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Article

Multiple Understandings of Sustainability among Alternative Food Organizations in Geneva

Catalina González and Jasmine Lorenzini *

Institute for Citizenship Studies, University of Geneva, Boulevard du Pont-d'Arve 40, 1211 Geneva, Switzerland; catalinagjamett@gmail.com

* Correspondence: jasmine.lorenzini@unige.ch

Abstract: Alternative Food Organizations (AFOs) seek to establish more sustainable practices in the food system. However, they might hold different conceptualizations of sustainability. Hence, we miss an overview of AFOs' conceptualizations of sustainability that allows grasping their overall transformative potential. In this paper, we analyze a broad range of AFOs active in food production, distribution, and consumers' advocacy to examine to what extent they share a common understanding of sustainability. Our empirical analyses focus on the Swiss canton of Geneva, we build on organizational survey data and detailed coding of the discourses published on their websites. We find that the environmental dimension of sustainability is more prominent and that weak and strong conceptualizations of sustainability are equally present in AFOs' discourses. However, important differences appear between food producers and distributors. The former have a multidimensional and strong conceptualization of sustainability, while the latter focus on fewer dimensions and a weak conceptualization. In spite of these differences, AFOs interact within a small but heterogeneous network.

Keywords: sustainability; food regimes; network; frames; Alternative Food Organizations



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1. Introduction

Against a background of growing socio-environmental pressures and tensions, food systems are reinscribed on the political and social agenda under the lens of ecology and sustainability. Constructing sustainable food systems requires taking into account objectives to reduce ecological and social costs of the current production system to remain within planetary boundaries, reducing socioeconomic inequalities that impact access to food, improving food workers' working conditions, and promoting healthy diets. Although this list is not exhaustive, it includes several challenges that political projects seeking to promote sustainable food systems are bound to face. Throughout the last decades, many initiatives that address one or more of these challenges have emerged [1–5]. These initiatives object to the current food regime defined as "temporary, yet sustained over time, constellations of interests and relationships" [6] (p. 228). The current food regime is characterized by the (over-)exploitation of natural resources [7], violation of workers' and peasants' rights [8], inequalities between consumers who can afford to pay more to have access to healthy food and poorer consumers feeding on agro-industrial unhealthy food [9], and imbalanced power relations [10]. Alternative Food Organizations (AFOs) defined as organizations that contest, counter, or reduce one or several of the mainstream food system's negative externalities, strive to transform the food system on a daily basis and, for some, seek to challenge the food regime. In other words, AFOs engage in political struggles to challenge and transform the food system through everyday action. These struggles include experimental action to practice alternative modes of food production, distribution, and consumption. But they also include challenging power relations and prevailing political discourses. In this paper, we analyze how AFOs based in the canton of Geneva (Switzerland) in the spring of 2019 understand sustainability.

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Why is it relevant to analyze AFOs' conceptualization of sustainability? In a context that some describe as post-political [11–13], many civil society organizations are engaged in offering alternatives to the dominant model [14–16]. However, these alternatives are often built on the lowest common denominator and forgo a more radical critique of the dominant model (de Moor, Catney and Doherty 2019). From this perspective, we analyze the conceptualizations of sustainability that AFOs adopt to understand what kind of alternatives to the dominant model they offer. The notion of sustainability is at the center of many governments and corporations' interests. However, this abstract notion encompasses multiple, not only divergent but also contradictory concerns [17]. Analytically, the different streams of sustainability can be broadly divided into those who adhere to a weak sustainability paradigm and those who support a strong one [18]. These two visions are opposed regarding a central element: the substitutability of natural, human, and physical capital. Weak sustainability advocates defend the idea that it is possible to maintain our current standard of living without depleting the planet's resources, especially due to technological advances [17,19]. Conversely, supporters of strong sustainability believe that a change in model to reduce our consumption of resources and maintain a viable ecosystem for several generations is necessary [18-20]. So far, only a handful of studies have analyzed a broad range of AFOs to understand whether they work together and what characterizes their shared political projects [21,22]. Accordingly, we ask which conceptualization(s) of sustainability AFOs propose and to what extent these conceptualizations are shared across a broad range of AFOs. With this purpose, we formulate the following research questions. First, we ask to what extent do AFOs share a common understanding of sustainability? To what extent are the five dimensions of sustainability considered simultaneously among AFOs? Which conceptualization of sustainability (strong or weak) prevails among them? Second, we analyze how sectors of activities and information exchange networks contribute to these shared understandings of sustainability.

Strong and weak sustainability embodied models are particularly appropriate for the study of the food sector because of its dependence on natural capital. Changes in global biophysical and socioeconomic conditions accelerated by climate change pose a major challenge to food systems [23]. In order to study sustainability in the field of AFOs, we build on the existing literature [24–27] to propose a typology of weak and strong sustainability distinguishing between five major areas of action. The five areas are: changing the economic model; reducing environmental impact; reducing inequalities; improving quality of life for present and future generations; and preserving cultural heritage. This multidimensional typology allows us to analyze AFOs discourses to understand how various sustainability objectives are translated into alternative food projects.

