Cultures of Sufficiency in Food Businesses : Proposing a Processual Systems Approach to Understand Cultures of Sufficiency

Hurtado Hurtado, Joshua

2024

Hurtado Hurtado, J, Salonen, H A, Nyfors, T, Heikkurinen, P & Wilén, K B 2024, Cultures of Sufficiency in Food Businesses : Proposing a Processual Systems Approach to Understand Cultures of Sufficiency. in M Gossen & L Niessen (eds), Sufficiency in Business : The Transformative Potential of Business for Sustainability. Transcript verlag, pp. 155-175. https://doi.org/10.1515/97838

http://hdl.handle.net/10138/585691
10.1515/9783839469101-011

Cultures of Sufficiency in Food Businesses

Proposing a Processual Systems Approach to Understand Cultures of Sufficiency

Joshua Hurtado Hurtado, Heini Salonen, Tina Nyfors, Pasi Heikkurinen and Kristoffer Wilén

Abstract *This chapter proposes a processual systems approach to examine organizational cultures of companies that practice sufficiency. We illustrate our approach by examining a food system and business network ecosystem in Finland: Agroecological Symbiosis. We show that maintaining a culture of sufficiency in companies is a continuous and evolving process.*

1. Introduction

Business organizations as powerful economic enactors have a significant role in defining, adopting and realizing sustainability practices. Currently, most businesses operate from a growth-oriented and competitive standpoint often at odds with environmental and social well-being (Heikkurinen/Bonnedahl 2013; Nesterova 2021). Such businesses tend to also emphasize efficiency and profitability in their goals and actions (Heikkurinen et al. 2019), as reflected in their organizational cultures. A culture of expansion, affluence and excess combined with effective organization can be seen as one of the root causes of the ongoing sustainability crisis (Smircich 1983). These cultures also disregard the role and agency of non-human actors. They differ markedly from cultures based on sufficiency which emphasize community, sharing, and the well-being of people and nature (Princen 2005; Jungell-Michelsson/Heikkurinen 2022). Business research traditionally portrays organizational culture as an instrument to be controlled and molded for managerial purposes, like superior economic performance (Chatman/O'Reilly 2016). The functionalist approach to studying organizational culture remains popular, as most studies use the instrumental view to examine the relationship between organizational culture and organizational performance (ibid). This view of culture is claimed to fail to provide a deep and rich understanding of organizational culture (Alvesson 2002).

Our approach to organizational cultures builds on the notions of *process* and *systems*, where the organization is conceptualized both as a process embedded in a cultural fabric, comprising an interplay between artefacts, values and basic assumptions (Whitehead 1978; Schein 1990), and as "a spatio-temporal concentration of energetic flows from the human and non-human worlds, where it is empirically impossible to pinpoint the boundaries between the registers of mind and matter" (Heikkurinen/Ruuska et al. 2021: 23). Inspired by Gregory Bateson (2000) and Kenneth Boulding (1956), we understand the organization as a systemic entity amongst other (more or less) ordered systems. On culture, our study draws on Pettigrew (1979) who also described creating organizational cultures in terms of processes and systems of becoming. He defined culture as a system, consisting of meanings given to tasks and people's actions at a time. In addition to an organization's culture being a system in itself, it is embedded in other systems, be they subsystems or oversystems of the organization, and interacts with them. For earthbound phenomena, like human doings and sayings, the planet operates as a focal system of survival and meaning.

In this study, we further assume that changing organizational culture may enable businesses to effectively adopt sustainable practices (Harris/Crane 2002; Baumgartner 2009). By espousing a set of beliefs, values and behaviors aligned with sufficiency, businesses could reduce their negative environmental and social impacts. However, addressing culture at the superficial artefact level is unlikely to lead to profound and sustained change in business culture. An examination of the underlying, taken-for-granted premises is needed, as noted by Harris and Crane (2002).

The purpose of this chapter is to understand the possibilities and the role of cultural processes in organizing business activities in line with the notion of sufficiency and outline a processual systems approach for the study of cultures. We find that such an approach to culture can lead to a more profound understanding of the principles underpinning business activities and what business actors consider effective, rational, or even possible in doing business. Identifying and understanding cultural elements that, on the one hand, prevent businesses from breaking free from old patterns of behavior and, on the other hand, enable adopting new practices in line with the logic of sufficiency (Princen 2005), is crucial to changing current business cultures to minimize human environmental impact. We claim that a mere technical focus on impacts is inadequate for reaching the ambitious targets of sustainability, manifested in the discourses and rhetoric of climate neutrality, net positive emissions and dematerialization. In other words, cultures of sufficiency go beyond calculations and measuring. Complementing the strategy of efficiency with one of sufficiency requires a closer examination of cultural aspects. In this chapter, we develop a frame that consists of three culturally embedded elements: enactors, enablers and enactments. We theoretically elaborate a processual systems approach to study suf-

ficiency in business, illustrating the approach using a case from a local, sustainable food system based on Agroecological Symbiosis developed in Palopuro, Finland.

We consider the system of Agroecological Symbiosis created in Palopuro to exemplify a case of sufficiency in business because it illustrates how businesses, as key enactors, have gone beyond a focus on profits, striving to meet human needs, like nutrition, community and collaboration. The businesses at Palopuro practice agroecological food production and generate renewable energy. Together they form the food system of Agroecological Symbiosis, in which they engage in reciprocal and mutually beneficial interactions with a wide range of other enactors. The businesses operating within Agroecological Symbiosis are concerned with remaining within the ecosystems' ecological boundaries and localizing production. Paying attention to elements of organizational culture, which we claim are processual, can sustain the sufficiency practices of businesses like those taking part in the system of Agroecological Symbiosis in Palopuro.

2. Organizational culture embedded in the ecosystem

2.1 Three generic cultural elements: enactors, enablers, enactments

We focus on three generic elements to understanding cultures of sufficiency, namely enactors, enablers and enactments. These three elements often feature prominently – yet separately – in the sustainability transitions and organizational sustainability literature (Sabella/Eid 2016; Heikkurinen et al. 2021; Wadham et al. 2023). In our view, they offer a useful base for building a conceptual frame to approach sufficiency in business.

We understand enactors as the principal (human and non-human) agents in each cultural setting, which reproduce or change the situation, be they dominant norms and practices or hegemonic institutions. When discussing agency in the context of sustainability transitions, the focus has been predominantly on human enactors, from individuals to corporate and political organizations (Fischer/Newig 2016). This anthropocentric perspective manifests in business cultures through the dominant understandings of sustainability: the triple bottom-line or linking together the economic, social and environmental domains of sustainability (Bonnedahl/Heikkurinen 2019). Even in accounts that address the need to consider non-human life forms, they are seen as external concerns rather than internal to sustainability practices (Nicholson/Kurucz 2019).

