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Reproducing biocultural heritage landscapes through alternative and retro-innovative food production

Eva Svensson^a , Margareta Dahlström^b , Hilde Rigmor Amundsen^c  and Marius Kjørsberg^d 

^aDepartment of Political, Historical, Religious and Cultural Studies, Centre for Research on Sustainable Societal Transformation, Karlstad University, Karlstad, Sweden; ^bDepartment of Geography, Media and Communication, Centre for Research on Sustainable Societal Transformation, Karlstad University, Karlstad, Sweden; ^cDepartment of Heritage and Society, The Norwegian Institute for Cultural Heritage Research, Oslo, Norway; ^dDepartment of Forestry and Wildlife Management, Inland Norway University of Applied Sciences, Koppang, Norway

ABSTRACT

Landscapes rich in biocultural heritage are declining en masse across Europe. This is due to the effects of countryside depopulation and to large-scale, industrial agriculture. Landscape heritage and its associated biodiversity largely depend on pre-industrial agrarian management. Because authoritative conservation cares only for minor, more spectacular, landscape segments, other forms of everyday management of the more mundane biocultural heritage are needed. Herein, innovative, alternative food producers (i.e. environmentally and animal-friendly farmers) are investigated as potential stewards of biocultural heritage. The results show that alternative food producers contribute to new ways of reproducing the biocultural heritage, albeit with greater emphasis on its 'green' side (e.g. biodiversity) than that of cultural heritage. They also face numerous challenges that threaten their businesses.

KEYWORDS

Biocultural heritage; alternative food production; cultural landscapes; biodiversity; retro-innovation

Introduction

In 2009, Anders and Anna¹ bought an 18th-century manor house in a depopulated rural area far from urban centres. They had been looking for a small croft, with an ambition of becoming generally self-sustaining. The manor house they ended up with, one in urgent need of repairs, was more than they had asked for. However, its purchase became the starting point for their new type of life. The couple had a passion for nature, livestock, and non-mechanical agriculture. An interest in history and heritage grew from their house renovations and from engaging with the inventory of old farming implements the previous owners had left behind.

Anders and Anna ploughed with draught horses and historical tools, cultivated ecological vegetables and crops, and rehabilitated overgrown meadows and grazing land with help from grazing sheep. They became skilled in historical building techniques as they renovated their manor house. They tried to run a restaurant on the farm, although this proved too challenging due to

CONTACT Eva Svensson  eva.svensson@kau.se

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external factors, such as regulations on food security. To the couple curating heritage, promoting the natural environment, and producing food were integrated activities, in contrast to the sectorised management traditions regarding these fields in Scandinavia.

The research behind this paper had a similar starting point, to integrate natural and cultural heritage studies in agrarian landscapes. For this purpose, the concept 'biocultural heritage', encompassing both aspects, was used (Eriksson, 2018; Lindholm & Ekblom, 2019), as will be discussed in more detail below.

Reproduction of biocultural heritage is dependent on active land use. Thus, countryside desertion poses a threat to the conservation of biocultural heritage. Countryside desertion is related to modernisation and factors pulling people to cities, such as new job opportunities and modern housing, as well as agricultural and forestry industrialisation and mechanisation. Almost everywhere, people are leaving the countryside and moving to cities. However, there are some counter-trends, in which people, such as Anders and Anna, are leaving the cities and moving to the countryside, but most commonly to rural areas near cities (Amcoff, 2020).

Farming has become increasingly concentrated in larger, more economically viable units, which need fewer workers. Over the last century, much agrarian land in Scandinavia, especially smaller holdings and land outside the fertile plains has been abandoned and overgrown. Former fields and meadows are now commonly used for spruce plantations, transformed from agrarian to forestry production—often using plantation and clearcutting methods that are detrimental to the biocultural heritage (Gren & Norman, 2010). Also, in the more open and fertile plains areas the semi-natural grasslands, housing important biodiversity, are decreasing considerably (Eriksson, 2022).

Researchers have pointed out that as pre-industrial, historical agrarian uses fall out of practice, these landscapes become poorer and biodiversity tends to decline. Landscape heritage and biodiversity thus depend on pre-industrial forms of agrarian management. The discontinuation of such practices takes place, rapidly across much of Europe, resulting in a massive decline in biocultural heritage, including biodiversity and landscape-associated cultural history (e.g. Krauß & Olwig, 2018; Peřinková et al., 2022; Rotherham, 2015).

One way of preserving landscapes rich in biocultural heritage is conservation. However, conservation is only possible in spatially limited areas of special value to nature conservation and/or heritage management. Conservation may also include the risk of heritagisation, that is, transforming previously functional items into heritage on the grounds of being considered outdated, by prohibiting the introduction of new land use practices and thus uncoupling the conserved area from the practices that produced it (Harrison, 2013; Stagno, 2019; Walsh, 1992, see also Cevalco, Moreno, & Hearn, 2015).

