


Organising Alternative Food Networks (AFNs): Challenges and Facilitating Conditions of different AFN types in three EU countries

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Abstract

This study aimed to explore the constraining and facilitating factors impacting the emergence and consolidation of different types of alternative food networks (AFNs) in different countries. Drawing on the expertise of organizers of seventeen AFNs, we investigated the conditions and actors that hinder and promote the development of different types of AFNs in Poland, Portugal and the Netherlands. Using a multi-actor perspective framework, we categorized six types of AFNs according to their logic and characteristics: consumer-led, producer-led, third-sector led, community supported agriculture, public-led, and business platforms. Key challenges and facilitating conditions varied according to AFN type, and depended on AFN particularities. In contrast to the Netherlands, low social capital was commonly cited as a challenge in Portugal and Poland. AFN organizers appeared to exercise innovative power when creating new forms of food provision; however, a wide scope of actions by governmental and non-governmental actors are needed to support the emergence of more AFNs.

Key words

alternative food networks, categorization of AFNs, challenges, cross-country comparison, power, short food supply chains

Introduction

Despite the extensive literature on alternative food networks (AFNs) (Feenstra 1997; Renting *et al.* 2003; Whatmore *et al.* 2003; Venn *et al.* 2006; Goodman *et al.* 2012), our understanding of the factors that hinder and facilitate their emergence

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and consolidation remains fragmented. We argue that these limitations are partly due to the following reasons. Firstly, insights are dispersed in a literature that tends to focus on a few case studies and rarely engages with the wide diversity of AFNs. Emerging as a response to the 'standardization, globalization, and unethical nature of the industrial food system', AFNs share in common a concern with the product quality, the creation of relationships of trust between consumers and producers, the sourcing of local produce (Edwards 2016, p. 2), and addressing unequal distributions of power in the supply chain (Galli and Brunori 2013). However, there is wide variation in the ways that AFNs set about addressing these issues (Grivins *et al.* 2017). AFNs significantly differ in their approaches, motivations, involved actors, and models of operation (Mount *et al.* 2014; Chiffolleau *et al.* 2016). Some AFNs follow more traditional formats (e.g., farm sales, farmers' markets, urban agriculture), whereas others have developed fairly new approaches (e.g., community supported agriculture (CSA), vegetable box schemes, and online sales; Kneafsey *et al.* 2013; Kalfagianni and Skordili 2018).

Although the literature has made important contributions to understanding the challenges and facilitating conditions experienced by AFNs (e.g. DeLind 1999; EIP-AGRI 2015; Galt *et al.* 2016), the applicability of findings to specific types of AFNs (e.g. cooperatives) is unclear. Studies tend to focus on single types of AFNs, e.g., consumer cooperatives (Öz and Aksoy 2019), collective purchasing groups (Thorsøe *et al.* 2016; Dedeurwaerdere *et al.* 2017), or CSAs (Hitchings 2013; Nost 2014; Galt *et al.* 2016). Some studies have broader scopes (e.g., Kirwan *et al.* 2013), but lack detailed comparisons across types of initiatives. Among a few exceptions are the study by Si *et al.* (2015), which categorized AFNs in China into CSAs, farmers' markets, buying clubs and gardening plots, and Mount *et al.* (2014), which explored the relation between barriers to scaling up different types of organizations, and rationales of a wide set of community food projects in Ontario.

Secondly, comparisons between countries are limited. Previous research has discussed variations in AFNs' motivations and concerns in different European regions (Sonnino and Marsden 2006; Bilewicz and Śpiewak 2019; Goszczyński and Wróblewski 2020), their relation to food security (Cerrada-Serra *et al.* 2018), and variations of alterity (Martindale *et al.* 2018). Some studies have compared Western and Eastern European countries with regards to food self-provisioning (Smith and Jehlička 2013; Sovová and Veen 2020) and farmers' markets (Fendrychová and Jehlička 2018). However, little attention has been paid to variations across countries of the hindering and facilitating factors of AFN organizing.

Thirdly, there is a lack of research on AFN organizing and organizers. Previous research on AFNs has primarily focused on consumers and producers (e.g., Feldmann and Hamm 2015; Hvitsand 2016; Zoll *et al.* 2018), which can conflate the experience of organizers with the experience of participants. AFNs may be organized by consumers, producers, or third-parties; however, a common characteristic is that they all depend on the work of individual or collective organizers. These are critical actors, as founders or key organizers are most aware of the experienced challenges and facilitating conditions of starting up and running a short supply chain.

Fourthly, a greater understanding is needed of which actors have power over specific challenges or facilitating conditions. For example, in the study by Sellitto *et al.*

(2018), the challenges of producers and consumers are often conflated rather than disentangled, which is problematic because it limits the potential of the diagnosis to inform processes of consolidation of AFNs on the ground. Additionally, it is important to examine who can act upon the changes needed for more AFNs to emerge. Identifying the actors and contexts involved in systems of production and consumption (such as AFNs) is essential to understand how these systems (can) change (Ribeiro *et al.* 2018; also see Oliver *et al.* 2018). To address the above-mentioned gaps, we draw on the expertise of AFN organizers to investigate the factors and actors that hinder and facilitate the development of various types of AFNs in three European countries: Portugal, Poland and the Netherlands. The study is driven by the following research questions:

1. How can AFNs be categorized according to their organizing logic and characteristics?
2. What are the challenges and facilitating conditions experienced by different types of AFNs?
3. How do challenges and facilitating conditions differ according to the country in which AFNs are based?
4. How can the concept of power explain and assist in addressing the challenges and facilitating conditions experienced by AFNs?

Theoretical framework

AFNs have been categorized in the literature on the basis of their extension in time and space (Renting *et al.* 2003), the level of commitment expressed by producers and consumers (Mundubat 2012), or other criteria related to the number of intermediaries (Chiffolleau *et al.* 2016; Jarzębowski *et al.* 2020). However, such typologies do not differentiate between economic models (for profit, non-profit) and other key characteristics of the AFNs (e.g., public/private, legal status/ informal). In order to distinguish between these aspects, we apply the multi-actor perspective (MaP) framework proposed by Avelino and Wittmayer (2016), based on the ‘welfare mix’ model of Evers and Laville (2004, p. 17) and Pestoff (1992, p. 25).

Multi-actor perspective (MaP)

Originally proposed in debates on sustainability transitions, the MaP framework (Avelino and Wittmayer 2016) helps to conceptualize the different actors exercising power in a transition and analyse the changing power relations between them. This framework is applicable to AFNs because they can be seen as actors who play a role in a transition towards sustainable food systems.

