes in prices, but still we are trying to control what price they are doing"* CEO GUTS; interview 2. GUTS may ultimately fire an agent who breaks the pricing rules. Although this has never happened, by terminating her contract for two months GUTS did once punish a LIKIE who repeatedly charged different prices.

LIKIES sometimes complain that other agents are selling within their appointed sales area. To prevent competition amongst LIKIES, supervisors need to settle such tensions; this is often done during group meetings. The supervisor may correct the woman who is encroaching on the complainant's area, while simultaneously motivating the complainant to improve her door-to-door sales as apparently there are customers available that she is not serving.

4.2.4 Arrangements between GUTS and LIKIE hubs

In each LIKIE city, GUTS has a hub to enable its sales agents to access its products. GUTS organises and controls the work of the LIKIES, which includes careful selection. LIKIE hubs also work with a pricelist provided by GUTS. They are compelled to sell the products to LIKIES at a fixed price (1 Birr above factory-gate price: the hubs' margin) and to charge a higher price when selling directly to consumers. GUTS thereby ensures that the hubs do not compete with its sales agents. If the hubs do not stick to these pricing arrangements, GUTS corrects them. In Adama, this was the case when the hub there lowered its prices for consumers. GUTS gave the Adama hub a couple of chances to correct its pricing, but, as it kept on breaking agreements, GUTS had to abandon this collaboration and find a new hub. Not only are hub owners expected to protect the LIKIES price-wise, they are also trained and responsible for guiding the LIKIES in the same way LIKIE supervisors do. GUTS provides hub owners with lists of questions (on topics like money handling or working character) that support them to guide and encourage the LIKIES. Once a month (or every fortnight), a LIKIE coordinator visits the hubs to observe how the hub owners are working with the women.

A clear challenge for GUTS is that hub owners cannot only be concerned with profit, they also need to know and support the LIKIE vision. The nature of the hub (and the personality of the hub owner) is therefore very important; this makes hub selection another critical element for GUTS in the process of ensuring that the LIKIE model functions as intended. Therefore, GUTS developed an assessment tool and selection procedure to find and select the right hubs. It ended up working not only with private retailers, but also with other parties. GUTS started working, for example, with a consumer cooperative in Bishoftu in April 2015. It also works with a pharmacy in Dessie that provides dedicated storage for GUTS' products. *"The one [hub] in Dessie is exceptional. They are not only a business partner, they really share the vision [and] [...] do really well the supervision of the LIKIE ladies"* LIKIE project facilitator; interview 10.

4.3 Arranging access to consumers

4.3.1 First response of consumers

It is quite unusual in Ethiopia for people to sell door-to-door. Most consumers are used to buying from small shops, and it took quite some time before consumers in Hawassa (where LIKIE was launched) started buying products from the LIKIES. There were two primary reasons for this. First, GUTS' products were new to consumers. So, when meeting LIKIES, consumers had lots of questions like: *“What is this product? Is it real? Why did you bring it to me?”* LIKIE coordinator; interview 6. They would request a free (try out) product or a look inside the package (to check its contents). The LIKIES could of course not allow this as they had invested in these goods and could not risk lower returns. Secondly, consumers' hesitant response can be explained by their bad prior experiences with street vendors, who often sell low-quality products (like in Hawassa: fruit or butter). *“They think that you [the LIKIES] are there because you have troubles selling your things and that you are begging there at their houses to buy it”* CEO GUTS; interview 9. This credibility issue is strengthened by the following Ethiopian consumers' mentality: *“In our country there is this pride [..]. If you are a buyer you should seek a product by yourself. If you were asked, or persistently asked, to buy a product, we always say ‘you take it cheap, because you were <baked> to buy it’. [So] it is almost too easy for customers to buy from LIKIE. You may deliver it to their house, at their doorstep, but for some that's too cheap, [..] they take it for granted”* CEO GUTS; interview 9.

4.3.2 Trade-off decisions impacting consumers' access to GUTS products

As mentioned in the introduction, GUTS' mission statement is: ‘Nutrition for all’. In its endeavours to reach lower-income Ethiopian consumers, GUTS learned of, and now consciously works with, the 4As (the product characteristics introduced in Part I: product availability, affordability, appropriateness, and acceptability). To be able to serve lower-income Ethiopian consumers, GUTS needs not only to safeguard its products' geographic availability and financial affordability, but also to invest considerable effort in ensuring that its products are appropriate and accepted. Thus, access to products is broadly defined and relates to multiple aspects. This presents challenges for GUTS, as it needs to make trade-off decisions when designing the LIKIE channel and its product offerings.

One example has already been discussed, in relation to salt. GUTS decided to invest in a salt factory with a full refining system. As a result, it delivers purified salt products of high quality for which GUTS needs to charge higher prices than its competitors. This is a good example of an appropriateness–affordability trade-off decision.

Another more recent example involves an acceptability–affordability trade-off. GUTS’ product Supermom is not selling well, and therefore GUTS is currently experimenting with new carton packaging (see Figure 9). The new factory-gate price of Supermom will therefore rise from 10 to around 18 Ethiopian Birr. Whereas 30% of this price increase relates to the fact that the new package will contain 50 gram more content, the other 5.5 Birr price increase is due to the additional cost of carton packaging. GUTS CEO explains the need for this experiment: *“They say: ‘Ok, the BoP don’t have money, so you have to modify or adjust the product, in terms of package or packaging size,’ but it’s not working [...]. They are the same as the middle income or the top, they have the same aspiration [...]. We offer them this [pointing to old package]; we didn’t want to make it fancy, expensive, this and that [...]. We didn’t expect that the buyer would ask for more and demand for such a package [pointing to new package] [...]. They always ask us: ‘why didn’t you bring it in carton? We could have better sales’. That drove us to prepare this new packaging”* CEO GUTS; interview 9.



Figure 9 – On the left: the new carton package (250 gram). On the right: the old plastic package (200 gram)

Concerning Supermom’s affordability in light of this intervention, GUTS’ CEO continues: *“At least, even now with the new packaging, we are still offering a better price than the others. There is a similar product in the market, although it is not fortified [...], they sell it something like 25–28 Birr. If we would go 20 birr we are still good, [but] we don’t do that”* CEO GUTS; interview 9. As most Ethiopian consumers are used to buying porridge products that are packaged in cartons, GUTS hopes to increase the acceptability and sales of Supermom with this intervention.

Currently, GUTS faces two availability–affordability trade-off design challenges. The first challenge relates to the trend of LIKIES preferring to sell to kiosks rather than going door-to-door to end-consumers. They do so because they simply find this easier and they can sell higher

volumes this way. This, however, affects GUTS' idea and affordability objective, and GUTS is trying to follow up on this. The second availability–affordability challenge concerns LIKIES' transportation costs in rural areas. LIKIE ladies use taxis to go to sell their products at local markets in rural areas; this of course entails significant additional costs. Even from the LIKIES in cities, GUTS is receiving feedback that transportation costs are an issue. GUTS currently provides ad hoc solutions to this problem, as it brings LIKIES to these markets by car in the morning and picks them up in the afternoon after they have finished their sales, because *“without transport, how can they sell?”* LIKIE coordinator; interview 4. GUTS is, however, aware that this is not a sustainable solution. *“You cannot take and bring the ladies like that in the future. If we see the potential, then we are considering a traditional shop [in these areas] to be a hub. Then we don't have to send LIKIES to these areas, [but] we can recruit other LIKIES from these rural areas. Another option is that LIKIES run a hub themselves”* CEO GUTS; interview 9. In Bishoftu, LIKIE ladies themselves are already asking GUTS for this opportunity.

5. Embedding LIKIE

5.1 Market activation: nutrition education and awareness raising

From customers' first reactions and feedback, GUTS learned the importance of nutrition education and awareness raising. Consumers need reasons to believe that LIKIE and GUTS are trustworthy parties that sell quality products and that consumption of nutritious foods is something important. Consequently, GUTS conducted different awareness raising activities.

GUTS has visiting programmes where representatives go to schools, scouting groups, and similar environments that bring (young) people together, to teach about nutrition and promote GUTS' business and products. *“Schools are a pressure group that can help influence the buying behaviour of families when it comes down to nutrition”* LIKIE coordinator; interview 8. GUTS also organised two market activation campaigns, consisting of a mid-week event full of promotion activities that helped create a buzz around LIKIE and GUTS' products. These campaigns included, amongst other things: local radio advertisements; visits to schools and health centres; ceremonies where new LIKIE ladies were certified and best performing LIKIES were honoured; and contributions by Ethiopian celebrities who participated in these activities throughout the week. GUTS worked closely with the city mayor and with the education offices at sub-city level to organise these campaigns. The campaigns helped the LIKIES in terms of visibility and increased credibility and had a significant impact on the LIKIES' sales numbers. GUTS thereby learned that it is important to engage in such market activation right at the start when introducing LIKIE to a new city.