Farmers like Anders and Anna, who use everyday, non-industrial landscape management methods for food production, represent another possibility for reproducing biocultural heritage and preserving historical agrarian landscapes (Barthel, Crumley, & Svedin, 2013). This production mode is herein called 'alternative food production'; that is, environmentally and animal-friendly production with limited use of large farming machines which mainly targets a local or niche market (for research on different aspects of the alternative food network, see for example, Dubois, 2018; Dubois, 2019; Franklin, Newton, & McEntee, 2011; Goodman, 2003; Kneafsy et al., 2013; Marsden & Smith, 2005; Roep & Wiskerke, 2004).

This paper explores the connections between alternative food producers like Anders and Anna and the reproduction of biocultural heritage, and examines the potentials and obstacles that such farmers experience in their everyday production. The study was conducted as an Interreg Sweden–Norway project, Biokuma, based in the Värmland region of Sweden and the Hedmark region of Norway in which researchers in archaeology, human geography, and ecology participated. Different traits of biocultural heritage were recorded through field surveys at four farmsteads, combining mapping of historical remains, landforms, and current practices, and interviews were conducted with the farmers. In addition, material from workshops with alternative

food producers and representatives from relevant authorities and non-governmental organisations (NGOs) was used. This paper aims at answering the following questions: Can alternative food producers contribute to reproducing biocultural heritage? If so, how and to what extent? Which challenges and opportunities are the alternative food producers facing?

The paper will start by introducing the theoretical concepts. Then, the investigation methods and material are presented followed by the results and discussion.

Concepts: biocultural heritage, niche construction, alternative food production, and retro-innovation in the agrarian landscape

The biocultural heritage concept contains somewhat different meanings. Quite often biocultural heritage refers to human impacts on nature, nature's responses to them, and the use of palaeobotanical data to study historical processes (Cevasco et al., 2015; Dearing et al., 2015; Rotherham, 2015, see Emanuelsson, 2003 for 'biological heritage'). In line with this, Indigenous knowledge and biocultural heritage have been forwarded as a framework, biocultural design, for sustainable development in local communities (Davidson-Hunt et al., 2012).

Departing from archaeology, a broader meaning of the concept of biocultural heritage has been developed adding more material and immaterial cultural heritage, such as cultural memory, including traditions and place names, tangible material elements of human practice, such as historical buildings and archaeological sites, besides shaped biophysical landscape elements, such as responses in soil, species composition and vegetation and fauna biodiversity (Lindholm & Ekblom, 2019).

Following the broader understanding of the concept presented above, the biocultural heritage encountered in the project included archaeological and historical remains, sites, landforms and buildings, shielings, traces of forest grazing and other historical agricultural management practices, use of historical/traditional crops and breeds and biodiversity linked to these practices.

It also became clear that biocultural heritage was not an easily applied concept, and required to be situated in a context. For this, niche construction theory has been used.

Entangled socioecological processes involving humans and other organisms, and their environments, result in specific niches (Eriksson & Arnell, 2017). Agriculture can be considered a prime example of changing human niche construction, with visible features like fields, crops, houses, fences, and domesticated animals. These processes involve less obvious impacts, as in forested and mountain landscapes. Different niches have been produced across the millennia of agrarian history, and through shifts in sociotechnological complexes over time (Myhre, Gjerdåker, Øye, Lunden, & Almås, 2002; Myrdal, 1998–2003). The historical niche preceding the transition to modern, industrialised agriculture is associated with diverse production and land use, including fields, meadows, livestock, and outlying lands. In contrast to the succeeding industrialised agriculture, with more monocultures and mechanised techniques, the pre-industrial, diversified agriculture produced and reproduced a significant biocultural heritage that is now declining (Peřinková et al., 2022; Roep & Wiskerke, 2004; Rotherham, 2015).

The project behind this paper departed from the assumption that the farming modes preferred by alternative food producers (e.g. avoidance of pesticides and fertilisers, low degree of mechanisation, outdoor sojourns, and livestock grazing, diversified crop production and combined cultivation and livestock breeding) resemble aspects of pre-industrial agriculture (Dubois, 2018; Franklin et al., 2011; Goodman, 2003; Kneafsy et al., 2013; Marsden & Smith, 2005). That is, that alternative food producers would to some extent be able to recreate the pre-industrial agrarian niche. However, previous research has observed strong innovative elements and entrepreneurship in alternative food production and distribution. Knowledge transfer and recreation of older knowledge and practices adapted to 21st-century contexts are called 'retro-innovation', or sometimes even 'biocultural innovation' when including historical farming

techniques and pest management, reintroduction of old crops and use of traditional food recipes (Dubois, 2019; Marsden & Smith, 2005, p. 450; Rosol & Barbosa, 2021; Stuiver, 2006; Swiderska et al., 2018).

Methods and material: the case farms

There are no registers of alternative food producers in the investigated regions Värmland and Hedmark, but many are affiliated with organisations, such as the consumer-supported agriculture-inspired REKO ring markets. Alternative food producing farms affiliated with the REKO rings pursue environmentally and animal-friendly farming modes of production. As the REKO ring markets are the main meeting places for alternative food producers and consumers they were used in this project to find suitable farms for the study.

