

A food system approach project involving cashew nuts, product development and combating malnutrition in Guinea Bissau

Gabriela Loewe

Mestrado em Ciências do Consumo e Nutrição

Faculdade de Ciências e Faculdade de Ciências da Nutrição e Alimentação

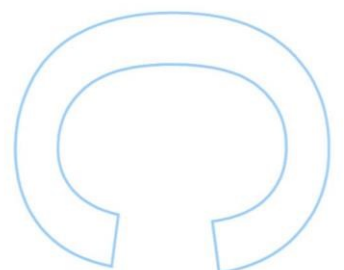
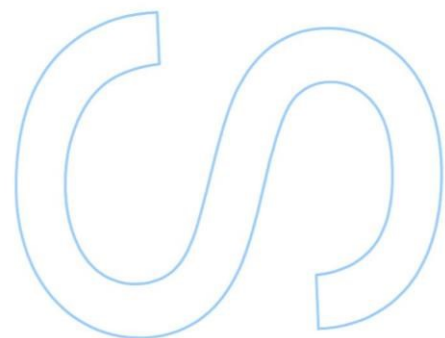
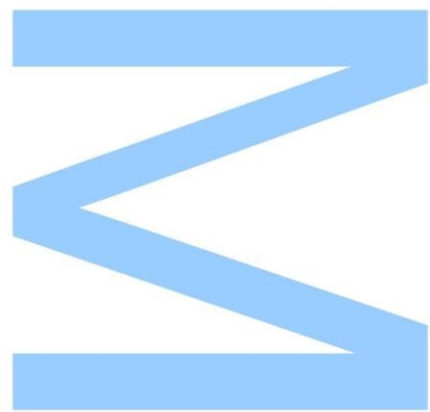
2022

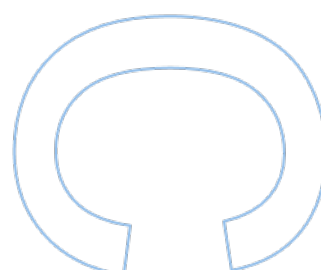
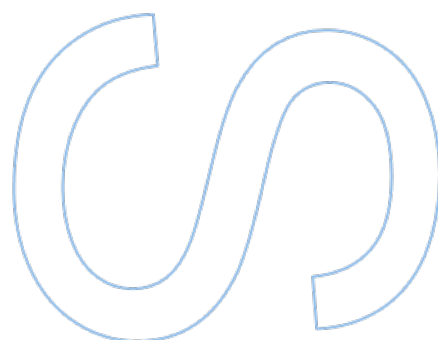
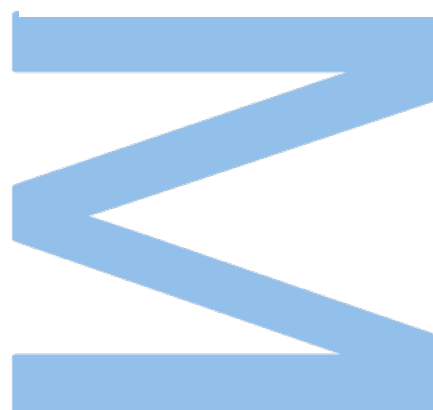
Orientador

Ana Pinto de Moura, Professora Auxiliar, Universidade Aberta

Coorientador

Susana Caldas Fonseca, Professora Auxiliar Convidada, Universidade do Porto





Declaração de Honra

Eu, Gabriela Loewe, inscrito(a) no Mestrado em Ciências do Consumo e Nutrição da Faculdade de Ciências da Universidade do Porto declaro, nos termos do disposto na alínea a) do artigo 14.º do Código Ético de Conduta Académica da U.Porto, que o conteúdo da presente dissertação reflete as perspetivas, o trabalho de investigação e as minhas interpretações no momento da sua entrega.

Ao entregar esta dissertação, declaro, ainda, que a mesma é resultado do meu próprio trabalho de investigação e contém contributos que não foram utilizados previamente noutros trabalhos apresentados a esta ou outra instituição.

Mais declaro que todas as referências a outros autores respeitam escrupulosamente as regras da atribuição, encontrando-se devidamente citadas no corpo do texto e identificadas na secção de referências bibliográficas. Não são divulgados na presente dissertação quaisquer conteúdos cuja reprodução esteja vedada por direitos de autor.

Tenho consciência de que a prática de plágio e auto-plágio constitui um ilícito académico.

Gabriela Loewe,

Porto, 31 de Outubro de 2022

Agradecimentos

A Deus por sua indescritível e infinita graça.

Ao Professor Luís Cunha pelo precioso conselho sobre o direcionamento da orientação deste trabalho.

À Professora Ana Pinto de Moura, por aceitar o desafio de orientar e colaborar com este trabalho. Por sua paciência, disponibilidade, sabedoria e generosidade em partilhar o seu conhecimento.

À Professora Susana Caldas Fonseca, enquanto coorientadora deste trabalho, por seu apoio e valiosa colaboração.

Aos meus pais pelo incentivo. Ao meu marido, pelo encorajamento e apoio nas horas mais difíceis. À minha filha pela motivação.

À Universidade do Porto por me permitir acesso a um conhecimento tão estimado por mim e a todos os docentes do Mestrado em Ciências do Consumo e Nutrição por me inspirarem e cumprirem um grande propósito neste mundo através do seu ensino.

À Hope for Fulanis por levar esperança à um povo esquecido e por todo esforço em encontrar seus tesouros escondidos.

À SONAE MC pela colaboração e confiança, sobretudo, aos participantes deste trabalho.

Resumo

Aproximadamente 3,1 milhões de crianças ainda morrem anualmente de malnutrição e a maioria ocorre em países de baixo e médio rendimento, e isto está largamente relacionado com o desequilíbrio nos sistemas alimentares actuais. A sustentabilidade dos sistemas alimentares tem implicações sociais, económicas e ambientais, pelo que os sistemas alimentares não funcionam com objectivos isolados. Só adoptando uma abordagem do sistema alimentar em programas sensíveis à nutrição e agricultura será possível erradicar a má nutrição em todas as suas formas e prevenir as suas consequências. Foi criada uma parceria entre uma ONG e uma empresa portuguesa, com o objectivo de combater a desnutrição na Guiné-Bissau através do desenvolvimento do "Pasta 100% Caju". O objectivo deste estudo era explorar o projecto de desenvolvimento deste produto através das seguintes fases: i) avaliação do envolvimento dos intervenientes da empresa envolvidos no desenvolvimento do produto, ii) avaliação da percepção do consumidor português e iii) avaliação do impacto do projecto relativamente aos objectivos da ONG e através dos intervenientes da ONG. A metodologia deste estudo incluiu entrevistas com as partes interessadas, um questionário ao consumidor, e a cedência de dados pela empresa. Como principais resultados, o envolvimento e empenho das partes interessadas do projecto parece ser um dos principais factores relativos ao seu desenvolvimento, sustentabilidade, e replicabilidade. Por outro lado, a relevância e a sua eficácia na população alvo parece representar o sucesso deste tipo de projecto.

Palavras-chave: Desenvolvimento de Produtos, Castanha de Caju, Malnutrição, Sistema Alimentar

Abstract

Approximately 3.1 million children still die from malnutrition each year and mostly occur in low- and middle-income countries, and this is largely related to the imbalance in current food systems. Sustainability of food systems has social, economic, and environmental implications, so food systems do not operate with isolated goals. Only by adopting a food system approach in nutrition and agriculture-sensitive programs it will be possible for malnutrition in all its forms to be eradicated and its consequences prevented. A partnership between an NGO and a portuguese company was created, with the aim to fight malnutrition in Guinea-Bissau through the development of “Pasta 100% Caju”. The aim of this study was to explore the project of this product’s development through the following phases: i) evaluation of the involvement of the company’s stakeholders engaged with the product development, ii) evaluation of the Portuguese consumer perception and iii) evaluation of the impact of the project regarding the NGO objectives and through the NGO’s stakeholders. The methodology of this study included interviews with stakeholders, a consumer questionnaire, and the ceding of data by the company. As the main results, the involvement and commitment of the project’s stakeholders appears to be one of the main factors regarding its development, sustainability, and replicability. On the other hand, the relevance and its effectiveness in the target population seems to represent the success of this type of project.

Keywords: Product Development, Cashew Nuts, Malnutrition, Food System

Index

List of tables

Table 1 The nutrition declaration of "Pasta 100% Caju" on the product packaging label (in 100 g of product)	26
Table 2 Competitors products to "Pasta 100% caju" in the Portuguese market (collected data done between March 2022 and September 2022).....	27
Table 3 Characterization of interview participants.....	28
Table 4 Categories for analysis of the company interviews	29
Table 5 Roles performed and Motivation.....	30
Table 6 Weaknesses and Strenghts.....	32
Table 7 Opportunities and Threats	34
Table 8 Corporate Values and Sustainability of NGOs projects.....	36
Table 9 Sociodemographic characteristics of participants	39
Table 10 Respondents distribution (N and %) according with who in the household consumes the product.	40
Table 11 Respondents distribution (N and %) according with time of day of product consumption	41
Table 12 Respondents distribution (N and %) according with monthly consumption frequency.....	41
Table 13 Respondents distribution (N and %) according with the encouragement to buy the first time the product "Pasta 100% Caju"	42
Table 14 Respondents distribution (N and %) according with purchase continuity of the product.....	43
Table 15 Respondents distribution (N and %) according with Reasons to continue buying "Pasta 100% Caju"	44
Table 16 Respondents distribution (N and %) according with Reasons to stop buying.....	45
Table 17 Respondents distribution (N and %) according with Interest with buying another product with a humanitarian character	45
Table 18 Respondents distribution (N and %) according with post-purchase attitude .	45
Table 19 Descriptive statistics from sensory attributes consumers perception (of 1 to 5 where 1: very unpleasant; 2: slightly unpleasant; 3: neutral; 4: not very pleasant; 5: very pleasant)	46
Table 20 Influence of price and quality on food expenditures (where 1 means 'price over quality' and 9 means 'quality over price')	46
Table 21 Subjective health status (where 1 means 'not at all healthy' and 9 means 'quite healthy').....	47
Table 22 Involvement with humanitarian causes (where 1 means 'not at all involved' and 9 means 'quite involved')	47
Table 23 Characterization of interview participants.....	48
Table 24 Categories for analysis of tha NGO interviews.....	49
Table 25 Roles performed and motivation.....	49
Table 26 Relevance of the project to the needs of the target population and Projects' Effectiveness	51
Table 27 Sustainability and Institutional Experience	53
Table 28 Sales and donations throughout the months. Source: SONAE (2022).....	55

List of figures

Figure 1: UNICEF Conceptual Framework—causes of malnutrition and death	4
Figure 2 Distribution map of Fula people in Africa. Dark green: a major ethnic group; Medium: significant; Light: minor. 1:400.000. Source: Wikipedia. Accessed 19 September 2022, https://en.wikipedia.org/wiki/Fula_people#cite_note-35	8
Figure 3 Fula children in Tabanane, Bafatá, Guinea-Bissau. Source: © Loewe G.	9
Figure 4 Cashew nuts, in shell production in Guinea-Bissau over the period of 1961-2020. Source: FAOSTAT in October 2022.	14
Figure 5 Cashew tree and cashew apple, species <i>Anacardium occidentale</i> (A,B,C). Source: http://www.flickr.com/photos/70268842@N00/483016381/ ;	15
Figure 6 Cashew Nuts being handled by a Fula man. Source: © Loewe G.	16
Figure 7 Communication in press releases, “Missão Continente” website and Continente website Source: https://shoppingspirit.pt/pasta-100-caju-do-continente-promove-a-nutricao-saudavel-e-combate-desnutricao-infantil/ ; https://www.arodadaalimentacao.pt/	18
Figure 8 Communication in company’s and digital influencers’s social networks. Source : https://www.facebook.com/continenteoficial/photos/a.316956707438/10160705437567439/?type=3 ; https://www.instagram.com/p/CQrBW1Aptwi/ ; https://www.instagram.com/p/CQ	19
Figure 9 Front packaging of “Pasta 100% Caju”.	25
Figure 10 Back packaging of “Pasta 100% Caju”.....	25
Figure 11 Respondents who consumed oneself the product in their household according with age group	40
Figure 12 Intensity of different aspects influence on “Pasta 100% Caju” purchase (1=“very negatively” and 5=“very positively”)	43
Figure 13 Monthly consumption frequency (1: 0.5 times/month; 2: 2 times/month; 3: 4 times/month; 4: 16 times/month; 5: 28 times/month) according with Purchase continuity of the product.....	44
Figure 14 SWOT analysis.....	57
Figure 15 Projects constrains and favourable factors	58

1. Introduction	1
1.1 <i>Malnutrition: Definitions and Key Findings</i>	1
1.2 <i>Causes of Malnutrition.....</i>	3
1.3 <i>Fighting malnutrition: the food system approach interventions.....</i>	5
2. The Fula Livelihood Group: Characterization, Malnutrition Problems, and Agricultural Context.....	8
2.1 <i>Characterization and Malnutrition Problems</i>	8
2.2 <i>Agricultural Context</i>	12
3. The “Pasta 100% caju” Project	16
4. Purpose of Study	19
5. Methodology.....	20
5.1 <i>Evaluation of the Involvement and Motivation of the Company’s Stakeholders Engaged with the Product Development.....</i>	20
5.2 <i>Evaluation of Portuguese Consumer Perceptions</i>	21
5.3 <i>Evaluation of the Impact of the Project by the NGO.....</i>	23
6. Product Characteristics	24
6.1 <i>Packaging.....</i>	24
6.2 <i>Regulation (EU) n° 1169/2011</i>	26
6.3 <i>“Pasta 100% Caju” market.....</i>	27
7. Results.....	28
7.1 <i>Evaluation of the Involvement and Motivation of the Company’s Actors.....</i>	28
7.2 <i>Evaluation of Portuguese Consumer Perceptions</i>	38
7.3 <i>Evaluation of the Impact of the Project by the NGO</i>	48
8. Discussion	59
9. Conclusion.....	70
10. References.....	71
Appendix.....	77
1. <i>Interview Guide - Interview with Company Stakeholders Involved in the Project</i>	77
2. <i>Portuguese Consumer Perception of "Pasta 100% Caju" Questionnaire</i>	79
3. <i>Interview Guide - Interview with NGO Actors Involved in the Project</i>	86
4. <i>Transcript Interviews with Company Stakeholders Involved in the Project.....</i>	88
5. <i>Transcript Interviews with NGO Actors Involved in the Project.....</i>	98

1. Introduction

1.1 Malnutrition: Definitions and Key Findings

According to the FAO (2000, p. 26) definition, malnutrition is “an abnormal physiological condition caused by inadequate, unbalanced, or excessive consumption of macronutrients and/or micronutrients”. Malnutrition includes the following forms: overweight and obesity, undernutrition, and micronutrient deficiencies. At one end of the malnutrition spectrum is the problem of over nourishment, leading to overweight and obesity. At the other end of the malnutrition spectrum is the problem undernutrition (FAO, 2000).

Overweight and obesity corresponds to body weight that is above normal because of an excessive accumulation of fat. For adults, it is usually a manifestation of over nourishment. Overweight is defined here as Body Mass Index (weight in kilograms by the square of the height in meters): BMI >25-30 and obesity as BMI >30. For children from birth to 18 year old, one must look at the relevant WHO Growth Standards for age and for sex, and to track and monitor children growth over time to detect any nutritional risk (WHO, 2008). Globally, an estimated 38 million children under-five children were overweight or obese, in 2020. In the African region, the focus of our attention, since 2000, the burden of overweight and/or obesity among under-five children has increased by nearly 24% (WHO, 2021b). Overweight and/or obesity during the childhood period affect physical and psychological health with a chance to stay obese during the adulthood period. Obesity during this period might be prone to develop non-communicable diseases (NCDs) like diabetes and cardiovascular diseases (Sahoo et al., 2015). The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended, as there has been: i) an increased intake of energy-dense foods that are high in fat and sugars; and ii) an increase in physical inactivity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization (WHO, 2021a). This has generated increases in diet-related Non Communicable Diseases (NCD) in developed and developing countries, such as cancers, chronic respiratory diseases and diabetes (WHO, 2022).

Undernutrition is the result of undernourishment, poor absorption and/or poor biological use of nutrients consumed. Undernutrition is known by the three broad sub-forms: wasting, stunting and underweight. Wasting is known as low weight for height, and usually indicates recent and severe weight loss. It is usually associated with a food shortage and/or infectious disease, such as diarrhea, which also causes weight loss. A young child who is moderately or severely wasted has an increased risk of death, nevertheless treatment is possible. On the other hand, stunting is known as low height-for-age, and is explained by chronic or recurrent undernutrition, usually associated with poor socioeconomic conditions, poor maternal health and nutrition, frequent illness, and/or inappropriate feeding and care of infants and young children early in life. Stunting is particularly more associated with physical and cognitive potential (WHO, 2021a). Underweight, as the name implies, refers to low weight for age are known as underweight children. An underweight child may be wasted, stunted, or both. Low dietary energy supply, wasting, stunting, underweight and low body mass index (BMI) are all used to identify the problem. This energy deficit leaves its victims prone to illness and early death; it also makes them listless and unable to concentrate (WHO, 2000).

Globally, 155 million children under the age of five years suffer from stunting. Approximately 3.1 million children still die from malnutrition each year and 45% of deaths among children are related to undernutrition and these mostly occur in low- and middle-income countries (Robert E. Black et al., 2013). Undernutrition and specifically stunting affect about 28 million and 56 million children under the age of 59 months in Africa (R. E. Black et al., 2013). Childhood undernutrition, as measured by prevalence in children under five years of age, is worst in rural areas in all countries for which data is available and makes children much more vulnerable to disease and death (Smith et al., 2005). Also, typically, access to health, education, and basic services is significantly better in cities, which eventually affects and influences the nutritional conditions.

Finally, micronutrient deficiency refers to the lack of vitamins, minerals and/or trace elements required in small amounts which are essential for the proper functioning, growth and metabolism of a living organism (Miller & Welch, 2013). The most significant deficiencies are of Iodine, vitamin A, and iron, as they represent a major threat to the health and development of populations around the world, particularly children and pregnant women in low-income countries (WHO, 2021a) and people with compromised immune systems, such as people with AIDS (WHO, 2000). The standard interventions to improve the nutritional status of children covered in the literature consist of single and multiple micronutrient supplementation in the prenatal and antenatal period for women, dietary supplementation, breastfeeding encouragement and complementary feeding

promotion and ready-to-use supplementary foods (Keats et al., 2021). In 2018, at least half of all children under five years were suffering from the sub-form of deficiencies in vitamins and minerals, most known as hidden hunger, mostly caused by poor dietary quality and diversity, which in turn accumulates over time, leading to severe physiological consequences (UNICEF, 2019). Alternatively, adequate food intake, dietary diversity and a supportive environment are necessary from the time of conception until the end of the first 14 months of life for the normal development of a child, and the impact of poor nutritional quality of food in this period can cause physiological, psychological, and psychosocial damage into adulthood. Dietary diversity, in turn, is related to nutritional status, specifically through balanced intake of macro- and micronutrients (Burchi et al., 2011).

All concepts mentioned above and throughout this paper are in line with the FAO e-learning Academy's Nutrition, Food Security and Livelihoods: Basic Concepts course, which addresses basic issues and concepts related to food and nutrition, malnutrition, food security and livelihoods. Understanding these concepts is essential for assessing a food and nutrition situation, planning and implementing projects that address nutrition problems, and evaluating the nutrition outcomes of programs, investments and policies (FAO, 2022b).

1.2 Causes of Malnutrition

Malnutrition has multiple and interrelated causes. The UNICEF developed a conceptual framework on causes of malnutrition, particularly among women and children (Figure 1). The causes of malnutrition can be grouped into: i) basic causes (that comprises the socioeconomic and political contexts), ii) underlying causes (inadequate household food security, care of women and children, and the health environment and access to health care), and iii) immediate causes (inadequate dietary intake and diseases) of malnutrition (UNICEF, 1990). The immediate causes of malnutrition capture the physiological reasons why an individual child becomes malnourished (related to food intake and disease), which in turn are driven by the underlying causes (related to food, health and care), which in turn are determined by the basic causes of malnutrition (Sundaram et al., 2015). These three levels reflect the institutional or administrative level at which drivers of malnutrition operate, ranging from the individual child, the household, and the local community, and the wider regional, national, or even international level. As

a result, it is not enough to identify specific actions, as any action needs to be embedded in the relevant systems and institutions to ensure sustainability (Young, 2020).

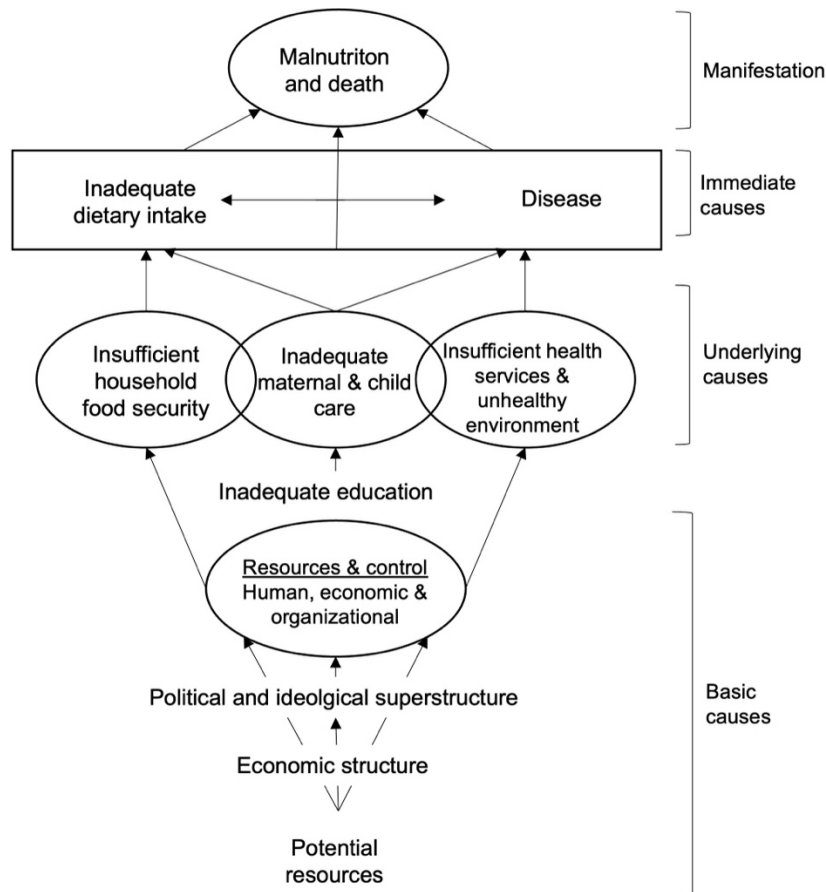


Figure 1: UNICEF Conceptual Framework—causes of malnutrition and death

In fact, different determinants of malnutrition are described, many of which involving complex relationships and usually overlap with each other. The most described are health accessibility, general determinants of health, hygiene, HIV prevalence, water accessibility and quality, medical assistance, and socio-economic factors, such as per capita income, which translates the poverty. However, it is known that there is high heterogeneity between different countries and regions, suggesting that further determinants such as environmental characteristics, climate change, and political stability may also have an influence on underweight (Ricci et al., 2019).

In an ecological study with sub-Saharan African populations, water accessibility, basic health assistance, HIV prevalence and poverty were described as the major determinants of undernutrition prevalence in children (Ricci et al., 2019). In fact, poverty

is well known as a determinant of undernutrition since it causes lack of food access and nutrient intakes. Global extreme poverty is decreasing, yet in sub-Saharan Africa there are now more extremely poor people than in the 1990s (Asongu & Le Roux, 2019).

This is particularly relevant for the vulnerable livelihood groups, like pregnant and lactating women, children under five years of age, adolescent girls, elderly people, people with HIV/AIDS and people with diseases are most at risk of malnutrition because they had higher nutritional requirements and lower capacity to absorb essential nutrients. They invariably end up being affected by the outcomes of inequity, due to their lack of opportunities to obtain healthy diets, healthy environments, and adequate basic health care (UNICEF, 2020). Specifically in vulnerable regions, nutrition inequity can be linked to underproduction in agriculture, poorly resourced small farmers, challenging application of research and development results, lack of food safety and quality assurance, high amounts of food waste from farm to consumer, deficient supply chain management, land tenure problems, and lack of empowerment to women in agriculture (Cordaro, 2013).

Particularly in Guinea-Bissau, stunting rates are nearly uniformly high across the three lowest wealth quintiles, but even in the wealthiest households nearly one-fifth of the children are stunted. This indicates that, while stunting is associated with poverty, other factors also put children at risk of chronic undernutrition in this country. These include the high prevalence and incidence of disease, particularly diarrhea, as well as inappropriate feeding and caregiving practices (UNICEF, 2017).

1.3 Fighting malnutrition: the food system approach interventions

Food systems can be defined as the coming together of food in multifaceted, multi-layered processes linking food production, processing, distribution, and consumption. These processes involve political, economic, social, and ecological relationships (Dekeyser et al., 2020). A widely accepted definition of a food system, proposed by Willet et al (p. 3)., states that it is "*all the elements and activities related to the production, processing, distribution, preparation, and consumption of food,*" where it includes the environment, people, inputs or raw materials, infrastructure, and everything that drives food from agricultural production to the consumer (Willett et al., 2019).

On the other hand, sustainable development can be benefited or hindered by food systems, depending on their balance. From a balanced view of food systems,

political, governmental, and private sector decisions are more protected and tend to be more sustainable over time. The sustainability of food systems has social, economic, and environmental implications, so food systems will never have isolated goals, for example, eradicating hunger through one intervention alone (IFPRI, 2016). A sustainable food system is at the heart of the United Nations' 17 Sustainable Development Goals (SDGs), which aim to transform agricultural and food systems to end hunger, achieve food security, and improve nutrition by 2030. The SDGs turn out to be practical and achievable goals that, in this context, inspired those who conceived this project (FAO, 2018).

Approaches that ensure that healthy and sustainably produced foods are the most accessible and desirable choice for all is the scenario that food systems aim to achieve, however, this requires consideration of many issues such as low access to clean potable water and land, food waste, clearing land for agriculture as a contributor to greenhouse gas emissions and a consequent biodiversity loss and climate changes that worsen the low productivity (Dekeyser et al., 2020).

In this context, the global commitment to universal health coverage is an opportunity to integrate nutrition care into health and food systems. Coordination across sectors is key to building functional and resilient systems, as well as integrating and expanding preventive and emergency nutrition care (FAO, 2019). Therefore, only by addressing inequities in food systems can undernutrition in all its forms be ended (UNICEF, 2019).

Therefore, in the fight against undernutrition, it is clear that more assertive interventions are needed, previously planned in terms of their implementation, which include education strategies and, in the long term, employment growth (Iversen et al., 2012). Also, it is imperative that intervention consider the whole food system of the target population and find strategies to work in a cycle.

A resilient and optimal food system involves people, as consumers, as the central focus, ensuring environmental integrity, economic self-sufficiency, and social well-being. It guarantees connections are made between sustainable natural resource management, food production, food consumption, and nutritional health (Burchi et al., 2011).

The use of primary resources from developing countries to create food products with the aim of benefiting the nutritional health of the population of these same countries is already a widely recognized practice. This can be seen in the development of the so-called Ready-to-use Therapeutic Foods (RUTF), usually made with peanut and milk powder, which are convenient therapeutic food intervention to cover the special nutrient

needs (macronutrient and micronutrients) of people with severe acute undernutrition in those patients that can be managed as outpatients or in those inpatients in the rehabilitation phase (Schoonees et al., 2013).

UNICEF is testing new formulations of RTUF, based on chickpeas, soy, oats, and trying to compare their effectiveness with the base formula that is made from peanuts. There is also interest in replacing powdered milk, which is the most expensive component of the current RTUF formulation, by including animal protein sources such as egg. The goal is to decrease the cost of RTUFs while improving their coverage and effectiveness, equity, and impact to treat children with acute malnutrition (UNICEF, 2021b).

The distribution of fortified foods and lipid-based food supplements is widely recognized and have been shown to be an effective intervention in the context of undernutrition in Africa. However there are factors that appear to affect this effectiveness, such as the duration of the interventions, the composition of the intervention, as well as baseline demographic characteristics and monitoring of the nutritional status of the participants (Langendorf et al., 2014; Matsungu et al., 2017).