In contrast, recent research on sustainable business argues that the preference for human activity has been institutionalized at the expense of the non-human world and is complicit in increasing human environmental impact (Heikkurinen et al. 2016). The strong sustainability perspective overcomes this anthropocentric

focus to integrate the concerns of other species and socio-ecological systems, aiming to respect the integrity of individuals and species (Bonnedahl/Heikkurinen 2019). Recent discussions on sustainability practices for organizations highlight the relational nature of the agents that respect planetary boundaries. For example, Heikkurinen et al. note that "a key means of respecting nonhumans is to blur the boundaries between earthbound actors. Different forms of life unfold in a complex conjoint genesis with humans" (2021: 278).

Both human enactors (individuals, producer and consumer groups, organizations) and non-human enactors (plants, animals, fungi, microorganisms and ecosystemic elements like bodies of water) comprise sufficiency cultures. Individual human enactors can design a business model that adopts sufficiency as a central premise. The business itself, in its organizational charter, can embody sufficiency by describing its ethos and practice (Bocken/Short 2016; Kropfeld/Reichel 2021; Niessen/Bocken 2021). But non-human elements can also guide the practice and ethos of sufficiency in business. As Ortiz-Przychodzka et al. (2023) suggest, non-human entities negotiate with humans in performing economic activities. The authors give the example of bees, animals which make valuable honey in trees. This prompts humans who would otherwise cut down the trees to leave them alone so that they can later obtain honey from the bees' natural activities. Some bees defend themselves against wood producers and might sting them if threatened. These interactions suggest that the non-human world possesses more agency than often acknowledged from an anthropocentric viewpoint and can influence the activities of human beings towards sufficiency.

The second element of our frame, enablers, are the cultural elements that combine with biophysical elements and steer the enactors towards sustainability and specifically towards cultures of sufficiency in business. Culture does not only include artefacts, such as the products a business creates or the logotypes it uses, or restrict itself with an instrumental practice, such as establishing codes of conduct inside an organization to improve organizational performance. Culture, for us, operates akin to a constitutive worldview that underlies the values and basic assumptions that push the enactors towards sufficiency (or away from it) (Schein 1990). This culture becomes visible in organizational settings, which establish the parameters for the enactors. The enactors themselves contribute to the creation of culture through interactions that are informed or steered by their specific set of values and assumptions.

Enablers contributing to cultures of sufficiency in business go beyond general sustainability enablers in organizational culture. At the broadest scale, the constitutive worldview of cultures of sufficiency in business is premised on "enoughness" (Jungell-Michelsson/Heikkurinen 2022). This worldview manifests as an enabler through visions, values, business models, strategies and communication. According to Kantabutra (2020), sustainability-based organizational visions should

provide clarity and stability, be future-oriented and satisfy stakeholders. Organizational values that favor sustainability in corporations include perseverance against challenging conditions, responsibility towards society and the environment, innovation, generosity and integrity (Assortagoon/Kantabutra 2023). Business models that embrace sufficiency encourage sharing, extend product life, facilitate the reuse of existing products and offer immaterial services focused on enhancing social well-being and personal abilities (Bocken/Short 2016; Gossen et al. 2019). Niessen and Bocken (2021) propose that business sufficiency strategies could be structured according to four dimensions: consuming fewer items and resources (*less clutter*), designing products to last and be used for longer (*less speed*), producing and consuming locally and disentangling value chains (*less distance*) and encouraging consumers to be self-sufficient and collaborate (*less market*) (see also Sachs 1993). In other words, business strategies should aim at increasing the quality of production. Decreasing the amount of production and influencing customers to consume better and consume less are desirable (Heikkurinen et al. 2019). Influencing consumers so that they share the values of sufficiency requires effective communication. Gossen and Heinrich (2021) show how digitalisation allows companies to promote sufficiency communication through multiple channels and forms of content and suggest that inspiring customers to reduce consumption and change social norms may influence lifestyle changes, which in turn could benefit sufficiency-oriented companies.

The third element of our frame, enactments, focuses on the actions of, and interactions among, the human enactors, as well as on the dynamics between humans and non-humans. Enactments create and reveal culture: acting reflects underlying values and assumptions about the world and normative commitments and may contribute to changing organizational settings and cultural norms, as well as stabilizing them over time. At the scale of sustainable production, sufficiency enactments can manifest as a paradigm shift in business logic, where businesses *change priorities* by moving towards non-consumerism and escaping the imperative of maximizing profits (Jungell-Michelsson/Heikkurinen 2022). In the clothing industry, Freudenreich and Schaltegger (2020) suggest actions such as creating physically durable items of clothing, reusing high-quality clothing items and designing modular clothing with detachable parts as enactments of sufficiency. Niessen and Bocken (2021) similarly identify offering repair and refurbishing services, producing and consuming local products, organizing workshops to help others build their own furniture and grow their own food and buying and selling in second-hand shops as enactments of sufficiency.

Sufficiency enactments also refer to the relationships between the enactors themselves and the meaning they assign to the enactments. Beyeler and Jaeger-Erben (2022) highlight the social meanings of sufficiency in business, where enactments should manifest care, patience, local embeddedness, happiness and joy,

among other features. Moreover, the authors note, developing competencies is necessary for sufficiency business practice. Sufficiency enactments therefore include acquiring repairing skills, receiving feedback and continuously learning, building communities, collaborating with others and involving other stakeholders.

2.2 Processual system approach on enactors, enablers and enactments

We propose that the enactors, enablers and enactments constitute a frame that should be considered through a *processual systems* approach. Organizational cultures consist of multiple, interrelated processes that span a limited period of time and achieve partial stability, which we recognize when we encounter a particular culture. If we were to examine a food organization, which engages in food self-provisioning practices, we might find a process where two enactors – the self-provisioning farmer and the crop – are engaged in a mutually-nurturing relationship. In this simplified example, we disregard processes that would in reality be included, such as decision-making processes over work responsibilities or the kind of crops to be cultivated. The biophysical enabler in this case would be a fertile plot of land that allows the crop to grow in the regional climate. The enactments at this scale of analysis could consist of providing nutrients and watering the plants over many days and months. The crop is thus sustained by the farmer, and the crop gives the farmer their means of sustenance. This cycle repeats itself for this relationship and is replicated by other farmers in the organization.

