Roskilde University

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Jungell-Michelsson, Jessica; Nesterova, Iana

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Digging for Roots of Sufficiency in the Food Industry

Exploring How Ecological Embeddedness Supports Sufficiency in Business

Jessica Jungell-Michelsson and Iana Nesterova

Abstract *This chapter explores sufficiency in the food industry. We suggest that sufficiency is a process that can be enhanced through ecological embedding in food organisations. By looking at two empirical examples from Finland, we analyse the degrees and qualities of ecological embeddedness as an element of "sufficiencing" in the food business.*

1. Introduction

Sufficiency is increasingly acknowledged as an important element of strongly sustainable consumption and production. Within sustainability science, strong sustainability is often contrasted with weaker forms of sustainability based on whether the approach focuses on either qualitative (eco-efficiency) or quantitative (sufficiency) changes. Strong sustainability emphasizes the need to reduce overall resource use (quantity) to avoid transgressing planetary boundaries and calls for system-level transformations (e.g., degrowth or a steady-state economy), while weak sustainability follows dominant economic logics and incremental (qualitative) solutions within current systems (e.g., greener technology or process efficiency) (Neumayer 2003; Landrum/Ohsowski 2018). Given the magnitude at which multiple social and ecological crises are currently occurring (Ceballos et al. 2015; Foster et al. 2010), scholars have argued that weak sustainability measures must be complemented to a greater extent with efforts based on the premise of strong sustainability (Lehtonen/Heikkurinen 2022). Sufficiency may serve as an alternative organising principle for doing so (Princen 2003).

Sufficiency is based on the idea that human activity can and should be organised in such a way that it does not exceed the carrying capacity of the planet and allows other, i.e. beyond human, forms of life to thrive. Sufficiency is, moreover, characterised by an ethic of solidarity, since it pursues modes of living that are accessible to everyone instead of being premised on some enjoying a materially intensive

lifestyle while the basic needs of others are not satisfied (Naess 1995). Thus, sufficiency has been conceptualised as both a means to strongly sustainable production and consumption as well as an end in itself (Jungell-Michelsson/Heikkurinen 2022). It is a state of "enoughness" both philosophically and materially; a human mindset that is oriented towards needs rather than wants and quality of life instead of ever-increasing consumption. Sufficiency goes hand in hand with a non-utilitarian approach to nature, humans and non-humans, and it rests on the assumption that humans have the ability for reflection, self-transformation and care for others and nature (Buch-Hansen/Nesterova 2023). On an individual level, sufficiency can manifest as intuitive common sense, e.g., knowing when you have had enough chocolate before beginning to feel sick or avoiding food waste, or as more active choices to reduce consumption in general, e.g., minimalism or voluntary simplicity (Elgin 2013; Elgin/Mitchell 1977). However, sufficiency is about more than just consumption limits and individual lifestyle choices. Thinking in terms of sufficiency creates space for new ways of theorising about sustainable economic activity. It means thinking differently about familiar economic categories, such as production, consumption and exchange (Heikkurinen/Bonnedahl 2019). Sufficiency cannot be left to consumers alone to implement but also requires transformative actions by those who produce what we consume, i.e. industry actors and businesses.

The operationalisation of sufficiency in business depends on the type of industry in question. In a genuinely sustainable society, some industries would cease to exist altogether (Buch-Hansen et al. 2024), e.g., fast fashion or the fossil fuel industry, while others will remain essential. The latter include industries that satisfy basic human needs, such as those involved in providing housing and food. While the question of what constitutes human needs remains unresolved, the need for food is beyond dispute. It is almost impossible to imagine human life without food in its different forms and appearances, as it serves our energy needs and is a key element of many cultures, rituals and traditions. At the same time, the environmental pressure put on nature due to various food processes is enormous (Campbell et al. 2017) and the social double burden (hunger in some parts of the world and obesity in others) keeps growing (Popkin at al. 2020). The modern food industry and agricultural system has become ever more efficient and productive, but it has been insensitive to the impacts on the health of nature and people (McGreevy et al. 2022). Efficiency has outcompeted quality and sufficiency and global market gains have outcompeted regional sensitivity and adaptation to local environments. Consequently, food production and consumption have a central position in the transformation of societies towards strong sustainability (see, e.g. Jungell-Michelsson/Autio 2022; Nelson/Edwards 2021; Nesterova 2022). Yet, the meaning of sufficiency in terms of food production and its operationalisation in the food business remain a rather untouched area of research.