A review that intended to assess the information about effects of RUTF on recovery, relapse and mortality in children (from six months to five years of age) with severe acute undernutrition concluded that it was not possible to reach definitive conclusions regarding differences in clinical outcomes in children with severe acute undernutrition who were given RUTF compared to the standard diet, or who were treated with RUTF in different daily amounts or formulations (Schoonees et al., 2013).

Considering the lack of consistency in the results of most commonly implemented treatments for food insecurity, in particular for treating and preventing malnutrition, in developing countries, FAO has proposed strategies to plan, implement, monitor, and evaluate nutrition and agriculture-sensitive programs, through the course "How to conduct a food and nutrition situation analysis", available in the FAO e-learning Academy (<https://elearning.fao.org/course/view.php?id=798>, <https://www.fao.org/3/i5107e/i5107e.pdf>). The first stage in the planning and implementing of a nutrition and agriculture-sensitive program is analyzing the food and nutrition situation, as well as the agricultural context of the livelihood group in focus.

2. The Fula Livelihood Group: Characterization, Malnutrition Problems, and Agricultural Context

2.1 Characterization and Malnutrition Problems

The Fulani or Fula are characterized as a dispersed livelihood group of herdsman and farmers living in the Sahel/Savannah belt of Africa. Today they inhabit the westernmost part of Africa, however, they can be found in areas near Sudan (Figure 2). The population origins of the Fula point to ancient Egypt or the Upper Nile valley, others even hypothesize the Middle East (Stenning, 1957). In the socio-political-cultural context, the Fula are considered a vulnerable livelihood group, being one of the least reached and politically recognized ethnic groups on the African continent. The Fula are traditionally nomadic herders, semi-sedentary or sedentary, and in Guinea-Bissau are found in the east of the country, near the border with Senegal (Pinto, 2009) (Figure 3).

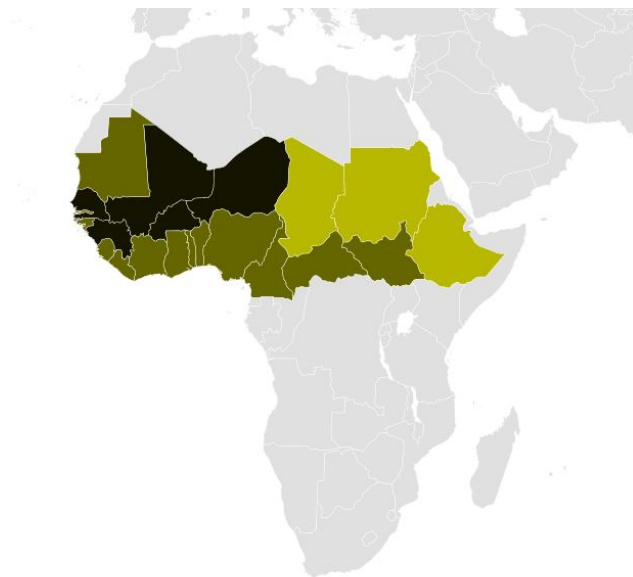


Figure 2 Distribution map of Fula people in Africa. Dark green: a major ethnic group; Medium: significant; Light: minor. 1:400.000. Source: Wikipedia. Accessed 19 September 2022, https://en.wikipedia.org/wiki/Fula_people#cite_note-35.



Figure 3 Fula children in Tabanane, Bafatá, Guinea-Bissau. Source: © Loewe G.

Data on Fula children in Guinea-Bissau are rare and almost non-existent, although there is data on children in the rest of the country (Ekpo et al., 2008).

Between 2000 and 2020, the prevalence of stunting in all population has changed in Guinea Bissau, from 33.8% to 27.7% (UNICEF, 2022). This could be explained to the economic growth with higher incomes leading to greater spending on healthcare and better diets. However, while economic growth can be proper this is not an automatic outcome. This experience was seen in several countries, and shows that substantial reductions in the prevalence of stunting are possible with high level of political commitment, effective nutrition governance, and a focus on maternal and child health and nutrition particularly in the first 1000 days (Donnenfeld, 2021).

Only 10% of children in Guinea-Bissau, aged 6-23 months, had access to minimum dietary diversity and 44% of these children had low fruit or vegetable consumption based on 2013-2019 data (UNICEF, 2017, 2019). Low access to minimum dietary diversity can be explained by several factors, all of which pointing to an imbalance in health systems and food systems. In Guinea-Bissau, the prevalence of minimum dietary diversity decreased from 10% to 8.1% between 2014 and 2020 (UNICEF, 2021a). According to the WHO, minimum dietary diversity is characterized by consumption of four or more food groups among seven food groups and can be a good indicator for assessing diet quality (WHO, 2018).

In 2020, 28.1% of children under 5 years of age in Guinea-Bissau were stunted, which is lower when compared to the average for sub-Saharan Africa (30.7%) and is considered a medium result based on cut-offs references for public health significance by World Health Organization (UNICEF, 2021a). However, 5.1% of children still have wasting and this is considered a poor result based on cut-offs references.

Unfortunately, this food diversity pattern is not seen in the Fula livelihoods in Guinea-Bissau, where regular meals are mostly composed of sorghum, fonio, corn, rice, milk, and okra. The main forms of malnutrition identified in the context of the beneficiaries of this project are underweight, stunting and wasting. This reality could be elucidated through data on the indicators of these malnutrition forms obtained from the Multiple Indicator Cluster Survey (MICS) conducted in the years 2018-2019. It was possible to observe that children under 5 years of age in the Bafatá region have negative Z-score averages for the indicators of nutritional status: weight-for-age, height-for-age, and weight-for-height, respectively, -1, -1.5 and -0.2. And when reported data was specific of the Fula ethnic group (in the whole country) the scores were equal or lower ((INE), 2020).

A cohort conducted with the Fula population living in the country of Gambia showed that stunting seemed to be common in children of this ethnic group, compared to other ethnic groups and that the same stunted or underweight children tended to be anemic. The authors of this study related the nutritional status of these children to sociocultural habits of the Fula, such as sedentary lifestyle, low milk consumption due to purely social use of cattle, maternal malnutrition that may be related to the fact that women are the last to eat their meals because of the gender dynamic within the household, and finally, food taboos that may contribute to caloric-food depletion (Wilson et al., 2018).

It was identified that Fula pregnant women do not consume eggs, bread, bananas, catfish, and peanuts. These are some of the taboos identified through interviews with a group of ethnic Fula people in a study conducted in 2013. Diet during pregnancy and lactation is known to play a crucial role in the protein-calorie malnutrition of the child, and if food taboos are followed, they can contribute to the depletion of these nutrients over generations of the ethnic group (Martínez Pérez & Pascual García, 2013).

The low diversity of foods available in Fula villages is already a fact, added to this, a pregnant woman who avoids eating bread is reducing her intake of carbohydrates, vitamin B, phosphorus, magnesium, and potassium. By not eating bananas, for example, she is reducing the amount of vitamin A, potassium, folic acid, iron, phosphorus, and calcium. If a pregnant woman decides not to eat eggs, she may be affected by a

decreased intake of protein, calcium, iron, vitamin A, and cholesterol. Therefore, in combination with other cultural factors and severe economic constraints, food taboos are an aspect that impacts the health and nutrition of the most vulnerable, in this case pregnant women and, indirectly, children (Martínez Pérez & Pascual García, 2013).

It is important to understand the political context of nutrition in Guinea-Bissau and how this affects the Fula population. Guinea-Bissau as a member of the Community of Portuguese Speaking Countries (CPLP) gives high priority for the eradication of hunger and poverty in its territory and takes into account the Strategy for Food and Nutritional Security (ESAN-CPLP). In fact, the Food Security and Nutrition Strategy (ESAN-CPLP), adopted in 2011, is a real and operational tool to improve levels of human development in the member states of the CPLP, and is perfectly aligned with the United Nations' Goals of Sustainable Development (UN, 2022). The pillars of CPLP Strategy are: i) strength the governance of public policies on Food and Nutrition Security at all levels of government; ii) promote access to food and improve livelihoods of more vulnerable groups; iii) increase food availability based on small scale farming (CPLP, 2015).

In 2014, Guinea-Bissau joined the Scaling Up Nutrition (SUN) movement, which aims to promote nutrition by unifying efforts between different parts of society to address all forms of malnutrition. While the country is already committed to public policies for nutrition such as vitamin A supplementation for children, promotion of complementary feeding, and the presence of regular statistically representative nationwide surveys, there is still much to be done (HANCI, 2019). More neglected populations, such as the Fula population living in the villages (*Tabankas*) of the Bafatá region, unfortunately, end up being marginalized from many interventions, which never reach them or are slow to arrive, thus delaying their beneficial impact.

Vulnerability in livelihoods is widely associated with the diagnosis of different types of malnutrition (Das et al., 2018; Devine & Lawlis, 2019; Roba et al., 2016). The vulnerability of the Fula ethnic group in Guinea-Bissau in relation to the nutritional status of the population is expressed both physiologically and socioeconomically. Physiologically because children, lactating women, the elderly and sick people who have or have had malaria/ "*paludismo*" are those who are apparently underweight. And socioeconomically, due to the evident poverty situation in the villages. The relationship between limited access to nutritious food, i.e., food diversity, and food insecurity is well known, especially in youth populations, and is partly explained by economic factors (Devine & Lawlis, 2019).

Poverty is one of the main determinants of malnutrition in this population (Adeyeye et al., 2017). Indeed, in 2018, 47.7% of people were still living below the poverty line in Guinea-Bissau, and the trend of this data is that it has increased after the covid-19 pandemic (*World Bank Group*, 2018). And data from Guinea-Bissau's National Institute of Statistics and Census shows that the region of Bafatá, where many Fula live, corresponds to one of the regions with the highest level of absolute poverty in Guinea-Bissau (72.4%), contributing 13.6% to the country's national poverty (*National Institute of Statistics and Census (Guinea-Bissau)*, 2010).

2.2 Agricultural Context

The colonial system in most Sub-Saharan African countries was export driven through inadequate production systems, whose motivations were political and self-interested, rather than promoting rural economic development and food security at home through research into what would be beneficial to the population. From this context, serious local food shortages began to emerge and the predominance of monoculture (Bjornlund et al., 2022). In the post-independence period, governments saw the Western agricultural model as the best way to develop, so agricultural policies ended up focusing increasingly on exports and less on the need to integrate food production systems into the national economy, the development of supply chains and associated market infrastructure, storage and value added, and the introduction of appropriate technologies. As a result, Africa is the only continent in the world where increased export production has led to a decline in per capita food production, and not opposite (Bjornlund et al., 2022).

As previously reported, food insecurity and therefore poverty are ultimately related to the imbalance in the current agricultural system in the country, which is biased towards encouraging monoculture for export profit, for example cashew (Havik et al., 2018). Researchers in the field have concluded that there is a need to increase agroecosystem services in Guinea-Bissau through crop diversification, and that this would provide crops for the domestic market, increasing agrobiodiversity with positive social impacts, for example, on poverty (Monteiro et al., 2017). Most farmers in the Fula *tabankas* survive on livelihoods dependent on the use of a small number of crops and end up increasingly exposed to the risk of poor harvests. And specifically, those involved in cashew monoculture have low productivity and limited access to markets and productive resources.

Agricultural systems in north of Guinea-Bissau, where the Fula livelihood group are mostly focused on producing basically rice, maize, cashew nuts rather than producing a wider range of foods such as fruits and vegetables, so the disconnect between these systems and the nutrition challenges tracked is evident. This prioritization creates inequalities and therefore an imbalance in the availability of essential foods for healthy eating (Branca et al., 2019). Also, food security is further impacted by irregular rainfall, volatile prices of imported rice, and an economy based on an undiversified local cashew nut production (*World Bank Group*, 2017).

When it comes to cultivation in Guinea-Bissau, cashew (*Anacardium occidentale* L.) is the most relevant input in the economy, considering the country's gross domestic product that is directly affected by this input and its international trade, exportation, and price. Indeed, the country has an extremely high level of dependence on a single export, which is cashew, and according to data reported by the World Bank it is impossible to achieve broad success in export promotion and poverty reduction without a high degree of success in the cashew sector (*World Bank Group*, 2017). In fact, about 40% of food consumption in Guinea-Bissau depends on cashew sales, which makes it a very relevant product in the domestic economy. Cashew is therefore not only an important agricultural product, contributing significantly to both GDP and export trade at national level, but also an indispensable resource for the livelihoods of smallholder farmers, who represent the majority of households in this country (Carvalho & Mendes, 2016).

Actually, one study by Boubacar-Sid et al. concluded that a 15% increase in the farm gate price of cashew could result in an increase in food consumption of the extreme poor people of 9.5% (*World Bank Group*, 2017) and that 90% of export revenues are represented by cashew, but controversially only 4% of the production is processed nationally, which is explained by the technological and industrial limitation that the country faces (Havik et al., 2018).

The cashew nut was introduced in the lands of Guinea-Bissau by the Portuguese from the Northeast region of Brazil in the colonization times, initially aiming to recover the impoverished lands, however, its adaptation and propagation made it established as one of the major economic potentials in the country's agriculture, being its major export focus to China and India (Havik et al., 2018). West Africa is the world's newest and most ambitious cashew producer, accounting for 45% of world production in 2015, and specifically Guinea-Bissau's relevance in this market dates back only two decades (Figure 4). However, the potential of this crop in terms of value creation, export and sustainable development process is enormous (Carvalho & Mendes, 2016).

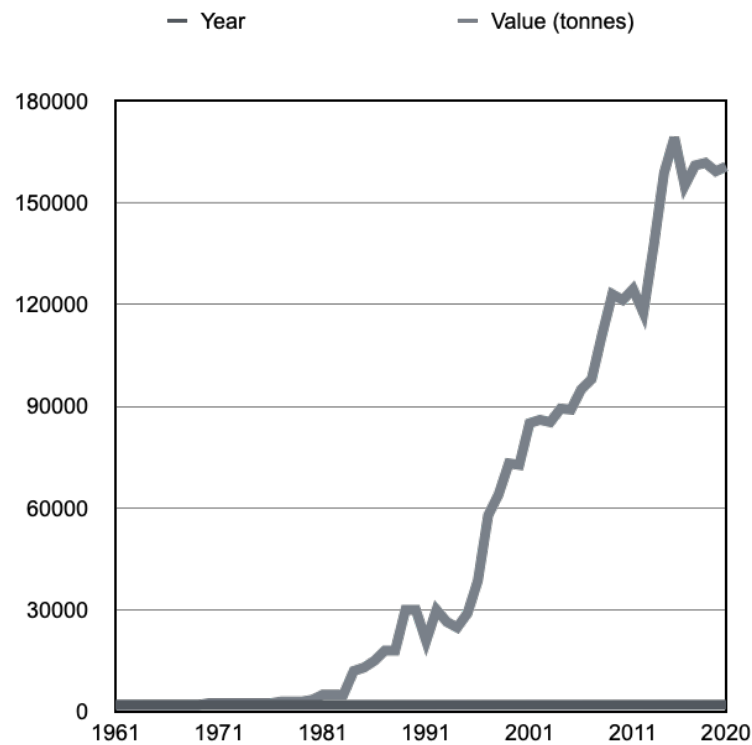


Figure 4 Cashew nuts, in shell production in Guinea-Bissau over the period of 1961-2020. Source: FAOSTAT in October 2022.

Today the cashew tree marks the landscape of the country, especially in the central and northern regions, where the Fula villages are also found. Cashew is mostly cultivated by smallholders as their essential source of income, and more than half of the country's households grow cashew (Havik et al., 2018). Therefore, entire villages (or *Tabankas*) wait most of the year for the beginning of the season that changes their routine for the work and income that cashew can offer them, this period starts in April and ends in August or mid-September (Monteiro et al., 2017) (Figure 6).

The cashew trees spread disorderly over almost the entire territory, because by the time of this introduction the seeds that were available were being used, that is, there was no selection of cultivars, so that it is very common to have in the same cashew trees yellow-fruited and red-fruited cashews, with larger and smaller nuts (Figure 5). This mixture can be one of the obstacles to industrialization and export, but this way they have been conducted. Another obstacle reported in the literature is that cashew production in Guinea-Bissau is less able to cope with pests and diseases that occur in its growing areas or with new strains that may emerge later because it is a crop that is grown outside its center of origin (Monteiro et al., 2017).

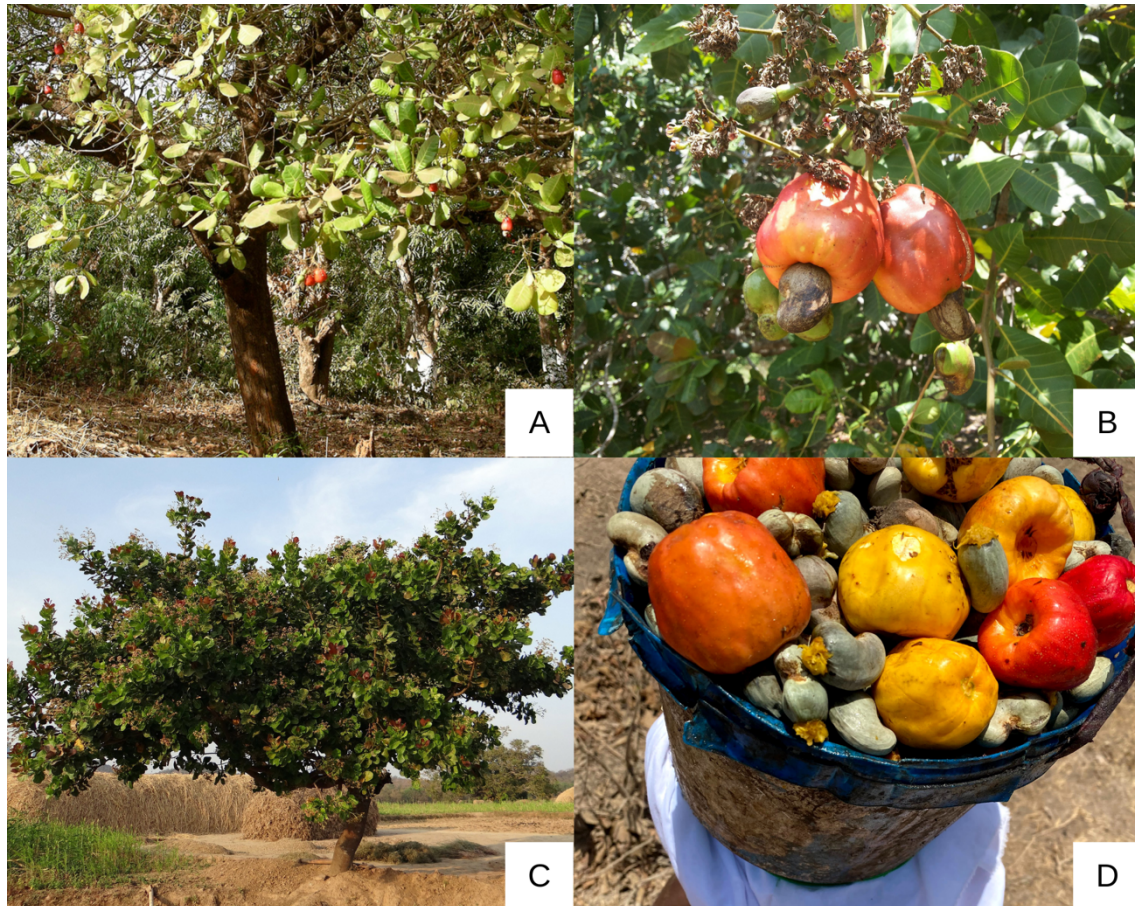


Figure 5 Cashew tree and cashew apple, species *Anacardium occidentale* (A,B,C). Source: <http://www.flickr.com/photos/70268842@N00/483016381/>;

In addition to this, other problems emerge with respect to the export of cashew nuts from Guinea-Bissau to other countries. They are precisely related to the low level of organization of the producers and the lack of quality verification at the departure from the country, which ends up being incompatible with the requirements of some markets, for example, in the European continent (Catarino et al., 2015).

An unfolding of this is how cashew is commonly transported (via used rice bags) and stored. In some cases, the nuts are stored in bulk at the assembly point until sufficient quantities are collected by the producers for economic shipment to the capital of the country, Bissau, increasing the time from harvest to the actual export and losing moisture (Hugo, 1990).

Finally, although Guinea-Bissau has a very good competitive position in terms of raw material production and processing potential, it faces a limited situation in terms of processing, industrial activities, transport, and marketing (Monteiro et al., 2017).



Figure 6 Cashew Nuts being handled by a Fula man. Source: © Loewe G.

3. The “Pasta 100% caju” Project

In Guinea-Bissau, the policy frameworks for progress on nutrition for the population are still under development, although the systems and entities for nutrition governance are linked to the government, their work is not sufficiently coordinated. Several stakeholders are doing beneficial activities, such as the non-governmental organization (NGO) “Hope for Fulanis”, however, the Technical Nutrition Committee, which should coordinate them, remains inactive due to government instability (SUN, 2022). Therefore, the efforts of the NGO “Hope for Fulanis”, its experience with the beneficiary population and knowledge of their needs, combined with the commitment and intention of the Portuguese retail company to get involved with humanitarian causes, sensitive to nutrition and sustainable development, resulted in the planning and idealization of the project “Pasta 100% Caju”.

The NGO “Hope for Fulanis” (<https://hopeforfulanis.org>), based in Portugal, created a partnership together with a company that is a leader for the country in the food retail business, called Modelo Continente, S. A. (www.continente.pt). This partnership aimed to fight undernutrition in the villages where the NGO works in the interior of Guinea-Bissau, namely within the scope of sustainable development for the Fula ethnic population.

The conception of the product "Pasta 100% Caju" had many stages, which influenced each other. The stage of choosing the industrialization partner, however, was fundamental because it effectively allowed the product development to move forward. After all, this industrial partner was essential for the transportation of cashew nuts from the African continent to Europe. Initially, the priority was to bring cashew nuts from Guinea-Bissau, a typical food in the NGO's country of intervention. Therefore, there was a first attempt to bring the nuts by plane, through the director of the NGO, in one of his trips to the country. However, the quality of the cashews was analyzed, who would then transform the nuts into paste, and it was not approved. Therefore, once a supplier of cashew nuts meeting the quality requirements was chosen, in this case coming from Mozambique, they proceeded with the consolidation of the partnerships.

This partnership project began in 2020 and consisted in the development of a product based on cashew nuts from the African continent and processed in Portugal by another industrial partner. The product was launched in Portuguese market in July 2021 and its sales and marketing results would support the NGO in actions directed to nutritional care, namely in supporting the creation of Centers for the Prevention of Child Undernutrition for Fula child. In fact, these operations started in October 2021, and would serve as a model for the NGO to replicate in other villages, depending on its effectiveness and success.

In order to promote the product, the goal marketing was to attract the largest number of consumers through communication. Which focused on dissemination on company's social networks, involving digital influencers and the hashtag #ajudarsabetãobem, in Continente Magazine, Continente mission website, press releases, displays and decoration in Continente stores, banners on Continente's website and on Continente's app, leaflets distributed in stores and on television through an auditorium program (Figure 7 and Figure 8).

The strategies of promoting the product focused on visual identity values: purpose, nutrition, health, balance and helping others (solidarity). The labeling was idealized based on transmitting to the consumer the purpose of the product and its origins, therefore, the colors have as reference the cashew nut (beige) and the land (brown), also patterns with designs that refer to the origin of the project (Africa). In addition, a symbol of the partner NGO was added to the label and this decision was justified as it is a special product among the conventional ones, with a "story behind it".

At the same time, the company also aimed to promote healthy eating in Portugal through the product developed, given the nutritional characteristics of this product: no added sugar, with only one ingredient (cashew nuts), and a source of protein.

In summary, the creation of a product made with cashew nuts, a typical food in the NGO's country of intervention and the purpose to bring financial return to the NGO and promote healthy eating, would be materialized as "Pasta 100% Caju".

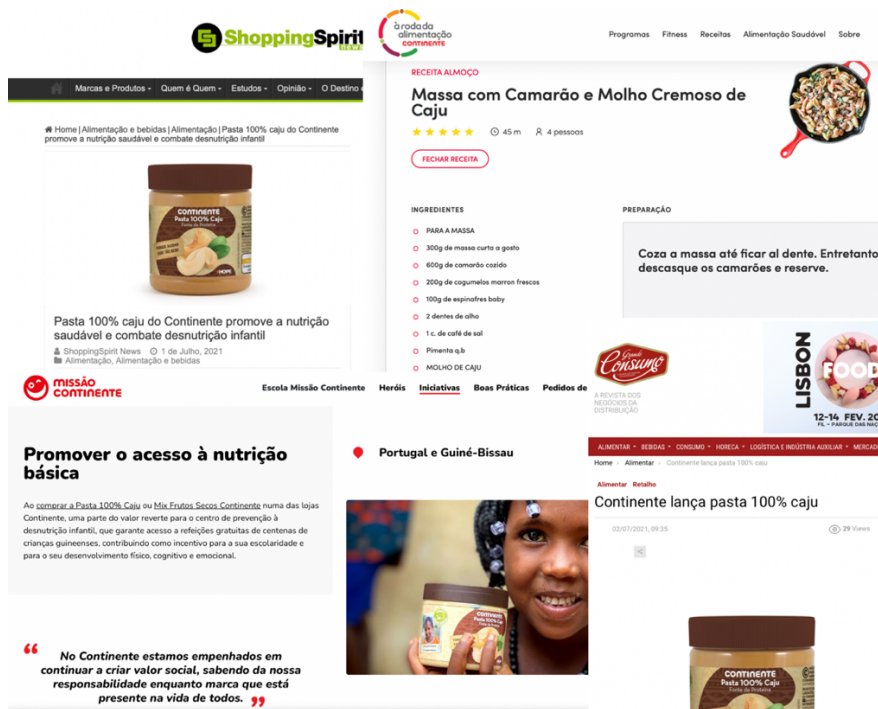


Figure 7 Communication in press releases, "Missão Continente" website and Continente website Source: <https://shoppingspirit.pt/pasta-100-caju-do-continente-promove-a-nutricao-saudavel-e-combate-desnutricao-infantil/> ; <https://www.arodadaalimentacao.pt/>

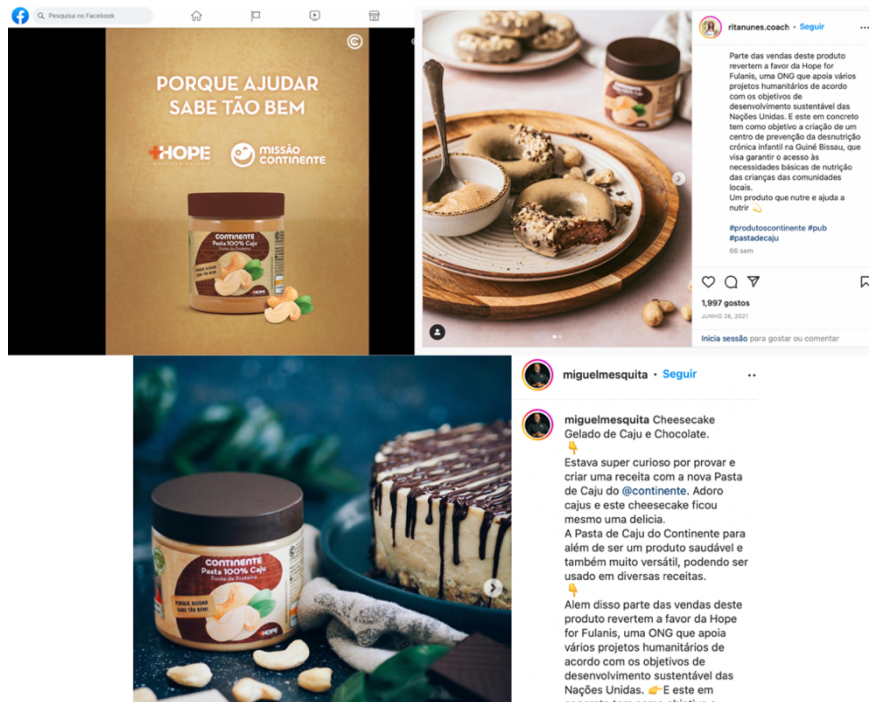


Figure 8 Communication in company's and digital influencers's social networks. Source : <https://www.facebook.com/continenteoficial/photos/a.316956707438/10160705437567439/?type=3> ; <https://www.instagram.com/p/CQrBW1Aptwi/> ; <https://www.instagram.com/p/CQ>

4. Purpose of Study

The aim of this study is to evaluate the impact of a food product's development in different areas of the food system in which it is inserted and in which it intends to impact. The specific objectives of this study are:

1. Evaluation of the Company's stakeholders involvement and motivation with the product development.
2. Evaluation of Portuguese consumer perception towards the campaign and the product.
 - a) Assessing consumer perceptions of the campaign involving the combat of malnutrition in Guinea-Bissau;
 - b) Describing the results of the campaign in Portuguese market;
 - c) Evaluating the Portuguese consumer perception of the developed product.
3. Evaluation of the impact of the project by the NGO.

