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Who Gives? Non-Commercial Distribution Networks in Domestic Food Production in the Inland North of Sweden

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Abstract: This paper examines the social context of "domestic food production" (dfp) in the inland North of Sweden, with a focus on understanding the contributions of non-commercial food distribution to local food security and sustainable rural community-building. We report on the findings of an exploratory pilot study that included an online survey of 305 people who engaged in at least one dfp activity (hunting, fishing, foraging, or farming). The aims were to uncover common social practices of dfp, as well as to identify key values attached to dfp, the extent of commercial and non-commercial distribution of home-produced food, and motivations to give away food. The main findings emphasize the social nature of dfp activities, with the vast majority of respondents undertaking dfp in groups or as part of formal clubs. Key values attached to dfp included social and community-related aspects, while commercial interests were limited. Respondents were more likely to engage in non-commercial distribution networks, usually involving close family and friends. Food givers mostly cited social factors as their main motivations rather than other food-related aspects (such as food security, health benefits, or food waste). Food givers were also likely to receive food from others, emphasizing the relatively narrow and reciprocal character of non-commercial food networks. We conclude that non-commercial dfp networks may be expanded to the broader community by exploiting the social nature of dfp and encouraging generalized reciprocity led by dfp clubs. This could potentially reduce the negative impacts of food deserts whilst also stimulating community interactions, learning and local dfp communities of practice.

Keywords: domestic food production; non-commercial food networks; informal food sharing; food security

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Citation: Carson, D.B.; Brunet Johansson, A.; Carson, D.A. Who Gives? Non-Commercial Distribution Networks in Domestic Food Production in the Inland North of Sweden. *Sustainability* **2024**, *16*, 2300. https://doi.org/10.3390/su16062300

Academic Editors: Gabriele Scozzafava and Francesca Gerini

Received: 7 February 2024
Revised: 29 February 2024
Accepted: 7 March 2024
Published: 11 March 2024

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1. Introduction

The purpose of this paper is to examine the social context of "domestic food production" (dfp) in the sparsely populated inland North of Sweden, with a focus on understanding the potential contributions of non-commercial food distribution practices to local food security and sustainable rural community-building. Dfp refers to food produced through private individuals' non-commercial engagement in the activities of hunting, fishing, foraging and domestic farming. The term "domestic" is used here to refer to food produced not just on people's private properties, but within nearby public-access forests, marsh lands and waterways, which in Sweden are commonly perceived as part of people's recreational backyard. While these activities are known to be very popular in northern Sweden among residents and visitors alike [1,2], little is known about what happens to the food that is produced and how it is distributed within local communities. There is, thus, limited knowledge of how dfp may contribute to alternative localized food systems that can improve access to local quality food in sparsely populated areas whilst also providing social benefits for inclusive community-building.

Drawing on survey results from an exploratory pilot study, the aims of our research are three-fold. We first aim to identify important social structures and practices facilitating different forms of domestic food production and distribution. We then aim to uncover the key values underpinning the production and distribution of home-produced food to understand the importance of social or community-related aspects in comparison to other food-related aspects (such as access, health benefits, food waste, and environmental factors). Thirdly, we aim to identify motivations for non-commercial food distribution practices, along with the role of reciprocity in such informal sharing networks, to understand how open and inclusive these networks are for the broader community, including marginalized groups (such as the elderly, migrants or non-residents).

In the Swedish context, the research contributes important insights into ongoing debates about access to diverse, healthy and culturally appropriate local foods in a peripheral region characterized by demographic decline, widespread food deserts, and increasing issues of social exclusion for vulnerable populations in smaller villages [3]. There is a theoretical potential for domestically produced food to contribute to increasing food security and social inclusion, but only if food distribution networks are, or become, wide reaching. Beyond Sweden, the research addresses a well-recognized gap in understanding of non-commercial transactions and sharing of home-produced food in local food networks, particularly in high-income countries [4–6]. While dfp activities are assumed to be widespread in many countries [7], there is surprisingly little research on the extent and network constellations of non-commercial food distribution, or the role of social and community-related motivations for sharing food beyond individual monetary gain. Our study contributes a Swedish perspective on such non-commercial dfp networks, recognizing that dfp in the North is more diverse and goes beyond farming and home gardening. This paper is unique in that it examines how "social" different northern dfp activities are and how inclusive local distribution networks seem to be, thus providing insights into how dfp can benefit local communities beyond individual producers.

The paper begins by describing the social and institutional contexts for dfp in the inland North of Sweden, which is key to understanding sharing practices and community dynamics. It then summarizes the limited literature on the social and community value of dfp and its role in local food networks, particularly in high-income countries, highlighting the lack of any clear model of dfp contribution. The results of the dfp survey are then reported, identifying the potential parameters of such a model and its applicability within and beyond Sweden.

2. The Social and Institutional Context for Domestic Food Production in Northern Sweden

Domestic food production through the activities of hunting, fishing, foraging and domestic farming is central to the mythology of the inland North of Sweden [2,8]—a very sparsely populated area that is still often referred to as a gateway to Europe's last wilderness [9]. Dfp activities are widely seen as central to how Northerners interact with wild nature, and to how those who have left the North (or the rural inland) retain their links to it [2]. Dfp is facilitated by formal political and informal social institutions which direct natural resource management. Most importantly, the right of public access (*Allemansrätten*) allows for everyone to freely roam and access nature, including for the purpose of harvesting food and other products from the wilderness, and this is politically entrenched and deeply embedded in socio-cultural norms. Such nature-based practices are often considered recreational rather than subsistence-driven and are largely non-controversial so long as harvests are small, for "personal use", non-destructive and conducted within the regulatory parameters.