This chapter contributes to efforts at understanding how sufficiency in the food industry could come into being. We "dig for the roots" of sufficiency in the food industry by exploring the concept of ecological embeddedness and analysing empirical examples from two different food businesses.

2. Sufficiency in food production and business

Navigating sufficiency in food production is not straightforward, as food not only satisfies the nutritional needs of humans but also their social and cultural needs (Rozin 1996). Food is related to culture, tradition and rituals and is a central component of our everyday lives. Food is a space where social and biological needs meet and become intertwined. For instance, the Swedish tradition of fika does not merely entail consuming coffee and sweet snacks, but is a space where people meet in a less formal atmosphere that facilitates well-being and bonding. Moreover, food production is characterised by diversity. It can take different forms, from foraging (gathering) and hunting, which throughout human history were the main forms of food production (Gowdy 1998), to the production of food by large businesses. While foraging for one's own use is perhaps the most sustainable and sufficiency-orientated mode of food production (see, e.g. Gowdy 2020), in modern societies most food production occurs in other spaces, such as small farms or large corporations. Here, we focus on those spaces rather than food production for the purpose of self-sufficiency.

In general, sufficiency in production implies reflecting on the direct and indirect business implications of striving for enough rather than more (Jungell-Michelsson/Heikkurinen 2022). In this sense, sufficiency is not opposed to other pursuits, principles and theoretical considerations (such as efficiency and circularity). Indeed, it is part of a constellation of principles that will hopefully bring genuinely sustainable production into existence (Nesterova 2020). Elsewhere, we have noted that sufficiency in business needs to concern the following domains: nature at large, location, humans, non-humans and the self (Nesterova/Jungell-Michelsson forthcoming). That is to say, for sufficiency to become an essential part of business, decision-makers need to consider treading lightly on the earth, be attentive to local nature and non-humans in concrete locations and develop worldviews that are compatible with strong sustainability. This creates a holistic framework for sufficiency, but it may still be perceived as an abstract ideal: something to strive for rather than a perfect end-state. In reality, businesses' relationships to sufficiency are more akin to journeys that involve navigating complex and diverse socio-economic landscapes rather than a one-off adoption of ideal practices (Nesterova 2023). In this case, we suggest referring to this journey not as the adoption of sufficiency or becoming perfectly sufficient but rather as "*sufficiencing*".

Sufficiencing in the food industry necessitates fundamentally different worldviews than those currently prevalent in most growth-oriented Western markets. In their discussion of sustainable food systems in a post-growth world, McGreevy et al. (2022: 1012) suggest that human food consumption patterns will need to be reshaped according to a new set of values and principles that prioritise regeneration over extraction, distribution over accumulation, commons over private ownership, care over control and sufficiency over efficiency. In such a system, food would be produced at rhythms that correspond more with nature, showing sensitivity towards the ecological carrying capacity and concern for local human and non-human communities. Hence, sufficiency in food production systems "engages social-ecological limits that are linked to community health and well-being, to field-level agroecologies and to their 'nested' positions within wider ecologies" (ibid: 1012). In practice, this would require adopting business models and strategies that treat nature as a key stakeholder and primary constraining factor for production while placing emphasis on value flows that extend beyond just financial ones (Brozovic 2020). Such business models aim at longer-term value creation not only in economic terms but also in ecological and social terms, by prioritising regenerative practices that show care for, not control of, natural cycles. Sufficiency in food production would allow for adequate nutrition as well as cultural expression for all groups of people while preserving local land- and seascapes (McGreevy et al. 2022).

For a business operating in the food industry, sufficiency can also be implemented as business models that support consumers in moderating their food consumption. Food production and consumption are inherently intertwined, and food sustainability is often socio-materially mediated through, e.g., product packages or marketing (Jungell-Michelsson/Autio 2022). By rethinking sales tactics and marketing practices, food businesses can inspire or nudge consumers towards greater sufficiency in food consumption, such as shifting to plant-based diets or reducing food waste (Heikkurinen at al. 2019; Sandberg 2021). In comparison to other consumables, food is challenging to 'design' or produce for reuse, repair or extended life-time use (without technical or chemical moderation); practices which otherwise have been identified as effective ways for businesses to promote sufficient consumption (Niessen/Bocken 2021). Instead, food businesses can focus on avoiding over-selling and urge consumers to, e.g., buy only what is needed. This has been done, for instance, by the German organic food retailer Bio Company, which in 2019 successfully launched the "Buy Less" (*Kauf Weniger*) campaign in an effort to make their customers more conscious of their food purchasing behaviour and food waste (Bio Company 2020).[1] Bocken et al. (2020) advise food businesses to