An ‘actor’ is defined as ‘a social entity, that is, a person or organization, or a collective of persons and organizations, which is able to act’ (Avelino and Wittmayer 2016, p. 634). As depicted in Figure 1, this framework distinguishes between four sectors, namely the state, market, community and the ‘third-sector’, which differ according to their ‘logic’ and characteristics – i.e., public/private domains, for-profit/non-profit

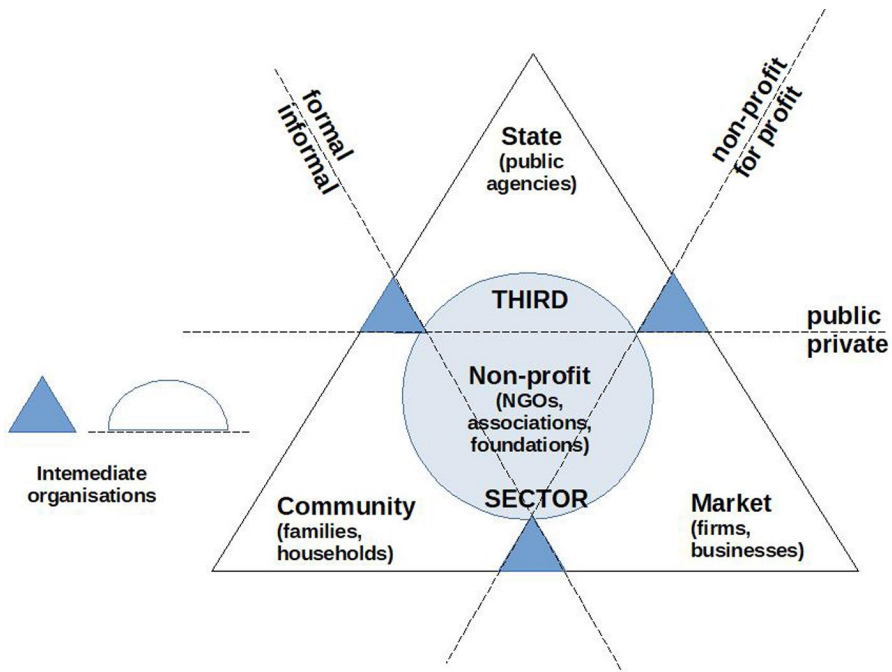


Figure 1: *Multi-actor perspective. Level of sectors.* (From Avelino et al. 2016) [Colour figure can be viewed at wileyonlinelibrary.com]

purposes, and formal/informal legal statuses. The overlapping zones between sectors are described as the space of intermediate organizations and exhibit characteristics of different sectors (e.g., public-private partnerships would be placed in the triangle overlapping state and market). Avelino and Wittmayer (2016) acknowledge that the boundaries between sectors are not fixed, but rather contested and permeable.

Actors and power

Each sector has multiple actors, and the same person may have roles in multiple sectors (e.g., a policy-maker working for the state can be part of an association in the third-sector while also involved in a neighbourhood group). Actors can be individual (e.g., neighbour, entrepreneur, politician) or organizational (e.g., neighbourhood group, association, governmental body, multinational). Such variety suits research on diverse AFNs, as some are led by groups of people and others by organizations of multiple sorts.

Acknowledging the multiplicity of actors shows that power dynamics can occur between actors of the same sector or across sectors. We use Avelino's (2011, p. 798) working definition of power: 'the capacity of actors to mobilize resources to achieve a certain goal'. Avelino and Wittmayer (2016, p. 639) argue that 'in modern western

societies, during the past decades of welfare state development combined with neo-liberal privatizations, our societies have been dominated by a two-sector state-market logic and the influence of the Third Sector has been underestimated'. This statement clarifies that despite the equal size of the sectors depicted in Figure 1, the market and state sectors are in fact more dominant than the others (see figure 5 of Avelino and Wittmayer 2016).

While it is generally accepted that state and market actors have more power than other actors, this is a limited view of the notion of power. Avelino and Wittmayer (2016) highlight that besides studying levels of power and who has power over whom, it should be acknowledged that there are different kinds of power, which can be exercised by drawing on different types of resources (e.g. human, monetary, mental; Avelino 2011). One can also differentiate between re-inforcive power (to reinforce existing institutions), innovative power (to develop new resources) and transformative power (to develop new institutions) (Avelino 2011). There are diverse sources of power: economic, technological, political-institutional, symbolic, knowledge and legitimacy (Rossi *et al.* 2019, p. 149). Legitimacy is at the basis of 'discursive power and reframing ability' and informs normative stances of policies. The ability to create shared knowledge through sustained relationships of actors, seemed to be a key factor in the reconfiguration of power relations in transformations of agri-food systems studied by Rossi *et al.* (2019). According to Avelino (2011), power relations between hypothetical actors A and B can be categorized according to whether (1) A has more power than B, (2) A has power over B, or (3) A has a different power than B. These distinctions are useful to explore the different types of power exercised by the organizers of different AFNs and analyse the relations between AFNs and other actors in the food system.

Literature review

Table S1 (i.e., Table S1 of the Supplementary Material) synthesizes current knowledge on the challenges and facilitating conditions of different AFN types. There is considerably more literature focusing on challenges than on facilitating conditions. Whereas some authors have explored a specific challenge or facilitating condition within a type of AFN, (e.g. Thorsøe *et al.* (2016) on trust in purchasing groups; van Oers *et al.* (2018) on legitimacy in CSAs), other studies and reports have more broadly enumerated several supporting or hindering factors (e.g. Kneafsey *et al.* 2013; Mount *et al.* 2014). The studies with most detailed enumeration of weaknesses of AFNs are EU (funded) reports (EU 2013; Kneafsey *et al.* 2013; EIP-AGRI 2015) drawing on numerous case studies and stakeholder meetings. While they do not distinguish between the barriers experienced by different types of AFNs, the view of producers involved in AFNs seems to be predominant. Literature on challenges of CSAs also seems to express the view of producers.

The study by Mount *et al.* (2014) is the only one (to the best of our knowledge) exploring the relation between types of initiatives, their rationales, and the barriers to scaling-up. They distinguished between non-profit, private business, governmental agency or cooperative, as organizational types. Their results showed that initiatives

that shared organizational form and rationales consistently identified similar barriers, but initiatives that only shared organisation form reported different barriers, suggesting that rationales might influence more the actions of initiatives than their organizational type. They found that initiatives with different rationales could indicate the same barrier, but express distinctive interpretations of it.

Generally, the contents of Table S1 overlap with the lists of barriers and success factors in literature on grassroots innovations (community energy projects (Ornetzeder and Rohracher 2013), transition towns (Feola and Nunes 2014), sustainable consumption (Grabs *et al.* 2016), and sustainable community initiatives (e.g. Forrest and Wiek 2014).

Methods

Data collection and sample

We analysed 17 initiatives of AFNs, seven in Portugal, six in Poland and four in the Netherlands. We chose these countries because they are situated in contrasting EU regions (South/Mediterranean, Central/East, and West/North, respectively) with different food cultures and histories of food supply and distribution (see 'Contexts of countries'). Moreover, AFNs in Portugal and Poland are under-researched (Bilewicz and Śpiewak 2018; Moreira and Morell 2020).

We conducted purposive sampling to maximize the diversity of cases in each country based on (1) number of consumers reached or engaged; (2) mode of operation (e.g., for-profit, non-profit); and (3) types of organizations (e.g., farmer-led, consumer-led, or led by third-party). AFNs were defined as arrangements of food provision that aimed to reduce as much as possible the number of intermediaries between producers and consumers. We only considered AFNs engaged in activities that either allowed for producers and consumers to connect through direct sales or facilitated that connection as sole intermediaries. We selected the initiatives through a sampling approach that included access to gate keepers (e.g., influential people in AFNs), snowballing, and mining of information from the internet. The list of initiatives and their characteristics is presented in Table S2. Applying the theoretical framework to the logics and characteristics of the AFNs' organizations, we were able to distinguish between six different AFN types.