5.2 The role of partnerships

5.2.1 Involvement of the local government

As discussed, government representatives are involved in LIKIE recruitment and group meetings, and they also work side-by-side with GUTS in relation to nutrition education and awareness raising. Government officials are therefore quite extensively involved in GUTS' operations. *“In Ethiopia you speak to these people, [...] you have to involve the city mayor. [So]*

*the first start in Hawassa was to go to the mayor office and talk to the mayor” CEO GUTS; interview*⁹. The description below reveals that it was a learning process for GUTS to work with the government; it also shows that the process has its advantages and disadvantages.

One of the first issues in the implementation of LIKIE in Hawassa concerned the question of how to register the LIKIES and comply with existing regulations and legislation. To be registered as an individual trader, LIKIES would need to own a shop with a permanent location, keep track of invoices, pay taxes, and comply with some other prerequisites. So, when GUTS received the approval of Hawassa’s city mayor, it approached government officials at one particular sub-city of Hawassa (Misrak sub-city) about how to deal with these regulations. In interaction with the SME department (of Misrak sub-city), a construction was agreed whereby LIKIES were ‘recognised’ and allowed to do their sales work, and the LIKIE group as whole was registered officially as an SME. Although this enabled the LIKIES to go out and start their business (without having to pay taxes), the approach led to some problems. When LIKIES started moving out of Misrak sub-city, they were being stopped by local administrators as they did not have the ‘recognition’ or mandate to sell in those areas. From this challenge, GUTS learned that, instead of contacting sub-city officials, it might be better to start working more top-down.

Another reason for this procedural shift is GUTS’ experience that processes with the government take a very long time and that GUTS’ initiatives are not always given priority. Particularly at the beginning, it took the local authorities a long time to shortlist LIKIE candidates. They brought in women who did not really match the selection criteria stipulated by GUTS, and they were too busy to give feedback on the selection process. *“When we go to the local level and the officials are positive but too engaged in other activities, our efforts may still fail”* LIKIE coordinator; interview⁸. GUTS therefore plans to approach and discuss LIKIE matters with government officials at federal level.

5.2.2 Involvement of community-based groups

As local government representatives do not always give priority to GUTS’ (awareness raising) initiatives, GUTS partners with other influential pressure groups. Besides schools, health centres, and celebrities, GUTS works with community-based groups. An example is EDIR: a traditional association that assists its members with funeral ceremonies. It is locally very strong and acknowledged and accepted by many Ethiopians. *“In some places, [...] they are the ones to talk to in order to gain acceptance”* LIKIE coordinator; interview⁸. Each EDIR group has around 800 members for whom it organises monthly meetings. It is a great promotion channel that GUTS utilises to promote LIKIE.

5.2.3 Involvement of LIKIES

As discussed, every LIKIE group has a board with a chairman, a secretary, and a treasurer appointed by the LIKIES themselves. During group meetings, the first two are given the responsibility to lead the meeting and control the agenda, whereas the latter manages finances at group level. This is needed for example when LIKIES are invited to a trade fair and GUTS covers their expenses for participation in such an event. This way, GUTS stimulates the groups

to organise themselves and become independent, because, in the long run, GUTS envisions turning and upgrading some of the LIKIE groups into new hubs.

Figure 10 provides an overview of GUTS' partnering processes.

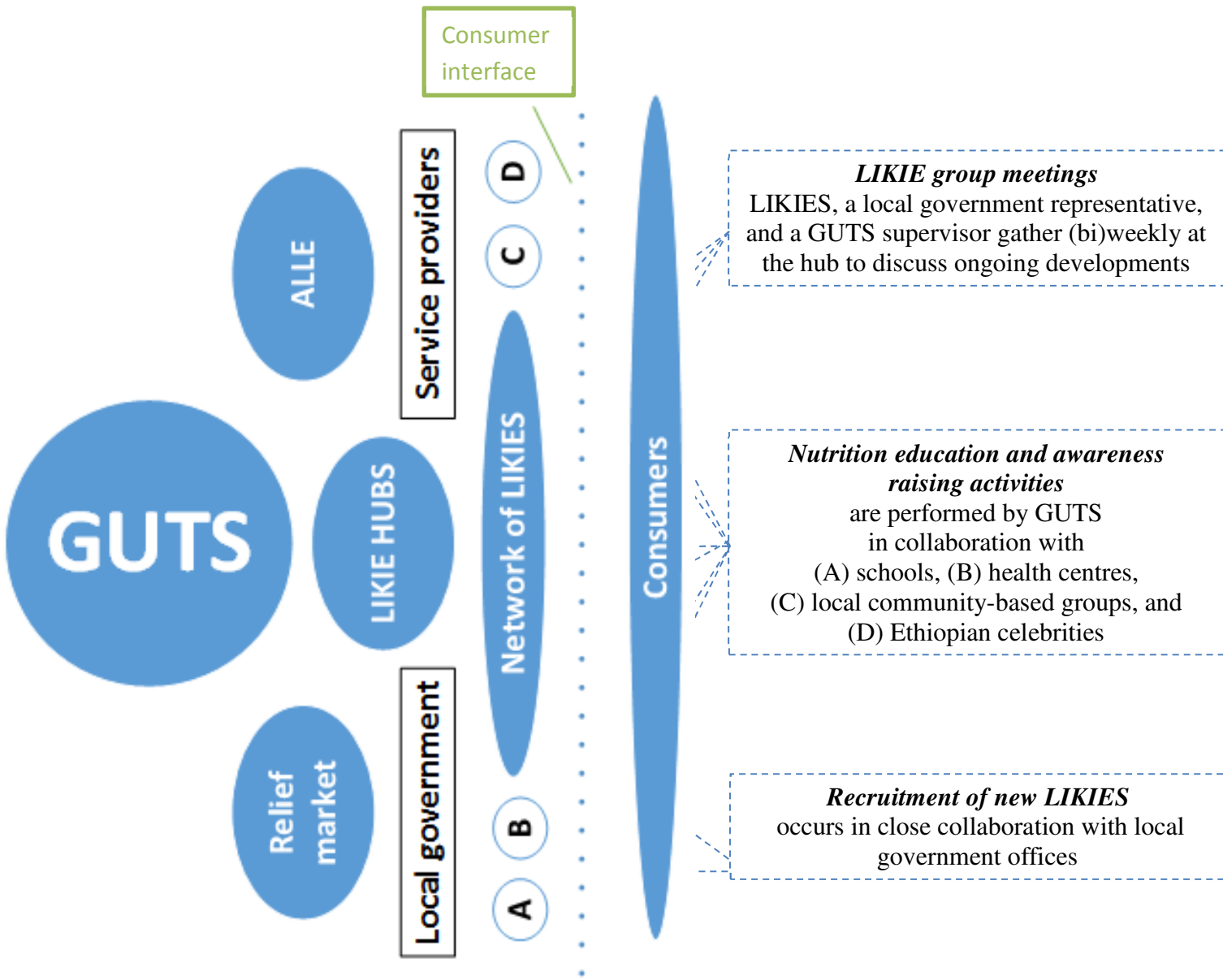


Figure 10 – Involved partnering processes in GUTS’ consumer interface (pictures: IFDC / 2SCALE team, Ethiopia)

PART IV – THE CASE OF CTAE

6. Introducing CTAE

6.1 What is the business? Product portfolio and affordability

The Coopérative de Transformation d’Approvisionnement et d’Écoulement de Soja (CTAE) is a semi-industrial soya processor located in Allada, a rural town in the south central Atlantique department of Benin. Currently, CTAE sells four products: soya oil, soya powder, animal feed cake (the sticky soya cake that remains after oil extraction), and soya goussi (soya cake roasted into soya sticks that are sold for human consumption). The latter product is an ingredient used in a variant of the popular West African goussi dish. The goussi meal traditionally comes with rice or acasa (a maize porridge, see Figure 11 on the left) and is eaten with a sauce (of tomatoes, onions, and greens), mashed squash seeds, and, for those who can afford it, fish or meat. CTAE found out that the traditional mashed squash seeds could very well be replaced by the roasted soya product (see Figure 12). So instead of traditional squash goussi, CTAE introduced soya goussi, which tastes almost identical but is more nutritious (42% protein content), far less labour-intensive to produce, and more profitable.



Figure 11 – Regular soya goussi



Figure 12 – The branded soya goussi

Right from the start, soya goussi became (and still is) CTAE’s bestselling product, and CTAE is still the only Beninese company producing soya goussi. Especially for poorer Beninese families, the product is an affordable source of protein and a replacement for fish or meat. Section 7 presents more detail and background on the emergence of CTAE’s products and how they were introduced to the market.