We identify processuality in how the different elements of our frame constitute one another. In our example, the self-provisioning farmer and the crop are responsible for the continued sustenance of each other. The enabler of the fertile plot of land also creates the possibility for this relationship to flourish: it provides nutrients to the crops and gives the self-provisioning farmer a territory which allows them to identify and act as a farmer. The enabler, in this sense, is one condition of possibility for the enactors to exist. The same principle applies for the enactments: the enactment of watering the plants, done by the farmer towards the crops, reflects the action that sustains the mutually-nurturing relationship between the farmer and the crop. Without this enactment, the crop would perish, while the farmer would not obtain the food they need.

Moreover, we identify processuality in our frame because the enactors, enablers and enactments can themselves be transformed into each other, depending on the perspective of analysis and the temporality of the phenomenon under scrutiny. In the example of the food self-provisioning farmer, the fertile plot of land could be considered a more prominent enactor if looked at from a non-human perspective, which gives to the other enactor, the crops, the necessary nutrients to survive. Enablers for this relationship to flourish would be sunlight and humidity in the soil. The enactments between these two enactors would consist of growing fruits and

vegetables, which provide food for the self-provisioning farmer but also the means by which the plants reproduce themselves. If we shift the scope of the analysis to the organizational level, we could consider membership statutes as enablers of decision-making – an instance of enactments – that the self-provisioning farmer – an instance of enactor – has to make to maintain continuity and meet their responsibilities within the organization.

Figure 1: The Enactors, Enablers, Enactments frame through a processual systems approach. (Commissioned by the authors)

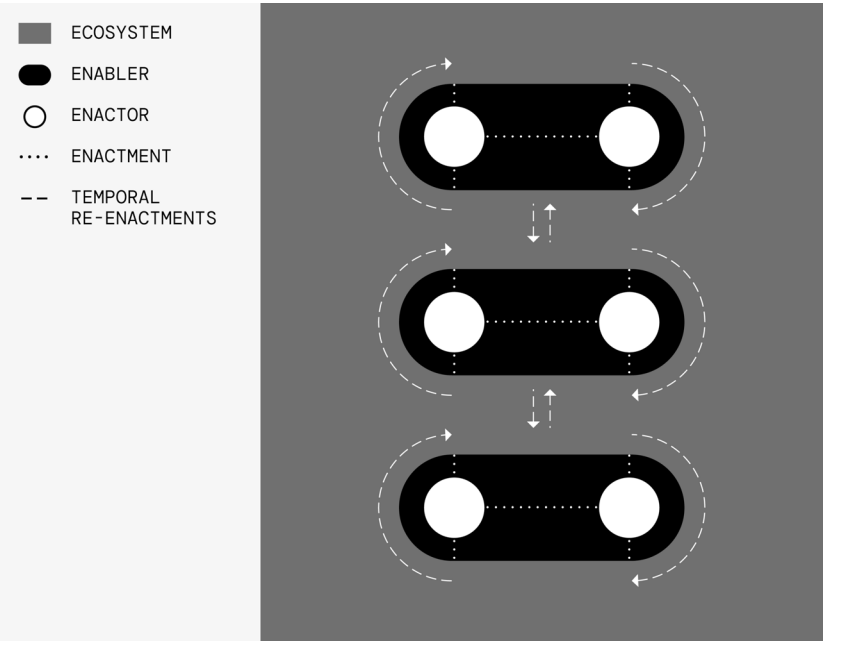


Figure 1 illustrates how we conceptualize the processual systems approach with the three elements of our frame. The enactors relate to one another in the form of enactments, and this is facilitated by the temporal, biophysical and cultural enablers. This relationship between each of these elements is re-enacted throughout time, giving it partial stability as a form of organizational culture. We propose this processual systems approach to the analysis of sufficiency cultures in business because it provides a starting point for identifying where elements that run counter to sufficiency and sustainability emerge and where sufficiency-oriented action should be implemented.

3. Case Agroecological Symbiosis: a food system that focuses on sufficiency

Agroecological Symbiosis (AES) is a sustainable food system model developed in Finland to reach sustainability at the system-level. The first of its kind was developed at Knehtilä farm, in Palopuro village, in southern Finland. More specifically, AES is:

> a form of food production and processing in which the farms, the food processors, and the energy producers function in an integrated and local manner. The operations are running in spatial proximity to each other allowing efficient material and energy integration (Helenius et al. 2020: 3).

Our analysis of AES is based on information obtained from three sources: 1) published academic research, 2) videos and websites that document processes in the AES food system, and 3) from ongoing research by some of this chapter's authors. The published academic research used ethnographic and participatory methods (Helenius et al. 2020; Mazac et al. 2021), which we considered valuable to present a textured depiction of the on-site dynamics at the Palopuro AES. The videos and websites offer an entry point to examining the enactments occurring at the Palopuro AES between different enactors from a systemic perspective (Healthy Future Project 2016; Eerikäinen 2019; Stenger 2022). Our own ongoing research involves interviewing the designers and participants of AES, including the leaders of two businesses that operate in the Knehtilä farm, where farming and food production takes place, and in Palopuro village. While this chapter offers more of a theoretical contribution, we ground our analysis of the culture at AES with information obtained from these sources.

The AES food system at Palopuro consists of a network of businesses, farmers and local inhabitants. Local entrepreneurs manage chicken coops and henhouses, vegetable farms and local biogas and food processing plants. The Global Network of Lighthouse Farms (2020) describes the Knehtilä farm as having an area of 380 hectares, where farmers cultivate cereals and buckwheat for both human food and chicken feed. The cereals undergo processing into organic snacks, granola and flakes, which are meant for human consumption. AES in the Knehtilä farm is also a net producer of renewable energy in the form of biogas. The biogas is then purified into biomethane in the on-site dry-anaerobic digesting biogas plant. The biomethane is used for farming activities in the AES and the surplus is sold to car drivers.

AES itself was designed as an alternative food system model that would reconfigure how food is produced in agriculture, processed for consumption and delivered to its consumers, although business activity is conducted within AES and is part of its central dynamics. In the Palopuro AES, several companies conduct business in

partnership with the farmers and processors. For example, an energy company invested in a biogas plant in the village as part of the AES, anticipating that the energy system in Finland will be more distributed in the future and wishing to partner with customers who have farms. Another company also works as part of the Palopuro AES and manages the supply chain, sales and agricultural production. Similarly, adopting a systemic perspective, farmers and processors earn their income through their business activities in the AES and interact with the final consumers of the agricultural produce in local and regional farmers' markets (Helenius et al. 2018).