Data analysis

Our goal was to glean an overview of the challenges and facilitating conditions experienced by the initiatives. Founders and current AFN organizers were the key informants, as the most knowledgeable sources on the experience of AFNs. We opted for a qualitative approach so that we could explore the topic in an open and emergent manner. Semi-structured interviews were conducted with 23 people from 17 initiatives (see Table S3 for details). We were able to interview 16 founders; we interviewed current organizers in cases when founders were no longer active and were unavailable. The interviews were conducted between February and July 2018 and lasted about

one hour each. Two interviews were conducted via phone and the rest took place in person. The interviews were recorded and transcribed. We used the English language in the Netherlands and Poland and Portuguese in Portugal, which was then translated to English when transcribing.

Some of the interview questions aimed to collect background information on the initiative, e.g., motivation, views of the current food system, operations, relation to farmers, setting of prices. The main topics addressed were the challenges and facilitating conditions encountered by the AFNs. Interviewees were asked about difficulties they faced or were facing in the AFNs as well as which factors had helped them. The last section of the interview script focused on the changes and incentives that were needed for more AFNs to emerge. Throughout the interviews, challenges or facilitating conditions were mentioned in response to direct questions; however, the majority were interpreted from spontaneous answers (e.g., an interviewee mentioning that something was difficult or hard).

The interviews were open coded with NVivo11. We coded the different types of challenges, facilitating conditions, and actors associated with each AFN. Simultaneously, a database was built with the list of challenges and facilitating conditions organized according to respective initiatives in order to track the challenges and facilitating conditions mentioned across initiatives. We looked for patterns considering the different AFN types and the different countries. Regarding data on changes that would be needed for the emergence of more AFNs, we considered which actors had power to enact those changes.

Contexts of countries

The three countries that are home to the AFNs in our investigation are in three different European 'corners' in which the geographical characteristics and historical contexts have shaped distinct agricultural systems. For example, the average farm size in Poland (Central-East) and Portugal (South) is lower than in the Netherlands (North = EU average of 34 hectares). The Netherlands has the EU's highest share in the EU of very large farms in terms of economic size (more than 50 per cent farms with outputs greater than €100,000). In contrast, this share is less than 10 per cent in Poland and Portugal, where very small and small farms (outputs lower than €8000) have shares of 65 per cent and 75 per cent respectively (EUROSTAT 2016).

A significant share of farms in the Netherlands are devoted to intensive livestock farming, dairy, and specialist horticulture (higher value-added crops), whereas agriculture in Poland is less intensive and productive, using mixed farming and permanent crops (EU 2018). In 2015, the average net income per farm in the EU was highest in the Netherlands (over €60000), whereas it was about €18000 in Portugal and approximately €8000 in Poland. The same report mentions the high cost of land in the Netherlands (EU 2018). In terms of income indicators, income per labour unit at farms is lowest in the North and Central Regions of Portugal (below €10,000) (EU 2018). The share of households engaging in food self-provisioning is significantly higher in Poland (54 per cent, Smith and Jehlička 2013) than in the Netherlands (14 per cent, Vávra *et al.* 2018).

Alongside this data, we interviewed experts from national rural networks in Poland and Portugal. Direct sales of farmers to urban residents used to be common in Poland between the 1970s and 1990s, when they served as a more trusted alternative to the state-managed wholesale system. However, many Poles were ready to embrace the “full supermarket”, which was associated with modernity (Bilewicz and Śpiewak 2018). This dream appears to have been fulfilled, considering the increasingly dominant supermarket chains that are driving out independent food stores. On the one hand, a connotation of buying directly from farmers with memories of the communist regime, might not be conducive of closer relations with farmers. On the other hand, the memory of ‘tasty’ produce contrasts with what people find in supermarkets, driving some to look for alternatives to mass-produced food.

Farmers’ markets in town squares are not a common sight in Poland, in contrast with countries in Western and Southern Europe. Although street sellers of produce are visible, they are mostly wholesale resellers, rather than farmers. Some of our interviewees (of initiatives K and L) commented that whereas there was a strong Polish cooperative movement at the beginning of the 20th century, cooperatives were controlled by the state during the communist regime (also see Chloupkova *et al.* 2003), and they are now mostly associated with corruption, hierarchies and mismanagement. The Polish expert drew a connection between countries entering the EU, agricultural industrialization involving large-scale specialized farming, and a drop in the quality (taste) of produce.

An expert in Portugal mentioned that there should be a role for local food procurement, namely in school canteens; however, this is hindered by, on the one hand, difficulties in incorporating criteria such as distance in public calls for suppliers, and on the other hand, by difficulties hindering collaboration. Collaboration would be needed to enhance food supplies, as farmers are mostly small-scale and unable to meet a school’s demand on their own, but the expert perceived that cooperation would be easier for younger farmers. This expert also pointed out the existence of a specific EU fund for short supply chains and local markets, however, she argued that what is needed is not more financing, but rather more alignment between different policy goals both at a national and European level. Despite the existence of rural development funds, most policies and incentives are contrary to such coordination efforts. Desertification of the rural areas is ongoing in Portugal, and it is further stimulated by the shutdown of public services such as schools and local health centres, which has jeopardized farming livelihood prospects.

Empirical findings

Categorizing different types of AFNs

Applying the MaP framework, we plotted the initiatives according to the logic and characteristics of the AFN’s organizations (i.e., formal/informal, public/private, for-profit/non-profit). Figure 2 and Table 1 show that our initiatives can be clustered into six AFN types: consumer-led, third-sector-led,¹ business platforms, farmer-led, public-led, and CSAs (collaboration between farmers and consumers). Consumer-led initiatives are informal entities within the community sector that consist of purchasing groups and informal