In the first part of this paper, we present the literature on AFOs. In the next part, we build the theoretical framework. We introduce the concept of food regimes, and then propose a typology of sustainability which includes the five aforementioned dimensions and distinguish between the two conceptualizations of sustainability. In the third part, we present the case of Geneva and introduce the empirical data used in this paper. The fourth part presents the results of our empirical analyses. In conclusion, we review the main results of our study.

2. Alternative Food Organizations

Alternative Food Organizations encompass different types of organizations that are active in food production, transformation, and/or distribution. Some of these organizations transcend a clear distinction between production, transformation, and distribution [3,28]. For instance, community-supported agriculture seeks to establish direct links between producers and consumers, with food producers taking into their own hands the distribution part and, sometimes, they transform the food that they sell in "food baskets" (e.g., cheese, bread). Others seek to develop new channels to distribute food, for instance, solidarity purchase groups [29] or participatory supermarkets [30]. In addition, other AFOs focus

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more on consumers' advocacy, seeking for instance to associate food with pleasure [31,32]. Still, others defend workers' [33] or peasants' [34] rights.

There is a rich literature that presents the diversity of food organizations and initiatives (see for instance these two edited volumes: [1,2]). Yet, few studies seek to analyze a broad range of food organizations to gain an overview of their overall transformative potential. Only a few scholars have sought to analyze a broad range of AFOs and applied network perspectives to examine how food organizations interact [21,22]. Moving from studies focusing on specific types of food organizations (e.g., solidarity purchase groups and participatory supermarkets) to research on the field of food organizations allows gaining insights into their shared goals and actions.

In this paper, we build on a study that sought to identify and survey a broad range of organizations seeking to contest, counter, or reduce one or several externalities of the food system in the canton of Geneva (Switzerland). This allows us to examine a heterogeneous set of AFOs that span across food production, distribution, and consumers' advocacy in order to understand how they conceptualize sustainable food regimes.

3. Sustainable Food Regimes

Food regimes constitute the ideational and relational underpinning of food systems. They define how food should be produced, distributed, and consumed. According to Friedmann [6], the current food regime is an *environmental entrepreneurial food regime*. It results from the incorporation of social movements' demands, throughout the 1960s and 1970s, for healthy, fair, and organic food. Large agribusinesses built on these demands to reform the food regime. For instance, agro-industrial actors developed industrial processes to produce high-value organic products on a large scale [35]. Similar processes are currently at play with regard to vegetarian or vegan food, as well as artisanal products such as beer or local products, for instance wine and cheese.

The environmental entrepreneurial food regime contributes to reinforcing inequalities between those who can afford quality food and those who consume the cheapest products. In a context of declining state power, corporations are offering healthier and more environmentally friendly products to consumers who can afford to pay more [6]. In parallel, social movements have moved from the streets to the markets where they seek to mobilize citizens to confront the growing power of private companies and the withdrawal of the state [36]. Many civil society actors are adopting modes of action that focus on developing concrete solutions [14–16,37]. In this vein, many food initiatives seek to develop concrete alternatives in food production, distribution, and consumption. These projects create niche markets and vary with regard to their transformative capacity and willingness to compromise and ally with more moderate players [38].

Field theory analyzes strategic action fields (SAF) defined as "a constructed mesolevel social order in which actors (who can be individual or collective) are attuned to and interact with one another on the basis of shared (which does not imply consensual) understandings about the purposes of the field, relationships to others in the field (including who has power and why), and the rules governing legitimate action in the field" [39] (p. 9). SAFs actors share a common worldview, goals, and action repertoires thus seeking to establish or reinforce shared understandings. Combining SAF and network analysis allows to identify how different organizations collectively seek social change.

Analyzing food regimes allows confronting the current food regime with alternatives that question dominant practices. These alternatives render visible implicit assumptions of the hegemonic model thus questioning what is taken for granted [40]. Its functioning is made explicit, and changes become possible. AFOs thus play a key role since they experiment with alternative models but also because they take part in political debates to question how food is produced, distributed, and consumed. Yet, these alternatives tend to offer compromise solutions that deviate little or not from the dominant model [37]. Therefore, it is important to analyze how AFOs conceptualize sustainability to understand which alternative models are being advocated and implemented.

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In this paper, we build on the idea that actors who are connected within a mesolevel order share common understandings of prevailing problems and solutions that might contribute to social change. Hence, we reconstruct AFOs' networks and we analyze their discourses to understand whether or not they share a common understanding of sustainability. Network analysis allows us to see, among a broad range of AFOs, whether or not they interact and share common understandings of food sustainability. Framing analysis allows us to highlight patterns underlying AFOs' discourses around food and to identify different dimensions and conceptualizations of sustainability.

3.1. Sustainable Food Regimes

Contemporary society is involved in different movements engaged in reforming or transforming the food regime [24,27,41]. Sustainable food regimes are multi-sectoral and have distinctive characteristics [42,43]. For example, they have a low impact on the environment, help protect and respect biodiversity and ecosystems, are culturally acceptable, economically equitable and accessible, affordable, nutritionally safe and healthy, and optimize natural and human resources [44]. Sustainable food regimes are, therefore, a cross-cutting concept referring to food systems that ensure food security, health, and environmental protection [42,45].