6.2 Who is involved?

As a processing cooperative, CTAE has a central position in the interface of different actors involved in the soybeans value chain in the Atlantique department. CTAE links to producers, wholesalers, and retailers and significantly impacts consumers’ access to nutritious and affordable food products. The most important actors involved in CTAE’s sourcing and marketing activities are introduced below (for an overview, see Figure 13).

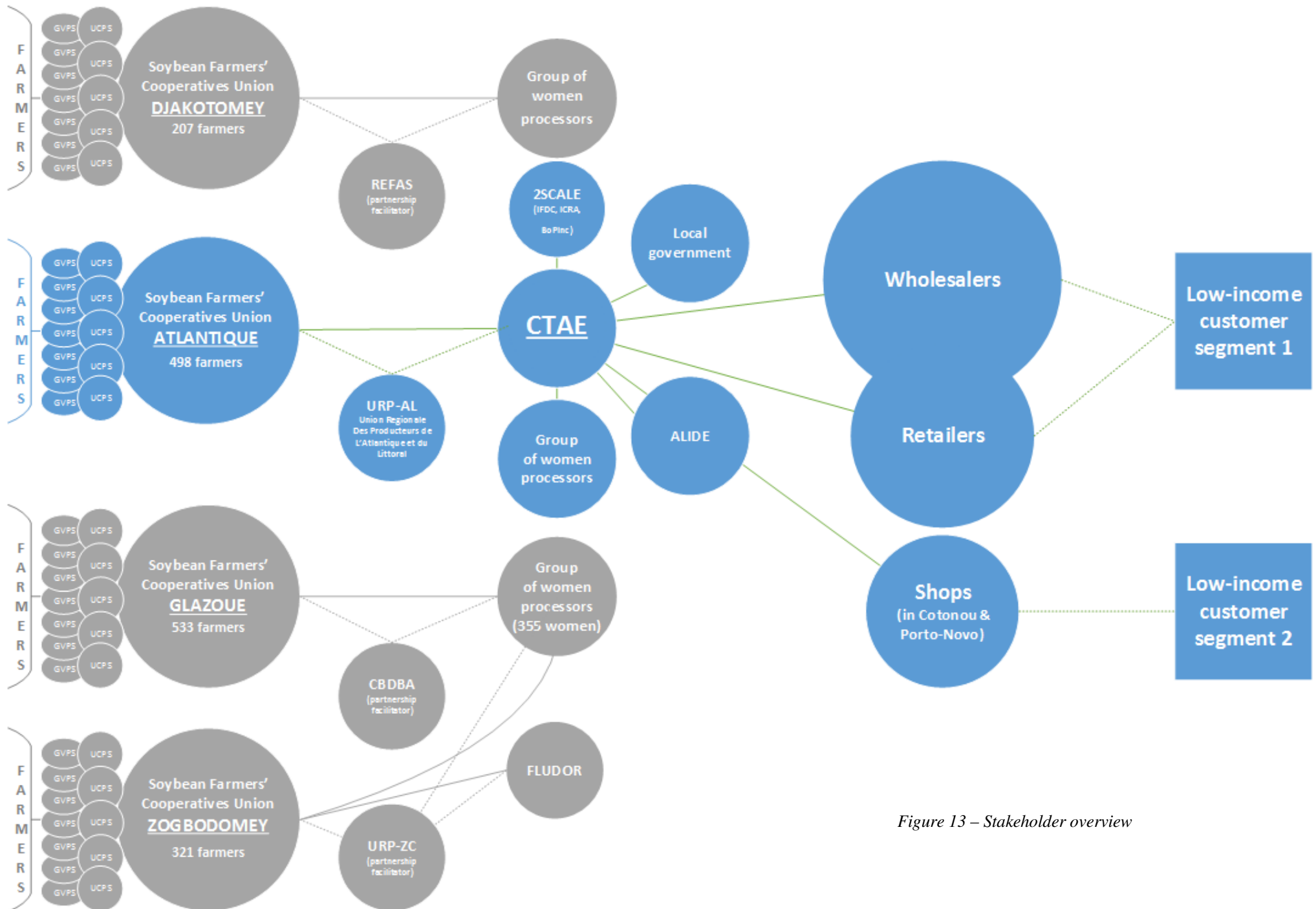


Figure 13 – Stakeholder overview

6.2.1 Enterprise level

Owners	CTAE is a cooperative organisation in which ownership is shared by 25 members.
Employees	Of the 25 cooperative members, 19 are employed (11 women, 8 men). These 19 workers take care of all processing activities involved: (i) cleaning and sorting (picking out pebbles and defective soybeans), (ii) winnowing, (iii) oil pressing (extracted oil is cooled and poured into bottles), and (iv) roasting (to lower the moisture level of the cake and enable a longer shelf-life for the product). A head of production takes care of the pressing machines that extract the oil and produce the cake, but all the other processing activities are carried out by women who, in two groups weekly, do either a roasting shift or a cleaning, sorting, and winnowing shift. Lastly, there are staff workers responsible for the procurement of soybeans, secretarial work (e.g. all the produced soya goussi is weighed and registered for sale), and other managerial tasks. The 19 workers do not have a contract but receive a remuneration of either 1,350 CFA per workday or 1,215 CFA per workday, depending on their responsibilities. These amounts are below the minimum remuneration of 40,000 CFA month, as set by Beninese public policy.
ALIDE	A local micro-finance institute that provides CTAE with loans to buy large volumes of soybeans.
2SCALE	A partnership between IFDC (International Fertilizer Development Centre), ICRA (International Centre for development oriented Research in Agriculture), and BoP Innovation Centre, which supports CTAE with its challenges in the interfaces with producers and consumers discussed in sections 6.2.2 and 6.2.3.

6.2.2 The interface with producers

Producers	CTAE works with around 25 farmers' cooperative unions (that altogether connect with 273 small-scale farmers) and 25 large-scale farms (with around 2 hectares of land, producing around 8,000kg of soya per year). These farmers come from five different communities: Tori-Bosito, Abomey-Calavi, Zè, Toffo, and Allada within the Atlantique department (see Figure 14). CTAE provides these farmers with a stable market for their produce.
URP-AL	The Union Régionale des Producteurs de L'Atlantique et du Littoral is a regional body of the national farmers' union FUPRO-BENIN (Fédération des Unions des Producteurs du Bénin). This regional body oversees different farmers' unions at community level (called UCPS: Unions Communales des Producteurs). URP-AL supports their mutual organisation and coaches these producers on their farming and business practices.

6.2.3 The interface with consumers

- Wholesalers** A group of about 100 wholesalers regularly come to CTAE's processing plant in Allada to buy 50kg bags of soya goussi. The wholesalers repack it into small plastic bags of 50 gram (for 20 CFA) and 100 gram (for 40 CFA) (see Figure 11) and generally sell around 500kg soya goussi per week at larger markets in southern Benin, thereby making a profit of about 50 CFA per kg.
- Retailers** Retailers resell soya goussi in their communities for around 25 CFA (50 gram) and 50 CFA (100 gram) per bag. Whereas most retailers source their soya goussi from the wholesalers, there are currently around 40 retailers who buy their stock straight from CTAE's processing plant. Both wholesalers and retailers are primarily women who live in different villages around Allada.
- Consumers** The wholesalers and retailers together reach around 13,000 families living in the areas between Allada and (i) Abomey-Calavi, (ii) Tori-Bossito, (iii) Toffo, and (iv) Zè (see Figure 14). CTAE targets two different customer segments with its goussi product. In addition to consumers who belong to the absolute base of the economic pyramid (low-income customer segment 1), CTAE serves the slightly wealthier consumer (low-income customer segment 2). The first group is primarily reached via wholesalers and retailers. The second (wealthier) customer segment is reached via several small shops located mainly in Cotonou and Porto Novo. They are provided with 0.5kg bags in better quality packaging that comes with a promotional flyer (see Figure 12). Previously, CTAE only distributed oil to these shops (1,000 CFA for 1.5ltr), but currently they also sell this slightly more branded version of soya goussi for 300 CFA per bag.