Recreational outdoor activities are supported by public infrastructure in the countryside, including walking trails, camping sites, wind shelters, boat ramps, and cabins for overnight stays. These, along with quotas and other seasonal restrictions on dfp, are typically managed by local hunting and fishing clubs or generic village associations. These clubs have substantial power in determining resource management strategies at the local level, and in collectively directing resource management policy nationally [10], but more importantly, they determine the social or community context in which these activities typically occur. When it comes to large game hunting (e.g., moose, but also bear), hunting clubs decide who can participate, where the hunt will take place, and how food from the hunt will be distributed, usually within a rather exclusive circle involving participating hunters, landowners and their extended families [11,12]. Hunting clubs are also responsible for training and licensing people for firearm use. Fishing clubs are usually less interventionist, but local fishing licenses are required to fish in lakes and rivers and are typically only available from fishing clubs [13]. Particularly in less touristic places, these clubs can also be quite exclusive in the sense that it is difficult for visitors and newcomers to access information or buy licenses.

Foraging (for berries, mushrooms, herbs, bark, honey and other foodstuffs) does not occur within such a "club" structure and is less formally regulated through social norms about access to target species such as chanterelle mushrooms or cloudberries [14]. Nevertheless, club-like structures exist, for example as part of community groups organizing training to educate about wild foods, or harvesting and preparation techniques. Similarly, domestic farming occurs within a less structured set-up. While there are farming clubs and collectives, they have no formal status in terms of regulating domestic agriculture, but plantings and harvests and butchering of meat tend to be marked by social events or at least accompany those events (Midsummer and autumn festivals, for example). One of the key social events of the year in the inland North is "hunting week" (in early September) which signifies the opening of the moose hunting season. Small businesses often close for the week, and ex-residents or people with second homes in the region come and visit, whether they are participating in a hunt or not [11,12]. Seasonal social events are also common among fishing clubs, such as pike game fishing during summer or ice fishing in winter, usually coinciding with school holidays when second home vacations and visits to family and friends are common. Dfp is, thus, also a substantial driver of various forms of tourism, especially second home tourism, which is deeply embedded in Sweden as a recreational and socio-cultural practice. In this special context, the lines between "resident" and "visitor" as part of rural communities are blurred, and visitors often have strong historical ties to the places in which they stay [15,16].

Dfp presents as a highly social and communal activity at certain times of the year, but this goes hand in hand with persistent stereotypes around masculinity (for hunting and fishing), femininity (foraging), and "loners" (activities conducted by and for oneself, usually in isolation of broader community interests or interactions) [12]. There are also notions of "exclusivity", perhaps reinforced by club structures and local knowledge, which make it difficult for outsiders or newcomers to become involved, and there are concerns about "dying" dfp traditions [11,17–19]. The latter emerges from the general socio-demographic context, with the northern inland commonly portrayed as a declining region where smaller villages have been affected by population ageing and out-migration of young people [3], partly replaced by new in-migrants with different nature consumption interests and comparatively weak socio-cultural ties to local residents and traditional associations [20]. Ageing and a decline of the farmer population has already been identified as one key marker of changing domestic and smallholder farming in the North [21]. Much less, however, is known about non-commercial forms of hobby farming or cottage gardening in people's private backyards, despite popular assumptions that such practices are widespread, including among second home owners, down-shifters (i.e., people pursuing a simpler and less consumerist lifestyle) and migrant communities [22,23]. It is also unknown how the social dynamics of food production and distribution might differ between farming and other dfp activities (hunting, fishing, and foraging), which typically extend beyond people's private properties (and ideas of "domestic" production in the strictest sense of the word) into wider community-owned domains. This study therefore set out to examine how "social" different dfp activities are in order to understand how their particular social contexts might influence food distribution networks, and as a result access to such networks for different groups of the community.

3. Dfp, Food Security and Community-Building

The assumption that dfp in the inland North is small-scale and for “personal use” has helped alleviate concerns about environmental impacts and commercial exploitation, meaning that these activities have long remained under the academic radar. There is some discussion about the commercialization of berry picking (and other foraging), suggesting that commercial interests and industrial exploitation (often organized by outsiders) may conflict with the social value of these activities for local communities [24,25]. Similar concerns may be raised about the commercialization of hunting and fishing, including through tourism [11,18]. However, there is otherwise no published research about the distribution practices of domestically produced food in northern Sweden, along with their social implications for rural community development in an increasingly declining and marginalized northern periphery. Similar to recent calls in other countries, therefore [4–6,26], there appears to be a glaring gap in research about dfp and its distribution as part of alternative and informal local food networks.