In order to move away from anonymous, complex, and rationally organized industrial production, sustainable food regimes seek to develop supply chains that can "short-circuit" the long industrial chains [46]. This vocation also enables the respatialization of food and the redefinition of the producer–consumer relationship with respect to information by articulating new forms of production, political association, and market governance [46–48]. Thus, strengthening the relationship between food production and territory can foster a re-rooting of agriculture towards more sustainable modes of production capable of addressing the political, social, and cultural concerns of our time [47,49–52]. Sustainability in food encompasses a set of values, practices, and commitments within a multi-stakeholder rationale for economic, social, and environmental balance and complementarity with a view to improving the quality of life [53,54].

3.2. Typology of Sustainable Food Regimes

Table 1 brings together different dimensions of sustainability in food, identified in the existing literature, and presents the components of weak and strong sustainability according to the economic approach that integrates environmental factors. Following the neoclassical theory of general equilibrium and growth, the former focuses on production patterns by considering the substitutability (and not complementarity) of natural capital [18,19]. The objectives of sustainable food considered weak are in line with the idea of constant growth through market instruments and ecosystem services [17,18]. In contrast, proponents of strong sustainability urge not to confuse development with growth (Felli 2008). Based on ecological economics, its adherents call for political rather than market regulation to achieve far-reaching social change. The elements of strong sustainability support regulatory measures for effective global governance for the implementation of a sustainable, equitable food system in harmony with planetary limits [55].

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 Table 1. Typology of sustainability in food.

	Economy	Environment	Inequality	Health/Wellness	Cultural Heritage
Strong durability	Supply and consumption: local, sustainable, short circuits, direct sales, contract farming, peasant farming, urban farming Reduction of consumption: consum'actor, imported and off-season products, non-monetary exchanges Food Sovereignty Economic knowledge	Agricultural models that preserve the environment: regenerative agriculture, agro ecology, crop diversity, natural fertilizers, anti-GMO Sustainable food consumption: Ecological, local and seasonal food Respect for ecological processes and balances: protection/preservation of nature, cultural heritage, natural cycles, biodiversity, islands of biodiversity, land, soil, protection, aquaculture systems, renewable energy Consumption and animal welfare: ant speciesism, vegetarian, vegan, flexi-vegetarian, vegan Voluntary simplicity	Sustainable food policies: public debate, participatory democracy, democratization of spaces, locavore, social anchorage, agricultural policies Working conditions: fairer, equitable, and supportive (producers/consumers), safety, fair wages, labor rights, inclusion through work Social inclusion: fight against poverty, intergenerational equity, social inclusion through work, respect for human beings Food knowledge: Raising awareness of eating well, learning about sustainable and quality food	Nutrition in public health: national nutrition programs, sustainable diets Citizen participation and engagement: consumerism, food sustainability activities, health literacy Health literacy Democratization of urban spaces	Food habits: diversity of diets, food traditions, Sharing knowledge: know-how Links between consumers and producers
Low durability	Supply and consumption: traditional agriculture, craftsmanship, transparency of origins, traceability, quality Reduction of environmental externalities: production, processing, packaging, distribution and consumption Local economic development: employment, economic benefits, financial stability of companies, financing, subsidies for agriculture, redistributive power, publicity, labels Controls and standards Fair trade Food safety	Production and supply methods: sustainable agriculture, artisanal or traditional production, participatory, integrated and organic production, reduction of transport Fight against food waste Ecosystem services Treatment of food waste: packaging materials, reduction, recycling Environment and climate change: Environmental awareness (pesticides, H ₂ O pollution, GHG, CO ₂)	Accessibility of food availability and quantity, fair/low prices, quality, stability, free meals and food, Solidarity: emergency accommodation Social justice: Anti-discrimination, human rights, inequalities, social inclusion Working conditions: Human rights, financial aid, programs to adapt to changing agri-food practices Financial independence: NGOs, associations, cooperatives International trade: globalization, income, equity, inequality, producer and consumer rights	Food supply: safe, fresh, healthy, balanced, free meals Food and nutritional requirements: Amount of nutrients/vitamins consumed, amount of calories, sugars, saturated fats Health for all Lifestyle: age, urban vs. rural households, population and national income	Identity: Gender, education, religion, class/status, cultural heritage, local, local food Social cohesion: social ties

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The capital stock model proposed by the World Bank considers three fundamental forms of capital, namely environment, economy, and society [56]. In this institutional view, sustainability capital is the sum of these three stocks, supporting the analytical models of weak and strong sustainability. As mentioned above, weak sustainability emphasizes the principle of substitution between capital stocks while strong sustainability advocates their irreplaceable and strictly complementary character. Considering this analytical division and the existing literature on sustainability in food regimes, we have constructed a table summarizing their multidimensional character through its interactions and interdependencies. Among the major structures that shape and influence the practices, norms, and objectives involved in this model of food, it is possible to distinguish five interconnected categories: (1) the economy, (2) the environment, (3) inequalities, (4) health and well-being, and (5) cultural heritage.