The Palopuro AES in the Knehtilä farm is unique in Finland for three reasons. First, the biogas plant is the first in Finland built inside a crop farm, as biogas plants were previously built farther away from food-production sites. Second, the presence of multiple business organizations and human enactors (i.e. the farmers, processors and other local entrepreneurs) has been characterized as a multi-enterprise network with complementary business models that symbiotically support one another (Global Network of Lighthouse Farms 2020). Finally, the location of the Palopuro AES in the Knehtilä farm benefits from its history as a site of local cultural activity. The farm consequently invested in the construction of a meeting facility, small local restaurants and facilities for local artists and acting companies. For these reasons, while AES was originally developed as an agroecological food system, it can also be understood as a business ecosystem for food and renewable energy.

3.1 Enactors in the Agroecological Symbiosis of Palopuro

The sufficiency enactors in the Palopuro AES in the Knehtilä farm comprise both human and non-human enactors. The on-the-ground, human enactors are farmers and processors, who tend to the non-human enactors in the Palopuro AES and maintain the machinery and facilities. Other human enactors influence the AES' design, business model and organizational culture, like company administrators and analysts, academics, public officials and company CEOs. Finally, we find human enactors who do not have a continuous presence in the Palopuro AES but who support its existence, business activities and organizational culture by gathering there for convivial activities like drinking coffee, having meals, talking and enjoying the landscape. These consumers mostly live nearby in the Palopuro village, but some also come from other Finnish towns and cities. In addition to consumers, artists, musicians and acting companies occasionally provide entertainment and sustain the cultural traditions of Palopuro and the Knehtilä farm.

The human enactors are the most visible enactors to human observers and an ethnographic vignette beautifully captures the centrality of the human enactors to maintain the Palopuro AES as a sufficiency-based food system and renewable energy business ecosystem:

> People gather down both sides of the long tables, with exuberant conversations and easy smiles – this is a joyful space. Folks mingle about the vendor tables, kids run through the crowd, sellers stand behind collections of hand-crafted goods and wares for sale. The air is warm and heavy with the smell of coffee and cake. The room buzzes and hums with layers of sound (Mazac et al. 2021: 196).

This vignette displays the variety of human enactors that – at ephemeral moments – give the Palopuro AES a vibrant and dynamic social life.

The farmers' markets and café vendors of the Knehtilä farm are businesses that promote sufficiency by focusing on consumer needs instead of wants (Bocken/Short 2016). They form long-term relationships with their customers to bring them back to experience the farm's dynamic social life, but they also emphasize to their customers that by consuming products from the farm, they contribute to a sustainable agriculture business. Additionally, the food and energy businesses in the farm educate their customers on sufficiency by allowing them to see behind-the-scenes of food and energy production processes and the closed loops of the Palopuro AES. In doing so, they foster a reconsideration of sustainable production and consumption in consumers (Bocken et al. 2020).

The non-human enactors in the Palopuro AES are the various plants and crops cultivated on the farmland. These crops consist mainly of rapeseed, oats, barley, buckwheat, wheat, rye and oil hemp (Stenger 2022). Additionally, various animal species reside on the Knehtilä farm. Chickens are part of the poultry raised for human consumption, but other domesticated animals that inhabit the farmland include horses, sheep, goats and rabbits. Numerous other species also inhabit the place as part of the natural wildlife, including insects, wild birds and frogs.

AES is designed to make the relationships between the main enactors complementary rather than competitive, which favors sufficiency. Not all relationships, however, persist without conflict. A civil servant involved in AES' design emphasized that building an AES requires people with matching skills to willingly organise to make it successful: "You have to find the right collaborators, you have to agree, and you have to find the right economic bases for everybody" (Interviewee 1). The relationships between the human and non-human enactors are also negotiated: insects and birds might find the crops tasty and feed on them, reducing their value for the human enactors. The domesticated farm animals also need to be cared for and live as stress-free as possible, in order to produce quality food and manure.

3.2 Enablers of Agroecological Symbiosis at Palopuro

The enablers of sufficiency at the Palopuro AES can be divided into two categories: biophysical and socio-cultural enablers. The biophysical enablers refer to those combinations of natural and human-made elements that provide the material founda-

tions for the AES to be operational and successful as a business ecosystem based on sufficiency. These enablers include spatial proximity between elements – farming location, biorefineries, chicken coops, the bakery and the mills, manures, feedstock, etc. – that enables optimal resource efficiency through symbiotic design and adaptiveness of the agroecosystem to its geographical location. Together, the enablers contribute to sufficiency by orienting the farmers' and processors' attention to the agroecosystem's productive capacity and ensuring that the AES only produces what its own internal inputs allow, without external biomass and nitrogen inputs, and that the soil retains fertility over time (Helenius et al. 2020)

The socio-cultural enablers refer to the values and behavior of the human beings working within, supporting or connected to the Palopuro AES. Values and assumptions manifest as behavior that enables adopting a culture of relationships and reciprocity towards human beings and ecosystem services. The human enactors realize that an "ecosystem has multiple functions in the mosaic that comprises the biosphere; while it is still used by humans to extract products and value, humans are obliged to return these services" (Helenius et al. 2020: 5). Without this socio-cultural enabler, the human enactors would behave in an extractive way as aligned with the dominant industrial food system (Mazac et al. 2021).

Two additional socio-cultural enablers reinforce the relational and reciprocal behavior and highlight the importance of linking oneself affectively with the food system. The first is the development of a sense of food and food citizenship that psychologically and socio-culturally connects people to the food system they are part of and benefit from (Helenius et al. 2020). AES does this by openly and transparently explaining its food and energy production system and how the AES operates to be self-sufficient and discussing the relevance of this mode of production in the recurring cultural events hosted at Knehtilä farm. While this sense of food and food citizenship remains under development, the fact that the local population enjoys convening and consuming the fresh products of the Palopuro AES in the café at Knehtilä farm suggests that they recognize the value of this form of food production.

The second socio-cultural enabler is the sense of community. One of the human enactors of the Palopuro AES describes this enabler in the following terms: "[a] mutual understanding, how they [people] feel and how they live. And an overall compassion can be cultivated by being there, to understand that you are also part of the system" (Interviewee 5). This enactor noted that a significant challenge in cultivating this sense of community is that human enactors struggle to ascribe to AES the fact that the spaces in the Knehtilä farm were created to facilitate their gatherings and socio-cultural events and that eating fresh organic products is enabled because of their proximity to their place of production. Fostering connections at the cognitive and affective level is meant to strengthen the operations of the Palopuro AES and nudge the enactors towards sufficiency.