Due to its climatic and economic context, northern Sweden has never been much of a prime agricultural or food-producing region. As a result, dfp activities extend well beyond farming and, thus, reflect important local food traditions and socio-cultural practices that should not be overlooked in discussions around sustainable local food production and rural community development. These are by no means trivial questions in debates about protection for dfp, but also for understanding the particular challenges in northern Sweden with regard to food security (i.e., the availability of quality food irrespective of demographics or region) and food sovereignty (i.e., the rights of local people to control production, distribution and consumption of culturally appropriate food as part of their own food systems) [27,28]. Sweden relies to a large extent on food imports [29], and the inland North is at the end of domestic food supply chains, typically receiving lower quality and less variety of (particularly fresh) produce than larger urban centers on the coast or in the south. The region is replete with “food deserts” due in part to the domination of the grocery market by the two main operators, which has led to an ever-greater concentration of supermarkets in the main municipal centers and an ongoing decline in rural village shops and grocery outlets [3,30]. Since at least the 1960s, there have been concerns about the impact of commercial food distribution practices on food security, particularly for older people and other vulnerable populations [31]. There is also recent recognition that locally produced food (including fresh and processed meat, fish and berries) is rarely available through supermarkets or village shops [2,32], partly because of supermarkets’ streamlined supply chain management, and partly because local food producers are small and pursue alternative supply chains [21,33]. This makes it difficult for local consumers without the knowledge of or connections to local producers to access local food. As in other Arctic peripheries, there have also been concerns about the lack of formal recognition of northern foods (including berries, herbs, fish and game meat) in national food security strategies, and the ways in which northern food traditions can be more formally supported so as to help Northerners access quality food that also meets cultural preferences [28,34,35]. While this body of literature is largely concerned with commercial opportunities for northern food industries, there is some recognition of the potential social value of food for northern communities, but overall limited mention of the role of non-marketized networks.

It may be assumed that dfp can play a role in enhancing access to fresh produce for some in the inland North, but the extent to which these benefits might flow beyond immediate producers (the hunters, the fishers, the foragers, the farmers) as part of more or less formalized alternative food networks is unknown. Similarly, the extent to which issues around food quality and food security or sovereignty drive motivations for domestic food production and distribution is unknown, as is the extent to which this is motivated by individual or collective community wellbeing interests.

The literature on non-commercial transactions and informal food sharing in local food networks is still relatively sparse [4,5,26,36]. Despite the recent hype around the emergence of the “sharing economy” as part of alternative food systems, research seems to have largely focused on commercial exchanges and food movements facilitated by organizational intermediaries and social media platforms [5,37,38]. In contrast, more informal and non-monetized forms of food sharing or gift-giving have remained under-researched and are usually considered as "primitive" practices common in developing countries or Indigenous cultures [26,39]. In these contexts, food is distributed within a well-defined (and typically small) group of people sharing similar interests or socio-cultural ties, often based on motivations around mutual help, strengthening of social networks, and maintenance of community membership [7,36,40,41]. Informal food sharing has also been identified as a strategy to care for vulnerable populations [26,40], including the elderly and young families. Such transactions may transcend geographic boundaries and flow on from rural (food producing) areas to distant urban locations, thus sustaining notions of community across space through social networks, intergenerational sharing, and rural–urban mobility [26].

The limited research on informal food sharing has emphasized the important concept of reciprocity, which seems paramount for any discussion of rural community building. Recent work in the Czech Republic [5] emphasized the importance of altruistic motives and generosity as key drivers for informal food sharing, arguing that reciprocity interactions were concentrated within particular social groups or geographic locations. While close family and kinship relations usually dominate such sharing networks, it has also been emphasized that these networks nevertheless extend to members outside of extended family circles and may, thus, contribute to the strengthening of community bonds [7,42]. Jehlička and Daněk [5] distinguish between sharing and gift-giving, arguing that sharing typically involves more reciprocal expectations, but even the act of gift-giving is often reciprocated in delayed form by returning gifts eventually [43]. Such practices may, thus, contribute to the strengthening and reproduction of social networks and create a rather narrow sense of community characterized by strong ties, mutual trust and respect, and collaboration. In a similar vein, they may also lead to experiences of social exclusion [43], particularly for individuals with limited capacity to give and join such exclusive networks, for example due to age, economic constraints or lack of food production skills.

In contrast to direct reciprocity, informal food sharing may involve "generalized reciprocity", as often observed in Indigenous and hunter–gatherer societies [44]. This means that a gift is given without expectation of any direct or immediate return, but "paid forward" as a response to gifts or favors received from someone else or expectations that such gifts/favors will be forthcoming from others. Endo and Lim [45] argued that this concept of generalized reciprocity is not necessarily exclusive, but can be inclusive—they may be used to broaden networks, with benefits accruing to all participants so long as the benefits to all are clear and the community self-organizes rather than having "rules" imposed on it.

