



Rapport de recherche

2020

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### How to cite

GUGU, Silvia, HUBER, Johanna Clara, LORENZINI, Jasmine. Alternative Food Organizations Networks in the canton of Geneva. 2020

This publication URL: <https://archive-ouverte.unige.ch/unige:156794>

# **Alternative Food Organizations Networks in the Canton of Geneva**

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**Geneva, Switzerland, June 2020**

**Funding: FNS Ambizione "Political Consumerism in Switzerland"**

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## **Introduction**

During the last decades, food producers and consumers launched new initiatives to offer alternatives venues to large supermarkets that sell industrial food. They propose to grow, sell, and/or buy food that is locally grown, organic, fair, or displays other features that challenge the agro-industrial food chain. These initiatives take different forms, from community-supported agriculture (food baskets) to participatory supermarkets. Sometimes, they seek to involve consumers in the production and distribution of food – they require that consumers work in the field or at the supermarket but also that they participate in decision-making processes. These initiatives contribute to transforming the food system with regard to its environmental impact, its impact on health, and important inequalities that shape access to healthy food, as well as working conditions for food workers.

As new initiatives appear, we propose to look at the overall network of Alternative Food Organizations (AFOs) active in the canton of Geneva. The present report offers an overview of the different networks in which AFOs interact with one another and with the state. We are interested in understanding the types and frequency of interactions with the state at the different levels (municipal, cantonal, and federal), as well as the types of exchanges among themselves (sharing information, co-organizing events, participating in political actions together, or sharing material resources). In addition, we provide detailed information about the structure of these networks to examine how connected AFOs are, whether some actors play a central role in bringing together different AFOs and if there are distinct “branches” of the alternative food sector in the canton of Geneva (clusters that form around specific AFOs).

We start with a description of the dataset that we use for the report, how we collected the data and which kind of analyses we present. Then, we move on to the empirical analyses and we first present membership in federations. Second, we discuss interactions with public authorities at different levels – from the municipality to the national and supranational levels. Lastly, we illustrate networks that exchange information, co-organize events, or take part together in political events. In the conclusion, we highlight the main features of existing networks among AFOs in Geneva.

## **Data and method**

The data that we use in this report are drawn from a survey of Alternative Food Organizations in Geneva conducted during the spring 2019. To circumscribe the field of alternative food organizations and to be able to map the field, we developed a set of criteria to operationalize

the theoretical definition of alternative food organizations. Firstly, organizations had to be active in the field of food in a broad sense. This can include organizations producing or distributing food but also organizations, which raise awareness to issues linked to food or defend the rights of food workers. Secondly, the organization had to have an office in the Canton of Geneva. Thirdly, they had to be either: an association, cooperative, or foundation (a legal form that guarantees they are non-profit organizations); or a member of the social and solidary economy<sup>1</sup>; a member of the organic food label<sup>2</sup>; a member of the community supported agriculture umbrella organization<sup>3</sup>; or a member of the Genevan movement for a peasant and citizen agriculture<sup>4</sup>. We developed these criteria in order to include also organizations that are not legally registered as not for profit organizations but who are ready to limit their profits for political reasons. This means that we do not include conventional food shops, supermarkets, butchers, bakeries, or any other food producers and distributors that do not promote alternatives to the corporate-environmental food regimes through an engagement reflected in membership to specific umbrella organizations that limit profit by requiring compliance with fair wages and a limited environmental impact.

#### *Mapping and survey of Alternative Food Organizations*

To map the field, we retrieved in a first step alternative food organizations identified in a project on resilience in times of crisis (Kousis and Paschou 2017). We selected all organizations that are active in Geneva and that work in the food sector. Then, we used a multi-entry approach using different sources to identify organizations. We used websites of umbrella organizations and other organizations where we checked lists of partner organizations. Then, we used platforms of networks or associations regrouping such organizations, flyers, and festival programs as well as keyword search in Google and on Facebook. Furthermore, we exchanged with actors from the field and public authorities to complete our mapping. Table 1 presents the number of organizations that we identified in the mapping and the survey respondents. We identified 226 alternative food organizations in the spring of 2019. Organizations that were

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<sup>1</sup> In Geneva, there is a chamber of the social and solidary economy (APRES-Genève). We included all their members who are active in the food sector.

<sup>2</sup> We consider two different labels, the Bourgeon Bio Genève and Demeter. The latter is stricter than the other, which allows us to see different degrees of engagement for the environment and for social justice.

<sup>3</sup> In the French-speaking part of Switzerland, the FRACP (Fédération Romande de l'Agriculture Contractuelle de Proximité) is the umbrella organization for community supported agricultural projects.

<sup>4</sup> The MAPC – Mouvement pour une Agriculture Paysanne et Citoyenne – is a newly created umbrella organization which brings together food producers and consumers. It includes both organizations and private citizens as members. We included all their organizational members.

created or joined an umbrella organization after the end of May 2019 were not taken into account. Furthermore, after contacting organizations to take part in the survey, 13 organizations mentioned that they are not active in the alternative food sector and for six we realized that they did not exist anymore.

Table 1: Number of organizations in mapping and response rates

	Number of organizations	Response rate (%)
Mapped organizations	226	
Excluded no longer exist	6	
Received survey invitation <sup>1</sup>	216	
Self-exclusion in response mail <sup>2</sup>	13	
Relevant mapped organizations	203	
Responded in the first wave (email invitation)	49	23.9
Responded in the second wave (phone calls)	119	58.3
Respondent excluded <sup>3</sup>	5	
Number of organizations analyzed	114	55.6

Note

<sup>1</sup> Four organizations had no contact information.

<sup>2</sup> Organizations that received the invitation but did not identify with our definition of AFOs.

<sup>3</sup> Organizations that answered the survey but were identified as irrelevant in the data-cleaning phase.

For the survey, we developed a questionnaire building on existing research on food organizations (Forno 2013; Levkoe 2001) and other civil society organization (YOUNEX, DEMOS, LIVEWHAT, TransSol). The questionnaire consist of about 50 questions organized into six thematic blocks. We were interested in the organization's goals and actions, their organizational structure, their relationship to the market, how they finance their organization, as well as how they interact with public authorities and other organizations.

We elaborated an online questionnaire administered using Qualtrics, which alternative food organizations accessed through a link sent by email. To increase our response rate we first informed the organizations by letter about our survey. We also met certain actors to introduce ourselves during public events related to the alternative food scene and had people active in the field supporting our survey by encouraging others to participate.

Each organization received an email with some short instructions and the link to access the questionnaire. They had two weeks to fill in the questionnaire and we sent a first reminder after a week. After two weeks, we realized that it was not enough time and we sent out an email to extend the deadline for another week. We then sent a reminder to organizations, which had not

responded at that time. Two questionnaires were filled in during an in-person conversation as they requested an interview. During the summer, we contacted organizations, which had not responded to the questionnaire by phone. Five organizations had to be excluded afterwards because they did not correspond to the selection criteria. The analysis is based on 114 responses, which makes a response rate of 55.6 percent and which is a very good response rate for this kind of survey (Baruch and Holtom 2008).

In the questionnaire, we asked two sets of questions about networks: a) interactions with the state and b) interactions with other AFOs. For the state, we asked whether they are in contact with public authorities at the municipal, cantonal, or national level. Furthermore, we asked about the kind of contacts or interactions they have with these public authorities (i.e. lobbying, exchange of information, offer services to public authorities, receiving in kind support, or participating in working groups). We also ask about the frequency of such contacts and interactions. Regarding contacts with other organizations, we asked about interactions with other AFOs and with organizations that are active in other fields. In both cases, we asked to name the five organizations with which they interact more frequently to share information, organize events, or participate in political action. In this report, we focus on these two sets of questions for a detailed presentation of the other survey items see the report on Alternative Food Organizations (Huber & Lorenzini 2020).

### *Social Network Analyses*

For a better grasp of the way AFOs form their networks, we applied social network analysis to map three types of relations: sharing information, co-organizing events, and joint calls for political mobilization. To this end, the data on contacts obtained from the survey has been re-coded in a matrix format for each type of relation. The resulting networks offer an overview of the ties that the AFOs develop with other actors.

The name-generation techniques employed in the data collection resulted in data on the personal (egocentric) networks of the AFOs (Campbell and Lee 1991). Respondents were not required to assess the connections among their alters. Among the criteria that prompts researchers to avoid asking respondents to generate data about their alters' interactions is the time-consuming and potentially expensive nature of this work. In addition, many network researchers question the accuracy of a respondent's report about ties between network members (McCarty 2002). The resulting personal (egocentric) networks are hence limited to direct relationships. Personal (egocentric) network studies have as their focus the social relations of respondents who have

no relationship to each other. They generally describe networks using measures that are not structural, opting instead for attribute-based analyses that summarize the relationships of the respondent to network members. In contrast, those who study whole (sociocentric) networks are interested in the pattern of relations among respondents who form a socially defined group. Our analysis is interested, for the most part, in descriptive measurements common to personal network analysis, such as size and composition of networks, and the importance of various organizational attributes to tie formation. However, because our respondents did belong to a socially and geographically defined group, and they were likely to have common contacts, we opted to present these personal networks together rather than individually. This allows us to compare the egocentric networks of AFOs in an integrated way and to highlight the connections that occur among these personal networks. In addition, it allows exploring some basic structural cues, such as homophily, in a more visually compelling way. In order to present these networks together, we stored personal network data in a common matrix, which describes the connections between interviewed organizations and the ones they cited, with the two categories partially overlapping.

At this point, we had a choice between a one-mode and a two-mode network format. In social network analysis, the one-mode versus two-mode distinction refers to whether data records ties between the same type of entities or two distinct sets of entities. However, what constitutes different modes is up to the researcher and his goals (Borgatti 2007, 3). In our case, the distinction between the AFOs (the respondents) and their alters was of the greatest interest, in order to not conflate the ego-centric nature of the personal network data collected. This pointed us to a two-mode approach. The two-mode network allows us to differentiate between the AFOs, as one of the modes, and their alters, as the second mode. By facilitating the examination of patterns present in the relations between the AFOs and their alters as distinct classes, the two-mode approach offers the possibility to infer an underlying pattern of social ties among the AFOs as a group (Borgatti and Everett, 1997) despite not having collected that data.

Another criterion considered in the choice of one-mode versus two-mode data formats are specific analytical limitations. Two-mode network analysis, presuming two distinct types of nodes, focuses only on the ties among the nodes belonging to the same set. Two-mode networks are rarely analyzed without being transformed, partly because many network measures were originally defined for one-mode networks and were not adapted to reflect the peculiarities of two-mode networks (Borgatti and Everett, 1997). This problem is commonly tackled by projection, which transforms the two-mode networks into one-mode networks, for example considering only the interviewed organizations. One-mode networks allow more analytical

depth, specifically regarding structural properties, when examining socio-centric data. For our personal network data, having more analytical capacity for structural properties did not make a difference, as we did not require respondents to report relations among their alters. The use of a complete network approach was employed primarily for visualization purposes.

For the purpose of this report, we opted thus for the use of two-mode matrices, while avoiding measurements based on projections. This approach has the advantage of highlighting the distinct categories of nodes, reflecting the way data were collected, and still allowing for the analysis of the features of interest such as criteria for tie formation and node characteristics.

Other variables describing the characteristics of the actors, such as their category based on the sector of activity, goals, and type were used as attributes associated with each matrix. The category attribute indicates the sector of activity – differentiating among production, consumption, distribution, or auto-production, and is a variable constructed based on our survey data for survey respondents. The alters' category is coded as “unknown”, as no information was collected. The main goals of the actors – such as environment, social justice, health and mutually-exclusive combinations of these – were also determined based partially on our survey data (for survey respondents) and on information collected separately from the official web pages (for the alters cited). The actor type is data derived both from information obtained in the mapping phase of this study, and from information collected separately about the alters cited by survey respondents, based on their auto-description on their official web page. Thus, the actor type attribute distinguishes among AFOs in our sample, other food organizations, non-food CSOs, public institutions, private enterprises, media organizations, and other types of entities without organizational status. The last type groups initiative committees and networks or internet platforms with no formal status. This category emerged because, although the name-generation questions in our survey required the reporting of organizations, respondents also named a number of entities without an organizational status. One of the advantages of personal network data is that they can be expected to reflect perceptions and subjective constructs rather than conventionally defined concepts and relations (McCarty 2002), hence offering an opportunity for the inductive revision of the initial concepts and relations targeted in a study. In addition, the two-mode approach, contrary to the one-mode, accommodates the inclusion of different classes of entities as alters, as it is built on the distinction between respondents and their alters,

A number of properties were computed and illustrated in order to provide an overview of the characteristics of the information exchange, event organization, and political action relations. At macro-level we focused on exploring potential *homophily* against various criteria such as

organization type, category, and goals, to better understand what led to the emergence of relations. If present, homophily reflects the degree of network homogeneity and offers great insight into the basic structure of a network (McPherson et al. 2001). The analysis is based on a partition of a network into a number of mutually exclusive groups and the calculation of an E-I index, which is the number of ties external to the groups minus the number of ties that are internal to the group divided by the total number of ties. This value can range from 1 (showing heterophily) to -1 (showing homophily).

At meso-level, *component analysis* locates parts of the graph that are disconnected, and we are using it to highlight the interconnectedness of the AFOs' personal networks. We also highlight the networks' *cut-points*, i.e. the key nodes that would disconnect the networks into further separate blocks if they were removed, to show which organizations pull these personal networks together. Cut-points may be particularly important actors – who could act as brokers among otherwise disconnected groups.

The identification of these key actors is complemented by the analysis of node properties. Node centrality is a valuable measurement of the relational power that each node is invested with by its position in a network. For the purpose of our description we computed directed centralities (indegree and outdegree) as well as betweenness centralities. *The outdegree centrality* counts how many connections depart from an organization. It is an indicator of an actor's activism in a network and of its willingness to associate with other partners (Freeman 1979). *The indegree centrality* amounts to the number of incoming ties - in other words, to the number of times an organization is cited as a contact. For this reason, it generally represents a measurement of node prestige in a network (Diani 2003, 307). *Betweenness centrality* measures whether a particular actor lies between other actors in the network. Actors with high betweenness often serve as gatekeepers and brokers for different subgroups. They function as important communication channels through which information and resources can be transmitted or exchanged, and they have particular influence over the flows of communication (Hanneman 2001, 68). All measurements were produced with the help of the UCINET software (Borgatti et al. 2002).