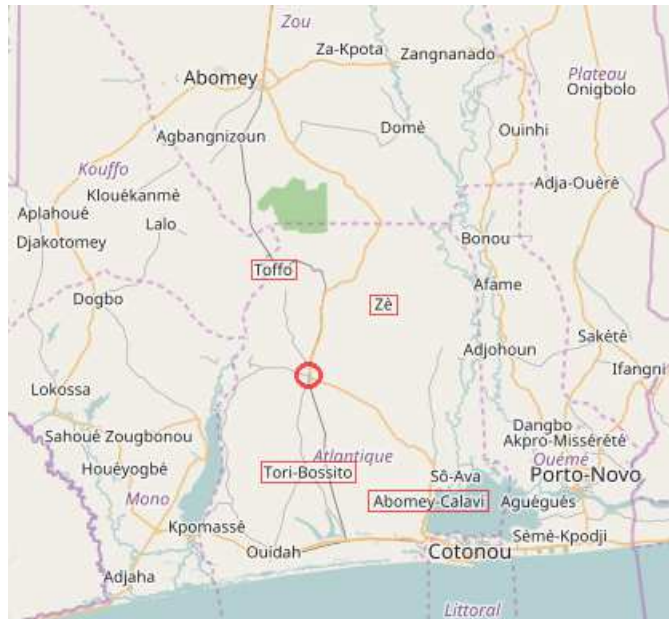


Figure 14 – Wholesalers sell soya goussi to 13,000 families in the Allada area (the red circle) and Abomey-Calavi, Tori-Bossito, Toffo, and Zè. The product is also sold at higher segment markets in Cotonou and Porto Novo (source: openstreemap.org).

Section 7 presents a brief overview of the major developments in CTAE’s business over time. The following sections then elaborate more in depth on three general processes with which CTAE is occupied, namely: organising and controlling access to raw materials (section 8), organising and controlling access to markets (section 9), and the process of embedding soya goussi commercialisation in local Beninese markets (section 10).

7. The story behind CTAE

7.1 Start-up stage (period up to 1996)

The story behind CTAE began, prior to its official foundation, with a German man called Dietz. Dietz worked for a German organisation that provided cooperative development services. When the socialist regime came to power, his organisation stopped its activities in Benin. Years later, when the socialist regime came to an end (early 1990s), Dietz returned to Benin to visit his friends and former colleagues, and he instructed some of them to set up a maize cooperative. In those days, maize prices in Allada (rural town) were lower than in Cotonou (urban area). This made it profitable for the new cooperative to buy maize in big quantities in Allada and sell it in and around Cotonou to poultry farmers. As over time maize prices for both regions levelled up, this business collapsed. It was during this time (1995) that the maize cooperative members, in cooperation with some of their former poultry-farming clients, founded the soybean processing cooperative CTAE. Together they envisioned the production of animal feed cake, which at that time was imported and therefore very expensive. CTAE’s members would produce it for their individual poultry farms and would sell the produced surplus to other poultry or cattle farmers. With this plan in mind, Dietz and Raphaël Kocoun (CTAE’s current manager) went to the Netherlands to buy their first processing equipment (currently still in use). CTAE soon also

established its first relationships with soybean farmers in the north of Benin, as the soybean crop at that time was not produced by enough southern farmers.

As neither Dietz nor the other CTAE members knew exactly how to use the processing equipment, they started experimenting. They discovered that during the first 30 minutes the pressing machines produced soybean powder and oil. After half an hour, when the machines became hot, the residue started to stick together and came out as a soya cake. They started to sell the powder and soya cake to poultry or cattle farmers in and around Allada. However, people from the neighbourhood also came to CTAE's plant to buy soya powder for personal human consumption. They used the soy powder to thicken the sauces that they prepare and eat for dinner. Because of this development, CTAE introduced soy powder sachets (for 25 CFA), and some women started to sell these at local markets and door-to-door. As there obviously was a human demand for soya products, Dietz undertook some research and discovered how the soya cake could be roasted to make it (more) appropriate for human consumption. Consequently, CTAE started its roasting activities and experimented with how the roasted soya product could be used in various kinds of meals. They found that it fitted very well in the traditional goussi dish as a replacement of mashed squash seeds (Figure 15). This replacement was especially appreciated by lower-income consumers, as the roasted soya cake is cheaper (600 CFA for 1kg compared to 1,300–1,500 CFA for 1kg squash seeds) and highly nutritious (42% protein content). From that moment (still 1995), CTAE started selling the roasted soya cake as soya goussi.



Figure 15 – Mashed squash seeds (sold for 1,300–1,500 CFA per kg)

7.2 First growth (period 1996–2011)

CTAE introduced its soya goussi product at one of the larger weekly markets between Allada and Toffo. In 1999, CTAE started working with its first wholesaler. A woman called Pelagie took over the sales at this market. Pelagie started selling the goussi product by walking it (carrying the soya goussi on her head) around the market. Thus, she was able to promote the product and tell people about its high protein level. Over the years, Pelagie started selling acasa, tomatoes, vegetables, spices, and other sauce ingredients from behind a stall (Figure 16) when many retailers (Figure 17) started buying from her. During the first year of her wholesale business, Pelagie bought 1.5 (50kg) bags of soya goussi per month from CTAE for 175 CFA

per kg; a significantly lower price compared to the current situation in which she buys 10 bags per month for between 400 and 550 CFA per kg. As the demand for soya goussi grew over the years, more and more wholesalers found their way to CTAE's processing plant.

The sales numbers for the soya powder, animal feed cake, and soya goussi products all grew initially. Soon, however, CTAE faced quite strong competition in the animal feed cake market. For soya goussi, CTAE was (and still is) the only processor and therefore this product line developed fastest. Increased production levels created an issue regarding the procurement of sufficient raw materials. CTAE's staff therefore visited their soybean-producing villages up north to convince and mobilise the farmers to produce larger quantities of soybeans.



Figure 16 – Soya goussi wholesaler



Figure 17 – Soya goussi retailer

In most of its relationships with farmers from middle and northern Benin, CTAE was obliged to collaborate with, and buy from, women trade agents. CTAE was, however, also in direct contact with some farmers. Management of these direct relationships proved to be a costly and time-consuming process. In neither way could CTAE gain control over the quality of soybeans supplied. In 2006, CTAE became a member of Union Régionale des Producteurs de L'Atlantique et du Littoral (URP-AL), a regional body of the Fédération des Unions des Producteurs du Bénin (FUPRO-BENIN). It informed the URP-AL coordinator of its sourcing issues, but URP-AL could not address them at the time because of limited available time and resources. Later on, URP-AL introduced CTAE to the 2SCALE programme, which provided opportunities to work on CTAE's collaboration with soybean farmers.

7.3 A period of professionalisation and specialisation (period after 2012)

In 2012, soybean was being introduced in southern Benin as a substitute crop for cotton (or other traditional crops). Supported by 2SCALE, URP-AL mobilised more farmers in the Atlantique department to start growing soybeans. It supported these farmers by supplying them the needed seeds and fertilisers, offering them advice and training on good agricultural practices, and orchestrating their mutual organisation. Concerning the latter, URP-AL started to work from within FUPRO's existing multi-layered structure in which URP-AL oversees

different farmer unions at community level (UCPs). URP-AL commissioned its UCPs to set up village groups of soya producers (Groupe de Village des Producteurs de Soya, or GVPS) to organise soybean production per village. Although there were two large and active soybean processing business located in and near Atlantique (Fludor and SHB), new soybean farmers were progressively linked to CTAE and to different local women’s groups who produce soy-based products for street vendors and local restaurants (e.g. soya cheese or brochettes). URP-AL played a leading and facilitating role in this linking process.

With support from URP-AL, CTAE started to professionalise its business activities. CTAE for example: commissioned the LCSS (a public laboratory in Cotonou) to test the nutritional value of its soya goussi product, trained its women employees on good roasting practices, set up an employee health monitoring plan, developed a new goussi brand, and improved and intensified soya goussi promotion. Recently, CTAE also found a new investment partner in the form of the US African Development Foundation (US-ADF). With these new available resources, CTAE renovated some of its buildings (Figure 18) and built a new roasting facility (Figure 19). In the near future, CTAE will use the new ADF programme to: increase the capacity of its staff



Figure 18 – The prior roasting facility



Figure 19 – The new roasting facility

(concerning hygiene control, food safety, accounting, and business skills), install new equipment, and implement other interventions to help CTAE to comply with the public standards of, and acquire certifications from, the national control body DANA (Direction de l’Alimentation et de la Nutrition Appliquée). The latter will allow CTAE to undertake high level marketing (on national TV/radio). With the renovated buildings and new equipment, CTAE will soon separate and intensify the production of its animal feed cake and soya goussi product lines.

Figures 20 and 21 provide an overview of CTAE’s milestones and development trajectory.