While research in low-income countries typically views dfp and food sharing as responses to poverty or expression of cultural obligations [5,7,26], in higher-income countries, dfp is viewed more as a recreational activity and lifestyle choice, often linked to ideological motivations around environmental sustainability, the relocalization of food and community-building [6,7,12,46,47]. The latter can refer to various constellations of "community", ranging from narrow family circles, ethnic or migrant communities, communities of place (e.g., people brought together by geographic boundaries and identities linked to particular settlements or regions), communities of interest (people sharing similar interests and values irrespective of family relations or geographic location), and communities of practice (people engaging in similar activities and practices around common goals to develop a shared set of resources and knowledge). Communities of practice have often been the focus in the literature about communal production—through community and school gardens [6,48,49] and distribution—through food banks and other forms of donation [50]. Much of this literature is situated in urban areas and is narrowly focused on home gardening. In these cases, food is deliberately grown for consumption within the grower group and with the aim of having surplus to give away [51]. Key motivations for dfp and food sharing reported in this literature include financial considerations (that it is cheaper than store-bought food), environmental (sustainable agriculture and reducing food waste), nutritional ("good", "healthy" and "quality" food), social (integration, social inclusion), cultural (preservation of traditional food practices) and freedom of choice [6,40,52].

How these motivations for the production and sharing of homegrown food, along with their implications for social community constellations, translate to a highly peripheral region such as the inland North of Sweden is currently unknown. In a context marked by increasing demographic decline, loss of services, social isolation, and exclusion of new population groups with limited connections to "northern" traditions [20], there is a call for increased attention to community-building. The aims include (re)uniting diverse populations, stimulating social interactions and the development of a shared community spirit or vision, and lowering the health and wellbeing risks associated with isolation and exclusion. There has yet to be any research into how traditional practices such as dfp could contribute to this ambition. This study, thus, explores the social context of dfp and its distribution practices in the North to understand the importance of social or community-related motivations, along with motivations related to food security (access and nutrition) or other environmental factors. We focus in particular on informal sharing of food, and the role of reciprocity in such non-commercial distribution practices, to understand how open and inclusive these networks might be for increasingly diverse and marginalized community groups. The specific research questions relating to our aims were as follows:

- How 'social' are different dfp activities in terms of participation in formal clubs or informal groups?
- What core values do participants attach to dfp, and how important are social or community-related interests in comparison to other food-related aspects?
- How common is it for food to be distributed (commercially or non-commercially) beyond the direct producers?
- What are the motivations for non-commercial food distribution, and how important are social aspects and reciprocity in these practices?

Our expectations were that the answers to these questions would vary depending on the dfp activity under investigation due to different social structures and institutions guiding those activities, but also because of generic assumptions that certain activities, such as hunting and fishing, have the reputation of being male-dominated and somewhat "loner" activities, which might affect the broader sharing of food [18]. Foraging and domestic agriculture may be more female-dominated and may produce foodstuffs more designed for distribution (e.g., processed jams and chutneys, dried mushrooms, etc. [53]. There may be age effects, with older producers having closer connections to "traditions" of shared production and distribution and younger producers more focused on recreational values. There may be differences between those who permanently reside near the places of production and presumably have very close social ties and those who visit to engage in dfp activities, as well as between those who have long-term social connections to the place (e.g., through intergenerational family ties) and those who are more recent newcomers. Overall, we also expect to see indications of a rather narrow and exclusive dfp network structure, reflective of common socio-cultural features associated with rural communities in northern Sweden, where social networks have been described as relatively closed, revolving mostly around immediate family, and where locals are often perceived as introverted and not reaching out to newcomers [20,54]. These considerations will help us develop a better understanding of the sorts of "community" dynamics emerging from different dfp activities, as well as identify ways in which dfp might be better utilized in formal strategies to improve food security and community-building in small and isolated settlements.

4. Methods

Data were collected through an online survey (in Swedish) designed in Google Forms. The survey targeted people who regularly hunt, fish, forage or farm in the inland North of Sweden. The region broadly referred to the eight inland municipalities of the province of

Västerbotten, but some responses also came from neighboring municipalities in Norrbotten. The survey design was first tested in an initial pilot trial with key contacts active in various dfp activities, and after some small adjustments distributed through social media sites managed by community-based groups such as town and village organizations (29 of them). These organizations distributed a standardized invitation to participate through their social media presences. In addition, some participants learned about the survey through popular media (newspaper and radio stories) and through municipal social media sites. The survey was "live" between September 2022 and January 2023. There were 305 survey respondents.

The survey asked for participants' age (under 50 years or 50 years and older) and gender, place of usual residence (in the inland or elsewhere) and whether they had engaged in hunting, fishing, foraging or domestic agriculture (vegetables or animals) in the past five years. The survey also asked if participants were active in any hunting, fishing or horticultural/grower clubs. Non-residents were asked about their attachment to the place/s where they engaged in dfp, including whether they had previously lived there, they had family there, they had second homes there, or were relatively "new" visitors.

The survey then included a module for each dfp activity—asking where participants usually engaged in the activity, why they did it in that place (distinguishing between those who permanently lived close by and those who visited for the activity), who they did it with, what they did the with food produced (ranging from personal consumption to commercial distribution to gift-giving) and why they gave food away (if they did give food away). Reasons for giving food away included social (to thank someone, to be a good neighbor) or food-related reasons (to help older people access food, to reduce food waste to provide access to healthy food).

The survey concluded by asking whether participants themselves ever received domestically produced food as a gift and asking what values they attached to domestic food production. For the purposes of this paper, the values of interest were social (important for community identity, strengthening social contacts), nutritional (varying the diet, healthy eating), and commercial (main or supplementary source of income). Participants were asked if they agreed or disagreed that these were important values associated with dfp. Finally, most questions also allowed free text comments to be entered, and the final question asked for "any other comments".