1 Similar efforts can be found in other countries, too; e.g., in Sweden the food retailer ICA encourages consumers to plan their food shopping in a way that avoids unnecessary purchases and uses food leftovers as much as possible (ICA 2023).

base their sufficiency strategies on the three top tiers of the waste hierarchy, concentrating on business activities that support consumers in reusing (e.g., providing refillable packaging or repurposing food), reducing (e.g., developing products that last or changing consumer perceptions about "ugly" vegetables) and avoiding (e.g., shortening ingredient lists or choice editing towards eco-friendly diets). Here, sufficiency can manifest in food business through a producer's or retailer's efforts to curb demand, and consequently, overall resource use (Bocken/Short 2016).

Yet, sufficiencing not only takes place in the socio-economic spheres of the food industry between producers and consumers. Food production is essentially a natural process, connected to the local ecologies and places from which the food originates. Indeed, food production has historically been rooted quite literally in the natural environment and specific places. As Goodman/Sage (2016: 1) state: "there is almost nothing more geographical than food in the ways that it intimately interlinks production and consumption, nature and society, bodies and landscapes, the global and the local, and indeed, spaces, places and everywhere between." Modern food production has, however, altered such links in many respects and "food from nowhere" is the rule now rather than the exception in most highly industrialised societies. Due to the present possibilities to utilise long supply chains and high technology, food production can be rooted in one place, yet continue somewhere else, e.g., fruits and vegetables shipped to far-away destinations for processing. Moreover, new technologies, such as vertical hydroponic agriculture, have allowed humans to grow food that is not seasonal or native and without reliance on the soil and the sun (see, e.g., Nesterova 2022). Yet, if the food business is to become more aligned with principles of strong sustainability and sufficiency, it must reconnect with natural processes and start following strategies that are more sensitive to local ecological systems (Landrum/Ohsowski 2018). We therefore turn to exploring the idea of ecological embeddedness as an important part of sufficiencing in the food industry.

3. Ecological embedding in the food business

The idea of embeddedness was originally introduced to describe the ties and values created between social networks and economic activities and has often been applied to alternative food networks (AFNs)[2] (Granovetter 1985; Sonnino/Marsden 2006). For food system sustainability, however, it is crucial to acknowledge that socio-economic relations are also embedded within ecological relations, i.e. ecologi-

2 *Alternative food networks* is a term used for food provision systems that fall outside the conventional model of food production and consumption, with the aim of re-socialising and re-spatialising food, such as farmers' markets, community-supported agriculture or garden selling (cp. Sonnino/Marsden 2006).

cally embedded. That is to say, the economic activity of a business is embedded in the broader natural systems, and nature is not only a source of economic resources but inherently entangled with all economic processes. Since the idea of ecological embeddedness can be characterised as "intrinsically ambivalent, contingent, and dynamic" (Goodman 2003: 2), we chose to synthesise insights from agri-food as well as management and organisation studies to create a framework for analysing the link between ecological embeddedness and sufficiency in the food business. Based on the existing literature, we understand ecological embeddedness as three-dimensional sensitivity, as outlined below.[3]

The spatial dimension: sensitivity towards place. Ecological embeddedness implies a sense of place, particularly towards the biophysical environment and ecological material conditions. From a managerial standpoint, Whiteman/Cooper suggest that this means "the degree to which a manager is rooted in the land – that is, the extent to which the manager is on the land and learns from the land in an experiential way" (2000: 1267), i.e. having deep knowledge about the dynamics of the local natural environment. However, such a definition runs the risk of over-romanticising indigenous practices and rural, alternative modes of food production (Banerjee/Linstead 2004; Morris/Kirwan 2011). The spatial dimension of ecological embeddedness should instead be understood as something more holistic, which could best be described through the notion of topophilia (Tuan 1974; Shrivastava/Kennely 2013). Topophilia implies deep understanding, affection and care for certain places. In other words, "place rootedness" consists of the emotional energy directed towards a certain place (which can be both biophysical and human-constructed) in a mental process that does not necessarily require continuous physical presence in the natural landscape. For a food business, this translates into what Shrivastava/Kennely call place-based organising: "place-based economic activities are complex and rich, culturally and naturally rooted, positively inimitable, and, most important, conducted with deep respect for the soil and habitus that provide the generative force" (2013: 92). In other words, the spatial dimension of ecological embeddedness implies a connection to biophysical places but can involve different degrees of proximity to the land.