### **Membership in federation or umbrella organization**

We asked alternative food organizations whether they are members of certain unions or federations/umbrella organizations. In Table 2, we show the distribution of organizations that adhere to some umbrella organization and those that do not participate in any. This allows comparing their shares in the mapping with their share among the survey respondents and see

if there is an over- or under-representation of some organizations among the survey respondents. In general, we observe that the share of member organizations among the survey respondents is higher than in the mapping. Consequently, the share of member and non-member organizations are closer to parity in the survey than in the mapping. Furthermore, we look at each umbrella organization to see whether we observe any specificity regarding the response rate among its members. We see in Table 2 that members of Après-Ge represent a larger share among the survey respondents than in the mapping. For the other umbrella organizations, we see a slight increase for MAPC and FRACP among the survey respondents and not much change for BioGenève and Demeter.

Table 2: Share of different umbrella organizations, federation or chamber in the mapping and among survey respondents

	Mapping	Survey respondents
<i>Member of a federation</i>		
Members	39.1	46.5
<i>Specific federations</i>		
Après-Ge	20.7	29.0
Bio Genève	20.8	20.2
MAPC	11.4	15.8
FRACP	5.9	9.7
Demeter	2.0	1.8
N=	202	114

### **Interactions with public authorities**

In this section, we analyze how Alternative Food Organizations interact with the state. First, we are interested in knowing how many of the AFOs that we surveyed are in contact with the state. In table 3, we see that a majority of AFOs interact with the state (79.8 percent). However, it is important to note here that a fifth of the respondents did not answer this question. When calculating the average based on all respondents, the percentages of AFOs who are in contact with the state drops to 62.3 percent. Then, for all who mention having contacts with the state, we ask at which level of the state these contacts take place. First, we notice in table xx that AFOs interact with the state at multiple levels, most frequently at the cantonal level and at the municipal level much less so at the national level. Two thirds of AFOs who interact with the state are in contact with the canton of Geneva, interaction with the city of Geneva is equally high. Furthermore, about half of the AFOs are in touch with other municipalities – the number

here is lower because our mapping includes fewer AFOs outside of Geneva city. Only a fifth of AFOs who interact with the state do so at the national level. Most of the AFOs who interact with the state at the national level are large organizations that have sections in different cantons. These include unions and NGOs that are active in the distribution sector (for instance charity shops) or in the consumption sector (for instance organizations that defend the environment or aim to inform consumers about food) but also a few smaller organizations such as specific food producers.

Table 3. Interactions with the state at different levels

	%	N
Interact with the state	79.8	89 <sup>1</sup>
Geneva canton	74.7	71
Geneva city	73.2	71
Other cities	54.9	71
Swiss government	22.5	71
Other	4.2	71

Note

We calculate the interactions with the state considering only organizations that interact with the state, only 62.3 percent do. A fifth of all organizations did not answer this question.

In the next table, we consider the frequency of these interactions. Do they take on a regular basis or are they rather sporadic? Table 4 shows that in most cases these contacts are take place on yearly basis at the local level, be it municipal or cantonal but more frequently at the national level. Fewer AFOs interact with the national government, but when they do in 41.7 percent of the cases these take place on a monthly basis. These frequent interactions at the national level only happen for large organizations.

Table 4. Frequency of interaction with different state levels

	Weekly	Monthly	Yearly	Less frequent	N
Canton of Geneva	8.7	28.3	43.5	19.6	46
City of Geneva	8.2	22.5	53.1	16.3	49
Other cities	3.1	28.1	56.3	12.5	32
Swiss government	-	41.7	25.0	33.3	12

Lastly, we consider the types of interactions. We are interested in learning whether they exchange information, participate in working groups, engage in lobbying, offer services to the state, or receive in kind support such as access to infrastructures. Table 5 shows that the most common interactions with the state consist in exchanges of information. Two thirds of the AFOs

in contact with the state, exchange information with the canton of Geneva, three quarters with the city of Geneva, and 60 percent with the national government. Only 44.4 percent do so with other municipalities. AFOs fairly frequently offer services to the state and receive in kind support from the state. AFOs are less likely to engage in lobbying or to participate in working groups.

Table 5. Types of interactions with different state levels

	Infor- mation	Working groups	Lobbying	Services offered	Support received
Geneva canton	66.0	20.0	38.0	40.0	24.0
Geneva city	72.6	15.7	35.3	39.2	45.1
Other cities	44.4	5.6	33.3	47.2	36.1
Swiss government	60.0	13.3	53.3	13.3	26.7

In addition to these five types of interaction, another questions inquired about the sources of income. Among the different sources, we included state funding. In table 6, we present the percentage of AFOs income that comes from state funding. We observe that a majority does not receive any state funding (63.5 percent). Furthermore, for those who receive state funding, these correspond to a small share of their budget. For 15.3 percent state funding represent less than a quarter of their budget.

Table 6. Percentage of public funding in their total budget

	%
None	63.5
1 to 25 percent of budget	15.3
26 to 50 percent of budget	9.4
51 to 75 percent of budget	4.7
76 to 100 percent of budget	7.1
N	85

Summing up the interactions with the state, we notice that a fifth of the organizations did not answer the questions allowing assessing their interactions with the state. Hence, we base our analyses on a smaller sample for this part of the report (n=85). Among the AFOs that answered these questions, we observe that three quarters of all AFOs interact with the state at the municipal or cantonal level. Most of these interactions are rare, they take place only on a yearly basis. In addition, few organizations are active at the national level and interact with the Swiss government – only one fifth does so. These are large organizations such as unions, environmental organizations with a national reach, or charity food organizations. Lastly, we

showed that few AFOs receive state funding. Only one third receives state funding and this accounts for a small share of their overall budget.

**Networks**

In the next section, we consider interactions with other Alternative Food Organizations, as well as interactions with other Civil Society Organizations (CSOs). In table 7, we observe that about half of all AFOs interact with other organizations active in the field of alternative food (55.3 percent). In addition, a third interacts with other CSOs (36.8 percent). In table 7, we also distinguish different types of interactions. We observe that the most common types of interaction depend on whether we consider interactions with other AFOs and with CSOs. Let us look at each in turn.

Table 7. Interactions with Alternative Food Organizations & Civil Society Organizations

	AFOs	CSOs
Contacts	55.3	36.8
Events	47.4	17.5
Information exchange	34.2	29.0
Actions	22.8	11.4
Shared material	12.3	7.9
	n=114	n=114

First, when looking at the types of interactions with AFOs, we observe that the most common interaction consist in organizing events together. About half of the surveyed organizations who interact with other AFOs, co-organize events (47.4 percent). Surprisingly, sharing information is less common. Only a third mention this type of interaction (34.2 percent). Co-organizing political actions is even less frequent, with about a fifth who do that with other AFOs (22.8 percent) and only 12.3 percent share material resources with other AFOs.

Second, we look at the type of interactions with other CSOs. In this case, exchanging information is the most common interaction type (29.0 percent), co-organizing events is much less common with only 17.5 percent who do so and participating in political actions together is also rather infrequent (11.4 percent). Lastly, sharing material resources is a rare occurrence (7.9 percent).

*Sharing information*

Sharing information is one of the most common exchanges and is the first step towards cooperation. Of the 114 questionnaire respondents, 41 (36 percent of them) declared

exchanging information with other organizations. Altogether, they cited a total number of 97 contacts, the highest number compared to the other relations studied. The resulting networks total 138 directed ties. These are illustrated in Fig.1, which distinguishes between the respondents from our sample (black circles), and the organizations mentioned as contacts (grey and white squares).

We note that the graph includes ties among the AFOs, which indicates that a number of respondents exchange information among them. Of the food organizations cited as contacts, 24 are in our sample and 26 are external to it, totaling 50 food organizations mentioned versus 47 organizations not related to food. The latter category includes diverse organizations: 26 non-food CSOs, 9 public institutions, 2 newspapers, 4 private companies, and 5 networks or initiative committees (Table 8).

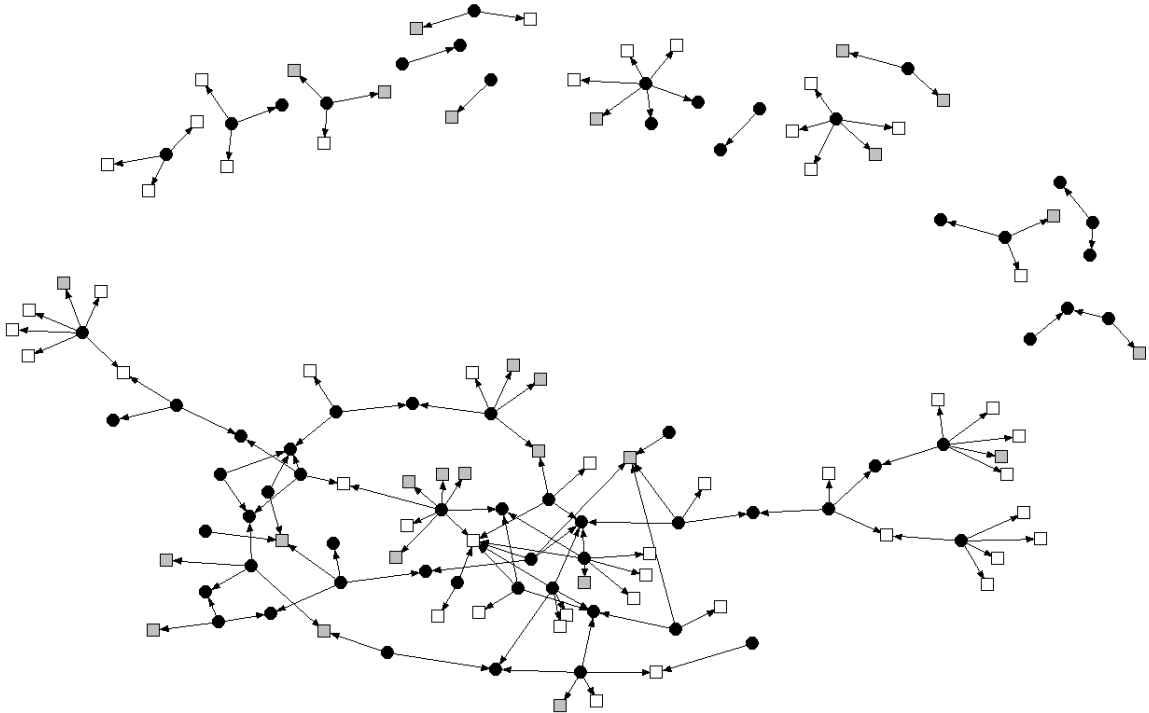


Fig. 1. Information exchange relations among AFOs and other organizations. Black circles represent the AFOs in our sample, gray squares designate food organizations not included in the sample and white squares non-food organizations.

Table 8. Information exchange – types of organizations mentioned by the AFOs

Organizations cited		Number of nodes	Percentage of nodes
Food	in sample	24	24.8
	not in sample	26	27.0
Non-food	CSOs	47	28.0
	Public institutions	9	9.2
	Private companies	4	4.0
	Newspapers	2	2.0
	Other (networks, initiative committees)	5	5.0
Total		97	100

The indegree refers to the number of times an organization is mentioned by another organization. It offers a measure of popularity and reputation. On average, organizations have 1.4 citations, which is relatively low. However, in table 9 we observe that the distribution is unequal. Two organizations are cited more frequently, with 7 and 5 indegrees. The most cited organizations are those whose role is explicitly one of coalition building and support (federations, collectives, umbrella organizations). The majority of the organizations were cited only once (76.5 percent). The organizations cited twice represent 14.5 percent in our information exchange network and smaller percentages are mentioned 3 or 4 times.

Table 9. Indegree centrality in the information exchange network

Indegree	Number of organizations	Percentage of organizations
7	1	1.0
5	1	1.0
4	3	3.0
3	4	4.0
2	14	14.5
1	74	76.5
Total	97	100

The majority of citations mention food organizations. There are 81 ties (representing 59 percent of the total number of connections) pointing to the 50 food actors. Hence, food organizations are cited on average 1.6 times, more than the non-food actors that have an average of 1.2 citations (Table 10). This suggests that the former are not only more numerous but also linked by denser ties. The rest of 57 ties connect food and other types of organizations (Table 9).

Table 10. Number of ties in the information exchange network

Cited organizations	Number of ties	Percentage of ties	Avg indegree
Food (in sample)	48	34.7	2.0
Food (not in sample)	33	24.0	1.3
Non-food	57	41.3	1.2
Total	138	100	

Next, we turn towards connections among the AFOs in our sample. These represent almost 35 percent of the total number of ties and make up an average of 2 citations per organization – the densest distribution of ties so far. If we compare it against the citations of the other food and non-food organizations, we see they are the most prestigious in our data. The other two categories score average indegrees that are really close to each other (1.3 and 1.2) once we take the AFOs in our sample out (Table 10). Substantially, this indicates that information exchange is more concentrated among the organizations included in our mapping of alternative food organizations.

Table 11. Outdegree centrality in the information exchange network

Outdegree	Number of respondents	Percentage of respondents	Percentage of ties
8	1	0.9	5.8
7	1	0.9	5.0
6	4	3.5	17.4
5	4	3.5	14.5
4	8	7.0	23.2
3	8	7.0	17.4
2	8	7.0	11.6
1	7	6.2	5.1
0	73	64.0	0
Total	114	100	100

To help us identify the most active participants, we calculate outdegree that indicate the number of ties that each respondent cited. While each organization could pick up to ten contacts, the actual number varies between 0 and 8. Table 11 suggests that a limited number of AFOs are more proactive and eager to connect than the rest. Thus, only 5.3 percent of the respondents

share information with more than 5 other organizations. The highest outdegrees belong, unsurprisingly, to organizations that aim for legitimacy as leaders in the field of food (i.e. defenders of human rights and consumer rights related to food). Almost a third of the sample (30.7 percent) declares that they only communicate with 1 to 5 entities, and the rest (64.0 percent) declare no exchange of information at all.

Fig. 3 illustrates the AFO's in the sample participating in information exchange and their 48 ties. It also classifies the organizations in the sample by category (production, distribution, consumption, and auto-production). The graph suggests that being a food producer (red circles) might also constitute criteria for forging information-sharing relations. The graph shows more ties among producers compared to the number of ties among distribution, consumption and auto-production AFOs.