Four farms, affiliated with REKO rings in Värmland and Hedmark, and practising alternative food production were selected for the study: two in Sweden (herein referred to as 'A' and 'B') and two in Norway ('C' and 'D'). All four had previously been conventional farms, but at some time had been converted into alternative food production. These farmsteads were selected based on the criteria that they were well established, with a track record of several years of alternative food production, that their production included livestock and grazing regimes, and that there were cultural heritage sites recorded in their vicinities. Because the project also evaluated knowledge transfer (not a topic herein) it was also important that at least one farm on either side of the border was engaged in educational activities (Dahlström et al., 2022; Knowles, Martinsen, Svensson, Amundsen, & Dahlström, 2022; Svensson, Amundsen, & Dahlström, 2022).

It should be noted that even if these four farms are not representative of all alternative food producers, some general knowledge from studying the four farms was to be expected due to similarities in production modes and contexts. This expectation was reinforced by the similarities in the experiences of the participating farmers.

Farmsteads B and C were family-run and livestock-focused, producing cheese and meat. One relied on milking goats, the other on both milking goats and a traditional, domestic breed of Nordic mountain cow (Figures 1 and 2). The Nordic mountain cow, previously common to shielings and both forested and mountainous grazing, is now rare in Scandinavian husbandry. Both farmsteads used shielings during the summer. At Farm C, the shieling was connected to the farmstead, and investigated as part of the project. Farm B sent some of their goats to a distant shieling as part of an authority-directed biological diversity and cultural heritage management programme; this temporary shieling arrangement was not part of the study.

Farmsteads A and D ran diversified agriculture, including both livestock and vegetable cultivation. Farm D also produced some dairy products and grew and ground some historical cereals. That farm was run by a cooperative of six members and additional volunteers as part of a training scheme, whereas Farm A was a family farm with additional, temporary, employees, volunteers, and periodic trainees enrolled in farm courses. These two farmsteads adhered to respectively biodynamic and permaculture ideological principles,² stressing earth-friendly, holistic production practices.

The fieldwork took place in August and September 2021 and consisted of a survey of biocultural heritage sites, e.g. archaeological remains and cultural plants, on and near the farms, and semi-structured interviews with the farmers. The surveys were carried out through field walks, with a probe for follow-up evaluations. Observed biocultural heritage sites were marked on a satellite map described verbally and photographed. The semi-structured interviews roughly followed an interview guide but were also highly flexible because the interviewees were eager to discuss their farms and often expanded on their answers and added new topics themselves. The interviews were recorded, and additional notes were taken in the field. One interview was conducted by two project members in person, and two on Zoom. The interviews were later transcribed and



Figure 1. Goat herd (Farm B). Photo: Christina Knowles.



Figure 2. Nordic mountain cows (Farm A). Photo: Margareta Dahlström.

analysed thematically (Wagner, Kawulich, & Garner, 2012) for themes based on the project research questions.

In January and May 2022, two workshops were organised with alternative food producers and other stakeholders, including representatives of NGOs and authorities in nature conservation and cultural heritage management. The first workshop was carried out online, the second in person. At each workshop, farmers' challenges, suggestions for solutions, and future possibilities related to production, land use, processing, distribution, and sales were discussed. The plenum part of the first workshop was recorded, whereas notes were taken during group discussions. The second workshop was documented with systematised notes from group discussions. Transcribed notes from both workshops were analysed thematically (Wagner et al., 2012).

Results: alternative food producers and biocultural heritage

First, we present biocultural heritage findings at the farmsteads and the farmers' relations with this concept. This is followed by reflections on the possibilities for alternative food producers to act as stewards of biocultural heritage and their challenges and opportunities in running environmentally and animal-friendly farms.

Biocultural heritage at the farms

Livestock grazing of areas previously thickly overgrown with trees and bushes had been transformed at Farms B and C into meadow and grassland, now thinly covered in trees and enriched with herbal plants (Figure 3). At the shieling attached to Farm C, a mountainous area into which trees and shrubs threatened to expand (due to its warmer climate), grazing goats now



Figure 3. After goat herd grazing—opening of landscape (Farm B). Photo: Eva Svensson.



Figure 4. Mountain grazing area at 900 m asl (Farm C, shieling). Photo: Eva Svensson.

maintained an open landscape (Figure 4). According to the farmer (Farm C), the holiday homeowners in this area appreciate the goat ‘landscape service’ of keeping the open view.

There were also innovative farming landscape transformations. Farm A had implemented a keyline design (Figure 5), the aim of which was to regenerate and improve soil fertility and increase water retention for more sustainable agriculture. This design was clearly visible, with fruit trees and bushes planted in curved lines.

Farm D had been converted to a biodynamic farm in the early 1970s. This transformation included production diversification into several cereals and vegetables, dairy cows, sheep, pigs, hens, and haymaking. Increased grazing areas, including forest grazing and hay meadows, promoted biodiversity; bee-friendly flowers were cultivated throughout the farm (Figure 6).

Farms A and D practised crop and vegetable cultivation including some, today uncommon, historic, domestic species. According to the farmers (Farm A and D), cultivating historic, domestic crops was consistent with a growing emphasis on seasonally based consumption of locally produced vegetables. The farmers considered the incorporation of historical crops and vegetables part of their innovative farming explaining that: ‘We experiment with one old (historical) crop every year’ (Farm D).