The moral dimension: sensitivity towards other beings. Based on the notion of topophilia, ecological embeddedness presumably also encompasses a moral dimension. To be ecologically embedded means having an ecological conscience and extending human morality to the non-human world. For businesses, this means shifting towards more eco-centric organising (Heikkurinen et al. 2016), i.e. treating nature, including its various beings (human and non-human), as a key stakeholder

3 While we recognise that social embeddedness (cp. Granovetter 1985) and the systematic study of it has great relevance in this context, too, we focus here on the ecological aspects of embeddedness, which so far have been less studied in relation to food production.

in all socio-economic activity. This necessitates a transformation in individual moral agency since companies, despite facing increasing pressure for corporate responsibility, do not have a conscience of their own; it is the individuals in the company that do. Thus, ecological embeddedness encompasses more than simply recognising the influence of nature on economic activity. It involves knowledge and beliefs about ecosystem functioning (Whiteman/Cooper 2000) and, perhaps even more importantly, an ethos based on respect for and reciprocity towards the land. By "the land" we do not mean just soil but also the whole energy cycle that constitutes and is constituted by all soils, waters, plants and animals (Leopold 1949). These animals include humans, who also inhabit "the land" and satisfying the basic food needs of all human groups should likewise be a central moral focus in food production. In an ecologically embedded organisation, managers and other organisational members need to take responsibility for the biotic community in the same way that they take responsibility for the social and economic ones. Hence, the moral dimension of ecological embeddedness emphasises individual moral agency in keeping the social metabolism within the carrying capacity of the planet.

The temporal dimension: sensitivity towards natural rhythms. Ecological embeddedness also has a temporal dimension to it in two respects. First, rather than merely asking whether individuals and organisations are statically embedded or not, it is more important to focus on the process of becoming more or less embedded. Ecological embeddedness can be understood as a continuum across which an organisation can move, a process of *embedding*, and food businesses can engage in various activities that allow them to either deepen their relationship to the land or disconnect from it (Murdoch et al. 2000; Winter 2003; Penker 2006). Thus, the degree and quality of ecological embeddedness varies over time. Second, Murdoch et al. propose that, particularly in the context of food, ecological embeddedness involves "re-establishing biological, as opposed to industrial, processes within food chains" (2000: 116). To be ecologically embedded means to be sensitive to temporal changes in nature. In food production, this manifests in the form of seasons and varying production phases, as ecological conditions dictate when and at what pace food can be produced. Industrialisation and globalisation have disconnected the conventional food industry from this natural rhythm, and many foods are produced irrespective of natural seasons. Consequently, AFNs are often presented as being more sensitive towards natural rhythms (Winter 2003; Morris/Kirwan 2011), but ecological embeddedness does not exclude market logic and cannot automatically be equated with alternativeness (Winter 2003; Penker 2006). Hence, we suggest that the temporal dimension of ecological embeddedness implies a sensitivity towards the natural rhythms of change and can exist in varying types of organisations and contexts.

Overall, for ecological embeddedness to make analytical sense, the focus should not be on whether an organisation is embedded or not but rather where and how it is embedded (Penker 2006) and to what degree and at what level of quality (Mur-

doch et al. 2000; Winter 2003). Ecological embeddedness is not static, nor is it preassigned only to specific types of businesses, organisations or individuals. It is a process characterised by different modes of embeddedness at different points in time. Manifested as sensitivity towards spatial and temporal aspects in the natural environment, as well as an ethic directed towards the land, ecological embeddedness may serve as a foundation for more sufficiency-oriented businesses and sustainable food systems.

4. Exploring different food businesses

To explore the nature of ecological embeddedness in the food business, we rely on a qualitative study from the Finnish food industry. Finland offers an interesting empirical context in terms of food sustainability due the northern location of the country and its limited farming season. The study is based on semi-structured interviews with 20 Finnish food companies of different sizes and types, ranging from small-scale agri-food businesses to large global food corporations. During 2021–2022, the first author interviewed the companies' sustainability managers and CEOs[4] to examine how sustainability is understood within the organisation, what the organisation does when faced with sustainability issues and how sustainability has become visible in organisational practices. A total of 23 interviews,[5] each lasting between 55 and 90 minutes, together with the companies' written sustainability material (web pages and sustainability reports), formed the basis for a content analysis of how the organisations make sense of sustainability (see also Jungell-Michelsson/Autio 2022) and whether elements of ecological embeddedness can be identified in the activities of the said business.