Importantly, we highlight that the biophysical enablers work as enablers because of their interaction with the socio-cultural ones. That is, biophysical enablers such as spatial proximity and biological diversity adopt an enabling function because AES designs them to operate the way they do in producing food and energy. Without interacting with the socio-cultural enablers, the biophysical enablers would still exist, but there is no guarantee that they would constitute enablers for the business ecosystem.

Policy also plays a crucial role in creating an enabling environment for initiatives such as AES. This includes improving the financial viability for sufficiency-oriented production (Niessen/Bocken 2021; Beyeler et al. 2022). Relevant policies could systematically support desired features and types of food businesses while discouraging unsustainable ones as well as remove subsidies on the former (Nyfors et al. 2020).

3.3 Enactments of Agroecological Symbiosis at Palopuro

In this chapter, we limit ourselves to describing the most prominent enactments that contribute to the sufficiency culture of AES. The first set of enactments involves those which we call *sufficient production enactments*, which focus on the ecological aspects of food and energy production in the AES. These enactments include rotating the crops to optimize the fertility of the soil, feeding the chickens and other livestock, collecting manure, processing the manure for the production of biogas, drying the grains, fertilizing the crops with the digestate (i.e. the residue of the biogas production process) and recycling phosphorus and other mineral plant nutrients (Koppelmäki et al. 2019; Helenius et al. 2020; Stenger 2022). These enactments represent sufficient production because the production of food and energy based on AES constrains itself by respecting the biophysical limits of the agroecosystem, thus abiding by the AES principle of "what is enough must not exceed what is too much for the ecosystems that the human shares with other species, both presently and in the future" (Helenius et al. 2020: 8).

A second set of enactments, the *socio-cultural behavior* enactments, capture all the human activities in the AES that contribute to sufficiency. These activities start at the production stage and continue until the moment of consumption and the performance of convivial activities. The enactments include designing the green manure leys, protecting biodiversity, self-processing of primary organic products, cooking food for local consumption, planning musical and cultural events for the local population and, perhaps most importantly, boosting the food literacy of the consumers through informative talks and events (Mazac et al. 2021). Numerous socio-cultural enactments result from cocreation facilitated by academics and policymakers, but the main enactors remain the local farmers, a bakery owner, the food processing businesses and the biogas energy company. Together, they developed the AES model

and modified it to suit their individual needs but also the economic and socio-cultural needs of Palopuro village (Helenius et al. 2020). The socio-cultural enactments, important for businesses in AES, continuously combine with the sufficient production enactments to orient the businesses as organizations and the individual human members towards sufficiency.

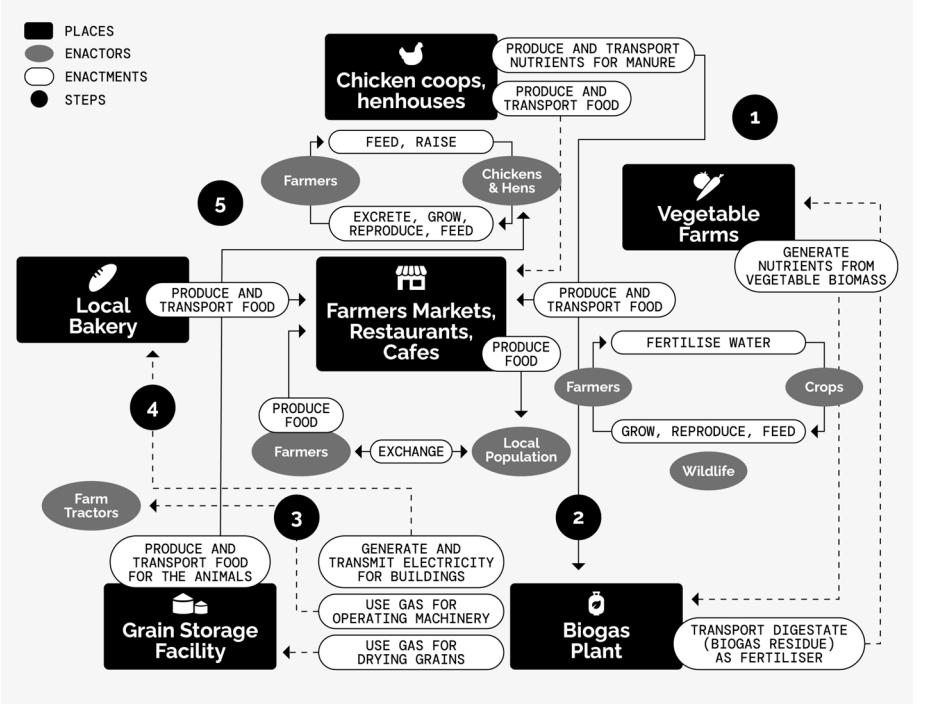
The final set of enactments constitute *non-human* enactments. Because we, the authors of this chapter, are human beings, we cannot properly characterize the significance of these enactments, but we can identify them by relying on second-hand accounts and observation. Some of the non-human enactments we identify include pollination, eating, excreting, reproducing, defending one's offspring, grazing, swimming and communicating with other enactors with body language. Important for the sufficiency culture of AES as a business ecosystem is that the enactments of the non-humans provide parameters for humans to understand whether they are engaging in behaviors that go against sufficiency premises. For example, disrupted reproduction patterns among wildlife would cause concern since they might indicate something in the ecosystem limits the different enactors' ability to continue with their eco-sufficient enactments.

3.4 Agroecological Symbiosis as a culture of sufficiency through the processual lens

AES embodies a culture of sufficiency in business because the enactors, enablers and enactments are oriented to produce enough or just what is needed, while ensuring staying within biophysical capacities of the agroecosystem without exceeding them. AES also represents sufficiency in business because the members of the business ecosystem – farmers, processors, local entrepreneurs and the local population in their role as consumers – do not seek to maximize their profits and extract resources at the expense of humans and non-humans. The way the enactors relate to one another via their enactments and facilitated by the enablers in the Palopuro AES reveals a careful consideration of the needs of the other enactors and of the whole agroecosystem. The business culture of sufficiency embodied by AES allows each enactor to benefit from the operations on the farm's premises when operating successfully.

We exemplify the processual character of the AES culture of sufficiency by describing how AES operates at a system level in Palopuro. We limit our description because of space constraints but outline the main processes at the system level and characterize them according to their temporal perspective and the co-constitution of elements. Figure 2 displays these processes.

