The Role of Exemplar Animal Welfare Charities in Food Supply Chains: An Exploratory Study

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ABSTRACT

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As consumers become increasingly concerned with the treatment of animals involved in food production, animal welfare charities find their efforts becoming more relevant to stakeholders across the food industry. However, little is known about how exactly animal welfare charities impact food supply chains. This gap is especially important to fill given that exemplar charities, of which there are few, are remarkably more successful at improving animal welfare in comparison to the numerous average charities impacting the industry. I therefore performed an exploratory study to investigate how exemplar animal charities impact the level of responsibility in food supply chains. Using reputational sampling, I selected three top-performing charities for an embedded case study. Based on a systematic literature review and secondary qualitative data, including the charities' performance evaluations and published reports, I conducted within-case and cross-case analyses which highlighted the primary practices and stakeholders being targeted by the charities' interventions. The results showed that these interventions targeted five main categories of food supply chain practices: operations, measurement, supplier continuity, learning, and external stakeholder practices. I also found that exemplar charities (a) target multiple food supply chain stakeholders and practices simultaneously, (b) consistently collaborate with other NGOs, (c) use a mix of confrontational and supportive approaches to target stakeholders, and (d) tend to focus heavily on practices associated with establishing measurement across the chain and reforming operations.

Keywords: animal welfare, charity, food production, factory farming, responsible supply chains, qualitative research, case study

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1. Introduction

Food supply chains are often divided into three groups of internal stakeholders – farmers, producers, retailers – and two groups of external stakeholders – consumers and governments. The internal stakeholders of food supply chains engage in operational activities to produce food products and have direct interest in improving key supply chain outcomes, such as economic performance and public image. The external stakeholders influence food supply chain indirectly and, in general, do not have an interest in improving food supply chains' economic performance and public image (Fritz & Hausen, 2009; Govindan, 2018; Grimm et al., 2014). Yet, external stakeholders can be interested in other outcomes that might be overlooked by the internal stakeholders of food supply chains. For instance, consumers are becoming increasingly concerned with the welfare of animals involved in the products they are purchasing (Matsumoto et al., 2020). Defined as "potentially measurable quality of a living animal at a particular time" (Broom, 2011, p. 122), animal welfare is becoming an important outcome for modern food supply chains.

Along with consumers and governments, charities are emerging as an influential external stakeholder that can play an important role in changing food supply chains in a way that can improve animal welfare. For instance, in the United States, People for the Ethical Treatment of Animals (PETA) is known for its efforts to improve animal welfare in the supply chains of large fast-food restaurants ("McCruelty: I'm Hatin' It," 2016). Focusing on the role of charitable organizations in food supply chains aligns with the recent call from supply chain management scholars to transition away from a narrow focus on for-profit firms' supply chains towards research on non-profit organizations and their role in supply chains (Pagell et al., 2018). This transition is crucial because "[t]here are plenty of other, often large, organizations managing supply chains that the literature has generally overlooked" (Pagell et al., 2018, p. 2). Extending this emerging body of supply chain scholarship (e.g., Gualandris & Klassen, 2018; Hajmohammad et al., 2021; Longoni et al., 2019; Pullman et al., 2018), my thesis investigates what role charitable organizations play in moderns supply chains. Specifically, I investigate how interventions of charitable organizations influence food supply chains to improve animal welfare.

A question may arise whether focusing on the state of animal welfare in food supply chains is important and whether improving animal welfare, in general, is a goal worth pursuing. The co-founder of the effective altruism movement, William MacAskill (2016), argues that the extent to which we should care about a charitable cause can be determined using three criteria: scale, tractability, and neglectedness. Thus, when assessing whether farmed animal welfare should be a high-priority cause, we must first look at the scale of this issue, i.e., how many lives are impacted by the issue both in the short run and the long run. In 2019 alone, an estimated 7.8 billion hens were farmed for eggs and approximately 78.3 billion animals were slaughtered for meat worldwide (FAOSTAT Statistical Database, 2021). Of these animals, 75% are estimated to have spent their lives in factory farms, where farmers pack masses of animals tightly in battery cages or concentrated feedlots (Anthis & Anthis, 2019). These animals are often so crowded that they turn to cannibalization (Clare, 2020). Chickens in these farms are also often genetically modified to speed up growth with such side effects as organ failure, abnormal skeletal development, and severe skin lesions (Clare, 2020). In addition, factory farming not only brutally impacts animal lives but also human lives in the long run due to the industry's considerable contribution to greenhouse gas emissions (US EPA Greenhouse Gas Emissions, 2019). In terms of its tractability – i.e., the ability to make and measure progress on this problem – farmed animal welfare is a tractable issue.

Potential solutions include such efforts as improving the conditions in which farmed animals are living and decreasing global consumption of animal-based products (MacAskill, 2016). In terms of neglectedness – i.e., the extent to which the issue has been overlooked – farmed animal welfare seems to currently be a highly neglected cause. In 2017, only 0.03% of total philanthropic funding in the United States went towards this cause, and it is even more underfunded across Asia where there is no shortage of large-scale industrial farms (Clare, 2020). This evidence, therefore, substantiates animal welfare's place as a high-priority charitable cause.

Animal welfare charities, therefore, can play a potentially important role in facilitating higher levels of responsibility across the food supply chains to improve animal welfare. Systematic literature review of food supply chains showed that the research has mainly focused on internal stakeholders of food supply chains and their supply chain practices. It also revealed a research gap: little is known about the role of animal welfare charities in food supply chains and how they work with other stakeholders to effectively improve animal welfare in food supply chains. This research aims to fill this gap by exploring how exemplar animal welfare charities impact the level of responsibility in food supply chains

Following Pagell and Wu (2009), I have focused on exemplar animal welfare charities to examine how they are able to making food supply chain more responsible. A focus on exemplars is especially relevant in this case as according to MacAskill (2016, p. 47), when evaluating the effectiveness of charities, it is vital to look at the best practices "because the best activities are often far superior to typical ones", i.e. there is usually a big difference between an average charity and an exemplar charity. Using reputational sampling strategy (Miles et al., 2018), I relied on Animal Charity Evaluators to select three charities that were classified as top charities in early 2021. The data for each case is comprised of secondary qualitative data, published research on their charitable interventions, and news articles.

This research resulted in a framework depicting the role of effective animal welfare charities in food supply chains. The results showed that interventions of exemplar charities targeted five main categories of food supply chain practices: operations, measurement, supplier continuity, learning, and external stakeholder practices. The results also showed that exemplar charities (a) target multiple food supply chain stakeholders and practices simultaneously, (b) consistently collaborate with other NGOs, (c) use a mix of confrontational and supportive approaches to target stakeholders, and (d) tend to focus heavily on practices associated with establishing measurement across the chain and reforming operations.

This research shows how by studying supply chains from the perspective of overlooked stakeholder groups that are not for-profit firms (Pagell et al. 2018), it is possible to reveal new ways of how supply chains can become more responsible. The findings of this research can be used as a basis for more effective charitable interventions by other charities in the food supply chains, better allocation of the limited funds being donated to animal charities every year, and consequently better overall animal welfare and better public image of food supply chains. This is expected to result in both increased responsibility in conduct across food supply chains as well as increased consumer satisfaction due to welfare demands being met.

2. Literature Review

The first step was to understand what is known in existing food supply chain literature. Following Durach et. al (2017), I conducted a systematic literature review with the aim of understanding the components and characteristics of food supply chains. I began this search for relevant literature by using the following search query on Scopus with key terms and relevant journals:

> *SRCTITLE (production OR supplier OR supply OR suppliers OR "supply chain") AND ALL (food OR meat OR animal OR poultry OR livestock OR agriculture) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j")) AND (LIMIT-TO (EXACTSRCTITLE , "Journal Of Cleaner Production") OR LIMIT-TO (EXACTSRCTITLE , "Management Science") OR LIMIT-TO (EXACTSRCTITLE , "Journal Of Service Management") OR LIMIT-TO (EXACTSRCTITLE , "Production And Operations Management") OR LIMIT-TO (EXACTSRCTITLE , "Journal Of Service Research") OR LIMIT-TO (EXACTSRCTITLE , "Annals Of Operations Research") OR LIMIT-TO (EXACTSRCTITLE , "International Journal Of Operations And Production Management") OR LIMIT-TO (EXACTSRCTITLE , "Journal Of Humanitarian Logistics And Supply Chain Management") OR LIMIT-TO (EXACTSRCTITLE , "International Journal Of Production Economics") OR LIMIT-TO (EXACTSRCTITLE , "International Journal Of Services And Operations Management")*

The initial search yielded 1,508 results published between 1997 and 2021. The process of narrowing the results down to the chosen articles involved numerous steps of selection and elimination. The first step of this process involved removing noticeably irrelevant articles on the basis of their titles, such as articles that focused primarily on the biological component of food production. After this, I read the remaining articles' abstracts to determine whether they could give sufficient insight into any food supply chain practices, outcomes, and/or stakeholders that could possibly be relevant to current animal welfare charity work. After selecting 63 articles that seemed most potentially valuable, I read the articles and found that 42 of them contained relevant and valuable insight into how food supply chains work. Table 1 outlines themes and sub-themes extracted during the literature review.

Table 1 - Themes and Sub-themes in Food Supply Chain Literature

Themes	Definition	Sub-themes
PRACTICES	Key strategic practices and capabilities displayed by stakeholders in food supply chains with the aim of achieving defined outcomes	• Knowledge management • Research & development • Supply chain transparency • Application of technology • Financial Resource Management • Internal Benchmarking • External (Competitive) Benchmarking • External (Non-competitive) Benchmarking • Commitment to standards • Government regulation
OUTCOMES	Effects of food supply chain operations that may be of interest to the stakeholders (and this study in particular)	• Economic Performance • Public image • Animal Welfare
STAKEHOLDERS	Parties in the food supply chain, the role(s) they each play, and key characteristics of each party	• Farmers • Producers • Retailers • Consumers • Government

2.1. Food Supply Chain Practices

The theme of *knowledge management* was present in multiple articles in the food supply chain literature. By promoting a culture of constant learning, companies are able to benefit from outputs such as "general, scientific, technical, and organizational" knowledge as well as improved products and services (Strøm-Andersen, 2020, p. 3). It has been shown to be preferrable to have "dynamic, information-based management practices" as opposed to "traditional practices based in fixed labor allocation and distribution practices" in agricultural supply chains (Ahumada & Villalobos, 2011, p. 677).

Another practice that top management should allocate fund towards is effective *research and development* as it is vital to maximizing organizational learning (Mangla et al., 2018; Strøm-Andersen, 2020). Exploratory learning, i.e., acquiring knowledge through research, is even more effective when combined with experiential learning (Strøm-Andersen, 2020). Effectively sharing this acquired knowledge is also important; in agricultural food supply chains, inter- and intra-firm knowledge sharing has resulted in less food wastage, better understanding of supply and demand variations, increased market share and profitability, safety, improved public image and sustainability (Kamble et al., 2020; Mangla et al., 2018; Wiskerke & Roep, 2007). The realization of these benefits is dependent on what type of knowledge is being shared as well as how and with whom it is being shared. For example, a study by Tang et. al (2015) shows that when governments share market information and agricultural advice with farmers in developing countries, market information has a positive impact on the farmers' profitability while agricultural information has no measured impact. A study in which social networks were used for knowledge sharing amongst

members of Brazil's coffee sector shows that market information and technical advice had positive effects on the firms' ability to adopt complex standards for certification (Hajjar et al., 2019).

Frequently mentioned throughout food supply chain literature, *supply chain transparency* can be considered a direct result of effective knowledge management (Pérez-Salazar et al., 2017). It can be viewed as the degree to which players in a supply chain can view knowledge and data that may be of use to them; this suggests that supply chain transparency not only includes what an organization has learned but also real-time metrics such as demand fluctuations and inventory levels (Kamble et al., 2020). As food supply chains become increasingly complex and globalized, it has become more difficult to achieve supply chain transparency (Roth et al., 2008). Simultaneously, as consumers grow increasingly interested in the sustainability, origin and safety of food, it has also become increasingly necessary to provide this visibility in order for sellers to compete in the global market (de Olde et al., 2020; Mohammed & Wang, 2017; Oglethorpe & Heron, 2013; Willem Ziggers & Trienekens, 1999). It is not only beneficial for consumers but also supply chain partners who benefit from supply chain transparency through more educated planning, better network design, timely problem-solving, and better assessment of sustainability risks (Grimm et al., 2014; Kamble et al., 2020). Supply chain transparency thus ultimately leads to cost-reduction, consumer satisfaction, and increased profitability (Kamble et al., 2020; Mohammed & Wang, 2017).

A major driver for better knowledge management practices and supply chain transparency is the *application of information technology* (Strøm-Andersen, 2020). Emerging internet-based information and communication technologies in the otherwise low-tech food industry have facilitated supply chain coordination, increased efficiency, lessened food wastage, eased both standardization and customization, and reduced overall costs thus contributing to customer satisfaction and profitability (Fritz & Hausen, 2009; Mangla et al., 2018; Matsumoto et al., 2020; Willem Ziggers & Trienekens, 1999). There is a progression towards building more productive and flexible 'smart factories' comprised of intelligent, interconnected devices capable of compiling and utilizing internet-based data, learned information, and real-time metrics measured in the physical world (Matsumoto et al., 2020; Monostori, 2018). A study by Strøm-Andersen (2020) explored the difference in innovation capability between a meat firm and a dairy firm with regards to timely adoption of technology. The meat firm, which invested in new technology earlier on, benefitted from the outcome of product innovation and had a launch plan ready by the end of the study. Meanwhile, the dairy firm was still in the early stage of investigating what technology to adopt and in that time was unable to pursue any innovative opportunities, highlighting the importance of adopting new technology in the food supply chain as it rapidly moves to a competitive data-driven environment (Kamble et al., 2020).

Effectively implementing all the previously discussed practices would arguably be impossible without effective *financial resource management*. One way in which key decisionmakers support the practices is by effectively securing the necessary financial resources. According to Mangla (2018, p. 389), "management needs to ensure higher funds and superior resources to adopt modern technologies, new machines, and equipment to enhance [food supply chain] sustainability". Once top management secures the funds, the team must then allocate them appropriately. Recent food supply chain literature focuses heavily on the potential tradeoff between profitability and sustainability that top management must address when allocating funds. As retailers and customers grow more powerful and demand that food supply chains follow stricter sustainability standards, management is placed under additional pressure as profit margins in the

food supply chain are already very low compared to other industries (Mangla et al., 2018). According to Glover's (2014, p. 102) study on the dairy supply chain, challenging top managers' dominant tendency to prioritize short-term profitability over sustainability will "require a broader more systemic approach to encouraging sustainable practices including investment and financing practices, so that all members of the dairy supply chain can co-operate and contribute to energy reduction". The author also suggests that when strategizing and collaborating with supply chain partners, firms should no longer consider a 'win-win philosophy' where the financial benefit of both parties is maximized and instead begin jointly focusing on the external impacts that their decisions make regardless of whether that may lead to a short-term reduction in profitability (J. Glover, 2020). For example, although it may not be very profitable in the short run, decisionmakers should ensure that research and development activities are adequately funded so more environmentally, socially, and economically sustainable practices can be promoted in the long run, thus maintaining long-term competitiveness (Mangla et al., 2018).