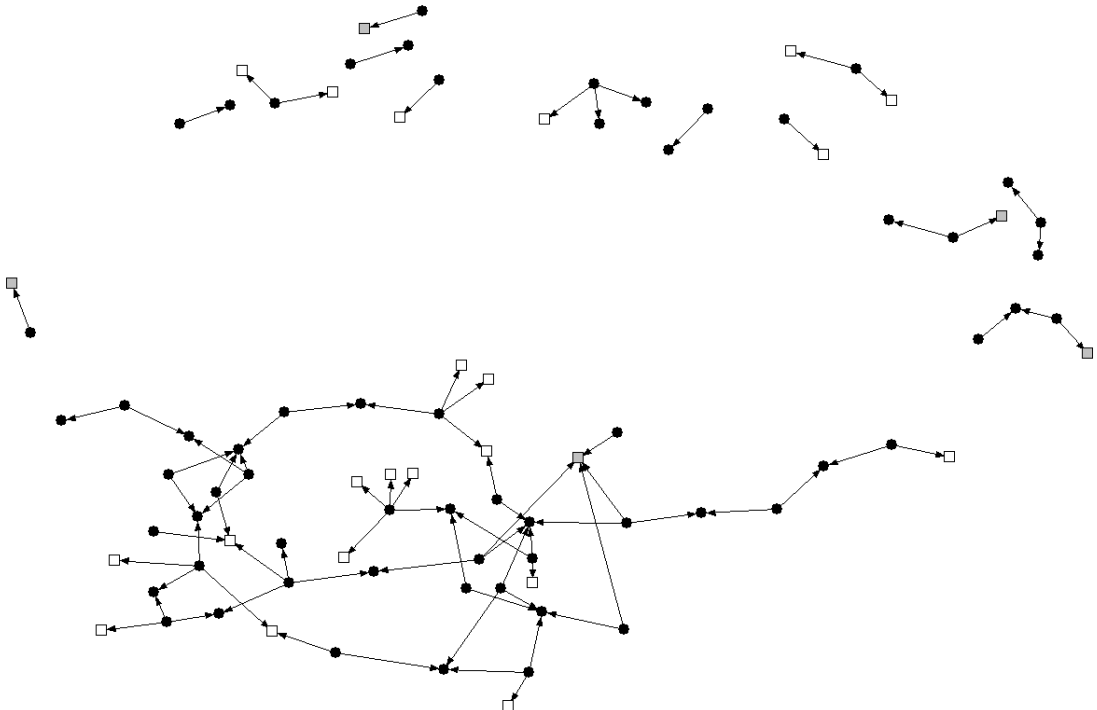


Fig. 2. Ties among food organizations only (Black circles represent the AFOs in our sample, gray squares designate other food organizations from the same geographical space, and white squares designate other food organizations activating outside of the Canton of Geneva and/or not having associative status).

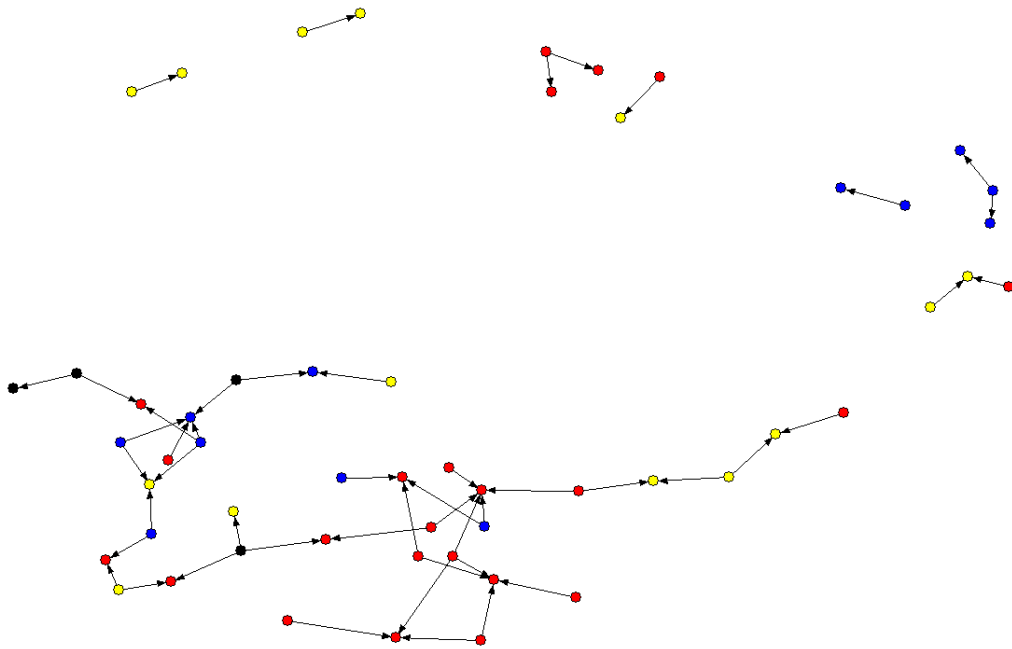


Fig. 3. Information exchange among survey respondents. Colors indicate organization category (red = production, yellow = distribution, blue = consumption, black = auto-production)

The prominence of producers among the AFOs is visible in degree measurements as well. They have some of the highest scores of outdegree centrality, which means they have access to more information, are more proactive in searching information, and may develop more agency (Fig. 4). They also have some of the highest scores of betweenness centrality, indicating they mediate the shortest paths to spread information between other organizations. This also means that they can control information flow (Fig.5). Several consumption oriented AFOs are also associated with high centrality measures, but they are less numerous and display less ties as a group.

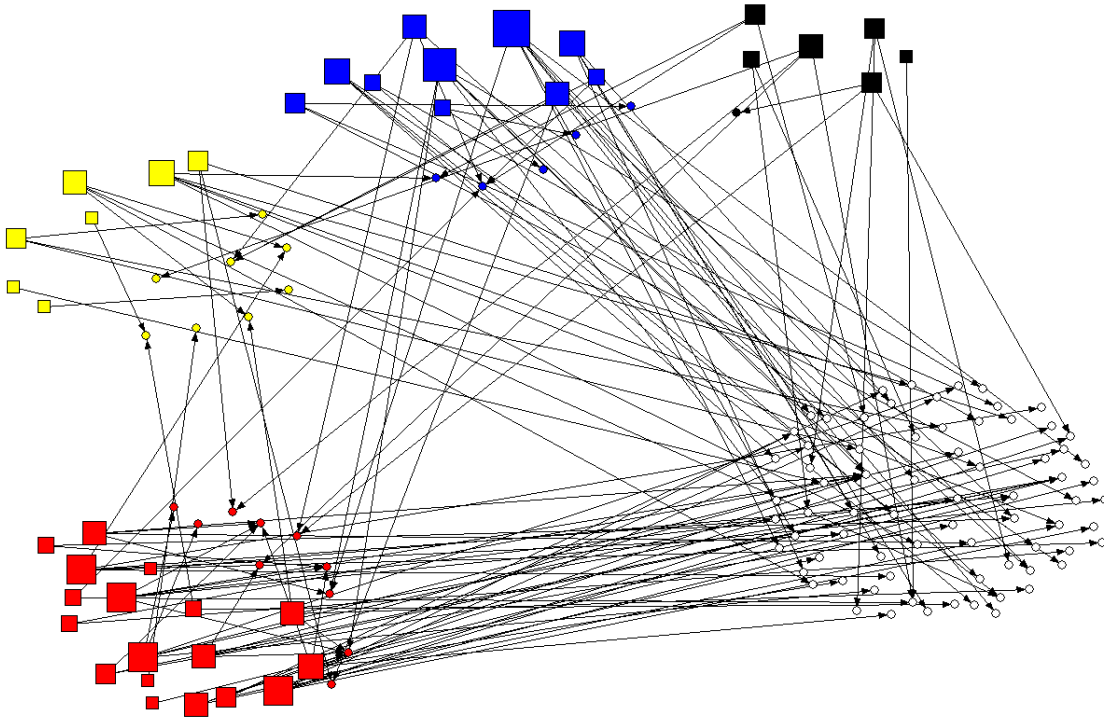


Fig.4. Outdegree centrality (represented by node size), nodes clustered by organization category (red = production, yellow = distribution, blue = consumption, black = auto-production)

In Fig. 5, we measure brokerage with betweenness centrality (the number of shortest paths that pass through a node). Organizations with higher betweenness centrality (which is represented graphically in the scale of nodes) have more control over the network, because more information passes through those nodes. In our principal component, the most prominent nodes are organizations with environmental goals, which function either as producers or as consumer organizations, and which play a role of umbrella organizations. While the latter are more potent, we can presume their scope is primarily that of coordination and reinforcing connections rather than obstructing them. Therefore, the brokerage present in the principal component is more likely to be facilitative for the circulation of information.

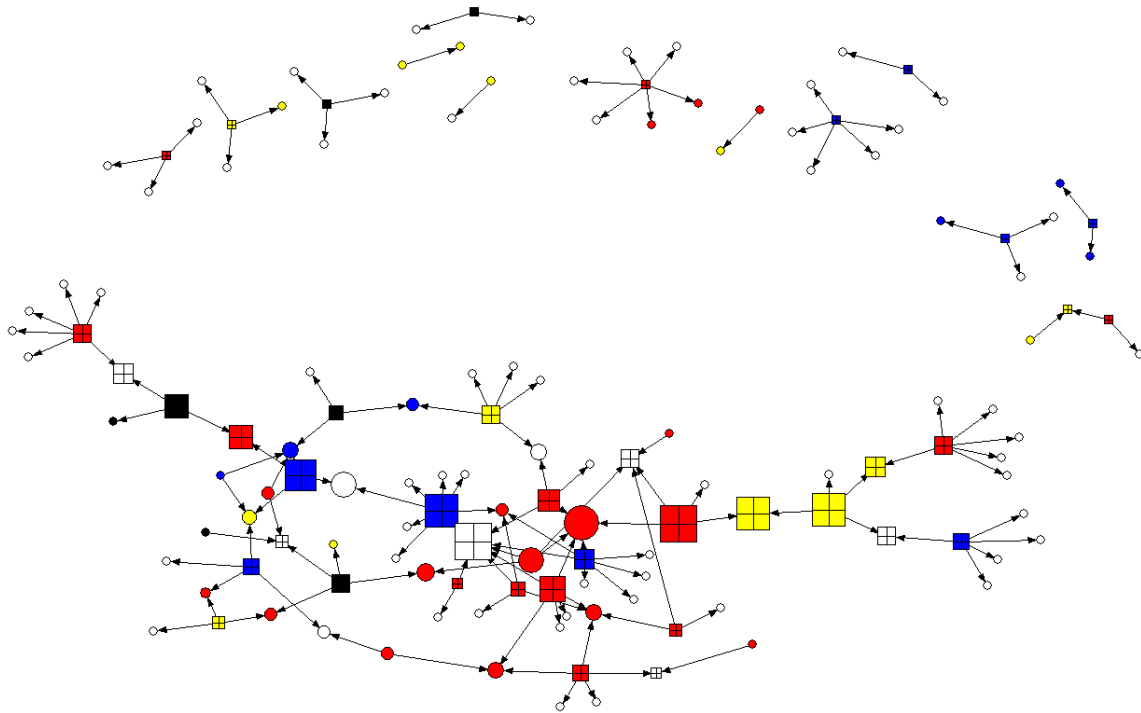


Fig. 5. Node betweenness (illustrated by symbol size) Colors indicate organization category (red = production, yellow = distribution, blue = consumption, black = auto-production)

Other sources of common interest and therefore a reason to exchange information are shared goals. Therefore, we look at the ties based on three main shared goals declared by AFOs: environment, social justice, and health (Table 12). These are pictured first in the context of the whole network. In a second graph, they are isolated from the other ties and highlight the AFOs in the sample against other food organizations and non-food organizations.

Table 12. Ties among the AFOs with the same goals in the information network

Goal	Number of ties	Percentage of ties
Environment	45	33.0
Social Justice	42	30.0
Health	18	13.0

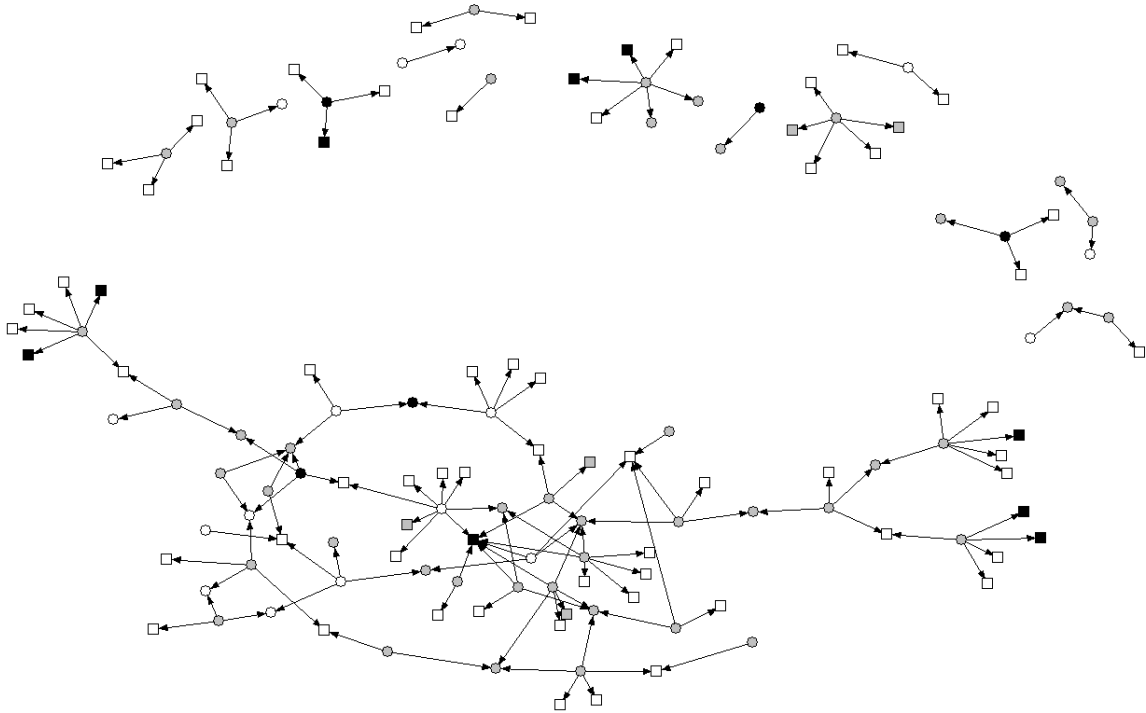


Fig. 6. Connections among organizations with environmental goals in the context of the whole network. Black = focus on environmental goals; grey = environment and other goals (social justice or health); white = not focused on the environment.

