

Ecological-Inclusive Business Models for Sustainable Development

A Case Study on Agro-Food Hybrid Organisations
in Sub-Saharan Africa

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Abstract

The Sustainable Development Goals (SDGs) proposed by the United Nations have encouraged companies to innovate their business models to achieve triple-bottom-line sustainability. Among the most interesting and effective examples of sustainable business model innovation are hybrid organisations. As these organisations change the fiduciary duty and structure of the firm, they blur the distinction between the profit and non-profit logic and rely on business model innovation to pursue their mission. This study focuses on the business models of bottom-of-the-pyramid hybrid organisations, which we refer to as ecological-inclusive, because of their inclination to produce positive environmental value while at the same time including low-income stakeholders in their value chain. The goal of this paper is to investigate how and to what extent sustainability aspects are integrated within ecological-inclusive business models, identifying possible business model archetypes. To do so, the authors applied a selective and inductive qualitative content analysis to 15 ecological-inclusive business models. By analysing and comparing the sampled business models we are able to propose two different archetypes of ecological-inclusive business models, according to the low-income stakeholders engaged as customers: the “young sunflower” and the “adult sunflower”. These archetypes explain how bottom-of-the-pyramid hybrid organisations face the challenges posed by the context in which they operate to fulfil the quest for corporate sustainability.

Keywords

Ecological-inclusive business models; business model canvas; qualitative content analysis.

1 – INTRODUCTION

Sustainable business model innovation has recently become a material issue within sustainable business model research, drawing more interest towards the factors of success or failure in the design or reconfiguration of sustainable business models (Evans et al., 2017; Geissdoerfer, Vladimirova & Evans, 2018). Research, however, has first focused on establishing a common theoretical grounding for sustainable business models, acknowledging the need for further empirical studies (Boons & Lüdeke-Freund, 2013; Evans et al., 2017; Schaltegger, Hansen & Lüdeke-Freund, 2016). As a result, there is room to test the application of analytical methodologies to case studies to investigate the drivers for the success of sustainable business models. Empirical studies have been carried out focusing on top-end companies in developed markets (Morioka, Evans & Monteiro de Carvalho, 2016; Ritala et al., 2018), or on projects by top-end companies in bottom-of-the-pyramid markets (Filardi, Delarissa Barros & Fischmann, 2018), but there is still the need to analyse business models of hybrid organisations in bottom-of-the-pyramid markets (Battilana & Dorado, 2010; Díaz-Correa & López-Navarro, 2018; Gebauer, Haldimann & Jennings Saul, 2017).

This study aims to contribute to the research field of sustainable business model innovation by analysing the business models of a set of agro-food hybrid organisations in Sub-Saharan Africa. By doing so, the authors aim to shed light on the reciprocal influence of coexistent ecological and social concerns on the design of the business models of hybrid organisations. This coexistence is not to be understood as a form of social or environmental consciousness, or as a tendency to do “less bad”, but rather as an actual effort to simultaneously deliver positive social and environmental value. As a result, our goal is to contribute to the understanding of the key factors for the achievement of a triple-bottom-line mission for hybrid organisations oriented at bottom-of-the-pyramid sustainability, and to identify possible archetypes for their business models. The business models of these organisations, which we define as “ecological-inclusive”, are analysed and compared to detect common features and understand how, and to what extent, these organisations integrate social and environmental aspects within their business models.

To do so, the authors conducted a selective and inductive qualitative content analysis (Elo & Kyngäs, 2008; Elo et al., 2014) on a set of sample sustainable business models. The cases are herein represented and analysed using the business model canvas (Osterwalder & Pigneur, 2010) to enable a more straightforward comparison and understanding of the most meaningful features defining a sustainable business model. The quest for comparability led the authors to narrow the scope of the analysis to a single business sector and the geographical boundaries to a consistent socio-economic context. Both were selected to produce the largest possible sample of organisations, for which secondary information was available from a reliable source. Notwithstanding these boundaries, which somehow limit the possibility of generalising its outcomes, our research can pave the way for applications of the same methodology to other contexts, as it has been argued in similar studies (Díaz-Correa & López-Navarro, 2018; Gebauer, Haldimann & Jennings Saul, 2017).

2 – SUSTAINABLE BUSINESS MODELS: A LITERATURE REVIEW

Over the last decade, international organisations have increasingly encouraged companies to reconsider their possible contributions to sustainable development (UN Global Compact, 2013; United Nations, 2015; World Business Council for Sustainable Development, 2010), because no sustainable development is possible without a sustainable development of corporations (Kourula, Pisani & Kolk, 2017; Schaltegger, Lüdeke-Freund, & Hansen 2016). As a result, corporate sustainability (Garriga & Melé, 2004) and the triple bottom line (Elkington, 1997) have become increasingly popular among companies as approaches to create long-term stakeholder value (Hart & Milstein, 2003; Kolk, 2016). Following these approaches, companies would try to address an array of social, environmental and economic issues and transform themselves accordingly to contribute to the goal of a sustainable development which respects the planetary boundaries (Whiteman, Walker, & Perego, 2013).

To this extent, the Sustainable Development Goals (SDGs) proposed by the United Nations (United Nations, 2015) were and still are considered an important step forward, and the contribution of private companies has always been perceived as fundamental for the success of the SDGs (Sachs, 2012). Although some authors argued for a substantial lag between sustainability talk and practice in large companies (Cho et al., 2015; Gray, 2010), these are still perceived to face fewer implementation problems, compared to smaller entities, when it comes to corporate sustainability (Gallo & Christensen, 2011; Hörisch, Johnson &

Schaltegger, 2015; UN Global Compact, 2017). Support from CEOs and an ethically-inspired leadership appears to be one of the key drivers for successful organisational changes for sustainability, albeit not a guarantee of success, as spreading down the change can still be challenging (Lozano, 2015; UN Global Compact, 2017).

Business model innovation has been recognised as a promising solution to bring the change for corporate sustainability into being (Bocken et al., 2014; Schaltegger et al., 2012). Most interestingly, some authors argued that business model innovation would represent a more effective and beneficial way to pursue corporate sustainability, while at the same time involving fewer risks than other kinds of innovations (Chesbrough, 2007; Choi & Wang, 2009; Lindberg, Meinel & Wagner, 2011). As a result, sustainable business model innovation has recently risen to prominence as a research field (Geissdoerfer, Vladimirova & Evans, 2018) and as a process to design, redesign and adopt new business models to overcome the barriers preventing organisations from being simultaneously profitable and beneficial to the natural environment and society (Boons, & Lüdeke-Freund, 2013; Geissdoerfer, Bocken & Hultink, 2016; Schaltegger, Hansen & Lüdeke-Freund, 2016).