Benchmarking refers to the measurement of a firm's performance in a chosen area and comparison to a similar measure. These comparisons can be generally categorized as *internal benchmarking* and *external benchmarking*. *Internal benchmarking* is done within the firm and could be in comparison to the firm's past performance across a certain metric or could be a comparison across different areas of the organization. This entails the establishing of indicators to effectively measure progress levels in production and consumption in order to quantify past performance and current standing (Govindan, 2018). It is important for the indicators in place to be capable of quantifying small improvements in performance as these should be discounted when making comparisons; small wins should be taken into account by decisionmakers to see if changes are faring well early on and also should be recognized by all other involved stakeholders as it has been shown to increase motivation and strengthen their joint commitment to the overall goal of an initiative in the long run (de Olde et al., 2020; J. L. Glover et al., 2014; Govindan, 2018). Companies can implement a combination of internal audits and third-party audits as both have been shown to improve productivity, safety, quality, and decision-making throughout the entire supply chain (Govindan, 2018; Willem Ziggers & Trienekens, 1999). Kamble et al. (2020) also find that it is important to have regular evaluations of existing supply chain visibility and deploy resources for improvement wherever needed. Effective benchmarking can help identify unique areas for improvement that would have otherwise been overlooked (Camp, 1989).

External benchmarking is also becoming increasingly relevant as governments and competitors are putting increasing pressure on firms to strive for continuous improvement particularly in the field of sustainability (Sarkis, 2010). External benchmarking can be further separated into *competitive benchmarking*, in which performance measures are compared with those of competing firms, and *non-competitive benchmarking*, in which they are compared with externally determined standards that have been set by non-competing entities such as the government or certification boards (Sarkis, 2003). In a paper looking into evaluation criteria for plant-based food guides, Karlsson Potter and Röös (2021) highlight that it is important for evaluation criteria regarding product impact to be complex enough to encompass different facets of sustainability while also being simple enough to be compared with other products within the company, outside the company, and against environmental targets. Grimm et al. (2014) suggest that measures for benchmarking should also be complex enough to encompass differences in organizational types and industry. While advancements in technology have allowed increased visibility and are making it easier to develop such multifaceted measures for benchmarking, data

availability and complexity still seem to be issues in the food industry (Grimm et al., 2014; Sarkis, 2010). Overall, if benchmarking is implemented effectively, these regular evaluations and comparisons can ensure the practice's primarily goals of continuous improvement and gaining a competitive edge (Sarkis, 2003).

Studies suggest that the public image of a product in the market is no longer tied to the product alone but to the entire supply chain that brings this product to market (de Olde et al., 2020; Rao, 2002). Resultingly, numerous public and private *certification programs and standards* have been developed over the past two decades to ensure that practices along the food supply chain abide by certain standards for quality, safety, and sustainability of practices (Trienekens & Zuurbier, 2008). These certification programs not only define such standards but also provide third-party verification that standards are met as well as recognition for firms and products that pass this verification. The success of commitment to such standards can be measured by their "rate and extent of adoption, and by [their] positive and negative impacts" (Hajjar et al., 2019, p. 125). The possible positive impacts include more food safety, more consumer confidence, improved production efficiency, better market access, improved animal welfare, better working conditions for employees, and better overall competitive standing (Hajjar et al., 2019; Trienekens & Zuurbier, 2008). Certification programs that focus on continuous improvement are more likely to lead to these positive impacts in comparison to those that remain relatively stagnant with their standards (Hajjar et al., 2019). The most direct disadvantage that is presented to firms that commit to certain standards of operation are the costs associated with improving practices to meet these higher standards; because of this it can be hard for most farms and for companies in industrialized countries as their profit margins are generally quite low (Hajjar et al., 2019; Trienekens & Zuurbier, 2008). In study on Brazil's coffee and cattle sectors by Hajjar et al. (2019, p. 124), the extent to which certifications are successfully adopted is dependent on factors including "differences in sustainability priorities, market orientations, supply chain traceability, and social networks". They also find that programs that require less investment from participating farmers are more likely to succeed and are easier to scale up. The participating firms that had more social networks and higher levels of supply chain visibility were also more successful in becoming certified as it was easier to communicate and monitor the changes required to meet standards. In the future, it is likely that large retailers will more commonly impose strict requirements on suppliers to comply with certification standards and will likely conduct third-party audits to ensure compliance (Trienekens & Zuurbier, 2008). This stringent approach is sensible as Hajjar et al. (2019) indicate that firms are more likely to become certified if they have more to lose if they choose not to; voluntary certification with no repercussion for not participating has not been very effective thus far.

Governmental regulation has also been studied frequently in food supply chain literature as a practice that has pushed firms to abide by certain environmental and/or ethical standards for production. Most of the studies focus specifically on the agricultural sector of the food supply chain seemingly because this sector is most deeply involved with the land, animals and labour that the regulations aim to protect. However, Hajjar et al. (2019) indicate that the factors that lead to successful implementation of regulatory changes in agriculture are transferrable to other sectors in the food supply chain. In a study by Bokusheva et al. (2012) on Swiss farms and their response to environmental regulations, the authors find that these regulations have caused significant changes in the farms' production technology and also led to the discovery that most fixed resources were not being used optimally by the farms. Dutch regulations that were introduced in 2019 were

focused on animal welfare in the egg sector. There were requirements pushing farmers to use non-debeaked hens for eggs (de Olde et al., 2020). These regulations were also in line with growing consumer demand for ethically farmed eggs, so it is admittedly difficult to determine which of these external pressures was more effective in causing the shift. Grekova et al. (2014, p. 176) suggest that to food supply chain firms, "regulative pressure (in spite of its great potential) is less important compared to normative and culturally-cognitive pressures", i.e. firms seem to find the need to maintain their public image and customer satisfaction more important than the need to comply with regulations. However, regulations can still be successful depending on "the distribution and quality of environmental resources, markets, knowledge, actors, and networks" (Hajjar et al., 2019, p. 124).

2.2. Food Supply Chain Outcomes

The food supply chain practices mentioned throughout the literature appear to be aimed at achieving certain outcomes, the most predominantly highlighted outcome being *economic performance*. For the purpose of this study, economic performance refers to a business's profitability, market share, and competitiveness. A study on sustainable practices in the dairy supply chain finds that while suppliers and retailers are increasingly focusing on sustainable practices, an overwhelming majority of these firms still fervently follow the "dominant logic" of "cost reduction and profit maximization" (J. L. Glover et al., 2014, p. 102). The study also highlights that this unwillingness to compromise on the outcome of maximum profitability is so deeply engrained in the industry that it is quite difficult to challenge, ideally requiring regulatory pressure. If such 'coercion' is not introduced, most businesses are only willing to adopt sustainable practices if they are predicted to improve profitability (J. L. Glover et al., 2014; Grekova et al., 2014; Li et al., 2014). The primary factors that affect profitability in the food supply chain are labour costs, level of food wastage, and transportation management (Ahumada & Villalobos, 2011).

The food sector faces increasing scrutiny from the consumers and media, making *public image*, or an entity's perceived reputation, a frequently mentioned outcome in recent food supply chain literature (Govindan, 2018). As Rao (2002, p. 632) mentions, "customers and other stakeholders do not always draw a line between a company and its suppliers". This, coupled with increasing pressure for food supply chains to adopt more sustainable and transparent practices, has led to food supply chain firms becoming deeply concerned with their suppliers' adherence to sustainability standards as it has a direct impact on consumer confidence (Govindan, 2018; Grimm et al., 2014; Oglethorpe & Heron, 2013; Rao, 2002). Glover et al. (2014) state that 'mimetic drivers', occurring when businesses imitate successful practices of other similar businesses, push most supermarkets nowadays to replicate their competitors' successful green practices primarily for the sake of bettering their public image. This occasionally unconscious imitation is an attractive practice as it puts businesses in agreeance with already-established social norms in the industry (Oliver, 1997). Grekova et al. (2014) highlight the role of 'culturally cognitive pressure' in pushing firms to want to adopt more socially acceptable behaviour. The authors suggest that this pressure to maintain a positive public image is arguably an even stronger driver for firms to implement more sustainable practices than legal pressure is.

2.3. Food Supply Chain Stakeholders

The literature review revealed five key stakeholders of food supply chains: farmers, producers, retailers, consumers and government. The stakeholders can be categorized into two main categories, internal stakeholders who have a more direct influence on an industry and direct

financial interest in the chain's activities, and external stakeholders who have a more indirect influence on the chain's activities and/or no direct financial interest. So, out of the five identified food supply chain stakeholders, farmers, producers, and retailers are considered internal stakeholders while consumers and governments are external stakeholders (Govindan, 2018; Grimm et al., 2014). *Farmers* refer to individuals and organizations involved in farming meat, poultry, and perishable agricultural products such as fresh fruits and vegetables. Farms are "mostly small or micro enterprises" (Fritz & Hausen, 2009, p. 445) that face unique challenges such as unpredictable fluctuations in supply and demand, high dependence on weather conditions, perishable products, unforeseeable price fluctuations, long lead times, low yields, generally fragmented flows of resources and materials, inadequate management, and limited access to resources (Asian et al., 2019; Fritz & Hausen, 2009; Kamble et al., 2020; Mangla et al., 2018; Shukla & Jharkharia, 2013). Some of the most significant operational decisions that growers have to make are those pertaining to the scheduling of planting and harvesting, storage, packing and transportation as these are highly impacted by the perishability of agricultural products (Ahumada & Villalobos, 2011). These characteristics make agricultural and overall food supply chains more complex than most other supply chains (Shukla & Jharkharia, 2013).

This complexity is heightened by consumers' increasing interest in sustainably produced food (Mangla et al., 2018) and the resulting agricultural "paradigm shift, from efficiency-driven industrial agriculture to resilience-focused eco-friendly agriculture" (Dong, 2020, p. 1). As farming requires the usage of high-volume natural resources and is also a large employer (Mangla et al., 2018), it is even more concerning to both farmers and governments that this industry actively addresses the social, environmental, and economic impacts of its operations (Kamble et al., 2020, p. 186).

Producers refers to parties in the food supply chain that usually fall between farms and retailers. Given the amount of coordination, planning and transportation that is required to operate at this stage, this stakeholder consists of the most complex parts of the overall food supply chain network (Fritz & Hausen, 2009). Globalization has also contributed to the complexity of operations at this stage of the supply chain, resulting in an increasingly "global and interconnected system for the production and distribution of food" (Trienekens & Zuurbier, 2008, p. 107). A study by Oglethorpe and Heron (2013) aims to identify the main challenges that producers are faced with due to the geographically expansive nature of their operations. The main hurdles they identified were market conditions, nature of products, labour availability and competence, institutional factors, supply chain partnerships, certification, policies and regulations, and cultural differences. One food production trend mentioned in recent literature is the rise in industrialization. Producers are seeking more repeatable and standardized process to ease mass-production and cater to larger markets (Beske et al., 2014; Oglethorpe & Heron, 2013). This trend in conjunction with customers' increasing interest in the quality and sustainability of food presents producers with the critical challenge of traceability and quality assurance (Grekova et al., 2014, 2014; Matsumoto et al., 2020). Interestingly, Matsumoto et al. (2020, p. 1) highlight that production is now moving "from a supply-based approach to a demand-based approach" in which customer preferences are taken heavily into account so that products are more personalized rather than standardized. This means producers now face the need to adopt advanced technology and flexible systems to survive this 'chain reversal'.

Retailers are most often the largest players in food supply chains and findings in a study by J. L. Glover et al. (2014) revealed that other stakeholders in the food supply chain agree that

supermarkets are the most dominant entities in the chain. Due to globalization, retailers have gained access to more suppliers are thus have become more price sensitive (Fritz & Hausen, 2009; Willem Ziggers & Trienekens, 1999). They have also become increasingly vulnerable to consumer dissatisfaction and negative impacts on public image; supermarkets are the only stakeholders in frequent contact with consumers which pushes them to ensure suppliers' compliance with regulations, certifications, and public and private standards (J. Glover, 2020; Simons & Taylor, 2007). Retailers are thus the most likely stakeholders to use coercive power over farmers and processors, leveraging the size of their business, bargaining power, and ability to conduct audits to ensure that standards are met (J. Glover, 2020; J. L. Glover et al., 2014).

Consumers are a key stakeholder in the food supply chain. This is evident in how often consumer behaviour has been studied throughout recent food supply chain literature, with researchers showing increasing interest after Valin et al. (2014) showed that global food demand is predicted to nearly double from 2005 to 2050. It is crucial to identify trends in this growing population's consumption and the factors that shape these trends in order for all other stakeholders in the food supply chain to strategize and allocate resources accordingly (Govindan, 2018). One major factor influencing consumer behaviour is purchasing power; research indicates that with more disposable income, consumers tend to purchase more animal meat and dairy (Shukla & Jharkharia, 2013). This raises concerns as global urbanization and income levels are increasing and threaten to impose a heavier load on already overburdened resources such as land, animals and water (Dong, 2020; Hsu et al., 2019; Shukla & Jharkharia, 2013). Contrastingly, Karlsson Potter and Röös (2021) indicate that consumers are now moving towards eating more plant-based foods. This change in preference has been attributed to consumers rapidly becoming "increasingly health conscience about the quality and nutrition content as well as provenance of the food they consume" (Dong, 2020, p. 1). Consumers are now demanding higher quality food that is produced in a safer, personalized, more transparent, and sustainable manner (Beske et al., 2014; Matsumoto et al., 2020; Mohammed & Wang, 2017; Trienekens & Zuurbier, 2008). The shift to plant-based diets thus makes sense as there is increasing scientific evidence indicating that plant-based diets are associated with a lower impact on the environment due to less energy usage, land usage, and animal-life impact (Beske et al., 2014; Karlsson Potter & Röös, 2021). According to a study by Hansmann et al. (2020), consumers are more likely to demand environmentally-friendly and healthier food if they have more income and also have access to more knowledge and information. The authors found that health-related information seems to have a slightly bigger impact on consumer preferences than information on environmental friendliness, possibly due to health being a more personal matter, but both forms of consumer education still lead to more sustainable food purchases in comparison to less educated consumers. With a rapidly growing, increasingly educated, and more affluent global population, it is clear that other food supply chain stakeholders must urgently tailor their practices to these shifting consumer demands.

Governments also play a role in the operations and outcomes of food supply chains although this role seems to be more passive than the other four key stakeholders. With food being increasingly shipped to and from various parts of the world, it is crucial to introduce regulations and new legislation in order to maintain certain standards of safety, sustainability and quality throughout the chain (Mangla et al., 2018; Trienekens & Zuurbier, 2008). This can be regulation on matters such as animal-friendly production, limitations on the usage of scarce resources, and pollution restrictions. Governments also play a supportive role to ensure that local food companies are preserved and aided in their growth (Trienekens & Zuurbier, 2008). This support can be

financial, commonly through subsidies. It is also increasingly being done through the provision of "agricultural extension services" (Tang et al., 2015, p. 1197) that can consist of easily accessible agricultural advice for local farmers through online platforms or training programs, supply/demand forecast information, and assistance in risk management to incentivize local food firms to expand (Mangla et al., 2018).

2.4. Emerging Outcome and Stakeholder

Animal welfare is defined by Broom (2011, p. 122) as the "potentially measurable quality of a living animal at a particular time". While this scientific concept has been discussed more frequently in numerous contexts over the past 30 years, conducted systematic literature review showed that the notion of animal welfare has not been as prominently present in the food supply chain literature with two notable exceptions. De Olde et al. (2020) briefly mention increasing concerns for the treatment and living conditions of animals farmed for food and trade-offs associated with improving farming conditions. Similarly, Glover (2020) has highlighted the increasing requirements retailers are imposing on suppliers to adhere to animal welfare standards. These findings indicate that animal welfare has only recently began to emerge as a key outcome of food supply chain practices.