Farms B and C kept livestock, whereas Farms A and D practised mixed farming, with livestock also providing manure. Forest and mountain grazing, important to both pre-industrial agriculture and biocultural heritage (Westin, Lennartsson, & Ljung, 2022) was practised by the Norwegian farmsteads. On the Swedish farms, forest grazing was either not considered or seen as unfeasible (see the *Challenges and possibilities* section, below). At the first workshop, nature conservation, heritage management, and shieling NGO representatives all strongly emphasised the importance of increasing forest grazing in Sweden to enhance the reproduction of biocultural heritage.



Figure 5. Fruit trees and bushes in keyline design. Photo: Eva Svensson.

To the farmers, livestock meant more than an income source because they formed attachments to their animals. Even when meat was important to their income, ethical slaughtering and avoidance of long, painful transports were stressed as a priority. Some farmer-livestock attachments were stronger than others. One farmer (Farm B) almost tearfully recalled their sorrow when it came time to slaughter an elderly, and unusually large, Nordic mountain bull named Ludde³ who was described as remarkably gentle and social. Ludde's leadership of the herd, and his caring, communicative manner had resonated among both the Nordic mountain heifers and his owners.

The interviewed farmers observed natural wildlife like bees and bumblebees, butterflies, amphibians, field mice, snakes and vipers, foxes, birds, and even wolves. They also took actions, such as planting flowers to promote bees and keep trees as homes for birds. Some animals were less valued. Field mice that harmed the roots of fruit trees and berry bushes were a major problem at one farmstead (Farm A). Snakes and vipers, though valued for managing field mouse populations, were unappreciated when they got too close to people or livestock. The farmers were a bit cautious concerning predators, like foxes and wolves, as potential threats to the livestock. But the farmers had very little experience with losing livestock to predators and practised different forms of monitoring and care to avoid such losses.

In contrast to the awareness of plants and animals and links to their practices, the farmers in this study were less aware of and committed to cultural heritage, or rather the concept as such. Cultural heritage was something 'out there' and old-fashioned. When asked if they knew about any heritage sites or ancient monuments, the farmers usually referred to sites beyond their farmsteads in the vicinity or region, such as a Stone Age quarry, 'Viking' burial sites, and remains of timber floating and crofts. They also noted that cultural heritage could be aesthetic, and in that capacity could enrich their farmstead.

The interviews, however, revealed interest in historical practices and traditions, like reintroducing historical crops and livestock, and learning from older practices. One woman farmer (Farm A) was interested in women's farmstead work from older times, to understand how women coped with their many tasks in running a farmstead, and how to find moments for resting and re-energising. To this end, she visited and conversed with older women in her neighbourhood.

The mapping of biocultural heritage sites through field survey revealed fairly recent fossilised fields and the remains of houses, clearance cairns (Figure 7), dams, ruins of a smithy (Figure 8),



Figure 6. Fruit trees and flowers (Farm D). Photo: Hilde Amundsen.

and fairly recent byre foundations, the latter detected through manure-promoted vegetation. When asked about these sites, the farmers knew of, and often had information about, them but had not really considered them as heritage because they were considered recent and modest. Still, they had kept and cared for the sites.

At Farm D, there were several preserved and reused buildings from the 18th and 19th centuries, including dwelling houses, a former brewery (now a farm shop), and several outbuildings. The relations to standing historical buildings were otherwise ambiguous. At Farm C, the old goat house had been demolished when funding for a new goat house was secured. In contrast, on Farm A, old barns were cherished as long as they were functional, embracing the notion of reusing and recycling old buildings; these farmers had even toured the vicinity for small, deserted outbuildings, a collection of which had been moved to and were in use at the farm.

Guardians of tradition, or innovators?

From the interviews, it became clear that the farmers did not regard themselves as heirs to pre-industrial farming. On the contrary, they considered themselves innovators—in contrast to modern, industrial agriculture, which they referred to as ‘traditional’ or outdated. According to the alternative food producers they stood for something new, better, and safer for the environment, livestock, and consumers. The farmers noted that their way of producing food was appreciated by conscious consumers, and increasingly so with media reports about food security. As one interviewee (Farm C) stated: ‘We are benefitting from every food scandal’. Consistent with this was increasing demand for their products during Covid-19 because their antibiotic-free livestock were considered a safer source of meat and cheese.

Product development was another innovative side. Cheese producers’ products included historical or traditional cheeses like brown cheese, local adaptations of international cheeses like



Figure 7. Clearance cairn in a fossil field (Farm A). Photo: Eva Svensson.

Camembert, and experimental products like spicing cheese with various herbs. Other innovative products (Farm C) included goat cream sweets and meat from male kids who otherwise were slaughtered at birth if unselected for breeding. The latter met the needs of new customer groups: immigrants from northeast Africa for whom kid meat is part of their traditional diet.

Being innovators included challenging power structures modelled on the dominant, industrial mode of agriculture. Livestock management and food security regulations are adapted to industrial agriculture, meaning that surveyors from food security authorities have been educated and trained in that tradition. This led to complications because inflexible regulations could not accommodate the higher standards of environmental and livestock management and food production claimed by these farmsteads. Surveyors were described as having problems handling innovative solutions, even when they could see that outcomes were superior. For instance, Farm



Figure 8. Interior of a deserted smithy (Farm B). Photo: Hilde Amundsen.