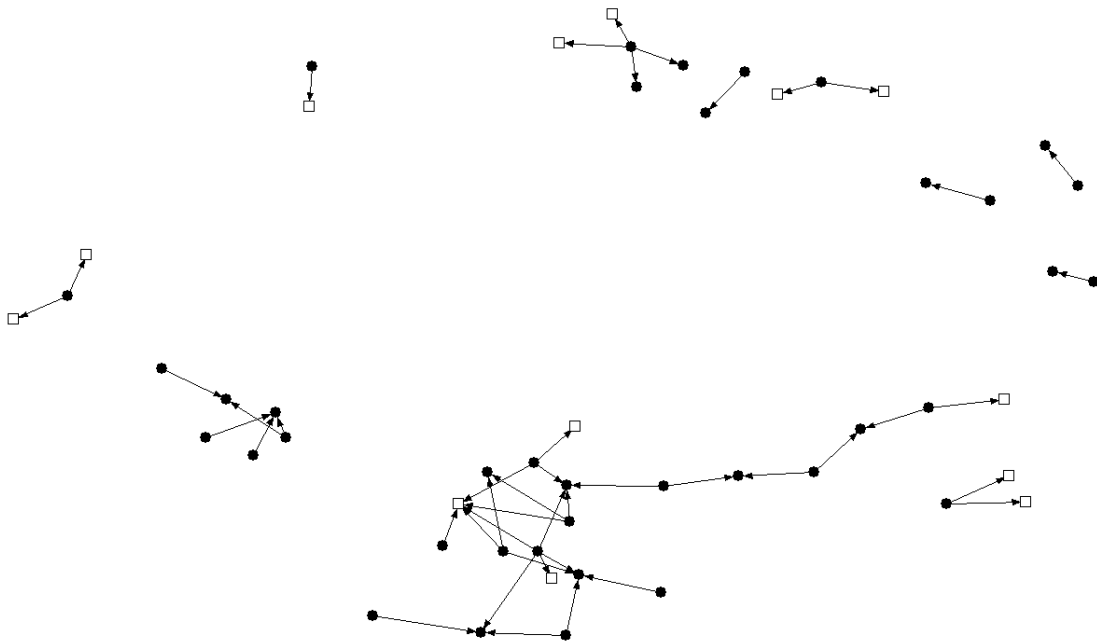


Fig. 7. Connections among organizations with environmental goals, isolated (black circles = AFOs in our sample; grey = food organizations not in the sample; white = non-food organizations)

Figures 7 and 8 suggest that environmental goals represent an important criterion for exchanging information (33 percent out of 138 links are among organizations with environmental goals) but mostly among local AFOs, albeit they do extend the relation to non-food organizations through peripheral linkages. A formal test for homophily confirms that environmental goals represent a criterion for preferential tie formation and cohesion in the exchange of information<sup>5</sup>.

The primarily linear layout of the ties among environmental organizations suggests a high betweenness, meaning the ability to mediate among organizations and to position at the intersection of information channels. This is typical of environmental issues, which are generally transdisciplinary in nature. A similar picture, but not as pronounced, emerges from the relations among organizations with social justice goals. Conversely, links among and to health focused organizations are less numerous, indicating health goals are not as conducive to inter-organizational connections for exchanging information.

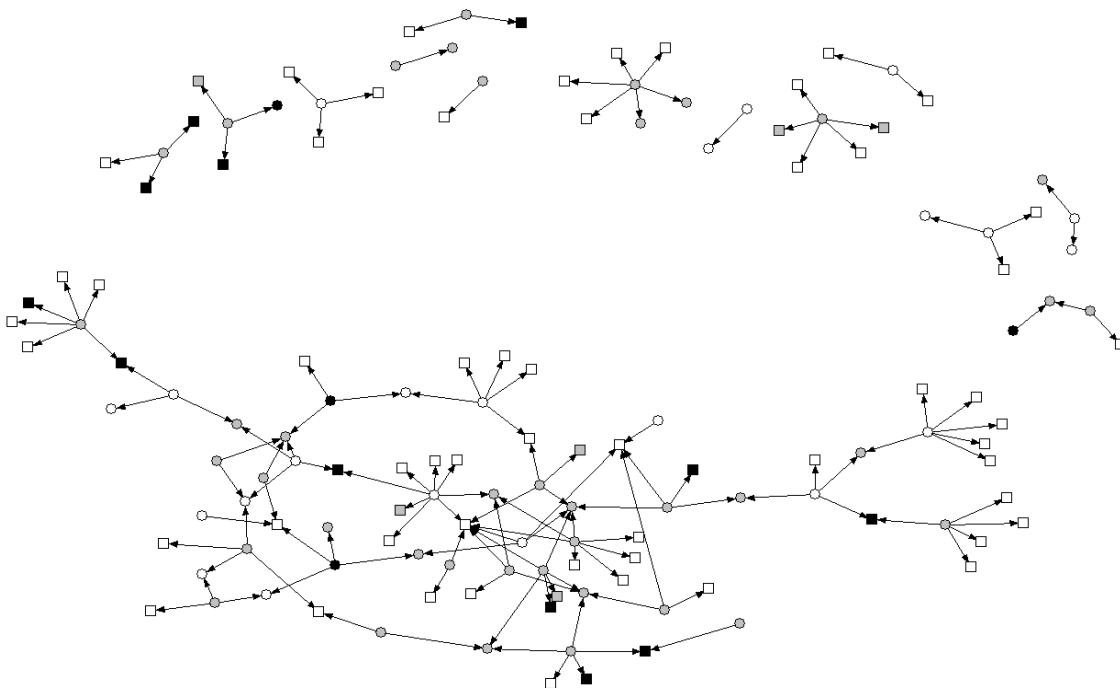


Fig. 8 Connections among organizations with social justice goals in the context of the whole network. Black= focus on social justice; grey=social justice and other goals (environment or health); white=not focused on social justice.

<sup>5</sup> The E-I index is based on the external and internal ties to the group of reference and slides on a scale from -1, signifying homophily, to 1, signifying heterogeneity. Using the environmental goal criterion, the E-I Index of -0.2464. In comparison, the score for social justice is -0.0870.

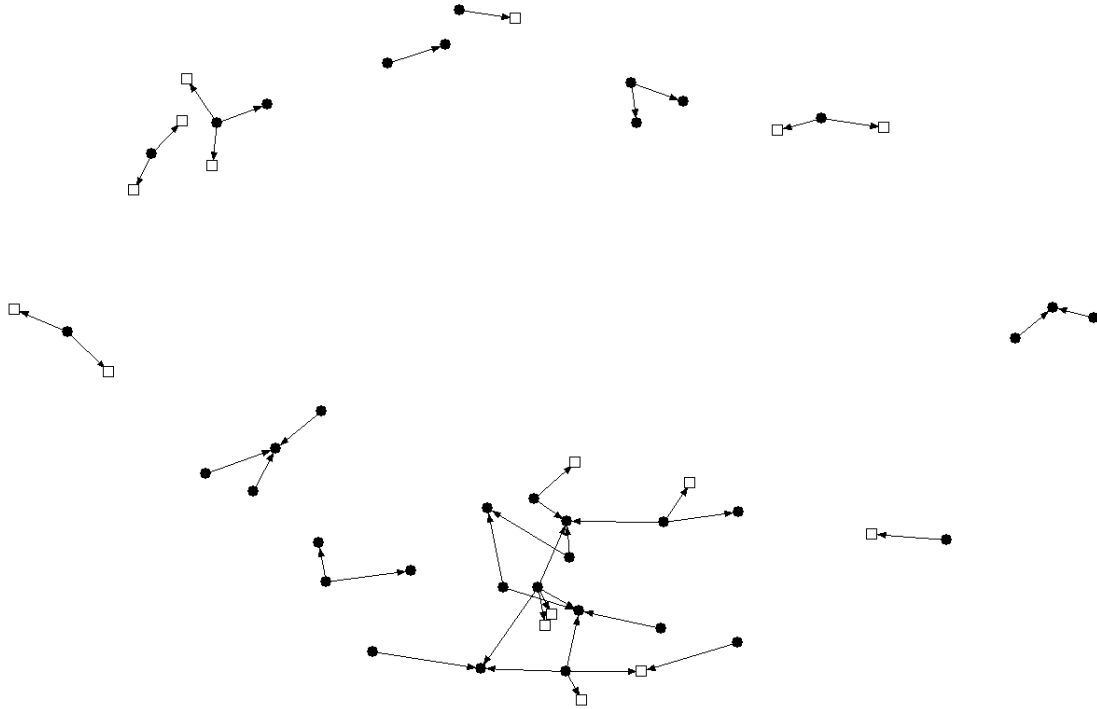


Fig. 9. Connections among organizations with social justice goals, isolated (black circles = AFOs in our sample; grey = food organizations not in the sample; white = non-food organizations)

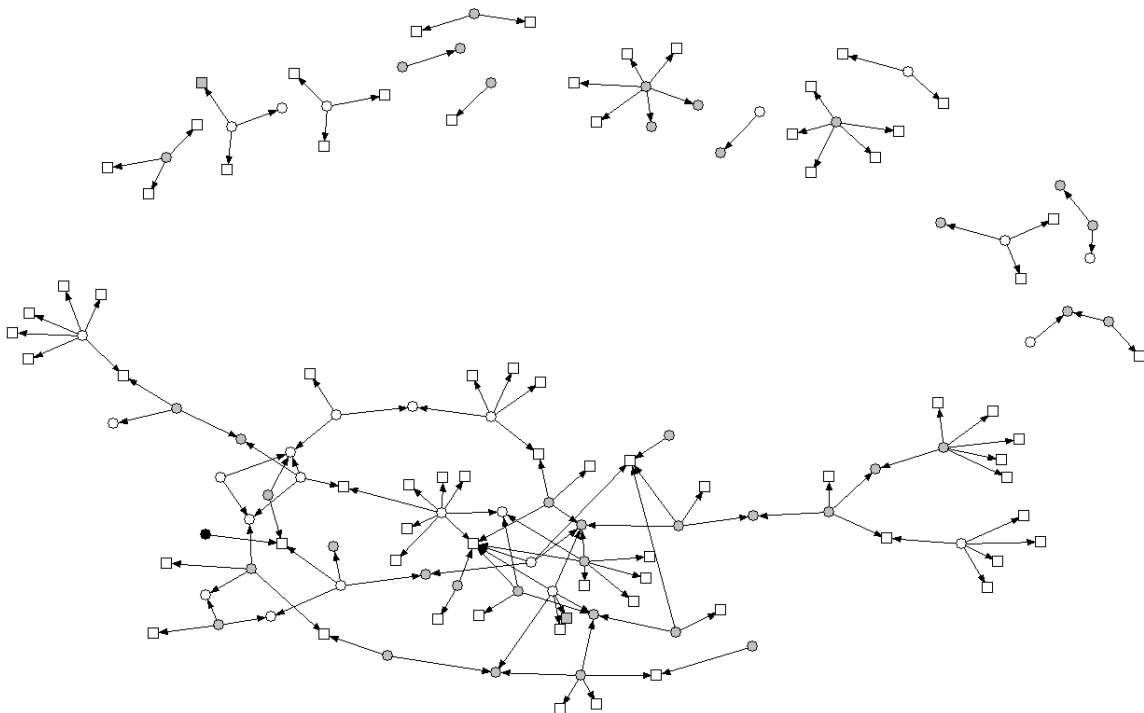


Fig. 10. Connections among organizations with health goals in the context of the whole network. Black = focus on health; grey = health and other goals (environment or social justice; white = not focused on health.

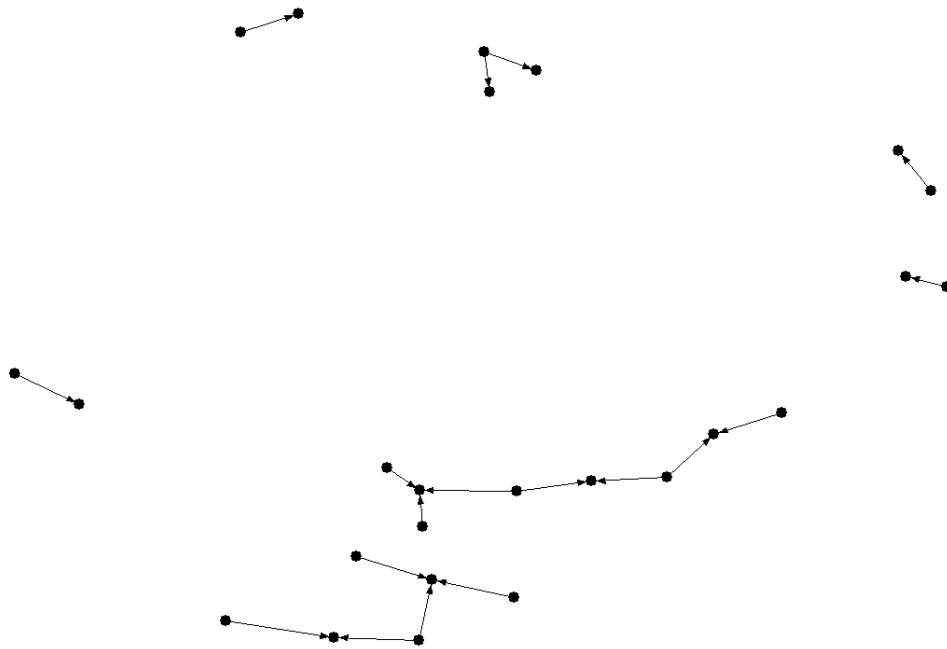


Fig. 11. Connections among organizations with health goals, isolated (black circles=AFOs in our sample; grey=food organizations not in the sample; white=non-food organizations)

Finally, moving beyond criteria for individual tie formation, we look at the way these ties are configured in groups. We focus on the configuration of subcomponents, i.e., the parts of the graph that are disconnected from the main component. Fig.12 highlights a principal component that cumulates 103 ties out of 138 (these represent 75 percent of all ties), which is remarkable considering that data was collected on personal networks that could have been completely disconnected. The smaller components illustrate personal networks that do not share any contacts. Thus, information could spread among a great part of the AFO's personal contacts, due to the connections they share among themselves (see also fig. 13).