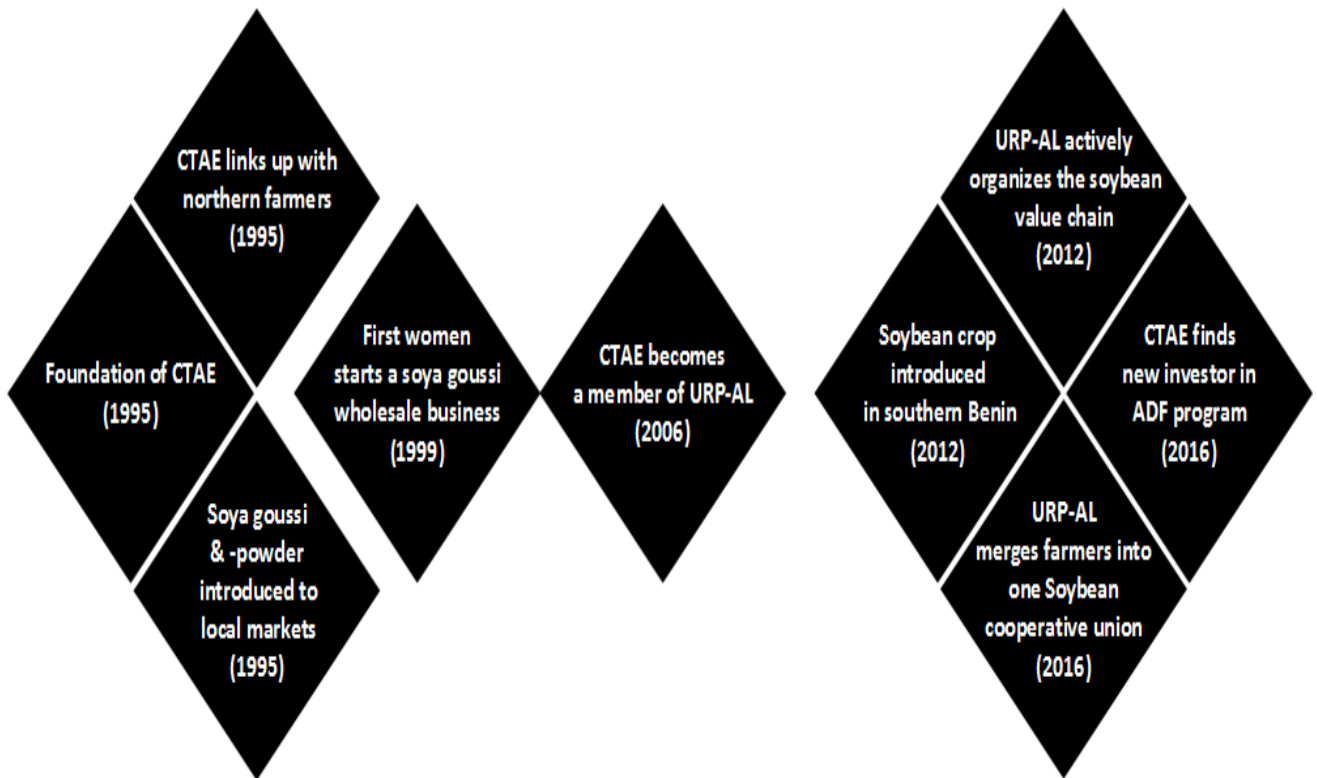


Figure 20 – Milestones in CTAE's timeline

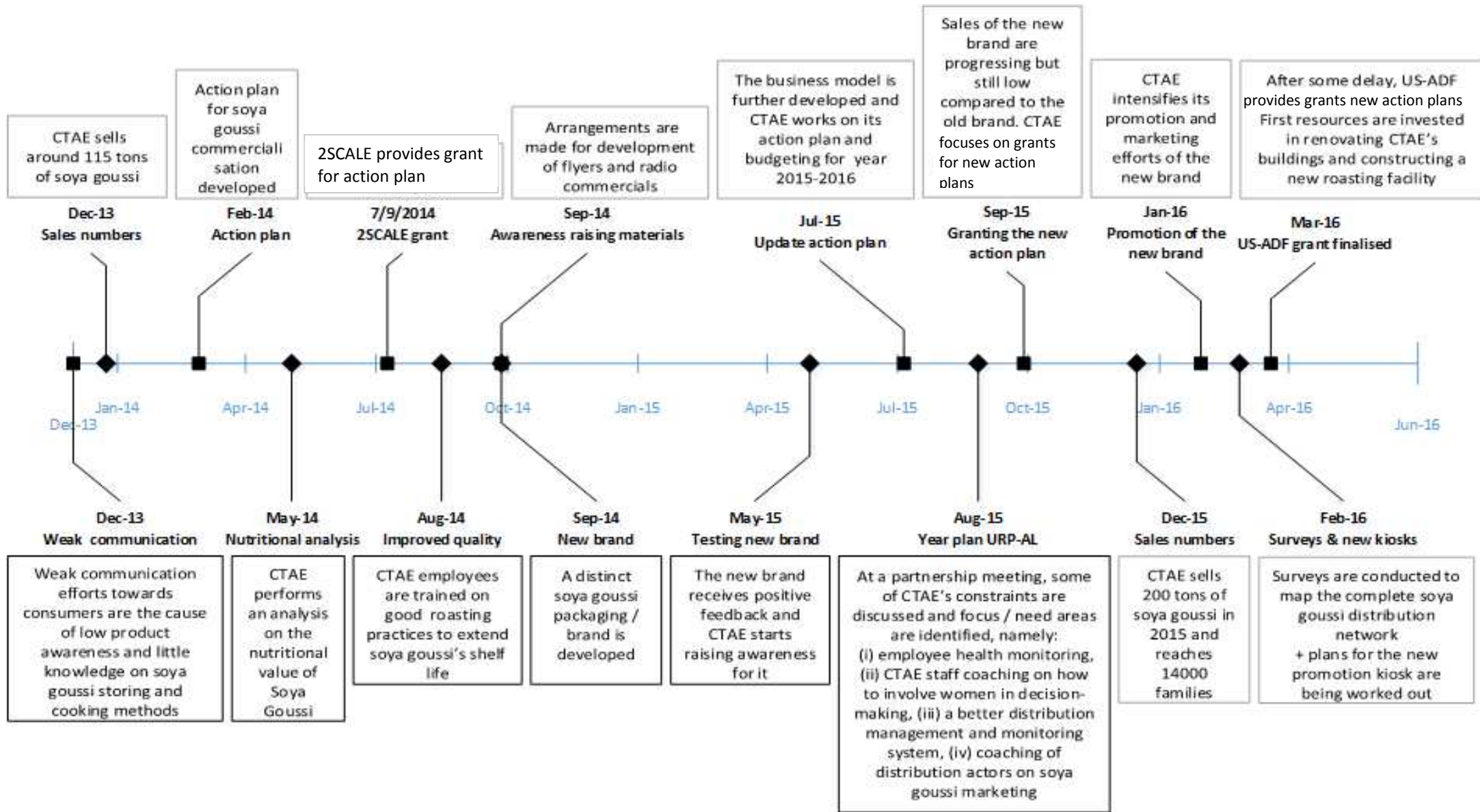


Figure 21 – A rough overview of CTAE’s recent history

8. Organising and controlling access to raw materials

8.1 Linking to producers

As discussed, the 2SCALE partnership played a significant role in linking southern soybean farmers to CTAE. 2SCALE's general aim for Benin is to develop markets for affordable soy-based food products so as to create nutritious substitutes for fish or meat. To do so, it has three primary focus points: to create linkages between soybean farmers and processors, to increase the competitiveness of soy-based products by improving the quantity and quality of the raw material, and to support enabling business environments for the involved actors. In this context, 2SCALE partners IFDC and ICRA started to hire business support service providers in 2011 that could set up, coach, and facilitate collaborations between soybean actors in Atlantique. As can be seen in Figure 13, in Atlantique (URP-AL) and Zogbodomey (URP-ZO) this coaching and facilitating role was outsourced to the FUPRO-based regional producer unions (URPs). For the two other southern regions, IFDC decided to work with NGOs (Refas for the Glazoue region and CBDBA for the Djaktomey region). These regional facilitators have the freedom and independence to act as they see fit. 2SCALE, however, regularly organises workshops with all coaches from the four regions. They evaluate challenges and successes, provide supervision for one another, and annually develop action plans with common tasks for all regions to improve the supply of quality soybeans.

As part of one annual action plan, IFDC facilitated the development of a business plan for the soy sector in Atlantique. It hired an independent consultant to develop this business plan in interaction with all involved parties (including CTAE, the women processors, and the farmers). ALIDE, the partnering local micro-finance institute, gave positive feedback on this plan and started to provide loans to CTAE and the women processors to enable them to buy soybeans in bulk. First credits were provided in 2014. When the loan repayments were completed later that year, CTAE and the women processors requested a new loan for 2015.