- a) Evaluating the NGO actor's involvement in the project;
- b) Assessing the impact in the NGO's work.

5. Methodology

To accomplish the objectives reported above, the study considered the following phases: i) evaluation of the involvement and motivation of the company's stakeholders engaged with the product development (qualitative methodology), ii) evaluation of the Portuguese consumer perception towards the campaign and the product (quantitative methodology), and iii) evaluation of the impact of the project regarding the NGO objectives and through ONG's stakeholders (qualitative methodology). In all phases the instruments were primarily used in Portuguese and later translated into English for this document.

5.1. Evaluation of the Involvement and Motivation of the Company's Stakeholders Engaged with the Product Development

Participants were company actors that worked directly within this project: those who dealt with the NGO from the conception of the idea, the management and direction of product development.

Face-to-face semi-structured interviews were the method of choice to obtain in-depth descriptions of the opinions, perspectives and motivations associated to interventions carried out by the company actors. A semi-structured interview guide of open-ended questions was developed considering the following dimensions: i) involvement and roles (position held in the company, knowledge of the project, participation and roles played); ii) perceptions about strengths and weaknesses of the project (limitations, opportunities and future threats of the project); iii) evaluation about the partnership between the NGO and the company (Appendix 1). Company actors were interviewed individually at the offices of the SONAE company, in the city of Lisbon, in Portugal, in March/2022, and they received an informed consent for participation in the

interview. Interviews were audio-recorded, anonymously transcribed verbatim and then handed to the participants to be read and validated.

Interviews were analyzed using a thematic analysis procedure (Braun & Clarke, 2006). Themes were identified inductively and the content was analyzed both in terms of manifest and latent themes, an analytical process that involves a progression from description to interpretation data (Joffe & Yardley, 2003). Considering the transcripts of the interviews, a comprehensive process of data coding and identification of themes, consistencies, and discrepancies across themes, was undertaken and explored to provide an in-depth understanding of the texts. Once groups of themes were created, constant comparison was used to ensure the internal homogeneity and external heterogeneity of the categories (Patton, 1990). To illustrate the analysis, direct quotes by the participants were transcribed, serving as a description of the topic explored. The quotes used in this text were translated into English.

5.2. Evaluation of Portuguese Consumer Perceptions

Participants were selected from the national SONAE consumer database company, corresponding to a sample of approximately 500 individuals. They were recruited based on their purchase of “Pasta 100% Caju”, since at least one purchase of the product was recorded in family use company card. Before completing the questionnaire survey, participants were informed about the confidentiality and anonymity of the answers and the data collected, through the header, where the purpose of the study was presented.

A self-reported questionnaire (Appendix 2) was applied in a web-based survey to obtain the data, through the Google forms® platform in April 2022, and its disclosure was made through the company.

The questionnaire had 25 different questions, and some questions of interest to the company were removed from this study, as they were not pertinent to the objectives of the study, remaining 20 close-ended questions, some being multiple choice and others not. The questionnaire was divided into 4 parts: part I - Purchase and consumption; part II - Purchase decision; part III - Perception of sensory aspects; and part IV - Sociodemographic data.

The questions in part I were the following:

1. Do you usually buy, or have you ever bought the product "Pasta 100% Caju"?
2. Who in your household consumes the product? (Choose all that apply).
3. When is the product " Pasta 100% Caju " consumed? (You can choose more than 1 option).
4. How often is the product "Pasta 100% Caju" consumed? (Choose only 1 option).

In part II the questions focused on investigating influences for purchasing the product, been the following:

5. Do you consider that your initial decision to purchase " Pasta 100% Caju " was encouraged by: (choose all that apply).
6. On a scale of 1='very negatively' to 5='very positively' or N/S, please rate the influence of the following aspects on your purchase of " Pasta 100% Caju "?
7. After the 1st purchase did you continue to buy the product " Pasta 100% Caju "?
8. If yes, what is/are the reason(s) for continuing to buy "Pasta 100% Caju"?
9. If no, what/is the reason(s) for no longer buying the "Pasta 100% Caju "?
10. After you bought the product "Pasta 100% Caju ": you learned about the work of the NGO involved through the QR code; You followed the NGO on Social Networks; You made a donation to the NGO; You supported other humanitarian causes; Other than buying, You did not support this or any other humanitarian cause; You did not notice that this product was involved with a humanitarian cause.
11. Would you buy another product with a humanitarian nature?

Part III focused on the perception of sensory attributes, with the following question:

12. On a scale of 1 = 'very unpleasant' to 5 = 'very pleasant', what best matches your appreciation of Continente's "Pasta 100% Caju product:

Finally, Part IV revealed sociodemographic data, through the questions below:

13. Please indicate how do you rate the way your food expenditures are influenced by the cost of the products. (Use the following scale, where 1 = 'price over quality' and 9 = 'quality over price').
14. To define your current health status, please indicate the value of the following scale that best fits your situation (Use the following scale, where 1 = 'not at all healthy' and 9 = 'quite healthy').
15. To define your involvement in humanitarian causes, please indicate the value of the following scale that best fits your situation (Use the following scale, where 1 = 'not at all involved' and 9 = 'quite involved').

16. Gender.
17. How old are you.
18. What are your Educational Qualifications?
19. What is the range in which your household's monthly net income is, i.e., after taxes have been deducted?
20. Place of residence.

Descriptive statistics were applied to characterize the participants and their reported attitudes and perceptions, using frequency tables to systematize the results. Subsequently, the chi-square, binomial, Friedman, Wilcoxon, Mann-Whitney, Spearman Correlation, and Pearson Correlation statistical tests were performed in the software IBM® SPSS Statistics (version 28.0.1.0), according to the suitability of each variable or objective, with a significance level of 5%.

5.3. Evaluation of the Impact of the Project by the NGO

The impact of the project was evaluated this way: i) interviews with involved NGO agents; ii) and global donations data exploration.

In order to assess the perceptions of the actors who work in the NGO and have already been in the field (in Guinea-Bissau), as well as their roles in the project, a web interview was applied to them in April 2022. For this, an interview guide ([Appendix 3](#)) was developed with the following dimensions: i) perceptions and roles (in which the participation, motivations for involvement, and roles performed were questioned); ii) assessment of the impact of the project (relevance, coherence, effectiveness, usefulness, and sustainability). The web interviews were recorded, transcribed, and validated by the interviewees, and then analyzed, following similar procedures referred to 5.1. section.

Data regarding the donations and their application were provided by the NGO and by the company in April 2022, respectively. The sales data of the product were provided, taking into consideration how many units, and where were sold each month from June 2021 to February 2022, as well as the amount of donations given to the NGO each month. Aligned to this, information about NGO objectives concretization in Guinea-Bissau until the month of march of 2022 was provided, since it shows the period of ten months after the launch of the product (from June to March) and six months after the

implementation of the activities in the first Center for the Prevention of Child Undernutrition in the villages (from October to March).

6. Product Characteristics

"Pasta 100% Caju" (Figure 9) is a Portuguese product made from cashew nuts, with no other ingredients or additives, and the regulatory name of the product in Portugal is Roasted Cashew Paste. Its ingredient declaration is roasted cashew nuts and its declared net quantity is 0.18 kg. The content has a light brown color, which is characteristic of its base ingredient, the cashew nut and it is described by the brand as a natural source of protein and a good ally for a healthier and more balanced diet.

6.1 Packaging

The product is commercialized in a transparent PET (Polyethylene Terephthalate) plastic packaging 100% recycled, brown colored rotating lid closure system of the same material and with metallic film, which must be removed after opening.

The name of the product "Pasta 100% Caju", the claim Source of Protein, the logo of the partner NGO ("Hope for Fulanis") and the phrase "Because helping tastes so good!" are presented in the product label. Additionally, there is a description of the NGO and the purpose of the project, a QR code that leads to the NGO's website, and an indication of the "Guinea-Bissau mission" which is part of the "Missão Continente" - a brand project that is involved with humanitarian causes, inside and outside of Portugal.

On its back label are described the descriptive name, the ingredients, the allergens, the preservation conditions, the suggestion for recycling, the contact of the consumer information service, the description of the distribution, as well as the nutritional declaration table (Table 1), quantity, and bar code (Figure 10). On the lid "best before" date (with month and year) and batch are presented.



Figure 9 Front packaging of "Pasta 100% Caju".
Source: Continente online. Acessed September 2022.



Figure 10 Back packaging of "Pasta 100% Caju".
Source: © Loewe G.

Table 1 The nutrition declaration of "Pasta 100% Caju" on the product packaging label (in 100 g of product)

<i>Nutrient</i>	<i>Amount</i>	<i>Unit</i>
<i>Energy</i>	2565	KJ
<i>Energy</i>	618	kcal
<i>Lipids</i>	48.6	g
<i>of which saturated</i>	9.6	g
<i>Carbohydrates</i>	20.8	g
<i>of which sugars</i>	7.7	g
<i>Fibers</i>	3.2	g
<i>Proteins</i>	23	g
<i>Salt</i>	0.03	g

6.2 Regulation (EU) n° 1169/2011

Regarding the principles governing the mandatory food information referred to in Article 4 of the Regulation n° 1169/2011, the product fulfills paragraphs 1.a and 1.b, however, it is worth mentioning item i. of paragraph 1.b and consequently paragraph 1.c, which could be given greater attention, since the label says "may contain traces of peanuts and tree nuts", and the main ingredient, which represents 100% of the composition of the product is a nut, the cashew nut, and this may be allergic to some part of the population (according to paragraph 8 of Annex II of the same document).

In the matter of Article 7, which refers to fair information practices, the items are properly and correctly covered in the product information. However, there is some information to which more relevance could be given, namely the country of origin and place of provenance of the raw material (item a) of paragraph 1, also item 3.a of article 25 of chapter IV), which would be the country of Mozambique, or the African continent. This information could even benefit the marketing of the product, since it supports the concept involved in the project as a whole food system.

Finally, item j) of Article 9 of Chapter IV talks about the mandatory mention of the way of using the foodstuff, when its omission hinders its proper use and could have been

considered in the elaboration of the label, taking into consideration that cashew nut paste or butter is not a common food present in Portuguese food culture, which can cause confusion as to the correct way to handle and consume the product.

6.3 “Pasta 100% Caju” market

In Portugal and in the world, changes are being noticed concerning structuring and innovation of the food retail sector, some of them being the attention to the sustainability of the food system as a whole and of the commercialized products, the higher demand for healthy food, the influence of technology in the processes up to the consumer and the facilitations of digital means to transport the products. This sector, to be successful, must respond to the needs mentioned above and others, such as customer demand, which is associated with competition and supply, for this, it must seek to create value through its products and engage in constant innovation.

The “Pasta 100% Caju” was developed and marketed by one of the most relevant Portuguese food retail chains (“Continente”), as an innovative, sustainable, and healthy product. However, similar products are commercialized in the sector’s competing networks in the country, which were analyzed in the following table according to name/brand, price, and ingredients (Table 2). The information was obtained from the website of each retail chain; therefore, some chains could not be investigated because they do not have the products described on their respective websites.

In addition to food retail chains, Celeiro store was included in the search, which focuses on offering products for healthy eating, organic products, alternatives for diabetics and coeliacs, food supplements and organic cosmetics, to be relevant for the search for products similar to “Pasta 100% Caju”.

Table 2 Competitors products to “Pasta 100% Caju” in the Portuguese market (collected data done between March 2022 and September 2022)

Name/Brand	Marketed by	Price	Ingredients
Not Guilty nuts – 100% nuts cashew butter	Auchan	5.99€	100% roasted cashews
	El Corte Inglés	5.99€	
	Apolónia	8.99€	
	Continente	5.99€	

<i>Biomit – Manteiga de Caju Biológica</i>	El Corte Inglés	7.99€	Roasted Cashew* 100% (*organically grown) Non-EU Agriculture.
	Celeiro	7.90€	
<i>Carley's – Creme para Barrar de Caju Biológico</i>	El Corte Inglés	12.49€	Raw Cashew nuts
<i>Pasta 100% Caju</i>	Continente	4.99€	Roasted cashew nuts
<i>Pasta Caju Bio – Caju para barrar</i>	Celeiro	6.94€	Cashew* (99.9%) and Sea Salt. *Organic Production
<i>Creme de Caju biológico – vida celeiro</i>	Celeiro	7.69€	Roasted Cashew Nuts*. *Sourced from organic farming controlled by PT-BIO-03, Non-EU Agriculture.
<i>Manteiga de Castanha de caju biológica – Nature foods</i>	Celeiro	6.05 €	Cashew nuts*. *Organically grown

7. Results

7.1. Evaluation of the Involvement and Motivation of the Company's Actors

To evaluate the involvement and motivation with the project "Pasta 100% Caju" of the actors of the company, interviews were conducted with 3 people. They were from three different positions: Commercial manager of the honey and jams category, Head of private label and Business director for the grocery area, which includes the honey and jams category. In Table 3, the characterization of the respondents is considered.

Table 3 Characterization of interview participants

Participant	Sex	Participant company's function	Participant company's Project role	Participant company's relationship with the NGO
P1	Male	Commercial manager of the honey and jams category	Find an industrial partner, define recipes, define price, make the product data sheet, agree on the launch timing and open the development process	Purely professional
P2	Female	Head of private label	Project conception design, product idealization and creation	Professional and as a volunteer

P3	Female	Business director for the grocery area	Find a industrial partner, mediating the relationship with the NGO	Professional and as a volunteer
----	--------	--	--	---------------------------------

For the analysis of the interviews, four major categories were identified: involvement with the project; overall perception of the project; future prospects; relevance of partnerships between the second and third economic sectors (Table 4).

The large category “Involvement with the project”, represents how engaged the participants were with the project as a whole, and comprises the following categories: Roles performed: what were the participant’s roles throughout the project; Motivation: what was the motivation that led him/her to work in the project.

The large category General perception of the project represents each participant’s point of view about the project as a whole was and comprises the following categories:

Weaknesses: difficulty, limitation, or obstacle encountered throughout the project; Strengths: what can be considered benefits or advantages of the project.

The large category Future prospects represents everything that can be expected from the project for the future. For this reason, the following categories were defined: Opportunities: what the project can become in the future, what developments it can generate;

Threats: the project’s limiting points, which can or certainly will restrict some future activity.

Finally, the large category Relevance of partnerships between the second and the third economic sector represents, the importance of businesses that relate non-profit organizations (third sector) and private companies, which aim for profit and market expansion, in this case, in the food retail sector. From this major category, the following categories were identified: Corporate Values: values that drive the company, that represent its purpose; Sustainability of NGOs: the need to maintain the projects created by NGOs over time, ensuring their longevity.

Table 4 Categories for analysis of the company interviews

Main categories	Categories
Involvement with the project	Roles performed
	Motivation

<i>Overall perception of the project</i>	Weaknesses
	Strengths
<i>Future prospects</i>	Opportunities
	Threat
<i>Relevance of partnerships between the second and third economic sectors</i>	Corporate Values
	Sustainability of NGOs

a) Involvement with the project

Roles performed and Motivation

Regarding the role of activities performed, two of the interviewees mentioned participation in finding an industrial partner (P1 and P3), with P1 appearing to be the most involved in this phase as well as in other practical phases. P2 described his activities more focused on the phase of idea conception and project design, as well as on involving the company in the project.

When asked about motivation, the answers were more diverse, however all participants mentioned that one motivation for participating in the project was recognizing the great needs of the Fula population. P1 emphasized that due to his position in the company, he had to get involved in the project, but that he would also do so by his own decision. On the other hand, P2 spoke that the motivation is also strategic, as far as the company's business is concerned. And finally, notably, P3 seemed very involved with the NGO and its projects, reporting that his motivations are related to his trip to the field (Table 5).

Table 5 Roles performed and Motivation

Roles performed	Motivation
P1	<i>"I had to go into the field right away to find a new partner, a new manufacturer that had better quality raw material, (...). I had to onboard this supplier right away and after approving the product, define recipes and then close the price, the product data sheet, agree on the launch timing and open the process internally here for it to be developed by our packaging department and quality department"</i> <i>"The project came to me because I am the commercial manager of this category and therefore, I would have to take the project"</i> <i>"It was a project from the beginning embraced with a great motivation for the help that we will be providing to this community that in fact is very needy"</i>

P2	<i>"It was at the creation of the project, in that more exploratory part. It was basically involving the whole company (...) it was very much in design conception phase, of telling this story and connecting all the dots."</i>	<i>"From the beginning it was strategic for us because our concern about healthy eating is very strong"</i> <i>"Why not develop a product that would be good for those who can buy it, being a more balanced option from the nutritional point of view for those who can afford it, in such a way that it would release in profitability a value that could subsidize a basic diet on the other side, of those who have cashew, but cannot extract the value it has?"</i>
P3	<i>"I did a lot of the initial work with the category manager, trying to find what could be the best partner from an industrial point of view to help us in this process and this had many phases involved"</i> <i>"My role was very much in intermediation with the manager and Hope, and we found a partner here"</i> <i>"The whole project was developed in different phases by these three people."</i>	<i>"Obviously, this project goes far beyond Continente's just commercial motivation"</i> <i>"Especially after having been in Guinea (I had this opportunity in December last year) and seeing the real impact that this has on those children."</i> <i>"Now, we are building from scratch our second Centre, but my dream is definitely to quickly reach 5 villages, now we are going for the second one, and I would like that within 1 to 2 years we would be able to reach these 5 villages."</i> <i>"When I went to Guinea, I often made this comparison in my head: my daughters could be those girls I was seeing, but they had the good fortune to be born in a developed country like Portugal, which gives them completely different opportunities than those girls from the villages of Guinea-Bissau, living in the same world, at the same time, in the same year."</i>

b) Overall perception of the project

Weaknesses and Strengths

About the weaknesses of the project, the results about the perceptions of the interviewees were diverse. For example, only P1 mentioned the fact that the "Pasta 100% Caju" is a product with little turnover in stores, the difficulty with the financial part of the company, the short shelf life and breaks in stock, and consequent waste. Another difficulty that was mentioned only by P2 was the fact that it is a new type of product,

without any reference. P3, in turn, mentioned the pandemic occurring in the year 2020 as a challenge to the project. On the other hand, P2 and P3 mentioned the fact that the raw material could not come from Guinea Bissau, which was the original idea of the project.

When it comes to strengths, all participants mentioned the involvement of company's people with the project. The purpose of the product itself and how it was possible to execute it dealing with business was mentioned by P2 and P3 as a strength (*"On the one hand, promoting healthy eating, but also, on the other hand, helping us contribute to sustainable development"* – P3, *"The great advantage of this project is to prove that it is possible, even from an economic point of view, to have products with a purpose..."* – P2). Finally, P3 reported that even with difficulties, the product was launched in "record time" (Table 6).

Table 6 Weaknesses and Strengths

Participant	Weaknesses	Strengths
P1	<i>"Cashew paste is an expensive product, so it is not a product that rotates in stores very often... also because it can have a high price, it is not a very popular dried fruit and it is not so well known in this format, unlike peanut paste."</i> <i>"...The difficulty in procedures because this project is not something like launching a product and then selling it...it is necessary to involve many people because of the donation part, the fiscal department, for example, bringing on board some people from the financial area, so it is not a normal procedure."</i> <i>"I would have made it different into decide more quickly that we wanted to launch a new product. Which in this case (...) is a spread that has a lower price because of the peanuts, so it will rotate more surely and we will be able to donate more money."</i> <i>"The supplier didn't have this recipe developed, and he also didn't have studies of the product's shelf life, so this had to be launched initially with a</i>	<i>"I think the strong point was motivation because we internally at SONAE even though we knew that this product might never receive a number of big sales and large volumes, it was always something that we had the intention of investing time and work in, even though it wouldn't give a very big return in terms of profit, because it ends up giving a much bigger return in emotional terms."</i> <i>"I think the strong point was always the motivation and involvement of everyone, even at the top level, the commercial director was always very concerned, always putting pressure to see how it was going, that was very strong."</i>

shelf life of 6 months (which is very short)”

“We bought a lot of the product to fill the stores and to donate more money in an initial phase...But it turns out that... we had a very large volume of purchase at beginning and now... there was a fall in stock (...) which is not very good, after all we are buying to help a cause, but we also must fight food waste.”

P2

“It was a project that when we launched, we didn't know what we were building yet.”

“The ideal would have been in less time, we had many setbacks because we tried to develop the whole process with an industrial...but, we had to restart the process with another one. First, we tried to bring cashew from Guinea- Bissau, then we had to resort to another way of doing the process, so it was a long and difficult birth.”

“So, the positive points are all this novelty, this "new avenue" that was created of products with purpose and that today can be adopted by other areas of the company and by other companies!”

“The great advantage of this project is to prove that it is possible, even from an economic point of view, to have products with a purpose that feed those who need it most and don't have it, and that, at the same time, nourish those who are able to pay”

“The product itself was very well received by consumers, by the company, by everybody,”

P3

“Shortly afterwards we had the pandemic, and we were all living at home, with a new reality that none of us had experienced before, so it was very challenging.”

“We didn't have viability to use cashews for reasons related to the conditions of the product and there was a need.”

“Unfortunately, we do not use cashew from Guinea-Bissau (...) this goal that one day we could have raw material from Guinea-Bissau and that we did not achieve in this first phase.”

“I had already guaranteed that the total sales of the product would revert to these centers not just a part of the retail

“On the one hand, promoting healthy eating, but also, on the other hand, helping us contribute to sustainable development”

“And with this product, even with all the setbacks that existed...we did it in record time, even with all these setbacks we had along the way”

“The involvement of all the people in the project. (...) this also tells us that when it is for a good cause, everything is achieved.”

price. For my own part, I wish we could donate more."

c) Future prospects

Opportunities and Threats

Regarding future prospects, opportunities and challenges were described. Regarding opportunities, P1 and P3 mentioned the diversification of products, as an advantage of the project for the future, and more specifically about a new product that was developed and is already on the market. Two interviewees (P2 and P3) agreed that bringing cashew nuts from Guinea-Bissau is also an opportunity, since with the experience they can now avoid mistakes. Only one of the interviewees (P2) said that the opportunities would be more for the economic point of view: *"from the economic point of view, that is, it is possible to launch products with purpose, from this example many others can come (...) There is a Business Case now on the table that can be replicated, that is a great opportunity"*.

In relation to future challenges, P1 mentioned that the lack of studies on shelf life can be a barrier for future products. P2 and P3, on the other hand, agreed that continuity is a crucial and necessary point (*"The big threat of this project is to be treated as a project and not a way of life, because a project starts and ends, and this can't end"* – P2). However, P2 said that this continuity is about product innovation, and fulfilling the expectation generated in relation to donations, while P3 said that this continuity is about involving the local community in Africa to the point of boosting its autonomy (Table 7).

Table 7 Opportunities and Threats

Participant	Opportunities	Threats
P1	<i>"From the beginning we were willing to give this product a kind of "little brother", a new spread that will have a lower price and will sell more after it manages to have a greater rotation and therefore, a greater donation donated to NGO. (...) We have given here a big sales boom, surely there will be a big increase in sales and with that then comes a big increase in purchases from the supplier an increase in donations to NGO (...) we will achieve an incredible number of sales surely because we also have exhibitors in all stores, the operations,</i>	<i>"And the threats, as they are 2 relatively new products, so the supplier did not have this recipe developed, and by not having a recipe developed, he also did not have studies of the product's shelf life. (...) With the new product, we have already managed to go from 6 to 9 months, but it is short"</i>

and stores on board this initiative which is very important"

P2

"I think that with this experience it is possible to speed up and burn some steps from here (...) With planning and with some know-how, (...) there are stages that could be avoided, for example, we would jump to launching the product immediately with an African raw material, regardless of whether it comes from Guinea-Bissau or not, and in parallel we would be trying this. We would also be better prepared for an evaluation of the industrial arm, if it is the right partner, if it is not, so all of this would be able to burn steps."

"From the economic point of view, that is, it is possible to launch products with purpose, from this example many others can come (...) There is a Business Case now on the table that can be replicated, that is a great opportunity"

"there are many people with the will to collaborate and help and who don't know how, and when there is a company with recognition in the market and they know that it is solid, and that it shows evidence of (...) investment, there are many people who want and are willing to collaborate (...) So, these companies gained the necessary trust here to be able to help invest."

"If we don't create a dynamic of innovation...It becomes hostage to itself it is a success, but then it dies. And the worst thing that can happen in this kind of project is that we create an expectation on the development side, and then we don't have the funding to do it. (...) The life cycle of these products also respects the normal life cycle of any product in economic cycles: it has a birth, maturity and decline phase; and we must anticipate this decline with a new product, or another product. (...) We must dedicate a good part of our time to think "what's next?" and with some anticipation, because the first product took a year, the second took 6 months, so, now that we launched this one, it's time to think what's next"

"The big threat of this project is to be treated as a project and not a way of life, because a project starts and ends, and this can't end"

P3

"To be able to gather conditions, provide training so that one day the raw material that is used in these products is really from Guinea-Bissau, and that is from these villages (...) I think it is still an opportunity for improvement."

"Diversifying the products that generate this donation is a huge opportunity. We cannot be dependent on the donation of a single product, because products also have their life cycle (...) we want to continue to feed this source (..) as a sustainable source, that is not just a

"This issue of continuity is also a threat in the sense that we need to create a structure in Guinea-Bissau, involving the communities so that they can also feed these projects from within and feel involved."

"We want it to be an incentive and a way to get started, but we want these communities to be able to be self-sufficient one day, not needing these incentives, these donations, and to be able to generate and be autonomous from an economic point of view."

project that was 1 year old and then died."

"We consider having here a regular source of donation that can enable these investments"

d) Relevance of partnerships between the second and third economic sectors

Corporate Values and Sustainability of NGOs projects

The relevance of partnerships between the second and third economic sectors was a question with uniform answers, in terms of agreeing with this relevance in current times. In addition, all three interviewees agreed that the company's values are based around people, that creating products with humanitarian and sustainable purposes is part of what the company believes in. However, only 1 participant (P2) highlighted the fact that these values are related with the company being a Long live company, which aims to take into consideration the long term of all its projects (*"we never do anything with the mere objective of making a profit in the short term because this is not sustainable in the long term.."*) and also that investors are more inclined to work with humanitarian and sustainable causes.

The question of sustainability of NGO projects was also brought up, which may explain the relevance of these partnerships. The participants had mixed opinions about this. One of them (P1) has mentioned that the amount initially proposed by the NGO was considered high. Another participant (P3) talked about the continuity of donations to the NGO, and that them must maintain the standard of contribution to the beneficiaries. And P2 highlighted that even though recent, the NGOs opening to partnerships with companies is a natural phenomenon, so that they can keep their projects alive through fundraising (Table 8).

Table 8 Corporate Values and Sustainability of NGOs projects

Participant	Corporate Values	Sustainability of NGOs projects
P1	<i>"SONAE is a company that connects with these partnerships,(...) that lives a lot from all communication... it has the Missão Continente, the smile mission (...) it has the predisposition for that, (...) is open to help with a mission to support these causes and solidarity causes, non-profit institutions, and (...) I think this partnership went super well, if there</i>	<i>"What we were presented with was the budget needed for the project, which would be around 50,000 EUR per year, which was difficult for us at first"</i>

P2

were more ideas like that, more of us would embrace those ideas (...) this is our life."

"I think the theme of nutrition, the theme of sustainability and the commitment we have to the SDGs helped the flow (...) because at SONAE we work with purpose"

"...our concern is to do things well for people and the planet and these fits (...) with the idea of developing nutritionally balanced products, but also contributing to mitigate this difference (...) between the two hemispheres, in terms of resources and food capacity."

"This is a company that was founded with the purpose of being a Long Living Company, therefore (...) that doesn't think in the short term and whose purpose is to create economic, social and environmental value, (...) we never do anything with the mere objective of making a profit in the short term because this is not sustainable in the long term (...) This makes perfect sense, for us it's not charity, for us it's a business."

"...in the business world it has been realized that without people and the planet there is no business, and so the companies that have value today are those that work around these sustainable development objectives."