The analysis focuses on the social context of dfp, commercial and non-commercial distribution of food, and motivations to give food away. These are compared between the different dfp activities, age, gender, and place of residence. Group differences were identified through pairwise logistic regression, reporting the chi-square statistic and odds ratios (OR) where significant ($p < 0.05$) group differences were encountered. A series of multi-variate logistic regression models was also constructed to explore whether particular combinations of individual characteristics predicted the propensity to give food away, but these models simply reproduced the relationships observed in the pairwise analysis, and are not reported here. Data were analyzed using Blue Sky Statistics v10.3.1 (https://www.blueskystatistics.com/, accessed on 4 April 2023).

There are some limitations to the study sample, most likely caused by the survey distribution process, that need to be acknowledged here. Community groups tend to have high participation from older women and lower participation from younger men [55]. Community groups are more active and have higher levels of participation in smaller villages rather than in the municipal centers. People who engage with community groups are probably also more likely to engage with activity-specific groups. The timing of the survey might also have impacted participation, as it coincided more with hunting and (the end of) the foraging season rather than with fishing or farming seasons. Overall, the relatively small sample size of 305 responses, in combination with a lack of reliable information about the size of the population engaging in dfp, makes it impossible to estimate a response rate or make any claims about the results being representative of the population. We therefore emphasize that the survey was primarily intended as a pilot study to identify interesting patterns and observations that can be followed up with a more targeted quantitative household survey or further qualitative interviews and focus groups at a later stage.

5. Results

5.1. Sample Summary

The sample included 105 males and 200 females. Of these, 53% of the males (56 people) were aged under 50 years, along with 47% (94 people) of females. Over one quarter (26%—81 people) of the sample usually lived outside of the inland North, with half (41) of these having a second home in the area. Table 1 summarizes the number of participants in dfp activities by demographic group.

Table 1. Participants (n) by dfp activity and demographic group.

Activity	Engages in the Activity	Younger Male	Older Male	Younger Female	Older Female	Residents	Visitors
Total	305	56	49	94	106	224	81
Hunting	135	37	35	37	26	102	33
Fishing	266	54	43	79	90	201	65
Foraging	297	55	47	91	104	220	77
Farming	220	38	30	66	86	176	44

Table 2 shows that foraging was the most common dfp activity for all participant groups, followed by fishing. Males and visitors were equally likely to engage in hunting as farming, while for females and residents, farming was far more common than hunting.

Table 2. Participants (%) by demographic group and activity.

Activity	% of Sample	% of Younger Males	% of Older Males	% of Younger Females	% of Older Females	% of Residents	% of Visitors
Hunting	44%	66%	71%	40%	24%	46%	41%
Fishing	87%	96%	88%	85%	84%	90%	80%
Foraging	97%	98%	96%	98%	97%	98%	95%
Farming	72%	68%	61%	71%	80%	79%	54%

5.2. The Social Context of dfp

Two-thirds of hunters were active in hunting club activities, significantly more than fishers active in fishing clubs (50%, χ^2 = 9.85, OR = 2.9), foragers in foraging clubs (49%, χ^2 = 10.78, OR = 2.9), or farmers in farming clubs (52%, χ^2 = 6.95, OR = 3.1).

Two-thirds of hunters were active in a club, significantly more than non-hunters (34%, χ^2 = 32.47, OR = 3.86). Fishers, however, were similarly likely to non-fishers to be active in clubs, as was the case when comparing foragers and non-foragers and farmers and non-farmers. Overall, 148 (49%) were active in at least one type of club. A total of 56% of hunters most often hunted with their hunting club. A further 36% hunted in small groups of family and friends, while just 8% hunted alone. In contrast, 17% of fishers and 18% of foragers undertook their activities alone. The remainder most often engaged in the activity in small groups of family and friends. Males were more likely than females (28% compared with 8%, χ^2 = 20.98, OR = 2.5) to fish alone, but otherwise, small groups were the most common activity mode for all participants in fishing and foraging.

When asked about the core values attached to dfp, 90% of participants agreed or strongly agreed that dfp is important for the identity of the local community (see Table 3) and over 90% asserted dfp's environmental sustainability and contribution to healthy eating. Recreational pursuits (getting in touch with nature—89%), ethical food production (88%), strengthening social contacts (86%), and nutritional interests (to vary the diet—84%) were also among the key values underpinning dfp. This suggests that social and community-related values were clearly important, but not the sole or most important values motivating dfp participants. Relatively few participants attached economic value (in terms of contribution to income) to dfp. There were no differences in level of agreement based on age, sex, activity or whether the person was a resident or a visitor.

Table 3. Values attached to domestic food production.

Domestic Food Production Is	Agree or Strongly Agree (%)
... sustainable for the environment.	93%
... a great way to eat healthy.	92%
... important for the identity of the local community.	90%
... a great way to get in touch with nature.	89%
... an ethical way of producing food.	88%
... a great way to strengthen social contacts.	86%
... a great way to vary the diet.	84%
... a supplement to my regular income.	19%
... my main source of income.	6%

5.3. Forms of Exchange

While only 6% of participants (17 people) said that dfp was their main source of income, a further 19% (57 people) said that dfp provided some supplement to their normal income at some point in the past five years. Most sales occurred of food produced from hunting (16% of hunters sold food) and farming (8%). Participants aged under 50 years (24%) were more likely to sell food than older participants (13%, χ^2 = 5.06, OR = 1.2). There were no other significant group differences among those who sold domestically produced food.