Bottom-of-the-pyramid businesses are among the most interesting examples of sustainable business models (Geissdoerfer, Vladimirova & Evans, 2018), as they aim to engage stakeholders with low incomes while providing more affordable and accessible services in innovative and sustainable manners (Bitzer & Hamann, 2015; Hahn, 2012). The customer base for such business consists of over 4 billion people living with less than \$2 per day, who form the so-called “bottom of the pyramid” (Prahalad, 2012). Since it was first identified, the bottom of the pyramid has been considered a promising market, especially for multinational corporations (Prahalad & Hart, 2002), albeit a challenging one (Olsen & Boxenbaum, 2009). Targeting low-income customers requires substantial innovations in the business model of an organisation (Prahalad, 2012), and the challenge of achieving long-term profitability while addressing customers with limited financial resources adds to the traditional barriers to sustainable business model innovation (Evans et al., 2017; Gebauer, Haldimann & Jennings Saul, 2017).

Although the bottom of the pyramid was first described as a potential market for large multinational corporations (Prahalad & Hart, 2002), it has been argued that the nature of these companies, as well as their distance from these consumers, would make them less effective without the support from non-profit entities, such

as NGOs (Pitta, Guessalaga & Marshall 2008). The need for cooperation between corporations and NGOs to successfully develop business models which are sensitive to the culture and to the socio-economic context of developing countries is an indication of how a bottom-up process is perhaps more effective (Dahan et al., 2010; Pitta, Guessalaga & Marshall 2008). In addition, it supports the claim that to become successful, business models for bottom-of-the-pyramid markets should be collaborative (Gebauer, Haldimann & Jennings Saul, 2017) and rely both on internal resources and on the external capabilities available in these markets (Sanchez, Ricart, 2010).

In this respect, the collaboration between corporations and hybrid organisations is considered an important opportunity to develop corporate sustainability initiatives (Haigh et al., 2015a). Hybrid organisations design or reshape their business models to address relevant social or environmental issues (Haigh et al., 2015b). As a result, their business models have been defined as “sustainability-driven” and represent a good business case for sustainable management (Díaz-Correa & López-Navarro, 2018; Haigh & Hoffman, 2012). Their hybrid nature is given by the fact that these organisations, while addressing sustainability issues, will also pursue for-profit activities, trying to make their mission profitable (Alberti & Varon Garrido, 2017). By doing so, they blur the distinction between profit and non-profit logic and present different legal statuses (Haigh & Hoffman, 2012).

Given their peculiar nature, hybrid organisations represent a form of organisational innovation. Achieving both positive social and environmental impacts and profits with the same business model represents a challenging tension which has been investigated by the hybrid organisation literature (Pache & Santos, 2013; Ramus & Vaccaro, 2014; Mair, Mayer and Lutz, 2015; Stevens, Moray and Bruneel, 2015). This two-fold goal, in fact, could produce paradoxical outcomes, positive for the mission but negative for profits. Hybrid organisations, for example, could end encouraging their customers to produce positive environmental and social outcomes by themselves, without involving the organisation (Jay, 2013). As a result, it is interesting to investigate if, and how, bottom-of-the-pyramid hybrids (Hockerts, 2015) can stay profitable in the long term and at the same time, effectively achieve their mission.

Research has produced many definitions of sustainable business models, but not all of them stress the importance of simultaneously and consistently delivering both social and environmental positive value (Geissdoerfer, Vladimirova & Evans, 2018). Bocken et al. (2014) described archetypes of sustainable business models,

but some of the archetypes focus mainly on technological innovation to improve eco-efficiency and reduce pollution, as opposed to other archetypes which present a dominant social component. The simultaneous creation of environmental and social positive value, although not ruled out, appears not to be a requirement, even among the archetypes under the organisational grouping. Other formulations, such as the Strongly Sustainable Business Model (SSBM), lay the emphasis on the creation of positive social, environmental and economic, as well as on the inclusiveness, as this triple-bottom-line value has to be co-created by engaging the wide audience of the stakeholders (Upward & Jones, 2016). Strongly Sustainable Businesses, however, are relatively unexplored as a formulation, especially from the point of view of empirical research.

Empirical research, accordingly, focused on bottom-of-the-pyramid hybrid organisations only aiming at a social impact (Agarwal et al., 2018; Brueckner et al., 2010; Hockerts, 2015), or on building social and environmental impact indicators for such organisations (Holt & Littlewood, 2015). Some authors, on the other hand, focused on bottom-of-the-pyramid venture initiatives (Duke, 2016; Filardi, Delarissa Barros & Fischmann, 2018; Gebauer, Haldimann & Jennings Saul, 2017) or on analysing business model innovations in frugal products and services (Howell et al., 2018; Pansera & Owen, 2015; Rosca et al., 2017; Winterhalter et al., 2017). These studies, however, focus, on the one hand, on single innovations (e.g. a product or a service) and, on the other hand, on venture initiatives by western firms. As a result, they do not assume the case of organisations which, as a whole, build their entire business model around sustainability. In addition, studies on sustainable business model focusing on major companies are outside of the hybrid organisation realm (Morioka, Evans & Monteiro de Carvalho, 2016; Ritala et al., 2018), and even the authors covering hybrid organisations in developed countries call for applications of the proposed research methods to different contexts (Díaz-Correa & López-Navarro, 2018).

A sound analysis of hybrid organisations in bottom-of-the-pyramid markets with business models oriented to triple-bottom-line sustainability is still missing. These particular business models, which we could refer to as “strongly sustainable” (Upward & Jones, 2016), or as “ecological-inclusive”, holistically connect different Sustainable Development Goals and embed them into the value proposition to solve specific social and environmental concerns. Since we are referring to bottom-of-the-pyramid hybrid organisations, we will hereinafter refer to this particular type of sustainable business models as “ecological-inclusive”, to emphasize the effort to produce positive environmental outcomes while including

low-income stakeholders. Another most noticeable feature of these ecological-inclusive business models is the fact that they embrace a proactive strategy instead of an accommodative strategy (Bocken et al., 2014). As a result, ecological-inclusive business models cannot be limited to do “less bad”, but they have instead to produce positive impacts both from the social and from the environmental point of view.