Through this theoretical and conceptual framework, it is possible to indicate that a strong vision of sustainability in food considers:

- 1. The promotion of local forms of supply and consumption, the reduction of food consumption, the development of local economic knowledge, and the strengthening of food sovereignty.
- 2. The promotion of agricultural models that preserve the environment, the respect of ecological processes and balances, the advancement of sustainable food consumption, the care of animal welfare, and voluntary simplicity.
- The implementation of sustainable food policies, the improvement of working conditions, the strengthening of social inclusion, and the democratization of food knowledge.
- 4. The implementation of public health nutrition programs, the improvement of health knowledge, the promotion of citizen participation and engagement, and the democratization of urban spaces.
- 5. Respecting and integrating diverse eating habits, sharing knowledge about sustainable food, and strengthening links between consumers and producers.
 - On the other hand, a weak view of sustainability concerns the following aspects:
- The promotion of global forms of supply and consumption, local economic development, the imposition of controls and standards, the development of fair trade, the reduction of environmental externalities through technology, and the strengthening of food security.
- The promotion of market-driven production and supply patterns, food waste treatment, the fight against food waste, awareness raising and promotion of interim solutions to the environment and climate change, ecosystem services (commodification of nature).
- 3. The strengthening of food accessibility, the promotion of solidarity measures, demands for social justice, productivist improvements in working conditions, searching for financial independence, and the promotion of international trade.
- 4. Improving food supply, meeting food and nutritional needs, promoting health, and addressing heterogeneous lifestyles.
- 5. Identity considerations and the promotion of social cohesion.

Although there are similarities between the two categories, it is important to keep in mind that the differentiation stems from the opposition between a productive or conservative vision of the environment and its resources.

4. Materials and Methods

The canton of Geneva is an urban canton characterized by strong pressures on agricultural land to facilitate urbanization and housing construction. Local food production is concentrated on one third of the territory (Genève 2017) and is mainly linked to cereal and oilseed production (56 percent), grazing (24 percent), vineyards (12.5 percent), and a very small share of market gardening (2.1 percent). Nevertheless, the local population favors

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a paradigm shift in both land management and production methods. Indeed, the population has rejected several proposals to move agricultural areas into building zones (the three votes concern: the modification of the zone limits on the territory of the municipality of Avusy; the modification of the zone limits on the municipality of Grand-Saconnex; the modification of the zone limits on the municipality of Geneva-Petit-Saconnex during the votes of (29 November 2020 and 24 November 2019) respectively. The results of the votes are available on the website of the State of Geneva (https://www.ge.ch/votations, last accessed 14 December 2021)) and has voted in favor of one popular initiative promoting food sovereignty [57]. This desire for change appears also in the development of many AFOs in the canton. In recent years, two participatory supermarkets have emerged, as well as many local contract farming projects and community gardens.

The Swiss agricultural policy in place since the 1990s corresponds to a multifunctional agricultural model that pursues three main objectives: guaranteeing food security, maintaining the natural basis for national food production, and preserving the territory [58]. Thus, this policy recognizes the multiple roles of farmers and supports them financially through direct payments for these different tasks that are not passed on in the price of the products [59]. As a result of the free trade agreements concluded in the 1990s and 2000s, Switzerland abandoned its policy of maintaining agricultural wages through price guarantees, as well as its protectionism. In the face of increasing international competition and strong price pressure, producers obtain a significant part of their wages from state direct payments.

On the consumer side, food expenditure is low in international comparison, accounting for 6 percent of the Swiss household budget [60]. However, Switzerland and the canton of Geneva are characterized by high income inequalities. The median wage in Geneva is high, but many people earn much lower wages. The median salary is CHF 7300 and the salary range varies between CHF 3800 and CHF 11,500 [61]. Thus, it is understandable that the 6 percent expenditure on food does not weigh equally on all households and that the scope for spending more on better quality products is sometimes limited. Indeed, price is one of the main barriers to healthier eating [62].

The canton of Geneva is representative of many large cities in Europe in terms of economic inequalities among citizens, but also in terms of a diversified offer of alternatives to mass consumption and a high degree of urbanization that limits the possibilities of producing food locally. However, an important specificity appears to be the politicization of the food issue and the support of the population for a paradigm shift.

4.1. Empirical Data to Study AFOs in Geneva

This study builds on two datasets: an organizational survey conducted with AFOs based in the Swiss canton of Geneva during the year 2019 and frame analysis derived from discourses that AFOs published on their websites during that same year.

A constitutive step for the organizational survey and the frame analysis consists in the mapping of all the associations, cooperatives, foundations, or enterprises in the social and solidary economy that produce, transform, or distribute food. Also, those that offer advice to or defend the rights of consumers, producers, and distributors about food. This means that the mapping includes a broad range of organizations, including, for example, micro-farms, farmers' unions, participatory supermarkets, food banks, and consumers' associations. The criteria for inclusion in the mapping relate to the status of the organizations (no or limited profits) and the issue addressed (food *and* environment, social justice, and/or health). These two criteria have allowed focusing on those who experiment with and promote alternatives to the environmental entrepreneurial food regime. The mapping started from an existing list of alternative organizations active in Geneva [63] among which we identified those that focus on food. Then, we expanded this list by visiting the websites of identified AFOs and umbrella organizations, as well as through our own knowledge of the field and feedbacks from experts. The mapping identified 226 AFOs.