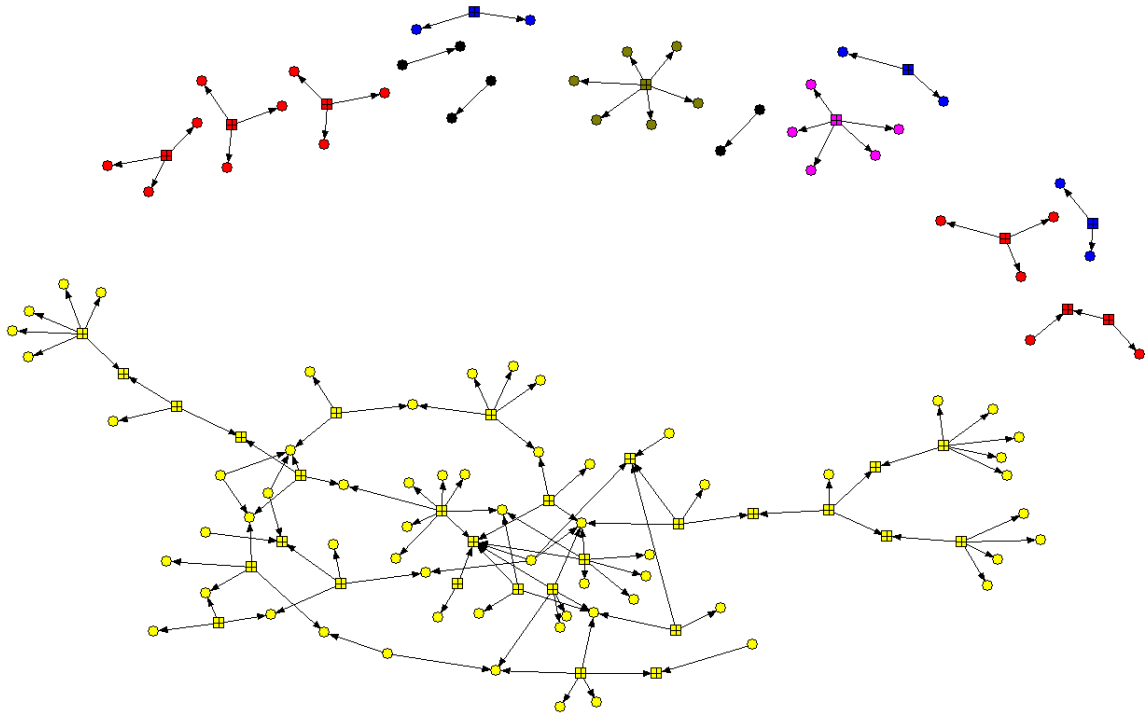


Fig. 12. Components by size and cut-points: yellow (103 ties), olive (6 ties), fuchsia (5 ties), red (3 ties), blue (two ties), and black (1 tie). Cut-points are marked by boxes.

To better understand the information flow among the organizations tied in the main component, Fig. 12 also highlights cut-points, key nodes which, once removed, disconnect the network into the highest number of parts. As expected based on the nature of the data, the number of cut points is high - there are 29 of them in the principal component (and 40 in total). Cut-points may be particularly important actors - who could act as brokers among otherwise disconnected groups, either as facilitators or as bottlenecks for the information flow.

### *Co-organizing events*

The organization of events is the second type of relation that we examine; it is also the second most common type of interaction. Among the 114 AFOs in the sample, 40 (35 percent) named at least one organization with whom they organize events. Their responses identified a total of 78 organizations. The resulting networks, linking respondents to the event co-organizers they cited, count 102 links and are illustrated in fig.13. As in the case of information exchange, some of these personal networks are interconnected, indicating that respondents organize events with other AFOs. The graph distinguishes between the AFOs in our sample, other food organizations, and non-food actors.

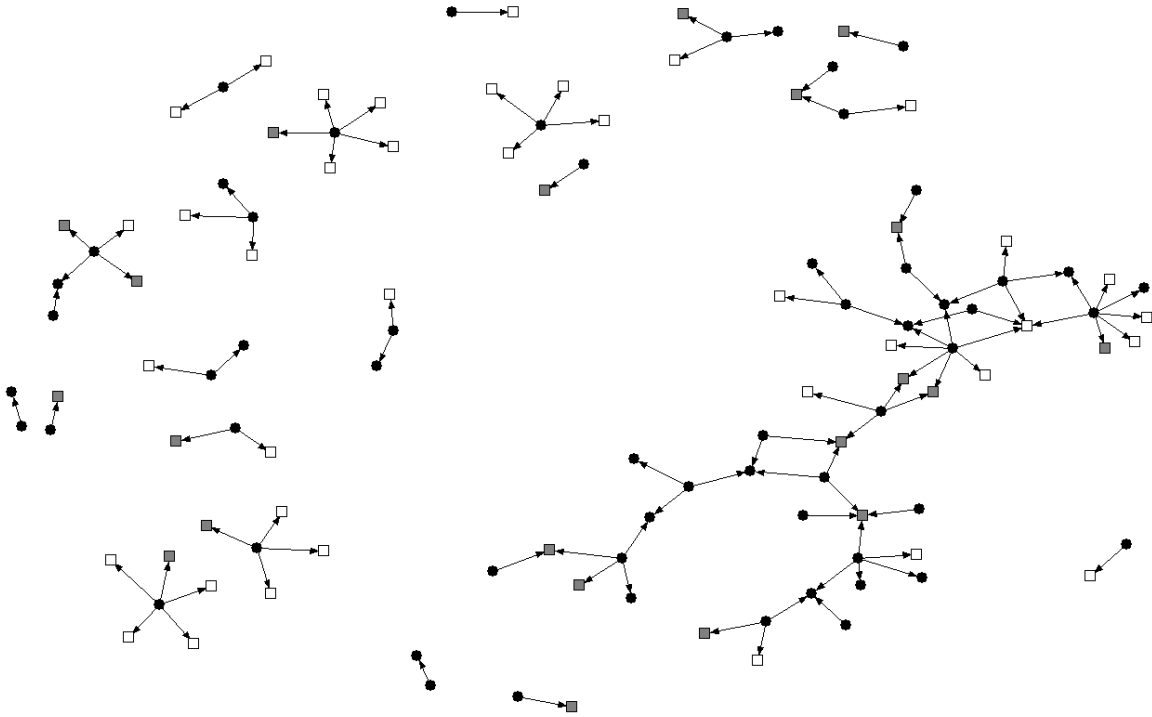


Fig. 13. The organization of events among survey respondents and other entities. Black circles represent the AFOs in our sample, gray squares designate food organizations not included in the sample and white squares non-food organizations.

Table 13. The types of organizations that the AFOs organize events with

Organization type		Number of nodes	Percentage of nodes
Food	in sample	19	24.0
	not in sample	20	26.0
Non-food	CSOs	19	24.0
	Public institutions	8	10.5
	Private companies	3	4.0
	Other (networks, initiative committees)	9	11.5
Total		78	100

For event planning, the AFOs appear to collaborate with an equal number of food and non-food organizations; their contacts are split in half between the two categories. Table 13 shows the type and number of organizations cited. The food group includes 19 organizations in our sample and 20 outside of it: again, an almost even distribution of 24.0 versus 26.0 percent of the AFOs’ contacts. Civil society organizations outside of the food sector make up another important category (24.0 percent). Platforms, networks, or initiative committees add up to 11.5 percent. This is not surprising, given their federated nature and their self-assumed role of exchange

facilitators. Public institutions also make up 10.5 percent, while private enterprises are present only in a very small minority.

The distribution of ties among categories of organizations reveals however that the AFOs organize events among themselves or with other food organizations to a greater extent than they do with non-food organizations (Table 14). Their relations are denser within the food sector (where organizations are cited 1.5 to 1.6 times on average) than outside of it (where organizations are cited once on average).

Table 14. Number of ties in the event co-organization network

Cited organizations	Number of ties	Percentage of ties	Average indegree
Food (in sample)	30	29.4	1.6
Food (not in sample)	30	29.4	1.5
Non-food	42	41.2	1.0
Total	102	100	

The popularity and prestige of participating actors also determines the number and density of ties in a network. To grasp the importance of the organizations cited, we look at how the ties between them and AFOs are distributed (Table 15). The indegree centrality, varying between 1 and 4, shows that the organizations cited enjoy equal popularity for the most part, with the exception of a few prominent actors that are cited more. Of the 78 partners named by the respondents, the majority are cited only once (80.8 percent). They account for 62.0 percent of the ties. The remaining 38.0 percent of ties go to the fifth of the organizations (19.2 percent) that have indegrees varying between 2 and 4. The only two entities that are cited 4 times are federations, which explains why they act as hubs in event planning.

Table 15. Indegree centrality in the event co-organization network

Indegree	Number of organizations	Percentage of organizations
4	2	2.5
3	5	6.4
2	8	10.3
1	63	80.8
Total	78	100

Ties are also generated by the activism of participants, who initiate partnerships and collaborations. Therefore, we examine the outreach of the AFOs in the sample (Table 16). The most active respondents collaborate with up to 7 organizations to plan events. These are the exceptions, they represent only 1.8 percent of the sample and they are AFOs profiled on the organization of events or on communication, which explains why they are particularly active. The average number of connections for those who get involved in events is 2.5, while for the entire sample it is only 0.9 since a large number do not participate in the organization of events (65 percent of the sample). This is also reflected in the difference between the most active organizations and the least. Looking at the outdegrees scores in table 16, we notice that the most active organizations have outdegree scores that range between 4 and 7. They make up less than 10 percent of the sample of organizations but account for more than half of the contacts in the network. This uneven participation is not surprising considering the resource-consuming nature of event planning.

Table 16. Outdegree centrality - how many organizations does each AFO mention?

Outdegree	Number of respondents	Percentage of respondents	Percentage of ties
7	2	1.8	13.7
5	3	2.6	14.8
4	6	5.2	23.5
3	6	5.2	17.6
2	8	7.0	15.7
1	15	13.2	14.7
0	74	65.0	0
Total	114	100	100

After describing the role of both the AFOs in our sample and of their event partners in creating ties around event-planning, we move on to examine other underlying causes of connection. Table 14 showed a majority of ties among food organizations. Fig 14 illustrates the extent of these links isolated from the rest. Among the 60 ties that link food organizations, a majority are among entities based in the Canton of Geneva (68.0 percent). Moreover, the graph shows that 30 of these ties link AFOs in our sample. This offers an indication of the localization of connections within the food sector, along both geographical and organizational criteria.

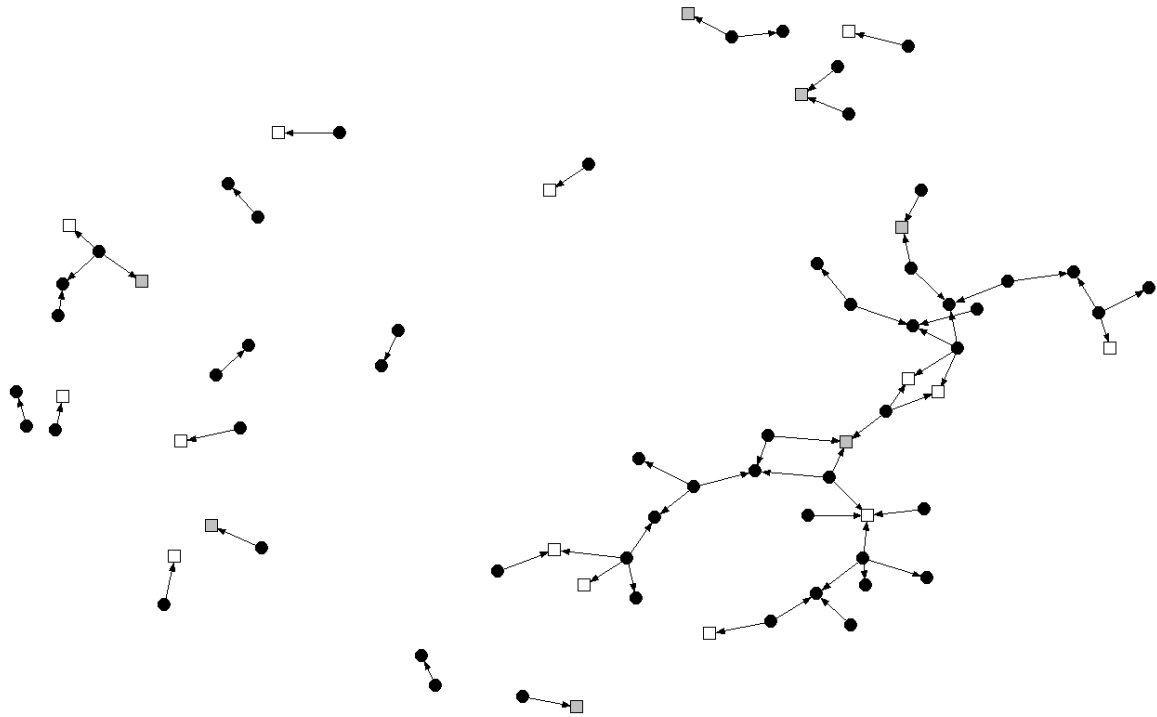


Fig. 14. Ties among food organizations only (Black circles represent the AFOs in our sample, gray squares designate other food organizations from the same geographical space, and white squares designate other food organizations activating outside of the Canton of Geneva and/or not having associative status).

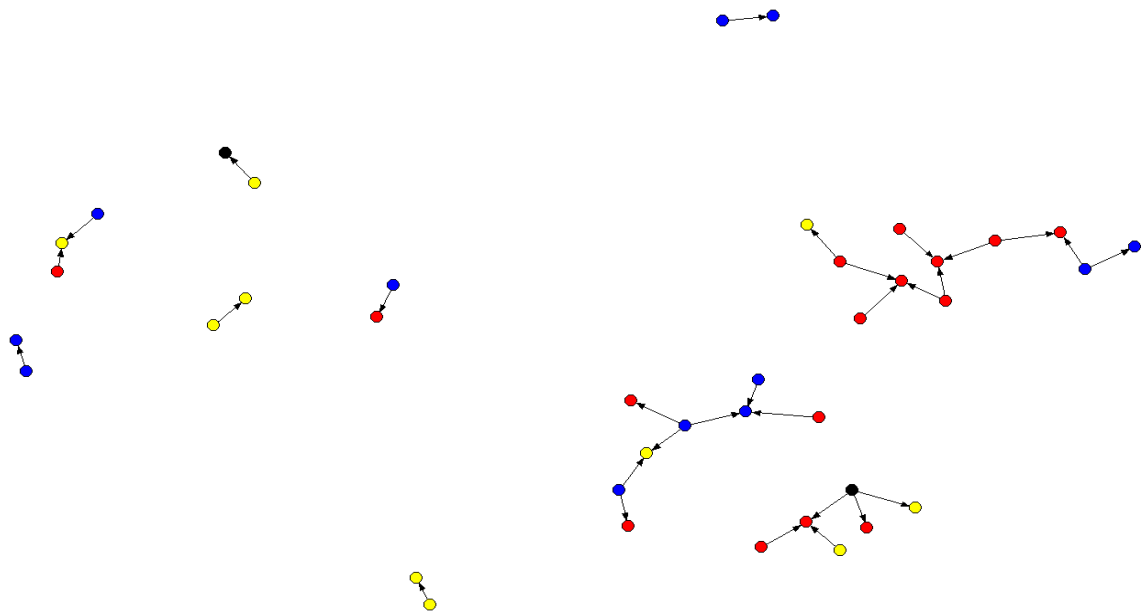


Fig. 15. The organization of events among survey respondents. Colors indicate organization category (red = production, yellow = distribution, blue = consumption, black = auto-production)

Fig. 15 adds more detail to the event links among the AFOs in the sample, distinguishing among categories based on production, distribution, consumption, and auto-production. The graph shows that the personal networks of the production and consumption oriented AFOs share common partners, resulting in the interconnection of their personal networks. We further investigate if any one of these categories plays a more active role either in maintaining ties or in the brokerage of event planning.