To best capture the varying qualities and degrees of ecological embedding and sufficiencing, we tell the story of two significantly different food businesses in the form of vignettes.[6] Based on the collected data, we chose to narrate and analyse 'The Local Farm' (a small-scale local farming business, operating through AFNs) and 'The

4 The interviewees were selected based on how actively they are involved in their organisation's sustainability matters. Hence, the position of the interviewee varied depending on the company. Typically, the CEO was the most informed person in smaller companies. In larger companies, sustainability was often managed by a specific sustainability (and/or communications) manager.

5 In three of the 20 companies included in the study, additional interviews were conducted due to a need for more information or if the company itself recommended that the researchers interview more than one sustainability manager.

6 To respect the anonymity of the respondents, no real names are provided in the vignettes. All references to places and products have been pseudonymised.

Food Corp' (a large food corporation with global supply chains, operating in the conventional food business market) because they contrast so strongly with each other, and hence, represent the diversity of experiences in food production sustainability and "digging for roots" of sufficiency in the food industry.

4.1 Vignette 1: The Local Farm

> But we know how to do it. Humans as a society know how to do it. You just buy the stuff that is growing at the time of the year from someone you know who doesn't live too far away. – Chris, The Local Farm

Chris and Emma took a leap of faith when they left their "normal" 9-to-5 office jobs to become small-scale farmers. Except for allotment gardening, they had no professional experience with farming but felt a need to downscale their hectic life and focus on something that brings them joy: good food and growing vegetables. The motivation for this lifestyle change was not purely environmental, and the main aim was not to become self-sufficient but rather to create a way of earning a living from a more down-to-earth and self-managed job. After some lucky coincidences, they came across a small farm in southern Finland, including a house and some land and started their vegetable farming business. The Local Farm now grows around 50 varieties of vegetables and herbs, which they sell to selected supermarkets, through REKO rings[7] and to higher-end restaurants in the area. The main business, however, comes from selling ready-packed weekly 'veggie bags' to local customers who place their orders through a Facebook group. The 50–100 regular customers who pick up their bags come to the farm because they value the localness and perceived high quality of the vegetables. The customers enjoy the event of visiting the farm, where they sometimes even get to pick their kale and pumpkins themselves directly from the growing beds. While this creates a positive bond between the customers and the farm, Chris is concerned that he can only serve a limited group of people instead of providing "everyone's veggies".

Everything from sowing seeds to sales takes place at the 1.5-hectare big farm and within a radius of 15 km (which includes rural as well as more urban areas); even the fertilisers are provided by neighbours who have a horse farm. The Local Farm grows vegetables organically and through regenerative farming practices. The sales follow the harvesting season in Finland, starting from rhubarb in the spring to root vegetables, pumpkins and cabbage in the autumn. The rhythm of the work follows the natural seasons: during spring and summer, Chris and Emma work long hours

7 REKO is a retail and distribution model that offers customers a way to order products directly from the producer, without the need for middlepersons. REKO stands for Rejäl Konsumtion, which is Swedish for fair consumption.

almost every day of the week, while in the winter there might be farming-related work only for one day, leaving room for other tasks and free time. In the winters, Emma continues to do some of her previous consultancy work, to balance the family's financial situation, as they do not yet make enough from the farming business for both of them to live on. Starting the farm has required financial investments and the sales are always insecure, depending on the weather, climate, animals and customers. The aim is to also keep The Local Farm at a small-scale level in the future, but Chris and Emma still hope that they can reach a stage where the farm is a self-sustaining business.

One ecological challenge for The Local Farm has been improving the soil. Chris and Emma manage the farm with a great respect for nature, but it takes time to learn and understand the dynamics and conditions of the local environment. They have tried different growing methods (e.g., "no-dig" beds) and are thinking about raising some animals so that they can produce their own fertilisers and keep everything in cycle at the farm. Chris and Emma started The Local Farm almost from scratch and had to learn many things along the way. However, according to Chris, most challenges of this kind can be solved quite easily by just looking at the plants and the ground: "You look at your plants and it becomes pretty obvious if something is wrong. And you see when you do things right that the ground improves, you just see the life, it smells better and takes some more water." Therefore, all vegetables at the Local Farm are grown from seeds instead of ready plants, which would be quicker and easier. It enables Chris and Emma to be more in control of the growing process and to monitor how the soil and the plants are developing. According to Chris and Emma, it is the best way to produce tasty, high-quality vegetables and food.