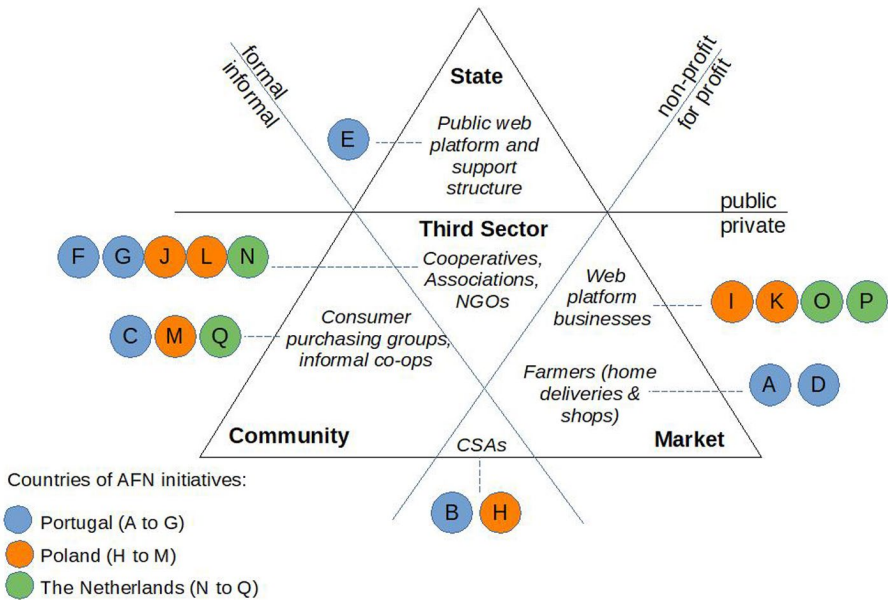


Figure 2: Types of AFNs studied in this paper according to the MaP framework [Colour figure can be viewed at wileyonlinelibrary.com]

cooperatives of consumers. Third-sector-led AFNs are formally instituted non-profit organizations, such as associations, consumer cooperatives and foundations. Within the (for profit) market sector, initiatives were categorized into two types: business platforms, and farmer-led. Business platforms typically consist of web platforms where consumers can choose the produce they want to order from regional farmers. Besides developing the platforms, businesses organize part or all of the logistics of transporting the food from farmers to consumers. Farmer-led initiatives are farmers who find their own ways of delivering directly to consumers (e.g., home deliveries, markets, farmer’s shops).

CSA initiatives were categorized as a separate AFN type in the overlap of market and community, as they consist of a joint commitment between farmers and consumers involving advance payments to the former (for some months, or a year). The final AFN type comprises public-led initiatives organized by public entities. In our sample, one initiative was started and is maintained by a publicly funded regional development organization that created an online platform where people can sign-up for a weekly food box from a regional producer. Together in a network of regional development organizations, they support small-scale farmers in different ways (e.g., finding consumers and providing pick-up locations for the deliveries of weekly baskets).

Challenges and facilitating conditions

Table S4 provides an overview of the most mentioned challenges and facilitating conditions across initiatives organized by the different types of AFNs. In this section, we

Table 1: Categorization of types of AFNs according to the AFNs' logics and characteristics

Types of AFNs	Description	Examples
Consumer-led	Informal groups of people who organize themselves to order food directly from farmers.	Purchasing groups, buying clubs, informal consumer cooperatives, solidarity purchase groups
Producer-led	Farmers who find ways of selling directly to consumers.	Home deliveries, shops, markets
Community-supported (CSAs)	Groups of people who have a joint commitment with a farmer, who is paid in advance (for a year or a season), for the produce.	CSAs, AMAPs (associations for the maintenance of proximity agriculture)
Business platform	Online for-profit web platforms working as marketplaces where consumers can order specific produce from regional farmers, and then get it delivered to their homes or to a pick-up location.	Online marketplaces for regional farmers
Third-sector-led	Non-profit, formally instituted associations and cooperatives (of consumers or farmers) that organize in various ways an exchange between producers and consumers.	Cooperative shop, cooperative farm, cooperative box scheme.
Public-led	Non-profit initiatives organized by public entities that facilitate direct sales from regional farmers, in various ways.	Web platforms with lists of farmers who deliver food boxes per region, local food procurement, farmers' markets

begin by reflecting on organizers' views on challenges and facilitating factors of each AFN type. Secondly, we provide a detailed description of the prevalent challenge of tensions between idealism and pragmatism, which was often cited in the interviews.

Main factors per AFN type. *Consumer-led:* These AFNs are managed by groups of people who organize themselves collectively to order and receive (or collect) produce from farmers. Participants in these AFNs form rotating shifts (twice a year in **Q**, 3h a month in **M**, and unspecified in **C**). The AFN **Q**, which is set in a village, struggled with finding vegetable farmers in their area, whereas the main challenges for groups **C** and **M** were self-organization and engagement. In **C**, there was not a specific order of shifts, and this ambiguity sometimes caused problems during deliveries, when someone must be responsible for receiving the produce and paying the farmer. In **M**, they instituted a formal commitment to dedicating three hours a month to the collective as a pre-condition for membership. Nonetheless, some people did not comply and would have to leave the group after (repeated) warnings. Interviewees of **C** and **M** also complained about a lack of trust and social capital, poor skills in collaborative work, e.g. knowing how to participate in group assemblies.

The availability of locations for the delivery and assembly of the separate food boxes was cited as a key facilitating factor for all three AFNs. **M** is allowed to use a local neighbourhood centre in exchange for organizing monthly activities, **C** pays a symbolic monthly fee to a local association, and **Q** uses the family farm of one of the members.

Third-sector-led: This is the most diverse type in our sample, including AFNs organized by cooperatives (**F** and **G**), a foundation (**J**), and two associations (**L** and **N**). Despite their formal statuses, they operate very differently – e.g., one cooperative is an organic farm with a shop (**F**), whereas another (**G**) arranges vegetable boxes for thousands of people by buying local produce that would otherwise be wasted due to appearance. They share a deep concern for farmers, particularly small-scale farmers, and for their livelihoods (which is also shared by public initiative **E**).

The main challenges of each initiative are related to how they operate, as well as the interviewee's role within the AFN. Difficulties at **G**, a cooperative with a farm, include managing relationships among the team and transforming land without investment. **L** is legally an association but operates as a cooperative organic supermarket, and the shop manager cited challenges arranging the logistics to receive produce from their farmers, due to the co-op's lack of vehicles and the farmers' inability to afford regular trips for relatively small quantities. Another **L** organizer, who is responsible for evaluating processes in the AFN, mentioned problems sustaining democratic and horizontal processes as the organization grows in size and complexity, engaging the 250 non-employee co-op members in decision-making, and inspiring in them a sense of ownership. Both this **L** organizer and **J**'s organizer, whose foundation supports small-scale farmers around another Polish city through consumer groups and direct sales, highlighted a lack of collaborative culture.

For **F**, it was difficult to convince farmers that someone would go to their farms to buy the produce they could not sell to wholesalers. The organizers of **N** created an association that developed an alternative CSA model whereby a community of families rents a piece of land and hires a farmer to grow food for them. They had assumed

that the main hurdles to start the first project would be securing the required financing and recruiting 200 committed families; however, due to assistance provided by a group of the main organizer's friends, finding the families was less problematic than expected.

The role of friends and an established base of relationships seems to be crucial in enabling multiple processes, such as working long hours in a team for a year before launching the project (L) or having a long-term trusted community willing to crowdfund a new project (G). Similarly, F's founder was assured that the project could take off after sending an email to friends and acquaintances and receiving more than enough interest to make the project viable. The facilitating role of friends and trust when starting things together is also visible in purchasing groups Q, C and M. Another supporting factor was crowdfunding for investments when starting four of the projects (G, L, F, N), which shows a strong capacity for mobilization. Self-reliance appears to be a key characteristic of third-sector-led AFNs, which is also evident from their view on subsidies (see discussion in *Tension between idealism and pragmatism*).