In fig. 16 and 17 we illustrate outdegree and betweenness centralities by node size, clustering nodes according to organization categories. In the outdegree centrality figure, production oriented AFOs are more central, but also more numerous. Consumer-based AFOs are comparably prominent; both categories dominate the graph through their number of ties, indicating a determination to reach out and establish connections from both the supply and demand sides (Fig. 16). As for betweenness centrality, the producers and distributors, hence the actors of the supply chain, have the higher scores, suggesting they have more interest in mediating connections and acting as gatekeepers.

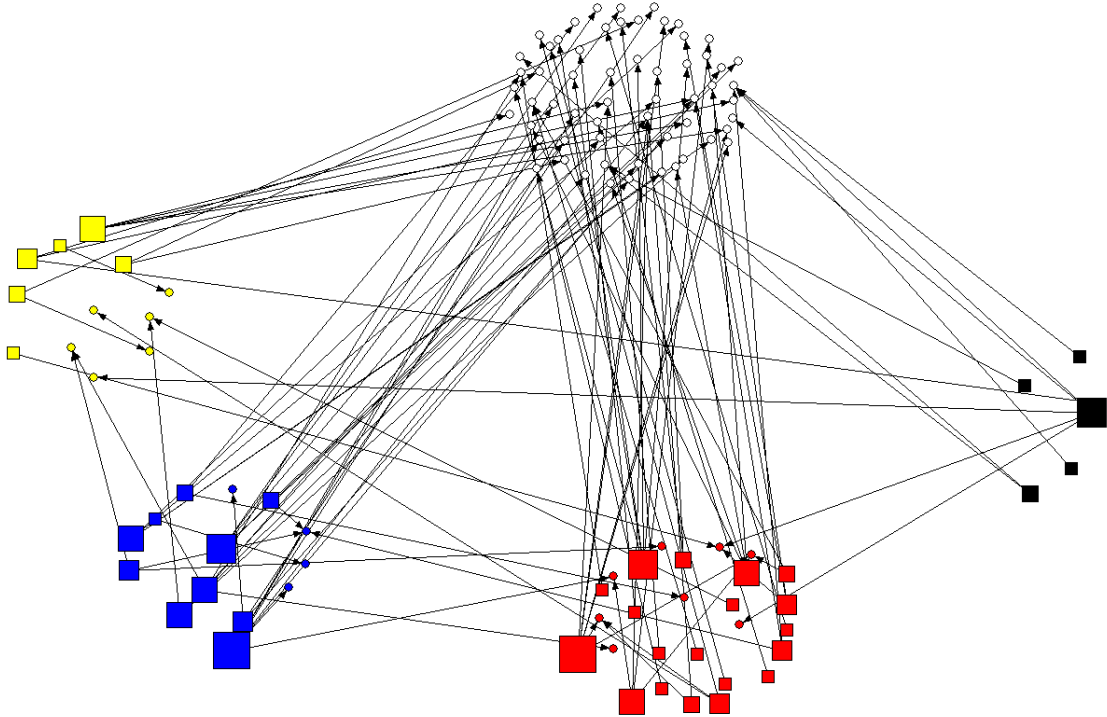


Fig.16. Outdegree centrality (represented by node size), nodes clustered by organization category (red = production, yellow = distribution, blue = consumption, black = auto-production)

In Fig.17, the producers are more prominent, it shows that the backbone of the principal component (the organizations that hold it together) is very diverse: nodes are predominantly AFOs from our sample including organizations active in the production, distribution,

consumption, and auto-production sectors, yet external organizations are also present. These nodes seem to bring together several smaller, rather homogenous segments: a group of producers (in red), an active distributor, a node external to the sample that is cited by 3 different auto-production organizations (in black), a string of consumer associations (blue).

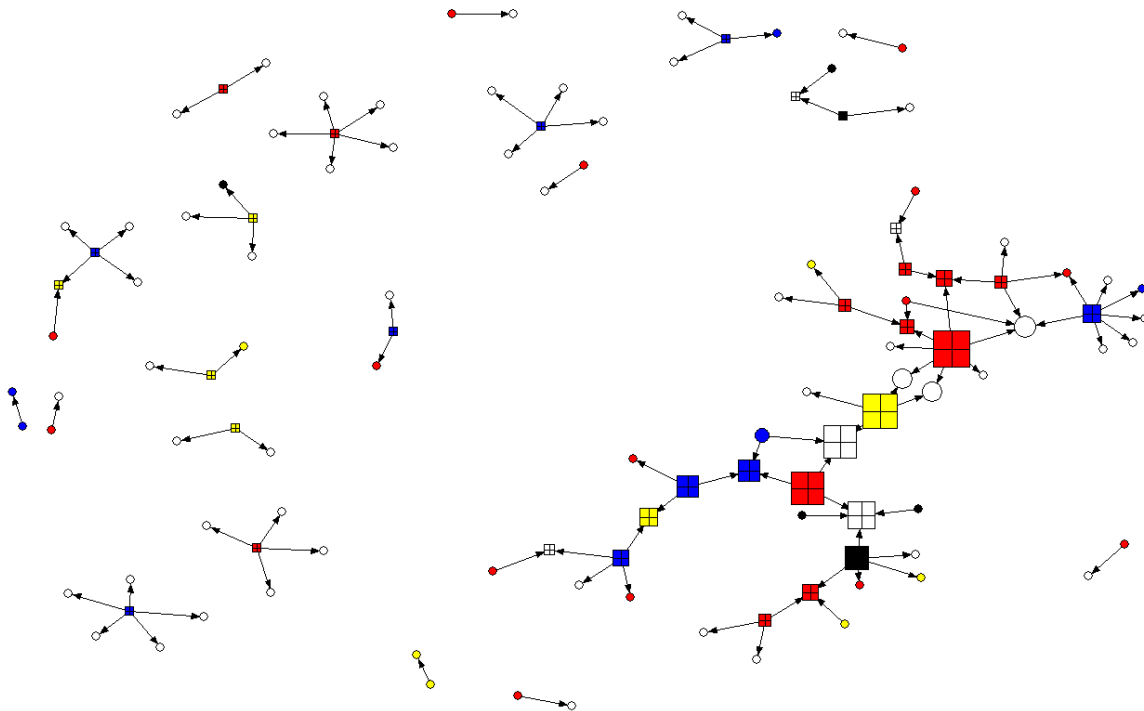


Fig. 17. Node betweenness (illustrated by symbol size) Colors indicate organization category (red = production, yellow = distribution, blue = consumption, black = auto-production)

Next, we explore the role of shared organizational goals in forming ties among organizations and facilitating the organization of events. In figures 18 and 19, we look at the links among organizations with environmental goals. They represent more than a third (39.0 percent) of the total number of ties (Table 17). In contrast to their role in the information exchange, where they seem to primarily intermediate the dialogue between distinct and otherwise apparently disconnected personal networks, here they group to form the denser parts of the network. In other words, the organizations with environmental goals seem to have a propensity to cluster for the planning of events and to form tie among themselves<sup>6</sup>.

<sup>6</sup>. This is confirmed by a UCINET homophily test of the network partitioned among environmental and non-environmental oriented organizations, which yields an E-I index of -0.3137.

Table 17. Ties among the AFOs with the same goals in the event organization network

Goal	Number of ties	Percentage of ties
Environment	43	39.0
Social Justice	35	32.0
Health	14	13.0

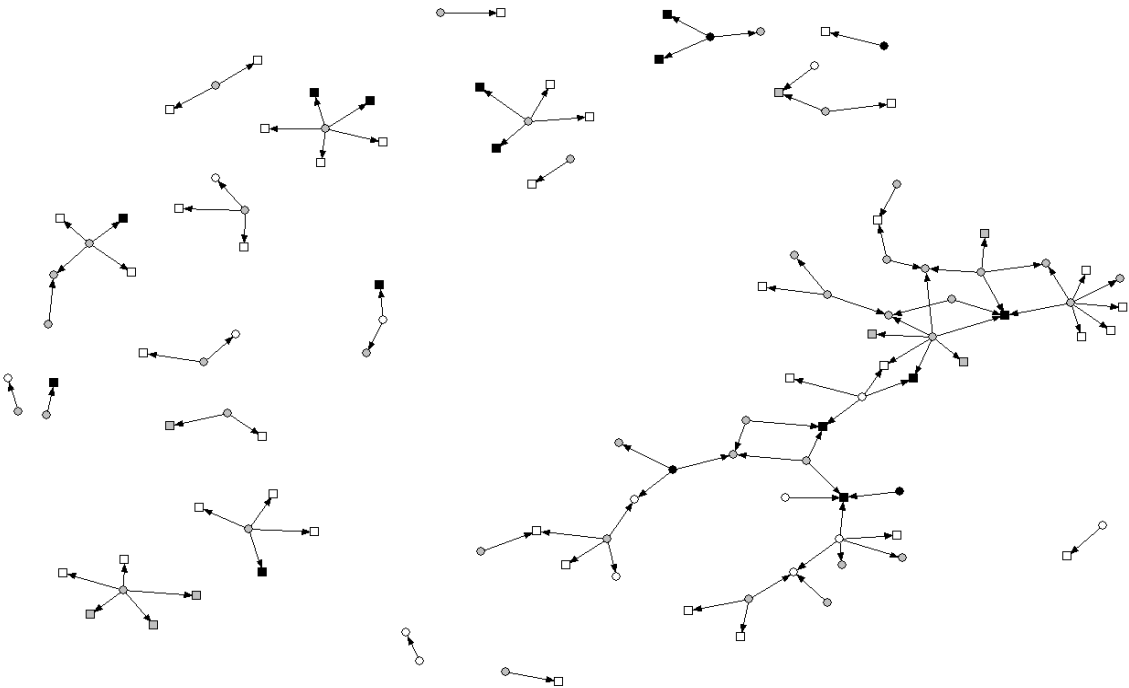


Fig. 18. Connections among organizations with environmental goals in the context of the whole network. Black = focus on environmental goals; grey = environment and other goals (social justice or health); white = not focused on the environment.

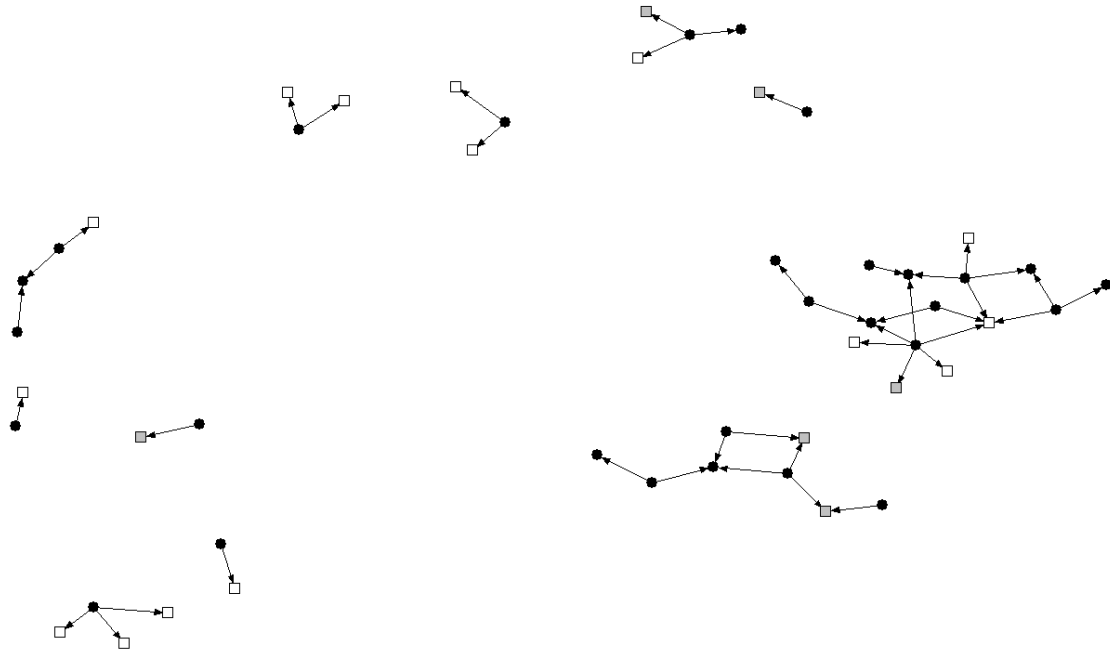


Fig. 19. Connections among organizations with environmental goals, isolated (black circles = AFOs in our sample; grey = food organizations not in the sample; white = non-food organizations)

A different picture emerges from the relations among organizations with social justice goals (Fig. 20 and 21). Although they make up 32.0 percent of the total of ties, they overlap entirely with the web among food organizations (Fig. 21). Given that the cooperation among food organizations emerged as dominant in the organization of events, this coincidence suggests social justice might not be necessarily the reason why they work together. In addition, all the organizations exclusively focused on social justice, and not on a mix of issues, are peripheral to all components (Fig. 20, in black). This aspect also refutes the hypothesis that social justice is a dominant criterion in cooperating for events among participants. If their goal provided a criterion for connection, we would have expected them in more central positions<sup>7</sup>.

<sup>7</sup> The homophily test confirms that social justice goals are not a strong criterion for making connections in event planning (E-I Ind. =0.0196).

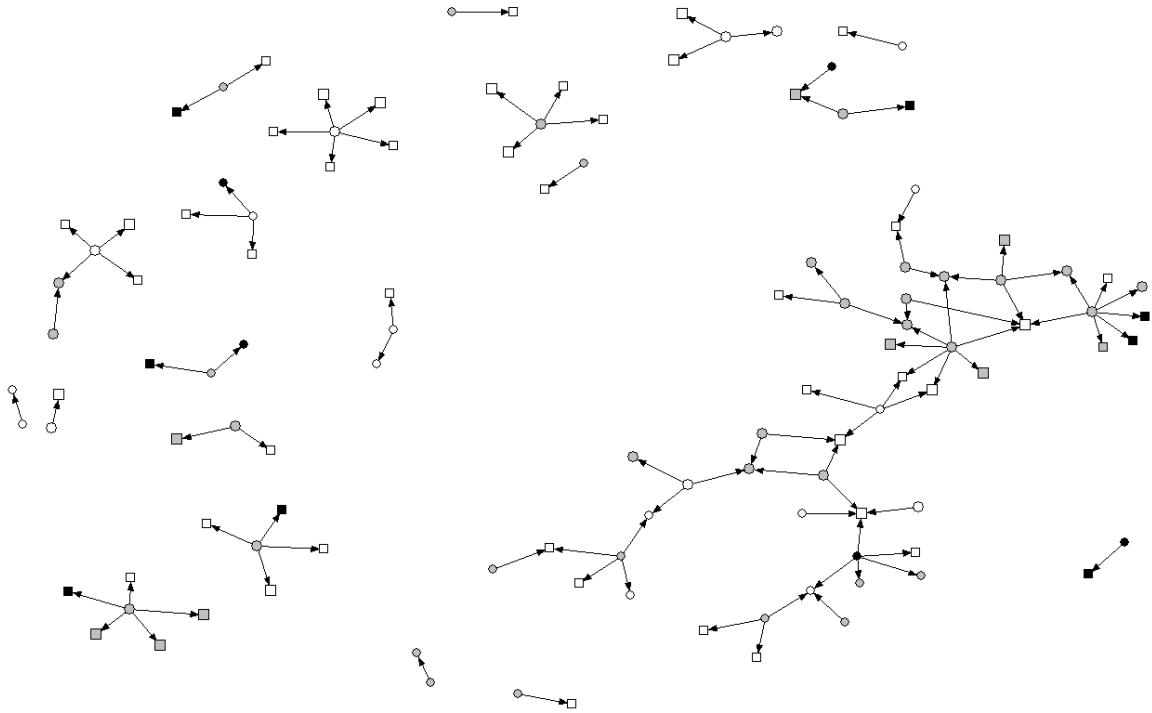


Fig. 20 Connections among organizations with social justice goals in the context of the whole network. Black = focus on social justice; grey = social justice and other goals (environment or health); white = not focused on social justice.