This hybridisation between planet-first and people-first missions potentially bears inside the seeds of a new institutional plurality, strategic orientation and business model and has hence to be investigated accordingly (Cornforth, 2014; Ebrahim, Battilana, & Mair, 2014; Jay, 2013). The authors argue that investigating how hybrid organisations integrate sustainability aspects into their ecological-inclusive business models can be fundamental to understand how business model innovation can serve the quest for corporate sustainability. A sound research methodology is fundamental to analyse a sample of hybrid organisations and to develop archetypes which are able to explain how these organisations face the tension between profit and non-profit mission, while engaging bottom-of-the-pyramid stakeholders in their core operations. In this respect, using qualitative content analysis to investigate the business models can help us to solve the question surrounding these hybrid ecological-inclusive organisations. Business models, in fact, enable us identifying how key components and functions are connected and combined within an organisation and between the organisation and the external environment to create and deliver value (Osterwalder, Pigneur, & Tucci, 2005; Osterwalder & Pigneur, 2010).

3 – RESEARCH METHOD

A content analysis relies on examining different text-based resources. To investigate how hybrid organisations integrate sustainability aspects in innovative ecological-inclusive business models, the authors used an inductive and selective content analysis (Elo & Kyngäs, 2008; Elo et al., 2014; Guthrie, Petty, Yongvanich, & Ricceri, 2004) over a collection of cases of ecological-inclusive business models. We chose this method to ensure credibility, consistency and transferability to our methodology. An inductive analysis, furthermore, will enhance the understanding of the issue, by establishing categories to group the entries accordingly (Cavanagh 1997).

Inductive content analysis, as defined in Elo & Kyngäs (2008), follows a five-steps path:

1. Open coding
2. Coding sheets
3. Grouping
4. Categorisation
5. Abstraction

This process is consistent with the conceptual framework for business model design and analysis provided by the business model canvas (Osterwalder & Pigneur, 2010). The nine building blocks of the business model canvas will be used as the fundamental monads to examine each organisation in the sample. Besides, the use of the business model canvas allows the comparison between companies. The business model canvas, as a result, will be used as a framework in the open coding step while reading and systematising the qualitative content for each company. By doing so, we will be able to identify, for each organisation, the customer segments, the value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships and the cost structure.

The information thus collected can be combined and displayed in an appropriate coding sheet (Figure 1). The “Impacts” row does not belong to the business model canvas as in Osterwalder and Pigneur (2010) and is added to summarise and list the most noticeable outcomes of the activity of the organisation as far as sustainability is concerned. We will make use of colours to indicate whether environmental or social aspects or actors are successfully integrated into each block. The yellow colour hence denotes the presence of social features in a block of the business model, while green represents the presence of environmental features. With the research question being how bottom-of-the-pyramid hybrid organisations address the tension between financial, social and environmental missions, it is most interesting to look at the simultaneous presence of cells labelled with green and cells labelled with yellow inside each block. The coding sheet, as a result, will appear more yellow and greener as more evidence of social and environmental aspects being simultaneously integrated into the business models is collected.

Business Model Canvas	Company #1	Company #2	Company #3
Value Propositions			
Customer Segments			
Channels			
Customer Relationships			
Key Resources			
Key Activities			
Key Partnerships			
Revenue Streams			
Cost Structure			
Impacts			

Figure 1: Sample coding sheet. Yellow stands for social features, green for environmental features, while white stands for absence of social or environmental features.

Having filled in the coding sheet, the authors were then able to draw the most noticeable features which make these ecological-inclusive business models innovative. The content analysis allows the identification of categories to understand how different types of ecological-inclusive businesses shape their business model to achieve their mission. Examining the business models, besides, will provide insights on how pro-societal and pro-environmental activities, rather than cost-increasing measures, can instead be integrated inside the core business of a company as profit-increasing activities. The explanation of these inherent connections through a business model can help to identify underlying low-cost innovation opportunities (Amit & Zott, 2012; Chesbrough, 2010; Zott & Amit, 2008).

For the scope of our analysis, we decided to use the following definitions for each block of the business model canvas (Figure 2), which are derived from the business model canvas (Osterwalder & Pigneur, 2010). The use of the business model canvas developed by Osterwalder & Pigneur (2010) instead of other formulations such as Joyce & Paquin (2016) or Upward & Jones (2016) is driven by the fact that the former is more established within the business model research field compared to the latter and more consistent with the information we were able to retrieve from our source database.

Business Model Canvas	Question
Value Proposition	How does the organisation create value with its products and/or services?
Customer Segments	Which customers does the organisations create value for?
Channels	How does the organisation reaches the different customer segments?
Customer Relationships	Which kind of relationships does the organisation establish with each customer segment?
Key Resources	Which are the most important resources to make the business model operative?
Key Activities	Which are the main activities carried out to make the business model operative?
Key Partnerships	Whom has the organisation to partner with to make its business model work?
Revenue Streams	Where does the organisation generate the revenue required for its going concern?
Cost Structure	Which costs are required to make the business model work?

Figure 23: Business model canvas and questions answered by each canvas.

4 – SAMPLE CONSTRUCTION

This study relies on a set of business cases retrieved from a third-party database. The source of the cases is the Publication Database of the Inclusive Business Action Network (IBAN), which contains to this day 486 case studies of organisations aiming at including bottom-of-the-pyramid consumers, suppliers, entrepreneurs and employees. The Inclusive Business Network Publication Database, in turn, collects the publications from various other sources, such as the Growing Inclusive Markets (GIM) database and the set of cases available on the website of the Business Call to Action (BCtA). The United Nations Development Programme (UNDP) launched and supported these two initiatives which date back to 2008,

whereas the Inclusive Business Action Network was established in 2014 and is managed by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

To ensure comparability across the sampled companies, the authors decided to focus the analysis on a uniform set of countries. The study should, in fact, be focused on a default and uniform geographical context. The political and socioeconomic contexts, in turn, will be as similar as possible for the entities to be examined. As a result, the hybrid ecological-inclusive organisations in the sample will have to address the same problems and needs when it comes to shaping their business model to contribute to the achievement of the Sustainable Development Goals (SDGs). Thus, the authors used regional groupings from the 2017 Sustainable Development Goals Report (United Nations, 2017) to determine the clusters of countries. We decided to focus our study on the regional group “Sub-Saharan Africa”, which offers the largest number of case studies compared to other regional groups. To this day, in fact, the Inclusive Business Network Publication Database collects 166 case studies for this regional group.