Figure 2: The Palopuro AES as a series of interconnected processes at the system level. (Commissioned by the authors)



The first process is the food production in the chicken coops and henhouses and in the vegetable farms. The enactors involve the farmers, the chickens and hens and the crops. The farmers feed and raise the chickens and hens, while the hens excrete, grow, reproduce and feed themselves, in the process giving the farmers what they need in the form of manure, eggs and eventually chicken meat. The farmers fertilize and water the crops, among other actions, while the crops grow, reproduce and eventually feed the farmers. Wildlife also becomes an enactor in the vegetable farms because the farmers respect it with minimal intervention. These enactments are performed throughout time and may evolve according to the enactors' needs, creating patterns of enactments that do not devolve into extractive forms seen in the industrial food systems.

The second process displayed is the collection of manure from the chicken coops and the henhouse and the biomass obtained from some crops in the vegetable farms. The farmers, taking the role of enactors, collect these elements and transport them to the biogas plant. This is where the third process occurs: dry anaerobic digestion transforms the manure and the biomass into biogas. This biogas is then used to dry

grain, drive the tractors and power up other mobile machinery and to provide electricity for the organic bakery. At the same time, the digestate is returned in the form of fertilizer to the vegetable farms. The fourth process involves the farmers obtaining grain to feed the animals, represented by the chickens and hens in our example. Both the crops in the vegetable farms and the chickens and hens reciprocate what the farmers do by replicating their enactments in the first process. Together, processes one to four depict the *symbiotic* processes in the Palopuro AES, which encourage sufficiency.

The final process involves the farmers and processors adding value to their food products so that they can sell them on-site at the farmers' markets, the restaurants and the cafés. In our example, the main human enactors are the farmers and the local population. These two enactors perform the enactment of exchange, where the local population act as consumers for the farmers' organic products, giving them money in return. Importantly, the enactments between farmers and the local population do not end in the enactment of exchange. Instead, they persist over time, as the local population gradually cultivates a sense of connection towards the Palopuro AES and (from what we have seen and been told) wishes to return periodically. In periodically returning to the Palopuro AES, the customers evolve from mere consumers to food citizens.

Specific to the culture of sufficiency at the Palopuro AES, food and energy production is intentionally displayed (whenever possible) to the local population. The local population gradually recognizes that the AES system works because of its closed loops of matter and energy flows but also because it respects the agroecosystem's biophysical limits and the farmers remain attentive to the needs of the farm animals and wildlife. This is done to limit consumption of the customers when participating in economic exchanges at the farmers' markets, restaurants and cafés, allowing the farmers and processors to practice eco-sufficient production. This remains an ongoing process because instilling sufficiency ideas presents similar challenges to creating a community, like creating stable, affective bonds, mutual understanding and compassion for others.

4. Discussion

Our processual systems approach exemplifies how businesses could be oriented towards sufficiency by identifying the enactors, their enablers of sufficiency and how their enactments further or constrain sufficiency. The business enactors in AES – individual farmers and the farmer's markets, cafés, food processing and energy production companies –illustrate several business sufficiency strategies as explained by Bocken et al. (2020) and by Beyeler and Jaeger-Erben (2022). They enact conscious sales and marketing techniques by focusing on needs and aiming for long-term re-

lationships with customers. They encourage their customers to rethink their relationship to consumption and their relationship to others –that is, they cultivate sociocultural enablers of sufficiency – by showing them the behind-the-scenes production processes and the other enactors involved. These experiences elicit the formation of an emotional bond with the Palopuro AES system, which works to affect and change the underlying assumptions of the customer enactors. This interrelationship between the various enactors acts as a process where engaging consumers and the building of community become the enablers that allow consequent enactments of a sufficiency culture. Over time, this cyclical process creates, maintains and reproduces a culture that espouses sufficiency principles. The various businesses also collaborate with local stakeholders (including non-human enactors, like wildlife and the farm animals), limit the production space through localized production and limit the consumption space by making products available mostly in nearby regions.

Furthermore, the businesses in AES embody the cross-cutting characteristics discussed by Beyeler and Jaeger-Erben (2022) of care, openness to learning, and patience. Care for the well-being of the employees and the environment underpins the operation of the AES system and manifests along the entire supply chain (from the farms to the service points like restaurants and cafés). The Palopuro AES system, being the first of its kind, involves continuous learning from all enactors involved, as the businesses continuously reorient themselves to ensure remaining within the ecosystems' boundaries. Patience is manifested, for example, in the discussions among different businesses, who collaboratively decide on what to farm and serve at the local restaurants and cafés, depending on the season and the needs of the agroecosystems.

Our processual systems approach suggests that for the practice of sufficiency in business, it is important to cultivate the socio-cultural enablers that allow sufficiency to be sustained, or even enhanced, over time. For example, a relational and reciprocal culture should be fostered as an enabler to incentivize producers and consumers to respect the boundaries of ecosystems, in this case the agroecosystems AES relies on. This is done at Palopuro by showing the local population the production processes and explaining their relevance, thereby creating a sense of connection and reciprocal care between the ecosystems, the producers and the consumers. Similarly, as depicted in Figure 2, the interconnected processes require the continuous performance of sufficiency enactments so that the businesses maintain stability in their sufficiency practices. The performance of the enactments should be distributed: it is not enough for only producers or only consumers to perform them, but all members in a business ecosystem (firms, the local population, policy designers) should aim to enact sufficiency as a core feature of their business practice, thereby also creating a shared culture of sufficiency.

The case of AES also highlights the need to move from anthropocentric to a more nuanced ecocentric thinking when trying to conceive a sustainable business. Or as

Korten (2021) argues: to move from "ego-nomics" towards "eco-nomics" – a system based on community that acknowledges the limits of a living earth but produces enough for material sufficiency and understands that the precondition for any business is a healthy and complex web of life. Specific business policies for achieving these goals could fall under the *nudging* and *cooperation* categories discussed by Nyfors et al. (2020). AES shows how nudging policies for sufficiency in business could include making the customer enactors aware of the whole life cycle of a product and creating spaces that facilitate reciprocal relations between enactors, while AES illustrates cooperation policies by having different businesses in a food system making decisions together and complementing the others' business models.

5. Conclusion

In addition to developing a processual systems approach to the study of sufficiency in business and particularly focusing on culturally sensitive elements of enactors, enablers and enactments, we make two main contributions. First, we show how an approach to studying business cultures of sufficiency can benefit from moving beyond an anthropocentric understanding of organizations, businesses and stakeholders. In the enactors, enablers and enactments frame, we position the non-human enactors as equally relevant to the sufficiency processes of businesses as the human enactors and hereby take a more inclusive approach to phenomena. This responds to the call for non-anthropocentric research designs and allows us to see that an organizational business culture that promotes sufficiency needs to understand the multiple enactments performed by the enactors within it as matter-energy flows that connect the human to the non-human world (Heikkurinen/Ruuska et al. 2021).