"...investors are more inclined to invest in companies that are involved in sustainable purposes, so it becomes interesting for companies to collaborate with NGOs as never before in our planet."

"Sometimes because the organizations are so big that you lose track of the impact you can cause, or others that are small and think: can cause an impact?"

"The NGOs are in this field, and companies don't know how to do this, they know how to raise funds to do this, but they don't know how to execute it."

"Today there is also a greater openness of the NGOs for the companies, because if NGOs did only this part, without understanding the need for financial sustainability of the project, they would kill the projects one day or another."

P3

"But I think that brands cannot exist just for the economic value, without also creating social value behind it, without having a positive impact on people and communities, because in the end, without people there is no business"

"Part of a brand's job is also to think about how it can contribute in a favorable

"We consider having here a regular source of donation that can enable these investments that we are making in the villages, not only through the construction of the centers, but also with breakfasts, because what can never happen is: we give lunch in one school year and then we cannot

way to this social development of communities” guarantee that in the second school year we will continue to.”

“As a brand, I know that I not only sell products on the market with the aim of generating profit and economic value, but also that I can reach (...) people.”

7.2. Evaluation of Portuguese Consumer Perceptions

Out of the 74 people who volunteered to participate in the questionnaire, only 51 answered that usually buy or have bought the “Pasta 100% Caju”. Since this first question (if you have already bought the product) was eliminatory, the total number of participants was 51. The questionnaire was sent by email to the holder of a family use card, in which some purchase of “Pasta 100% Caju” was registered, but not necessarily made by the person who answered the questionnaire.

Table 9 presents the sociodemographic characterization of the 51 questionnaire participants. It was possible to observe that the number of female respondents (86.3%) was significantly higher than male respondents (13.7%), according with the Binomial Test to equal proportions ($p=0.001<0.05$). The age of the respondents ranged between 18-34 years old (23.5%), 35-54 years old (51%) and +55 years old (25.5%), with significant differences over the proportions of age groups (Chi-square Test to equal proportions with $p=0.028<0.05$) (Table 9). The number of respondents with higher education degree (74.5%) was significantly higher than those without (Binomial Test to equal proportions with $p=0.001<0.05$).

In addition, the most frequent range of monthly income of the respondents was from 1875 to 2500 euros (29.4%) and secondly more than 2500 euros (25.5%). It was possible to conclude that significant differences in proportions exist between net monthly income, according with Chi-square test to equal proportions ($p=0.01<0.05$). And respondents most often answered that they live in Lisbon (27.5%), other regions (27.5%) and Porto (25.5%). However, based on chi-square test, there was no significant difference between proportions ($p=0.064>0.05$).

Table 9 Sociodemographic characteristics of participants

Sociodemographic characteristics		N (%)
<i>Sex</i>		
	<i>Female</i>	44 (86.3%)
	<i>Male</i>	7 (13.7%)
<i>Age</i>		
	<i>18-34 years old</i>	12 (23.5%)
	<i>35-54 years old</i>	26 (51%)
	<i>+55 years old</i>	13 (25.5%)
<i>Education level</i>		
	<i>Without higher education</i>	13 (25.5%)
	<i>With higher education</i>	38 (74.5%)
<i>Household's monthly net income</i>		
	<i>Less than 600 euros</i>	2 (3.9%)
	<i>Between 600 and 1050 euros</i>	8 (15.7%)
	<i>Between 1050 and 1500 euros</i>	4 (7.8%)
	<i>Between 1500 and 1875 euros</i>	9 (17.6%)
	<i>Between 1875 and 2500 euros</i>	15 (29.4%)
	<i>More than 2500 euros</i>	13 (25.5%)
<i>Place of residence</i>		
	<i>Lisbon</i>	14 (27.5%)
	<i>Other</i>	14 (27.5%)
	<i>Porto</i>	13 (25.5%)
	<i>Aveiro</i>	5 (9.8%)
	<i>Faro</i>	5 (9.8%)

Table 10 presents the respondents distribution according with who in the household consumes the product. The most frequent options were "oneself" (62.9%) and the "whole family" (17.7%) that also included the respondent. Other options selected were "spouse" (9.7%), "children" (8.1%) and "mother/father" (1.7%). The number of respondents who consumes oneself the "Pasta 100% Caju" in their household was

significantly higher than 50% of answers (Binomial Test to equal proportions with $p=0.001<0.05$).

Table 10 Respondents distribution (N and %) according with who in the household consumes the product

Who in the household consumes the product?	N (%)
Oneself	39 (62.9%)
Whole family	11 (17.7%)
Spouse	6 (9.7%)
Children	5 (8.1%)
Mother/father	1 (1.6%)

Figure 11 presents the age distribution of who consumed oneself the product in their household. The age had significant influence on the respondents who consumed oneself the product, with the 35-54 age group with higher frequency of consuming themselves the product in their household (Chi-square Test to equal proportions; $p=0.034<0.05$) (Figure 11).

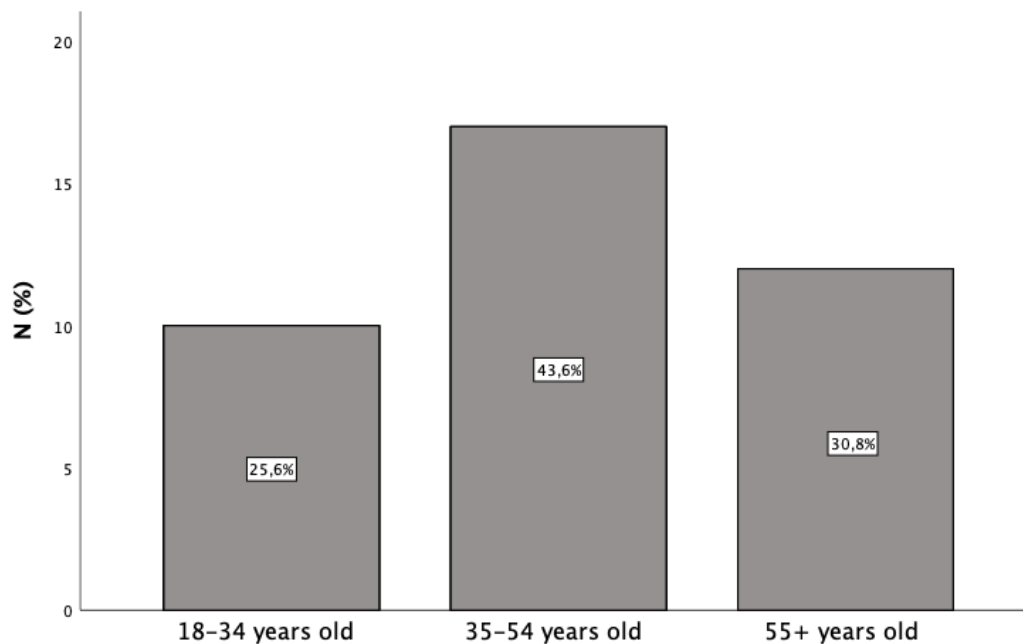


Figure 11 Respondents who consumed oneself the product in their household according with age group

Regarding the time of day of product consumption, 46% of respondents consume the product in the “afternoon snack”, 32.3% in the “breakfast” and 17.2% in the “morning snack” (Table 11). The sociodemographic characteristics had no influence on the time of day of product consumption, according with the Chi-square Test there was no statistical significance for gender ($p=0.266$), for age group ($p=0.255$), for place of residence ($p=0.562$), for net monthly income ($p=0.735$) and for education level ($p=0.895$).

Table 11 Respondents distribution (N and %) according with time of day of product consumption

When is the product " Pasta 100% Caju " consumed?	N (%)
Afternoon snack	40 (46%)
Breakfast	28 (32.2%)
Morning snack	15 (17.2%)
Lunch	1 (1.1%)
Dinner	1 (1.1%)
Supper	2 (2.3%)

Table 12 presents the monthly consumption frequency of “Pasta 100% Caju”. For better handling of the data, the scale was adapted to monthly instead of weekly, for example: 28 times a month is equivalent to 5-7 times a week, 16 times a month is equivalent to 2-4 times a week, 4 times a month is equivalent to 1 time a week, 2 times a month represents 1 time every 2 weeks, and 0.5 times a month is equivalent to 1 time every 2 months. Participants could choose 1 option, the one most appropriate. Monthly, 25.5% of the participants consume 28 times, 23.5% consume 16 times, 27.5% consume 4 times, 11.8% consume 2 times, and 11.8% consume 0.5 times a month. There were no significant differences between the different groups of consumption frequency (Chi-square Test to equal proportions with $p=0.202>0.05$).

Table 12 Respondents distribution (N and %) according with monthly consumption frequency

How often is the product consumed?	N (%)
28 times/month	13 (25.5%)
16 times/month	12 (23.5%)
4 times/month	14 (27.5%)

2 times/month	6 (11.8%)
0,5 times/month	6 (11.8%)

When it came to the first decision on buying the product, the respondents said that the higher incentive was Continente marketing communication (29.4%) and the nutritional values of the product (23.5%), and 13.2% confirmed that the first purchase was encouraged only by impulse (Table 13).

Table 13 Respondents distribution (N and %) according with the encouragement to buy the first time the product "Pasta 100% Caju"

	N (%)
Do you consider that your initial decision to purchase " Pasta 100% Caju " was encouraged by:	
Continente Marketing Communication	20 (29.4%)
Nutritional Values of the product	16 (23.5%)
Pre-knowledge of the NGO Project	10 (14.7%)
Impulse	9 (13.2%)
I already used to consume another brand	4 (5.9%)
Another	4 (5.9%)
Social Networks (Instagram influencers)	3 (4.4%)
Friends/Family	1 (1.5%)
Television – "Cristina Convida" Program	1 (1.5%)

When asked about the intensity of the influence of some aspects on "Pasta 100% Caju" purchase in a scale from 1="very negatively" to 5="very positively", the following aspects are highlighted with maximum medians (5="very positively"): healthy food, tasting new textures, tasting new flavours, support for humanitarian causes, environmental sustainability, and support for farmers in developing countries (Figure 12).

From the Friedman test $p=0.001<0.05$, it was possible to see that there is an overall statistically significant difference between the mean ranks of the aspects evaluated. In Figure 13 the different letters represent different groups according to the Wilcoxon test, which, identified two groups: (a) packaging and communication aspects with lower scaling values (b) healthy food, supporting humanitarian causes, tasting new flavors, tasting new textures, environmental sustainability and supporting farmers in

developing countries with higher values (Figure 12). The packaging and communication are aspects to be improved in new campaigns.

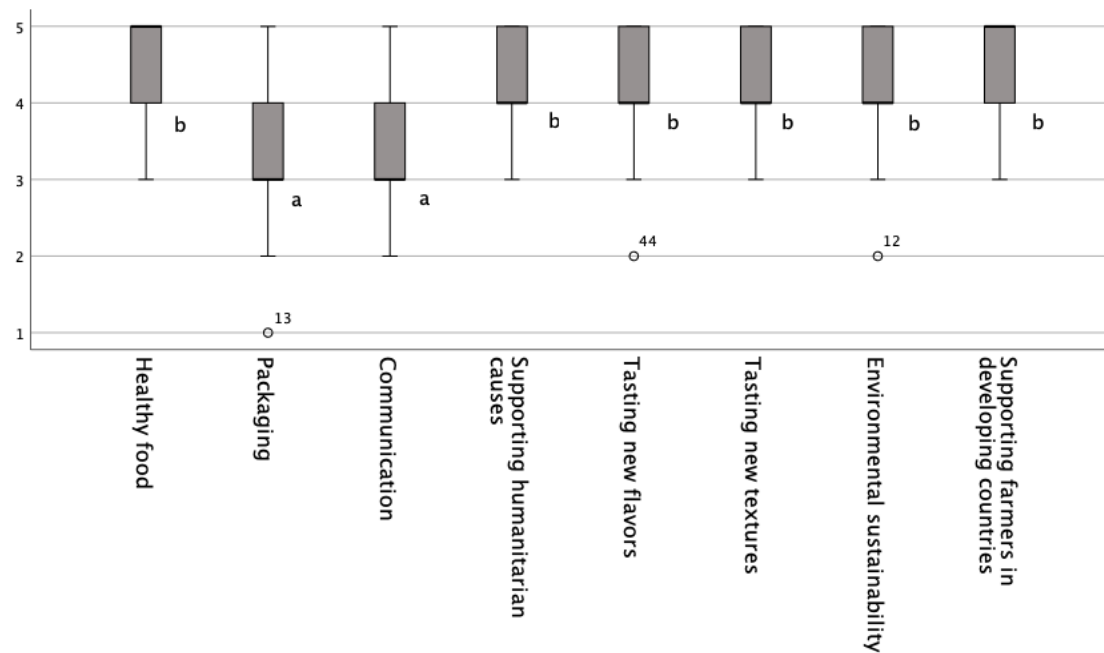


Figure 12 Intensity of different aspects influence on "Pasta 100% Caju" purchase (1="very negatively" and 5="very positively")

When asked whether they bought the product again after the first purchase (purchase continuity), 49% of the respondents said yes and 51% of the respondents said no, but these results are not statistically significant different than 50% (Binomial Test to equal proportions; $p=1.00>0.05$) (Table 14). However, as expected, it was possible to conclude that consumers who continued to buy are those who consume the product more frequently than those who did not continue to buy (Mann-Whitney Test $p=0.023<0.05$) (Figure 13).

Table 14 Respondents distribution (N and %) according with purchase continuity of the product

After the 1st purchase did you continue to buy the product " Pasta 100% Caju "?	N (%)
Yes	25 (49%)
No	26 (51%)

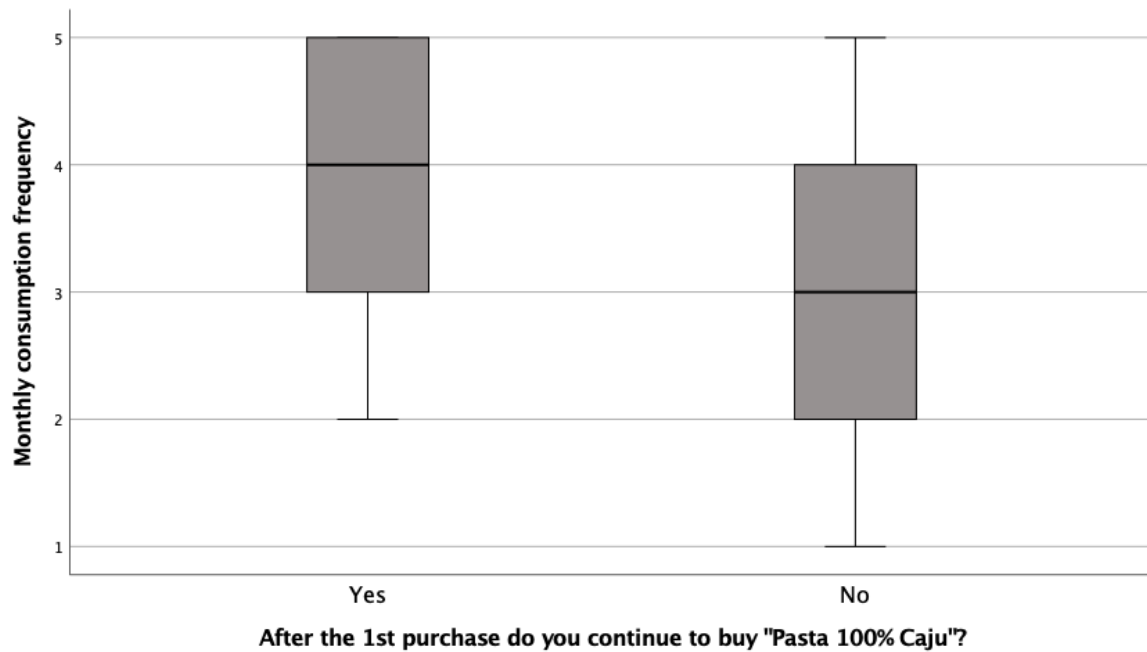


Figure 13 Monthly consumption frequency (1: 0.5 times/month; 2: 2 times/month; 3: 4 times/month; 4: 16 times/month; 5: 28 times/month) according with Purchase continuity of the product

When asked about the reasons for continued purchase, most respondents answered, "I like the taste" (33.3%) and others "healthy product" (24.2%); a smaller number of respondents said they feel identified with the project (18.2%) (Table 15).

Table 15 Respondents distribution (N and %) according with Reasons to continue buying "Pasta 100% Caju"

<i>If yes, what is/are the reason(s) for continuing to buy "Pasta 100% Caju"?</i>	<i>N (%)</i>
<i>I like the taste</i>	22 (33.3%)
<i>Healthy product</i>	16 (24.2%)
<i>I like the texture</i>	13 (19.7%)
<i>I feel identified with the project</i>	12 (18.2%)
<i>I consume regularly</i>	3 (4.5%)

When asked why they stopped buying, the most predominant reason was that they consume a small amount of product at a time (45.2%), followed by the high price (29%) (Table 16).

Table 16 Respondents distribution (N and %) according with Reasons to stop buying

If no, what/is the reason(s) for no longer buying the "Pasta 100% Caju "? N (%)

Consumption of a small amount of product at a time	14 (45.2%)
High price	9 (29%)
Didn't like the texture	2 (6.5%)
Didn't like the taste	1 (3.2%)
Other Which one?	4 (12.9%)
I bought a similar product from another brand	1 (3.2%)

When asked "Would you buy another product with a humanitarian nature?" 92.2% of the respondents answered "yes", being clearly higher than the number of those who answered "no" (binomial test to equal proportions with $p=0.001<0.05$) (Table 17).

However when they were asked about their post-purchase attitudes (Table 18), not all of them answered that they decided to get involved with the NGO, knowing its work (29.4%) or with another humanitarian cause (13.7%). Even some consumers had an attitude contrary to engagement, responding that they did not notice that this product was involved with a humanitarian cause (29.4%) and that other than buying, they did not support this or any other humanitarian cause (25.5%).

Table 17 Respondents distribution (N and %) according with Interest in buying another product with a humanitarian character

Would you buy another product with a humanitarian nature? N (%)

Yes	47 (92.2%)
No	4 (7.8%)

Table 18 Respondents distribution (N and %) according with post-purchase attitude

After you bought the product "Pasta 100% Caju ": N (%)

I got to know the NGO's work	15 (29.4%)
I didn't notice that this product is involved with a humanitarian cause	15 (29.4%)
Other than buying, I did not support this or any other humanitarian cause	13 (25.5%)
I supported other humanitarian causes	7 (13.7%)
I started to follow the NGO on the social networks	1 (2%)

The median values (5,00) demonstrate that the "Pasta 100% Caju" was a product with very good acceptance and success in the reported perception of consumers, regarding the sensory attributes (Table 19), and that there is no statistically significant difference between the mean ranks of the attributes (Friedman test $p=0.275>0.05$).

There is a statistically significant association between the reason for continuing to buy being "like the taste" and the evaluation of the sensory attribute taste (chi-square test to equal proportions with $p=0.021<0.05$), what demonstrates consistency in the respondents' answers. However, the same was not true for the evaluation of the texture attribute, which did not show a statistically significant association with the reason to continue buying being "like the texture" (chi-square test to equal proportions with $p=0.302>0.05$).

Table 19 Descriptive statistics from sensory attributes consumers perception (of 1 to 5 where 1: very unpleasant; 2: slightly unpleasant; 3: neutral; 4: not very pleasant; 5: very pleasant)

	<i>Global evaluation</i>	<i>Appearance</i>	<i>Taste</i>	<i>Texture</i>
<i>Mean</i>	4,59	4,53	4,63	4,47
<i>Median</i>	5,00	5,00	5,00	5,00
<i>Mode</i>	5	5	5	5
<i>Range</i>	4	3	2	3
<i>Minimum</i>	1	2	3	2
<i>Maximum</i>	5	5	5	5

According with the influence of price and quality on food expenditures (Table 20), the respondents seem to be more influenced by quality over price in relation to food expenditures, despite a considerable portion (21.6%) of the respondents said that the influence is average between price and quality on their food expenditures (chi-square test to equal proportions with $p=0.006<0.05$).

Table 20 Influence of price and quality on food expenditures (where 1 means 'price over quality' and 9 means 'quality over price')

1 ("price over quality")	2	3	4	5	6	7	8	9 ("quality over price")
--------------------------	---	---	---	---	---	---	---	--------------------------

1 (2%)	0 (0%)	2 (3.8%)	4 (5.9%)	11 (21.6%)	7 (13.7%)	13 (25.5%)	7 (13.7%)	7 (13.7%)
--------	-----------	-------------	-------------	---------------	--------------	---------------	--------------	-----------

The respondents consider themselves to be healthier people than unhealthy people (Table 21) (chi-square test to equal proportions with $p=0.001<0.05$). And from Spearman's statistical correlation test it was possible to conclude that there is a positive moderate correlation between this subjective evaluation of health status and the influence of their diet being healthy on the purchase of "Pasta 100% Caju" (Spearman correlation coefficient: 0,414, $p=0.003<0.05$).

Table 21 Subjective health status (where 1 means 'not at all healthy' and 9 means 'quite healthy')

1 ("not at all healthy")	2	3	4	5	6	7	8	9 ("quite healthy")
0 (0%)	0 (0%)	2 (3.9%)	1 (2%)	2 (3.9%)	7 (13.7%)	17 (33.3%)	14 (27.5%)	8 (15.7%)

In general the respondents consider themselves to be moderately involved in humanitarian causes (Table 22), and when related to the influence of supporting humanitarian causes on the purchase of "Pasta 100% Caju", there seems to be a statistically significant positive correlation between the responses, showing that as the involvement with humanitarian causes increases, their influence on the purchase of the product increases (Spearman correlation coefficient: 0.401, $p=0.004<0.05$).

However, respondent's involvement with humanitarian causes had no statistically significant association with the intention to buy another humanitarian product (Mann-Whitney test $p=0.064>0.05$).

Table 22 Involvement with humanitarian causes (where 1 means 'not at all involved' and 9 means 'quite involved')

1 ("not at all involved")	2	3	4	5	6	7	8	9 ("quite involved")
5 (9.8%)	2 (3.9%)	2 (3.9%)	2 (3.9%)	15 (29.4%)	10 (19.6%)	7 (13.7%)	2 (3.9%)	6 (11.8%)

7.3. Evaluation of the Impact of the Project by the NGO

7.3.1 NGO agents perceptions

In order to describe the perceptions of those involved with the "Pasta 100% Caju" project at the NGO and to obtain information on their appreciation of the present and future impact of the project, interviews were conducted with 3 people. These were the director and founder of the NGO, the co-founder and one volunteer. In Table 23, the characterization of the interviewees is considered.

Table 23 Characterization of interview participants

<i>Participant</i>	<i>Participant NGO function</i>	<i>Participant NGO Project role</i>	<i>Age</i>	<i>Occupation</i>	<i>Sex</i>
<i>P4</i>	Volunteer	To promote the product	24	Social assistant	Female
<i>P5</i>	Director and founder	Project development and to connect the NGO with the company	52	Nurse	Male
<i>P6</i>	Co-founder	To connect the NGO with the company and to support, prepare and plan trips.	52	Music professor	Female

In order to facilitate the interviews' analysis, major subject categories were defined, in accordance with the proposed interview objectives. They are: personal perceptions; impact assessment; future prospects (Table 24).

The first main category Personal perceptions refers to what is the personal vision of the interviewee about the project from the beginning. For this category the following categories were defined: Roles performed: what were the participant's specific roles throughout the project; Motivation: what was the motivation regarding her/his involvement in the project.

In the large category Impact assessment, which represents individual's appreciation or understanding of the impact of the project. For this, the following categories were identified: Relevance of the project to the needs of the target population:

whether the project objectives matched the reality of the population needs in Guinea-Bissau; Projects' Effectiveness in what was proposed: to what extent the project was effective and coherent regarding with the expected.

Finally, the large category Future prospects represents what the project can enable in the future and how it will behave. For this, two categories were identified: Sustainability: to what extent the project will continue in the future and will continue to benefit; Institutional experience: what institutional experiences the project generated in the NGO.

Table 24 Categories for analysis of the NGO interviews

Main categories	Categories
Personal perceptions	Roles performed
	Motivation
Impact assessment	Relevance of the project to the needs of the target population
	Projects' Effectiveness
Future prospects	Sustainability
	Institutional experience

a) Personal Perceptions

Roles performed and Motivation

Regarding the motivation in participating in the project, the NGO interviewees had mixed answers, one of the interviewees (P4) justified that part of his motivation was precisely professional in the NGO, another said it was related to life choices he made (P6). On the other hand, P5 brought the focus of the motivation to the beneficiaries, bringing up themes such as the valorization of the farmer and the community's need for basic subsistence means. Beyond this, the purpose of the project was mentioned by all interviewees as a motivation.

When asked about the tasks performed, the answers were also mixed: P5 answered that he had a role as a project developer, connecting the NGO with the company, and P6 seemed to have a similar role, but also supportive, preparatory, and planning. P1, on the other hand, got involved with publicizing the product.

Table 25 Roles performed and motivation

Participant	Roles performed	Motivation
-------------	-----------------	------------

P4	<i>"I could publicize a product present in the market. (...) the dissemination of Pasta 100% Caju itself"</i>	<i>"As a professional here in the institution, (...) and, on a personal level. The whole line of the construction of the project itself and regarding the cashew nut being something that makes sense to me."</i>
P5	<i>"...we as NGOs could not achieve much alone, in this need and we went looking for partners"</i> <i>"My function was precisely to find a possible way to realize this desire, this dream (...) to connect, to seek influences"</i>	<i>"The motivations have to be focused on the beneficiaries"</i> <i>"To somehow bring recognition to the work of the farmer, in this case those who sowed cashew, and harvested the cashew fruit, seeing it as a potential for growth, that is, to create a cycle where we can give even greater recognition for the effort and sacrifice that they make in this collection of the input. (...) work and create in that way some personal sustainability"</i> <i>"I saw that the fact that we could feel ourselves as an organization, and in the middle (...) as a bridge between one continent and another that needs to be developed, so that we find things in common, and everyone benefits."</i> <i>"This also came from a previous experience in a summit at the United Nations headquarters, where I was able to visualize the entire map and identify the sustainable development goals and (...) the number 17 precisely talks about partnerships to achieve the goals."</i> <i>"For us we may not see so much need, but when you get to a community that lacks, that has no basic means of subsistence, what we are doing as an NGO turns out to be something extraordinary"</i>
P6	<i>"My role has been to support, to prepare the trips, to equip the people who traveled with the knowledge, with whatever they needed to know what they were going to find, with an involvement at the level of looking for donations and, above all, to know the connections, to keep those relationships alive"</i>	<i>"My motivations have a long time also has to do with a life process, with a life choice that is already many years old."</i> <i>"We communicated a need and people here at SONAE also had a desire to do something, in this a motivation is formed: to transform people's lives and on the way be ourselves also transformed."</i>

"My involvement has to do with support, with continuity, (...) being a support column on the other side of the bridge."

b) Impact Assessment

Relevance of the project to the needs of the target population and Projects' Effectiveness

The results on the relevance of the project to the needs of the population show us that all interviewees consider that the project was indeed relevant and that, more precisely, it would be the solution to the needs ("*(...) I think this project is a solution to meet the objectives that we have on the ground*" P5). Two of the interviewees ("*...it's not external words, it's not politics, it's something that must be born precisely from the people, and this happened.*" - P5 and "*working with them makes them lift up and be part of the transformation*" - P6) mentioned that the project is intrinsic to the population. It was also mentioned that because it is a familiar product to the community, the butter made from cashew nuts makes an impact (P4).

And when asked about the effectiveness of the project, also all participants agreed that the project was a success in terms of effectiveness ("After the beginning of the project, we already see these needs reduced, effectively mitigated by the application of the intervention" (P4), "I think we achieved much more than we had anticipated" (P6), and two participants (P5 and P6) highlighted the initiation and construction of the Centers for the Prevention of Child Undernutrition for Fula child. In addition, the impact on the Portuguese population was mentioned ("We saw a positive impact not only on the community, but also on civil society here" (P4), "It has an impact on Portuguese society, it makes people on this side of the bridge think about other peoples' needs and feel able to make a gesture as small as buying a paste that will make a difference in the lives of others (...) (P6)).