In order to better ensure cross-firm comparability, the authors decided to focus the analysis on a single business sector. Hence, we selected the agricultural and food sector, which contains 72 case studies, the highest number for this regional group. Agriculture, moreover, is one of the business sectors with the most connections to the Sustainable Development Goals (SDGs). It is also one of the business sectors where interactions between different Sustainable Development Goals (SDGs) are the most challenging. For example, food production in Sub-Saharan Africa tackles the SDG 2 - “Zero Hunger” while supporting other SDGs such as SDG 1 - “No Poverty” and SDG 3 – “Good Health and Well-Being. At the same time, however, food production can constrain other SDGs such as SDG 13 – “Climate Action” (Nilsson, Griggs & Visbeck, 2016). As a result, we expect the agriculture and food sector in bottom-of-the-pyramid markets to present multiple opportunities and challenges to develop and shape innovative ecological-inclusive business models (Prahalad, 2012).

Eventually, in order to reduce the numerosness of the database and to obtain the final sample, the authors laid down some requirements to be applied. As a result, we require the sampled organisations to meet the following criteria:

- Independent and managerial governance: the sampled enterprises would present various organisational forms, provided that they have managerial

governance and their business management is independent from other public or private entities (e.g. large multinational corporations, local governments, intergovernmental organisations - IGOs). This criterion allows us to exclude ad-hoc projects and short-term initiatives, whether they are carried out by corporations with a going concern perspective or not;

- Mixed mission: according to this requirement, the firms would be selected only if they create a positive impact on SDGs related to both environmental and social aspects;
- Established companies: the sample will include only companies which have already gone beyond the start-up stage. As a rule of thumb, we will select companies with more than three years of activity since the establishment date;
- Complete, impartial, non-biased information: finally, we set this requirement to exclude all the cases where the lack of information prevented us from having a deep understanding of the business model. Besides, this criterion would leave out all the organisations for which forms of communication bias could mine the accuracy of the information included in the case studies.

Following these criteria, the database was reduced to 15 sampled organisations. A description of the sample is reported in Figure 3. For each company, the table lists the country of origin, its legal form, the date of establishment, the main products or services, the Sustainable Development Goals addressed and the low-income stakeholder engaged. A brief description of the mission is also included. Six of these organisations are based in Kenya, three South Africa, two in Mozambique and Ghana, and one in Nigeria and Uganda.

Organisation	Country	Legal Form	Established	Main Product/Service	SDGs Addressed	BoP Stakeholders Engaged	Mission
Baobab Products Mozambique	Mozambique	Private Limited Liability Company	2013	Baobab products	1; 2; 4; 5; 8; 12; 13	Women harvesters	Creating a local value chain around Baobab fruits for women harvesters.
Claire Reid Reel Gardening	South Africa	Social Enterprise	2010	Organic gardening solutions; Training services	1; 2; 4; 12	Harvesters, both women and children	Alleviating food shortages and promoting self-sustaining communities through simple, cost-effective and convenient means of agriculture.
Honey Care	Kenya	Social Enterprise	2000	Honey products; Beehives; Training services	1; 2; 5; 8; 12; 15	Subsistence farmers - beekeepers; BoP Consumers	To bring social impact by profitably providing trusted healthy honey products and snacks.
IMAI Farming Cooperative	South Africa	Cooperative	2010	Organic horticultural products; Training services	1; 2; 5; 8; 10; 12	Women farmers	Reducing food waste and creating income opportunities by producing and marketing vegetable atchar pickle made from surplus horticultural production.
Integrated Tamale Fruit Company	Ghana	Private Limited Liability Company	1999	Mangoes production	1; 2; 5; 12; 15	Smallholder farmers; women as employees	Harvesting and processing organic mangoes, improving the living standards of smallholder farmers.
Kenia Tea Development Agency	Kenya	Private Limited Liability Company	2000	Agricultural Services	1; 2; 5; 12; 13	Smallholder farmers	Investing in tea and other related profitable ventures for the benefit of the shareholders and other stakeholders.
Kickstart International	Kenya	Social Enterprise	2005	Irrigation tools for agriculture	1; 2; 8; 12; 13; 15	Subsistence farmers	Lifting millions of people out of poverty quickly, cost-effectively and sustainably.
Mobah Rural Horizons	Nigeria	mSME	2000	Pot-in-pot products	1; 2; 5; 8; 12	Subsistence farmers	Providing solutions to store perishable crops for rural farmers.
Mozambique Honey Company	Mozambique	Private Limited Liability Company	2010	Honey products	1; 2; 15	Subsistence farmers - beekeepers	Developing the honey chain while alleviating poverty.
Muliru Farmers	Kenya	Community-Based Enterprise	2004	Natural remedies; Environmental awareness trainings	1; 2; 8; 11; 12; 13; 15	Medicinal plant farmers	Cultivating traditional medicinal plants to protect the last Kenyan rainforest.
Muthi Futhi	South Africa	Community-Based Enterprise	2010	Medicinal plant ingredients; Organic fruits	1; 2; 5; 15	Women farmers	Protecting the biodiversity and creating sustainable jobs for rural women by cultivating and processing indigenous medical plants.
One Acre Fund	Kenya	Social Enterprise	2006	Financing and training services	1; 2; 4; 8; 12; 15	Smallholder farmers	Helping smallholders grow their way out of hunger and building lasting pathways to prosperity.
Safi Organics	Kenya	Private Limited Liability Company	2015	Rice Production	1; 2; 3; 13	Subsistence farmers	Empowering smallholder farmers in Kenya through an agricultural circular economy.
Unique Quality Product Enterprise	Ghana	Eco-Inclusive Enterprise	2012	Fonio Production	1; 9; 10; 13	Women farmers	Empowering marginalised women in Ghana by reviving the cultivation of indigenous crops.
Yice Uganda	Uganda	Social Enterprise	2012	Agricultural Services	1; 2; 10; 12; 15	Smallholder farmers, with a focus on women and youths	Facilitating farmers' access to demand-oriented agricultural and training, flexible financial services and quality farm inputs to reduce hunger, illnesses and poverty among small holder farmers in Uganda.