Table 4 reveals that about 60% of survey participants said that they gave food away. Giving away was equally common within each activity (between 62% and 67%). Note that comparison between foragers and non-foragers is not possible because of the very small number of people (8) who did not forage. Almost all survey participants (94%) engaged in multiple activities and typically gave away food from some but not all activities. For example, 76 of the 129 (60%) participants who engaged in both hunting and fishing gave away food from at least one of these activities, but only 48 (37%) gave away from both.

Table 4. Group differences in propensity to give food away.

Group	Give Away	Give Away
Total	61%	
Gender: male, female	70%	56%
Age: <50 years, 50+ years	59%	62%
Residence: inland, elsewhere	64%	51%
Activity		
Hunter, non-hunter	67%	56%
Fisher, non-fisher	63%	44%
Forager	62%	
Farmer, non-farmer	65%	48%
Active in club: yes, no *	70%	52%

* group difference significant at $p < 0.05$.

Participants who sold dfp were just as likely to give away food (67%) as those who did not sell food (59%). However, participants who sold food from foraging were more likely to also give away foraged food than those who did not sell food (75% compared with 46%, χ^2 = 5.24, OR = 1.6). Participants who claimed that dfp was their main or supplementary income were just as likely to give away dfp as those for whom there was no income impact (64% compared with 60%).

The only significant difference in give-away patterns between groups included in Table 4 was that people actively involved in club activities were more likely to give away domestically produced food (70% compared with 52% of those who were not active. χ^2 = 11.24, OR = 2.22).

Nearly 70% of survey participants said that they had received domestically produced food as a gift from someone else. Food recipients were significantly more likely than non-recipients to give food away (67% compared with 44%, χ^2 = 11.75, OR = 2.37). There were no differences in the likelihood of receiving dfp among people engaged in the different dfp activities. Males (77% compared with 65% of females) were more likely to receive dfp (χ^2 = 5.30, OR = 1.86), but there were no other group differences.

5.4. Motivations to Give

The most common reason for giving away food was "to be a good friend or neighbor" (79% of people who gave away cited this reason), followed by "to thank someone" (52%), "to help older people in the community access food" (31%), "to provide healthy food" (28%) and "to avoid food waste" (19%). There were no significant differences in reasons for giving away food for people engaged in the different dfp activities. Males (45%) were more likely than females (25%, χ^2 = 11.5, p = 0.001) to cite "thanking someone" as a reason for giving away food, but there were no other group differences. Overall, 96 of the 188 participants (51%) who gave food away cited at least one of the food-related motivations (to help older people access food, to provide healthy food or to reduce food waste).

Table 5 shows that males were significantly less likely than females to have a food-related motive for giving food away (χ^2 = 5.41, OR = 0.50). Hunters (42%) were less likely than non-hunters to have a food-related motive (χ^2 = 6.14, OR = 0.48). No other group differences proved significant, although residents were somewhat more likely than visitors (p = 0.08) to have food-related motives, as were those who were not active in a club compared to those who were (p = 0.06).

Table 5. Percentage of participants who gave food away and had a food-related motive.

Group	Had Food-Related Motivation	Had Food-Related Motivation
Total	51%	
Gender: male, female *	41%	58%
Age: <50 years, 50+ years	46%	57%
Residence: inland, elsewhere	54%	39%
Activity		
Hunter, non-hunter *	42%	60%
Fisher, non-fisher	51%	44%
Forager	51%	
Farmer, non-farmer	51%	51%
Active in club: yes, no	45%	59%

* group difference significant at $p < 0.05$.

5.5. Insights into Distribution Networks

There were 25 free-form comments from 19 participants which addressed the issue of giving food away. Primarily, participants talked about giving food to close family who had moved away (12 comments) and/or to people in the community who were no longer able to engage in the activity themselves (8 comments). A number of participants (six) talked about food exchange models—either directly bartering or sharing harvests (from foraging or farming) among a group of people who provided some type of input (time, equipment, access to land). One participant noted that there had been an attempt to use farming as a pathway to integration for refugees living in one municipality "some years ago", and that the idea was being revived for implementation "in the next year or two". Another described "soup days" in hunting groups, where (usually) older people who no longer hunted themselves helped prepare soup and were given a share. Two participants suggested that people rarely "donated" in the altruistic sense, but that "everyone… keeps a book and expects favors in return".

6. Discussion

This survey has tapped into a highly social segment of domestic food producers in the inland North of Sweden. While there were relatively few people aside from hunters who considered themselves members of formal clubs, about half of the survey participants nonetheless considered themselves active in club activities, serving not just as performers of the activity, but facilitators for and with others. This emphasizes the social significance of clubs (particularly hunting and fishing) [11,12,18] and the strength of their social ties in being able to recruit non-members to club activities.