A had outdoor, free-range chickens that were moved among fresh grazing areas using mobile sheds, called 'eggmobles' (Figure 9). According to the farmers' account, the surveyors were bewildered over how to evaluate this. On the one hand, this grazing arrangement was unknown and outside 'the book'; on the other hand, they attested that these were the healthiest chickens they had ever evaluated. A farmer (Farm A) stated: 'We are pushing [the surveyors] in front of us. They have to learn how to handle our innovations'.

There were elements of retro-innovation as historical practices and heritage were adopted as innovations, for instance, by reintroducing traditional crops. Other examples included combining historical practices with new technology, like forest and mountain grazing relying on virtual fencing and digital monitoring equipment (Farms C and D).

Interestingly, innovativeness was also expressed by the creation of new traditions and myths. Three of the four alternative food producers expressed in different ways that their farming was a novelty, and a break with the past. Farms A and B had changed their names. In one case a 'nicer' name was chosen to signify their new approach, in the other, a completely new English name highlighted their ideological production mode. Farm D had kept its original name but developed a comprehensive foundation narrative of a founding father who switched from conventional to ecological production and diversified from crops-only to including livestock and vegetable cultivation. The narrative also described this founding father as an impressive, inspirational person, who, while hitchhiking, convinced a lorry driver to help him realise his farming vision. Allegedly, the inspired lorry driver began delivering young hitchhikers to help with farm work. In this way, an organisation of voluntary workers was developed.

The ideology-based, biodynamic, and permaculture farms (A and D) were also keen to transfer their innovative production modes to new generations and build on new traditions. Both farmsteads offered various educational activities, like training volunteers and offering themed courses.



Figure 9. Hens and eggmobiles (Farm A). Photo: Hilde Amundsen.

Challenges and possibilities

The farmers considered the interviews and workshops as opportunities to talk about challenges, express their frustrations and (hopefully) convey a message to someone who could do something about their daily problems. Four major challenges were shared among the farmsteads relating to information and regulations, infrastructure, the market, and excessive workloads.

Agriculture and food production are closely regulated in both Sweden and Norway. The alternative food producers all felt major stress from the administrative burden of understanding and complying with frequently changing regulations, especially with multiple authorities involved with compliance monitoring. Contradicting regulations, and in particular that regulations are tailored to industrial agriculture, and a high rotation of surveyors added to the farmers' frustration.

This situation was especially serious regarding innovative solutions and diversified agriculture. The farmers emphasised that positive relationships with individual surveyors who were willing to learn about their production modes were key to managing these challenges. The frequent surveyor replacements were thus a severe source of stress and insecurity, hampering innovative solutions. Those engaged in diversified agriculture faced greater challenges from additional regulations, authorities, surveyors, and monitoring than those who took more limited, specialised production approaches. One farmer using diversified agriculture, described that: 'There is always something in process' (Farm A), and recommended that others not choose a diversified route, especially when starting up.

Whether to apply for ecological certification was another issue. Farm D, following a bio-dynamic ideology, was certified accordingly, whereas Farms A, B, and C had thus far refrained from applying for this designation. Instead, the latter relied on their reputations, building on

direct interactions and trust-building with customers, and felt they had nothing to gain from certification. To these farmers, certification was mostly considered an option if expanding to sales in metropolitan areas where they were less well known. Negative experiences with certification were also reported, such as certified farms being exclusionary in disallowing non-certified farmers from buying ecologically bred livestock, and with large-scale consumers like hotels that incorporated ecologically certified products to 'show off'.

Despite being largely self-supportive, the farmers relied on infrastructures like slaughterhouses and sometimes dairies. Because ethical slaughtering was important to all farmers, avoiding larger, more industrial slaughterhouses and long transports were necessary. The shortage of smaller slaughterhouses that were more considerate of animal welfare was a problem. Another problem was the monopolisation of the dairy industry by a few larger dairies that were unwilling to pick up milk, especially goat milk, from remote areas, forcing cheese producers to invest in their own dairies.

Even if producing alternative food was at their hearts, the farmers also had to sell their products. To reduce overhead expenses and keep their prices affordable to a broad segment of customers, they relied on a plethora of direct customer channels, like markets, fairs, REKO rings, farm shops, and subscriptions. The farmers enjoyed their direct contact with customers but found these channels work-intensive and time-consuming. They could spend the days working at the farm, the afternoons packing products, and the evenings and weekends as salespersons. For family reasons, Farm C chose to reduce their direct customer sales and prioritised selling to retail chains, despite the overhead costs.

From the accounts of the alternative food producers, environmentally and animal-friendly agriculture stands out as complex and time-consuming work, especially when it includes marketing and selling the products, and complying with different authorities and regulations. The alternative food producers chose their life for the love of the landscape, crops, and livestock, and for a higher quality of life. Vulnerable businesses and demanding workloads came with this choice.

Networking, mostly on digital platforms, was considered very helpful by the alternative food producers. Through social media, experience and advice on handling different challenges were shared, allowing alternative food producers to be part of a larger community despite geographical distances.