Table 26 Relevance of the project to the needs of the target population and Projects' Effectiveness

Participant	Relevance of the project to the needs of the target population	Projects' Effectiveness
P4	<i>"It is a product that the community itself has a lot of contact with and knowledge of, so there is already an impact here for the community itself: a return in terms of raising the</i>	<i>"It not only responds in a global way to a need of the community itself"</i> <i>"The value collected in monetary terms also goes back to the community itself"</i>

	<i>monetary value effectively reverts to the community"</i> <i>"It is then used for consumption in the community"</i> <i>"It meets the various needs, physiological and physical needs of the community itself, of insufficient food"</i> <i>"It ends up being a product that comes from a more disadvantaged community and worked in a favored environment, comes back with some return for community and nutrition for the disadvantaged area"</i>	<i>"After the start of the project we already see these needs reduced, effectively mitigated by the application of the intervention"</i> <i>"It is an innovation (...) how it is made, how it is treated, and how it returns to the community."</i> <i>"Hope today has the capacity to respond to other areas, continue to invest in the issue of nutrition"</i> <i>"We saw a positive impact not only on the community, but also on civil society here"</i>
P5	<i>"(...) the truth is that we do not sell the product, we sell the solution (...) I think this project is a solution to meet the objectives that we have on the ground."</i> <i>"It's not something we are imposing, this is born in a community desire, it's strength among all, it's not external words, it's not politics, it's something that must be born precisely from the people, and this happened."</i>	<i>"In less than 1 year, (...) the desire to see things work came about in the very first months, and we saw that the nutritional impact ends up also bringing fantastic consequences in relation to the cognitive development of the children."</i> <i>"Firstly, the impact on the health of the individual beneficiary, secondly the impact on learning, (...) thirdly is on the community and the involvement of local volunteers, and all of this brings about a transformation in the community itself, a new thinking, a new dynamic, a new way of looking at the day, (...) so all of this ends up bringing about a completely remarkable emotional and physical well-being."</i> <i>"This product has also been cooperating to, for example, the construction of a new center"</i>
P6	<i>"To give a hope to a people who have the potential to grow. Just having people working with them makes them lift up and be part of the transformation."</i>	<i>"The currency here has much more value than the currency there, which means that when it returns (a percentage) it makes a big difference (...) a good return was achieved, building a new nutrition prevention center in one of the villages in such a short time, in 3 months, so it was accelerated."</i> <i>"I think that we have achieved much more than we anticipated"</i>

"It has an impact on Portuguese society, it makes from this side of the bridge people think about other peoples' needs and feel able to make a gesture as small as buying a folder that will then make a difference in the lives of others (...) because they see things happening, the water hole, a nutrition prevention center has started, the other center is already being built."

"I think it's about the impact of transforming people's mentality, giving them hope in their own potential and this is our dream: to see them develop, grow, and realize that they are not forgotten people in the world."

c) Future Prospects

Sustainability and Institutional experience

Regarding future perspectives, the interviewees talked about the Sustainability of the NGO projects and the Institutional Experience. Regarding Sustainability, the long-term nature of the project was mentioned by all interviewees ("It will continue to make sense in the future" (P4), "...at least on the NGO side, the desire is for the long term." (P5), "It has legs to keep going. (...) If you have a project only for the moment, ...it ends. (...) it is something that has to continue over time, and I think this project has that nature." (P6)). In addition, themes such as bringing cashew nuts from Guinea-Bissau (P4), creating self-sustainability in the population (P5 and P6), development of new products (P5) were mentioned.

On the other hand, the interviewees reported the institutional experiences gained during the 100% Cashew Folder project, and the points mentioned were: creativity (P4), reliability in the organization and inspiration for others (P5), growth of the NGO (P6), recognition of the importance of people's involvement (P6), and greater possibilities for projects' planning (P6).

Table 27 Sustainability and Institutional Experience

Participant	Sustainability	Institutional Experience
P4	<i>"Through the sale of this product the NGO really had here a possible capital to invest in other areas of the institution."</i> <i>"And who knows in the future, streamline the use of products from that region"</i>	<i>"It was possible to see what makes sense, what doesn't make sense, but it was really with the experience and the practical application of launching this idea and seeing that even though it is</i>

	<i>"The importance of this consumer involvement is very great; we believe that continuing to bet on products for transformation of the community itself in Africa is possible through the civil society community here in the European context."</i> <i>"It will continue to make sense in the future"</i>	<i>not so easy and typical to observe in other realities."</i> <i>"We have learned (...) to be creative in the ways of making a difference and using what are the potentials"</i>
P5	<i>"The goal that we have is to create self-sustainability."</i> <i>"Pasta 100% Caju and other products from Continente could create a platform for launching new projects, new volunteers, of prolonging our work on the ground, of keeping professionals on the ground, (...) at least on the NGO side, the desire is for the long term and to the extent that we can see concrete things and needs we will be trying to meet"</i>	<i>"...our said word ended up being realized and this always creates confidence in the organizations, and we are today in a context of confidence"</i> <i>"The experience also creates trust, where other institutions support us by the fact that they know where we are"</i> <i>"Ultimately the experience also inspires other institutions to do the same."</i>
P6	<i>"It has legs to keep going. (..) If you have a project only for the moment it is not that it is bad, but it ends. (..) it is something that must continue over time, and I think this project has that nature."</i> <i>"This is like an expanding wave that goes on to touch and reach even more people."</i> <i>"This is not something that is being taken as a charity, this is making them (the community) assume their own role and then this has durability"</i>	<i>"It made us grow as an organization; it made us plant our feet."</i> <i>"From there, all the involvement and all the people who collaborate with the organization as members in the organization are so necessary."</i> <i>"I believe this now positions us at a level that we must have other bigger dreams to dream, (...) which leads us to other possibilities and other involvement in the community."</i>

7.3.2 Donations Impact

In order to facilitate data collection, the data of sales over the months and the donations to the NGO were combined. The information was organized in the following table (Table 28), in which it can also be seen the distribution of the data by regions of Portugal. Each region represents different stores of the Continente Group, which have different dimensions, namely North - Continente Norte, Continente Bom Dia Norte and Continente Modelo Norte; Center - Continente Bom Dia Centro, Continente Modelo Centro-Norte and Continente Modelo Centro-Sul; South - Continente Sul, Continente

Bom Dia Sul and Continente Modelo Sul; and the online sales platform, Continente online.

The amount reverted into donations to the NGO was counted from the purchase value of the products for each store, and not the sale value of the products in store for the consumer, after all the former is always higher due to stock-outs. The sale value of the product to the stores was 4.99 euros, and the initial idea was that until August 2021 for each unit sold, 50 cents would be donated to the NGO, and from September 2021 on, 1 euro. However, as it can be seen, the donated amounts ended up being greater than the sales.

Table 28 Sales and donations throughout the months. Source: SONAE (2022)

Data	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
<i>N units sold (Portugal)</i>	1,404	6,856	5,046	3,074	2,667	2,026	1,670	1,726	2,123	2,059	28,651
<i>By region:</i>	438/	2,228/	1,589/	928/	833/	661/	545/	627/	629/	680/	9,819
<i>(N/gross sale (€))</i>	2,186	10,422	7,452	4,631	3,862	2,907	2,599	3,106	2,659	3,003	
<i>South</i>											
<i>North</i>	468/2,335	1963/9,127	1442/6,765	920/4,591	814/3,767	554/2,637	474/2,256	495/2,440	592/2,462	579/2,423	8,301
<i>Center</i>	459/2,290	2,178/10,207	1,690/7,919	1,054/5,259	833/3,874	669/3,065	493/2,359	484/2,330	693/2,678	595/2,480	9,157
<i>Madeira</i>	39/195	417/1,955	284/1,331	146/729	162/769	126/607	116/550	82/401	169/685	178/757	1,719
<i>Continente online*</i>	0	61/295	41/191	26/130	25/117	16/76	42/202	38/186	40/174	27/132	319
<i>Sales values** (€)</i>	7,006	32,006	23,658	15,339	12,390	9,292	7,965	8,463	8,658	8,795	133,571.81
<i>Donations (€) to the NGO**</i>	9,561	4387.5	1,422	498	3,093	2,688	1,536	396	1,032	6,709	31,322.5
<i>Percentage (%) of total sales value</i>	136.4	13.7	6.01	3.2	24.9	28.9	19.3	4.7	11.9	76.3	100

* The product started to be sold on the online platform only in July 2021

**Sales values (with VAT and card discounts)

7.3.3 Impact

The first Center for the Prevention of Child Undernutrition for Fula child has already begun its social intervention, and 150 students were helped in the last school cycle, which began in October 2021.

Since then, “Hope for Fulanis” has managed to provide more than 17,500 breakfasts, with another 36,000 planned by the end of the school cycle. The distribution of breakfasts and nutritional control will be continued during school vacations, thus ensuring that nutritional goals can be maintained until the next school cycle (2022/23).

Simultaneously, “Hope for Fulanis” started the construction of a new Center on the ground, in its central area of action. The complete project aims to build 6 modules to provide support in the areas of nutrition, health, and education. This building is situated in a strategic area and will be the epicenter to support for all the villages in a 50km radius around it. This new center will accommodate more than 150 children and will offer basic health support to hundreds of families and youth from the surrounding communities and food reinforcement with specific supervision in cases of malnutrition.

7.4 Integrated analysis of the project: SWOT analysis

Based on the overall analysis of the results, a SWOT analysis was carried out (Figure 14) in order to synthesize the strengths and weaknesses of the project identified by all the actors, as well as the most relevant trends of the project regarding opportunities and threats for the future.

<i>Threats</i>	<i>Strenghts</i>
• Continuity on fulfilling the expectation in relation to donations to the NGO • Involving the local community in Africa to reach its own autonomy	• Motivation and involvement of different actors • Purpose of the product • The project's response to community needs • Goals achieved in the target population • Financial return on the product • It allowed the initiation and construction of the <i>Centers for the Prevention of Child Undernutrition for Fula child</i> • Impact on the Portuguese consumer

	The product had very good acceptance and success regarding the sensory attributes
<i>Opportunities</i> - Diversification of products with purpose (namely the development of new products) - Serving as an example for other companies, as a successful business case - Bringing cashew nuts from Guinea-Bissau and complete the circle of the food system - Most consumers would buy another product involved with a humanitarian cause	<i>Weaknesses</i> - Cashew nuts did not come from Guinea-Bissau - Difficulties encountered in the product development process in the company "Pasta 100% Caju" is a product with little turnover in stores "Pasta 100% Caju" had short shelf life when launched "Pasta 100% Caju" was a product without any reference in the company - High price of the product - Some consumers did not relate the product to a humanitarian cause

Figure 14 SWOT analysis

This analysis lies between the diagnosis and the strategies that can be used to improve innovations of project itself and to improve the design of future projects that may take this one as an example. From this SWOT analysis it will be possible to contribute to a comprehensive overview of the steps that characterize a food product development project with humanitarian purposes, ultimately, targeting the accomplishment of food systems cycle.

The involvement and commitment of the project's stakeholders is one of the main factors regarding its development, sustainability, and replicability. On the other hand, the relevance and its effectiveness in the target population represent the success of this type of project.

Although the effects and favorable factors of the decisions made during this project are better elucidated over long-term, it is important to identify and justify them to take advantage of the opportunities created and reduce the constraints and possible threats (Figure 15).

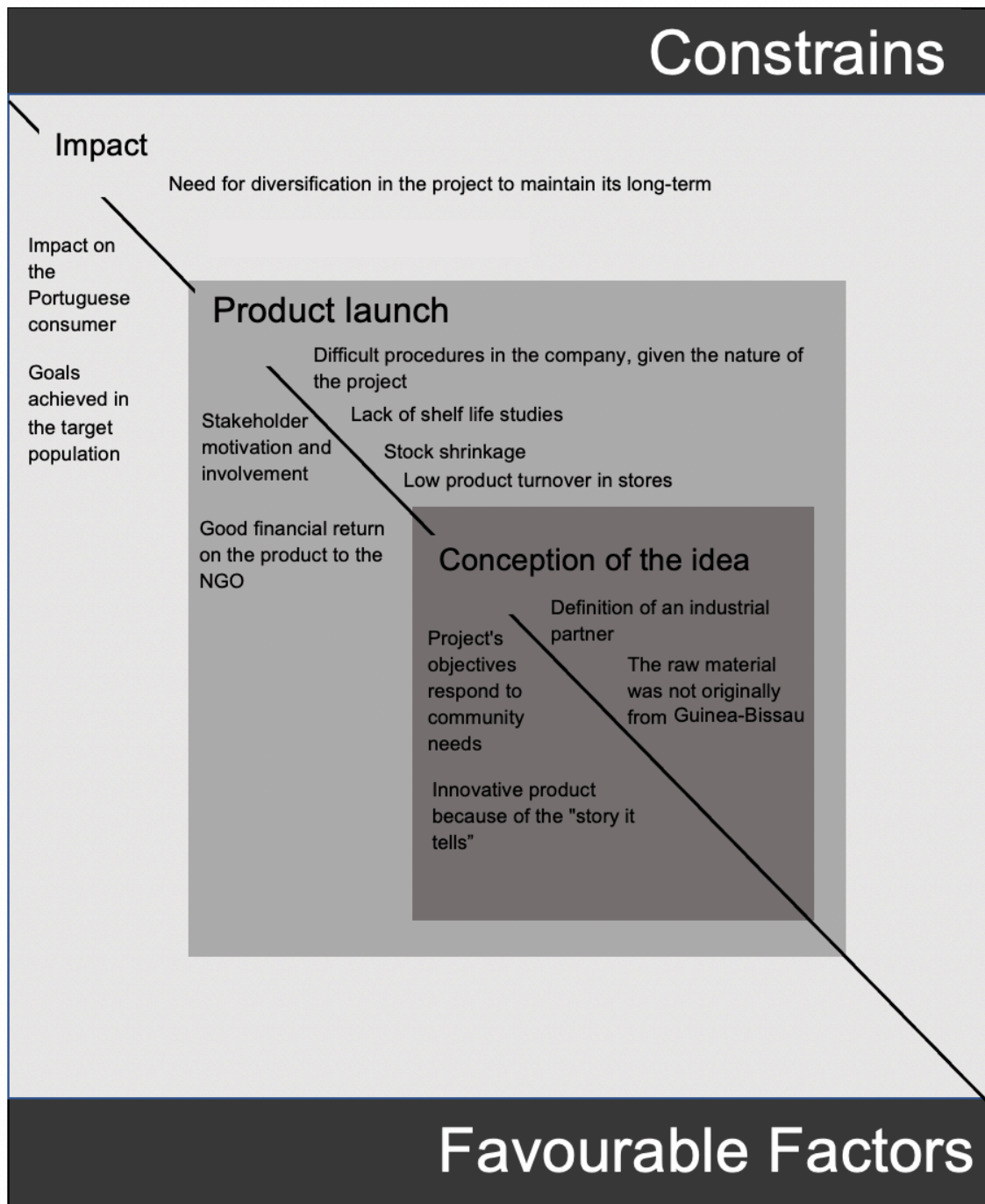


Figure 15 Projects constrains and favourable factors

8. Discussion

This study aimed to explore a project involving the development of a food product in Portugal, in order to combat child malnutrition in Guinea-Bissau. For this, the different phases of the project were examined: from the conception of the idea, the development and consumer perceptions of the product "Pasta 100% Caju", to the impact of the project in Guinea-Bissau. The project impact evaluation was made from the point of view of the company that produced the product, the NGO "Hope for Fulanis" and global donations data analysis.

The methodology adopted for such exploration was as follows: i) evaluation of the involvement and motivation of the company's stakeholders engaged with the product development (qualitative methodology through interviews), ii) evaluation of the Portuguese consumer perception towards the campaign and the product (quantitative methodology through a questionnaire), and iii) evaluation of the impact of the project regarding the NGO objectives (qualitative and quantitative methodology, through interviews and data provided, respectively).

The "Pasta 100% Caju" project follows the approach of the methodology proposed by FAO in the course "How to conduct a nutrition situation analysis", translated to Portuguese and adapted to the Community of Portuguese Speaking Countries, given the multisectoral nature of nutrition there are many different types of stakeholders that can be involved and relevant to interact with (FAO, 2022a). As a result, to reach the different stakeholders that are involved in this project, primary data was collected through key informants: interviews to the company's stakeholders engaged with the product development, Portuguese consumers survey towards the "Pasta 100% Caju", and interviews to the NGO members in order to evaluate the impact of the project regarding the NGO objectives. Moreover, this project intends to be in line with the pillars of the ESAN-CPLP, namely the promotion of access and use of food to improve the livelihoods of the most vulnerable groups (CPLP, 2015). In fact, this project deals with the Fula or Fulani, a dispersed livelihood group of herdsmen and farmers living in the Sahel/Savannah belt of Africa, namely at Guinea-Bissau.

❖ The project's response to community needs

The fact that the project's objectives meet the needs of the beneficiary community was a positive point of the project emphasized by the actors interviewed. The NGO "Hope for Fulanis" has identified that Fula people of Guinea-Bissau have problems of

malnutrition in all its forms, and as the literature predicts, the vulnerable portion of this population is the most affected (Adeyeye et al., 2017; Ekpo et al., 2008; WHO, 2021a; Wilson et al., 2018). Furthermore, low levels of education in the child population led the NGO to aim to tackle both problems at the same time through the Centers for the Prevention of Child Undernutrition for Fula child: addressing malnutrition and promoting education, since all the Centers are attached to public schools and the beneficiaries are mandatorily linked to school enrollment ((INE), 2020).

The same strategy was used with refugee children in Lebanon, through a community-based school nutrition intervention, and had a positive impact when assessing dietary diversity, hemoglobin levels, and school attendance of the children (Jamaluddine et al., 2020). In the scientific literature, the provision of school breakfast has been associated with improved attention span in children, and participation in school breakfast programs has been shown to improve school attendance, leading to higher cognitive outcomes (Omwami et al., 2011; Powell et al., 1998).

In addition, indirectly, the project intended to place value to agricultural producers, particularly of cashew nuts, since agriculture is identified as one of the key sectors for collaborative interventions to combat malnutrition (Reinhardt & Fanzo, 2014). The same concern was identified in consumers of the “Pasta 100% Caju” in Portugal. In fact, “supporting farmers in developing countries” was a highlighted attribute when asked about the intensity of its influence in products’ purchase.

❖ Purpose of the product

The purpose of the product “Pasta 100% Caju” since the conception of the idea was to benefit the Fula population in Guinea-Bissau, alleviating some sufferings, namely in food and nutrition, as well as preventing their consequences, through the Centers for the Prevention of Child Undernutrition for Fula child. However, the promotion of healthy food through the product sales was another purpose in question, as this is a widespread concern when it comes to product development nowadays (Hawkes, 2009; Lähteenmäki, 2013), especially when the companies are committed to the UN's SDGs and to sustainable food systems, which corroborates with one the company's values mentioned by the actors interviewed (Djekic et al., 2021; UN, 2022).

The company actors' perception of the product's purpose emphasized both the humanitarian cause involved and promoting healthy eating, while the NGO actors highlighted only the humanitarian cause. In turn, consumers of the product showed mixed perceptions regarding the product's purpose, with some not even “noticing that

the product was involved with a humanitarian cause" when asked about their post-purchase attitudes, while others highlighted supporting humanitarian causes as one of the biggest influences for their first product purchase.

Invariably, the two purposes are merged, as they ultimately aim to achieve better nutrition, primarily, in consumers with different age groups in Portugal, and then, in children in Guinea-Bissau. The purpose that embraces multiple and competing but potentially synergistic objectives is known as "hybrid", where companies innovate their business models in ways that go beyond current conceptualizations, making their mission profitable, rather than profit being their only mission (Alberti & Varon Garrido, 2017).

Interestingly, the purpose of the product was mentioned by the company actors related as a strength of the project, and, on the other hand, by the company actors, it appeared related to the motivations.

❖ **Motivation and involvement of different actors**

In this sense, as one of the interviewees from the NGO pointed out: "*The motivations have to be focused on the beneficiaries*" (P5), it is crucially important that the focus of any nutrition-sensitive project should be on the beneficiaries situation of vulnerability, and not only on the possibilities of effectiveness of the project (FAO, 2022a). Therefore, understanding the basic difficulties of the population (for example: low education levels), helps in the unfolding of projects focused on improving nutritional status (FAO, 2021) and creates motivation for the actors involved.

Therefore, knowing the reality of the beneficiary population seems to be linked to the motivation to work in this type of project, in the same way, it is known that the motivation for any activity is related to the knowledge of its purpose (Ditta et al., 2020). This knowledge seemed to be the great motivation for both the NGO and company's actors interviewed. For example, all participants of the company mentioned that one motivation for working in the project was recognizing the great needs of the Fula population. Going beyond this, not only recognizing the needs, but seeing them seemed to be a motivating factor. By interviewing one of the company's actors, who had the opportunity to get to know the NGO project on the ground in Guinea-Bissau, it was possible to notice that his motivation was directly related to his personal involvement, despite belonging to the company as an employee, because he used terms such as "we", "our" when referring to the NGO and its projects.

From the consumers' view, the motivations that influenced them at the time of purchase were evaluated. The buying process is understood as an action where consumers evaluate different products based on the strength of various attributes (Grunert, 1986), being intrinsic (such as shape, ingredients, taste, color, and flavor) or extrinsic (such as price, brand, and purpose) (Belk, 1988). As results, both intrinsic product characteristics (healthy food, trying new flavors and textures) and project-related characteristics (supporting humanitarian causes and supporting farmers in developing countries) were equally highlighted attributes. However, when asked about reasons to purchase the product again (purchase continuity) more consumers mentioned the intrinsic attributes of the product (healthy food, taste) and fewer mentioned identification with the humanitarian project.

Perhaps, this last phenomenon can be explained by the fact that consumers are not aware of the impact that the project has already had through packaging or communication, for example. On the other hand, the involvement and motivation regarding the humanitarian cause tended to be high in the actors from company and NGO, as actual impact of the project is already known. Thus, it is observed that when there is not full knowledge of what happens with the incentive, the involvement and the motivations with the cause are less intense. According to the literature, the knowledge of the project updates and the impact of the donations to the beneficiaries is an indicator of commitment, responsibility and appreciation of the project, and ultimately generates credibility for those who invest in the donations (Kim et al., 2016). Thus, the disclosure of the charity where the donation is sent by itself builds credibility of those who donate, however, this pertains only to donations and not to purchases that reverse donations (Hsieh, 2011).

❖ **Goals achieved in the target population**

The "Pasta 100% Caju" project has achieved practical results since its launch in June 2021, and these were indicated as projects' strengths by the actors of the NGO and the company. Namely the construction of the new Center for the Prevention of Child Undernutrition for Fula children and the intervention offered at the existing Center (daily breakfasts).

Similar interventions already exist and are proving effective in Guinea-Bissau. One of them is the implementation of Nutrition Recovery Centers (NRC), which by 2019 there were already 22 across the country. This initiative of UNICEF, the Italian Agency for Development Cooperation (AICS) and Caritas aim to mitigate symptoms and recover children from malnutrition. The NRCs are places that the community has full access to,

especially mothers and children, to offer meals and nutrition education. Professionals are available to teach and encourage mothers about breastfeeding, introducing food, and food safety, which also includes making recipes. In the NRCs, children are monitored weekly until they are "discharged" from their malnutrition diagnosis (UNICEF, 2021c).

According to UNICEF, the NRCs have generated a positive impact on the Guinean population, in the sense that the population itself reports improved nutritional status and health in general. In case of severe nutrition status, the mother and child may remain in the center for a period, in some cases for up to 4 weeks. Reports show that some children prefer to eat adult food, such as rice and meat, rather than porridge, and this can hinder their development, since meat is not always available in some villages and porridge with milk, on the one hand, adds protein to the meal and is cheaper and more practical for mothers (UNICEF, 2021c).

One study evaluated the impact of food interventions on school attendance in a rural area in Africa and showed that this type of intervention does have a positive impact on participation in education. However, it warns that the success of this type of intervention is only possible if basic needs are not a major concern for the population, such as food insecurity due to drought conditions or displacement (Omwami et al., 2011).

❖ **Financial return on the product**

A sustainable food system is one that generates food security for all, in a way that also generates economic sustainability (being profitable), social sustainability (having benefits for the societies in which it is inserted) and, ultimately, environmental sustainability (FAO, 2018). The "Pasta 100% Caju" project sought to bring profitability both to the company that developed it and to the NGO, in the form of donations, and mainly, to the beneficiaries in Guinea-Bissau. This economic sustainability was elucidated by a participant from the company: "The great advantage of this project is to prove that it is possible, even from an economic point of view, to have products with a purpose that feed those who need it most and don't have it, and that, at the same time, nourish those who are able to pay" P2.

In fact, the financial return for the product (about 31,000 euros in ten months) was a factor mentioned as a strength of the project by the NGO, and, on the contrary, mentioned as a weakness by the company's actors. The participants of the NGO appreciated the monetary value reverted from this project, mainly because the donations are received in a more valuable currency (euro) than the currency in Guinea-Bissau (CFA franc).

The company's actors said that the product unfortunately had a little turnover in stores, thus, both sales and donations could have been higher. For the company it makes more sense to sell a product that reverts to donations, but at the same time is congruent with its business and generates profit (Webb & Mohr, 1998). And consumers may also consider it more appropriate for a company to get involved with causes through products it manufactures or sells (Ellen et al., 2000). On the other hand, the opposite effect can happen, and may explain the low turnover of "Pasta 100% Caju" in stores. The congruence between the product sold and the cause makes it clearer how the company profits, and eventually may lead to a negative consumer reaction, decreasing sales of the product, relative to expectation. In fact, the literature shows that advertising managers believe that consumers react cynically to advertising campaigns with a social dimension when there is a close connection between the company's core business and the cause (Drumwright, 1996).

Another factor that may explain the products' little turnover in stores is that the percentage donated was not made explicit in the marketing of the product. According to the literature, the greater the donation from a purchase or product to a cause, the greater the trust the company receives from the consumer. When donations are smaller, consumers seem to believe that the company exploits the non-profit beneficiary (in this case the NGO), and also consider the product less appealing (Ellen et al., 2000). From each unit of the "Pasta 100% Caju " 50 cents (10% of the price) was donated until the fourth month of sales, and after that, 1 euro (20% of the price) was donated, so, it is possible to consider that the donations were relatively high and could be made explicit in the future when marketing of the product.

Through the consumer perceptions questionnaire, it was possible to ascertain that "consuming a small amount of the product at once" was the most frequent reason for consumers not buying the product anymore, and next was the high price of the product. Therefore, from these answers, it is not possible to draw completely assertive conclusions about what has hindered the product from leaving the stores, and may encompass extrinsic product aspects (price), intrinsic product factors (composition) and ultimately consumer behavioral factors. However, behavioral factors, such as perceptions of company credibility considering the social dimension of the product, were not taken into account in the questionnaire.

❖ A business case to others

The idea of the business model for this project was to frame a humanitarian cause within the business context, simultaneously generating profit and benefit. There is a

growing acceptance of the need to develop new business models that not only generate financial profits for the company's long-term growth, but also improve both the health of the population and the environment, and in some way contribute to the sustainable development of the planet. The argument in the literature that encourages such business model is that if a company's efficiency, competitiveness, and dynamism could be harnessed to address specific social problems, significant improvements could be made in global health and nutrition (Yach et al., 2010).

Yunus proposed the definition of this business model: a concept that uses the capitalist system as a bridge to social solutions (Yunus, 2007). One answer of a company's participant elucidates this concept in a practical way, applying it to the case of this project: *"Why not develop a product that would be good for those who can buy it, being a more balanced option from the nutritional point of view for those who can afford it? In such a way that it would release in profitability a value that could subsidize a basic diet on the other side, of those who have cashew, but cannot extract the value it has"* (P2). Furthermore, a speech by an involved actor on the part of the NGO is also in agreement: *"I think this project is a solution to meet the objectives that we have on the ground"* (P5). According to Sousa et al. (2011, p. 25), social entrepreneurship is a multidimensional phenomenon in business world that seeks to integrate economic, social, cultural, ecological and political dimensions in order to promote quality of life, social transformation and sustainable development as impact (Sousa, 2011).

A partnership between Grameen Bank and the Danone Group has elucidated the success of social business, allowing them to simultaneously produce dairy products in France, sell them around the world, and provide desperately needed nutrients to severely malnourished individuals in Bangladesh. Several companies are developing similar partnerships and will begin to match their investment with innovative products and new social business models (Bekefi, 2005). Some authors even believe that only through new and innovative partnerships between the public and private sectors it can be possible to make a difference in an unbalanced world like the one we live in (Smyth et al., 2021; Yach et al., 2010).