IFDC and URP-AL are currently facilitating a process whereby all the soybean-producing village groups from the five UCPs are merging into one second-level Atlantique soybean farmers' cooperative union. The aim is to better organise the farmers and create a more efficient interface with CTAE. Another challenge currently occupying IFDC and URP-AL concerns the distribution of inoculum (to boost soya production). URP-AL is currently undertaking the distribution and sales of inoculum and improved soybean seeds, but in a workshop with input suppliers it will propose that the suppliers take over these sales activities.

8.2 Setting prices and contracts

Although URP-AL is coordinating the above-described merging process, CTAE currently still sources its raw material directly from the various soybean village groups (GVPS). Each year, before harvest time, CTAE interacts directly with these groups to negotiate prices and set up contracts. At the beginning of a soybean campaign, technical agents from URP-AL calculate how much soybean each GVPS should be able to produce and sets production targets for each village. Halfway through the season, CTAE and a representative of the village group meet (often at CTAE's factory) to negotiate prices and agree on other relevant aspects such as

transport. An URP-AL representative joins and facilitates these negotiations. At the end of each season, that year's soybean campaign is evaluated at a workshop where CTAE, the local advisors, and farmers come together. When a GVPS delivers less produce or lower quality than expected, this is discussed and explanations are sought. Thus, CTAE holds the GVPSs accountable to their mutual agreements. Although CTAE makes contracts with the village groups, it can happen that farmers sell their produce elsewhere. These situations differ per individual case but often involve farmers who are in need of quick cash and therefore sell some of their soybeans to the women processors who produce soya cheese. CTAE does not object to this as it never finds that farmers sell it nothing at all.

In fact, farmers are keen to sell to CTAE, as this enables them to deliver all their produce in one go. They therefore tend to forget the women processors. URP-AL discovered this challenge and discussed it with all involved stakeholders. At a meeting in June 2016, women processors asked farmers to store their soybeans at a central storage and sourcing point so that they did not have to visit individual farmers themselves. The farmers responded negatively as they do not have such a place and neither do they have the money to rent and secure a new storage facility. With some advice from URP-AL, it was finally decided to have CTAE's processing plant as the central storage point. All soybeans in the area are now delivered to CTAE's plant, on the precondition that CTAE meets the demand of women processors who are free to come (on certain agreed days per week) to procure their soybeans.

8.3 Managing quality and risks

Prior to the first soybean campaign in 2013, URP-AL organised a meeting with a board of producers (a committee of soybean farmers representing all UCPs) and CTAE staff to discuss the topic of quality standards. Based on the discussions, several quality requirements were agreed (these were voted for) and captured in a 'book of requirements'. The most important requirements prescribe that the soybeans (i) may have an impurity level (presence of stones or wheats) of max 5%, (ii) must have a humidity percentage below 14%, and (iii) must be homogeneous in terms of colour and size. Besides these quality agreements, other obligations for the farmers and CTAE are captured in this document. When the farmers deliver their produce, CTAE sample-wise checks the soybean bags. When a delivery complies with the agreed standards, farmers are rewarded with 10 cents extra per kg soybeans on the soybean market price (for more details on pricing, see section 8.2).

URP-AL plays an important role in relation to settling issues and conflicts between farmers and CTAE. Especially during the first soybean campaigns, tensions emerged. One example is a group of farmers who delivered their produce and were told by CTAE that they had produced a significantly lower volume than the previous year. The farmers were convinced that they could not have produced less and refused to sell, as they did not trust CTAE's weighing scales. An URP-AL coach suggested that the farmers bring their own weighing scales and, having jointly reweighed the produce, the farmers came to the same conclusion. It appeared that they had dried their soybeans a bit longer than they had the previous year. With this clarification, trust was restored, and the farmers completed the transaction. URP-AL advised the farmers to sell their soybeans earlier next time and referred them to the book of requirements where the

exact accepted margins of soybean moisture are stated. Partly because of this tension, CTAE later invited an independent public weighing service (offered by the Ministry of Trade) to validate and certify the accuracy of its weighing scales.

CTAE regularly needs more soybeans than the UCPSs in Atlantique can deliver, and therefore it also sources soybeans from UCPSs elsewhere (e.g. Zogbodomey, Glazoue, or Djaktomey). In such cases, CTAE more often faces quality issues because of a lack of control over these farmers’ unions. CTAE once received a delivery from such an external group with a very high impurity level. After this experience, it decided to check better the deliveries of suppliers outside Atlantique. Also, in 2015, CTAE accepted and paid for a delivery from a new group of farmers who did not comply with the quality requirements (their soybeans contained too much moisture). Although CTAE had just started working with this new group, it decided not to continue this business relationship.

9. Organising and controlling access to markets

9.1 Overview of distribution channels

CTAE sells its soya goussi via three routes. It sells to wholesalers and retailers directly from its factory in Allada, and it delivers soya goussi to shops and kiosks in Cotonou and Porto-Novo (see Figure 22).

During the first decade of CTAE’s business, the number of soya goussi wholesalers increased rapidly. This trend was disturbed when retailers from areas surrounding Toffo and Zè started to bypass the wholesalers and skip their margins by coming to CTAE’s plant in Allada directly.

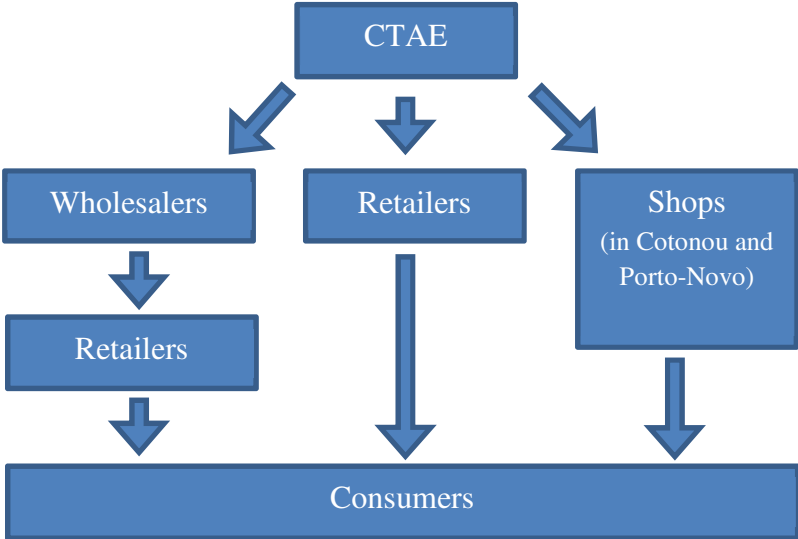


Figure 22 – Overview of CTAE’s distribution channels

As CTAE charges the same price per kg soya goussi for wholesalers, retailers, and consumers, it became less attractive for wholesalers to pursue their business as more and more retailers started buying their soya goussi straight from CTAE’s factory gate. As a result, the number of active wholesalers dropped to around 100 people (70% of CTAE’s customers), whereas the

number of retailing customers increased to around 40 (30% of CTAE's customer base). The rationale behind CTAE's 'same pricing policy' is its desire to keep its soya goussi product affordable.

Besides its connection with wholesalers and retailers, CTAE has business relationships with shops in Cotonou and Porto-Novo. These shops sell mainly the 0.5kg branded bags of soya goussi and soya oil.

9.2 Arranging the interface with wholesalers and retailers

From 1998 to 2013, CTAE set the price of soya goussi by adding 150 CFA/KG to the market price of 1kg soybeans. In 2014, URP-AL showed CTAE how to calculate its exact cost of production, which turned out to be 180 CFA per 1kg soya goussi. Since then, CTAE has charged (180+150) 330 CFA/KG on top of the soybean market price.

Soybean market prices fluctuate during the season. At the start of a new soy campaign, prices can rise to around 350 CFA per kg, whereas prices often drop during or just after the harvest to around 200 CFA per kg soybeans. With CTAE's above pricing method, soya goussi prices for wholesalers and retailers synchronically fluctuate with the fluctuations in soybean prices. Wholesalers therefore tend to keep a close eye on the soybean market price. If it drops, they will be the first to communicate this to CTAE staff and convince them to lower CTAE's soya goussi price point. According to a CTAE representative, in the past, prices have dropped from 450 to 425 CFA/KG or from 425 to 400 CFA/KG.

9.3 Arranging access to consumers

Most of CTAE's consumers access soya goussi via wholesalers or retailers. During periods of high prices, wholesalers like Pelagie package smaller bags of soya goussi while charging the normal prices. Some customers are not happy to receive less goussi for the same price and stop buying it. As a way to cope with lower profits, Pelagie sells self-made soya powder during these times. She then buys the soybeans herself, brings them to a local miller, and sells the soya powder on the market for a more lucrative margin of 250 CFA/KG. For retailers, Pelagie does lower her soya goussi prices to stimulate them to keep their business going.