Business platforms: These initiatives developed web platforms functioning as online marketplaces where producers can place their offers and consumers can order produce from a selection of regional producers and artisans (of vegetables, fruit, meat, dairy and some processed products). Organizing logistics and marketing are two of their main challenges, which are related to the particular role of satisfying both producers and consumers. K's founder expressed the sense of being a mediator between the city and the village, e.g., explaining to producers that consumers are not interested in large portions of meat and teaching consumers that fresh natural yogurt is less sweet and creamy than what they are used to. Finding a sufficient diversity of farmers within a certain radius around the cities was a challenge for Dutch initiatives O and P.

Although some initiatives received subsidies, they were generally quite critical about them. Initiative I had the largest number of users in our sample and received the largest subsidy, which came from a EU innovation grant and was used to finance the development of the platform's software.

Compared with purchasing groups, business platforms do not mention the importance of pick-up locations, although I and P also use them, nor do they denounce problems with self-organization, as they are not attempting to create horizontal structures with the involvement of consumers, who are mainly viewed as clients. Their commercial nature and the existence of intermediaries in logistics makes other initiatives regard them with scepticism. Despite their for-profit nature, three out of the four initiatives appeared to struggle to grow consumer demand, as explained by P's organizer: *'to make our service more accessible to [consumers'] lifestyles. That's the challenge'*.

Farmer-led: Both farmers behind AFNs A and D changed their careers to start farming organically. For them, the main challenges were partly related to consumers, namely insufficient demand and lack of awareness of the value of supporting small-scale organic farmers (A) and the healthy nature of organic food (D). Other significant obstacles were taken as a given (difficulties and intricacies of producing organic food, finding skilled labour), or had been surpassed (finding suitable land with a long-term lease). Both farmers spoke fondly of the direct relation to consumers and educating them on seasonality and ways of preparing some less-known vegetables.

CSAs: In addition to the CSA organisers of **B** and **H**, we also interviewed a farmer's couple (**A**) who worked with **B** and the organizers of one of the consumer groups (**M**) that worked with **H**. Main challenges cited by the organizers of **B** and **H** included finding enough consumers. Particularly for the farmers of **H** and **A**, having enough consumers via a CSA means not only predictability of demand, but also preventing waste and saving time that would otherwise be spent trying to sell the produce. Both referred to the importance of being able to use locations for delivering the produce and composing the food boxes. Initiative **B** has unpaid arrangements with different organizations to use their space weekly. **H** noted that whereas some consumer groups had arranged spaces in schools or neighbourhood centres, their pick-up location was under a bridge when delivering in a city where the consumers were not organized. The facilitator of **B** complained that most consumers were involved solely for the food rather than sharing the CSA's principles.

Public-led: E's organizers started by participating in several EU funded projects that allowed them to learn, develop, and test the method before launching it and replicating it in other regions, and they cited ensuring self-sufficiency as the main challenge. In this system, consumers cannot choose specific produce, but rather must sign up for a regular vegetable box from a farmer (or group of farmers) and commit to pick them up at a predetermined location. Employees of regional development organizations provide assistance to farmers by helping them find locations, marketing to consumers, and giving legitimacy to the project while representing them in contracts whereby the AFN agrees to use an organization's space as pick-up location. However, the initiative is maintained pro bono by various supporting actors. The web platform that collects orders from consumers is connected to the tax office, which facilitates paperwork for farmers, and positions them close to other web platforms. However, their diligent work in support of small-scale farmers is closest to that of the third-sector initiatives.

Tension between idealism and pragmatism. In addition to the main hindering and supporting factors cited by each AFN type, we noticed that other challenges recurred across interviews (see Table S4). Among these is the tension between idealism and pragmatism, which is further discernible in the various ways that initiatives criticize subsidies and deal with consumers' expectations of diversity.

Tensions between idealism and pragmatism come up when organizers feel conflicted between observing the principles they set out for the initiative and adapting or forgoing those principles for practical reasons. We found 11 examples of such situations (see Table S5 for details), which predominantly occurred with non-profit initiatives, but were also alluded to by two businesses (**P** and **K**) and two CSAs (**B** and **H**). For example, L's organizer described this tension regarding the food offered at the cooperative shop:

'We thought we wouldn't be selling olive oil, because it is not local. We would rather have a sign describing how sunflower oil can be very tasty, and can be used in exchange for olive oil. But then in practice, this aspect of providing a wide variety of products to meet the client's expectations is such a strong incentive that is very hard to overcome. [...] we were thinking about this very pragmatic argument that [...] if we import dates, and they are organic, and sold by a non-profit cooperative shop,

it is better than our clients coming to buy potatoes in our shop and then going to the conventional store to buy dates that are from conventional farming'.

In five of those examples, there was an effort to adapt the principles to practical requirements. In three cases, there was an acceptance of the situation despite its violation of the principles, and one case remained unresolved. The two cases in which organizers stuck to their principles showed opposite results. In one case (**B**), doing so led to the loss of consumers, whereas in the other (**P**), addressing the tension through conversations was viewed as an opportunity to educate consumers about the pricing system in conventional food chains.

Critiques of subsidies were rooted in both practical and idealistic perspectives. Five for-profit initiatives complained about practical aspects such as the bureaucratic nature and inflexible conditions of subsidy schemes. As **P**'s founder explained, *'It is terrible to get subsidies because they are designed from the perspective of the government, and not from my perspective, as an entrepreneur. [...] they are very strict. One year ago, you submitted this proposal, so now you have to execute it. And now the world is totally different, we want to do something else'*.

Although receiving subsidies would provide some financial help, three third-sector AFNs (**H**, **G**, and **N**) resisted doing so in favour of adhering to principles of independence and self-sufficiency. Initiative **H** expressed pride at their independence from subsidies along with fear that consumers would otherwise not want to support them: *'The government does not help us, so we can say to people from our CSA that everything that we changed in this farm, every machine, you have contributed, so you can be proud. Maybe if we take the government's subsidies and we get some big machines, then maybe people won't want to support us'*. The interviewee from food co-op **G** also exhibited pride in managing without subsidies: *'Frankly, because I think that sustainability is also about that. It's about having a real awareness of our resilience, of how far we can go without help'*. The founder of **N** reported similar fears as **H**; however, he also argued that most subsidies in the EU promote a harmful agricultural system, and his AFN aimed to create something outside that system: *'...it could trigger in my farm, in my communities[...], that when they get Brussels money, 'Oh that's easy. We can decrease our contribution...' And when the dependency comes, there will be these prescriptions we have to follow, and before you know we are the farm we already have. Dependency on the subsidy, on the loan, the mortgages... We have to keep it outside'*. This concern with self-reliance as an instrumental means of avoiding complicity in the industrial food system seems to be a strong theme in third-sector AFNs.