Figure 3: Sampled organisations.

5 – FINDINGS

One of the most noticeable features of our sample is that we can find organisations offering similar products and services. In particular, we have two organisations focused on honey production (Honey Care and Mozambique Honey Company), two organisations which produce natural remedies (Muliru Farmers and Muthi Futhi) and three organisations which developed innovative tools and

solutions for horticulture and agriculture (Claire Reid Reel Gardening, Kickstart International and Mobah Rural Horizons). Besides, three organisations focus their activity on marketing indigenous varieties of fruit and grain (Baobab Products Mozambique, Integrated Tamale Fruit Company and Unique Quality Product Enterprise). Kenya Tea Development Agency, One Acre Fund and Yice Uganda, on the other hand, all aim to increase the access to the markets and financial capital by offering an array of services to the smallholder farmers. Two organisations, finally, rely on waste and excessive production to promote a circular agricultural value chain for smallholder farmers (Imai Farming Cooperative and Safi Organics). Whether these groups would share common features and consequently form different groups will be confirmed or denied during the grouping and abstraction stages.

The results of the coding process are displayed in the coding sheets included as annexes at the end of the paper. Our analysis shows that environmental and social features can be found in all the value propositions of the sampled organisations. This evidence basically confirms us that the sampling method used produced indeed a sample which is consistent with our premises. Each of the entities in our sample displays an evolution of the value proposition, from a traditional single-purpose proposition towards a triple-bottom-line proposition where societal needs and environmental concerns are considered alongside doing economically viable business. As our sample shows, this orientation to the simultaneous creation of economic, social and environmental positive value presents some significant challenges when it comes to the profitability and scalability of the business.

Regardless of the groups of companies, which we have previously identified according to the product or service provided, our sample suggests that the main distinction lies indeed within the “Customer Segments” block of the business model canvas. We will, therefore, explain this difference as it emerges from the organisations in our sample, and describe two possible archetypes of ecological-inclusive business models. As previously said, the “Customer Segments” block of the business model canvas is used to identify the different kinds of customers whom the organisation is addressing to while carrying out its business activity. It is then important to verify whether bottom-of-the-pyramid customers are engaged as customers by each organisation, as well as whether these customers are somehow related to the environmental sustainability realm.

As far as the presence of social and environmental features is concerned, our sample suggests that social features are a constant presence within the “Customer Segments” block of the business model canvas. All the 15 sampled hybrid organisations address bottom-of-the-pyramid customers, whether in the form of consumers or as producers, and, in this specific case, as smallholder and subsistence farmers. The main goal of all the organisations in our sample is to provide affordable products or services either for bottom-of-the-pyramid households or for bottom-of-the-pyramid farmers, or both. By engaging the smallholder subsistence farmers, most of them manage to lift the farmers out of absolute poverty by providing additional income or alternative income sources. At the same time, however, some of the organisations in our sample are also targeting bottom-of-the-pyramid consumers, as they feature in their range of products also food products which are affordable for the low-income households.

The main dichotomy which our sample suggests is between two types of hybrid organisations: the ones which focus only on downstream customers, and the ones which manage to engage also their suppliers as upstream customers. Some of the organisations included in our sample, in fact, do business not only by marketing agricultural or food products but also by selling agricultural inputs or services to the farmers, which are indeed both suppliers and customers. Other organisations, on the other hand, engage with the farmers by providing training in organic farming or hygiene practices, but only to ensure the quality of the products, and without receiving revenues in exchange.

Overall, the 15 sampled organisations can be divided into two different groups, according to the low-income stakeholders engaged as customers. The first group comprises those hybrid organisations which, besides selling agricultural products to upstream customers, also provide substantial support to smallholder farmers whether in the form of training, access to farming inputs, to financial credit or insurance services. As a result, they earn revenues both from selling agricultural products and from the services they provide to the farmers. This group includes three organisations, namely Honey Care, Integrated Tamale Fruit Company and Kenya Tea Development.

The second group includes those hybrid organisations which target only downstream bottom-of-the-pyramid customers, be they smallholder farmers or households. Two sub-types of organisations fall into this category: the ones whose customers are smallholder farmers (Kickstart International, One Acre Fund, Safi Organics and Yice Uganda) and the ones whose customers are bottom-of-the-

pyramid households (Baobab Products Mozambique, Claire Reid Reel Gardening, Imai Farming Cooperative, Mobah Rural Horizons, Mozambique Honey Company, Muliru Farmers, Muthi Futhi and Unique Quality Product Enterprise). The organisations in the first sub-type provide products or services to smallholder farmers, and these are their only source of revenues. Alongside their main products or services, they also promote and provide training in sustainable agriculture practices. The organisations in the second sub-type, on the other hand, focus their activity on the production and marketing of agricultural products. Even if they provide some sort of training to their suppliers, that is, to smallholder farmers, in sustainable agriculture practices, they do not receive any revenue in exchange.

All these organisations engage at least one bottom-of-the-pyramid stakeholder as a customer and carry out their business activities with the aim of addressing the substantial needs of these stakeholders. By doing so, they also address environmental concerns by promoting sustainable farming practices. To some extent, thanks to their inclusive nature, they can all be considered capacity builders. However, the extent to which they manage to incorporate this capacity building within their business models and value creation strategy is somehow different between the two groups. The hybrid organisations in the first group, in fact, do not limit themselves to increase an existing capacity. Instead, they create capacity from scratch by providing innovative solutions to allow the farmers to carry out new activities, improving their living standards and the agricultural outputs in a sustainable way.

6 – DISCUSSION

Having acknowledged the distinction between the two groups of organisations, we can use a metaphor to describe two different possible archetypes of ecological-inclusive business models. The metaphor used is the one of the sunflower, and it is an image which makes reference both to the agro-food business sector, which is the scope of our study and to the concept of the flourishing enterprise (Laszlo et al., 2014).