Wholesalers and retailers are very important intermediaries between CTAE and its end-consumers. To expand its customer base, and to expand the network of soya goussi retailers and wholesalers, CTAE is currently installing two small promotion kiosks in Cotonou and Porto-Novo. Via these kiosks, CTAE hopes to be able to extend its market and introduce soya goussi to these urban areas.

10. Embedding soya goussi commercialisation

10.1 Market activation: nutrition education and awareness raising

As mentioned, CTAE is currently trying to extend its market to more urban areas by installing two new kiosks in Cotonou and Porto-Novo. It found some existing business partners (shop

owners) willing to man these kiosks and promote soya goussi. The strategy is firstly to sell the *acasa* (the maize porridge) that goes with the goussi meal and give the sauce and soya goussi away for free, together with the instructions on how to prepare the meal. The goussi promoters attract attention as they wear t-shirts with messages about soya goussi's nutritional value. For example, they target older people with the message: *When eating goussi, you will stop using your car*. This way they hope to win the hearts of consumers in Cotonou and Porto-Novo and make them familiar with the soya goussi meal and product. The kiosks are merely envisioned to serve as promotion channels, as CTAE hopes to attract retailers and wholesalers whom it can welcome and refer to its factory in Allada.

This type of market activation is not very different from that which wholesalers have used over the years. CTAE also trains its retailing customers on how to prepare the soya goussi meal, as this is crucial knowledge that enables them to promote and sell the product. After 18 years of experience with her soya goussi wholesale business, Pelagie concludes that the increase in sales over the years was not really related to any specific event. In her eyes, it was 'just a matter of time' during which people became aware of the product and started using it.

10.2 The role of partnerships

10.2.1 Role of URP-AL and 2SCALE

In addition to orchestrating farmers' local organisations, URP-AL and 2SCALE partners IFDC and BoP Innovation Centre support CTAE in its process of embedding and promoting the soya goussi product. Consequent to market research, they helped with the development of (i) the new 500 gram packaging (Figure 12) that is more attractive for, and tailored to, the relatively wealthier lower-income segment 2 and (ii) promotional messages on the nutritional value of soya goussi that are shared via simple leaflets and radio broadcasts. The 2SCALE partners are also instrumental in providing CTAE and the women processors access to trade fairs where they can promote their soy-based products.

10.2.2 Role of third parties

Over time, third parties have anticipated CTAE's success in marketing soya goussi. Various schools started buying soya goussi and currently use it in the meals they provide. The Beninese social promotion service became interested and now advises its target group (mostly pregnant and breastfeeding women) to use soy powder and soy goussi in their meals to ensure sufficient protein intake. The mayor and assembly of Allada (and other surrounding villages) regularly invite CTAE to special events to tell its story and promote its product. And most recently, as explained in section 9.3, a new public partner (US-ADF) has expressed its interest in supporting CTAE and is currently investing in the further professionalisation and scaling of CTAE's business.

PART V – ANALYSIS AND PRELIMINARY FINDINGS

It is not so easy to define generic and encompassing characteristics of frugal innovations. On the one hand, the nature of frugal innovations is shaped by *the exact combination of sub-optimal, constraining conditions* with which an enterprise is struggling, which are very context specific. On the other hand, it is shaped by *the type and combination of frugal mechanisms or interventions* that enterprises use and deploy to cope with or overcome these conditions. Concerning the latter, studies on frugal innovation tend to adopt a strong focus on the (technical) (re)designing of products. The presented case studies, however, particularly exemplify interventions on the level of the business model and institutional arrangements. Based on the presented empirical data, the following analysis first identifies *constraining conditions* in more detail and thereafter focuses on the *frugal mechanisms* that CTAE and GUTS use and deploy at product, business model, and institutional level. The final section presents some discussion points and suggestions for further research.

11. Specification of constraining conditions

Both food processing businesses face the challenge of having to organise and control access to (1) an uninterrupted supply line of high quality, raw materials (producer interface) and (2) consumer markets whilst ensuring product affordability (consumer interface) (see Figure 1, page 7). The following are some of the generic constraining conditions that underlie these challenges:

- the low income level and purchasing power of the firms' target customers (who are very price sensitive and vulnerable to price fluctuations)
- the firms' reliance on unskilled employees
- the firms' reliance on poor infrastructures (e.g. existing distribution channels, transportation opportunities, access to finance)
- the firms' poor linkages to other market players (other value chain actors as well as supporting financial and government institutions) (PPPLab, 2015).

This list of constraining conditions is not meant to be exhaustive. They are presented because the following reflections will exemplify how these constraining conditions to a different extent are significant to the entrepreneurial context of CTAE and GUTS. Consequently, we shall see that processes of frugal innovation materialise in different interventions or frugal mechanisms at different levels.

12. Specification of frugal mechanisms

12.1 Diversifying products and markets

Regarding *(re)designing processes at product level*, it is noteworthy that both CTAE and GUTS actively experiment with their product portfolio. Both firms tweak and tailor their product offerings for different customer segments and utilise different distribution channels to make them accessible. CTAE for example sells its simplest or most sober product (50kg bags of soya

goussi) to women wholesalers and retailers who (re)pack the goussi in plastic bags (Figure 11). Customers who are a bit more demanding and wealthier are offered a branded product with better packaging (Figure 12), which is mainly distributed via shops in Cotonou and Porto-Novo. GUTS also serves different markets with its product portfolio. Over time, it has tapped into institutional markets (relief and school-feeding contracts), the retail market (hotels, fuel stations, consumer associations, and restaurants via ALLE) as well as the low-income consumer market (via LIKIE). In an experimental way, both firms diversify their product portfolios and markets and thereby enlarge their entrepreneurial playing field. Thus, neither firm is solely dependent on one market and revenue flow; rather, both have developed a more hybrid business model with multiple sources of income.

12.2 Configuring the producer interface

The fourth listed constraining condition – poor linkages between market players – is highly significant for both firms and has stimulated them to *(re)design processes at business model level*. Both businesses experienced a great need to create and manage strong(er) linkages with networks of producers in order to secure their access to an uninterrupted supply line of high quality raw materials. CTAE and GUTS are both supported in this by an external support service provider. This (i) provides technical and agronomic support services to the farmers and (ii) facilitates decision-making processes with the cooperative unions, thereby enabling them to make tailored arrangements.

12.3 Configuring the consumer interface

The first constraining condition – the low purchasing power and price sensitivity of consumers – impels both firms to gain control over the affordability of their products. GUTS and CTAE deal with this differently, as they configure their consumer interface differently.

CTAE did not intervene majorly in its consumer interface as it was tapping into existing wholesale and retail networks. It tried to exercise control over the affordability of its products by actively welcoming and inviting wholesalers, retailers, and consumers to its factory gate where it charges all buyers the same soya goussi price. This pricing policy does not favour wholesalers. As a result, many wholesalers over time decided to quit their wholesale business as more and more retailers started buying their soya goussi directly from CTAE.

GUTS intervened quite radically in its consumer interface. It found that the conditions within Ethiopia's existing distribution channels formed a major constraint to reaching their affordability objective. It therefore invested significant resources in developing a new independent distribution channel. GUTS now proactively manages its consumer interface and the affordability of its products. Dedicated GUTS staff members coordinate and supervise the LIKIE network; they, amongst other things, select what distributors to work with (distribution hubs and LIKIES) and control the prices that hubs and LIKIES may charge the end-consumer.

Comparison of these two different configurations of the customer interface suggests that the major difference is that GUTS works with a high-investment and high-control (over pricing)

distribution method, whereas CTAE's distribution method requires fewer interventions and investments but results in a lower degree of control over product prices. Both firms, although to a different extent, have in common that they try to control the affordability of their products through a selection process for their distributors.

12.4 Role of women retailers in introducing new product offerings to local markets

Both agri-businesses started marketing new products that needed to be introduced to local markets. It is remarkable, in terms of *business model design*, how women retailers contributed significantly to the firms' endeavours to introduce these products to local markets and create demand for them. In the following two ways, the retailers are an integral part of this process.

Firstly, we see that the women retailers are the firms' eyes and ears, as they capture first-hand customer feedback regarding the introduction process. Through close collaboration with the women retailers, the firms are able to capture this feedback and anticipate it by adjusting and reconfiguring their offerings. This is especially the case with the LIKIES, who are really an integral part of GUTS' learning processes. In different ways, they have helped GUTS to adjust and reconfigure the LIKIE model and its offerings.