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For the organizational survey, all the mapped organizations were invited to complete an online survey available on Qualtrics from 3 June until end of September 2019. They all received a letter by email to present the survey, introduce the related research project, and invite them to participate. Subsequently, two reminders and one phone call sought to raise awareness about the survey and foster participation. The questionnaire included 55 questions covering the structure of the organization (e.g., date of foundation, size, and budget), its goals (e.g., values and objectives), its activities (e.g., selling food, producing food, lobbying), its internal organization (e.g., organs and decision-making processes), and interactions with other organizations and public institutions. The survey took about 20 min to be completed. In total, 114 AFOs completed the survey. The response rate was 56.1 percent, which is fairly high for an organizational survey [64]. An analysis of potential biases shows that response rates correspond to the distribution in the population for members of different umbrella organizations, including the Chamber of Social and Solidarity Economy, one Organic Label, and the Federation of community supported agriculture. However, organizations that are not members of any umbrella organization tend to be under-represented in this survey (they represent 60.9 percent of the population but only 53.6 percent of respondents). For more information about the survey, see Huber and Lorenzini [65].

For the frame analysis, a codebook was developed and used to analyze the discourses that AFOs publish on their websites. A team of four coders was trained during a period of two weeks. The training pursued a double objective: to clarify and improve the coding procedure, to train coders and reach a uniform coding procedure applied by all team members. The task consisted of three steps. First, all relevant sentences were defined as those that talk about food. Second, identification was carried out on the framing used in the sentence distinguishing between sentences presenting problems (diagnosis), solutions (prognosis), calls to action (mobilization), or identities (those of AFOs, its allies, or its adversaries). Third, to code the subject, the action, and the issue appeared in this framing. A sentence was coded multiple times if it included different frames, subjects, actions, and/or issues. For each website, the coding covers the home page, as well as the pages presenting the project, its values, and its objectives. The frame analysis includes the discourses published on the websites of 172 AFOs; among them 108 answered the organizational survey (for more information, see [66]). The analysis presented here focus on prognostic frames identified on the websites of AFOs that responded to the survey. Hence, we worked on 98 AFOs and on 2219 frames.

4.2. Methods Used to Identify AFOs' Shared Conceptualizations of Sustainability

First, we used the frame analysis to examine whether AFOs share a common understanding of sustainability and to answer our first research question plus its two subquestions: what are its underlying dimensions (economy, environment, inequalities, health, and heritage) and the prevailing conceptualization (weak or strong). AFOs conceptualization of sustainability are derived from the issue variable in the frame analysis. This variable includes nine predefined categories: the environment, inequalities, health, markets, democracy, localism, animal rights, agriculture (in general), and food (in general). In addition, coders created specific codes inductively to reflect the details and the specificities of AFOs' discourses. For the analyses presented here, we used the typology presented above to categorize all the inductive codes according to specific conceptualization of sustainability. Below, we present descriptive analyses to examine the distribution of AFOs' discourses across these categories. Then, we compare the distribution across sectors of activities to identify underlying division's structure AFOs' discourses around sustainability. More specifically, we compared food producers, food distributors, consumer' advocacy groups, and self-production initiatives; the idea being that different segments of the food system might have different preoccupations, thus focusing on specific dimensions of sustainability but might also value a weak or strong conceptualization of it.

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Second, having identified commonalities and divergences regarding understandings of sustainability among AFOs, we moved to relational analyses. We used multiple correspondence analysis (MCA) to examine the links between AFOs' position in different segments of the food chain and their conceptualizations of sustainability. The MCA includes three variables. (I) the number of issues addressed that range from 0 to 5. (II) The share of strong sustainability derived from the frame analysis. We calculated the mean number of issues that correspond to strong sustainability in our typology. Then, we recoded this continuous scale to have a five-point scale (0 = no reference; 1 = less than 25 percent; 2 = between 25 and 49 percent; 3 = 50 percent; 4 = 51 to 75 percent; 5 = more than 76 percent of references to strong sustainability). III) The four sectors of activity (production, distribution, consumers' advocacy, and self-production). In addition, we used network analysis to see whether AFOs who exchange information share similar understandings of sustainability. We used one question drawn from the organizational survey to reconstruct AFOs' networks. The question measures interactions with other food organizations. The exact question wording is "With which organizations active in the field of food are you in contact for the following activities. Please mention the name of organization and the type of exchange you undertake with that organization." Here, we consider only exchanges that take the form of *sharing information*. The network data is unimodal, however we transformed it into bimodal to visualize all the interactions among AFOs included in the survey. MCA and network analysis allow us to see whether specific understandings of sustainability in terms of dimensionality and conceptualization appear within specific sub-groups of AFOs.