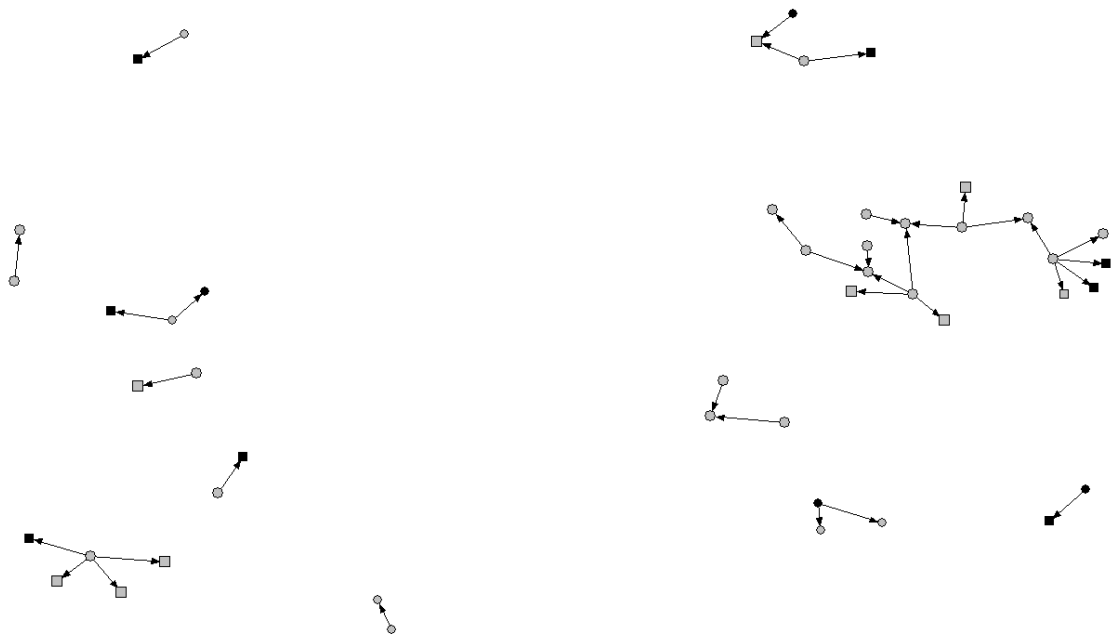


Fig. 21. Connections among organizations with social justice goals, isolated (black circles = AFOs in our sample; grey = food organizations not in the sample; white = non-food organizations)

Finally, health-focused entities form significantly fewer ties (Fig.22 see also Appendix A1), many of which overlap with ties formed by other interests (food, social justice). These three sub-networks aggregated around goals suggest that AFOs plan events related to multiple interests, of which the dominant is, predictably, food, followed by the environment.

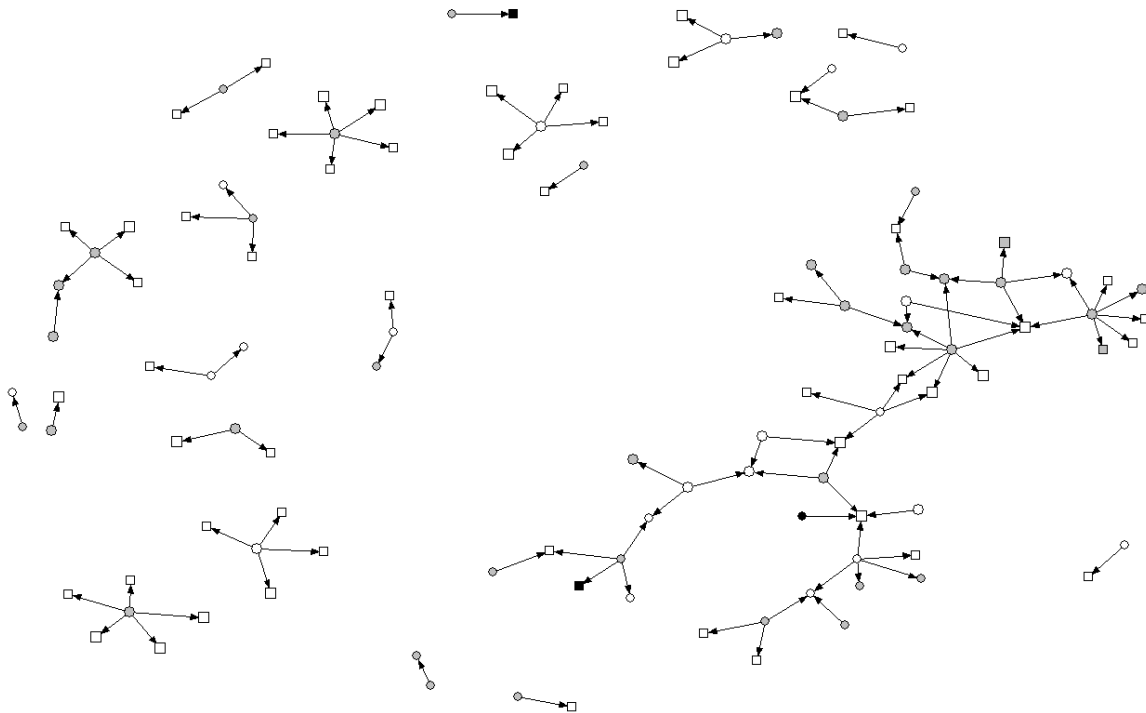


Fig. 22. Connections among organizations with health goals in the context of the whole network. Black = focus on health; grey = health and other goals (environment or social justice); white = not focused on health.

Moving on from individual tie formation to the formation of groups, we note that the event organizing network has a similar overall configuration as the information exchange network (Fig.23). We distinguish a main group – a principal component – that groups 54 ties, 53 percent of the total ties developed by the AFOs. Around it gravitates a suite of small components – disconnected ego-networks - of between one and 5 ties. The components appear either as small star graphs or as linear formations along the shared connections of the questionnaire respondents, and they could easily be disconnected by the removal of the numerous cut-points of the network (illustrated by box symbols).

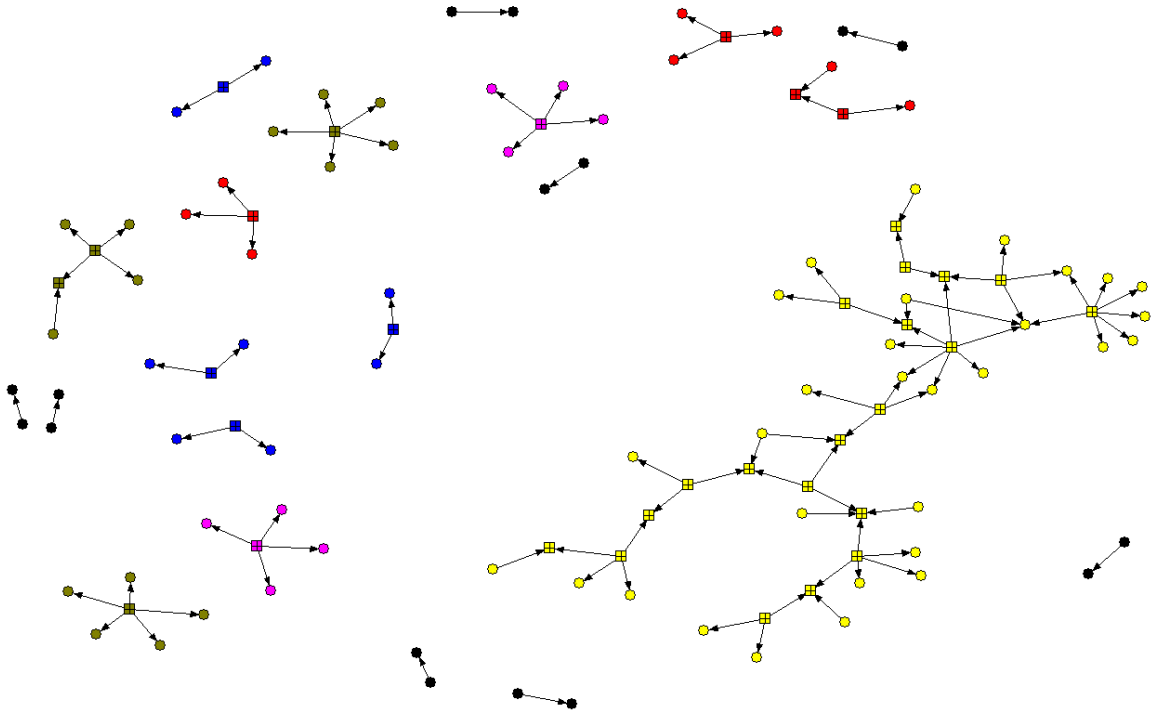


Fig. 23. Components by size and cut-points: yellow (54 ties), olive (5 ties), fuchsia (4 ties), red (3 ties), blue (2 ties), and black (1 tie). Box symbols illustrate cut points.

*Participating in joint political projects*

Lastly, we examine the participation in joint political projects among the AFOs and their contacts. From the 114 AFOs in the sample, 26 (23.0 percent) named at least one organization with whom they participate in political action. Their responses identified a total of 56 organizations. The resulting networks, linking respondents to their political partners, are tied by 73 links, which indicates that the average number of political action partners per organization is 2.8, slightly higher than the number of partners involved in organizing events. A higher number of partners per active organization was expected, due to the high amount of resources required by the involvement in political projects. The political networks of the AFOs are illustrated in Fig.24. As in the previous sections, the graph distinguishes between the AFOs in our sample, other food organizations, and non-food actors.

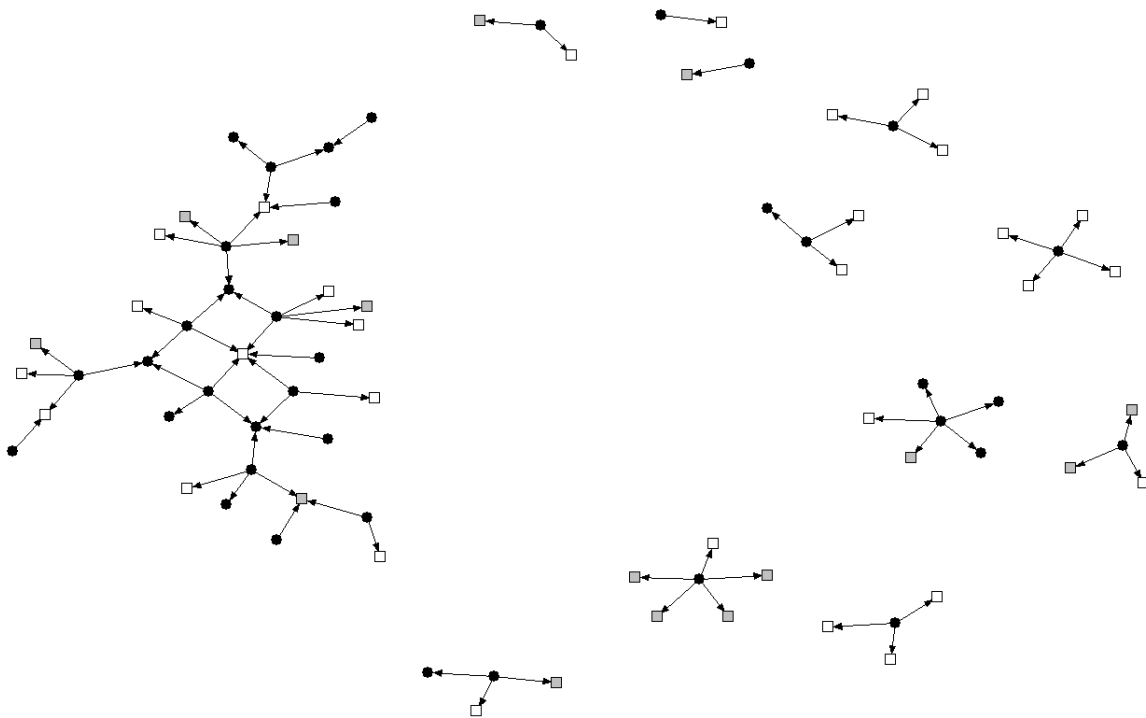


Fig. 24. Participating in political projects among survey respondents and other entities. Black circles represent the AFOs in our sample, gray squares designate food organizations not included in the sample and white squares non-food organizations.

Table 18 describes the composition of the networks that the AFOs develop through political projects. The food group counts 27 organizations and includes, as for the other types of relations studied, a number or connections among the AFOs in our sample. There are 12 AFOs cited (21.4 percent of all names cited) along with 15 food organizations external to the sample. (26.8 percent of the total). The non-food category, counting 29 actors, is composed primarily of civil society organizations (20 contacts or 35.0 percent of all cited organizations), various networks or initiative committees (6 contacts or 10.7 percent), and public sector entities (3 contacts, the equivalent of 5.4 percent). No private sector actors or communication media are mentioned as allies in political action.

Table 18. The types of organizations that the AFOs organize politically with

Organization type		Number of nodes	Percentage of nodes
Food	in sample	12	21.4
	not in sample	15	26.8
Non-food	CSOs	20	35.7
	Public institutions	3	5.4
	Other (networks, initiative committees)	6	10.7
Total		56	100

The distribution of ties among categories of organizations shows that despite citing more non-food organizations, food organizations were cited more often by the AFOs. Table 19 shows that AFOs have denser ties among themselves: there were 20 citations of the 12 unique AFO names mentioned, so an average of 1.7 citations per organization from one member of the sample to another. The next more popular group are the non-food actors, which are each cited 1.2 times. The links to other food organizations are the least dense, on average 1.1 per actor and only 23 percent of the total number of ties. However, if we combine the two food categories together and calculate an average ratio of citations per actor, there is more political mobilization with food than with no food actors overall.