The challenge of expectations of product diversity is closely related to seasonality, as restricting consumption to seasonal regional foods limits the range of available products. Most of the interviewees described feeling the pressure of consumer expectations for the diversity of products they are accustomed to enjoying at supermarkets. For farmers engaged in delivering vegetable boxes, diversity is an essential challenge, as they are required to either offer a varied set of produce each week or organize that together with other farmers, which was problematic for **E** because many producers were used to growing monocultures. For a web platform business (**K**) that collects produce from farmers, product diversity was expressed as a matter of efficiency, as it would save them time if they could collect a range of produce from one farmer rather than driving to several specialized farmers. AFNs with shops experienced these

expectations as pressure to provide a wide variety of products. As D described, *'Some customers were asking sometimes for nuts, or rice, pasta, jams, wine...So if you have those products you can have more consumers...[...]it should be interesting to take only fresh products. But the consumer is so lazy that if you can bring them everything, they prefer it'*. Nost *et al.* (2014) and Galt *et al.* (2019) also refer to the challenge of managing consumer expectations of food quantity, diversity and quality, and Brunori *et al.* (2012) mention that consumers have to adapt their diet to seasonal produce.

Country differences

Some conditions differed across countries. Interviewees in Poland reported a general perception that conventionally produced food is unhealthy. Organizers in Portugal and Poland often complained about a lack of trust and collaborative culture. Three interviewees in the Netherlands cited concerns with farmers indebtedness, bankruptcy, and land speculation.

While discourse of conventionally produced food as unhealthy, unnatural, and not tasty is commonplace in the field of AFNs, it appeared to be more generalized in Poland. One interviewee from initiative K described mass produced food as *'not nourishing for anybody [...] It is cheap but it is not really giving you food, so you are starving eating'*. The view of I on food: *'We want zero tolerance for mass produced food with chemistry, fertilizers, herbicides. We want to be the tastiest, healthiest, the safest food in the market'*. I's organizers spoke of people coming to them because of *'the poor quality of the product that they encounter on the market'* and *'their kids are having problems with digestion, and they just learn that you need to go to the root [...] and just eat good quality food'*. When asked where this impression would come from, interviewees responded that it likely derived from memories of differently produced, tastier food from small-scale producers prior to the fall of the communist regime in the early nineties. We also found the initiative with the highest number of members in Poland (I had 100,000 registered users), which indicates a very significant demand.

Eight initiatives, all in Portugal and Poland, complained about the inability of people to collaborate. As E's organizer described, *'We have very small farms, and almost everyone has farming machinery. Everyone has at least one tractor. They don't share things. They are not able to do that. It is very, very hard'*. Similarly, initiative L in Poland explained that *'It is not that easy for people to cooperate with one another. This is not what is strongly embedded in this culture. It is not what you learn at school. It is rather the wild east of capitalism. We were taught to compete with one another, and that you should fight to secure your own interests'*. One interviewee from Polish initiative K referred to the role of governments in influencing culture: *'The strong message from government officials is competition is good. If they start promoting farmers getting together [...] if we create a certain climate that would stimulate people to do things together rather than compete against each other all the time... It does not cost much; you just start talking differently and that's it'*. In contrast, in the Netherlands, 'doing things together' was mentioned as a solution for things that would generally take some time, such as this example provided by initiative Q: *'maybe we can grow our own [vegetables] in the winter time. We can do it together, so it is easy'*.

Actors and power

In this section, we explore the types of power exercised by AFNs and the power relations between them. Furthermore, based on what organizers perceived as the changes required to facilitate the emergence of more AFNs (see the last column of Table S4), we consider which actors have power to enact those changes.

AFNs' power. Based on Avelino's (2011) description, AFN organizers appear to exercise innovative power in terms of their determination to create alternative food supply models. This innovative character is illustrated by the most cited challenge: the pioneering nature of the initiatives. As expressed by I, creating new types of organizations and finding the right structures is one aspect of this question. For AFNs E and F, the issue emerged when farmers did not understand the purpose of the initiative and were not eager to engage. Similarly, it was difficult for L to convince the municipality to allocate them a discounted rental space suitable for their first shop, as officials did not understand the concept of a food co-op supermarket; however, it was much easier for the second shop. Potential distrust towards pioneer AFNs and confusion regarding their needs are overcome with media exposure and collaboration with universities, which gives initiatives visibility and credibility and indicates the importance of these other actors.

Power relations between AFNs can be conceived as comprising either different types or levels of power. When focusing on initiatives within the same city, it seems that different types of AFNs (M, L, K and I) attract slightly different participants. For example, H's organizer explains to prospective consumers that weekly vegetable boxes are better suited to families who cook regularly at home rather than single people. As a shop, L can cater to co-op members who pay a monthly fee as well as the general public. In this dynamic, location is important to an extent. Some of M's participants created other informal consumer co-ops when moving to other city districts, whereas others chose to remain in a group of already established relationships, even if it meant crossing the city to get their products. Among the business platforms, one offers home deliveries (K), while the other relies on neighbourhood pick-up locations (I). Through their locations and operation models, participants' requirements, and the narratives they use, these AFNs employ distinct powers to attract different types of consumers. The relations between them appear to be one of neutrality.

However, there seemed to be some competition between business platforms K and I, which share similar goals. Nonetheless, the founder of K hinted at the possibility of a mixed competition-cooperation relation: *'I do believe that we play not against each other but against the corporate business, the establishment that is around us. It could be very helpful if these companies could [...] organize certain things together, the field that they don't need to compete on. Logistics, general promotion of the whole idea'*.

Power and non-AFN actors. Heretofore, we have mainly focused on the roles of organizers, consumers, and farmers as agents in AFN development and operation. However, Table S4 shows multiple challenges, facilitating conditions, and measures that would facilitate the emergence of more AFNs, suggesting that a

diversity of actors have power over these factors.

Various actors exert different types of power. Governmental actors have some power over the other actors (through legislation). Journalists and other media actors can create media attention around a certain initiative, thereby increasing their visibility and conferring legitimacy, as well as raise consumer awareness of problems with the industrial agricultural and distribution system. Collaboration with universities supports AFNs with legitimacy as well as potential research insights. Location availability was described as being provided by associations, a local neighbourhood centre (municipality), and shops. Winning the second prize of a competition organized by a foundation was the trigger to start initiative F. Some EU funds and projects have also assisted the start or scaling up of some initiatives.

For-profit initiatives D and P spoke of the need for consumer awareness campaigns concerning the importance of local, healthy food, which could be led by governmental actors. However, organizers of O and P complained that while local governments facilitated discussions and networking events around the topic of food systems, they did not directly support local food through their procurement departments. Six of the AFNs advocated for public food procurement favouring local (and organic) food sources. For example, E's organizer suggested that this could entail re-defining some public contracts to include a criterion limiting the sourcing of products to a certain distance, highlighting the role of institutional power in setting norms prioritizing local sources. One member of L added that producers could collaborate to make it easier to respond to such a policy with larger volumes. K's founder saw another role for local governments, namely collaborating with farmers to build and manage shared infrastructures as cooperatives, e.g., packaging facilities.

The strict conditions of subsidy schemes can only be addressed by the governmental actors that define them. In this regard, the founder of N proposed that funding should be available for people who are preparing AFN projects:

'I think the main goal is to stimulate individuals to start new things [...] I think that when you are in the capitalist system, you would say you are crazy. So many hours not paid for, "why would you do that?" [...] I think that when you can pick out the right innovators, you should give them space, in the financial sense of the word.[...] Give them the trust for four years of having no worries. Let them work, let them go, I think so many beautiful things can happen. [...] All the people who inspire me as well as I inspire them, they don't mind how much money they earn, they just want to do their thing. It is kind of a call.'