5. Results

5.1. Dimensions and Conceptualizations of Sustainability

Table 2 presents the proportion of framings addressing each of the five dimensions of sustainability, as well as the percentage that promote a strong conceptualization of sustainability. The results show that the AFOs' discourses focus mainly on the environmental dimension of sustainability with one third of the coded frames (33.5 percent). The economic and inequality dimensions account for about one-fifth of the frames (21.3 and 18.7 percent respectively). The other dimensions are less frequently mentioned in AFOs' discourse, with heritage appearing in only 13.1 percent of the frames and health in 6.3 percent. In addition, 7.1 percent of the framings refer to sustainability in general. For more details on the content of the five dimensions, see Appendix A.

Table 2. Dimensions and conceptualizations of sustainability in AFOs' discourse	Table 2. Dimensions and	conceptualizations of s	sustainability in	AFOs'	discourses.
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	Percentage on the Whole Framing	Strong Sustainability (% within Each Dimension)
Dimensions of sustainability		
Environment	33.5	66.5
Economy	21.3	50.5
Inequalities	18.7	43.5
Legacy	13.1	27.0
Health	6.3	52.1
Sustainability (in general)	7.1	-
Conceptualization of sustainability		
Strong sustainability	48.0	
Total	2219	

In terms of the proportion of framing adopting a strong conceptualization of sustainability, this equates to 48 percent of the framings analyzed. Thus, about half of the AFOs analyzed defend a strong conceptualization of sustainability. There are significant variations depending on which dimension of sustainability is discussed. The share of strong

sustainability is highest in the environment dimension with 66.5 percent and lowest in the heritage dimension with only 27.0 percent for strong sustainability. Weak sustainability in the environmental dimension includes general framings that speak of environmental protection and ideals, notions that remain vague. However, it also includes many framings that propose concrete solutions such as organic farming, combating food waste, and reducing pollution. The strong conceptualization of this dimension includes the maintenance of biodiversity, anti-speciesism (which includes veganism and animal welfare), the preservation of species and the respect of natural cycles. We observed concerns that go hand in hand with the adoption of various concrete measures aimed at protecting the environment and respecting the capacities of the biosphere at the national level. In the other dimensions, the share of strong sustainability corresponds to about half of the frames. Slightly less so in the inequality dimension, where strong sustainability accounts for only 43.5 percent of the frames.

In Table 3, we compare the distribution of the five dimensions of sustainability within each of the sectors. Table 3 reveals important differences between sectors. The share of the producers' discourse devoted to economic and cultural dimensions (related to heritage) is higher than that of the other three sectors. Distributors talk more about inequalities and community gardens talk more about the environment. Moreover, in the discourses of organizations advising consumers, well-being appears to be a more important dimension than in the other sectors. The same is true for the environment and inequalities. As far as the environment is concerned, it is mentioned more often in the discourses of community gardens than among producers or distributors. In the second part of Table 3, we present the share of strong sustainability. Community gardens and producers have a higher proportion of strong sustainability with 62.2 and 53.4 percent, respectively, while distributors have the lowest average with 28.8 percent.

Table 3. Sustainability in the different alternative food sec	tors.
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	Production (44 AFOs)	Distribution (17 AFOs)	Consumption (21 AFOs)	Self-Production (16 AFOs)	Total
Environment	28.1	26.4	38.3	61.7	33.5
Economy	35.0	17.9	<u>2.7</u>	<u>12.2</u>	21.3
Inequalities	<u>11.1</u>	36.7	25.9	<u>5.0</u>	18.7
Legacy	19.6	10.6	<u>3.5</u>	13.3	13.1
Health	<u>3.6</u>	4.2	11.8	7.2	6.4
Durability Strong	<u>2.6</u>	<u>4.2</u>	17.9	<u>0.6</u>	7.1
(medium) durability	0.53	0.29	0.45	0.62	0.48
N	1059	330	637	180	2206

Note: We used adjusted residuals to calculate to identify cells that have higher or lower than expected percentages and to identify statistically significant differences. The percentages in bold indicate percentages that are higher than expected (those with adjusted residuals >1.96), while underscore is used to indicate percentages that are smaller than expected (those with adjusted residuals <-1.96).

We observed that sustainability discourses vary across food sectors. The institutional and political context of the country allows for a deeper understanding of these differences. For example, producers concerned with the environment and heritage conservation relate to laws and political programs that seek to preserve the Swiss landscape and cultural heritage. In the welfare dimension, the attention paid to the category of consumer-actor shows the urgent need to reclassify the role of the consumer in order to integrate him or her and make him or her co-responsible in a sustainable food system. The interest shown in the dimension of inequality by the distribution actors shows the importance of access to food in a country where almost 10 percent of wage earners do not manage to live on their income. Weak sustainability in this dimension coincides with various support modalities that do not challenge the dominant model. Local authorities claim principles of social justice, endorsing responsibility for ensuring access to food. Discourses corresponding

to the consumer sector highlight the organizational modes supported by differentiated values and objectives that find their unity as locally rooted forms of commitment, and that contribute to the evolution of alternative practices in food. The self-production sector has a strong interest in the environmental dimension of diversified and environmentally friendly agriculture, also advocating for a reconnection with nature in the city.