Similarly, *animal welfare charities* has been overlooked in the food supply chain literature. Only a single recent study briefly mentions this stakeholder, enlisting charity employees as part of a group of experts surveyed to come to a consensus on specific animal welfare issues and their prioritization (Rioja-Lang et al., 2020). However, this study did not focus on charities specifically and their role in the food supply chain. This gap is what my study aims to explore.

3. Methodology

I used the conducted systematic literature review to develop initial framework. The literature reveals how food supply chain stakeholders use practices to achieve specific business outcomes. The systematic literature review provided some clarity regarding, the review revealed the gap in the literature and highlighted the need to investigate how charities intervene in food supply chains. To explore this gap, I complemented the results of the systematic literature review with the following constructs. First, the state of the animal welfare necessitates the charitable cause of improving this outcome. Second, charitable cause how a charity operates and, specifically, what charitable intervention it chooses to implement. Such interventions are likely to be aimed at changing the food supply chain practices in a way that improves animal welfare. Figure 1 contains this initial framework.

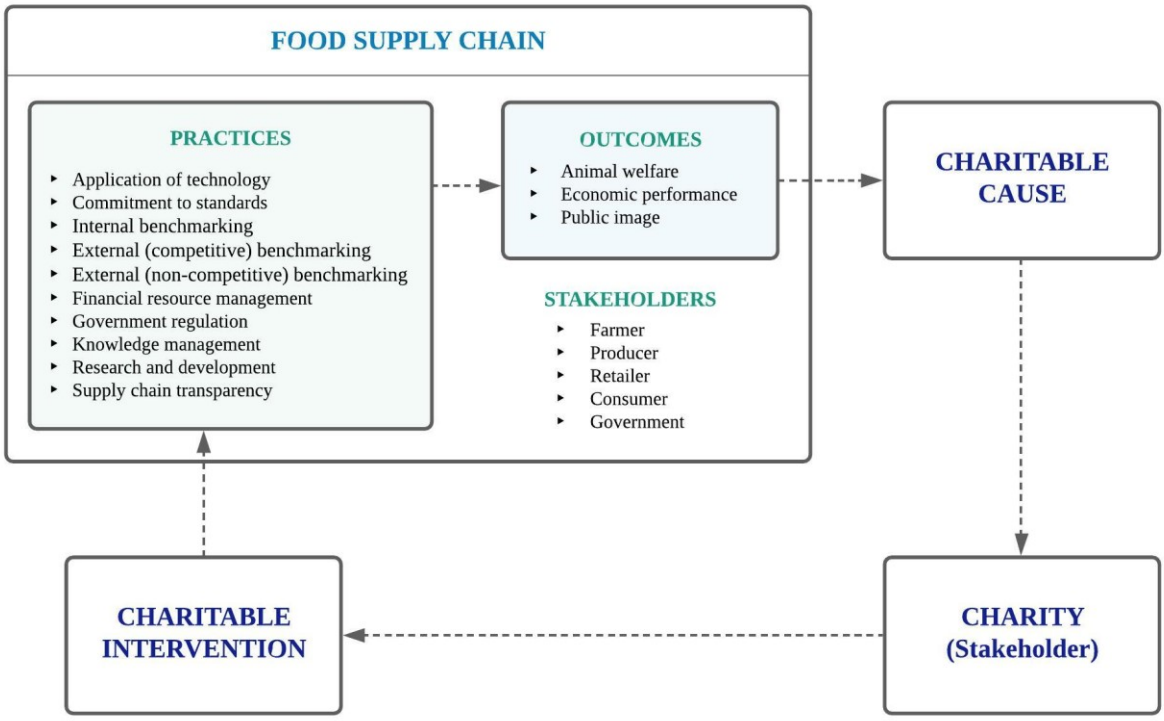

Figure 1 Initial Framework

3.1. Data Collection

Drawing from study conducted by Pagell & Wu (2009), I selected animal welfare charities known for their effective interventions in food supply chain to examine "multiple exemplars simultaneously to build propositions based on patterns of behaviour" (Pagell & Wu, 2009, p. 40). Using theoretical sampling (Eisenhardt, 1989; Miles & Huberman, 1994), I chose exemplars in the field using third-party evaluation by Animal Charity Evaluators (ACE), the leading animal charity evaluator in the world, that have received the highest level of recognition from non-profit evaluator GuideStar (Matthews, 2020) and recommendations by co-founder and President of the Center for Effective Altruism, William MacAskill (MacAskill, 2016). The ACE assessments of charities are based on numerous factors including evidence of animals' lives being positively impacted by charity work and the charities' levels of commitment to research-based improvement to programs.

By early 2021, through their evaluation of 262 charities thus far, ACE established three top charities in 2020:

- The Albert Schweitzer Foundation
- The Humane League
- Good Food Institute

Pagell and Wu (2009, p. 40) have noted that in the supply chain management field, there have been "numerous examples of multiple case study research using from three to 11 cases", so the chosen number may be sufficient to establish externally valid results. Importantly, as the within-case analysis later revealed, these cases are embedded, i.e. each charity uses multiple interventions to make the food supply chain more responsible. Specifically, I have analyzed 13 interventions

performed by these charities. Table 2 specifies different types of data sourced used in this study. Using different data sources helped reducing the risk of biases as well as strengthening reliability and validity (Pagell & Wu, 2009). In total, the data set contained 856 pages of text.

Table 2 - Data Collected for Coding

Charity No.	Charity Name	Data Sources	No. of total pages coded
#1	Albert Schweitzer Foundation	• ACE Comprehensive Review • 3 reports published by charity • 3 links within comprehensive review • 9 footnote links • 10 charity website links	325
#2	The Humane League	• ACE Comprehensive Review • 5 reports published by charity • 4 links within comprehensive review • 14 footnote links • 10 charity website links	299
#3	The Good Food Institute	• ACE Comprehensive Review • 3 reports published by charity • 1 link within comprehensive review • 5 footnote links • 9 charity website links	232

3.2. Coding

The collected data was uploaded on qualitative data analysis software NVivo. This software was used for the coding process which entailed assigning meaningful and relevant 'labels' to units of qualitative data. The goal of coding is to categorize and organize data by thematic content, making it easier to detect patterns and relationships amongst different variables and entities (Miles & Huberman, 1994). Once the initial documents (listed in Table 2) were coded to the case that each document pertained to, I proceeded to the first step recommended by Miles & Huberman (1994) when creating codes: making a 'start list'. This start list is often composed of codes that are derived from the conceptual framework that has already developed through a paper's literature review. So, the framework composed after the literature review (Figure 1) was used to formulate the first few codes. This included the ten food supply chain practices, five food supply chain stakeholders, and three food supply chain outcomes highlighted in the literature.

Using this 'start list' of codes, The Albert Schweitzer Foundation was the first case to be coded, starting with the ACE comprehensive review. As themes emerged from this document, they were also added to the list of codes, primarily being codes pertaining to the charitable cause, the charity's internal attributes, and the charity's interventions. The next few documents including the published reports and the footnote links were then coded with more codes being added accordingly (as shown in Figure A-1, Appendix A). As new codes were being defined, they were also being cross-referenced with existing research to see if the concepts discovered in the data have already been defined in the literature. For example, a code initially named 'bargaining power', referring to

the communication style or decisions a charity may implement in order to be taken seriously by target companies, was renamed to 'legitimacy' as this concept was already defined in a published paper by Rendtorff (2019). Any new codes were also simultaneously being added to the conceptual framework. Once these documents were coded, the case was coded again twice to ensure that themes that may have been missed in earlier rounds are captured in later rounds of coding. During the re-coding of the three cases more codes were added and revised as described earlier. Also, as more coding was done, emerging relationships and patterns were being suggested so these were also added as codes. As suggested by Miles & Huberman (1994), I was also adding notes throughout the coded data to be able to later recall any key discoveries, potential patterns, or summaries that may be valuable during the analysis phase. With the additional codes and relationships, the cases were yet again revised to identify sections of data that may have been missed and sections that may have accidentally been attributed to the wrong codes. Once these last documents were coded, the resulting conceptual framework was updated as shown in Figure 2.

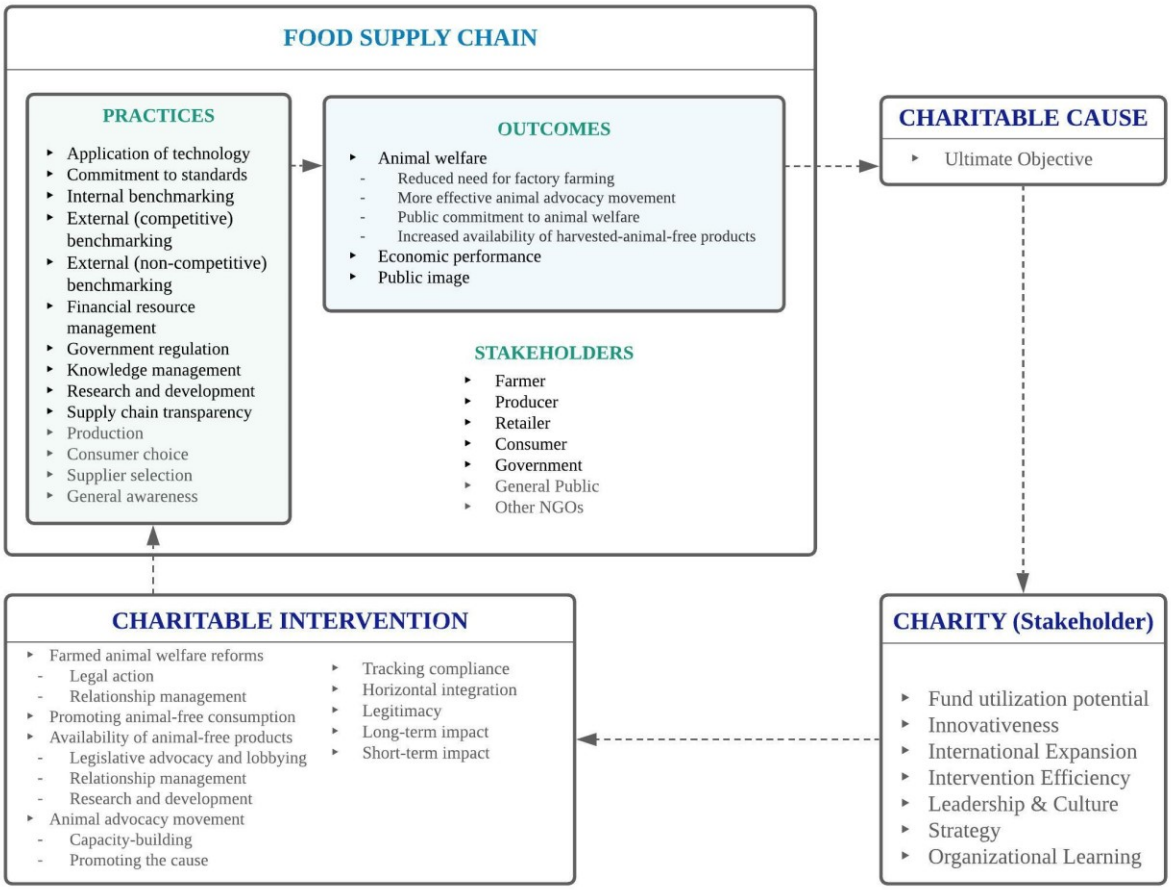

Figure 2 Conceptual Framework after Coding

4. Case Analyses and Results

4.1. Within-Case Analysis

Once the data was coded, I proceeded to the within-case analysis, an iterative process that allows for simplifying and managing the data to develop a description of the manner in which each individual charity's interventions impact the food supply chain (Pagell & Wu, 2009). This process involves developing case displays, a visual representation of relationships, patterns, and/or networks that can be seen in each case. These displays can later be "used to draw and verify conclusions" surrounding phenomena described in each of the cases (Miles & Huberman, 1994, p. 90). To develop these displays, it was important to first summarize the data coded under each code and then obtain a comprehensive understanding of each theme in relation to the individual case. This was done using framework matrices on NVivo where data coded under each individual code and case can be isolated and reviewed (as shown in Figure A-2, Appendix A).

Crucially, this process revealed the embedded nature of the three cases and showed that it would be more appropriate to treat each intervention within each charity as a separate case, breaking down the 3 cases at the level of a charity into seven cases of a charitable programs that in turn can be divided 13 cases at the level of a charitable intervention:

- 5 interventions by the Albert Schweitzer Foundation (ASF)
- 5 interventions by The Humane League (THL)
- 3 interventions by the Good Food Institute (GFI)

As a result of this breakdown, the study can be viewed as 'multiple embedded case study' meaning that I will not only by analyzing the charities 'holistically' as individual units but also investigating their sub-units (interventions) as individual cases (Scholz & Tietje, 2002). Since most of the interventions within each program are similarly structured, I developed an individual display for each of the 7 programs with coinciding explanations derived from the coded data. Table 3 shows these 7 programs and the interventions (i.e. embedded cases) comprising each one.

Within-case analysis, which "typically involves detailed case study write-ups for each [case]" (Eisenhardt, 1989, p. 540), helps with the early stages of condensing large amounts of data into a relatively digestible format. Through the within-case analysis, I was able to build comprehensive displays of the interventions and their respective programs which helped both visually and textually process the information that was available in the coded data. I ensured that every relationship shown in these displays is supported by sufficient evidence from the coded data.

Table 3 - Intervention List

CHARITY	PROGRAM	CASE/INTERVENTION
ASF	Farmed Animal Welfare Reforms (Figure 3)	1 - Legal Action 2 - Relationship Management – Corporate Outreach 3 - Relationship Management – Corporate Campaigns
	Availability of Animal-Free Products (Figure 4)	4 - Relationship Management – Vegan Product Expansion
	Strengthening Animal Advocacy Movement (Figure 5)	5 - Capacity-Building
THL	Farmed Animal Welfare Reforms (Figure 6)	6 - Relationship Management – Corporate Outreach 7 - Relationship Management – Corporate Campaigns & Media Outreach
	Promoting Animal-Free Consumption (Figure 7)	8 - Promoting Animal-Free Consumption
	Strengthening Animal Advocacy Movement (Figure 8)	9 - Promoting the Cause 10 - Capacity-Building
GFI	Availability of Animal-Free Products (Figure 9)	11 - Legislative Advocacy & Lobbying 12 - Research & Development 13 - Relationship Management

4.1.1. Charity 1: Albert Schweitzer Foundation

ASF focuses on reducing the suffering of farmed animals primarily through abolishing factory farming and increasing adoption of a vegan lifestyle. This **charitable cause** is kept in mind when the charity selects the interventions it will be using to tackle the issue. ASF selects its **charitable interventions** by determining what the animal protection movement needs, how ASF can most efficiently add value to the movement, how big of a gap there would be in the movement without ASF's intervention(s), and whether the proposed intervention is backed by scientific evidence. Once any intervention is implemented, ASF holds post-mortem meetings to perform self-assessments and determine where their strengths and weaknesses lied throughout their operations and how well the intervention addressed the charitable cause. They also determine how this **organizational learning** can be implemented to further address the cause and improve future decision-making. Since this general process is followed for all three of ASF's programs, these components are consistent throughout the three displays; meanwhile, the unique process of each intervention is explained further following each display.