During the fieldwork, coinciding with the Covid-19 pandemic, the alternative food producers expressed the feeling that it was their time, that the 'winds were blowing their way'. Interest in environmentally and animal-friendly, locally produced foods had increased greatly. At a time when people were working from home and most activities were cancelled, the REKO rings were still allowed to operate in both Norway and Sweden. Shopping at these local markets intensified and attracted many new consumers.

However, when pandemic restrictions were lifted, and people went back to their workplaces and leisure activities, interest in alternative foods declined. At the second workshop, and in later contacts with the alternative food producers during spring 2022, less optimism was expressed and more challenges were described.

After years of being unable to make ends meet and losing patience with impossible regulations, Anders and Anna gave up and found work outside their farm. They still live in the manor house and produce alternative food, but only for themselves. Farms A and B went the same way, despite many years of well-established businesses. One is now entirely shut down and the other is 'on pause'. Production at farms C and D is ongoing.

Concluding discussion; becoming stewards of biocultural heritage?

Our results indicate that alternative food production may represent a new way to contribute to reproducing a biocultural heritage, but not on a large scale. The farmers participating in this

study do not consider themselves stewards of historical modes of production or land use. Rather, they are emphatic that they are innovators and pioneers of new, better farming methods—in contrast to the dominant, industrialised agriculture—and that their food production methods are cutting-edge and forward-looking. Alternative food producers are thus not reviving the ‘pre-industrial agrarian’ landscape niche, but instead constructing new niches with some qualities similar to a ‘pre-industrial agrarian’ niche (Eriksson & Arnell, 2017).

The alternative food producers in this study are foremost interested in contributing to a healthier natural environment and reproducing biodiversity through grazing practices, environmentally friendly production, and care for the natural environment. Although they handled even modest cultural heritage sites with care, cultural heritage was foremost appreciated as elements in retro-innovations along with other innovations. Importantly, cultural heritage, produced by the pre-industrial agriculture, was given a new role in the alternative food production niche instead of decoupled, thus avoiding heritagisation (cf. Marsden & Smith, 2005; Stagno, 2019; Stuver, 2006; see also Cevasco et al., 2015). Reusing old buildings for new purposes (in which the buildings’ historicity is considered an asset), experimental introduction of historical crops and livestock, and use of traditional recipes are mixed with keyline design, eggmobiles, and state-of-the-art goat milking barns with visitor viewing platforms. The alternative food production niche can thus be characterised as a hybrid of traditions with new meanings and innovations, including a production mode positive for the reproduction of biocultural heritage to a certain extent.

So far, Indigenous and traditional agricultural modes of production have been emphasised as major reproducers of biocultural heritage (e.g. Barthel et al., 2013). Alternative food producers may offer a supplementary way of reproducing biocultural heritage, although still too limited in scale to present a substantial conservation alternative. Alternative food producers are, and prefer to be, small scale and they are still few in number. To make a difference, many more alternative food producers are needed. However, alternative food producers face numerous challenges, including disadvantageous politics and legislation, monitoring, insufficient infrastructure, and overwhelming workloads, which may restrict interest in starting such businesses and threaten the durability of existing ones.

Some challenges can be tackled by the farmers themselves, especially through cooperating and networking about experiences and solutions, including sales channels, such as REKO rings. Other challenges can be solved through cooperation with external actors, like niche food retailers, and organising less demanding sales channels (e.g. unstaffed shops) that limit farmers’ delivery demands while continuing to reach a large customer base.

However, political and legislative challenges need lobbying beyond the capabilities of alternative food producers alone. In this context, the project results could contribute with arguments to politicians, showing that alternative food production has a positive impact on reproducing biocultural heritage. Reproduction of the biocultural heritage is part of the political and legislative agenda (albeit not a top priority) and there are authorities whose responsibility it is to manage the biocultural heritage. Linking biocultural heritage and alternative food production should include calling for more lateral collaboration between authorities regarding food security, farming, nature protection, cultural heritage, and rural development. Such joint efforts would create stronger voices for improved political and legislative conditions for alternative food producers to increase their numbers, and that farmers like Anders and Anna might continue to pursue their ambition to produce healthy food, and reproduce the biocultural heritage.

Geolocation information

Norway; Hedmark.
Sweden; Värmland.

Notes

1. Anders and Anna are fictitious names for 'real' people. The couple has participated and presented their experiences in workshops arranged by project Biokuma.
2. Biodynamic agriculture regards the farm as an independent self-productive organism. The cultivation practice seeks to preserve vitality without using artificial pesticides and fertilisers. Biodynamic agriculture has its own certification rules. Permaculture stands for Permanent Agriculture. It is a holistic design system reconciling human communities with ecological imperatives. Central to permaculture are earthcare, people care and fairshare ethics.
3. Ludde is the Swedish name of the cartoon puppy Scamp, conveying something cute and mischievous; thus, not a particularly 'bull-like' name.