He later reiterated that he perceived such support as an investment rather than charity, and in turn, funders would have to consider also non-monetary aspects such as soil improvement, ecosystem restoration, or the number of families fed by local food. The call for investing in individuals or groups to create new things is pertinent: two other organizers took one-year unpaid sabbaticals to prepare the launching of their AFNs; however, most would-be organizers lack the financial resources to afford such a sacrifice. Governmental actors with political-institutional power can use their economic and legislative resources to reinforce the agro-industrial system, or they can shift resources to support the transformation of food systems.

There is a contrast between organizers who advocate for the removal of subsidies and other support to industrial agriculture (B, I, L), and those who mainly focus on

the role of consumers and themselves. One organizer of Q viewed consumers as key actors of change and expressed a sense of responsibility for spreading the awareness: *'I think the change can only come from the consumers [...] what we can do here, locally, is to tell what we are doing. We do it a little bit, but we have to do it a little bit more'*. AFN F's organizer claimed that:

'legislation in the case of food waste due to appearance is not the main problem, because it does not forbid the sale of those products. I think it is important that consumer choices change, because that is what has influenced supermarkets, but I think that is already changing [...] I think now it is time supermarkets start buying from farmers all fruit and veggies, regardless of their appearance'.

One member of the informal consumer co-op M argued that people should take the initiative to start their own consumer groups: *'Every day one person asks if they can become a member of our cooperative. [...] But people have to organize themselves, not only through us, which is a really well-established institution'*.

Notably, six AFNs were engaged in educational activities, (five non-profit and one farmer-led), and others (e.g., CSA H) reported sometimes complying with requests for help starting CSAs, showing their commitment to sharing knowledge. CSA-affiliated interviewees proposed that other organizations (NGOs, associations) should support the creation of more CSAs. For example, it was a NGO's suggestion that introduced farmers in H to the idea of CSAs. As H's farmer elaborated:

'I think the most important thing to develop CSA in Europe is to create an organization that will be focused only on the CSA model and find the methods of telling farmers that they can do everything in this model and it can be really good. In Poland there are many small farms that don't know how to sell their products with a good price. It should be maybe an NGO or some [organization] that gets support from the government and they should focus only on how to make really good marketing for this idea'.

However, she also decried the precarious system of NGO funding: *'NGOs have a grant, because it's good to have something on CSA, it's a hot topic, so the EU gives you money for two years. And then the money is finished and people focus on something else'*.

Several initiatives highlighted the need for national governments and the EU to eliminate restrictive regulations. For example, several interviewees in Poland cited a regulation that limits the sale of processed artisanal-made farmers' products. E and L argued that farmers should be able to exchange seeds to save on high purchasing expenses and noted that imported seeds are not necessarily adapted to local conditions. The founder of N spoke of the existent possibility for innovators in the Netherlands to apply to the ministry of economics for temporary exemptions from certain regulations in order to experiment, and later propose modifications to the law. The importance of legal space for experimentation is also reported by Rossi *et al.* (2019).

The diversity of possible measures, actions, and changes described above shows the multiplicity of actors who can foster the emergence of more AFNs. However, specific actors have the power to enact certain changes or measures. Starting a new consumer co-op is up to consumers; however, more information about consumer purchasing groups, CSA models, and local food could be disseminated by properly funded NGOs, local governments, education and media actors. Public food procurement is up to

public entities, as are the current supporting mechanisms for industrial agriculture, which are maintained through re-inforcive power.

Discussion and conclusion

This study offers four main contributions to the scholarship on AFNs: (1) it proposes a categorization of different types of AFNs according to the logics and characteristics of their organizations; (2) it identifies the main challenges and facilitating conditions experienced by different types of AFNs; (3) it indicates some country-specific factors impacting AFNs; and (4) it provides insights into differential power in the emergence and consolidation of AFNs. In this section, we discuss each of these points in turn.

As depicted in Table 1, applying the MaP framework to the field of alternative food chains proved to be a useful method for categorizing AFNs according to their logics and characteristics. The categorization suggests that certain characteristics of AFNs are related to the main actors organizing them (e.g. farmer-led for-profit AFN). However, applying the framework also neglected some elements such as the number of intermediaries. In Figure S1, we offer an alternative depiction of our AFN sample, adapting the scheme of Chiffolleau *et al.* (2016) to illuminate the different ways in which our initiatives operate according to the number of intermediaries. We found that in addition to initiatives with no or one intermediary, we can distinguish initiatives enabled by third-parties ('helpers') who do not act as formal intermediaries, but rather have created the conditions and structures that facilitate the exchange between consumers and producers.

We identified some patterns in the challenges and facilitating conditions of different types of AFNs. Business platforms were mainly dealing with the challenges of logistics and marketing to increase consumer demand. Consumer-led AFNs faced issues with self-organization and member engagement but received support for delivery locations. Similarly to what Mount *et al.* (2014) report, farmer-led initiatives complained about limited consumer awareness and insufficient demand but took pleasure in educating farmers about growing food, seasonality, and the food system. Public initiatives and third-sector-led AFNs appeared to demonstrate the greatest concern for small-scale farmers. Third-sector-led AFNs were organized to be self-reliant, and shared a base of established relationships at the root of their starts, and a capacity to mobilize people by crowdfunding as facilitating conditions. Trusted relationships with people who share similar goals are not only important for the long term success of AFNs (Glowacki-Dudka *et al.* 2013; Thorsøe and Kjeldsen 2016) and for multi-stakeholder groups working on rural innovation (King *et al.* 2019), but are also critical preconditions for starting non-profit AFNs. While active participation in some AFNs can expand one's trusting relationships, the absence of social trust, as reported in Portugal and Poland, hinders processes of collaboration - crucial in many AFNs - and begs the question of how to create social capital. For Ostrom (1999, p. 182) it is hard to create social capital from an external position, but it can be facilitated '*when considerable space for self-organization is authorized outside of the realm of required governmental action*'.

Third-sector-led AFNs presented specific challenges for each initiative, which might be explained by the diverse sample, and suggests that challenges are more likely to be shared by AFNs operating in similar ways. However, when interviewing organizers from the same AFN, we found somewhat divergent views on challenges. Differing views can be related to the specific roles of organizers (as in L), or to the principles that each organizer thinks the AFN should uphold (see tension observed between CSA H and member of purchasing group M in Table S5). The fact that perceived challenges can depend on the person interviewed is a limitation of this study, which was addressed to some extent by interviewing more than one organiser in five AFNs of our sample. Focusing on organisers allowed to survey the experience of starting and managing such projects, and complements the more abundant literature on participants of AFNs (e.g., Zoll *et al.* 2018). There are, however, examples of smaller AFNs in which the distinction between organizers and participants is blurred or non-existing (e.g. solidarity purchase groups in Italy, Grasseni 2014).