4.2 Vignette 2: The Food Corp.

> Nature – it's where our food essentially comes from. We are dependent on nature. So maybe we should then get nature to steer our business a bit more and not the other way around. – Anna, The Food Corp.

When Anna chose to accept the position of sustainability manager at The Food Corp., it was because she knew that this was a company that was serious about its sustainability work. For Anna, who loves spending time in nature and growing stuff in her garden, it was important to work for a food company that values nature and understands its impact on nature. The Food Corp. can be called a multinational food corporation within FMCG (fast-moving consumer goods). With raw material sourced from nearly 50 countries, its own production sites in seven countries and products sold in 40 countries, The Food Corp. truly is an international business. The company owns many well-known food brands with products in several categories, such as sweets, snacks, frozen meals and dried foods. The assortment covers products

that require sourcing raw material from countries on the other side of the globe, including everything from small-scale farmers in local villages to larger cooperatives and big-scale farms. The raw material is processed, packed and branded at The Food Corp.'s own factories across Europe, and the ready products are sold through conventional food retail outlets, i.e. food stores and supermarkets. The company has always been recognised for its high-quality products and responsible business governance, but as knowledge about (un)sustainability in the food industry has increased, The Food Corp. has decided to step-up its efforts in sustainable food production.

The Food Corp. wants to be a sustainability forerunner in the industry. In practice, this has meant engaging in systematic sustainability work during the last few years, including adopting a specific sustainability strategy, enacting several sustainability-related programmes and hiring sustainability experts to carry out the implementation of different actions. At first, many of the actions focused on minimising CO_2 emissions at the company's own production sites, but The Food Corp. has recognised that most emissions are created at the agricultural stage and is now focusing more on improving primary production processes on the fields and farms where the raw materials for the company's products are cultivated. The company is aware that most negative and positive environmental and social impacts are created at the beginning of the supply chains, and The Food Corp. is therefore trying to engage more actively on a local scale through supply chain certification schemes as well as direct actions. Examples include a climate project where The Food Corp. has worked together with local farmers to improve nutrient management and deploy regenerative agricultural practices, a project to enhance biodiversity on farms throughout Europe and a project where a percentage of the sales of a product goes to developing better water systems on farms in ecologically vulnerable areas. Such projects have required regular visits to the fields and farming locations in question to collaborate with the primary producers and better understand both the social and environmental dynamics of the specific places. As Anna emphasises: "It is all about local conditions and local variations."

According to Anna, one of the biggest challenges in working with sustainability in the food industry has to do with combining the different rhythms of people, business and nature. When The Food Corp. engages in developing more environmentally friendly agricultural practices, the changes and possible improvements to the soil and in harvests can be seen at the earliest during the next harvesting season or even later. Such engagements are thus done without any short-term benefits for The Food Corp.'s business or any tangible changes in the products for the consumers. It is done for the sake of nature, which, according to Anna, sometimes can be challenging to pitch (internally and externally) in FMCG businesses. Another struggle for The Food Corp. is handling the multitude of sustainability issues that arise in its global operations. The company cannot "fix" everything at once and has to prioritise efforts. So far, the most pressing issues from an environmental standpoint have been

to find ways to decrease CO_2 emissions throughout the products' supply chains and to enhance biodiversity (e.g., through regenerative farming). These efforts are still a work in progress, but Anna already has some ideas about what she personally hopes will be "the next big thing" in The Food Corp.'s sustainability work: To implement the idea of planetary boundaries and for the business to start following the seasons and natural cycles. This will, however, require "a change in mindset and thinking", as Anna puts it.

5. Discussion

The Local Farm and The Food Corp. disclose two significantly different stories of moving towards more sustainable food production and consumption. One is about downscaling, re-localising to the countryside and aiming for small-scale agriculture with closer relationships to nature and consumers. The other one is about creating corporate sustainability strategies, investing in supply chain projects to minimise environmental impact and balancing consumer business logics. From the perspective of ecological embedding, the empirical examples highlight the challenges of bringing together "land ethics" (Leopold 1949) and food production practices in large, multinational companies due to the nature of business operations. In a smaller, local company, where the business, the land and the owners are deeply intertwined, ecological embedding can manifest directly in the business operations. In a large global company, the business is detached from the actual places and natural processes that provide the foundation for the business, making it difficult to develop deep connections between the business and the land(s). However, the vignettes illustrate that elements of ecological embedding are not limited only to small-scale, local agrifood businesses. Rather, ecological embedding both looks different and manifests differently in various types of businesses. While The Food Corp. cannot be as sensitive towards specific places, natural rhythms and seasons as The Local Farm can, it is not impossible for the company to make nature a key stakeholder in the business (Brozovic 2020). Embarking on a journey of ecological embedding in food production is in essence a mental process of turning one's attention to local, natural circumstances and taking responsibility for the non-human world, "the land". Land is something immediate but also part of something bigger: the Earth at large, towards which people exhibit concern and with which they experience unity (Yaden et al. 2017). Such individual moral agency can be identified in both stories presented above. Despite differences, the core of the stories is similar: a journey aimed at becoming more embedded in nature, which often involves trade-offs, conflicts and doubt. We now reflect on these journeys in relation to the three dimensions of ecological embeddedness.