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Notes on contributors

Eva Svensson is a historical archaeologist and Professor of Environmental Sciences at Risk, as well as Environmental Studies at Karlstad University, Sweden. Svensson is an expert in socio-ecological and interdisciplinary approaches to forested landscapes in a long-term perspective, and on the role of heritage and history in realising Agenda 2030.

Margareta Dahlström is Professor of Human Geography at Karlstad University, Sweden. Her research focuses on regional innovation systems, green transformation, the inclusion of civil society in transformation, and policies in relation to these themes. She also works with methodological perspectives and methods for multidisciplinary research and for transdisciplinary research, i.e. research that includes non-scientific actors.

Hilde Rigmor Amundsen is an archaeologist and researcher at The Norwegian Institute for Cultural Heritage Research (NIKU), Oslo, Norway. Amundsen has varied experience with research and management within the field of cultural heritage. She has a basic training as a gardener and has knowledge about disciplines, such as ecology, biology, landscape, and agriculture.

Marius Kjønsberg is a PhD candidate in applied ecology, Inland University of Applied Sciences, Norway. Working with fundamental ecology of wildlife species, including behaviour, land use, interactions with other species, and monitoring as well as the importance of wildlife for human communities, including hunter harvest, tourism, and the diverse ways that wildlife contributes to human well-being and livelihoods.

ORCID

Eva Svensson  <http://orcid.org/0000-0003-0571-2624>
 Margareta Dahlström  <http://orcid.org/0000-0001-8788-0044>
 Hilde Rigmor Amundsen  <http://orcid.org/0000-0002-1719-3836>
 Marius Kjønsberg  <http://orcid.org/0000-0002-1233-4919>

References

- Amcoff, J. (2020). Periferins befolkningsutveckling i början av 2000-talet. In S. Stenbacka & S. Heldt Cassel (Eds.), *Periferi som process. Ymer* (Vol. 140, pp. 149–177). Stockholm: Svenska sällskapet för antropologi och geografi.

- Barthel, S., Crumley, C., & Svedin, U. (2013). Bio-cultural refugia—Safeguarding diversity of practices for food security and biodiversity. *Global Environmental Change*, 23(5), 1142–1152. doi:10.1016/j.gloenvcha.2013.05.001
- Cevasco, R., Moreno, D., & Hearn, R. (2015). Biodiversification as an historical process: A plea for the application of historical ecology in biocultural diversity research. *Biodiversity and Conservation*, 24(13), 3167–3183. doi:10.1007/s10531-015-0943-3
- Dahlström, M., Amundsen, H. R., Björkholm, R., Bowring, H., Josefsson, S., Kjøsberg, M., & Svensson, E. (2022). *Inkomster från småskalig matproduktion som gynnar det biokulturella arvet*. Policy Brief Nr 2 2022, Centrum för forskning om hållbar samhällsförändring (CRS), Karlstads universitet, Sverige og Norsk institutt for kulturminneforskning (NIKU), Norge.
- Davidson-Hunt, I. J., Turner, K. L., Pareake Mead, A. T., Cabrera-Lopez, J., Bolton, R., Idrobo, C. J., ... Robson, J. P. (2012). Biocultural design: A new conceptual framework for sustainable development in rural indigenous and local communities. *SAPIENS*, 5(2), 33–45.
- Dearing, J. A., Acma, B., Bub, S., Chambers, F. M., Chen, X., Cooper, J., ... Marchant, R. (2015). Social-ecological systems in the Anthropocene: The need for integrating social and biophysical records at regional scales. *The Anthropocene Review*, 2(3), 220–246. doi:10.1177/2053019615579128
- Dubois, A. (2018). Nurturing proximities in an emerging food landscape. *Journal of Rural Studies*, 57, 1–12. doi:10.1016/j.jrurstud.2017.10.005
- Dubois, A. (2019). Translocal practices and proximities in short quality food chains at the periphery: The case of North Swedish farmers. *Agriculture and Human Values*, 36(4), 763–778. doi:10.1007/s10460-019-09953-y
- Emanuelsson, M. (2003). *Skogens biologiska kulturarv: att tillvarata föränderliga kulturvärden*. Stockholm: Riksantikvarieämbetets förlag.
- Eriksson, O. (2018). What is biological cultural heritage and why should we care about it? An example from Swedish rural landscapes and forests. *Nature Conservation*, 28, 1–32. doi:10.3897/natureconservation.28.25067
- Eriksson, O. (2022). Coproduction of food, cultural heritage and biodiversity by livestock grazing in Swedish semi-natural grasslands. *Frontiers in Sustainable Food Systems*, 6, 801327. doi:10.3389/fsufs.2022.801327
- Eriksson, O., & Arnell, M. (2017). Niche construction, entanglement and landscape domestication in Scandinavian infield systems. *Landscape Research*, 42(1), 78–88. doi:10.1080/01426397.2016.1255316
- Franklin, A., Newton, J., & McEntee, J. (2011). Moving beyond the alternative: Sustainable communities, rural resilience and the mainstreaming of local food. *Local Environment*, 16(8), 771–788. doi:10.1080/13549839.2011.574685
- Goodman, D. (2003). The quality 'turn' and alternative food practices. Reflections and agenda. *Journal of Rural Studies*, 19(1), 1–7. doi:10.1016/S0743-0167(02)00043-8
- Gren, L., & Norman, P. (2010). The impoverishment of heritage in the European landscape – with some Swedish examples. In S. Trow, V. Holyoak, & E. Byrnes (Eds.), *Heritage management of farmed and forested landscapes in Europe* (pp. 169–176). EAC occasional paper no. 4. Brussels: Europae Archaeologia Consilium (EAC).
- Harrison, R. (2013). *Heritage: Critical approaches*. Abingdon: Routledge.
- Kneafsy, M., Venn, L., Schmutz, U., Balazs, B., Trenchard, L., Eyden-Wood, T., ... Blackett, M. (2013). Short food supply chains and local food systems in the EU. A state of play of their socio-economic characteristics. In F. Santini & S. G. Paloma (Eds.), *JRC scientific and policy reports*. European Commission: JCR, Institute for Prospective Technological Studies, Luxembourg.
- Knowles, C., Martinsen, J., Svensson, E., Amundsen, H. R., & Dahlström, M. (2022). *Handboken: Lärdomar om småskalig, miljövänlig matproduktion och det biokulturella arvet*. Centrum för forskning om hållbar samhällsförändring (CRS), Karlstads universitet, Sverige og Norsk institutt for kulturminneforskning (NIKU), Norge.
- Krauß, W., & Olwig, K. R. (2018). Special issue on pastoral landscapes caught between abandonment, rewilding and agro-environmental management. Is there an alternative future? *Landscape Research*, 43(8), 1015–1020. doi:10.1080/01426397.2018.1503844
- Lindholm, K.-J., & Ekblom, A. (2019). A framework for exploring and managing biocultural heritage. *Anthropocene*, 25, 100195. doi:10.1016/j.ancene.2019.100195
- Marsden, T., & Smith, E. (2005). Ecological entrepreneurship: Sustainable development in local communities through quality food production and local branding. *Geoforum*, 36(4), 440–451. doi:10.1016/j.geoforum.2004.07.008
- Myhre, B., Gjerdåker, B., Øye, I., Lunden, K., & Almås, R. (2002). *Norges landbrukshistorie. Bd. I–IV*. Oslo: Det Norske Samlaget.
- Myrdal, J. (Ed.) (1998–2003). *Det svenska jordbrukets historia*. Stockholm: Natur och kultur/LT.
- Peřínková, V., Vavrouchová, H., Kovařík, D., Mašiček, T., Vaishar, A., & Štátná, M. (2022). Extinct settlements and their reflection in the land-use changes and historical landscape elements. *Land*, 11(12), 2313. doi:10.3390/land11122313
- Roep, D., & Wiskerke, J. S. C. (2004). Reflecting on novelty production and niche management in agriculture. In J. S. C. Wiskerke & J. D. van der Ploeg (Eds.), *Seeds of transition: Essays on novelty production, niches and regimes in agriculture* (pp. 341–356). Assen: Royal van Gorcum.
- Rosol, M., & Barbosa, R. (2021). Moving beyond direct marketing with new mediated models: Evolution of or departure from alternative food networks? *Agriculture and Human Values*, 38(4), 1021–1039. doi:10.1007/s10460-021-10210-4