4.1.1.1. ASF Program 1: Farmed Animal Welfare Reforms

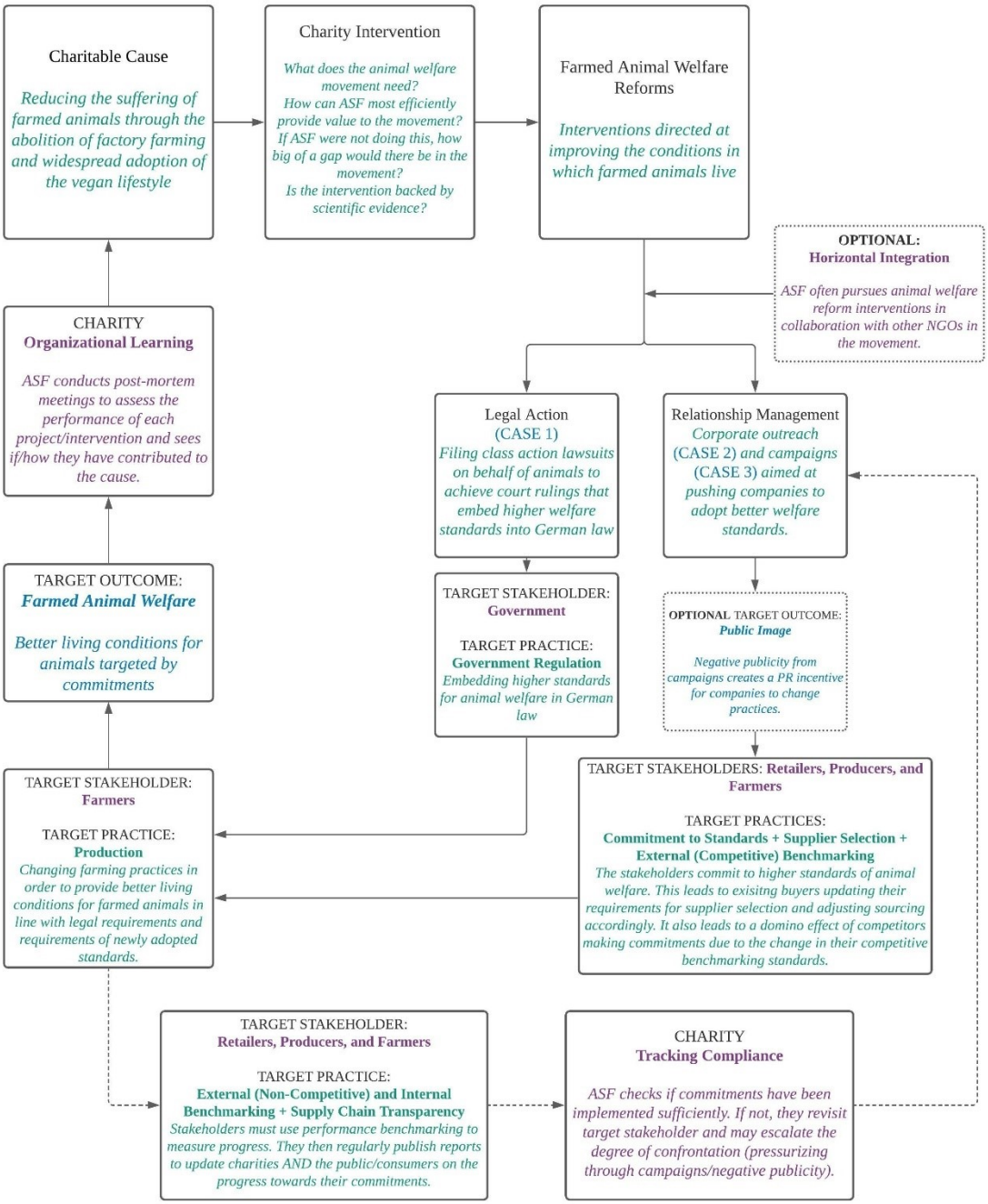

Figure 3 ASF Program 1 Display

As shown in Figure 3, one set of interventions that has met the requirements of ASF's intervention selection process is their **farmed animal welfare reforms** program. The primary aim of this program is to improve the conditions in which farmed animals live. This category can be further split into two types of interventions: legal action and relationship management. ASF often takes advantage of horizontal integration when pursuing these interventions, collaborating with other non-governmental organizations (NGOs) in the animal protection movement to benefit from

legal rights that ASF may not possess and also increase the likelihood that relationship management efforts lead to successful changes in animal welfare conditions.

One method through which ASF pursues farmed animal welfare reforms is through **legal action (Case 1)**. ASF, in cooperation with other charities, participates in filing class-action lawsuits on behalf of farmed animals in order to obtain court rulings that deem current animal farming practices illegal according to current German law and eventually force changes in **government regulations** through these court rulings. These regulatory changes have a more long-term affect that is difficult to measure but it has thus far contributed to cases of welfare policies being more effectively legally enforced due to the lawsuits and even the addition of new policies such as banning the killing of baby chicks in Germany. The regulatory changes thus affect what **production** practices are permitted to lead to better **animal welfare**.

Another method ASF may use to induce farmed animal welfare reforms is **relationship management**, i.e., directly interacting with food companies to obtain **corporate commitments to higher standards** of farmed animal welfare. ASF could do this through its **corporate outreach (Case 2)** programs which include direct communication with companies asking them to adopt certain welfare standards (most commonly the European Chicken Commitment (ECC) which ASF has had a part in developing) or develop better policies for themselves. ASF even works with food supply chain companies to regularly review and update these policies. However, if this less confrontational method does not work, then ASF may try to obtain commitments through **corporate campaigning (Case 3)**. These campaigns have a far more assertive and confrontational tone than the outreach methods and involve the public and media too. This attack on a company's **public image** creates a negative incentive for companies to adopt the requested commitments and ideally also leads to other similar companies making commitments as well to avoid similar negative publicity. These commitments may be made by farms themselves or other companies further down the value chain who source from these farms, i.e., producers and retailers. When the commitment is made by these stakeholders, they must change their **supplier selection** criteria accordingly, making sure that their suppliers are meeting the requirements of the newly adopted standards. A stakeholder's commitment to a set of standards also affects the **external competitive benchmarking** practices of similar firms who seem to adopt similar if not the same standards in order to maintain a competitive edge. Once the standards are adopted, they ultimately affect the **production** practices followed by farmers and thus lead to better conditions for the farmed animals.

The stakeholders that make commitments must also ensure that they are measuring their progress regularly (**internal benchmarking**) and comparing them to the standards they've pledged to follow (**external non-competitive benchmarking**). They often choose to regularly publish their progress towards the commitment publicly, i.e., they increase their **supply chain transparency**. ASF also **tracks companies' compliance** to the standards through third party audits and/or having them publish specific annual reports on their practices. If the standards are not met, ASF is likely to get involved with a higher degree of confrontation in order to pressurize companies to adhere to the standards that they have committed to within the agreed-upon time frame. However, this seems to be an unlikely occurrence in Germany due to the nature of corporate commitments in the country in comparison to the US; in Germany, companies often announce their commitments to certain standards *after* the necessary production changes have already completely or partially been implemented as opposed to announcing them far beforehand as is common in the USA where such commitments are rarely adhered to in the long run.

4.1.1.2. ASF Program 2: Availability of Animal-free Products

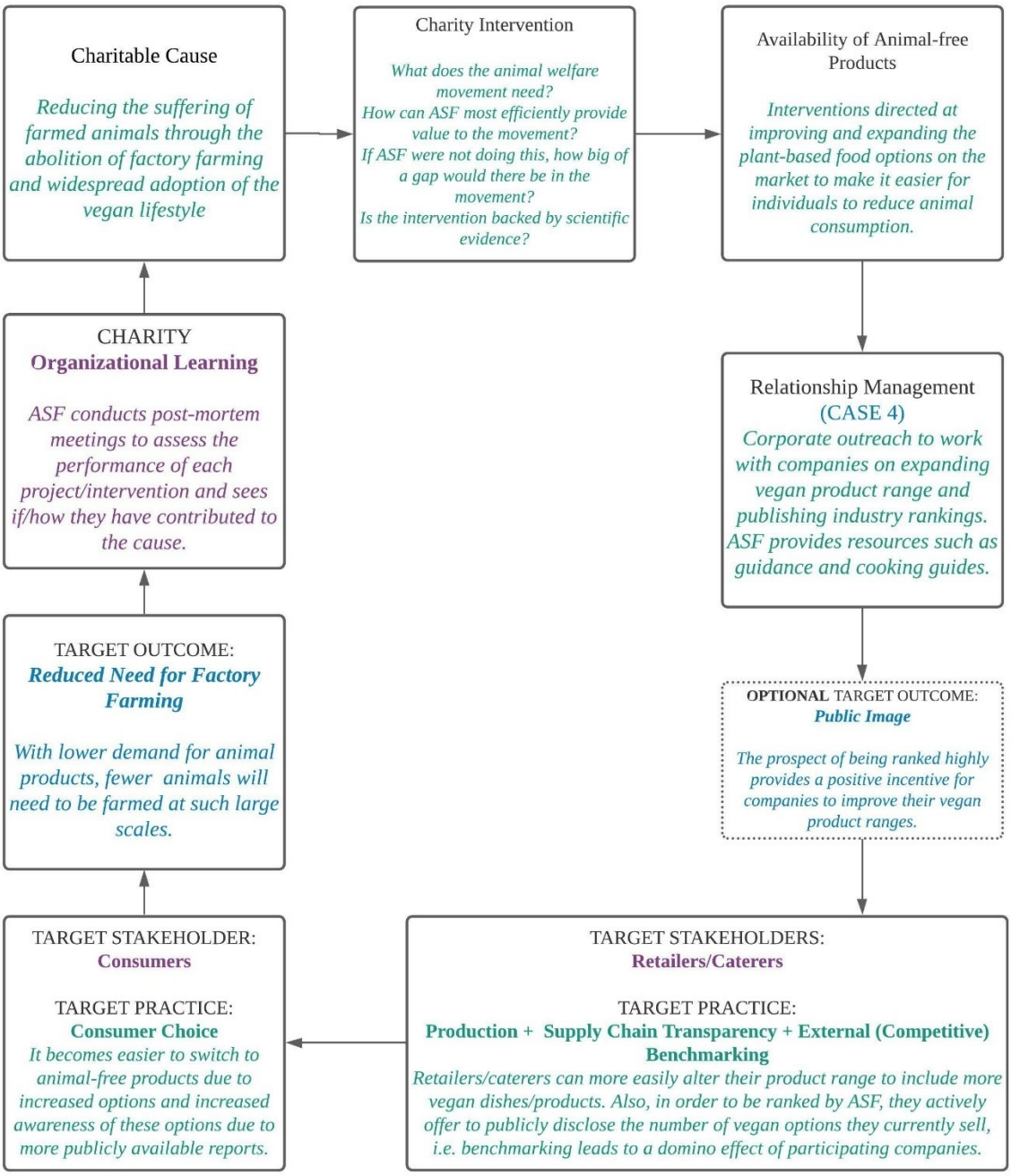

Figure 4 ASF Program 2 Display

Another program (Figure 4) that ASF implements is increasing the **availability of animal-free products** in order to create an environment in which it is easier for individuals to eat high-quality vegan foods. This is done primarily through **relationship management for vegan product expansion (Case 4)**, i.e., communication and collaboration with other food supply chain stakeholders to improve and expand their animal-free product offerings. One way that ASF does

this is by collaborating with restaurants/retailers to assess their current vegan offerings, improve the quality of these offerings, and help develop their menus to offer more vegan products. They further facilitate this expansion of vegan products through a website launched by ASF in 2015 which provides advice for food companies on how to expand their vegan product ranges. ASF also regularly publishes food guides which are aimed primarily at canteens and caterers and includes vegan recipes and substitutes for animal-based ingredients that can be used to 'veganize' existing recipes. ASF may also choose to indirectly persuade companies to expand their vegan offerings through targeting their **public image**. This is not done as aggressively as in the case of farmed animal welfare reforms, but rather through regularly publishing rankings of retailers based on their vegan offerings; this has led to companies reaching out to ASF for guidance with regards to developing more vegan options as the prospects of ranking higher than their competitors seem to provide a positive incentive implement these changes, i.e., the rankings have impacted retailers' **external competitive benchmarking**. Since the rankings have also led to more food companies sharing details on their vegan products, **supply chain transparency** has also been impacted by this intervention.

Through expanding companies' vegan product ranges and essentially altering the way in which they **produce** food, ASF aims to have better-quality vegan food more widely available to consumers who would then be consuming food in an environment where choosing plant-based alternatives would be far easier. This intervention thus impacts **consumer choice** in order to reduce demand for animal products and consequently **reduce the requirement for factory farming** as fewer animals would have to be farmed at such large scales.

4.1.1.3. ASF Program 3: Animal Advocacy Movement

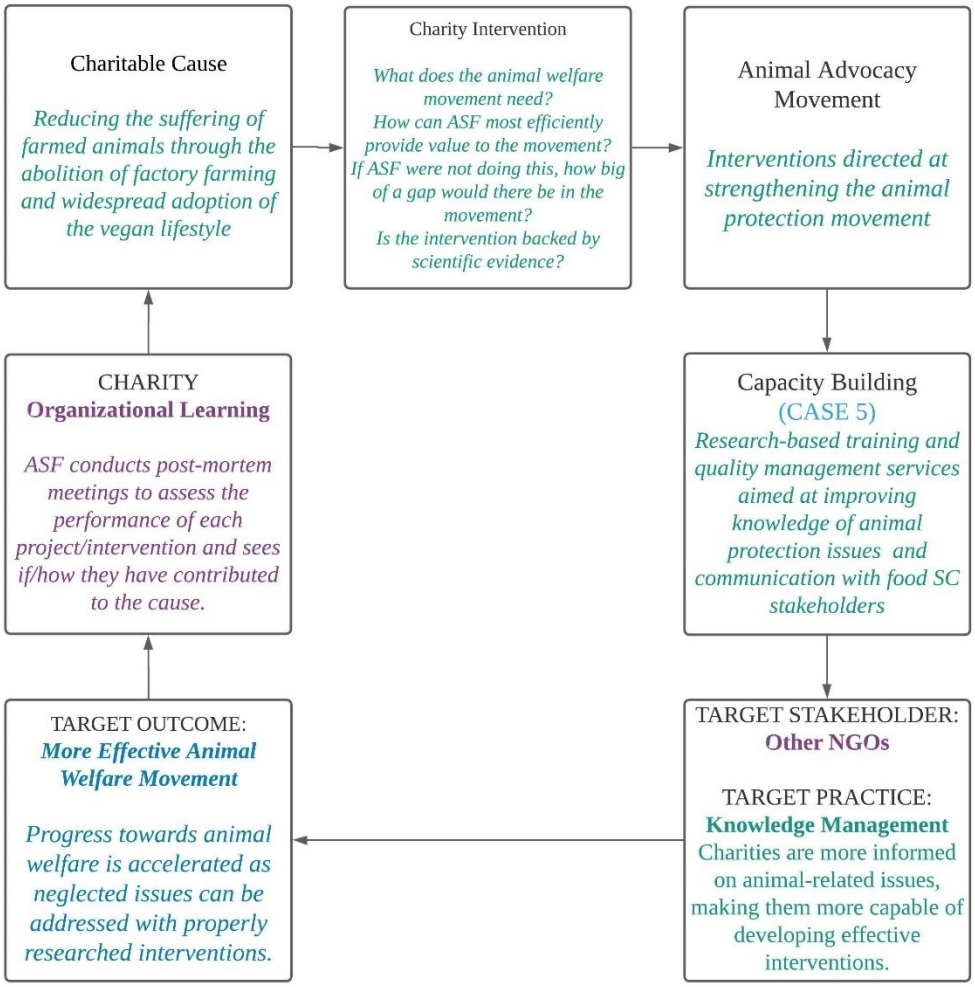

Figure 5 ASF Program 3 Display

The third program (Figure 5) that ASF participates in is strengthening the **animal advocacy movement**. This is primarily done through **capacity-building (Case 5)** activities with the main aim of strengthening ASF's ability to tackle issues in the animal protection movement as well as other NGOs' abilities to tackle them. ASF regularly conducts research in order to provide updated training to both its own employees and those of other NGOs on veterinary knowledge and what activities may truly benefit the animal advocacy movement at any point in time. This improves other charities' **knowledge management** capabilities as the charities learn to use ASF's research to make more informed requests with regards to what specific changes in current production practices and living conditions farmed animals require for a better quality of life. As more animal charities base their interventions on updated research, ASF contributes to a **more effective animal advocacy movement.**

4.1.2. Charity 2: The Humane League

THL's work centers around addressing the **charitable cause** of ending the abuse of animals raised for food. In order to contribute to the cause, THL evaluates what **charitable interventions** the movement needs, what is achievable and most impactful, what is backed by sound science and/or expert insight, and how collaborating with other NGOs could aid the intervention. Once the interventions are implemented, THL ensures regular organizational learning by holding post-mortem meetings as well as quarterly and annual reviews to see how much they have contributed to the cause and if tactics need to be changed based on the results and other external factors. Since this general process is followed for all three of THL's programs, these components are consistent throughout the three displays; meanwhile, the unique process of each intervention is explained further following each display.