Young sunflowers follow the sun

We found the behaviour of the hybrid organisations with ecological-inclusive business models included in the first group to resemble the one of young sunflowers. Before they eventually bloom, young sunflowers track the movement

of the sun in the sky, moving from east to west, and backwards, during the day. If we consider the sun as a metaphor of the social and environmental purposes, hybrid organisations with the “young sunflower” behavioural pattern will move from downstream to upstream in their value chain, engaging both consumers and suppliers as their customers, in an effort to create positive environmental and social value along the whole value chain. The “young sunflower” business model archetype is characterised by a strong attitude towards the resolution of the challenges faced by bottom-of-the-pyramid stakeholders upstream and downstream the value chain. They create a strong bond with their suppliers, providing them with fundamental farming inputs, such as beehives, or valuable services, on the condition that they supply all their agricultural outcome to Honey Care, Integrated Tamale Fruit Company and Kenya Tea Development Agency.

Adult sunflowers always face eastward

The hybrid ecological-inclusive organisations in the second group, on the other hand, act as “adult sunflowers”. When sunflowers finally bloom and become adult, they stop tracking the sun in the sky and always face eastward during the day. Likewise, the organisations in the second group, have their focus oriented in just one direction, downstream, either towards households or towards smallholder farmers. They either market agricultural products to consumers or provide services to smallholder farmers. In the case of smallholder farmers, these organisations may provide them with some training services, but only to ensure product quality and so that the agricultural outcome can be marketed as produced from certified organic farming. As far as these organisations are concerned, however, producing and selling agricultural products to downstream customers does not prevent them from pursuing significant positive environmental and social outcomes upstream in the value chain. These hybrid organisations, in fact, aim to improve the living standard of smallholder farmers by paying them fair prices, allowing them to move away from subsistence farming.

The value of partnerships

All the companies make extensive use of collaboration and partnerships with third parties, to overcome the challenges of doing business in bottom-of-the-pyramid markets. Partnerships are fundamental to achieve scalability and to expand to other markets, but also to produce positive social and environmental value for the stakeholders engaged. Our sample suggests that scalability can be more of a challenge for young sunflowers compared to adult sunflowers, as they might have

to build by themselves the upstream supply capacity required to fulfil the downstream demand. In this regard, partnerships can be fundamental for hybrid organisations with a “young sunflower” business model to increase the access to farming inputs, financial capital and other services for their suppliers. This evidence supports the claim that collaboration is the key to success for business models in bottom-of-the-pyramid markets (Gebauer, Haldimann & Jennings Saul, 2017).

7 – CONCLUSIONS

Our study contributes to the research field of sustainable business model innovation by providing an empirical analysis of the business models of 15 hybrid organisations in agro-food bottom-of-the-pyramid markets. Our research offers an insight into the solutions developed by these organisations to address relevant social and environmental concerns related to the Sustainable Development Goals (SDGs). The main outcome is the identification of two possible ecological-inclusive business model archetypes, which we called “young sunflower” and “adult sunflower”. Although the scope of our study is limited to a specific business sector and to only one of the regional groupings proposed by the United Nations, its results are indeed interesting. We suggest that future research should test the presence of a dichotomy between young and adult sunflower ecological-inclusive business models in other contexts, and using larger samples.

Our research, finally, suggests that content analysis has, indeed, an interesting potential when it comes to analysing business models, and can hence be used as a methodology for empirical studies on sustainable business model innovation. As far as the sampling method is concerned, third-party publication databases such as the one offered by the Inclusive Business Action Network (IBAN) can be useful sources to build an unbiased sample. However, the availability and quality of the qualitative information from third-parties, especially on hybrid organisations in bottom-of-the-pyramid markets, can pose significant constraints to the research activity. As a result, we suggest a direct collection of the information through interviews and questionnaires as an improvement for similar studies.

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Annexes

Business Model Canvas	Baobab Products Mozambique	Claire Reid Reel Gardening	Honey Care	IMAI Farming Cooperative
Value Propositions	Buying, processing and trading nutrient-rich baobab products such as powder and oil,	Addressing food insecurity among low-income households and children	Selling high-quality honey products,	Producing and marketing atchar picke
	empowering women harvesters,	with organic gardening solutions as bio-degradable paper strips with organic seeds,	including accessible honey products for BoP consumers,	made from surplus vegetable, and by that, reducing waste
	and increasing the resilience of local communities by providing them with an alternative source of income.	as well as by providing training in organic gardening	while promoting the conservation of woodlands for apiculture	and creating additional income for vegetable farmers
Customer Segments	Consumers in local and international markets	to develop the skills of women and children to provide them with new income opportunities.	and providing subsistence farmers with inputs, training services and market access.	while at the same time training them in organic farming practices.
	BoP consumers in local markets	High and middle-income households	Consumers in local and international markets	Consumers in local and international markets
		BoP households	BoP consumers in local markets	BoP consumers in local markets
Channels		Schools	Subsistence farmers	
	Retail	Community gardens		Retail
		E-commerce or retail (for high/middle-income consumers)	Retail (consumers)	
Customer Relationships		Distribution through project partners (for low-income consumers)	Direct engagement (smallholder subsistence farmers)	
	Transactional	School projects	Co-creation (farmers provide feedback through questionnaire)	Transactional
		Training in organic farming	Training and support in beekeeping practices	
Key Resources		Engagement in community garden projects	Door-to-door supply of beekeeping equipment, collection of honey and payment	
	Local network of baobab subsistence harvesters in Manica province	Semi-automatic machine to place the seeds in the paper strips	Local network of subsistence farmers	Shared agro-processing plant
	Baobab forest resource	Financial resources to scale up the business (demand is higher than the supply)	Beekeeping equipment	Local network of farmers
	Baobab pulp and seeds processing facility	Financial resources and a local network of well-trained sales agents to provide training to manage the school projects and the community gardens	Well-trained personnel to provide training in professional beekeeping to subsistence farmers	Rainwater harvesting dam