- Rotherham, I. D. (2015). Bio-cultural heritage and biodiversity: Emerging paradigms in conservation and planning. *Biodiversity and Conservation*, 24(13), 3405–3429. doi:10.1007/s10531-015-1006-5
- Stagno, A. M. (2019). Investigating rural change. Legal access rights and changing lifestyles in rural mountain communities (Ligurian Apennines, Italy, 16th–21st centuries). *World Archaeology*, 51(2), 311–327. doi:10.1080/00438243.2019.1674066
- Stuiver, M. (2006). Highlighting the retro side of innovation and its potential for regime change in agriculture. In T. Marsden & J. Murdoch (Eds.), *Between the local and the global (research in rural sociology and development)* (Vol. 12, pp. 147–173). Amsterdam: Emerald Group Publishing Limited. doi:10.1016/S1057-1922(06)12007-7
- Svensson, E., Amundsen, H. R., & Dahlström, M. (2022). *Biokulturellt arv, landskap och produktion. Biokulturellt arv och alternativ matproduktion*. Policy Brief Nr 1 2022, Centrum för forskning om hållbar samhällsförändring (CRS), Karlstads universitet, Sverige og Norsk institutt for kulturminneforskning (NIKU), Norge.
- Swiderska, K., Argumedo, A., Song, Y., Rastogi, A., Gurung, N., & Wekesa, C. (2018). Biocultural innovation: the key to global food security? *IIED Briefing, June 2018*. Retrieved from <http://pubs.iied.org/17465IIED>
- Wagner, C., Kawulich, B. B., & Garner, M. (Eds.) (2012). *Doing social research: A global context*. Berkshire: McGraw-Hill Higher Education.
- Walsh, K. (1992). *Representation of the past: Museums and heritage in the post-modern world*. London: Routledge.
- Westin, A., Lennartsson, T., & Ljung, T. (2022). *Skogsbeten och bondeskogar. Historia, ekologi, natur- och kulturmiljövärd*. Stockholm: Riksantikvarieämbetet.