4.1.2.1. THL Program 1: Farmed Animal Welfare Reforms

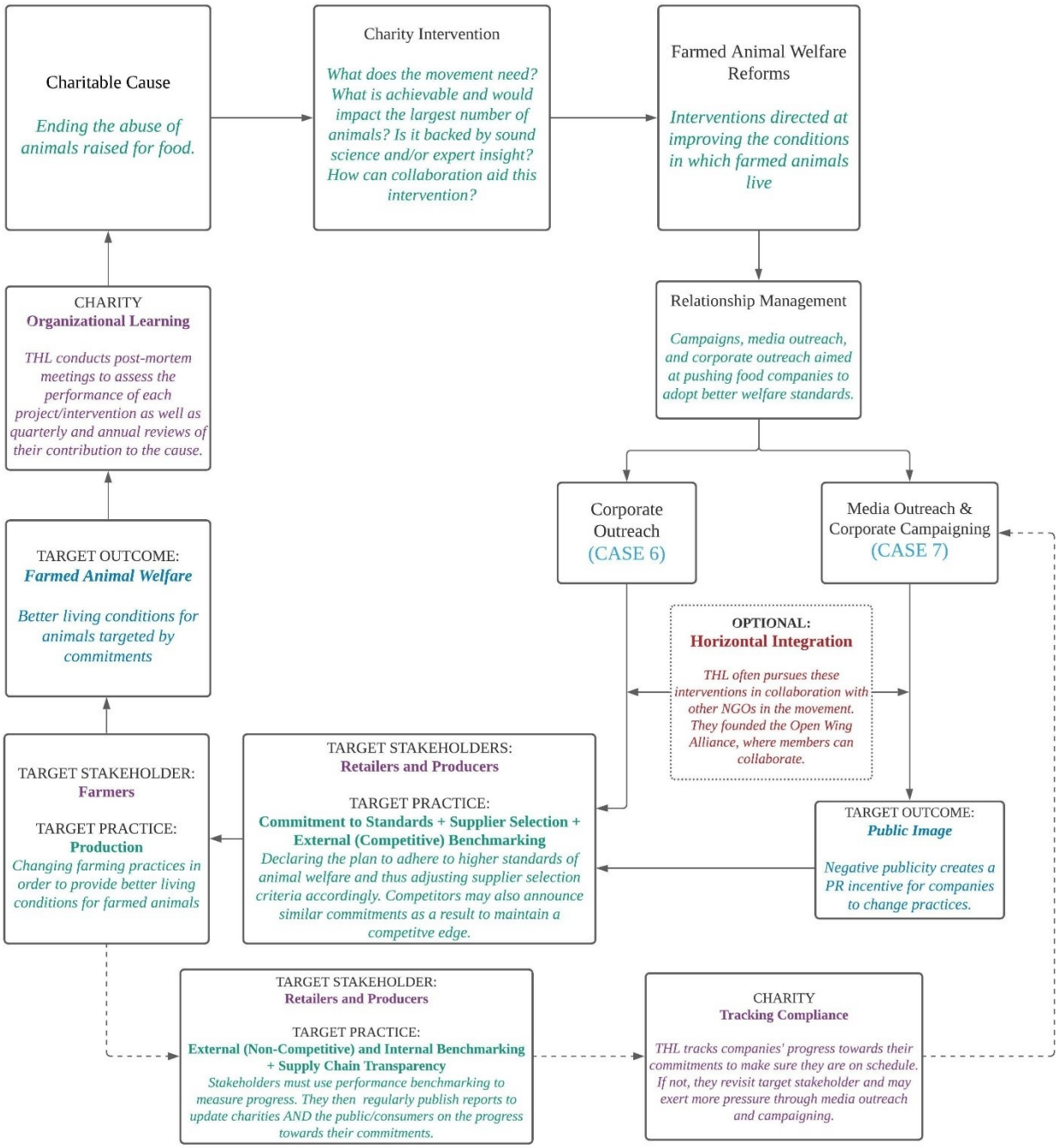

Figure 6 THL Program 1 Display

One set of interventions that has met the requirements of THL's intervention selection process is their **farmed animal welfare reforms** program (Figure 6). These are actions aimed at improving the conditions in which farmed animals live. THL does this primarily through **relationship management**, managing communication, collaboration, and negotiation with other food supply chain stakeholders to achieve change. One method of relationship management that THL uses is **corporate outreach (Case 6)**. This involves direct communication and collaboration

with retailers and producers in order to request that they address the cause through **committing to higher standards** of welfare. This sometimes leads to long-term relationships with these targeted stakeholders. THL may also conduct corporate outreach in collaboration with other NGOs, often ones that are in the Open Wing Alliance (OWA) which THL founded to facilitate horizontal integration amongst animal welfare advocates. If this positive approach does not work, THL may also choose to obtain these commitments with a higher degree of confrontation primarily through its **media outreach and corporate campaigning (Case 7)** efforts. This involves contacting news outlets and social media as well as organizing protests to target retailers' and producers' **public image**, creating a negative incentive for these stakeholders **to commit to higher standards** and mend their reputations. This may also be done involving **horizontal integration**, i.e., creating more pressure on food companies by involving more animal advocacy groups.

Once these corporate commitments are obtained through corporate outreach, media outreach, and/or campaigns, the retailers and producers place pressure on the farmers that they source from to adhere to higher standards of animal welfare. This is because committing to standards means that food companies must change their **supplier selection** criteria accordingly, making sure that their suppliers are meeting the requirements of the newly adopted standards. A stakeholder's commitment to a set of standards also affects the **external competitive benchmarking** practices of similar firms who seem to adopt similar if not the same standards in order to maintain a competitive edge. Ultimately, these adopting these standards influences farmers' **production** practices. Once these production practices are changed, **farmed animal welfare** is expected to increase as the living conditions of these animals have been changed for the better.

The stakeholders that make commitments must also ensure that they are measuring their progress regularly (**internal benchmarking**) and comparing them to the standards they've pledged to follow (**external non-competitive benchmarking**). They often choose to regularly publish their progress towards the commitment publicly, i.e., they increase their **supply chain transparency**. It seems as though in the USA, food companies seem to follow through on only about half of the pledges that they make, so it is important for THL to also be **tracking compliance** on their own to ensure that the commitments are enacted and make a measurable difference. To do this, THL runs a publicly accessible website where producers and retailers that have made these corporate commitments are expected to regularly provide updates on their progress towards these commitments. If they do not seem to be on track to meeting the commitment's deadline or aren't disclosing their progress, THL (possibly in collaboration with other NGOs) will likely increase pressure by once again creating negative publicity through media outreach and campaigning until the charity's welfare demands are met.

4.1.2.2. THL Program 2: Promoting Consumption of Animal-Free Products

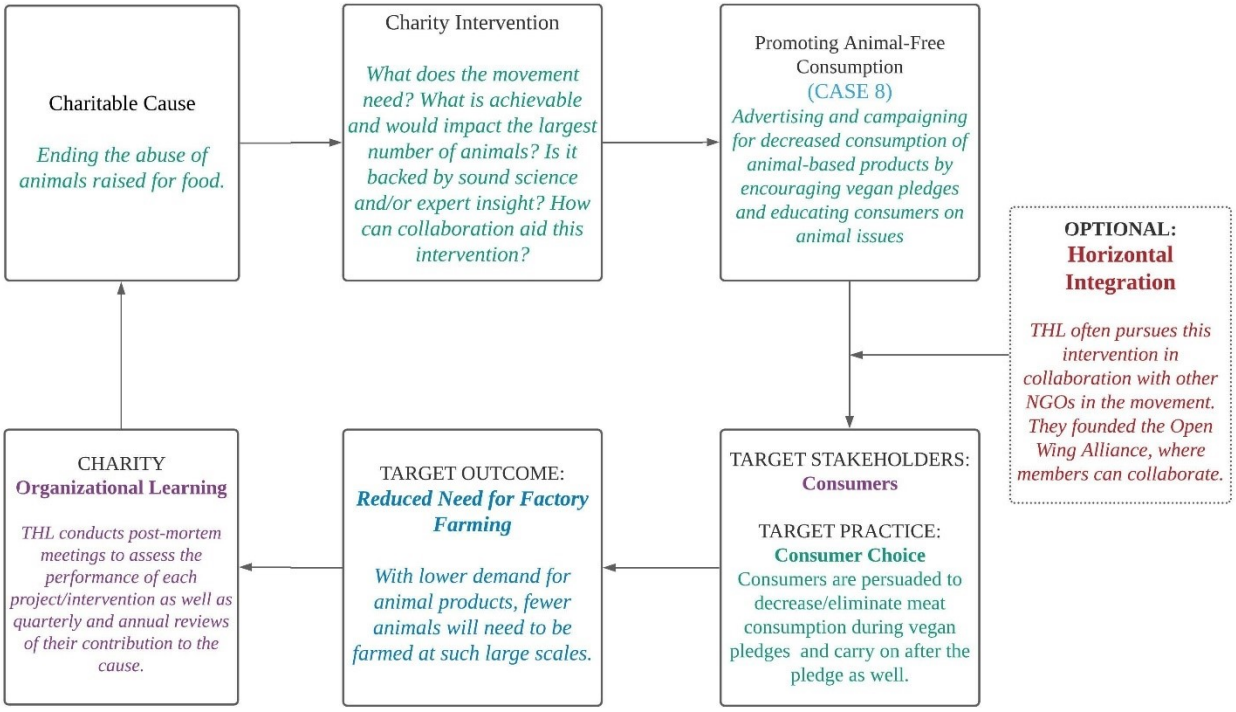

Figure 7 THL Program 2 Display

The second program that has met THL's intervention selection criteria is the **promotion of consuming animal-free products (Case 8)** (Figure 7). This intervention consists mainly of advertising and campaigning aimed at informing the public of animal-related issues and the benefits of plant-based diets in order to discourage the consumption of animal products. THL often does this while participating in horizontal integration, often promoting other NGOs' vegan pledges and collaborating on publishing material such as educational leaflets and vegan recipe guides. The aim of this intervention is to influence **consumer choice**, persuading them to change their dietary habits mostly through participating in self-monitored vegan pledges and ideally carrying on with lowered meat consumption after the pledge is complete. This decreased demand for animal products is aimed to **reduce the need for factory farming**, sparing numerous animal lives.

4.1.2.3. THL Program 3: Animal Advocacy Movement

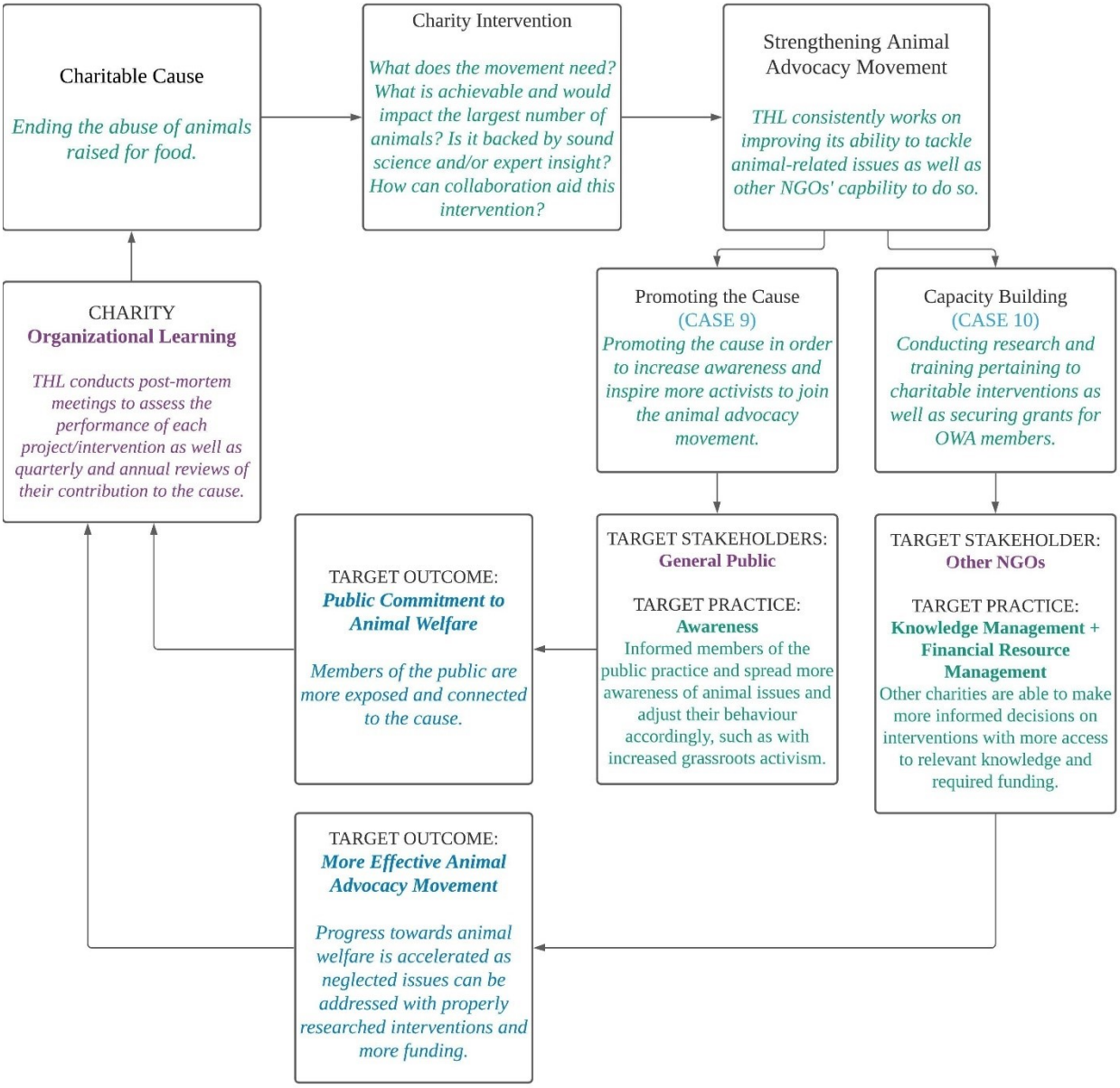

Figure 8 THL Program 3 Display

The last program that THL currently implements is its **strengthening of the animal advocacy movement** (Figure 8). This intervention is aimed primarily at improving THL's and other animal advocates' ability to tackle animal welfare issues. One way that THL does this is through **promoting the cause (Case 9)**, mainly by physically and digitally distributing educational materials to members of the public. These materials inform the public of animal-related issues and readers are also are encouraged to join networks created by THL such as the Changemaker Network and Student Alliance for Animals where members are provided training and mentorship on how to be effective activists, persuading them to further grow the network in their own

communities. THL also encourages members of the public to join their Fast Action Network where activists can connect online and access regularly updated resources on animal welfare issues and how they can be ended. As members of the **public** practice and spread more **awareness** of the cause, they are expected to participate in grassroots activism in larger numbers, leading to more **public commitment to animal welfare**.