In fact, the goal 17 of the SDGs encompasses strengthening the means of implementation and revitalizing the global partnership for Sustainable Development, within this objective the targets 17.16 and 17.17 concern, respectively: Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the SDGs in all countries, particularly in

developing countries; Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships (UN, 2022). In this sense, one of the major categories identified in the interviews with the company's stakeholders was the relevance of the partnerships between the second and third economic sectors, in this case between the food retail company and the NGO "Hope for Fulanis". Within this category, the corporate values category, and the sustainability of NGOs were identified.

The importance of this type of partnership was associated with the corporate values of the company involved, which appeared to be the cause of this importance from the interviewees' point of view. The corporate values mentioned were being a Long Living company, creating economic, social and environmental value, working with sustainable development goals (SDGs), achieving impact on people. All these values can be identified in the literature in the definition of social entrepreneurship, as mentioned above.

❖ **Difficulties encountered in the product development process**

The social business model is not quickly replicable in different business contexts, it requires planning and specific strategies for the contexts where it is intended to be inserted, by the company, the beneficiary, and the public from which the income will come (Bekefi, 2005). The lack of reference of this business model in the company that developed the "Pasta 100% Caju" was pointed out as a weakness of the project, but also as an opportunity in the future.

❖ **Continuity on fulfilling the expectation in relation to donations to the NGO**

Looking to the future, continuity in meeting expectations regarding donations seems to be a concern both from the company's and the NGO's point of view. This concern is understandable since social entrepreneurship must be committed to solving problems in a sustainable and definitive way, with a solution that can be applied over time, not just a one-time action (Dourado, 2018). In this sense, many speeches of the company's actors involved culminated in this idea, especially regarding the sustainability of the donations sent to the NGO and the fact that this project must be tackled over the long term.

"The big threat of this project is to be treated as a project and not a way of life" (P2)

In fact, according to Drumwright (1996), there is a positive association between long-term commitment and the interest of the company's stakeholders. Additionally, the more time a company devotes to a cause, the more successful the advertising campaign and consumer stickiness tend to be (Drumwright, 1996).

❖ **Diversification of products with purpose: the development of new products**

In practical terms, this sustainability seemed to be directly linked to innovation and product diversification. And according to the actors involved, this is a great opportunity for the future: *“Diversifying the products that generate this donation is a huge opportunity. We cannot be dependent on the donation of a single product, because products also have their life cycle” P3.*

It is known that as consumers become more familiar with this type of product, the social business model becomes an expression of company differentiation (Ellen et al., 2000). In fact, the results of this work show that consumers of the "Pasta 100% Caju" are clearly interested in buying another humanitarian product, showing that this is a potential gap for ensuring the sustainability of the project.

❖ **Impact on the Portuguese consumer**

Spreads made from nuts and dried fruit have been gaining ground in Western diets. They appear as an option to increase the food use of nuts and dried fruit, introducing them in the snack or breakfast of the consumers (Shakerardekani et al., 2013). In fact, consumers in this survey reported that the time of day when they consume 100% Cashew Paste the most is at breakfast and midday snacks.

However, roasting and grinding (particle size reduction) are two important stages in their production that affect the textural characteristic and the overall quality of the nut spread (Shakerardekani et al., 2013). The textural properties, color, and taste of nut spreads play an important role in consumer attraction, purchase decisions and eventual consumption. A study that performed sensory analysis with analogous and much more popular products (such as peanut butter), concluded that cashew butter seems to have better nutritional composition and sensory attributes than peanut butter (Ogunwolu & Ogunjobi, 2010).

The "Pasta 100% Caju" was a product of very good acceptance regarding the sensory attributes: overall evaluation, appearance, taste, and texture, and can be considered a successful product, even though there is a variety of similar products on the Portuguese market. The actors involved in the company report the same perception of product success.

On the other hand, the repetition or continuity of purchase is one of the indicators of the consumer's evaluation with a product according to his expectation (Ogbulie, 2019). And in this context, continuity of purchase did not seem to be a favorable factor in the

consumer's perception of the "100% Cashew Paste", since almost half of the respondents inferred that they would not buy the product again.

❖ **Involving the local community in Africa to reach its own autonomy**

The Centers for the Prevention of Child Undernutrition promoted by "Hope for Fulanis" aim to include the population in labor activities, through work in the school canteens and weight screening of children. In the future, it is intended to include professional training in these spaces, as well as the creation of local markets for the sale of food products.

One of the first reported concepts of sustainable development defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (UN, 1987). This definition encompasses the idea that vulnerable communities should be empowered to live with autonomy, not relying primarily on donated goods or charity (Pretorius & Nicolau, 2020). A statement by one of the actors of the NGO elucidates the idea: "*The goal that we have is to create self-sustainability*" (P5)

The lifestyle in the villages/*tabankas* in the interior of Guinea-Bissau is very simple, with little structure for innovation and development in economic terms (Catarino et al., 2015). Therefore, it is necessary to understand that the effectiveness of the interventions in this type of context requires effort on the part of those involved, so that the community is encouraged to take its own responsibility, thereby promoting sustainable development. In this sense, local community involvement was reported by company actors as a concern for the future, while by NGO actors through a more optimistic and hopeful view.

❖ **Completing the circle of the food system**

Finally, from the food system perspective, from which the project was initially outlined, it is possible to recognize actors and phases in the areas of food production, food storage and processing, food trade and marketing and finally, demand, food preparation and consumer preferences. In the food production domain, the actors would be the farmers, particularly the cashew producers, in processing and storage food the industrial partners would be the actors. Responsible for trade and marketing of food, would be the company that developed the product "Pasta 100% Caju" and finally, in the field of demand, food preparation and preferences would be the Portuguese consumers of the product. The NGO "Hope for Fulanis", in this sense would play the role of linking all these actors to fulfill the needs already identified in the beneficiaries.

However, because of practical impediments to using cashew nuts from Guinea-Bissau in production, it was not possible to complete the circle of the intended food system. This happened for quality control reasons. Nevertheless, it was the most mentioned topic regarding opportunities, either by the company actors or the NGO actors elucidating the commitment of both institutions to sustainable food systems.

Limitations

Along the project some difficulties were encountered. Concerning the methodology of this study, the sample size as come short form the expected in the questionnaire to product's consumers. Regarding the idealization of the product, the main difficulties were the lack of reference because the company had never made a similar product (with a humanitarian character). In the product development stage, the difficulties implicated the involvement of all the company's people with the purpose of the product, the change of the industrial partner and the lack of product life studies by the supplier (which initially hindered the definition of the shelf life). Finally, at launch time there were some obstacles as the time of the launch that could have been shorter, the participation of all the stores regarding communication through exhibitors and the stock shortages that occurred after the launch.

9. Conclusion

From small initial efforts, such as this one, it may be possible to inspire similar partnerships and eventually, ensure greater visibility for the government in Guinea-Bissau to ensure public policies that encourage and support this type of cooperation. There is no single intervention that will solve malnutrition in Fula livelihoods in Guinea-Bissau, but rather a multiplicity of interventions as there are multiplicity of causes of malnutrition.

Furthermore, the social business model in the food industry can create the bridge to address malnutrition in the world, as it acts with a step beyond the current focus on humanitarian organizations as the only solution to the urgent food insecurity crisis and, in turn, imbalance in food systems. Finally, through this work, it was possible to realize that this type of project is accepted and adhered by consumers at the food retail level, concurrently, it pleases the interests of NGOs, enables an innovative and profitable business model for product development, and ultimately brings effective benefits to a vulnerable population in relation to food safety.

10. References

- (INE), M. r. d. E. e. F. a. e. D. a. o. G. d. P. I. N. d. E. s. (2020). *Inquérito aos Indicadores Múltiplos (MICS6) 2018-2019, Relatório Final. Guiné-Bissau: Ministério da Economia e Finanças e Direção Geral do Plano/ Instituto Nacional de Estatística (INE)*.
<https://www.unicef.org/guineabissau/media/1106/file/Guinea%20Bissau%202018-19%20MICS6.pdf>
- Adeyeye, S., Adebayo-Oyetoro, A., & Tiarniyu, H. (2017). Poverty and malnutrition in Africa: a conceptual analysis. *Nutrition & Food Science*, 47.
<https://doi.org/10.1108/NFS-02-2017-0027>
- Alberti, F. G., & Varon Garrido, M. A. (2017). Can profit and sustainability goals co-exist? New business models for hybrid firms. *Journal of Business Strategy*, 38(1), 3-13. <https://doi.org/10.1108/JBS-12-2015-0124>
- Asongu, S. A., & Le Roux, S. (2019). Understanding Sub-Saharan Africa's Extreme Poverty Tragedy. *International Journal of Public Administration*, 42(6), 457-467.
<https://doi.org/10.1080/01900692.2018.1466900>
- Bekefi, T. (2005). *BUSINESS AS A PARTNER IN TACKLING MICRONUTRIENT DEFICIENCY: LESSONS IN MULTISECTOR PARTNERSHIP*.
https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/programs/cpi/files/report_7_Bekefi_micronutrient_2006FNL1-23-07.pdf
- Belk, R. W. (1988). Possessions and the Extended Self. *Journal of Consumer Research*, 15(2), 139-168. <https://doi.org/10.1086/209154>
- Bjornlund, V., Bjornlund, H., & van Rooyen, A. (2022). Why food insecurity persists in sub-Saharan Africa: A review of existing evidence. *Food Security*, 14(4), 845-864. <https://doi.org/10.1007/s12571-022-01256-1>
- Black, R. E., Victora, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., de Onis, M., Ezzati, M., Grantham-McGregor, S., Katz, J., Martorell, R., & Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet*, 382(9890), 427-451.
[https://doi.org/10.1016/S0140-6736\(13\)60937-X](https://doi.org/10.1016/S0140-6736(13)60937-X)
- Black, R. E., Victora, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., de Onis, M., Ezzati, M., Grantham-McGregor, S., Katz, J., Martorell, R., & Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *Lancet*, 382(9890), 427-451. [https://doi.org/10.1016/s0140-6736\(13\)60937-x](https://doi.org/10.1016/s0140-6736(13)60937-x)
- Branca, F., Lartey, A., Oenema, S., Aguayo, V., Stordalen, G. A., Richardson, R., Arvelo, M., & Afshin, A. (2019). Transforming the food system to fight non-communicable diseases. *BMJ*, 364, l296. <https://doi.org/10.1136/bmj.l296>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
<https://doi.org/10.1191/1478088706qp063oa>
- Burchi, F., Fanzo, J., & Frison, E. (2011). The role of food and nutrition system approaches in tackling hidden hunger. *Int J Environ Res Public Health*, 8(2), 358-373. <https://doi.org/10.3390/ijerph8020358>
- Carvalho, B., & Mendes, H. (2016). Cashew Chain Value in Guiné-Bissau: Challenges and Contributions for Food Security: A Case Study for Guiné-Bissau. *International Journal on Food System Dynamics*, 7, 1-13.
<https://doi.org/10.18461/ijfsd.v7i1.711>

- Catarino, L., Menezes, Y., & Sardinha, R. (2015). Cashew cultivation in Guinea-Bissau – risks and challenges of the success of a cash crop. *Scientia Agricola*, 72, 459-467. <https://doi.org/10.1590/0103-9016-2014-0369>
- Cordaro, J. B. (2013). New Business Models to Help Eliminate Food and Nutrition Insecurity Roadmap for Exploration.
- CPLP. (2015). *Estratégia de Segurança Alimentar e Nutricional da CPLP: Enquadramento e Órgãos para Governação*.
- Das, D., Grais, R. F., Okiro, E. A., Stepniewska, K., Mansoor, R., van der Kam, S., Terlouw, D. J., Tarning, J., Barnes, K. I., & Guerin, P. J. (2018). Complex interactions between malaria and malnutrition: a systematic literature review. *BMC Med*, 16(1), 186. <https://doi.org/10.1186/s12916-018-1177-5>
- Dekeyser, K., Rampa, F., D'Alessandro, C., & Bizzotto Molina, P. (2020). The food systems approach in practice: Our guide for sustainable transformation.
- Devine, A., & Lawlis, T. (2019). Nutrition and Vulnerable Groups. *Nutrients*, 11(5). <https://doi.org/10.3390/nu11051066>
- Ditta, A. S., Strickland-Hughes, C. M., Cheung, C., & Wu, R. (2020). Exposure to information increases motivation to learn more. *Learn Motiv*, 72, 101668. <https://doi.org/10.1016/j.lmot.2020.101668>
- Djekic, I., Battle-Bayer, L., Bala, A., Fullana-i-Palmer, P., & Jambrak, A. R. (2021). Role of the Food Supply Chain Stakeholders in Achieving UN SDGs. *Sustainability*, 13(16), 9095. <https://www.mdpi.com/2071-1050/13/16/9095>
- Donnenfeld, Z. (2021, 12 August 2021). *Food security levels are no longer improving globally, and the trend for Africa is especially worrying*. Retrieved June, 2021 from <https://issafrica.org/iss-today/un-report-on-nutrition-gives-africa-food-for-thought>
- Dourado, C. B. M. Z. A. C. B., B. A. . (2018). Motivações na Criação de um Negócio Social *Revista de Empreendedorismo e Gestão de Micro e Pequenas Empresas* 3, 82-101. https://www.researchgate.net/profile/Bruno-Anicet-Bittencourt/publication/325047483_MOTIVACOES_NA_CRIACAO_DE_UM_NEGOCIO_SOCIAL_MOTIVATIONS_IN_CREATING_A_SOCIAL_BUSINESS/links/5af321e2a6fdcc0c0305ae9d/MOTIVACOES-NA-CRIACAO-DE-UM-NEGOCIO-SOCIAL-MOTIVATIONS-IN-CREATING-A-SOCIAL-BUSINESS.pdf
- Drumwright, M. E. (1996). Company advertising with a social dimension: The role of noneconomic criteria. *Journal of Marketing*, 60, 71-87. <https://doi.org/10.2307/1251902>
- Ekpo, U. F., Omotayo, A. M., & Dipeolu, M. A. (2008). Changing lifestyle and prevalence of malnutrition among settled pastoral Fulani children in Southwest Nigeria. *Ann Agric Environ Med*, 15(2), 187-191.
- Ellen, P. S., Mohr, L. A., & Webb, D. J. (2000). Charitable programs and the retailer: do they mix? *Journal of Retailing*, 76(3), 393-406. [https://doi.org/https://doi.org/10.1016/S0022-4359\(00\)00032-4](https://doi.org/https://doi.org/10.1016/S0022-4359(00)00032-4)
- FAO. (2000). *State of Food and Agriculture 2000 : Lessons from the Past 50 Years*. Fao.
- FAO. (2018). *Sustainable food systems: Concept and framework*. <https://www.fao.org/3/ca2079en/CA2079EN.pdf>
- FAO. (2019). *Building resilience to multiple shocks* (FAO Regional Office for Near East and North Africa, Issue. <https://www.fao.org/neareast/priorities/building-resilience/en/>
- FAO. (2022a). *Como realizar uma análise da situação alimentar e nutricional*. FAO e-learning Academy. <https://elearning.fao.org/course/view.php?id=798>;
- FAO. (2022b). *Nutrição, segurança alimentar e meios de subsistência: princípios básicos*. FAO e-learning Academy. <https://elearning.fao.org/course/view.php?id=794>

- FAO, I., UNICEF, WFP & WHO. (2021). *The State of Food Security and Nutrition in the World 2021*. (Transforming food systems for food security, improved nutrition and affordable healthy diets for all., Issue.
- Grunert, K. G. (1986). Cognitive determinants of attribute information usage. *Journal of Economic Psychology*, 7, 95-124. [https://doi.org/10.1016/0167-4870\(86\)90015-2](https://doi.org/10.1016/0167-4870(86)90015-2)
- HANCI. (2019). *Hunger and Nutrition Commitment Index (HANCI-Global)*. Key data for Guinea-Bissau (Hunger Reduction Commitment Index (HRCI)
- , Issue. <http://www.hancindex.org/countries/guineabissau/>
- Havik, P. J., Monteiro, F., Catarino, S., Correia, A. M., Catarino, L., & Romeiras, M. M. (2018). Agro-Economic Transitions in Guinea-Bissau (West Africa): Historical Trends and Current Insights. *Sustainability*, 10(10), 3408. <https://www.mdpi.com/2071-1050/10/10/3408>
- Hawkes, C. (2009). Identifying Innovative Interventions to Promote Healthy Eating Using Consumption-Oriented Food Supply Chain Analysis. *Journal of Hunger & Environmental Nutrition*, 4(3-4), 336-356. <https://doi.org/10.1080/19320240903321243>
- Hsieh, G. H., Scott E.; Kraut, Robert E. . (2011). Donate for Credibility: How Contribution Incentives Can Improve Credibility. *CHI Journals* <https://faculty.washington.edu/garyhs/docs/hsieh-CHI2011-credibility.pdf>
- Hugo, C. (1990). A Review of the Cashew Sub-sector in Guinea-Bissau. In (Vol. 119, pp. 136). Postharvest Grain Systems Food and Feed Grains Institute, Manhattan, Kansas. Agency for International Development United States Department of State. .
- IFPRI. (2016). *Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030*.
- International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/9780896295841>
- Iversen, P., Marais, D., du Plessis, L., & Herselman, M. (2012). Assessing nutrition intervention programmes that addressed malnutrition among young children in South Africa between 1994-2010. *AFJAND*, 12, 5928-5945. <https://doi.org/10.18697/ajfand.50.11005>
- Jamaluddine, Z., Choufani, J., Masterson, A. R., Hoteit, R., Sahyoun, N. R., & Ghattas, H. (2020). A Community-Based School Nutrition Intervention Improves Diet Diversity and School Attendance in Palestinian Refugee Schoolchildren in Lebanon. *Curr Dev Nutr*, 4(11), nzaa164. <https://doi.org/10.1093/cdn/nzaa164>
- Joffe, H., & Yardley, L. (2003). Content and thematic analysis. In.
- Keats, E. C., Das, J. K., Salam, R. A., Lassi, Z. S., Imdad, A., Black, R. E., & Bhutta, Z. A. (2021). Effective interventions to address maternal and child malnutrition: an update of the evidence. *Lancet Child Adolesc Health*, 5(5), 367-384. [https://doi.org/10.1016/s2352-4642\(20\)30274-1](https://doi.org/10.1016/s2352-4642(20)30274-1)
- Kim, J., Kong, H.-K., Karahalios, K., Fu, W.-T., & Hong, H. (2016). *The Power of Collective Endorsements: Credibility Factors in Medical Crowdfunding Campaigns*. <https://doi.org/10.1145/2858036.2858289>
- Lähteenmäki, L. (2013). Claiming health in food products. *Food Quality and Preference*, 27(2), 196-201. <https://doi.org/https://doi.org/10.1016/j.foodqual.2012.03.006>
- Langendorf, C., Roederer, T., de Pee, S., Brown, D., Doyon, S., Mamaty, A. A., Touré, L. W., Manzo, M. L., & Grais, R. F. (2014). Preventing acute malnutrition among young children in crises: a prospective intervention study in Niger. *PLoS Med*, 11(9), e1001714. <https://doi.org/10.1371/journal.pmed.1001714>

- Martínez Pérez, G., & Pascual García, A. (2013). Nutritional Taboos among the Fullas in Upper River Region, The Gambia. *Journal of Anthropology*, 2013, 873612. <https://doi.org/10.1155/2013/873612>
- Matsungu, T. M., Kruger, H. S., Faber, M., Rothman, M., & Smuts, C. M. (2017). The prevalence and factors associated with stunting among infants aged 6 months in a peri-urban South African community. *Public Health Nutr*, 20(17), 3209-3218. <https://doi.org/10.1017/s1368980017002087>
- Miller, B. D. D., & Welch, R. M. (2013). Food system strategies for preventing micronutrient malnutrition. *Food Policy*, 42, 115-128. <https://doi.org/https://doi.org/10.1016/j.foodpol.2013.06.008>
- Monteiro, F., Catarino, L., Batista, D., Indjai, B., Duarte, M. C., & Romeiras, M. M. (2017). Cashew as a High Agricultural Commodity in West Africa: Insights towards Sustainable Production in Guinea-Bissau. *Sustainability*, 9(9), 1666. <https://www.mdpi.com/2071-1050/9/9/1666>
- National Institute of Statistics and Census (Guinea-Bissau). (2010). <https://ghdx.healthdata.org/organizations/national-institute-statistics-and-census-guinea-bissau>
- Ogbulie, A. N. N., Christian; Egele Aja Ebeke. (2019). Influence Of Product Attributes On Consumers Purchase Decisions On Malt Drink In Enugu State, Nigeria. *American International Journal of Business Management (AIJBM)*, 2(12), 18-27. <https://www.aijbm.com/wp-content/uploads/2019/12/C2121827.pdf>
- Ogunwolu, S., & Ogunjobi, M. (2010). Nutritional and Sensory Evaluation of Cashew Nut Butter Produced from Nigeria Cashew. *Journal of Food Technology*, 8, 14-17. <https://doi.org/10.3923/jftech.2010.14.17>
- Omwami, E., Neumann, C., & Bwibo, N. (2011). Effects of a school feeding intervention on school attendance rates among elementary schoolchildren in rural Kenya. *Nutrition (Burbank, Los Angeles County, Calif.)*, 27, 188-193. <https://doi.org/10.1016/j.nut.2010.01.009>
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*, 2nd ed. Sage Publications, Inc.
- Pinto, P. (2009). *Tradição e Modernidade na Guiné-Bissau: Uma Perspeciva Interpretativa do Subdesenvolvimento* Universidade do Porto]. <https://repositorio-aberto.up.pt/bitstream/10216/23213/2/tesemestpaulapinto000093779.pdf>
- Powell, C. A., Walker, S. P., Chang, S. M., & Grantham-McGregor, S. M. (1998). Nutrition and education: a randomized trial of the effects of breakfast in rural primary school children. *Am J Clin Nutr*, 68(4), 873-879. <https://doi.org/10.1093/ajcn/68.4.873>
- Pretorius, R., & Nicolau, M. (2020). Empowering Communities to Drive Sustainable Development: Reflections on Experiences from Rural South Africa. In W. Leal Filho, U. Tortato, & F. Frankenberger (Eds.), *Universities and Sustainable Communities: Meeting the Goals of the Agenda 2030* (pp. 529-545). Springer International Publishing. https://doi.org/10.1007/978-3-030-30306-8_32
- Reinhardt, K., & Fanzo, J. (2014). Addressing Chronic Malnutrition through Multi-Sectoral, Sustainable Approaches: A Review of the Causes and Consequences [Review]. *Frontiers in Nutrition*, 1. <https://doi.org/10.3389/fnut.2014.00013>
- Ricci, C., Asare, H., Carboo, J., Conradie, C., Dolman, R. C., & Lombard, M. (2019). Determinants of undernutrition prevalence in children aged 0–59 months in sub-Saharan Africa between 2000 and 2015. A report from the World Bank database. *Public Health Nutrition*, 22(9), 1597-1605. <https://doi.org/10.1017/S1368980018003415>
- Roba, K., Tp, C., Nm, B., & Belachew, T. (2016). Serum Zinc, Iron and Urinary Iodine Levels and their Relationship to Other Indices of Malnutrition among Lactating Mothers in Two Agro-Ecological Zones of Rural Ethiopia. *Journal of Nutrition and Health Sciences*, 3. <https://doi.org/10.15744/2393-9060.3.202>

- Sahoo, K., Sahoo, B., Choudhury, A. K., Sofi, N. Y., Kumar, R., & Bhadoria, A. S. (2015). Childhood obesity: causes and consequences. *J Family Med Prim Care*, 4(2), 187-192. <https://doi.org/10.4103/2249-4863.154628>
- Schoonees, A., Lombard, M., Musekiwa, A., Nel, E., & Volmink, J. (2013). Ready-to-use therapeutic food for home-based treatment of severe acute malnutrition in children from six months to five years of age. *Cochrane Database Syst Rev*, 2013(6), Cd009000. <https://doi.org/10.1002/14651858.CD009000.pub2>
- Shakerardekani, A., Karim, R., Ghazali, H. M., & Chin, N. L. (2013). Textural, rheological and sensory properties and oxidative stability of nut spreads; a review. *Int J Mol Sci*, 14(2), 4223-4241. <https://doi.org/10.3390/ijms14024223>
- Smith, L., Ruel, M., & Ndiaye, A. (2005). Why Is Child Malnutrition Lower in Urban Than in Rural Areas? Evidence from 36 Developing Countries. *World Development*, 33, 1285-1305. <https://doi.org/10.1016/j.worlddev.2005.03.002>
- Smyth, S. J., Webb, S. R., & Phillips, P. W. B. (2021). The role of public-private partnerships in improving global food security. *Global Food Security*, 31, 100588. <https://doi.org/https://doi.org/10.1016/j.gfs.2021.100588>
- Sousa, E. G. G. P. E. G. M. R. C. (2011). Empreendedorismo Social no Brasil. Um Fenômeno de Inovação e Desenvolvimento Local. *Dialnet*, 9, 22-34. <https://dialnet.unirioja.es/servlet/articulo?codigo=3965860>
- Stenning, D. J. (1957). Transhumance, Migratory Drift, Migration; Patterns of Pastoral Fulani Nomadism. *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, 87(1), 57-73. <https://doi.org/10.2307/2843971>
- SUN. (2022). *Guinea-Bissau - 2021 SUN Country profile* (Country Profiles, Issue.
- Sundaram, J. K., Rawal, V., & Clark, M. T. (2015). *Ending Malnutrition: From Commitment to Action*. Food and Agriculture Organization of the United Nations in association. <https://books.google.com.br/books?id=0KaAvgAACAAJ>
- UN. (1987). *Report of the World Commission on Environment and Development: Our Common Future (Brundtland report)*. <https://digitallibrary.un.org/record/139811>
- UN. (2022). *The Sustainable Development Goals Report*. D. o. E. a. S. A. (DESA).
- UNICEF. (1990). Strategy for improved nutrition of children and women in developing countries. In. New York :: UNICEF.
- UNICEF. (2017). *Guinea-Bissau: Maternal and child nutrition. Contributing for adequate nutrition for every women and children*. <https://www.unicef.org/guineabissau/maternal-and-child-nutrition>
- UNICEF. (2019). *The State of the World's Children 2019. Children, Food and Nutrition: Growing well in a changing world*. . <https://www.unicef.org/media/60806/file/SOWC-2019.pdf>
- UNICEF. (2020). *Global Nutrition Report 2020: Action on equity to end malnutrition*. <https://globalnutritionreport.org/reports/2020-global-nutrition-report/>
- UNICEF. (2021a). *Global Nutrition Report. Country Nutrition Profiles: Guinea-Bissau*. <https://globalnutritionreport.org/resources/nutrition-profiles/africa/western-africa/guinea-bissau/>
- UNICEF. (2021b). *Ready-to-Use Therapeutic Food - Current Outlook March 2021* (Supply Division, Issue. <https://www.unicef.org/supply/media/7256/file/RUTF-Supply-Update-March-2021.pdf>
- UNICEF. (2021c). "She eats well now" Improving the nutrition of children in Gabú, Guinea-Bissau. UNICEF Retrieved from <https://www.unicef.org/guineabissau/stories/she-eats-well-now>
- UNICEF. (2022). *Malnutrition data*. <https://data.unicef.org/resources/dataset/malnutrition-data/>
- Webb, D. J., & Mohr, L. A. (1998). A Typology of Consumer Responses to Cause-Related Marketing: From Skeptics to Socially Concerned. *Journal of Public Policy & Marketing*, 17(2), 226-238. <http://www.jstor.org/stable/30000773>

- WHO. (2000). *Global strategy for the prevention and control of noncommunicable diseases*. <https://www.afro.who.int/sites/default/files/2017-06/NCD-Global Strategy for the Prevention and Control of NCD 2000.pdf>
- WHO. (2008). *Child growth standards* [Tool]. <https://www.who.int/toolkits/child-growth-standards>
- WHO. (2018). *Infant and young child feeding* (Nutrition and nutrition-related health and development data, Issue. <https://www.who.int/data/nutrition/nlis/info/infant-and-young-child-feeding>
- WHO. (2021a). *Malnutrition* (Fact Sheets: Malnutrition Issue. <https://www.who.int/news-room/fact-sheets/detail/malnutrition>
- WHO. (2021b). *Obesity and overweight*. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
- WHO. (2022). *Noncommunicable diseases*. <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., Tilman, D., DeClerck, F., Wood, A., Jonell, M., Clark, M., Gordon, L. J., Fanzo, J., Hawkes, C., Zurayk, R., Rivera, J. A., De Vries, W., Majele Sibanda, L., . . . Murray, C. J. L. (2019). Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. *Lancet*, 393(10170), 447-492. [https://doi.org/10.1016/s0140-6736\(18\)31788-4](https://doi.org/10.1016/s0140-6736(18)31788-4)
- Wilson, A. L., Bradley, J., Kandeh, B., Salami, K., D'Alessandro, U., Pinder, M., & Lindsay, S. W. (2018). Is chronic malnutrition associated with an increase in malaria incidence? A cohort study in children aged under 5 years in rural Gambia. *Parasit Vectors*, 11(1), 451. <https://doi.org/10.1186/s13071-018-3026-y>
- World Bank Group. (2017). Retrieved Health, Nutrition & Population from <https://openknowledge.worldbank.org/bitstream/handle/10986/26417/113817-WP-PUBLIC-GHNGE-HNP-Discussion-Paper-ScalingUpNutritionGuineaBissau.pdf?sequence=1&isAllowed=y>
- World Bank Group. (2018). [Online Database]. https://data.worldbank.org/indicator/Sl.POV.NAHC?end=2018&locations=GW&name_desc=false&start=1991&type=shaded&view=chart
- Yach, D., Feldman, Z. A., Bradley, D. G., & Khan, M. (2010). Can the Food Industry Help Tackle the Growing Global Burden of Undernutrition? *American Journal of Public Health*, 100(6), 974-980. <https://doi.org/10.2105/ajph.2009.174359>
- Young, H. (2020). Nutrition in Africa's drylands: A conceptual framework for addressing acute malnutrition.
- Yunus, M. (2007). *Social Business*. Yunus Centre. <https://www.muhammadyunus.org/post/2113/social-business>

Appendix

1. Interview Guide - Interview with Company Stakeholders Involved in the Project

Type: Semi-structured

Recipients: company stakeholders involved in the "Pasta 100% Caju" product project

Purposes:

- To describe the motivations and perceptions of those involved with this project in the company, as well as their roles;
- To obtain information about the appreciation of the stakeholders about the relevance of partnerships between second and third economic sectors and the project in this sense.