Key Activities	Buying, processing and trading baobab fruits and derived products	Producing and selling biodegradable paper strips with organic seeds	Honey collection, packaging and distribution	Collecting and processing surplus perishable agricultural outcome
	Training women in Manica province on harvesting and processing techniques	Training children and women from low-income households in gardening	Capacity building and training activities	Providing training in hygiene, food processing and entrepreneurship
	Sustainable management of the baobab forest resource (assessing the cultivated areas replanting baobab trees, determining sustainable harvesting yields)	Promoting projects to create community gardens and gardens in school.	Engaging beekeepers by collecting feedbacks through performance monitoring questionnaires	Selling atchar pickles to BoP consumers
Key Partnerships	Eco-Micaia Ltd. owns 80% of Baobab Products Mozambique, offers business development services	Lonely Road Foundation, for community projects Unilever, for the distribution of the products, fundraising and training of sales agents	Impact investors to promote social projects	Small Enterprise Development Agency, Supports IMAI for the product development and product packaging
	Micaia Foundation provides training in sustainable harvesting practices	Reach Scale, for business development Labelpak, for product development	NGOs – Africa Now, to earn the trust of local communities and ensure transparency	University of Limpopo, tests the products of IMAI and sometimes buys its product
	PhytoTrade Africa supports with the natural resource assessment of baobab areas	SPACE, to manage the school programme Avocado Vision manages the training of the sales agents	Development agencies, to promote joint beekeeping projects in rural communities	Limpopo Department of Agriculture, offers technical expertise on irrigation infrastructures
Revenue Streams	Sales revenues	Sales revenues Fundraising (to finance community projects)	Sales revenues	Sales revenues
Cost Structure	Cost-driven (producing affordable nutrient-rich baobab products for BoP customers)	Cost-driven (producing affordable gardening solutions) Relying on fundraising for school projects and community gardens	Cost-driven (eliminating intermediaries between farmers and retail, ensuring larger profits for the beekeepers)	Cost-driven (reducing costs by sharing resources between farmers)
Impacts	Improved living standards of women harvesters	Increased food security for BoP households and children	Beekeeping became an important source of income for smallholder farmers	Decreased seasonality of revenues for local smallholder farmers
	Promoting gender equality (women as shareholders are actively engaged in the company)	New income opportunities for women in low-income households	Promoting gender equality (more than 40% of female beekeepers)	Encouraging farmers to form rural cooperatives and empowering women
	Adaptation to climate change by providing an alternative source of income	Reducing water consumption needed to grow vegetables in water-scarce contexts	Decreasing deforestation (farmers no longer rely on selling firewood as a source of income)	Reducing food waste and loss of valuable agricultural outcome
	Sustainable management of the baobab forest resource	Decreasing soil erosion thanks to organic farming	Pollinators increase and protect the biodiversity and is positive for agriculture	Reducing groundwater depletion thanks to rainwater harvesting

Business Model Canvas	Integrated Tamale Fruit Company	Kenya Tea Development Agency	Kickstart International
Value Propositions	Cultivating, processing and selling large volumes of certified organic mangoes for local and international markets,	Providing effective management services to smallholder tea farmers,	Developing and selling affordable manual irrigation pumps for subsistence farmers,
	providing smallholder farmers with farming inputs using interest-free loans	enhancing the climate resilience of tea farmers with drought-tolerant tea varieties	promoting sustainable agricultural practices and water management.
	while shifting agricultural production away from perennial crops with high environmental impact.	and promoting climate mitigation measures.	
Customer Segments	Consumers in international markets	Buyers in local and international markets	Smallholder farmers
	Subsistence farmers	Smallholder farmers	
Channels	Retail (consumers)	Wholesaling, at factories	Retail
	Direct engagement in the Organic Mango Outgrower Associations (OMOA)	Auctions for agricultural commodities	
		Supply agreements with buyers	
		Direct engagement in the governance of the company	
		Provision of services through subsidiaries	
Customer Relationships	Outgrowing scheme	Transactional (consumers)	Co-creation (through focus groups)
	Support and training for the farmers to obtain licenses and certifications of organic farming	Long-term relationships with smallholder farmers, encouraged by the provision of services	
Key Resources	Local network of mango subsistence harvesters	Network of over 550,000 smallholder tea farmers	Raw materials – especially iron, to manufacture the pumps
	Packing and processing unit	Collection centers and factories	Human capital for new technology development
	Financial resources to lend farming inputs to the farmers at zero-interest rate	Subsidiaries to provide financing services, health insurance, to carry out philanthropy projects and to supply renewable energy to the farmers	Local networks of suppliers, distributors, retailers
	Mango plantation and seedling nursery		
Key Activities	Cultivating, processing and selling organic mangoes to local and international markets	Collecting and processing tea leaves to sell high-quality tea in international markets	Market research to explore new business opportunities to improve farming techniques
	Providing access to farming inputs to subsistence farmers through zero-interest loans	Providing training to smallholder farmers through Farmer Field Schools	Development, manufacturing and distribution of irrigation solutions for smallholder farmers
	Providing training and support activity on organic farming techniques, to obtain organic farming licences	Training smallholder farmers in sustainable agricultural practices to obtain the Rainforest Alliance Certification	Monitoring the impact of the innovative irrigation solutions

Key Partnerships	Organic Mango Outgrower Association (OMOA) - network of subsistence outgrower farmers	Rainforest Alliance, Unilever and the Dutch Sustainable Trade Initiative, to certify all the factories to the Sustainable Agriculture Network standards	E-Business International, provides support for remote controls on the quality of production Donors: Bill & Melinda Gates Foundation, Rockefeller Foundation, David & Lucie Packard Foundation
	Children To School Project (CTSP) to support the school system, also by planting five-acre mango farms in each school	The Kenyan Ministry of Agriculture, The Tea Board of Kenya and the Tea Research Foundation provide support in the assessment of climate vulnerability	Alwaleed bin Talal Foundation – to expand the business to Western Africa
		Ethical Tea Partnerships collaborates with KTDA to provide training on climate risk and adaptation measures	IKEA Foundation – to expand the business to Southern Africa
			ExxonMobil Foundation supports Kickstart in its projects to empower female farmers
Revenue Streams	Sales revenues	KTDA charges a 2,5% management fee to the factories. The farmers take turns in running the factories (5 farmers elected for 3-year mandates) and 70% of the final market price of the tea goes to the farmers	Sales revenues, from selling affordable water pumps to subsistence farmers
	Payments from the farmers for the farming inputs loaned	Smallholder farmers pay KTDA’s subsidiaries for the services provided	
Cost Structure	Cost-driven (achieving economies scale to ensure a greater bargaining power for mango harvesters)	Value-driven (strongly focused on the quality of the final product, this translates into a 20% premium)	Cost-driven (economies of scale and lean thinking to make the pumps as affordable as possible for the farmers)
Impacts	Promoting gender equality (female employees in the processing unit)	Improving the living standards of smallholder tea farmers	Improving the living standards of smallholder farmers
	Increasing significantly the income of subsistence farmers	Empowerment of smallholder farmers as shareholders and managers (especially women)	Creating new business and working opportunities, even beyond farming
	Preventing deforestation to cultivate traditional crops	Increasing the climate resilience in the tea value chain	Increasing the climate resilience of rural communities
	Protecting biodiversity with complementary beekeeping activity	Climate change mitigation through tree planting projects and the development of small hydro plants to produce renewable energy	Preventing harmful environment practices carried out by subsistence farmers in extreme poverty