The spatial dimension. Place rootedness is apparent in the story of The Local Farm. Chris and Emma live directly on and off the land that provides the products for their small business. Through their constant presence on the land and the daily time spent with the soil and the plants, they learn and develop together with their immediate biophysical environment. The Food Corp., in contrast, has operations in several countries and sources agricultural products from across the globe, including places with varying characteristics (e.g., urban factory areas, small-scale tea farms and large grain fields). This makes it impossible to be physically present on all the land(s) involved in the company's food production. The Food Corp. has, indeed, acknowledged the importance of engaging at the local agricultural level, and managers have increasingly visited the areas of primary production to develop better knowledge of the specific places where the company has connections. Yet, the multitude of places and natural environments involved in the business limits the possibilities for company managers to "learn from the land in an experimental way" (Whiteman/Cooper 2000: 1267). This is, however, not to say that other modes of food business do not also face trade-offs in the same manner. While the owners of The Local Farm are highly sensitive to the place where they live, they still rely on other places in the world. For instance, REKO rings and marketing of the farm and its products necessitate reliance on high technology (social media), which is not place-based.

The moral dimension. Sensitivity towards the non-human and human involves moral struggles that can be distinguished in both vignettes. The Local Farm's careful farming methods (regenerative, keeping everything in cycle at the farm) and provision of organic, nutritious food directly to customers shows respect towards and responsibility for both people and the land. Yet, it should be noted that the business was not founded purely based on altruistic aims but also on more selfish grounds, such as doing what feels fun (growing vegetables) and working without a boss. Despite downscaling and going "back to the land", Chris and Emma are still concerned about pricing, marketing and the sales of their products, indicating that deep ecological connections do not rule out a business mindset. Moreover, as Chris has acknowledged, there is a risk that The Local Farm's food becomes part of an elitist food trend instead of being "everyone's veggies", as the products might not be accessible to all due to price as well as physical location. In comparison to The Local Farm, The Food Corp. provides products to the main food retail market and the "ordinary consumer". The company's products are available and accessible to a large group of people and are an important part of the everyday food intake of many. Additionally, the business is important for supporting many people's livelihoods. The Food Corp., however, struggles to continue serving a broad range of consumers with good and affordable food while at the same time changing the modes of food production and consumption towards sustainability. Radical changes, e.g., suddenly deciding not to produce certain products or quitting the business altogether, could lead to negative consequences in terms of farmers losing their livelihoods and

consumers losing some of their everyday food options. The decision of just what communities (biotic and human) to take responsibility for becomes challenging in a globally spread-out business, as the moral issues also become more diverse.

The temporal dimension. Ecological embedding in a food production context means being sensitive towards natural rhythms of change and the seasons. The Local Farm is based on providing only those vegetables that can be naturally grown during certain times of the year. The fact that the business is small and local makes it easier for the owners to adapt to ecological changes since they are not spread out over a geographically vast area encompassing different seasons. The downside of this practice, however, is that The Local Farm does not provide a steady income throughout the whole year, and Chris and Emma have to return to "regular" work during some months of the year. Hence, they have to dis-embed and re-embed (Murdoch et al. 2000) themselves to some extent as the seasons change to and from winter. In contrast, The Food Corp. maintains steady operations throughout the year. Yet, due to the company's constant presence in several places and various ecological surroundings, it becomes almost impossible to adapt the business to the natural seasons, as the scope of its operations may encompass many different seasons simultaneously. The Food Corp. has indeed made efforts to prioritise the rhythms of farming instead of business, e.g., through its engagements in agroecological development projects, which do not materialise directly in new consumer products or business gains. This illustrates an attempt to adapt to temporal elements of ecological embedding, but aligning the business with ecological and social rhythms is still seemingly a challenge, as Anna highlighted. The process of embedding is restrained by the scale and the logic of the business, making it questionable whether a multinational FMCG company ever really can align itself with the natural seasons.