5.2. Relational Approach: Sectors, Interactions, and Conceptualizations of Sustainability

Figure 1 presents the results of a multiple correspondence analysis that allows visualizing AFOs' positions in relation to the five dimensions of sustainability and the proportion of strong sustainability in their discourses. Three positions stand out in this field. First, AFOs active in food production are close to strong sustainability (codes 4 and 5 represent a percentage of strong sustainability higher than 75 percent) and to a multidimensional conceptualization of sustainability, close to the codes for four or five dimensions. Among the organizations active in production, community supported agriculture, which represent one fifth of this group, contributes strongly to this positioning. These initiatives address different dimensions of sustainability and have a conceptualization of strong sustainability that prevails.

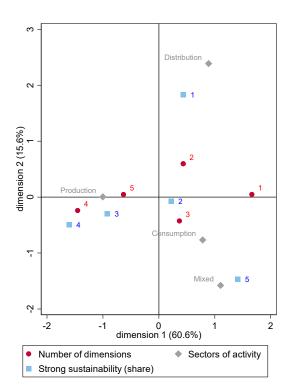


Figure 1. Multiple correspondence analysis.

AFOs active in food distribution are located in the upper right-hand box and are close to the codes indicating a low number of dimensions (one or two) and a low share of strong sustainability (code 1 representing the zero share of strong sustainability). Two-thirds of the organizations active in distribution offer low-cost food to disadvantaged populations, in the form of food banks, community kitchens, or low-cost grocery stores. Their positioning shows that they focus on reducing inequalities and have little or no position on other dimensions of sustainability—they do not talk about environmental protection, the economic system, or even well-being. However, some organizations offer a multidimensional discourse. In particular, one food bank talks about the environment, the market, and inequality. Its discourse is mainly about the environment through the fight against food waste, the recovery of unsold food, and the reduction of transport. Moreover, its main function—distribution of free food to the most disadvantaged—also leads it into

taking a position on the issue of inequality. Lastly, it speaks about the economic dimension: quality standards for all the distributed products and economic viability.

In the bottom right-hand box, the AFOs that advise consumers occupy an intermediate position. They are close to an average number of dimensions (3) and a low proportion of strong sustainability (code 2, which represents a strong sustainability proportion of 25 percent). This close to average positioning hides important variations among organizations active in the consumers' advocacy sector. Some organizations active in veganism, animal welfare, or degrowth speak mainly about one dimension of sustainability, while other organizations that offer advice to citizens and/or businesses on how to live a more sustainable lifestyle position themselves on multiple dimensions of sustainability.

Lastly, consumer organizations are close to self-production organizations (i.e., community gardens). Although these are very close to the highest percentage of strong sustainability (code 5, which represents more than 75 percent of strong sustainability), as are consumer organizations, we find great variation among community gardens in terms of multi-dimensionality and strong sustainability.

Figure 2 presents a visualization of the network of AFOs exchanging information. This figure shows that the network is fragmented, it is formed by a main component that includes 35 organizations, two sets of two organizations form isolated dyads and the majority of AFOs are isolated—that is, they did not mention any AFOs with whom they exchange information. Moreover, no other AFO mentioned them. As the exchange of information is the most basic interaction between two organizations, its absence shows that the field of the AFOs is weakly connected.

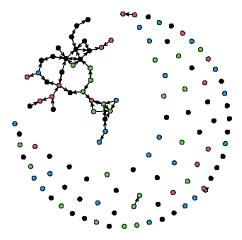


Figure 2. AFOs' information exchange network. The dots represent AFOs, the colors represent sectors of activity (black = production; red = distribution; green = consumption; blue = self-production), and the arrows represent interactions, in this case sharing information.

Figure 2 also distinguishes AFOs according to the four sectors of activity, the black dots identify organizations active in production and indicates that these organizations play a central role in the main component—they form an important part of this component and connect many other organizations. Furthermore, Figure 2 shows that the main component includes organizations active in production, distribution (red), consumption (green), and self-production (blue). The segmentation of the network does not appear around the distinction between the four sectors of activity.

In Figure 3, we reproduce AFOs' network by introducing the variables used to analyze sustainability thus, bringing our different variables of interest together in a single figure. It shows that the main component of AFOs' network includes organizations that vary with regard to the number of dimensions addressed and the conceptualizations of sustainability. Regarding sustainability dimensions, among AFOs that form the main component, eight address only one dimension while an equivalent number address two and four dimensions

respectively. Moreover, the share of strong sustainability also varies within this main component. While about 15 AFOs have a low (2) or no (1) proportion of strong sustainability, a dozen defend a strong conceptualization of sustainability in their public discourses (code 3 and 4). Interactions among AFOs within the information network are not structured around a conceptualization of sustainability, strong and weak models coexist in the network.

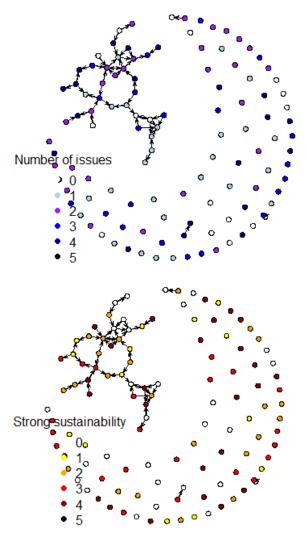


Figure 3. AFOs' information exchange network by number of dimensions of sustainability and importance of strong sustainability (0 = missing values).