Secondly, the women retailers are an integral part of the consumers' learning processes. Not only do product offerings need to be shaped and reconfigured; both case studies also reveal that it is important for consumers to be educated, guided, and directed in relation to buying, cooking, and eating new nutritious foods. The cases provide different examples of how the firms aim to achieve nutritional and dietary behaviour change among their target customers. The retailers are in this process, so to say, the firms' 'mouth, hands, and feet', as they help shape consumer behaviour. More theoretically, one could say that the retailing women play an important role in the firms' process of 'configuring the user' (Nahuis et al., 2012).

12.5 Role of partnering in embedding products and services in local networks

The presented cases give insight into how food processing businesses collaborate with different private, public, and civil society organisations in their efforts to embed their nutritious and affordable food offerings in local markets and networks. Within these collaborations, it can be observed how *(re)designing processes at institution level* materialises. The GUTS case in particular is rich in terms of novice collaborations. Several parties outside GUTS' business boundaries gather around the LIKIE network and create conditions that are essential to the viability of the LIKIE model (see again Figure 10) and GUTS' new nutritious and affordable food products. GUTS cooperates with local government bodies, schools, health centres, and local community-based groups to redesign certain institutional arrangements, like:

- The way people from low-income communities are recruited for a sales job.
- The way people from low-income communities are trained and develop skills required for a sales job. LIKIE hub owners for example (pharmacies, consumer associations, private retailers) become part of, and are involved in, the training and skill development

process of lower-income entrepreneurs as they guide them, support them, and help them shape an entrepreneurial mind-set.

- The way to deal with SME laws and regulations. GUTS and local government offices devised some tailor-made arrangements on how LIKIES' business activities could comply with SME laws and regulations.
- The way to pursue nutritional and dietary behaviour change among consumers through educational and awareness raising activities.

13. Discussion points and suggestions for further research

After the above internal reflection on how CTAE and GUTS cope with constraining entrepreneurial conditions through certain frugal intervention mechanisms, this last section presents some discussion points and suggestions for further research on the implications of these mechanism for (1) the terms of inclusion of farmers, women retailers, and lower-income consumers and (2) the involvement of these actors in processes of co-creation.

13.1 Implications for the terms of inclusion of farmers, women retailers, and consumers

The inclusivity of a food processing business is often referred to, and measured by, the number of farmers, women retailers, and consumers involved. The case studies, however, give more precise insights into the terms under which these farmers, retailers, and consumers are included in CTAE's and GUTS' business operations: their 'terms of inclusion'.

In both cases, the decision-making processes between farmers' cooperative unions and food processing businesses largely shape the *terms of inclusion of farmers*. The way in which these decision-making processes are facilitated, and their actual outcomes, determine the way in which the farmers are involved in the business operations of the agri-business. Some *inclusivity indicators* that can be distilled from the cases are related to:

- A) Quality requirements How they are jointly set up; how clearly they are communicated to, and understood by, farmers; how consistently they are acted upon (farmers meeting the agreed quality requirements and businesses living up to the agreed rewards for that)
- B) Risks How clearly agreements are made on mutual responsibilities; how unforeseen consequences and issues are settled through 'give and take' interactions; how commitments are made to minimise unintended consequences in the future
- C) Price setting How price negotiations are facilitated by a neutral facilitating party; how payment arrangements are agreed.

Future research could refine and complete this list of inclusivity indicators for farmers and more precisely unravel the way firms deal with them.

Regarding the *terms of inclusion of women retailers*, the previous section presented the finding that both food processing businesses (although to a different extent) control product affordability through a selection process for distributors. In this sense, inclusion processes for distributors also involve exclusion. There is, so to say, ‘inclusion through exclusion’. An important related question for future research is therefore: What criteria should firms use to ensure the possible inclusion of a broad range of actors in distribution activities but at the same time allow them to make a purposeful selection of best candidates?

The 4A’s are used in this report as inclusivity indicators for consumers (see Part I). In regard to the *terms of inclusion of consumers*, the cases provide insight into how agri-businesses (have to) manage tensions between the 4A product characteristics. The case examples indicate that investments in a product’s appropriateness, acceptability, or availability may affect its affordability, or vice versa. As these characteristics seem to be interdependent, future research could focus in further detail on the way firms manage the tensions that exist between them.

13.2 Implications for co-creation processes

In the two case studies, it can be observed that support service providers play an important role in facilitating *co-creation processes between food processing businesses and smallholder farmers*. Without these organisations, it would be a big challenge and a major time-consuming process for the respective food processing businesses to utilise smallholder farmers as their main source of raw materials. Future research could validate whether, and in what exact way, these support service providers accelerate co-creation processes. Two important related discussion points are: should these support services be temporarily or permanently in place? and, in the case of the latter, what – public or private – actors should be taking up this role (e.g. government service providers, local private consultants, donor service providers)?

Concerning *co-creation processes between food processing businesses and consumers*, it can be observed that this process emerged quite naturally in the CTAE case. The soya goussi story in short: (a) people started buying soya powder during a period in which it was positioned as an animal feed product, (b) CTAE thus discovered the human demand for soy-based food products and started experimenting with how roasted soya cake could be used in traditional meals, (c) when CTAE found the right formula (the goussi meal), it started selling soya goussi at local markets, and (d) soon women took over the sales at these markets, beginning a soya goussi wholesale or retail business. If this co-creation process is compared with the story of LIKIE and GUTS’ product portfolio, the latter can be characterised as having emerged in a less natural and a more top-down way. GUTS basically learned of, and adopted, the micro-franchise distribution model and started to adapt it to the Ethiopian context. To be able to implement successfully its new service (door-to-door sales of nutritious foods), GUTS deliberately and quite intensively needed to shape and reconfigure consumers’ perceptions and mind-sets. Further research on frugal innovation could (a) investigate in more detail the way firms can deliberately manage these different co-creation processes and (b) look at their impact on the frugal interventions or mechanisms that are at play.

A final general discussion point concerns the *influence of institutional context on co-creation processes*. Reflection on the GUTS case suggests that institutional context largely determined the type of co-creation processes that emerged. The institutional context in Ethiopia is characterised by a high level of government involvement and extensive and branched governmental networks. It is therefore no surprise that most of the co-creation processes in GUTS' producer and consumer interface include a governmental body. This raises the following discussion points. How should food processing businesses operating in strongly hierarchal institutional contexts engage in business-to-community partnerships? How and to what extent should food processors extensively involve local or federal government offices in their activities that serve public goals?

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ANNEX I – SOURCES GUTS CASE STUDY

Desk study GUTS

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Interviewees GUTS

Interview number	Interviewee	Role	Location	Date
1	Emile Schmitz	BoP Innovation Centre, supported the implementation of LIKIE	Utrecht, The Netherlands	22-06-2016
2	Engidu Legesse	CEO	Addis Ababa	22-07-2016
3	Yonas Seitu	Finance officer	Addis Ababa	22-07-2016
4	Getachew Kshetu	LIKIE coordinator	Addis Ababa	22-07-2016
5	Tigist Abera, Ayele T/tsaddik, and Solomon Teklu	LIKIE coordinator, Administrator & Head of production, Production manager	Hawassa	23-07-2016
6	Tigist Albera and Hanna Weya	LIKIE coordinator, LIKIE supervisor	Hawassa	25-07-2016
7	Lemlem Meahin, Emebet Hisilase, and Yewegnesh Worku	LIKIE sales agents	Hawassa	25-07-2016
8	Getachew Kshetu	LIKIE coordinator	Addis Ababa	27-07-2016
9	Engidu Legesse	CEO	Addis Ababa	27-07-2016
10	Hiwot Shimiless	BoP Innovation Centre / IFDC Ethiopia, supported the implementation of LIKIE	Addis Ababa	28-07-2016
11	Tekalgn Ayano	IFDC Ethiopia, partnership facilitator of soy–maize clusters	Addis Ababa	28-07-2016

ANNEX II – SOURCES CTAE CASE STUDY

Desk study CTAE

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Interviewees CTAE

Interview number	Interviewee	Role	Location	Date
1	Joe Toho	Programme coordinator URP-AL	Allada	17-07-2016
2	Pelagie Akplogan	Soya goussi wholesaler	Allada	18-07-2016
3	Adegiou Idossou Amitale	Farmer and chairman of UCP Toffo	Allada	19-07-2016
4	Raphaël Kocoun, Pierre Hessou, and Justin S. Houngnohoue	Manager, Chief of production, and Secretary	Allada	19-07-2016
5	Bernard Dedjelenou	Coordinator of URP-AL	Allada	19-07-2016
6	Mathias Ahounou	Partnership facilitator IFDC	Allada	20-07-2016
7	Raphaël Kocoun, Pierre Hessou, Justin S. Houngnohoue, and Yinea Casimir	Manager, Chief of production, Secretary, and Procurement manager	Allada	20-07-2016