In summary, it would be overly simplistic to say that The Local Farm is ecologically embedded and that The Food Corp. is not. Both businesses face their own struggles within each of the three dimensions, and sometimes the business is successful in one dimension at the expense of another. For instance, The Local Farm is sensitive towards place and the rhythms of change, but this comes at the cost of providing their products only for a certain group of customers. The Food Corp., on the other hand, can make their products accessible to more people, but this comes at the cost of being less sensitive towards places and the rhythms of natural change. Our empirical examples illustrate that the scale of the food business limits the degree to which an organisation can be ecologically embedded. Yet, food businesses of different kinds and sizes can place themselves upon and move along the continuum of ecological embedding, and thus, the potential of larger companies to pursue sufficiency should not be ruled out.

6. Conclusions

In this chapter, we contributed to a deeper understanding of sufficiency in the food industry. Since sufficiency generally presupposes a shift of focus from (unlimited) wants to vital needs, it may seem that the study of food production should be easy: food is a basic need and there needs to be enough of it for everyone. However, food production satisfies not only the nutritional needs of humans but also cultural and social ones. Moreover, food production is carried out by a great variety of organisations, ranging from small-scale farms and cooperatives to multinational corporations. Hence, we have suggested that sufficiency in the food industry should not be defined as an ideal state of production or business but rather as a process, which we have called "sufficiencing". While this process can take various forms, the underlying driver is an aspiration to organise production and consumption in a way that does not exceed the carrying capacity of the planet. It is essentially about a change in the human mindset towards engaging in more ecologically sensitive actions. Therefore, we proposed that ecological embeddedness – here defined as sensitivity towards place, other beings and natural rhythms – may enhance sufficiencing in food organisations. Acknowledging sufficiencing as well as ecological embedding as part of a process allows us to account for a wide range of food business rather than proposing that it is only alternative, small-scale, highly localised producers who can be sustainable. Such thinking also takes into account the opportunities for larger businesses, which many humans rely on to satisfy their needs for food, to step onto the pathways of strong sustainability.

The empirical examples we have explored are (intentionally) contrasting, which brings forth the diversity of challenges that various businesses face. In our exploration, we have deliberately moved away from providing calculations and attempting to quantify sufficiency. Rather, our interest lies in exploring nuances and imperfections, in understanding the stories and journeys of businesses. Digging for roots of sufficiency in food production brings to the surface trade-offs and doubts, which are a part of reality for all kinds of food-producing organisations. Our aim has not been to excuse the practices of large-scale, multinational corporations but to empathise with all kinds of struggles involved in stepping onto alternative pathways. It is only in theory that corporations can suddenly become local or cease to exist, and it would be reductionist to say that only those who live directly on and off the land can understand and appreciate nature and ecosystems. As our empirical examples show, stronger moral agency towards nature, humans and non-humans can develop among owners and managers of various kinds of businesses. As Leopold stated in his classic work, *The Land Ethic*: "no important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions" (1949: 113). Such individual transformations are unique depending on the people and businesses in question. Yet, showing the kind of sensitivity towards

the land that we have argued for here is more easily done if "the land" is close and visibly comprehensible, so that one can see the consequences and reciprocities of one's actions on nature (Nesterova 2023). Hence, there is a limit to how large a food organisation can be in an ideal case in order to still be deeply ecologically embedded.

Overall, it is not challenging to theorise about strongly sustainable food production through, e.g., seasonal, small-scale, organic food or using only native species of plants. The issue is rather how to step onto alternative pathways, such as sufficiencing, considering that food production is diverse and complex and connected to multiple other systems in society. For instance, most consumers in highly industrialised countries today do not live according to the seasons but rather follow standardised season-less diets. For food producers to be able to embed themselves ecologically, consumer-side adjustments are needed as well, such as (re)learning how to preserve food or adapting meals to the seasons. Viewing sufficiency as a process rather than an ideal benchmark allows us to perceive it not as something obstructive, associated only with imposed limits, or as something unachievable for the vast majority of organisations in the food industry but as a welcoming activity of contemplation and exploration, which can be approached with curiosity and empathy. We propose that ecological embedding supports such activity. Every food business, regardless of the modes of production, can support stronger moral agency towards the land and create room for digging for the roots of strongly sustainable food production and consumption.

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