6. Conclusions

Using organizational survey data and frame analysis, we studied the discourses of AFOs active in the Swiss canton of Geneva in the spring of 2019. Our empirical analyses underscore three main findings. First, we observed that, in their public discourses, AFOs tend to focus on the environmental dimension of sustainability and that the discourses equally divide between strong and weak conceptualizations of sustainability. Second, we found important differences across sectors of activities in terms of dimensions and conceptualizations of sustainability. We found that food producers are more likely to embrace multiple dimensions and strong conceptualizations of sustainability, whereas food distributors tend to focus on fewer dimensions of sustainability and a weak approach. In between the two, we found consumers' advocacy organizations and auto-production initiatives. Third, in spite of these different conceptualizations of sustainability that appear to be related to sectors of activities, AFOs from different sectors of activities and holding different conceptualizations of sustainability interact. In Geneva, approximately one-third

of all AFOs surveyed constitute a network for the exchange of information, as shown in our network analysis.

Compared to previous studies on food organizations, our paper presents an encompassing study of AFOs at the local level. We analyzed a broad range of AFOs including food producers, distributors, consumers' advocates, and self-producers. Moving beyond studies that show the richness and diversity of such initiatives at the local level [1,2], we highlight that AFOs hold heterogeneous and complementary conceptualizations of sustainability. Moreover, network analysis confirms previous findings [21,22]. AFOs tend to be disconnected from one another. Likewise, we show that even when they interact, they do not necessarily share similar understandings of sustainability. However, these organizations exhibit the capacity of local practices to challenge and modify existing relationships around sustainable food regimes, which are constructed in practice considering the ambiguity surrounding the concept.

The fact that AFOs are scattered challenges their transformative potential, not only AFOs represent a small share of the food system but they are not united under common transformative goals. On the one hand, this might contribute to the richness and diversity of discourses around food but, on the other, it might also foster citizens' confusion about what to do in the light of the multiple challenges that they face to adapt their lifestyle and reduce their environmental footprint in a complex system. In the future, AFOs need to create bridges among themselves to increase their influence. This would allow building discourses and actions related to food that span a broad range of issues and allow addressing food system transformation taking into account the complexity of this task.

Regarding the main limitations of our study, we focused on AFOs and we did not analyze established power holders. It would be interesting to compare AFOs' understandings of sustainability to those of agro-industrial corporations and governments. Future research could examine whether AFOs seek alliances beyond the field of food organizations and with whom they interact or build sustainable political projects.

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Appendix A

Table A1. Framing the Different Dimensions of Weak and Strong Sustainability.

	%		%
Sustainability in general			
Sustainability	75.0		
Sustainable development	25.0		
n =	156		
Environment (low sustainability)		Environment (strong sustainability)	
Organic farming	28.6	Biodiversity	16.1

Table A1. Cont.

	%		%
Protection of the environment	19.0	Antispeciesism	14.0
Reduction of food waste	10.9	Preservation of species	12.4
Environmental ideals	10.9	Respect for natural cycles	12.0
Reduction of transport	10.5	Respect for nature	11.0
Reduction of air pollution	10.5	Natural fertilizers	8.1
Sustainable agriculture	3.6	Voluntary simplicity	8.1
Reduction of water pollution	3.2	Shared green spaces	7.7
Recycling	2.8	Renewable energy	7.5
, 0		Sustainable food consumption	2.9
		Anti-GMO	0.2
n =	239	n =	492
Inequality (low sustainability)		Inequality (strong sustainability)	
Human rights	26.6	Food knowledge	45.8
Social justice	18.5	Inclusion through work	17.3
Free food and meals	14.6	Fair wages	12.3
Solidarity	12.0	Fair prices for producers	10.1
Inequalities	8.6	Respect for human beings	8.4
Emergency accommodation	6.0	Fair working conditions	6.2
Low food prices	5.6	Tun Working Conditions	0.2
Consumer rights	3.9		
Anti-discrimination	3.0		
Financial independence (of orgs)	1.3		
n =	233	n =	179
Health and WB (low sustainability)	233	Health and WB (strong sustainability)	179
Health for all	50.7	Consumers	50.7
	49.3		19.2
Healthy eating	49.3	Citizen participation	16.4
		Democratization of urban spaces	
	(7	Health literacy	13.7
n =	67	n =	73
Legacy (low sustainability)	20.4	Legacy (strong sustainability)	FO 1
Social links	29.4	Links between consumers and producers	73.1
Local food	29.4	Sharing knowledge	26.9
Local economy	26.1		
Cultural heritage	15.2		=0
n =	211	n =	78
Economy (low sustainability)		Economy (strong sustainability)	
Handicrafts	28.5	Local contract farming	39.2
Quality of goods	25.0	Peasant agriculture	22.4
Controls and standards	18.5	Food Sovereignty	13.9
Fair trade	12.5	Short circuits	10.6
Product traceability	6.5	Urban agriculture	5.9
Grants for agriculture	3.9	Non-monetary exchanges	4.6
Financial stability of companies	3.9	Economic knowledge	3.4
Food safety	1.3	Ç	
n =	232	n =	237

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