Our second main contribution is about highlighting how practicing and sustaining a culture of sufficiency in business is *a continuous and evolving process*. Sufficiency practices are not one-and-done singular enactments but a web of enactments that should be stable over time to work. This is important to keep in mind when trying to integrate sufficiency ideas into a non-sufficient business. It is not enough to organize specific events that promote sufficiency or to perform singular enactments aligned to sufficiency ideas. Instead, multiple interconnected processes should be reorganized in line with sufficiency. This reorganization towards sufficiency takes time. As we see in the case of AES, significant challenges remain, like orienting the human enactors to recognize themselves as a community and instilling ideas about sufficiency in consumers, which is necessary to reduce tensions between the organizational aims and the external operational environment. For this reason, once enactments of sufficiency are performed, they *need to continue being performed* so that

sufficiency becomes a focal new norm for the business and for the wider socio-cultural ecosystem.

Funding

Joshua Hurtado's work was supported by the Maj and Tor Nessling Foundation, grant agreement 202200237. Tina Nyfors' work was supported by the Tiina and Antti Herlin Foundation. This work was also supported by the Research Council of Finland grant number 343277 – Skills of self-provisioning in rural communities (SOS) Research Project.

References

Alvesson, Mats (2002): Understanding Organizational Culture, London: Sage.

Assoratgoon, Waewkanee/Kantabutra, Sooksan (2023): "Toward a Sustainability Organizational Culture Model." In: Journal of Cleaner Production 400, 136666. https://doi.org/10.1016/j.jclepro.2023.136666.

Bateson, Gregory (2000): Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology, Chicago: University of Chicago Press.

Baumgartner, Rupert J. (2009): "Organizational Culture and Leadership: Preconditions for the Development of a Sustainable Corporation." In: Sustainable Development 17/2, pp. 102–113. https://doi.org/10.1002/sd.405.

Beyeler, Laura/Jaeger-Erben, Melanie (2022): "How to Make More of Less: Characteristics of Sufficiency in Business Practices." In: Frontiers in Sustainability 3, 949710. https://doi.org/10.3389/frsus.2022.949710.

Bocken, Nancy/Smeke Morales, Lisa/Lehner, Matthias (2020): "Sufficiency Business Strategies in the Food Industry – The Case of Oatly." In: Sustainability 12/3, 824. https://doi.org/10.3390/su12030824.

Bocken, Nancy/Short, Samuel William (2016): "Towards a Sufficiency-Driven Business Model: Experiences and Opportunities." In: Environmental Innovation and Societal Transitions 18, pp. 41–61. https://doi.org/10.1016/j.eist.2015.07.010.

Bonnedahl, Karl Johan/Heikkurinen, Pasi (2019): "The Case for Strong Sustainability." In: Karl Johan Bonnedahl/Pasi Heikkurinen (eds.), Strongly Sustainable Societies: Organising Human Activities on a Hot and Full Earth, Abingdon: Routledge, pp. 1–20.

Boulding, Kenneth (1956): "General Systems Theory: The Skeleton of Science." In: Management Science 2/3, pp. 197–208. https://www.jstor.org/stable/2627132.

Chatman, Jennifer A./O'Reilly, Charles A. (2016): "Paradigm Lost: Reinvigorating the Study of Organizational Culture." In: Research in Organizational Behavior 36, pp. 199–224. https://doi.org/10.1016/j.riob.2016.11.004.

Eerikäinen, Tapio (2019): "Solving It Together" (Policy Presentation). Helsinki, LUKE: Natural Resources Institute Finland.

Fischer, Lisa-Britt/Newig, Jens (2016): "Importance of Actors and Agency in Sustainability Transitions: A Systematic Exploration of the Literature." In: Sustainability 8/5, 476. https://doi.org/10.3390/su8050476.

Freudenreich, Birte/Schaltegger, Stefan (2020): "Developing Sufficiency-Oriented Offerings for Clothing Users: Business Approaches to Support Consumption Reduction." In: Journal of Cleaner Production 247, 119589. https://doi.org/10.1016/j.jclepro.2019.119589.

Global Network of Lighthouse Farms (2020): "Palopuro Agroecological Symbiosis: Finland." In: Community, Energy Production & Biogas (blog), Global Network of Lighthouse Farms 2020, 6.12.2023 (https://www.lighthousefarmnetwork.com/lighthouse-farms/palopuro-agroecological-symbiosis).

Gossen, Maike/Heinrich, Anneli (2021): "Encouraging Consumption Reduction: Findings of a Qualitative Study with Clothing Companies on Sufficiency-Promoting Communication." In: Cleaner and Responsible Consumption 3, 100028. https://doi.org/10.1016/j.clrc.2021.100028.

Gossen, Maike/Ziesemer, Florence/Schrader, Ulf (2019): "Why and How Commercial Marketing Should Promote Sufficient Consumption: A Systematic Literature Review." In: Journal of Macromarketing 39/3, pp. 252–69. https://doi.org/10.1177/0276146719866238.

Harris, Lloyd C./Crane, Andrew (2002): "The Greening of Organizational Culture: Management Views on the Depth, Degree and Diffusion of Change." In: Journal of Organizational Change Management 15/3, pp. 214–34. https://doi.org/10.1108/09534810210429273.

Healthy Future Project (2016): "Knehtila Tila – Menu Introduction – Minna Sakki-Eerola and Paula." [Video]. Palopuro, 6.12.2023 (https://www.youtube.com/watch?v=wT0R4TRRHzs).

Heikkurinen, Pasi/Bonnedahl, Karl Johan (2013): "Corporate responsibility for sustainable development: a review and conceptual comparison of market- and stakeholder-oriented strategies." In: Journal of Cleaner Production 43, pp. 191–198. https://doi.org/10.1016/j.jclepro.2012.12.021.

Heikkurinen, Pasi/Clegg, Stewart/Pinnington, Ashly H./Nicolopoulou, Katerina/Alcaraz, Jose M. (2021): "Managing the Anthropocene: Relational Agency and Power to Respect Planetary Boundaries." In: Organization & Environment 34/2, pp. 267–86. https://doi.org/10.1177/1086026619881145.

Heikkurinen, Pasi/Rinkinen, Jenny/Järvensivu, Timo/Wilén, Kristoffer/Ruuska, Toni (2016): "Organising in the Anthropocene: An Ontological Outline for Eco-

centric Theorising." In: Journal of Cleaner Production 113, pp. 705–14. https://doi.org/10.1016/j.jclepro.2015.12.016.