The club is central to the activity of hunting, with over half of hunters most commonly hunting in club-organized groups. This might reflect a prevalence of large game hunting (especially moose) among survey participants. However, even where "the club" was not the hunting group, group rather than solo hunting was the norm. Perhaps more surprisingly, group-based activity was also the norm for the majority of fishers and foragers, with over 80% of each normally engaging in the activity in small groups rather than alone. As a result, hunting, fishing, foraging and farming did not just have individual recreational value, but were widely considered important avenues for maintaining social contacts and community identity [52]. "Community" had a number of dimensions, relating to community of practice (where residents and visitors together engaged in the same form of dfp), socio-cultural identity (particularly within an extended family) and location.

Previous research has suggested that there is a stronger commercial aspect to domestic food production in the inland North than may be commonly perceived [21,25], and there was a substantial segment of survey participants (around 20%) who had a commercial interest in dfp. However, that commercial interest did not preclude them from giving food away at similar rates to other participants. In other words, commercial and non-commercial forms of exchange are not mutually exclusive, but co-exist.

Motivations for giving away food were primarily related to reciprocity (thanking someone) and strengthening social ties (being a good friend or neighbor), consistent with the literature [5,7,40,42]. The importance of reciprocity was emphasized in the free-form comments, where it was also suggested that non-commercial exchange occurs within fairly narrow and proximate groups (family and neighbors more than any wider geographic or social definition of community generally). The survey also showed "reciprocity in action", where those who received food from others were significantly more likely to give away their own food. Networks for food distribution are likely to extend only marginally beyond the network of producers in situations like sharing food with close family who have moved away or "locals" who no longer participate in dfp activities themselves.

While social motivations for giving food away were acknowledged by over half of the survey participants, motivations relating to food security (food access, healthy food) or food waste, although not absent altogether, were less common. There was some recognition of the importance of local food for older people (31% of participants), and the contribution of local food to healthy diets (28%), reflecting some consideration of the dietary as well as cultural significance of local food, which is largely absent from commercial food supply chains and is difficult to access in local shops [12,28].

There were few differences in dfp behavior between the groups considered in this survey (males and females, younger and older participants, residents and visitors). Males may be more likely to engage in dfp alone, and more likely to give food away as an expression of thanks. Younger participants may have been more likely to have a commercial interest in dfp. However, generally, these variables did not have an impact on rates of giving, or on the values attached to dfp. This is somewhat surprising, given the expectation in the literature that there would be differences based on age, gender, and, perhaps most interestingly here, residence [17–19]. About half of the "visitors" included in the survey sample had second homes and/or generations of attachment to the place in which they performed dfp, making them a specific type of "tourist" whose social ties and cultural values are likely to mimic those of residents [15]. The narrowness of networks and the high overlap between activities engaged in dfp may also enhance the reproduction of social values across generations and between genders. The changing (and shrinking) demography of the inland North [3,23], however, might lead to greater group differences in the future as the social and geographic distances between dfp participants increases.

Understanding the social context of dfp activities, its underlying key values, distribution patterns, and motivations for giving away food to other members of the community is important for ongoing discussions about the potential contributions of dfp to local food security and rural community-building in the North. While dfp is already a communal resource addressing, at least in some small part, some of the challenges of access to fresh and healthy food in an area where commercial food outlets are rare and difficult to access [3], the potential benefits of these local food sources have so far remained limited to a relatively narrow circle of producers, clubs and their immediate close networks. There may be potential to extend these benefits to other members of the community through expanding opportunities for giving food through formal donation networks, particularly using clubs as the donating or coordinating entity. However, the observed theme of (primarily direct rather than generalized) reciprocity and the apparent narrowness or closedness of exchange networks must be kept in mind. Dfp participants may be less willing to give food to those who have not "earned it" in some way—through historical engagement in the activities, through providing some input (such as helping prepare the soup for soup day or volunteering in club activities) or through close connections with other dfp participants. It may, thus, be difficult for "outsiders", such as the refugees mentioned in the free-form comments but also other newcomers and in-migrants from different socio-cultural backgrounds [20], to become part of exchange networks around dfp, and again it might require active intervention from clubs to make this community-building happen [18].

Ideas around generalized reciprocity as conceived by Endo and Lim [45], among others, offer hope in this regard and may provide some inspiration in terms of how the non-commercial sharing of dfp beyond narrow social circles can be formally promoted as a tool for more inclusive community-building. Some concrete practical applications of such ideas would be to link dfp clubs and participants to formal community service providers, including in aged care, schools, or migrant integration. This would not only offer opportunities to make local food available to other members of the community, but to use dfp as a tool to stimulate social interaction, integration (e.g., of migrants and newcomers), as well as education and knowledge exchange concerning dfp practices, thus expanding local dfp communities of practice.

7. Conclusions

The key findings drawn from this exploratory pilot study can be summarized as follows: The various dfp activities practiced in the inland North of Sweden are considerably more "social" in nature than expected, and tend to be conducted either as part of formal clubs (especially in the case of hunting) or as smaller groups of family and friends. Strengthening social contacts and community identity were ranked highly as key values attached to dfp, along with values around environmental sustainability, healthy diets, and nature-based recreation. Commercial interests in dfp were clearly more limited, and often coexisted with non-commercial distribution of food. The survey confirmed that giving away food for free was a widespread activity (practiced by over 60% of survey respondents). Giving food away was especially common among participants actively involved in club activities. While hunting seems to stand out as one of the more social activities registering high rates of giving away food, there were otherwise few significant differences between the various dfp activities in terms of core values, distribution patterns and motivations for giving away food.