Some of these findings are supported by Mount *et al.* (2014) and generally align with the literature review. The problem of lack of consumer awareness and its relationship with consumer demand is reflected in the extant literature (e.g., EU 2013; Kneafsey *et al.* 2013; Mount *et al.* 2014). Likewise, the critique of subsidy schemes was mentioned by Seyfang and Smith (2007) with regards to grassroot innovations, and van Gameren *et al.* (2015) also noted that subsidies can lead to a loss of independence.

One of the most prevalent challenges that we identified is the tension between idealism and pragmatism which was mainly cited by non-profit AFNs. Others have also highlighted this challenge, not only regarding AFNs (Ashforth and Reingen 2014; Öz and Aksoy 2019), but also in eco-communities (Cattaneo 2015). Seyfang and Smith (2007) similarly referred to conflicts that arise between purists and 'system-builders' who are willing to compromise. Cattaneo (2015) described this issue as being a significant potential challenge of eco-communities: '*Any realization of utopian intentions depends on a strong willingness and a pragmatism that might clash with original ideals*'. Tensions between the different ambitions of organizers were also reported in DeLind's (1998) narration of her experience as part of a CSA.

Confrontations between idealism and pragmatism appear to be a common AFN challenge (see Table S5), showing that they are moved by specific ideals and principles. These principles could be conceptualized as the '*the yardstick of the alternative ends*' set by each AFN. According to Le Velly's view (2019, p. 16) of AFNs' alterity: '*the degree of conventionalisation of an alternative network will be measured by the yardstick of the alternative ends that the project asserts rather than by referring to a general ideal of alteritiveness*'. Deeper inquiries into how AFNs deal with tensions between idealism and pragmatism can further contribute to the ongoing discussion on alterity in AFNs that sees relations between alternative and conventional systems as often fluid over time (Ilbery and Maye 2005; Sonnino and Marsden 2006; Holloway *et al.* 2007; Levkoe and Wakefield 2014; Forssell and Lankoski 2015; Lamine and Dawson 2018). Other challenges identified in this study had not previously received much attention. The 'pioneering nature of initiatives' was among the most mentioned in our study; however, to the best of our knowledge, this issue has not been highlighted before now.

Despite some patterns per AFN type, we note that many factors are related to the particularities of each AFN. This finding could indicate that each initiative encounters

very specific conditions and experiences, which requires them to work with what is available, as Grivins *et al.* (2017) described with the concept of 'bricolage' as 'making do'. Furthermore, we found that interviewees mentioned more challenges than facilitating conditions, which could be explained by a 'negativity bias', whereby issues or conditions of a negative nature receive more attention than positive factors with the same intensity (Baumeister *et al.* 2001).

The importance of context was investigated in cross-country comparisons, which highlighted two major issues. In Poland, we found a strong narrative of the poor quality of mass produced food, which was also noted by Bilewicz and Śpiewak (2019). Goszczyński and Wróblewski (2020, p. 259) perceived this narrative as being similar to the motivations of Western AFNs, however, they describe Polish AFNs as 'associated with a crisis of confidence in modern institutions' and experts. Whereas a lack of social trust and a culture of collaboration was often cited in Portugal and Poland, these issues were not mentioned in the Netherlands. This distinction might be related to levels of social trust, which are significantly lower in Poland and Portugal than in the Netherlands (OECD 2016).

This is one of the first multi-country, multi-organizational analyses to attempt to provide insights in the rich set of barriers and enablers of AFNs. Larger comparative studies across different AFN types in different countries are needed. For example, we included only two farmer-led AFNs, both of which were led by Portuguese farmers, and only one public-led AFN. Future research should use larger samples of varying AFN types to better assert what kinds of facilitating conditions and challenges are more prevalent among different types of initiatives. Comparative research across countries would benefit from choosing one or two AFN types and comparing the facilitating and hindering factors of multiple AFNs in those countries (see ongoing project 'Food Citizens', Leiden University 2020).

Finally, we observe that AFNs can be seen as exercising innovative power, which can be linked to the concept of political agency, which Heller and Jones (2013) defined as 'the capacity to take part in the struggle to define the modalities of life in common'. We revealed that the actors directly involved in AFNs do not necessarily have the power to address some of the challenges they experience (see 'Power and non-AFN actors'). Many of the challenges mentioned by the initiatives, such as redefining the conditions of subsidy schemes, stopping subsidies for industrial agriculture, promoting local food through public procurement, and adjusting regulations, cannot be addressed by producers and consumers, but rather must be tackled by governmental actors. Even consumer-related challenges (lack of awareness, limited demand, expectations of product diversity) cannot be tackled by consumers or AFN organizers alone. Although AFNs address these issues to some extent by educating their consumers about seasonality, respondents also highlighted the importance of public awareness campaigns and education which could be led by governmental and non-governmental actors such as NGOs, universities, media actors, or social movements.

These results suggest that non-AFN actors could play a more active role in tackling the challenges that AFNs experience. However, regarding governmental actors, van Gameren *et al.* (2015) pointed out that closer links with public institutions could lead to additional resources, but such relationships can also pose disadvantages. For example, stronger government involvement may result in increased attention to the grey legal areas in which initiatives often operate, loss of independence, and softening

of the initiatives' principles. One way that governmental actors could support AFNs without impinging on their autonomy is through public procurement (EU 2013), which would set an example, promote adaptation to seasonal diets, and increase demand, thereby addressing some of the main challenges of AFNs. Other possibilities are funding AFN organizers when starting up initiatives, making legal space for innovations, valuing non-financial impacts such as healthier and more resilient regional food systems, and adding AFN modes of operation to the curriculum of agriculture studies. Local councils could provide spaces to serve as pick-up locations.

Exploring the factors that facilitate and hinder diverse types of AFNs has shown that some factors depend on the AFN type, whereas others are shared by a broader group (e.g., non-profit AFNs) or are related to specific characteristics, contexts or phases of an AFN. Although challenges were predominant, we also recognized various facilitating conditions (e.g., base of established relationships, support with location, crowdfunding, subsidies). The cross-country comparison showed certain country-specific conditions. A more generalized critical view of mass-produced food contributes to a growing demand for AFNs in Poland and the lack of social trust and a culture of collaboration presents challenges for cooperation in Poland and Portugal. Finally, AFNs are created by organizers' innovative power; however, other actors (e.g., governmental, universities, NGOs, media) exercising other types of power (e.g., political-institutional, educational, legitimacy through visibility) play an important role in enabling the emergence of a larger number of AFNs.

Author contribution statement

Ana Poças was the main lead in conducting and writing this research. Robert Harmsen has accompanied closely the research process and provided feedback at every step of the research and the manuscript. Giuseppe Feola has contributed with his expertise on alternative food systems, through discussions, revisions of the paper, and re-writing some sections. Jesús Rosales Carréon has accompanied the research, and provided feedback on earlier research phases, and on the final versions of the manuscript. Ernst Worrell has provided feedback on the manuscript.

Data Availability Statement

Research data are not shared. The data are not publicly available due to privacy or ethical restrictions.

Note

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¹We define 'third-sector' more strictly than in the original framework (Figure 1) where it is seen as overlapping with all other sectors. In this paper we defined it as operating under the logic of private, legally established non-profits such as cooperatives, NGOs and associations.

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