Objectives	Questions
1. Introduction	1.1 Explain the context and objectives of the work and thank in advance for the availability. 1.2 Clarify the need to record the interview, mentioning that the interview is anonymous and will be used only for scientific dissemination. 1.3 Give each interviewee the consent form for them to read, and if they agree, to sign;
2. Know each person's involvement and roles in the project since the beginning	2.1 What is your position in the partner company? 2.2 How and when did you find out about the existence of this project? 2.3 What led you to participate in this project? 2.4 What roles did you play in the project - specific activities?
3. Identify each person's perceptions of strengths, weaknesses, limitations, and prospects from the project.	3.1 How would you rate the project in terms of strengths and weaknesses? 3.2. Would you have done anything different from what was outlined in the project activities? 3.3 What are the opportunities and threats for the future in relation to the project?
4. Obtain information on stakeholders' appreciation of the relevance of second and third economic sector partnerships and the project.	4.1 How would you describe the relevance of the partnerships between the company and the NGO?
5. Conclusion	5.1 Thank the actors for their willingness to participate. 5.2 Explain how the following data will be analyzed. 5.3 Be available to provide future information on the work.

2. Portuguese Consumer Perception of "*Pasta 100% Caju*" Questionnaire (portuguese version)

Por favor, leia com atenção a seguinte informação. Se achar que algo está incorreto ou não está claro, não hesite em solicitar mais informações. Se concorda com a proposta que lhe foi feita, por favor assinale no respetivo quadrado, no final do texto explicativo.

Título do estudo: “Sistema alimentar da castanha de caju: desenvolvimento de produtos e combate à desnutrição infantil na Guiné-Bissau” no âmbito da Dissertação do Curso de Mestrado em Ciências do Consumo e Nutrição da Universidade do Porto.

Explicação do estudo: Este estudo visa avaliar o impacto do desenvolvimento de um produto alimentar em Portugal feito com castanhas de caju do continente africano, cujo retorno financeiro visa ser utilizado para investimentos em cuidados básicos em nutrição, mais especificamente numa aldeia na Guiné-Bissau, através de uma parceria com a ONG *Hope for Fulanis*. Para a presente investigação, o projeto mencionado será avaliado em quatro áreas: i) Campanha do produto, ii) Envolvimento e motivação dos intervenientes na empresa de desenvolvimento e comercialização do produto, iii) Perceção do consumidor português em relação à campanha e iv) Impacto do projeto relativamente aos seus objetivos, em parceria com a ONG.

Condições e financiamento: Não existem despesas pessoais para si em qualquer momento do estudo. Também não existe compensação financeira relacionada com a sua adesão a este estudo. A sua participação é voluntária, pelo que está livre caso não queira ou desista de participar.

Confidencialidade e anonimato: Os seus dados são anónimos e serão utilizados apenas por investigadores envolvidos neste projeto para disseminação científica, não podendo ser utilizados para nenhum outro efeito que não seja este estudo.

Eu, atesto que a minha participação na resposta ao questionário o estudo: “Sistema alimentar da castanha de caju: desenvolvimento de produtos e combate à desnutrição infantil na Guiné-Bissau” voluntária, tendo compreendido a explicação que me foi fornecida acerca do referido estudo. ☐

Muito obrigado pela sua colaboração!

Parte I – Compra e de consumo

1. Costuma comprar ou já comprou o produto “Pasta 100% Caju”?

Sim ☐ Não ☐

2. Quem é que do seu agregado familiar consome o produto? (escolha todas as que se aplique)

Próprio/a ☐

Filhos ☐

Mãe/Pai ☐

Cônjuge ☐

Outros elementos do agregado familiar ☐:

3. Em que momento o produto “Pasta 100% Caju” é consumido? (pode escolher mais de 1 opção)

Pequeno-almoço ☐

Lanche da manhã ☐

Almoço ☐

Lanche da tarde ☐

Jantar ☐

Ceia ☐

4. Com que frequência o produto “Pasta 100% Caju” é consumido? (escolha apenas 1 opção)

1 ou mais vezes por dia ☐

5 a 6 vezes por semana ☐

2 a 4 vezes por semana ☐

1 vez por semana ☐

1 a 3 vezes por mês ☐

1 vez a cada 2 meses ☐

Parte II – Decisão de compra

5. Considera que a decisão inicial da sua compra da “Pasta 100% Caju” foi incentivada por: (escolha todas as que se apliquem):

Redes sociais (Instagram de Influenciadores) ☐

Pré-conhecimento do Projeto da ONG ☐

Redes Sociais Continente (Instagram e Facebook) ☐

Amigos/familiares ☐

Revista Continente Magazine ☐

Site Missão Continente ☐

Site Hope for Fulanis ☐

Press release/ Comunicado de Imprensa ☐

Loja – expositor e decoração ☐

Banners no Continente Online ☐

Banners na Aplicação ☐

Folheto ☐

Televisão – Programa Cristina Convida ☐

Outro ☐ qual?

6. Numa escala de 1= “muito negativamente” a 5=“muito positivamente” ou N/S, avalie a influência dos seguintes atributos na sua compra da “Pasta 100% Caju”?

1	2	3	4	5
Alimentação Saudável				
Influencia Muito Negativamente	Influencia Negativamente	Influencia nem muito nem pouco.	Influencia Positivamente	Influencia Muito Positivamente

1	2	3	4	5
Embalagem				
Influencia Muito Negativamente	Influencia Negativamente	Influencia nem muito nem pouco.	Influencia Positivamente	Influencia Muito Positivamente

1	2	3	4	5
Comunicação				
Influencia Muito Negativamente	Influencia Negativamente	Influencia nem muito nem pouco.	Influencia Positivamente	Influencia Muito Positivamente

1	2	3	4	5
Apoio a causas humanitárias				
Influencia Muito Negativamente	Influencia Negativamente	Influencia nem muito nem pouco.	Influencia Positivamente	Influencia Muito Positivamente

1	2	3	4	5
Experimentar novos sabores				
Influencia Muito Negativamente	Influencia Negativamente	Influencia nem muito nem pouco.	Influencia Positivamente	Influencia Muito Positivamente

	1	2	3	4	5
Experimental novas					
Texturas					
	Influencia Muito Negativamente	Influencia Negativamente	Influencia nem muito nem pouco	Influencia Positivamente	Influencia Muito Positivamente
Sustentabilidade					
ambiental					
	Influencia Muito Negativamente	Influencia Negativamente	Influencia nem muito nem pouco	Influencia Positivamente	Influencia Muito Positivamente
Apoio aos agricultores					
de países em desenvolvimento					
	Influencia Muito Negativamente	Influencia Negativamente	Influencia nem muito nem pouco	Influencia Positivamente	Influencia Muito Positivamente

7. Depois da 1ª compra continuou a comprar o produto “Pasta 100% Caju”?

Sim ☐ Não ☐

8. Se sim,

Qual/is as razão/ões para continuar a comprar a "Pasta 100% caju"?:

Produto saudável ☐

Gosto do sabor ☐

Gosto da textura ☐

Identifiquei-me com o projeto ☐

Outro. Qual? ☐

9. Se não,

Qual/is as razão/ões para deixar de comprar a "Pasta 100% caju"?

Consumo pouca quantidade do produto de cada vez ☐

Preço elevado ☐

Não gostei do sabor ☐

Não gostei da textura ☐

Passei a comprar um produto semelhante de outra marca ☐

Outro. Qual?

10. Depois que comprou o produto “Pasta 100% Caju”:

Conheci o trabalho da ONG envolvida através do QR code ☐

Segui e acompanho a ONG nas Redes Sociais ☐

Fiz uma doação para a ONG ☐

Apoiei outras causas humanitárias ☐

Para além de comprar, não apoiei esta nem outra causa humanitária ☐

Não reparei que este produto se envolvia com uma causa humanitária ☐

11. Compraria outro produto com cariz humanitário?

Sim ☐ Não ☐

Parte III – Perceção dos Aspetos Sensoriais do Produto

12. Numa escala de 1 a5 em que 1 = Muito desagradável e 5 = Muito agradável, onde mais se adequa com a sua apreciação do produto “Pasta 100% Caju” do Continente:

	Muito desagradável 1	Pouco desagradável 2	Neutro 3	Pouco agradável 4	Muito agradável 5
Avaliação Global					
Aspecto					
Sabor					
Textura					

Parte V – Dados Pessoais

13. Indique como avalia o modo como os seus gastos em alimentação são influenciados pelo custo dos produtos

(Utilize a seguinte escala, em que 1 significa 'preço em detrimento da qualidade' e 9 'qualidade em detrimento do preço')

Preço em detrimento da
qualidade

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Qualidade em
detrimento do preço

14. De modo a definir o seu estado de saúde atual, por favor indique o valor da seguinte escala que melhor se adequa à sua situação.

(Utilize a seguinte escala, em que 1 significa 'nada saudável' e 9 'bastante saudável')

Nada saudável

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Bastante saudável

15. De modo a definir o seu envolvimento com causas humanitárias, por favor indique o valor da seguinte escala que melhor se adequa à sua situação.

(Utilize a seguinte escala, em que 1 significa 'nada envolvido' e 9 'bastante envolvido')

Nada envolvido

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Bastante envolvido

16. Gênero

Feminino ☐

Masculino ☐

17. Qual é a sua idade? _____

18. Quais as suas Habilitações Literárias:

1º ciclo ☐

2º ciclo ☐

3º ciclo ☐

Secundário ☐

Licenciatura ☐

Mestrado ☐

Doutoramento ☐

19. Qual o intervalo em que se situa o rendimento líquido mensal do seu agregado familiar, isto é, depois de deduzidos os impostos?

Menos de 600 Euros

Entre 600 e 1050 Euros

Entre 1050 e 1500 Euros

Entre 1500 e 1875 Euros

Entre 1875 e 2500 Euros

Mais de 2500 Euros

20. Local residência:

- ☐ Aveiro
- ☐ Beja
- ☐ Braga
- ☐ Bragança
- ☐ Castelo Branco
- ☐ Coimbra
- ☐ Évora
- ☐ Faro
- ☐ Guarda
- ☐ Leiria
- ☐ Lisboa
- ☐ Portalegre
- ☐ Porto
- ☐ Santarém
- ☐ Setúbal
- ☐ Viana do Castelo
- ☐ Vila Real
- ☐ Viseu
- ☐ Madeira/Açores

3. Interview Guide - Interview with NGO Actors Involved in the Project

Type: Semi-structured

Recipients: NGO actors involved in the "Pasta 100% Caju" product project

Purposes:

- To describe the perceptions of those involved with this project in the NGO, as well as their roles;
- To obtain information on the appreciation of the actors on the impact of the project, namely in terms of pertinence, coherence, effectiveness, usefulness and sustainability.

Objectives	Questions
1. Introduction	1.1 Explain the context and objectives of the work and thank in advance for the availability; 1.2 Clarify the need to record the interview, as well as the confidentiality; 1.3 Give each interviewee the consent form for them to read, and if they agree, to sign; 1.4 Indicate the estimated duration of the interview;
2. To know the perceptions and roles of each person in the project since the beginning	2.1 What were your motivations regarding your involvement in the "100% cashew paste" project?; 2.2 What led you to participate in this project?; 2.3 What roles did you play in this project - specific activities?;
3. To obtain information about the stakeholders' assessment of the impact of the project, in particular with regard to relevance, coherence, effectiveness, utility and sustainability	3.1 To what extent do you consider that the project objectives (at the time they were set), were relevant to the needs of the "target population"?; 3.2 In this sense, do you consider that the project had an impact on the target population in relation to their needs and problems?; 3.3 Do you believe that the project has contributed to achieving the specific

	objectives of the NGO in this area and also the overall objectives of the NGO so far?; 3.4 How would you compare the "situation of arrival" in the target population before the project with the "current situation"? 3.5 To what extent do you think the project interventions or benefits will last in the future?; 3.6 Does the project present any institutional experience in the NGO that could have an influence in the future?;
6. Conclusion	6.1 Thank them for their willingness to participate; 6.2 Explain how the following data will be analyzed;

4. Transcript Interviews with Company Stakeholders Involved in the Project

P- Participant; I: Interviewer

Interview 1

I- How and when did you find out about the existence of this project?

P1- What we were presented with was the budget needed for the project, which would be around 50,000 EUR per year, which was difficult for us at first because this is a cashew paste. Cashew paste is an expensive product, so it is not a product that rotates in stores very often, that sells very well, also because it can have a high price, it is not a very popular dried fruit and it is not so well known in this format, unlike peanut paste. The volume that we could achieve was never going to be very high, so from the beginning we were willing to give this product a kind of little brother, a new paste that will have a lower price and that having a lower price, will sell more after it manages to have a greater rotation and therefore a greater donation donated to NGOs. My Expectations: were very high, this is a project that we here at Sonae embraced from the beginning.

I- What is your position in the partner company?

P1- Manager of the honey and jams category.

I- What led you to participate in this project?

P1- It was presented at the top level first and then it came to me that I am the manager of the honey and jams category where the dried fruit paste is and it was a project from the beginning embraced with a great motivation for the help that we will be providing to this community that in fact is very needy, well, we "bought" the idea right from the start. It was a request that came from above, because Gabriel Dias (director of the NGO) initially presented the project, and someone from SONAE's senior staff, some administrator who got the idea to our commercial director and she gave the green light, so the project came to me because I am the commercial manager of this category and therefore I would have to take the project, so it was not an own initiative although it could perfectly have been because in fact the idea was very good.

I- What roles did you play in this project - specific activities?

P1- I performed functions from the beginning because the project was presented to us with a raw material from Guinea-Bissau and this raw material at the beginning did not have the necessary quality for the manufacturer of the pulp to be able to make a good product, so I had to go into the field right away to find a new partner, a new manufacturer that had better quality raw material, in this case not from Guinea-Bissau, which was arriving at the factory with it with a lot more like bugs etc., it did not have the necessary care to produce the pulp. I had to *onboard* this supplier right away and after approving the product, define recipes and then close the price, the product data sheet, agree on the launch *timing* and open the process internally here for it to be developed by our

packaging department and quality department because there is a whole procedure for launching products, since we are a certified brand, there is a whole set of rules that we have to follow. I participated from the very beginning.

I- How would you rate the project in terms of strengths and weaknesses?

P1- I think the strong point was motivation because we internally at SONAE even though we knew that this product might never receive a number of big sales and large volumes, it was always something that we had the intention of investing time and work in, even though it wouldn't give a very big return in terms of profit, because it ends up giving a much bigger return in emotional terms. The time we invested and the order of priority we applied was always high, so I think the strong point was always the motivation and involvement of everyone, even at the top level, the commercial director was always very concerned, always putting pressure to see how it was going, that was very strong. The weak point was the difficulty in procedures because this project is not something like launching a product and then selling it, that is, it is necessary to involve many people because of the donation part, the fiscal department, for example, bringing on board some people from the financial area, so it is not a normal procedure. That was the big difficulty at first.

I- Would you have done anything different from what was outlined in the project activities?

P1- The only thing that would have made it different is that we would have decided more quickly that we wanted to launch a new product, so to give a brother to this product, which in this case is being launched just this week, our "Dried Fruit Mix Paste" which is a paste that has a lower price because of the peanuts, so it will rotate more surely and we will be able to donate more money. I think it would have been useful right at the beginning, but there was also a fear that we were taking a bigger step than the leg, so we launched it first only. If I had known what today I know 1 year ago, I would have done the 2 portfolios right away.

I- What are the opportunities and threats for the future in relation to the project?

P1- The opportunities are very big. We have given here a big sales *boom*, surely there will be a big increase in sales and with that then comes a big increase in purchases from the supplier and there will also be an increase in donations to NGOs, so this is the big opportunity, we will achieve an incredible amount of sales surely because we also have exhibitors in all stores, the operations and stores also on board this initiative which is very important. The brands must pay for the extra space in store, brands like Nestle etc. pay for that space, but we in private label don't make that investment, however we must do almost a "charm operation" to sell the idea to the operations and I feel the stores are with us. And the threats, as they are 2 relatively new products, so the supplier did not have this recipe developed, and by not having a recipe developed, he also did not have studies of the product's shelf life, so this had to be launched initially with a shelf life of 6 months which is very short, since we have to receive merchandise with a minimum of 2/3, so if you have 6 months, we have 2 months only to deliver, he has to deliver with 4 months of validity, this is because the supplier had no shelf life studies to prove that the cashew paste and now the dried fruit mix paste could have a 1 of validity, which is more or less what similar products of other brands have. This takes some time, you can do a

kind of acceleration in the greenhouse of the shelf-life study, but it also takes some time. With the new product, we have already managed to go from 6 to 9 months, but it is short, because *Pasta 100% caju* is a product that sells very little, and we bought a lot to fill the stores and to donate more money in an initial phase, because the more we bought, the more we sold and the more we donated, to give that initial *boost of* investments and donations to the NGO, But it turns out that the big threat was the fall, we had a very large volume of purchase at the beginning and now nine months have passed and there was a fall in *Pasta 100% Caju's* stock, which is not very good, after all we are buying to help a cause, but we also must fight food waste, right, so that was the big threat

I- What are the opportunities and threats for the future in relation to the project?

P1- SONAE is a company that connects a lot with these partnerships, it's a company that lives a lot from all communication... it has the *Missão Continente*, the smile mission. It's a company that has the predisposition for that, it's a company that is open to help with a mission to support these causes and solidarity causes, non-profit institutions, and, therefore, I think this partnership went super well, if there were more ideas like that, more of us would embrace those ideas for sure, this is our life.

Interview 2

I- What is your position in the partner company?

P2- At the time of contact with Hope for Fulanis I was in the role of *head of private label*, so my responsibility was everything that was the management and development of the Continente private label.

I- How and when did you find out about the existence of this project?

P2- I did not know about this project right away. At the time, we were developing projects in the area of ecological products in the cleaning area and one of the big issues with the ecological products in the cleaning area was that no matter how environmentally friendly the product is, it always impacts negatively on wood, in the case of paper, and water because of contamination with waste, and so we had the intention to support a project in each of these areas, one in the forest area and others in the water area, in this sense, we listened to many companies and Hope for Fulanis was at that time trying to finance a borehole for the population in Africa and so presented its project. At the time, as the Continente brand was still a very small brand, we decided to support local Portuguese projects and so we ended up supporting a prairie (the Sado Marine Prairie) but at the meeting where the Hope for Fulanis project was presented, we were explaining why we were not going to support the project, Gabriel (director of the NGO) brought some cashew nuts because he had been to Guinea-Bissau. In Continente's own brand the theme of nutrition is very strong and from the beginning it was strategic for us and our concern about healthy eating is very strong and when he brought the cashew nut, we questioned him about it, and he told us "Indeed their cashew is very abundant there. And our project is based on education, we at the moment are trying to finance the water borehole to make sure that we mitigate this phenomenon of very early infant mortality and the diseases associated with contaminated water, but actually there are several problems before we can get the kids to school, besides the water problem, that would be for example, the lack of food" and he showed us the malnourished hair of the children

and I said "what do you do with this cashew?" and he at the time said "the cashew is sold at a very cheap price". We were developing the spreads at the time because dried fruit spreads are starting to have some attraction also in Portugal and from the nutritional point of view, in fact, they are much more balanced than other sweets that you put on bread. I asked "and why don't they make cashew paste? This would add value to the product and allow us to earn more from cashew," then we realized that the infrastructure that exists in Guinea-Bissau did not allow us to work with this type of product yet, but it was the idea that inspired us. "Why not develop a product that would be good for those who can buy it, being a more balanced option from the nutritional point of view for those who can afford it, in such a way that it would release in profitability a value that could subsidize a basic diet on the other side, of those who have cashew, but cannot extract the value it has?" we thought. And so, we started this conversation, we went looking for an industrial partner because we had the chance to sell a product, he had the NGO and the way to support the project on the ground, but we lacked the industrial arm to produce the cashew, so this whole process took us a year. We didn't get it right the first time with an industrial arm, but we learned from this process as well and it was like this, we knew the project from the point of view of education, but we realized that before education there would be a need here to embrace another project in the area of food to ensure that the children went to school with a sufficient base to not compromise later on the concentration, the cognitive part.

I- What led you to participate in this project?

P2- I think the theme of nutrition, the theme of sustainability and the commitment we have to the SDGs helped the flow and the way the project fitted in with us because at SONAE we work with purpose, and therefore sustainability in a broad sense is our vision, and the own brand has this role of being able to do things well. In this sense, in the 3 years that I have worked here and now Tania has followed up on this work, our concern is to do things well for people and the planet and this fits very well with the idea of developing nutritionally balanced products, but also contributing to mitigate this difference that exists between the two hemispheres, in terms of resources and food capacity, and therefore fits very well with our long term commitment. This is a company that was founded with the purpose of being a *Long Living Company*, therefore one that lasts generations, that doesn't think in the short term and whose purpose is to create economic, social and environmental value, therefore we never do anything with the mere objective of making a profit in the short term because this is not sustainable in the long term either, if it is not in fact something good for people and for the planet. This makes perfect sense, for us it's not charity, for us it's a business.

I- What roles did you play in the project - specific activities?

P2- It was the creation of the project, in that more exploratory part. I didn't see any reference, no one had ever done this, so it was basically involving the whole company, the marketing of *Missão Continente* basically selling the idea that we could have a product with purpose that would bring some added value to the brand, but also for those children who are there, so it was very much in this phase of design conception, of telling this story and connecting all the dots that was my involvement.

I- How would you rate the project in terms of strengths and weaknesses?

P2- Look, I think it is difficult because it was a project that when we launched, we didn't know what we were building yet. It is different if today we launch, for example, the second product, you have a reference and you already know. Here everything was new, when we started, we couldn't imagine where this would end up, so the positive points are all this novelty, this "new avenue" that was created of products with purpose and that today can be adopted by other areas of the company and by other companies. The great advantage of this project is to prove that it is possible, even from an economic point of view, to have products with a purpose that feed those who need it most and don't have it, and that, at the same time, nourish those who are able to pay and don't limit themselves to feeding themselves. So, I think this was a great added value. Some things go less well, I think that because of the inexperience, what went less well was the time, which even so I don't know if we could have done it in less time, but the ideal would have been in less time, we had many setbacks because we tried to develop the whole process with an industrial partner, in the end as we couldn't, we had to restart the process with another one. First, we tried to bring cashew from Guinea- Bissau, then we had to resort to another way of doing the process, so it was a long and difficult birth. I think that with this experience it is possible to speed up and burn some steps from here.

I- Would you have done anything different from what was outlined in the project activities?

P2- It is the great threat and from the beginning is that we believe that this is the end, we have to see that this is only the beginning and it has to be fed all the time, because the product itself was very well received by consumers, by the company, by everybody, but if we don't create a dynamic of innovation of "now a new product comes" and "in a while I have to come another" and "maybe there is one that has to go". The life cycle of these products also respects the normal life cycle of any product in economic cycles: it has a birth, maturity and decline phase; and we have to anticipate this decline with a new product, or another product, and, therefore, this is a project that if we don't keep feeding it and making it grow, it becomes hostage to itself, it is a success, but then it dies. And the worst thing that can happen in this kind of project is that we create an expectation on the development side, and then we don't have the funding to do it, so the day we took this step we took on a very big responsibility, which is to keep feeding this growth. We have to dedicate some time obviously now, but we have to dedicate a good part of our time to think "what's next?" and with some anticipation, because the first product took a year, the second 6 months so now that we launched this one it's time to think what's next: sometimes it's a new product, sometimes it's a new campaign, sometimes it's a new partner joining, but it's important to create this dynamic of innovation and product renewal, to think afterwards, to look at the project. It's true that there are many things that were built almost on faith, but because we didn't see it, but more and more we have to bring the issue of planning to the table and say "in x amount of time it is predictable that we will need this investment, so how are we going to finance it? who are the partners that we put on board?"; So the big threat of this project is to be treated as a project and not a way of life, because a project starts and ends and this can't end. If it is a way of life, it must be fed all the time with new partners, new ideas, and therefore it has to have a continuity plan behind it so that it doesn't threaten its sustainability over time. With planning and with some *know-how*, some knowledge, there are stages that could be avoided, for example, we would jump to launching the product immediately with an

African raw material, regardless of whether it comes from Guinea-Bissau or not, and in parallel we would be trying this. We would also be better prepared for an evaluation of the industrial arm, if it is the right partner, if it is not, so all of this would be able to burn steps. It is a matter of planning and organization, but that, in fact, is only possible after you have gone through the process once, you cannot plan what you don't know, and this was really unknown.

I- What are the opportunities and threats for the future in relation to the project?

P2- The opportunities are the new ideas that arise because behind this example, I felt 2 great opportunities: one from the product point of view (from the economic point of view, that is, it is possible to launch products with purpose, from this example many others can come) and the other was that there are many people with the will to collaborate and help and who don't know how, and when there is a company with recognition in the market and they know that it won't disappear, that it is solid, and that it shows evidence of the application of that investment, there are many people who want and are willing to collaborate, and we had this example of partners who were not directly involved in the product itself, but when they learned about our project connection they said "I want it too" and then they said "I want to finance a borehole", "I want to finance part of the school" and as a company we were also a bridge to others who want to help and don't know how. Sometimes because the organizations are so big that you lose track of the impact I can cause, or others that are small and even I can cause an impact, but I don't know, I don't believe, I don't trust, and the Portuguese people are very suspicious. So, these companies gained the necessary trust here to be able to help invest. The 2 great opportunities were these: to open an avenue of business, of *Business Case*. There is a *Business Case* now on the table that can be replicated, that is a great opportunity, and the other is to open doors for others to participate in a more direct or indirect way in this type of projects.

I- How would you describe the relevance of the partnerships between the company and the NGO?

P2- I think for a long time it was believed that the jobs were separate. That the purpose of companies is to generate profit and that of NGOs is almost a charity and help those in need, and the planet doesn't subsist like that. At this moment we live a different paradigm, because in the business world it has been realized that without people and without the planet there is no business, and so the companies that have value today are those that work around these sustainable development objectives, and who already do this work there are the NGOs that are in this field, and, therefore, companies don't know how to do this, they know how to raise funds to do this, but they don't know how to execute it. So, finally, the financial world itself supports with subsidized interest rates, or investors are more inclined to invest in companies that are involved in sustainable purposes, so it becomes interesting for companies to collaborate with NGOs as never before in our planet, so I think we are at the ideal time to expand this partnership. I think that they have worked more backwards and today they realize the need to work in an integrated way. Today there is also a greater openness of the NGOs for the entry of companies, because if NGOs did only this part, without understanding the need for financial sustainability of the project, they would kill the projects one day or another. And there is a greater understanding by companies of the need to have sustainable purposes

in their business, I think that finally the two go well together and it had to be one: either it was the financial world, to the legal world pushing, and I think here it's both things but mainly the financial world pushing this *forcing* towards sustainable development, and I'm glad it is so.