THL also strengthens the animal advocacy movement through its **capacity-building (Case 10)** activities. THL's labs regularly conduct and publish research on the effectiveness of various charitable interventions. THL also provides training opportunities and grants to members of the OWA based on what areas of the cause could benefit from additional attention. Through this sharing of knowledge, experience, and financial resources, THL is able to provide other **animal charities** with better **knowledge management** capabilities (using updated research to develop better interventions) and **financial resource management** (helping management secure funds to implement these better interventions). With this additional funding and research, neglected areas of the cause can be better addressed to make progress towards animal welfare, creating a **more effective animal advocacy movement**.

4.1.3. Charity 3: Good Food Institute

GFI's work is focused on its **charitable cause** which is essentially to create a sustainable and just food system. GFI's plan is to achieve this just food system through making alternative proteins no longer 'alternative', thus removing the need for animals to be involved in the food supply chain and indirectly improving farmed animal welfare. GFI also highlights that its main aim is to address the cause not through influencing consumer behavior directly but more so focusing on altering food supply to make alternatives to animal products more widely available. GFI chooses its **charitable interventions** with this cause in mind as well as through assessing what interventions are currently neglected, are tractable, and also would have high-scale impact, i.e., directly using MacAskill's (2016) criteria for determining the prioritization of charitable causes. When these interventions are implemented, GFI conducts post-mortem meetings to evaluate each project's performance in comparison to the charity's key results framework, i.e., contributing to the charity's **organization learning**. The results of these evaluations are used to inform GFI of how much progress the charity has made towards its cause and what can be changed in future projects/interventions.

4.1.3.1. GFI Program 1: Availability of Animal-Free Products

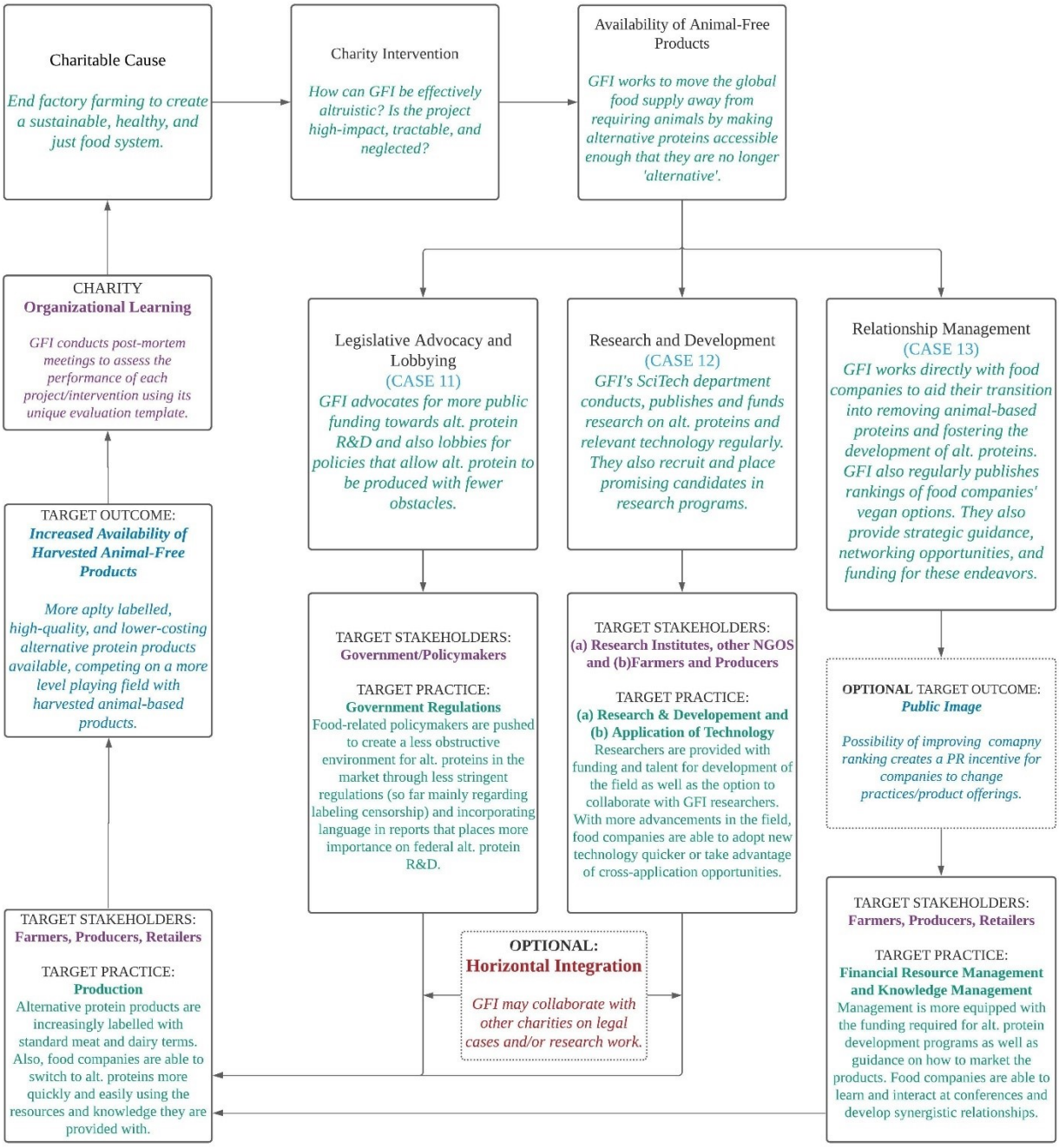

Figure 9 GFI Program 1 Display

GFI has found that working on increasing the **availability of animal-free products** (Figure 9) meets the criteria it uses to select its charitable interventions. This program focuses on mimicking meat and dairy products with alternative proteins that are formulated either through plants or growing meat directly from cells, allowing consumers to easily enjoy the same foods without having to opt for animal-based options. GFI pursues multiple avenues of action to increase the availability of these products, one of them being participation in **legislative advocacy and**

lobbying (Case 11). GFI advocates for more public funding to be allocated towards advancing alternative protein research and development. While this has not yielded the intended result(s) yet, certain public food authorities have included language in new reports that seems to be encouraging advancement in the field of alternative proteins. The charity also lobbies for policies that would allow alternative proteins to be brought to the market with fewer obstacles and costs. These lobbying efforts are often pursued in collaboration with other organizations; GFI also often participates as co-counsel with other charities and organizations in court cases that challenge state laws regarding animal-free product censorship. The primary target stakeholders and practices of these interventions seem to be the **government/policymakers** and the **regulations** that these stakeholders set. GFI has so far influenced policies regarding the labelling of alternative protein products in numerous areas; the resulting changes have made it increasingly permissible to use labels and terms typically applied to animal-based products on alternative protein products, such as the usage of the terms 'hot dog' or 'milk' on products that do not come from 'harvested' animals. Reducing this type of censorship allows alternative proteins to be sold on a more level playing field along with animal-based proteins, thus **increasing the availability of harvested animal-free products**.

The second intervention under this program is GFI's **research and development (Case 12)** work in the field of alternative proteins, often pursued in collaboration with other research institutes and/or charities. GFI has a 'SciTech' team dedicated to advancing research in the field of developing plant-based protein products and biomimicking meat products using animal cells. They also conduct research regarding the usage and potential cross-application of technology in the production process. The team aims to fill knowledge gaps in the field through its published work as well as through funding other groups' research work. The SciTech team also regularly recruits promising research candidates to ensure that there is a great pool of talent working towards advancement in the field. GFI therefore helps **research institutes and other NGOs** further their **research and development** efforts with more funding, knowledge, and talent to work with. GFI also aids the **application of technology** by **farmers and producers** as they are given a better understanding of how to efficiently select and implement such changes. As research, development, and application of technology are improved, **production practices** are altered to produce high-quality alternative protein products more efficiently, **increasing the availability of harvested animal-free products** on the market.

Lastly, GFI implements **relationship management for alternative protein product expansion (Case 13)** work in order to aid food companies in their transition towards offering more alternative protein products. GFI publishes rankings of food companies' vegan offerings which pushes companies to make changes in their product lines in order to rank higher and improve their **public image**. GFI may also affect production more indirectly, primarily through offering strategic guidance, funding for alternative protein start-ups, and networking opportunities for food companies. GFI is able to aid food companies' **financial resource management** by obtaining funding for companies' alternative protein projects. GFI also helps with **knowledge management** through guidance on best practices in the industry to allow companies to introduce alternative proteins into their product mixes successfully; the charity also facilitates knowledge sharing amongst food companies through its conferences and events. **Farmers, producers, and retailers** are provided with opportunities to learn and form synergistic partnerships at these events. With more resources, strategic guidance, and partnerships, **production** is made more efficient and there are more **alternative protein products available** on the market.

4.2. Cross-Case Analysis

After completing the within-case analysis of 13 charitable interventions, I was able to begin the cross-case analysis, a phase used to improve the generalizability of the mechanisms within each case; multiple cases are studied in order to ensure that the findings observed under certain conditions are not just idiosyncratic but can indeed be relevant and applicable to other scenarios under similar conditions (Miles & Huberman, 1994). Another purpose of cross-case analysis is deepening the ability to understand and explain the observed processes. This increased understanding entails a clearer view of what set(s) of conditions may increase or decrease the likelihood of obtaining certain results (Miles & Huberman, 1994).

The first step in my cross-case analysis was to create a partially ordered meta-matrix (See Appendix B, Figure B-1). This exploratory step involves creating a chart "assembling descriptive data from each of several cases in a standard format" (Miles & Huberman, 1994, p. 178). A chart is designed to be filled with general descriptions of each case across different variables; this data is then reduced as much as possible in order to retain meaningful information while being simple enough to be able to observe potential patterns.

During the cross-case analysis, I kept on reviewing the within-case analyses and amending it if needed. This is one reason why Miles and Huberman (1994) highlight that it is important to first on a partially-ordered display rather than moving straight from within-case analysis to conceptually-ordered displays. Once the revised table was filled out, cases could be sorted according to different variables in order to note any possible trends or themes that may emerge from the display. In this step, I looked for trends and made comparisons while sorting the chart at charity level, program level, and intervention level. Some major trends I aimed to observed were those related to the performance of each charity/intervention in terms of the scores received on Animal Charity Evaluators. I also looked for major commonalities across charities and interventions.

Next, I created charts to display the cross-case information in a variable-oriented view, i.e., looking for patterns across different constructs rather than across cases as it is usually beneficial to have a mix of both a case-oriented approach and a variable-oriented approach to analysis (Miles & Huberman, 1994; Pagell & Wu, 2009). I created two tables: one showing the sum of interventions targeting each stakeholder and another showing the sum of interventions targeting each practice. Table 4 indicates the number of interventions that target each of the identified stakeholders as well as how many of the three chosen charities target the stakeholder.

Table 4 - Count of Interventions per Stakeholder

Type of Stakeholder	Stakeholder	Identified in Literature Review	Targeted Interventions	Count per Charity		
				ASF	THL	GFI
Internal	Farmers	Yes	8	3	2	3
	Producers	Yes	7	2	2	3
	Retailers	Yes	8	3	2	3
External	Consumers	Yes	2	1	1	-
	General Public	No	1	-	1	-
	Government	Yes	2	1	-	1
	Other NGOs	No	3	1	1	1

Similarly to Pagell and Wu (2009), I created another table to display the number of interventions that target each food supply chain practice as well as how many of the three chosen charities target the practice. The practices have been organized into five bundles or meta-constructs as shown in Table 6. Creating a conceptually-ordered display like Table 6 helps reduce data to analyze and make comparisons across certain variables and meta-constructs without the added complexity of case-specific details (Miles & Huberman, 1994). Similarly to Pagell and Wu (2009), I chose the five meta-constructs in Table 5 after multiple iterations of different categorizations and settling on the arrangement that felt most concise and comprehensive. Observations regarding the performance of interventions that target particular practices and meta-constructs were also made using this variable-oriented view as shown in Figure B-2, Appendix B.

Table 5 - Count of Interventions per Practice

Meta-Construct	Practice	Identified in Literature Review	Count of Interventions	Count per Charity		
				ASF	THL	GFI
Bundle 1: **Operations**	Application of Technology	Yes	1	-	-	1
	Production	No	9	4	2	3
	Financial Resource Management	Yes	2	-	1	1
Bundle 2: **Measurement**	Commitment to Standards	Yes	4	2	2	-
	Internal Benchmarking	Yes	4	2	2	-
	External (Competitive) Benchmarking	Yes	5	3	2	-
	External (Non-Competitive) Benchmarking	Yes	4	2	2	-
Bundle 3: **Supplier Continuity**	Supplier Selection	No	4	2	2	-
	Supply Chain Transparency	Yes	5	3	2	-
Bundle 4: **Learning**	Knowledge Management	Yes	3	1	1	1
	Research and Development	Yes	1	-	-	1
Bundle 5: **External Stakeholder Practices**	Consumer Choice	No	2	1	1	-
	Government Regulation	Yes	2	1	-	1
	Awareness	No	1	-	1	-

5. Discussion

Cross-case analysis helped with observing overall trends and themes that indicate how the chosen exemplar charities interact with the food supply chain to make it more responsible. Figure 10 provides a summary framework of these interactions, i.e., how interventions influence various categories of food supply chain practices to achieve the ultimate goal of animal welfare. The analysis also provided insights into certain tendencies that arose within these interactions. Below I formulate a set of propositions that summarize the most interesting findings.

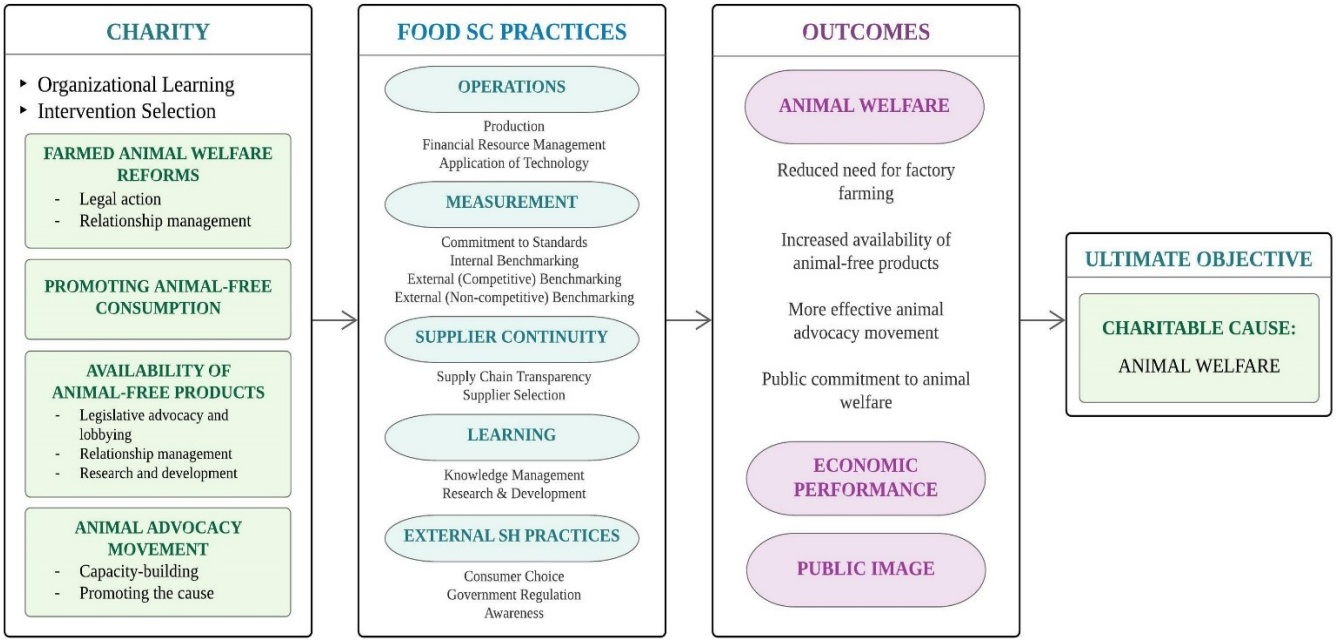

Figure 10 Summary Framework

As previously mentioned, I conducted the cross-case analysis on multiple levels due to the embedded nature of collected case studies. The following propositions arose from an analysis at the charity-level, i.e., at the level of the 'parent' cases:

Proposition 1: Exemplar animal welfare charities tend to target multiple food supply chain stakeholders and practices simultaneously.