Heikkurinen, Pasi/Ruuska, Toni/Kuokkanen, Anna/Russell, Sally (2021): "Leaving Productivism behind: Towards a Holistic and Processual Philosophy of Ecological Management." In: Philosophy of Management 20, pp. 21–36. https://doi.org/10.1007/s40926-019-00109-w.

Heikkurinen, Pasi/Young, C. William/Morgan, Elizabeth (2019): "Business for Sustainable Change: Extending Eco-Efficiency and Eco-Sufficiency Strategies to Consumers." In: Journal of Cleaner Production 218, pp. 656–64. https://doi.org/10.1016/j.jclepro.2019.02.053.

Helenius, Juha/Hagolani-Albov, Sophia E./Koppelmäki, Kari (2020): "Co-Creating Agroecological Symbioses (AES) for Sustainable Food System Networks." In: Frontiers in Sustainable Food Systems 4, pp. 1–16. https://doi.org/10.3389/fsufs.2020.588715.

Helenius, Juha/Koppelmäki, Kari/Sophia E., Hagolani-Albov (2018): "Agroecological Symbiosis." In: Scaling-up Agroecology to Achieve the Sustainable Development Goals: 2nd International Symposium on Agroecology. Helsinki: University of Helsinki/FAO, 6.12.2023 (http://www.fao.org/agroecology/database/detail/es/c/1144155/).

Jungell-Michelsson, Jessica/Heikkurinen, Pasi (2022): "Sufficiency: A Systematic Literature Review." In: Ecological Economics 195, 107380. https://doi.org/10.1016/j.ecolecon.2022.107380.

Kantabutra, Sooksan (2020): "Toward an Organizational Theory of Sustainability Vision." In: Sustainability 12/3, 1125. https://doi.org/10.3390/su12031125.

Koppelmäki, Kari/Parviainen, Tuure/Virkkunen, Elina/Winquist, Erika/Schulte, Rogier P. O./Helenius, Juha (2019): "Ecological Intensification by Integrating Biogas Production into Nutrient Cycling: Modeling the Case of Agroecological Symbiosis." In: Agricultural Systems 170, pp. 39–48. https://doi.org/10.1016/j.agsy.2018.12.007.

Korten, David (2021): "Ecological Civilization: From Emergency to Emergence," 6.12.2023 (https://davidkorten.org/wp-content/uploads/2021/11/Korten-EcoCiv-11032021.pdf).

Kropfeld, Maren Ingrid/Reichel André (2021b): "The Business Model of Enough: Value Creation for Sufficiency-Oriented Businesses." In: Annabeth Aagaard/Florian Lüdeke-Freund/Peter Wells (eds.), Business Models for Sustainability Transitions, Cham: Springer, pp. 163–189. https://doi.org/10.1007/978-3-030-77580-3_6.

Mazac, Rachel/Hagolani-Albov, Sophia E./Tuomisto, Hanna L. (2021): "Agroecological Symbiosis." In: C. Parker Krieg/Reetta Toivanen (eds.), Situating Sustainability: A Handbook of Contexts and Concepts, Helsinki: Helsinki University Press, pp. 195–210.

Nesterova, Iana (2021): "Small Firms as Agents of Sustainable Change." In: Futures 127, 102705. https://doi.org/10.1016/j.futures.2021.102705.

Nicholson, Jessica/Kurucz, Elizabeth (2019): "Relational Leadership for Sustainability: Building an Ethical Framework from the Moral Theory of "Ethics of Care." In: Journal of Business Ethics 156/1, pp. 25–43. https://doi.org/10.1007/s10551-017-3593-4.

Niessen, Laura/Bocken, Nancy M. P. (2021): "How Can Businesses Drive Sufficiency? The Business for Sufficiency Framework." In: Sustainable Production and Consumption 28, pp. 1090–1103. https://doi.org/10.1016/j.spc.2021.07.030.

Nyfors, Tina/Linnanen, Lassi/Nissinen, Ari/Seppälä, Jyri/Saarinen, Merja/Regina, Kristiina/Heinonen, Tero/Viri, Riku/Liimatainen, Heikki (2020): "Ecological Sufficiency in Climate Policy: Towards Policies for Recomposing Consumption." In: Futura 3.

Ortiz-Przychodzka, Stefan/Benavides-Frías, Camila/Raymond, Christopher M./Díaz-Reviriego, Isabel/Hanspach, Jan (2023): "Rethinking Economic Practices and Values As Assemblages of More-Than-Human Relations." In: Ecological Economics 211, 107866. https://doi.org/10.1016/j.ecolecon.2023.107866.

Pettigrew, Andrew M. (1979): "On Studying Organizational Cultures." In: Administrative Science Quarterly 24/4, pp. 570–81. https://doi.org/10.2307/2392363.

Princen, Thomas (2005): The logic of sufficiency, Cambridge: MIT Press.

Sabella, Anton R./Eid, Niveen L. (2016): "A Strategic Perspective of Social Enterprise Sustainability." In: Journal of General Management 41/4, pp. 71–89. https://doi.org/10.1177/030630701604100405.

Sachs, Wolfgang (1993): "Die vier E's. Merkposten für einen massvollen Lebensstil." In: Politische Ökologie 11/33, pp. 69–72, 6.12.2023 (https://epub.wupperinst.org/frontdoor/deliver/index/docId/66/file/66_Sachs.pdf).

Schein, Edgar H. (1990): "Organizational Culture." In: American Psychologist 45/2, pp. 109–119. https://psycnet.apa.org/doi/10.1037/0003-066X.45.2.109.

Smircich, Linda (1983): "Concepts of Culture and Organizational Analysis." In: Administrative Science Quarterly 28/3, pp. 339–358. https://doi.org/10.2307/2392246.

Stenger, Wif (2022): "Self-Sufficient Organic Finnish Farm Grows Its Own Fuel and a Greener Future." This Is Finland (blog), 7.12.2023 (https://finland.fi/life-society/self-sufficient-organic-finnish-farm-grows-its-own-fuel-and-a-greener-future/).

Wadham, Helen/Wallace, Carrianne/Furtado, Tamzin (2023): "Agents of Sustainability: How Horses and People Co-create, Enact and Embed the Good Life in Rural Places." In: Sociologia Ruralis 63/3, pp. 390–414. https://doi.org/10.1111/soru.12387.

Whitehead, Alfred North (1978): Process and Reality, New York: Simon and Schuster.