Interview 3

I- What is your position in the partner company?

P3- I was director of the business unit for the grocery area, where you include a category that is honey and jams, which is where these products are managed.

I- How and when did you find out about the existence of this project?

P- Right at the beginning, because it was a person from my team, Lourenço who was the commercial manager that took this category, so this project was a project that we took here on the Sonae side with three very close hands: Ana Alves, who was director of own brands, me, because I was the business unit director and Lourenço. Then the whole project was developed in different phases by these three people. So, I was involved right at the beginning, after the first idea that came up between Ana and Gabriel at their first meeting, where they had this idea that seemed a little "out of the box", which was to launch a cashew paste that could have a dual mission. From there, from that conversation between Gabriel and Ana was when Ana challenged me to find a supply partner that could be with us throughout this project and then we started thinking how it is, who could it be... negotiations..., so I had almost from the first hour.

I- What led you to participate in this project?

P3- And I think that, obviously, this project goes far beyond Continente's just commercial motivation if we wanted to manufacture cashew paste under the Continente brand, it's one thing and this project has a completely different dimension, so I think my involvement was in what I know is the performance of my duties in the commercial area, but I think that anyone who was involved with this project also has here a recognition and sharing of the noble values of this project, which is to have this dual dimension: on the one hand, promoting healthy eating, but also, on the other hand, helping us contribute to sustainable development in a country where we, as Portugal, also have a very close relationship, as former colonizers and want to help. Therefore, all of us who participated I think we felt this, far beyond a normal Continente brand product. Obviously, my involvement was more immediate because I was part of the commercial team, but then my personal involvement goes far beyond that and I speak for myself, but I speak that for anyone this project ended up touching.

I- What roles did you play in the project - specific activities?

P3- I did a lot of the initial work with the category manager, trying to find what could be the best partner from an industrial point of view to help us in this process and this had many phases involved. First because we thought that it should be a complete virtuous circle, which was that we could buy cashew in Guinea-Bissau, bring it to Portugal and process it there, and then that part of the sales of this product would also revert to the project of the centers for the prevention of child nutrition. So my intervention was to find

this partner, which would have to be a flexible enough partner because we were building something from scratch, and then we must not forget that this project began to be designed at the end of 2019, beginning of 2020 and shortly afterwards we had the pandemic, and we were all living at home, with a new reality that none of us had experienced before, so it was very challenging. I mediated here the relationship with Gabriel, that is, with the NGO and the first attempts to fly in cashews. We found a partner in Portugal, which was not the partner with whom we ended up developing the project, because it requires a lot of challenge, an open mind, willingness for trial and error, and, therefore, the first supplier we had selected processed these cashews that Gabriel brought by plane on one of his visits to Guinea-Bissau, in the middle of the pandemic (we were, if I am not mistaken, in June 2020). This ended up not happening, we did not have viability to use cashews for reasons related to the health conditions of the product and there was a need, even for some resistance that we were having with this industrial partner, as it was all so new we felt the need to go in search of someone who had this open mind, and so we went back to look at what was our supplier base, and try to find a partner that we thought would be more consistent with this business and with the spirit of innovation that we had to have here. Then we ended up finding Mozanuts, and here my role was very much in intermediation with the manager and Hope, and we found a partner here. Unfortunately, we do not use cashew from Guinea-Bissau, but we do use cashew from Africa, and this was also a requirement at an early stage, in this case from Mozambique. But we still continue with the dream and there is to be one of the stages of this project: to be able to gather conditions, provide training so that one day the raw material that is used in these products is really from Guinea-Bissau, and that is from these villages and can be harvested and then transformed into a product with added value in Portugal, so it is not forgotten this idea of the cycle to close, although in this first phase we have not been able to gather conditions for that.

I- How would you rate the project in terms of strengths and weaknesses?

P3- I think there are some things here that are cyclical because we were developing the project during the pandemic. It's important to say that the development of a new Continente brand product normally takes one year between the initial idea and the product being on sale in the stores. And with this product, even with all the setbacks that existed and the fact that we were living during a pandemic period, it didn't take any longer than that, with the first meetings being there in early 2020 and managing to launch the product in June 2021, I think we did it in record form, even with all these setbacks we had along the way, this was one of the strong points. Another point is the involvement of all the people who were involved in the project, whether Gabriel, Mozanuts or Continente contributed to achieve this in record time...this also tells us that when it is for a good cause, everything is achieved, even when we had Covid-19 in between. The weak point I think is this goal that one day we could have raw material from Guinea-Bissau and that we did not achieve in this first phase. This is something that could have frustrated us, that could have even made us give up because at the time we thought: "maybe this doesn't make sense anymore, right? As Guinea-Bissau is one of the main cashew producers, this could have weakened the project and could have made us question. But I think it is still an opportunity for improvement, which has not yet materialized, but I believe it will one day.

I- Would you have done anything different from what was outlined in the project activities?

P3- I had already guaranteed that the total sales of the product would revert to these centers not just a part of the retail price. For my own part, I wish we could donate more. Even so, we made a great effort to donate as much as possible to the product, which is of added value. We started initially with a donation of 50 cents and around October or November we negotiated with our partner Moza nuts and what is our commercial margin, or part of that commercial margin and we managed to increase 50 cents to 1 euro, which is already a more significant value. But if I could, I would do my utmost, especially after having been there in Guinea (I had this opportunity in December last year) and seeing the real impact that this has on those children. Like an idea that was developed in a room, so many miles away, from a conversation where some enlightened minds, and perhaps with a special hand, thought this was possible and the real impact that this creates in the lives of these families and these children in particular, and how this also works as an incentive to schooling with the enrolment of children in schools and therefore, how sometimes there are things that we consider to be almost impossible, right? If we do not consider that this is a crazy idea, it can materialize and have a real impact. So, if I had to change something, it would be the speed of the launch, but as I said we did it in almost record time. And to be able to donate even more than we are already donating. However, obviously the product also has a cost, that cost must be guaranteed, and I think we have also gone some way in this increase in donation. Now, we are building from scratch our second Centre, but my dream is definitely to quickly reach 5 villages, now we are going for the second one, and I would like that within 1 to 2 years we would be able to reach these 5 villages, so that this would also have a fast progression.

I- What are the opportunities and threats for the future in relation to the project?

P3- In terms of opportunities, diversifying the products that generate this donation is a huge opportunity. We cannot be dependent on the donation of a single product, because we know that products also have their life cycle, and what we sold at the beginning of cashew pulp is not what we are now regularly selling month by month. Therefore, we must continue to feed these donations through product diversification, and we are already working... we have now launched the second product *Pasta Mix de Frutos Secos* and we also have another to launch, because we want to continue to feed this source and work so that it is a sustainable source, that it is not just a project that was 1 year old and then died. That is not the intention at all, we want to continue to sustainably feed this donation through a larger portfolio of products, or possibly a partnership of Hope for Fulanis with other areas of the company within Continente that we are also already trying to explore, not only in the food area, but in other areas of the company. We consider having here a regular source of donation that can enable these investments that we are making in the villages, not only through the construction of the centers, but also with breakfasts, because what can never happen is: we give lunch in one school year and then we cannot guarantee that in the second school year we will continue to give this breakfast, and therefore, there must be continuity. In terms of threats, I would say that this issue of continuity is also a threat in the sense that we need to create a structure in Guinea-Bissau, involving the communities so that they can also feed these projects from within and feel involved. It should not just be like "now the mainland is coming and

supporting us, we have a source here, but it is a source that can run out." Ideally, the communities themselves should help, so that this is sustained over time. We can give tools and training to these communities so that they can, even as part of this investment, have their own economic autonomy, for example, start their own small businesses, start training from a professional point of view, and be able to sell some things with added value. This is not limited to the issue of child nutrition, and I think that ensuring that this is something sustained within these communities is something that is both a threat and an opportunity, because we know that, unfortunately, due to the lack of infrastructure in Guinea-Bissau, and due to the lack of a spirit of innovation, it is necessary for there to be an incentive through external stimulus in the first phase. We want it to be an incentive and a way to get started, but we want these communities to be able to be self-sufficient one day, to be able, with the tools that we will give them, not to need these incentives, these donations, and to be able to generate and be autonomous from an economic point of view.

I- How would you describe the relevance of the partnerships between the company and the NGO?

P3- I think it's super relevant, I'm fortunate to manage the Continente brand today, but I think that brands cannot exist just for the economic value, without also creating social value behind it, without having a positive impact on people and communities, because in the end, without people there is no business, and therefore, part of a brand's job is also to think about how it can contribute in a favorable way to this social development of communities. Unfortunately, we still live in a world with many asymmetries, where half the world talks about food waste, and the other half talks about hunger and malnutrition. When I went to Guinea, I often made this comparison in my head: my daughters could be those girls I was seeing, but they had the good fortune to be born in a developed country like Portugal, which gives them completely different opportunities than those girls from the villages of Guinea-Bissau, living in the same world, at the same time, in the same year. What separates us is just the chance of having been born in a different country, and nothing else. So, I think that as a brand, being aware of what can also be our role to help combat these asymmetries, i.e., for those who can pay for this product, it will bring benefits, because it is a healthy product, 100% natural but it is especially good for those who do not have this opportunity. As a brand knowing that I not only sell products on the market with the aim of generating profit and economic value, but also that I can have such a reach. What Continente has actually done can be applicable to any product and any brand, but you have to have the idea, then you have to have the commitment and focus to execute, I think to have this awareness of what our impact can be, beyond selling product, that is, to reach people, to be able to help people, to contribute to be better, to eat better, or to simply have a more conscious consumption more sustainable... to give at least the basic pillars of the evolution of a society, especially education and in this case also nutrition.

5. Transcript Interviews with NGO Actors Involved in the Project

Interview 4

I- What were your motivations regarding your involvement in the "100% cashew paste" project?

P4- So as personal motivations, there are two aspects here: one as a professional here in the institution, in terms of my area of intervention which is social service, and another, on a personal level because as a citizen. The whole line of the construction of the project itself and regarding the cashew nut being something that makes sense to me, i.e., a product that left Africa, was worked on, and returns as an intervention designed to benefit the community. So, these were the big motivations.

I- What led you to participate in this project?

P4- What led to participation within the more professional side was precisely working in the NGO and on a personal level the very awareness that I could publicize a product present in the market.

I- What roles did you play in this project - specific activities?

P4- My involvement in this sense was in the dissemination of the paste itself and how it was constituted and what is the purpose of the sales of the paste. The dissemination that I did occurred not only in my social networks, but also through informal contacts, where I explained where this cashew paste comes from, what is the food-base- which is the cashew nut, a typical food in Guinea-Bissau, in addition to the whole explanation of this cycle, which is really sustainable and is already responding to several areas that we work in at the NGO and that I work on as a professional, but also on a personal level.

I- To what extent do you consider that the project objectives (at the time they were set), were relevant to the needs of the "target population"?

P4- The cashew nut is a typical African fruit and from that region, i.e., it is a product that the community itself has a lot of contact with and knowledge of, so there is already an impact here for the community itself: a return in terms of raising the monetary value effectively reverts to the community. Also, the paste itself is then used for consumption in the community and here. So, it meets the various needs, physiological and physical needs of the community itself, of insufficient food. There is here the question of how to put a new product on the market for sale and that, on the other hand, represents a source of income for the institution itself. Therefore, the objectives respond to three major areas at the level of the commercialization market.

I- In this sense, do you consider that the project had an impact on the target population in relation to their needs and problems?

P4- It is a revolutionary product, an innovative idea by the creation of the product itself, because we could take a typical food from Europe, Portugal, for example, however the food used is from an area and a continent with needs, so it ends up being a product that

comes from a more disadvantaged community and, worked in a favored environment, returns with some return for community and nutrition for the disadvantaged area, so it ends up being innovative in that sense.

I- Do you believe that the project has contributed to achieving the specific objectives of the NGO in this area and also the overall objectives of the NGO so far?

P4- In fact, when we reflect on this product, it not only responds in a global way to a need of the community itself, but a product of the community itself is used for this transformation that is not possible in that context. It is sold here in a context with better conditions and the value not only of the product that goes back there, but the value collected in monetary terms also goes back to the community itself. So yes, the answers really here global and specific goals and in the area of the development of sustainability ready really is ends up fulfilling all the steps.

I- How would you compare the "situation of arrival" in the target population before the project with the "current situation"?

P4- *Pasta 100% Caju* was also used directly with the population with the community that is, for their own consumption, at the nutritional level I really believe it had a significant impact. In the verification before the project were identified immense needs and constraints, after the start of the project we already see these needs reduced, effectively mitigated by the application of the intervention. In addition, the form of consumption of cashew in paste would never be possible, so this product, with a softer texture, worked, today is a product that is used of the own by the community. Through the sale of this product the NGO really had here a possible capital to invest in other areas of the institution, clearly it is an innovation, not only by the very philosophy of this product, but also how it is made, how it is treated, and how it returns to the community. Hope today has the capacity to respond to other areas, continue to invest in the issue of nutrition, and who knows in the future, streamline the use of products from that region.

I- To what extent do you think the project interventions or benefits will last in the future?

P4- It will last into the future and continue to raise awareness both in the local community and the community that consumes this product. The importance of this consumer involvement is very great, we believe that continuing to bet on products for transformation of the community itself in Africa is possible through the civil society community here in the European context and where it is marketed.

I- Does the project present any institutional experience in the NGO that could have an influence in the future?

P4- It was really a learning vector during this journey. The project was a pilot initiative and clearly, with the experience, it was possible to verify that one can bet on the future. It was possible to see what makes sense, what doesn't make sense, but it was really with the experience and the practical application of launching this idea and seeing that even though it is not so easy and typical to observe in other realities, it is possible. This course effectively showed that it is an idea that makes perfect sense, and that it made perfect sense and will continue to make sense in the future. So, yes, we have learned here to continue to be used and to be creative in the ways of making a difference and

using what are the potentials, as well as the constraints and vulnerabilities of the various contexts. We saw a positive impact not only on the community, but also on civil society here, the impact that such a small product can have and has had, we can bet here who knows, on another product and other creative ways of not only nurturing, but also supporting the NGO itself and using the civil society as a partner to realize all the NGO's goals.

Interview 5

I- What were your motivations regarding your involvement in the "100% cashew paste" project?

P5- The motivations have to be focused on the beneficiaries and the needs that we see, once we have identified and diagnosed a need, the next step is accountability. In this sense, the motivation that I had related to development in the community that we work in Africa, was to somehow bring recognition to the work of the farmer, in this case those who sowed cashew, and harvested the cashew fruit, seeing it as a potential for growth, that is, to create a cycle where we can give even greater recognition for the effort and sacrifice that they make in this collection of the input. The motivations are born precisely there, when we identify a need and prepare the ground to, with responsibility, be able to meet it, and in this case the need we had was to value a farmer's work and create in that way some personal sustainability.

I- What led you to participate in this project?

P5- We knew that we as NGOs could not achieve much alone, in this need and we went looking for partners, the fact is that we thought we could have contacts in Europe that could supply the needs of this population in Africa, in Guinea-Bissau where we are inserted there are no structural conditions of factory, or production of food products so it was necessary to seek external support so that this participation is more concrete. I saw that the fact that we could feel ourselves as an organization, and in the middle as a channel, as a bridge between one continent and another that needs to be developed, so that we find things in common, and everyone benefits.

I- What roles did you play in this project - specific activities?

P5- My function was precisely to find a possible way to realize this desire, this dream, and to do this it was necessary to connect, to seek influences and this also came from a previous experience in a summit at the United Nations headquarters, where I was able to visualize the entire map and identify the sustainable development goals and in this sense, there is a goal, number 17, which precisely talks about partnerships to achieve the goals and then a company in Portugal talks to me about creating a product together that can fulfill the cycle that we want and that makes perfect sense. The raw material from the African continent, the transformation through a supplier that I presented to Sonae (a factory that has a very large experience in Africa and is in Portugal) and is from there, then the market takes responsibility for the distribution of this product, really the truth is that we do not sell the product, we sell the solution.

I- To what extent do you consider that the project objectives (at the time they were set), were relevant to the needs of the "target population"?

P5- I think this project is a solution to meet the objectives that we have on the ground, so a percentage of the resource of this paste we agreed to be for the development of a child nutrition center in Africa and then we started the first step, where the cycle is closed precisely that cashew nuts returned transformed into paste and that at the same time nourishes in Portugal who buys, people are involved in an extraordinary way to a cause and we managed to meet needs on the ground that is the child nutrition center.

I- In this sense, do you consider that the project had an impact on the target population in relation to their needs and problems?

P5- In less than 1 year, the project and the desire to see things work came about in the very first months, and really we see that the nutritional impact ends up also bringing fantastic consequences in relation to the cognitive development of the children that we are working with, and this development ends up improving obviously the physical health of a child in a scope from first to fourth grade. So firstly, the impact on the health of the individual beneficiary, secondly the impact on learning which makes itself well known with the noticeable change in engagement in the child in school subjects, the impact thirdly is on the community and the involvement of local volunteers, and all of this brings about a transformation in the community itself, a new thinking, a new dynamic, a new way of looking at the day, knowing that daily bread is on the table for a child, for the volunteers, for the teachers, so all of this ends up bringing about a completely remarkable emotional and physical well-being.

I- Do you believe that the project has contributed to achieving the specific objectives of the NGO in this area and also the overall objectives of the NGO so far?

P5- Yes, we identified that we are working on 7 of the 17 sustainable development goals, a proposal of the United Nations agenda, and this cashew pulp product has also been cooperating to, for example, the construction of a new center, where in this physical space we will have conditions for education with 4 classes of students and we will also have a space for nutrition and basic health care for the population and all those who surround the area, a space also for training in the area of entrepreneurship, motivation in youth, in the areas of creativity and all this creates a socio-economic development and cultural transformation. For example, the drinking water borehole that we built ended up determining a means of sustainability by the creation of community gardens, so the specific objectives are very clear, very visible, and very important, and they are really of prime necessity. For us we may not see so much need, but when you get to a community that lacks, that has no basic means of subsistence, what we are doing as an NGO turns out to be something extraordinary, it is proof that you can implement, and you can achieve the goals. We are also counting on the good sense of the national government to bring the peace that is needed in the country, stability and equality in all spheres, justice, a context of democracy that is fragile development in the region, so even though we still have goals to achieve globally, those that are basic end up being transcendent at this time.

I- How would you compare the "situation of arrival" in the target population before the project with the "current situation"?

P5- Before receiving a project or a vision, people receive you. So, the fact that I can face a project where the initiative is born in the population ends up encouraging me in the

sense that it's not something we are imposing, this is born in a community desire, it's strength among all, it's not external words, it's not politics, it's something that must be born precisely from the people and this happened. We have seen commitment and desire from the population and the welcome has multiplied over these 20 years, to the extent that our said word ended up being realized and this always creates confidence in the organizations and we are today in a context of confidence, such that today we have a delegated "authority" throughout the region, the recognition of the social representative bodies of the government in the region, this is good news to continue to sow and bring about the sustainable development that we all desire."

I- To what extent do you think the project interventions or benefits will last in the future?

P5- We have to also understand that nothing is guaranteed, we have a completely unstable country right now where anything can happen. So, the commitment that we have is a 2030 agenda and the goal that we have is to create self-sustainability and to the extent of this process we will certainly figure out the ways to make this a reality. So the precautionary measures that we have right now is not so much in our base, because there is the desire, there is the commitment, there is the involvement, and all of this has been demonstrated over the years, but we depend on the country allowing us to continue with our actions and our work, this being so the cashew paste and other products from Continente could create a platform for launching new projects, new volunteers, of prolonging our work on the ground, of keeping professionals on the ground, so it is at least on the NGO side the desire is for the long term and to the extent that we can see concrete things and needs we will be here to try to meet them.

I- Does the project present any institutional experience in the NGO that could have an influence in the future?

P5- Yes, in the first place, perseverance, the years that we have in the field create credibility, therefore the experience of knowing a people, of knowing needs, of knowing priorities, of knowing the road and the bridges, make it possible for us to do things in a more accelerated and productive manner, and that they give more fruit in the short term; this is what happens when we have experience. The experience also creates trust, where other institutions support us by the fact that they know where we are, this enriches the project also with human resources, who travel, who sow a time of their lives, or personal resource for what we dream, and ultimately the experience also inspires other institutions to do the same.

Interview 6

I- What were your motivations regarding your involvement in the "100% cashew paste" project?

P6- My motivations have a long time also has to do with a life process, with a life choice that is already many years old, and I always had a notion that we are not here to do everything for ourselves, because there is something that we should also do for others. In this long journey of many years, we got to know the Fula people and we saw the possibility of making a difference in a people that had the will, that really had the heart dedicated to their community and we really felt that we could make a difference there, there were conditions, there were connections, there were people that we knew for many

years and from all these things opportunities for this to happen were forming, and then we also met people here in Portugal that were in a position to make a decision and I think that sometimes connections are what make the difference. Also knowing how to communicate, we communicated a need and people here at SONAE also had a desire to do something, in this a motivation is formed: to transform people's lives and on the way be ourselves also transformed.

I- What led you to participate in this project?;

P6- It has to do with my personal history because I since I was very young, since I was 12 years old I had a dream, I was born in Argentina and my dream was always to go to places where there was a greater need than where I was from (I also did things in Argentina, in the north of the country, which is a very poor area and I worked there), but I wanted to do something outside the country, hence our first exploratory trip to Guinea that resulted in all this involvement with Africa and when we were 30 we went with the family to live there. That process and the connections led us to this village, Tabanane, which is a very small village, it is a village full of needs, also full of people with initiatives and desire to change. After many years we ended up staying here in Portugal and we do our mission from here to there, traveling a few times a year, doing the most distant work, but always connected with the same people and the same village, this made with that during all these years many things were happening at the development level such as schools, support with UNICEF, with WFP (World Food Program). All this support that we have been giving and that we have been able to get has made this project grow and we have been meeting the most real needs such as the lack of water, nutrition, which is the point where we are now. Even though we know that during these years a lot of things have been developed, there were situations with which we didn't have the capacity to grow more, and from there other connections arose with people connected to health, education, and nutrition, and from there we saw how we could reach out in a better way. The connection that we have here in Portugal with SONAE and this specific project was, in the end, the resource to find people and courses that were available and wanted to make a difference and from there, the portfolio emerged. It was a very beautiful story, I would say very divine, where we found a company that was bringing cashew from Africa and bringing it here to Portugal and for us this was also a sign of something we should do. Once this happened let's say that things started to move forward we knew that also on the spot we needed people to be involved because we are aware, because we live in Portugal, we needed to have people there working because there was no other way of doing things, and so the locals, the village people, the women, the men, the smiling leaders got involved in a very natural way because they are many years old, they know that we are people of our word, that when we propose something, we do it. So there are so many people involved in the village itself with their work, with their contribution, with their support, and also the company that worked here, obviously, for them it was also in the best interest to work and build the nutrition centers but they were also the part of this process as people, to develop with a correct attitude, because it's not only to win, but also to develop the communities, I think all the elements have been showing the same goal of transformation, and not only in personal interest I think the key is there.

I- What roles did you play in this project - specific activities?

P6- In this last phase, my role has been to support, to prepare the trips, to equip the people who traveled with the knowledge, with whatever they needed to know what they were going to find, with an involvement at the level of looking for donations and, above all, to know the connections, to keep those relationships alive because obviously all the characters in this story have relationships, and I think that all the jobs are important, but the people are more important, the relationships. What remains from all this is how I related to you, what I contributed to your life and how I contributed to the lives of all the characters in this story. I also have another job, I am a music teacher and I work in this area here in Portugal, which doesn't allow me to travel sometimes, but my involvement has to do with support, with continuity, let's say being a support column on the other side of the bridge.

I- To what extent do you consider that the project objectives (at the time they were set), were relevant to the needs of the "target population"?

P6- When the project was launched it had a very ambitious goal, which was that we could bring the cashew paste properly from the farmer in Guinea-Bissau, we encountered some difficulties, the first was the pandemic and then the transportation of cashew from Guinea-Bissau, but the reality of agriculture is one, the reality of the whole local industry is still far below what is expected here in Europe, so that's why this original idea was not realized until the end. Not being able to get cashew from Guinea - that's where I say these divine connections - it happened from Africa, from Mozambique, and the adaptation we had to make from that original idea ended up giving the project viability. In other words, we had a project, an idea conceived from what we thought would be ideal, and then the next step was to take it to reality, and when we managed to bring this cashew with an African company that already works here in Portugal, then everything fell into place. Of course, it is not completely aside from our dreams to be able to help in the future in the industry itself, in the import and industry of cashew from Guinea, but it is a quality that is still at a level that is not feasible to be consumed here in Europe, but it is a dream that we hope one day to be able to realize.

I- In this sense, do you consider that the project had an impact on the target population in relation to their needs and problems?

P6- We felt that so if we could do this, not only buy from them the products, which would grow agriculture, but then give back to them this resource to continue to grow but this was not possible, so the measure that we got was in every way fabulous, since we are using a product from Africa, selling here, producing here and this currency here has much more value than the currency there, which means that when it returns (a percentage) it makes a big difference, so I think a good return was achieved, building a new nutrition prevention center in one of the villages in such a short time, in 3 months, so it was accelerated. Also, with a previous project of drilling a water borehole, I think with this new project the idea was completed that nutrition is not just having food, but also having clean water to be able to make food in a way that is healthy, so the project involves several other areas as well. I think that we have achieved much more than we anticipated, not only because of the scope that this has, but because it is a reality that is still growing, we ourselves don't know where it will reach, because "it has legs to keep going" and this is very important, because if you have a project only for the moment it is not that it is bad, but it ends. This project has not ended, it is a project with legs to

continue, this is fundamental when we talk about the development of a community because it is something that has to continue over time, and I think this project has that nature.

I- Do you believe that the project has contributed to achieving the specific objectives of the NGO in this area and also the overall objectives of the NGO so far?

P6- It contributes for several reasons, one of them has to do with resources that are raised, let's not be hypocritical. Also, with the fact that it has an impact on Portuguese society, it makes from this side of the bridge people think about other peoples' needs and feel able to make a gesture as small as buying a product that will then make a difference in the lives of others. And there, obviously it is having an impact, because they see things happening, the water hole, a nutrition prevention center has started, the other center is already being built, this must be no small thing for them. This gives them courage, it gives them the feeling that they can do more things, that they have the capacity to develop more, to the point that they themselves have initiatives, for example they have made vegetable gardens now that water is abundant. The community itself is developing because they see that it is possible, and this is priceless. Far beyond the impact we can make with money, I think it's about the impact of transforming people's mentality, giving them hope in their own potential and this is our dream: to see them develop, grow, and realize that they are not forgotten people in the world, but that there are others who care about them and that they themselves can make a difference in their communities, and in those around them. This is like an expanding wave that goes on to touch and reach even more people.

I- How would you compare the "situation of arrival" in the target population before the project with the "current situation"?

P6- To give a hope to a people who have the potential to grow. Just having people working with them makes them lift up and be part of the transformation.

I- To what extent do you think the project interventions or benefits will last in the future?

P6- I think the most interesting thing about this portfolio project has to do with an involvement over time. Because of the United Nations 2030 goals we already have some continuity assured, but also this is not something that is being taken as a charity, this is making them (the community) assume their own role and then this has durability. You never see a project develop until the community itself takes over, so I believe that this project really has durability and has legs for the future.

I- Does the project present any institutional experience in the NGO that could have an influence in the future?

P6- This project allowed us to jump 10 stories, it made us grow as an organization, it made us plant our feet. This is why I say that connections are divine because they take us to the place where we should be, in this walk sometimes they are small steps (and I have experienced them throughout history) but in this case, I think it was many steps, it was a big growth for us as an organization, and from there, all the involvement and all the people who collaborate with the organization as members in the organization are so necessary. We need to make these 10 floors that we have grown can now go from there

to the next, there is no going back, we need to believe for more and I believe this now positions us at a level that we must have other bigger dreams to dream. Now, myself, I must raise my dreams to the level of what we are making happen, which leads us to other possibilities and other involvement in the community. We have grown a lot in all areas and this allows us to see development both in health, and in education (which is one of the areas that we really like to invest in), having a space to do it (center) where you can do, from trainings to distance teachers, there are so many things that we can now dream about, and all of this based on this project that has developed and continues to develop in the coming times.