The literature has indicated that profit margins in food supply chains tend to be low (Hajjar et al., 2019; Mangla et al., 2018) which can make it less appealing to adopt sustainable measures that usually involve significant funding (Trienekens & Zuurbier, 2008). Farmers are the food supply chain stakeholders who are primarily in charge of the welfare of farmed animals. However, since these are also generally the smallest firms in the food supply chains with limited access to resources (Fritz & Hausen, 2009), there seems to be less of an incentive to invest in more sustainable practices in the absence of significant external pressures. Challenging the dominant tendency to prioritize profitability over sustainability will require systemic change, largely through regulatory and normative pressures (J. L. Glover et al., 2014; Grekova et al., 2014). This suggests that if farmers are pressured by governmental regulations as well as by producers and retailers, they are more likely to adopt sustainable practices. Educated consumers are another source of pressure on the chain as they are growing increasingly concerned with animal welfare standards behind the products they consume (Hansmann et al., 2020; Karlsson Potter & Röös, 2021); since retailers are the primary consumer-facing stakeholders in food supply chains and are thus highly susceptible to social pressures (J. Glover, 2020), retailers are likely to exercise their coercive power to ensure that producers' and farmers' practices are in line with consumer expectations. The combination of pressures from governmental regulations, consumer expectations, and the coercive power of producers and retailers is the level of systemic change that is likely needed to ensure significant changes in animal farming practices.

Proposition 2: Exemplar animal welfare charities tend to cooperate with other animal welfare NGOs.

Proposition 2 highlights an unexpected finding that all the studied exemplar charities cooperated with other NGOs in every single intervention; each of the charities also had at least one intervention in which the primary aim was strengthening the effectiveness of other NGOs. The knowledge-sharing and financial help that the exemplar charities provide to other NGOs could create better partners with which the exemplars can collaborate to exert more culturally cognitive pressure (i.e., triggering the food companies' need to maintain a favourable image in in the public eye) than they would be able to exert alone (Grekova et al., 2014).

Proposition 3: Exemplar animal welfare charities tend to use a mix of approaches when communicating with the targeted food supply chain stakeholders, i.e., confrontational, supportive, and/or both simultaneously.

Proposition 3 reflects on the fact that exemplar charities use a comprehensive approach in their interactions with food supply chains. Apart from responding to culturally cognitive pressure by addressing any potential harm to public image, food supply chain companies can also be motivated to change their practices when the entire chain is aligned with a single goal. This joint commitment along with transparency fosters a supportive environment that positively incentivizes sustainable change (de Olde et al., 2020; J. L. Glover et al., 2014; Govindan, 2018). This suggests that both negative and positive incentives have their place in driving change amongst food companies, and that having a mix of confrontational and /or supportive interventions could allow charities to maximize their potential impact on the food supply chain.

Along with a cross-case analysis at the charity-level, I also conducted a cross-case analysis at the level of individual charitable interventions, i.e., sub-cases:

Proposition 4: Animal welfare interventions that directly target internal food supply chain stakeholders (i.e., farmers, producers, and retailers) tend to be more effective.

Proposition 4 reflects on the role of internal food supply chain stakeholders who are financially incentivized to appease to external stakeholders to maintain good economic performance (J. L. Glover et al., 2014; Grekova et al., 2014; Li et al., 2014) and are thus more susceptible targets of the mentioned regulatory and culturally cognitive pressures. The behavior of consumers and governments is more difficult to manipulate since they do not seem to have as strong of an incentive to adopt new animal welfare-related practices. It thus makes sense that charitable interventions targeting farmers, producers, and/or retailers are highly effective.

Proposition 5: More confrontational charitable interventions tend to be less cost-effective.

Proposition 5 highlights the fact that while aggressive pressure from regulatory bodies, consumers, and retailers seem to be mentioned throughout the data and literature as significant enough to insight change in farming practices, more confrontational charitable interventions that heighten these pressures still seem to be less cost-effective than more supportive interventions. This could likely be due to the costs associated with being confrontational, i.e., media outreach and campaigning. Additionally, more confrontational measures are mainly trying to coerce food companies to adopt more animal-friendly measures; lower cost-effectiveness suggests that the main issue hindering progress towards animal welfare may not be that food companies need to be

convinced to make these changes but rather that they need more guidance and/or funding (i.e., support) to actually adopt the required measures.

Table 5 divides the identified food supply chain practices into five bundles. Bundle 1 is Operations. Included as a meta-construct by Pagell and Wu (2009), this refers to activities closely pertaining to the food production process. One intervention contributes to improving the *technology* that used in food production. As suggested in a study by Strøm-Andersen (2020), earlier adoption of new technology has been linked to increased product innovation in food firms; the intended product innovation in this scenario is primarily the development of alternative protein products. The largest number of total interventions influence the activity of *production*. As explained in the within-case analysis, 'production' arose from the data as encompassing the practices associated with treatment of animals on farms as well as the processing, design, and packaging of food products. This is thus the primary practice that animal welfare charities are aiming to change. The last component of this meta-construct is *financial resource management* which, in the context of this study, refers to the allocation of funds across supply-chain related activities in food companies. Interventions that target this practice provide access to funds for the development of animal-free products as well as guidance on how to allocate the funds efficiently. This means that charities are able to ease the decision-making process when it comes to choosing whether to prioritize sustainability over profitability when funding is limited; with more funding specifically for animal welfare-related measures, food companies can perhaps enjoy a 'win-win' solution which otherwise is very difficult to reach (J. Glover, 2020; Mangla et al., 2018).

Bundle 2 is Measurement. This is another meta-construct that was derived from Pagell and Wu (2009). This refers to all activities pertaining to the measurement of progress or performance and is the most frequently targeted meta-construct out of the five. Interventions that drive food companies to adopt *corporate commitments to standards* essentially alter the criteria for acceptable performance when it comes to animal welfare requirements. As the literature suggests, companies are more likely to adopt corporate commitments if they have more to lose if they do not (Hajjar et al., 2019). Since food companies have more to lose now than ever before due to changing consumer expectations, this is a highly successful intervention; commitments are an effective avenue for change in the industry as it has been shown to positively impact food safety, sustainability, and market access (Hajjar et al., 2019; Trienekens & Zuurbier, 2008). These benefits are all becoming increasingly vital for food firms in an increasingly globalized and competitive market where consumers are becoming more concerned with animal welfare. Multiple interventions force companies to develop stringent internal performance measurement tools after making corporate commitments (i.e., *internal benchmarking*). While internal benchmarking has been shown to increase productivity, safety, decision-making and quality (Govindan, 2018; Willem Ziggers & Trienekens, 1999), it was not specifically mentioned in the literature as a possible driver of responsibility in the food supply chain. However, since the literature does mention that internal benchmarking has been shown to increase company-wide commitment to an overall goal (de Olde et al., 2020), it would make sense to suggest that establishing measurement of animal welfare standards in a company would drive the company to be more responsible and perform better over time. Some charitable interventions drive companies to measure and compare their own performance to that of competitors when it comes to their corporate commitments and vegan offerings (i.e., *external competitive benchmarking*). Companies are increasingly driven to externally benchmark against other food companies as it leads to continuous improvement and an increased competitive edge (Sarkis, 2003); charities seem to be taking advantage of this

increasingly competitive food market to create a 'domino effect' of responsible practices in the food supply chain. Finally, multiple interventions force companies to compare their performance to the external standards associated with the corporate commitments that they adopt (i.e., *external non-competitive benchmarking*). As mentioned earlier, firms are more likely to adhere to commitments if they have more to lose (Hajjar et al., 2019); the charities that push for corporate commitments also track company compliance primarily through audits, the results of which are usually publicly published. This places pressure on food companies to improve their external non-competitive benchmarking efforts and maintain the required level of responsibility, thus avoiding publicization of their failure and the consequent negative impacts on economic performance.

Bundle 3 is Supplier Continuity. This meta-construct contains practices that ensure the success and long-term competitiveness of all businesses within a supply chain (Beske et al., 2014; Pagell & Wu, 2009). One such activity is *supplier selection* which emerged from the data as the basis upon which food companies develop relationships with qualified suppliers. Interventions that target this practice force companies to reevaluate their suppliers to determine whether they would be capable of adopting higher standards of animal welfare. If not, companies are perhaps more likely to develop long-term relationships with suppliers who are more closely aligned with this goal and thus ensure the entire chain's continuity in a changing market. Multiple interventions also target *supply chain transparency*, driving food companies within the chain to be more transparent with each other to ensure that animal welfare requirements are being met by all members as well as being more transparent with the public to uphold social responsibility. Transparency has been shown to be vital and beneficial for food companies to succeed in an increasingly global and competitive market (de Olde et al., 2020; Mohammed & Wang, 2017). Benefits such as better assessment of sustainability risks and resulting consumer satisfaction would make it appealing for companies to amend their transparency-related practices (Grimm et al., 2014; Kamble et al., 2020), especially with additional pressure from charitable interventions that threaten to jeopardize public image and economic performance.

Bundle 4 is Learning. This meta-construct contains practices that contribute to the acquisition, sharing, and application of information within and across food companies in the chain (Beske et al., 2014). Multiple interventions target *knowledge management* and facilitate organizational learning by providing training and resources on scientific developments in the field of animal-friendly food production and/or best practices when it comes to managing a food company. Improvements in knowledge management are expected to affect food production practices (Strøm-Andersen, 2020), so the improved knowledge of animal welfare-related issues and best practices likely leads to increased responsibility in practices pertaining to these issues. Interventions may also directly contribute to *research and development* efforts in the chain by providing expertise and resources. This practice has been linked to increased sustainability in food supply chains in the past and is especially effective when the research is accompanied by a plan to put it into practice (Mangla et al., 2018; Strøm-Andersen, 2020). The impact of knowledge acquisition and sharing on production practices is difficult to predict as seen in the literature; sharing technical agricultural information with farmers had no measured impact in a study by Tang et. al (2015) whereas it had a positive impact on practices in another study by Hajjar et al. (2019). Therefore, interventions targeting learning can be more difficult to design and implement effectively.

Bundle 5 is External Stakeholder Practices**.** This meta-construct includes all the practices that are mainly performed by consumers, the government, or the public. *Consumer choice* is one

such practice which emerged from the data, with interventions influencing consumer choice through increasing animal-free product offerings and increasing promotion of these animal-free products. These interventions seem to be indirectly targeting customer satisfaction levels and economic performance, both outcomes being significant incentives for food companies to change their practices (J. L. Glover et al., 2014; Grekova et al., 2014; Li et al., 2014). Another practice in this bundle is *government regulation*, which is targeted by multiple interventions to embed higher standards for animal welfare into the law and hold companies that do not abide by these standards legally accountable. Cultural pressure seems to often be more impactful on food supply chain practices than legal pressure, but this additional layer of pressure still has great potential, especially if the regulations are realistic for the targeted business environment (Grekova et al., 2014; Hajjar et al., 2019). Lastly, one intervention targets the general public's *awareness* of the cause to increase commitment to animal welfare. This could be linked to the effect that cultural pressure has been shown to have on sustainability in the food supply chain (Grekova et al., 2014). Propositions 6a and 6b summarize the findings based these bundles of practices, with Proposition 6a expressing the findings in terms of individual practices and Proposition 6b expressing the findings in terms of meta-constructs or bundles of practices:

Proposition 6a: Exemplar animal welfare charities tend to focus on practices associated with production, benchmarking, and supply chain transparency.

Proposition 6b: Exemplar animal welfare charities tend to impact food supply chain stakeholders by largely focusing on establishing/impacting measurement and reforming food supply chain operations.

These findings address the gap found in my systematic literature review, i.e., the impact of animal welfare charities on food supply chain stakeholders and practices had not yet been explored. With a better understanding of this gap in the research, more 'good' animal charities could adopt best practices to become 'great', thus becoming more effectively altruistic. It also allows food supply chain decisionmakers to better understand how many of their practices have a direct and/or indirect impact on the outcome of animal welfare.

There are numerous limitations to the study that may restrict its generalizability. As the concept has not been covered enough in existing studies, I performed exploratory research into the issue which does not provide results that are as conclusive as would be in descriptive or explanatory research. The study is also limited as I was the sole coder of the data; the lack of triangulation means certain themes may have been overlooked. Having multiple researchers performing a systematic literature review and coding could reduce the risk of selection bias and potentially introduce new insight. The next limitation is the fact that reputational sampling was used to select the exemplar charities; the case selection was thus based on Animal Charity Evaluator's assessment and although they are leading charity evaluators, the findings of this study depends on their criteria. Additionally, while it is an embedded case study, there were still only three charities studied which is at the lower end of the acceptable number of cases for a case study. Finally, the selected exemplar charities are geographically limited as they operate primarily in the USA, Germany, and Poland. Since cultural, political, social, and economic differences across different regions would heavily impact the factors contributing to the effectiveness of animal charities, it could be valuable to study charities across more regions to account for these differences.

Future research should quantitatively test the formulated propositions using a large sample. The sample should include charities from a geographically and culturally diverse population of charities. Future research should also leverage mathematical modelling tools, such as system dynamics simulation, to explore the complex relationships between charitable intervention. Specifically, future research should investigate how various charitable interventions interact with each other within a charity and how efforts of multiple charities interact to create more responsible supply chains.

6. Conclusion

This research contributes to a growing body of work in supply chain management that focuses on the actions of stakeholders that are not for-profit firms (Pagell et al., 2018). Extending previous research on social enterprises in supply chain management (Longoni et al., 2019), this research shifts the focus onto charitable organizations. With an increasing need for food companies to adopt more sustainable practices, it is vital that animal welfare be recognized and prioritized as an outcome that is affected by food supply chain practices. Animal welfare charities aim to speed up this process of incorporating animal welfare consideration in more decisions throughout food supply chains. However, as William MacAskill (2016) highlights, there is a significant different between a good charity and an exemplar charity. My thesis aimed to explore what these exemplar charities are doing to successfully make food supply chain stakeholders more responsible towards animal lives. This was done through an embedded case study of three exemplar charities and their individual charitable interventions. Multiple case analysis has led to a framework depicting the ways in which these charities have impacted food supply chain practices. The results of this analysis indicated that exemplar animal welfare charities tend to

- target multiple food supply chain stakeholders and practices simultaneously;
- collaborate with other NGOs, use a mix of confrontational and supportive approaches to target stakeholders;
- tend to focus heavily on practices associated with establishing measurement across the chain and reforming operations.