Aspects of reciprocity were clearly important for dfp participants giving away food, with food recipients being significantly more likely than non-recipients to give food away. This was also reflected in the key motivations for giving away food, which were primarily about strengthening existing social ties (e.g., "to be a good friend or neighbor" or "to thank someone"), while other food-related motives (helping older people access food, providing healthy food, or avoiding food waste) were less common. There were also indications that giving away food occurs primarily within narrow social networks (family and neighbors), at times extending to family who have moved away or to locals no longer able to participate themselves. Non-commercial distribution also occurs as direct reciprocal exchanges within narrow circles, such as bartering with other producers or giving food in exchange for other production inputs. Overall, there were few indications that sharing or giving away food occurred as part of purely altruistic motivations or to reach out to unfamiliar members of the community beyond the club or one's immediate social circle.

The limitations of this pilot study mean that there is still a lot to be learned about dfp and alternative food networks in sparsely populated rural areas. As a "tick box" survey, this research suggests some pathways for continued research while being largely exploratory itself. While there appears to be widespread willingness to give, the conditions under which that giving may occur (what, how much, to whom, how) have not been explored in any depth, apart from some side notes provided by participants in the open comments section. Additional qualitative research could strengthen these insights and explore the multifaceted motivations behind non-commercial food exchanges, focusing on the complex interplay of social, cultural, environmental and other factors influencing their behavior. What is presented here is the start of a model of dfp exchange in the inland North which suggests that commercial and non-commercial exchange co-exist; that social motivations for dfp exchange are paramount but may lead to narrow or exclusive exchange networks; and that reciprocity is the driving force in exchange transactions, with less (but still some) consideration of food security. Future research could aim to quantify the scale and seasonality of dfp exchanges further, along with paying more attention to the spatial networks (particularly rural–urban networks) emerging from those exchanges. Another important area for follow-up research concerns recipients of domestically produced food. This research has focused on people who take part in dfp, and except where they are also recipients, we do not have great insights into who receives dfp or the values they attach to dfp exchange. Future research should, thus, investigate the characteristics, preferences, and values of food recipients, along with the various social, cultural and health/wellbeing benefits associated with receiving food, to provide a more comprehensive understanding of dfp exchange networks. This could also involve qualitative interviews or focus groups to gain deeper insights into recipient perspectives, and such approaches should also include the perspectives of other members of the community that may struggle to access such exchange networks (such as newcomers and migrants).

Geographically, the research has addressed a gap in the literature with regard to dfp and non-commercial food distribution in a sparsely populated area characterized by socio-demographic challenges and expansive food and service deserts. This is a region that is not necessarily renowned for its agricultural food-producing capacity and has, thus, attracted very limited policy and research attention to issues around sustainable local food production and alternative food networks. The paper has also contributed a broader perspective on domestic food production or self-provisioning, which in the literature is predominantly focused on domestic farming (and more specifically home gardening). Dfp in these northern areas is so much more than just farming, and our study suggests that there are important similarities and differences between these northern signature dfp activities when it comes to their social contexts and distribution practices, which could also be further explored and contextualized in future qualitative studies. There may also be differences in practices between those who live permanently in the region and those who visit for dfp activities which were not picked up in this survey, but could relate to strength of attachment and motivations for visiting.

Beyond this northern context, this research adds insights into the constitution and operation of non-commercial local food networks that have been largely neglected in the academic literature. Even in high-income, highly industrialized and highly urbanized countries, domestic food production remains a popular activity whose importance is far greater than simply filling in leisure time or supplementing incomes. Periodically, dfp attracts attention from policy-makers, marketers, and alternative food advocates through its promises of connecting with nature, educating urban children about food production, and contributing to personal and collective food security, diversity and quality. What has been lacking is an understanding of how domestic food production and distribution "works" in a communal (and particularly rural and sparsely populated) setting. This research has commenced the process of building that understanding.

Author Contributions: Conceptualization, D.B.C., D.A.C. and A.B.J.; methodology, D.B.C. and A.B.J.; data curation, A.B.J.; formal analysis, D.B.C. and A.B.J.; writing—original draft preparation, D.B.C., A.B.J. and D.A.C.; writing—review and editing, D.A.C.; project administration, D.B.C. and D.A.C.; funding acquisition, D.B.C. and D.A.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Swedish Research Council for sustainable development FORMAS, under the projects "Farming futures in borderline communities of Sweden and Australia" (2017-00828) and "Cities of the North: urbanisation, mobilities and new development opportunities for sparsely populated hinterlands (2016-00352), and the Kamprad Family Foundation, under the project "Rural shop innovations in a post-COVID world: implications for community development in northern Sweden" (2022-0029).

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and complied with the internal ethics procedures for research involving humans maintained at the Department of Epidemiology and Global Health, Umeå University. The nature of the study did not involve any risk of causing participants physical or mental harm and did not involve the processing of sensitive or incriminating personal data. As such, it did not require external ethical review by Swedish Ethical Review Authority as stipulated in the Ethical Review Act.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data available from authors upon request.

Conflicts of Interest: The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

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