Business Model Canvas	Mobah Rural Horizons	Mozambique Honey Company	Muliru Farmers	Muthi Futhi
Value Propositions	Producing affordable cooling devices called "pot-in-pot" products	Selling high-quality honey to local and international markets	Cultivating medicinal plants and processing them into essential oils and medical remedies	Cultivating and processing indigenous medicinal plants, promoting their use to solve health issues in rural communities
	which do not require electricity	but also affordable honey to low-income consumers	enhancing rainforest and biodiversity preservation, promoting ad-hoc harvesting instead of exploiting wild stocks	decreasing the pressure on wild stocks of these plants
	for subsistence farmers and BoP households	and promoting sustainable beekeeping practices.	and generating additional income for smallholder farmers.	while creating permanent jobs in rural communities, especially for women
	to avoid the waste of perishable agricultural products.			and training subsistence farmers on organic farming practices.
Customer Segments	Smallholder farmers	Consumers in local and international markets	Consumers in local and international markets	BoP consumers in local markets
	BoP households	BoP consumers in local markets	BoP consumers in local markets	Other companies, to produce other remedies
Channels	Retail	Retail (formal market)	Retail	Retail (consumers)
	Direct door-to-door sale to customers	Network of local distributors (BoP consumers, informal market)		Business-to-business (B2B)
Customer Relationships	Personal assistance (product use demonstrations to rural communities)	Transactional	Transactional	Transactional (consumers)
				Long-term relationships (B2B)
Key Resources	Raw materials - clay	Local network of beekeepers	Local network of farmers	Local network of farmers
	Skilled workers in rural communities to manufacture the pot-in-pot products	Local network of "Bee Promoters" for capacity building	Equipment to extract essential oil from dried leaves	17 hectares cultivated and a plant nursery, all managed with sustainable agricultural practices and organic farming
	Sales assistants	Processing and packing facility	Production, packaging and storing facility	Processing and packaging facility
Key Activities	Exploring demand for pot-in-pot products in rural communities	Provide training in beekeeping, hive management and hygiene to ensure product quality	Recruiting local subsistence farmers for the cultivation of medicinal plants	Purchasing compost from smallholder farmers
	Training local crafters on how to produce pot-in-pot products, according to the specifications required by the customer	Processing, packing and marketing honey and honey products	Buying medicinal plants from subsistence farmers and processing them into herbal remedies to be sold in local and international markets	Cultivating and processing medicinal plants to produce medicinal remedies for BoP consumers and other companies

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Key Resources	Raw materials - clay	Local network of beekeepers	Local network of farmers	Local network of farmers
	Skilled workers in rural communities to manufacture the pot-in-pot products	Local network of "Bee Promoters" for capacity building	Equipment to extract essential oil from dried leaves	17 hectares cultivated and a plant nursery, all managed with sustainable agricultural practices and organic farming
	Sales assistants	Processing and packing facility	Production, packaging and storing facility	Processing and packaging facility
Key Activities	Exploring demand for pot-in-pot products in rural communities	Provide training in beekeeping, hive management and hygiene to ensure product quality	Recruiting local subsistence farmers for the cultivation of medicinal plants	Purchasing compost from smallholder farmers
	Training local crafters on how to produce pot-in-pot products, according to the specifications required by the customer	Processing, packing and marketing honey and honey products	Buying medicinal plants from subsistence farmers and processing them into herbal remedies to be sold in local and international markets	Cultivating and processing medicinal plants to produce medicinal remedies for BoP consumers and other companies

Business Model Canvas	One Acre Fund	Safi Organics	Unique Quality Product Enterprise	Yice Uganda
Value Propositions	Providing asset-based financing and training to smallholder farmers	Processing waste rice husk into biochar which is sold as a cheap fertiliser to smallholder farmers	Promoting the cultivation and processing of fonio as as climate resilient crop using traditional farming methods,	Providing access to agricultural knowledge, capital and markets for subsistence farmers,
	while increasing the climate resilience of smallholder farmers	and by doing so replacing inorganic fertilisers and increasing carbon storage in agricultural soil.	training women in rural communities	while at the same time increasing agricultural yields by promoting sustainable agriculture practices.
	and promoting a sustainable intensification of agriculture to prevent the loss of forests.		recovering infertile and abandoned communal land	
Customer Segments	Smallholder farmers	Smallholder farmers	BoP consumers in local markets (children, pregnant women, elders)	Subsistence farmers
Channels	Direct provision of farming inputs	Direct sale Door-to-door sale through young farm agents	Retail	Farm agents (100% women)
Customer Relationships	Personal assistance Co-creation	Dedicated personal assistance, training on sustainable soil treatment solutions and organic farming	Transactional	Direct engagement in training, hygiene and Farming programmes
Key Resources	Local network of smallholder farmers	Raw materials (waste rice husk)	Local network of fonio harvesters	Local network of farm agents (100% women)
	Farming inputs	Technology and processing facility	Access to abandoned plots of land	Information Technology to provide agricultural information and collect payments through mobile phones
	IT solutions	Local youth employed as farm agents	Female employees for fonio processing and quality controls	
Key Activities	Asset-based financing for smallholder farmers and distribution of farming inputs	Collecting and processing waste rice husk to produce biochar	Supporting women in gaining the access to the abandoned plots of land	Training on sustainable agriculture practices for subsistence farmers
	Training on sustainable agricultural practices to increase yields in without affecting the environment	Selling affordable biochar to smallholder farmers	Training and employing women in fonio harvesting and processing	Giving flexible loans (30% as farm inputs, 70% as money)
	Facilitating the access to the market for smallholder farmers		Buying fonio from female smallholder harvesters, processing it and marketing under the label "DIM Fonio"	Programmes to promote hygiene
	Providing crop insurance to increase the climate resilience of smallholder farmers	Training young local as farm agents to distribute the biochar		Promoting organic agriculture in refugee camps.