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Appendix A: Coding on NVivo

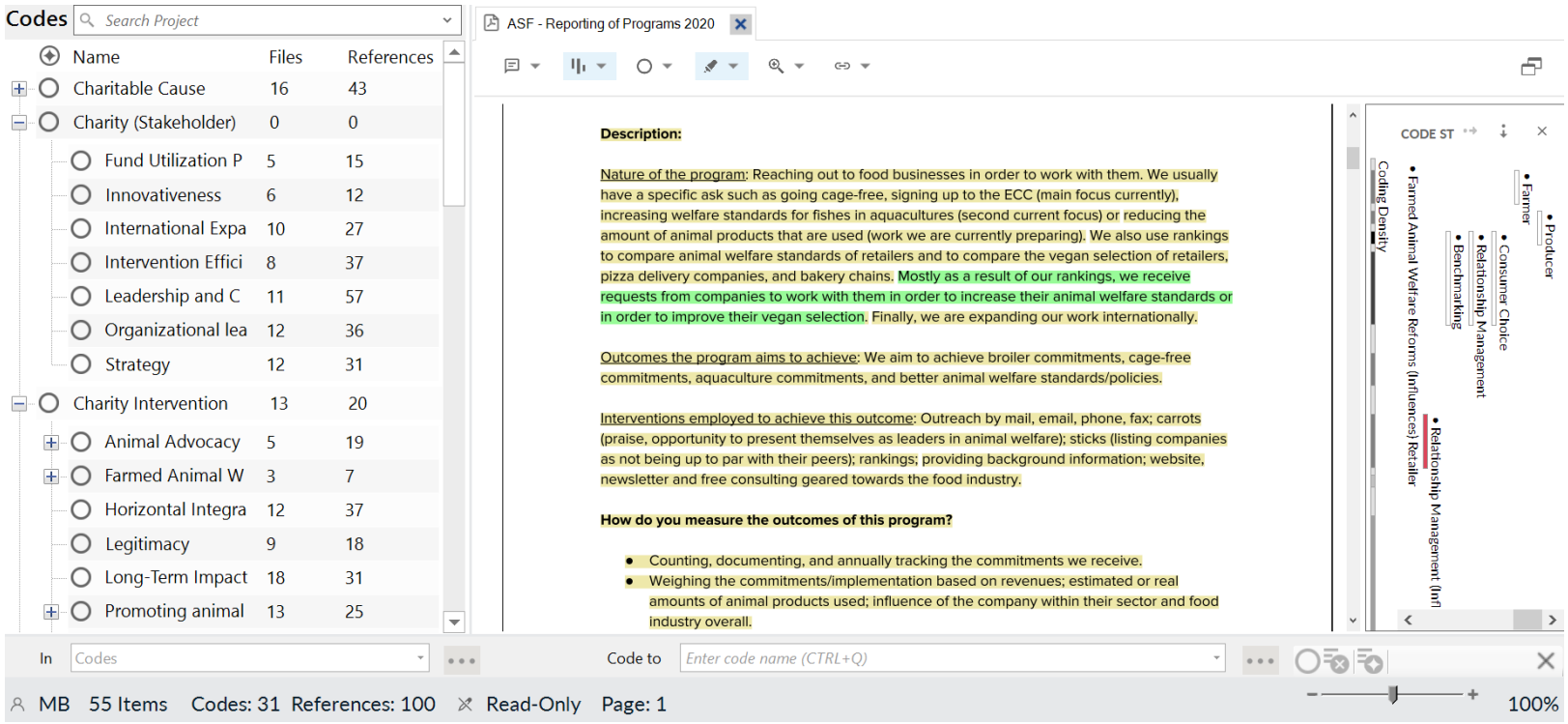


Figure A-1 Snapshot of Coded Data on NVivo

Shown in Figure A-1 is a snapshot of a coded page of data, with the full list of defined codes on the left of the text. To the right of the text are the specific codes attributed to a particular section of the data.

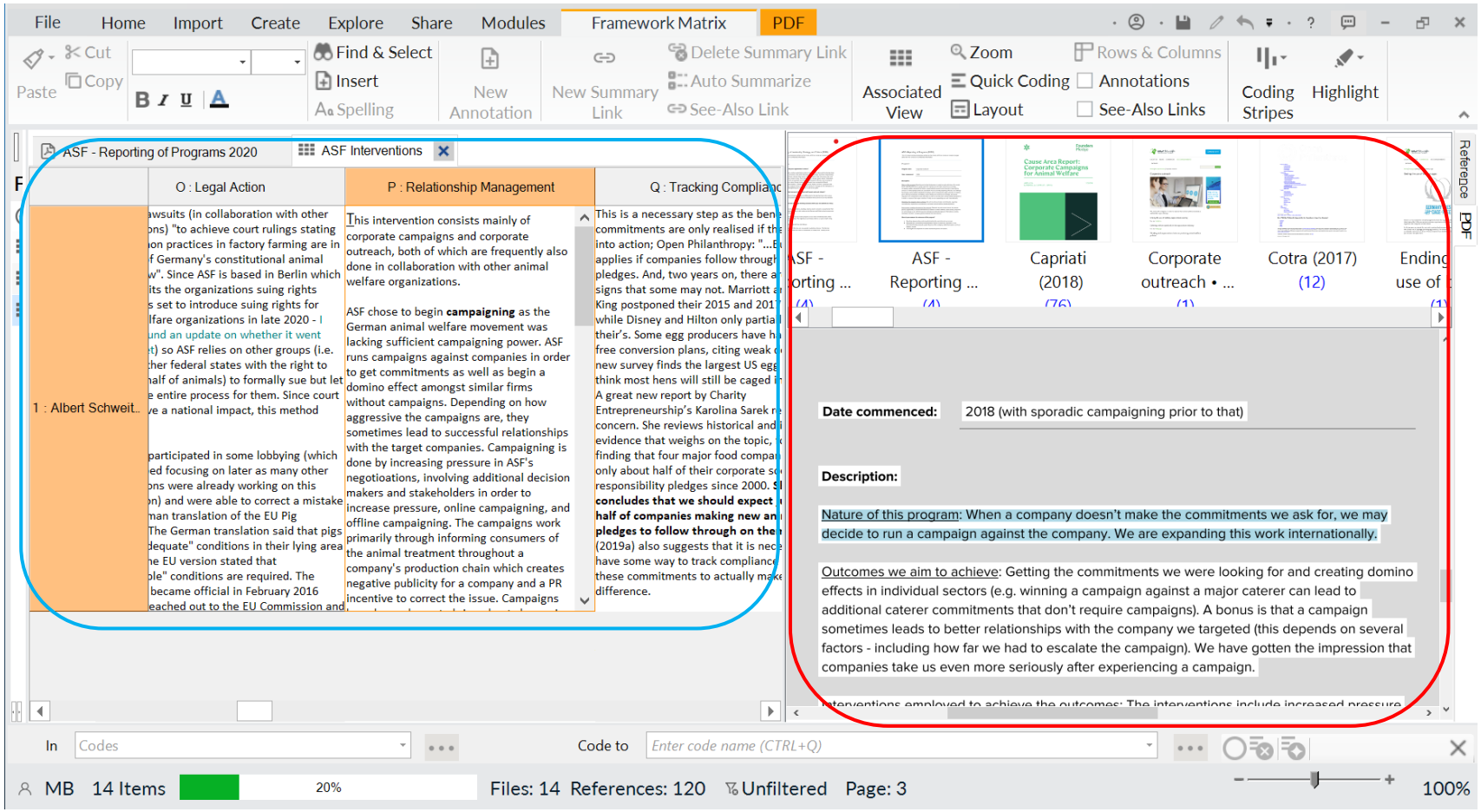
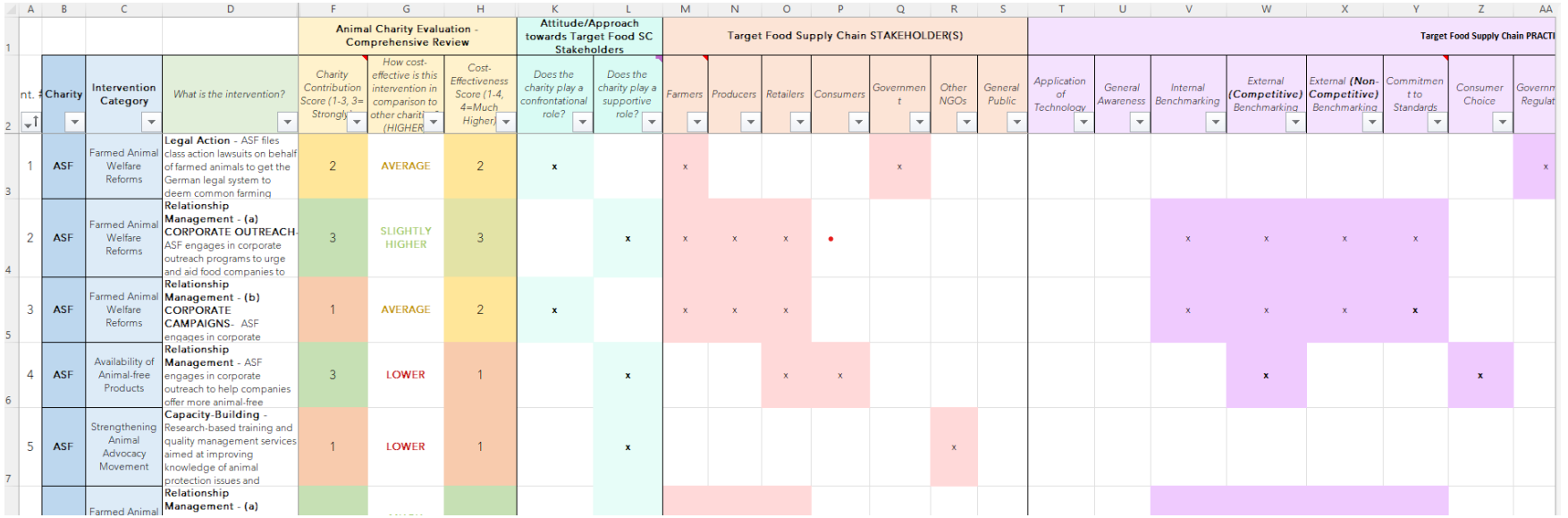


Figure A-2 Snapshot of Framework Matrices on Nvivo

Figure A-2 shows a portion of the framework matrices developed for each case. This snapshot shows a portion of the matrix developed for the Albert Schweitzer Foundation. The section within the red box shows all the sections of data that have been coded under the selected code (i.e., 'Relationship Management', highlighted in orange). The section enclosed in blue shows the summaries I have written under each code (based on reading through all the coded text attributed to the code).

Appendix B: Partially Ordered Meta-Matrix

Figure B-1 shows a snapshot of the partially ordered meta-matrix after multiple rounds of revision.



nt. #	Charity	Intervention Category	What is the intervention?	Animal Charity Evaluation - Comprehensive Review: Charity Contribution Score (1-3, 3= Strongly	How cost-effective is this intervention in comparison to other charit (HIGHER	Cost-Effectiveness Score (1-4, 4=Much Higher)	Attitude/Approach towards Target Food SC Stakeholders: Does the charity play a confrontational role?	Does the charity play a supportive role?	Target Food Supply Chain STAKEHOLDER(S): Farmers	Producers	Retailers	Consumers	Government	Other NGOs	General Public	Target Food Supply Chain PRACTI: Application of Technology	General Awareness	Internal Benchmarking	External (Competitive) Benchmarking	External (Non-Competitive) Benchmarking	Commitment to Standards	Consumer Choice	Governm Regulat
1	ASF	Farmed Animal Welfare Reforms	**Legal Action** - ASF files class action lawsuits on behalf of farmed animals to get the German legal system to deem common farming	2	AVERAGE	2	x		x				x									x
2	ASF	Farmed Animal Welfare Reforms	**Relationship Management - (a) CORPORATE OUTREACH**- ASF engages in corporate outreach programs to urge and aid food companies to	3	SLIGHTLY HIGHER	3		x	x	x	x	•						x	x	x	x		
3	ASF	Farmed Animal Welfare Reforms	**Relationship Management - (b) CORPORATE CAMPAIGNS**- ASF engages in corporate	1	AVERAGE	2	x		x	x	x							x	x	x	x		
4	ASF	Availability of Animal-free Products	**Relationship Management** - ASF engages in corporate outreach to help companies offer more animal-free	3	LOWER	1		x			x	x							x			x	
5	ASF	Strengthening Animal Advocacy Movement	**Capacity-Building** - Research-based training and quality management services aimed at improving knowledge of animal protection issues and	1	LOWER	1		x						x									
		Farmed Animal	**Relationship Management - (a)**																				

Figure B-1 Snapshot of Partially Ordered Meta-Matrix

This meta-matrix was designed to display a case-by-case summary across each of the following factors (i.e., columns) so that each could be sorted and analyzed to find emerging patterns/relationships:

- ACE Comprehensive Review Scores
  - Intervention's Level of Contribution to the Cause
  - Cost-effectiveness
  - Estimated General Effectiveness of the Intervention (i.e., how effective ACE estimated that the intervention can generally be if implemented correctly)
- Attitude Towards Target Stakeholders
  - Supportive Approach
  - Confrontational Approach
- Target Stakeholders

    - Farmers
    - Producers
    - Retailers
    - Consumers
    - Government
    - Other NGOs
    - General Public
- Target Practices
    - Application of Technology
    - Awareness
    - Internal Benchmarking
    - External (Competitive) Benchmarking
    - External (Non-Competitive) Benchmarking
    - Commitment to Standards
    - Consumer Choice
    - Government Regulation
    - Knowledge Management
    - Production
    - Research and Development
    - Supply Chain Transparency
    - Supplier Selection
    - Financial Resource Management
- Intervention's Target Outcome
- Does the intervention target food companies' public image to achieve the desired outcome?
- Collaboration with Other Charities
- Collaboration with Other External Stakeholders
- Is compliance tracked?

Figure B-2 shows the sheet that was used to provide a variable-oriented view of each practice, meta-construct, and the interventions targeting each practice/meta-construct. The sheet also shows the scores attributed to each intervention in order to observe potential patterns in intervention performance across certain practices/meta-constructs.

(Scores depicted in the table represent how strong the intervention's 'contribution to the cause' is)

			ASF					THL						GFI			
Meta Construct	Food SC Practice	Legal Action	Corp Outreach	Corp Campaigns	Veg Product Rel Mgr	Capacity Bldg	Corp Outreach	Corp + Media Campaign	Promo - Veg Consumption	Promo - Cau	Capacity Bldg	Leg Adv and Lobby	R&D	Rel Mgmt	# of interventions targeting the practice
External SH Practice	Consumer Choice				3				2						2
External SH Practice	General Awareness									3					1
External SH Practice	Government Regulation	2										3			2
Learning	Knowledge Management					1					2.5			3	3
Learning	Research and Development												3		1
Measurement	External (Competitive) Benchmarking		3	1	3		3	3							5
Measurement	Commitment to Standards		3	1			3	3							4
Measurement	External (Non-Competitive) Benchmarking		3	1			3	3							4
Measurement	Internal Benchmarking		3	1			3	3							4
Operations	Production	2	3	1	3		3	3				3	3	3	9
Operations	Financial Resource Management										2.5			3	2
Operations	Application of Technology												3		1
Supplier Continuity	Supplier Selection		3	1			3	3							4
Supplier Continuity	Supply Chain Transparency		3	1	3		3	3							5

Figure B-2 Table of Practices vs. Intervention Performance