Table 19. Number of ties in the political mobilization network

Cited organizations	Number of ties	Percentage of ties	Average indegree
Food (in sample)	20	27.4	1.7
Food (not in sample)	17	23.3	1.1
Non-food	36	49.3	1.2
Total	73	100%	

Next, we examine how the popularity and activism of individual actors influences the number and density of ties in the political mobilization network, we look at the indegree and outdegree of individual nodes respectively. Table 20 shows the prestige or the popularity of the organizations cited. The indegree centrality varies between 1 and 5, with the vast majority of the nodes (85.7 percent) recording only one tie. Only a handful of organizations display higher

values, eight organizations have two or more incoming ties – organizations mentioned that they engage with this organization in political mobilization. Although some of the prestige of these organizations is slightly more concentrated in the hands of a few actors, the political participation of the AFOs does not seem to lean on very prominent partners, but rather on the diffuse cooperation with a range of civil society entities. These entities come mostly from the food sector and the most active ones from among the AFO group itself.

Table 20. Indegree centrality in the political mobilization network

Indegree	Number of organizations	Percentage of organizations
5	1	1.8
4	1	1.8
3	4	7.1
2	2	3.6
1	48	85.7
Total	56	100

In table 21, we look at the activism of the AFOs in the sample. Political participation is obviously the least accessible of the social behaviors studied here, due to its higher cost for the AFOs. Consequently, only a small number of them (26 organizations, representing 22.8 percent) declares being involved. More than two thirds do not mention any partners for political action. For this reason, the average number of political partners for all AFOs interviewed is 0.6. However, among those involved, the average AFO reaches out to 2.8 other organizations to take part in political projects and 16 out of the 26 politically active AFOs are above the average. A majority has between 3 and 5 political partners. Similar to the diffuse popularity among the AFOs political partners, activism among the small number of AFOs who do participate in political action is evenly spread.

Contrary to the prior relations examined, AFOs find it only marginally easier to connect with other food organizations to participate in political projects. Their ties are evenly split between the food and non-food categories and they actually identify more partners outside of the food sector, but they still cultivate slightly denser ties with their food sector partners (table 18 and 19). This relative preference is explored next. Fig 25 illustrates the extent of the links within the food sector, isolated from the rest.

Table 21. Outdegree centrality in the political mobilization network

Outdegree	Number of respondents	Percentage of respondents	Percentage of ties
5	4	3.5	27.4
4	5	4.4	27.4
3	7	6.1	28.7
2	2	1.8	5.5
1	8	7.0	11
0	88	77.2	0
Total	114	100	100

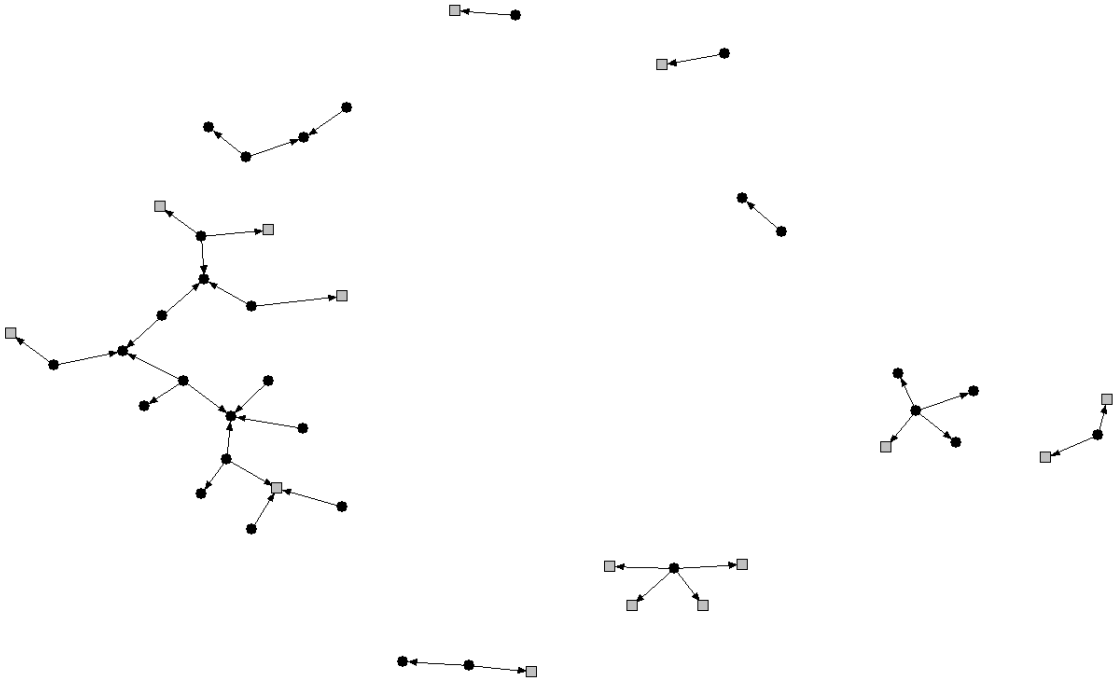


Fig. 25. Ties among food organizations only (Black circles represent the AFOs in our sample, gray squares designate other food organizations from the same geographical space, and white squares designate other food organizations activating outside of the Canton of Geneva and/or not having associative status).

All 37 ties in the food sector connect organizations based in the Canton of Geneva and 20 of them link AFOs in our sample. In addition, only one of the actors outside of the sample is cited more than once – the rest being peripheral and very easy to disconnect. The contrast between the structural positions of two types of food organizations is pronounced, suggesting that the specific characteristics of the AFOs and not merely being a food organization are more important in political alliances. In fact, the common institutional framework associated with the

Canton of Geneva might be more, or just as relevant to these relations than activating in the food sector.

Fig. 26 zooms into the links among the AFOs in the sample, highlighting subcategories based on production, distribution, consumption, and auto-production. The graph shows that producers share common partners which leads to interconnected personal networks, to a greater extent than the other sub-categories. Moreover, these partners are also producers, suggesting an underlying structure of a well bonded group when it comes to political participation.

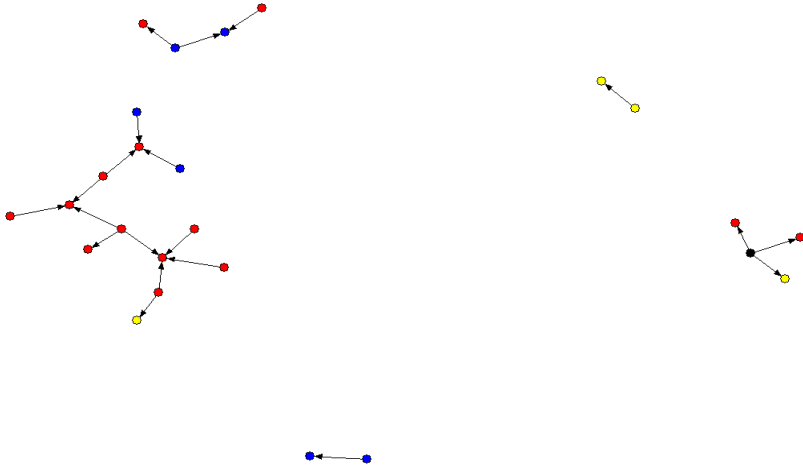


Fig. 26. The organization of events among survey respondents. Colors indicate organization category (red = production, yellow = distribution, blue = consumption, black = auto production)

The tendency of producers to intermediate connections among personal networks is equally visible in Fig. 28, reflected in their higher betweenness centrality. Fig. 27 illustrates degree centralities. Consumption and production AFOs dominate the graph, the size of the nodes indicating a higher number of connections for the organizations in these groups and hence more interest in joint political projects. The unique organization with an auto-production profile also appears very active, particularly in reaching out to other AFOs. Lastly, only three distribution-profiled organizations declared participating in joint political projects and appear more active, while other three are mentioned as partners by other AFOs. Fig.28 shows that the principal component is to a great extent the result of connections among the production and the consumption profiled AFOs, which bring together their personal networks to form a larger network.

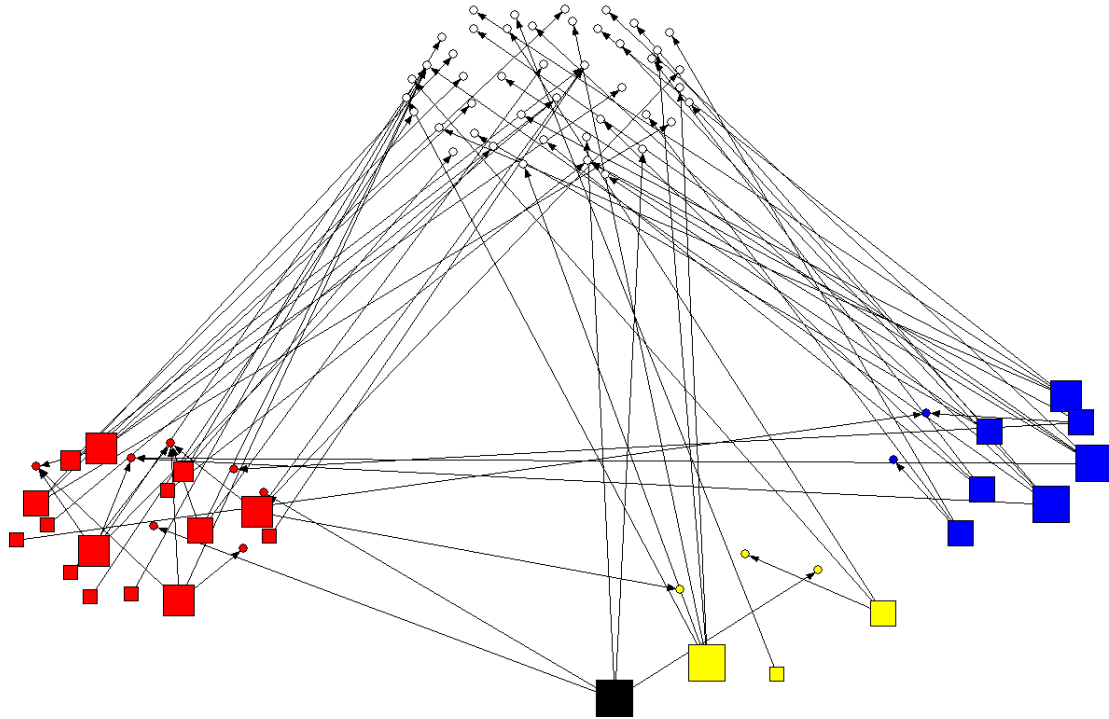


Fig. 27. Outdegree centrality (represented by node size), nodes clustered by organization category (red= production, yellow = distribution, blue = consumption, black= auto-production)

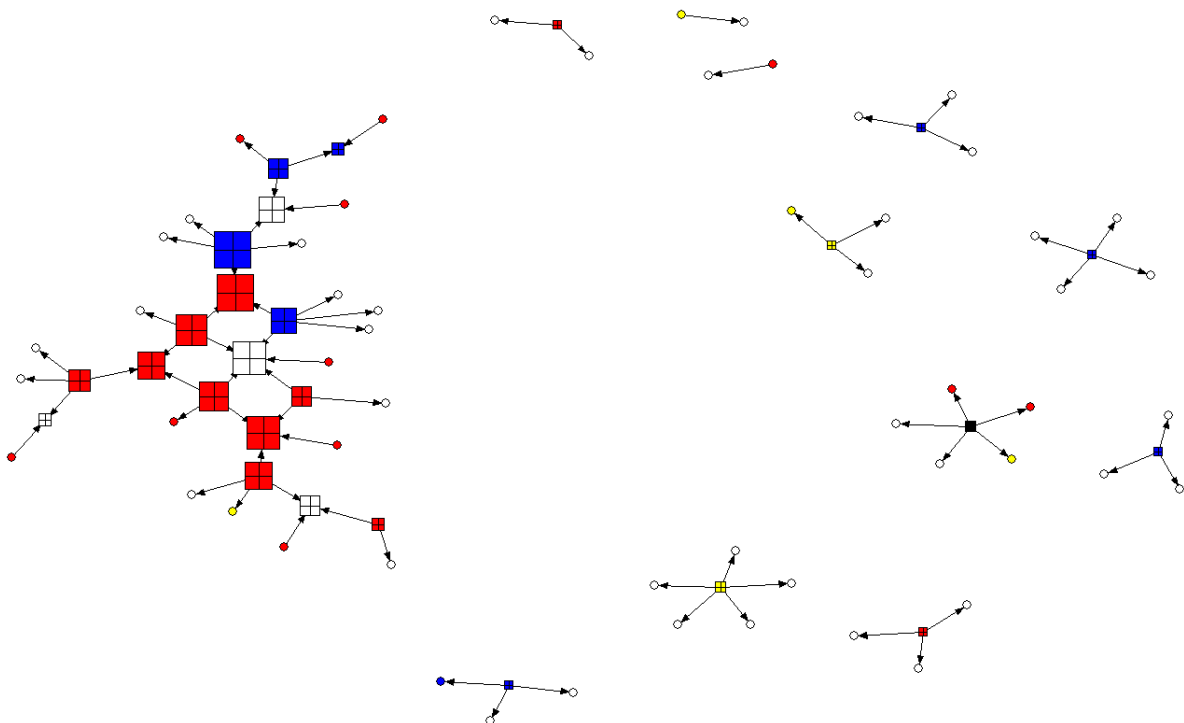


Fig. 28. Node betweenness (illustrated by symbol size) Colors indicate organization category (red = production, yellow = distribution, blue = consumption, black= auto-production)

Next, we turn to organizational goals to explore their role in connecting organizations around political projects. In figures 29 and 30, we observe the links among organizations with environmental goals, which represent a substantial share of the network ties: 41 percent (Table 22). Most of them are AFOs (Fig. 30), which makes it difficult to determine if their connectedness is based on the environmental or food interests. Moreover, a majority of them share a double focus, both environmental and social justice (Fig. 29). There is however one prestigious, centrally located environmental actor who is neither a food organization nor pursuing other goals, and whose popularity brings together five AFOs and their personal networks to create the largest component in the graph<sup>8</sup>.

Table 22. Ties among the AFOs with the same goals in the political mobilization network

Goal	Number of ties	Percentage of ties
Environment	30	41.0
Social Justice	28	38.4
Health	7	9.6

<sup>8</sup> A UCINET homophily test of the network partitioned among environmental and non-environmental oriented organizations indicates an E-I index of -0.1507 supporting the idea that environmental interests activate partnerships among organizations for political mobilization.

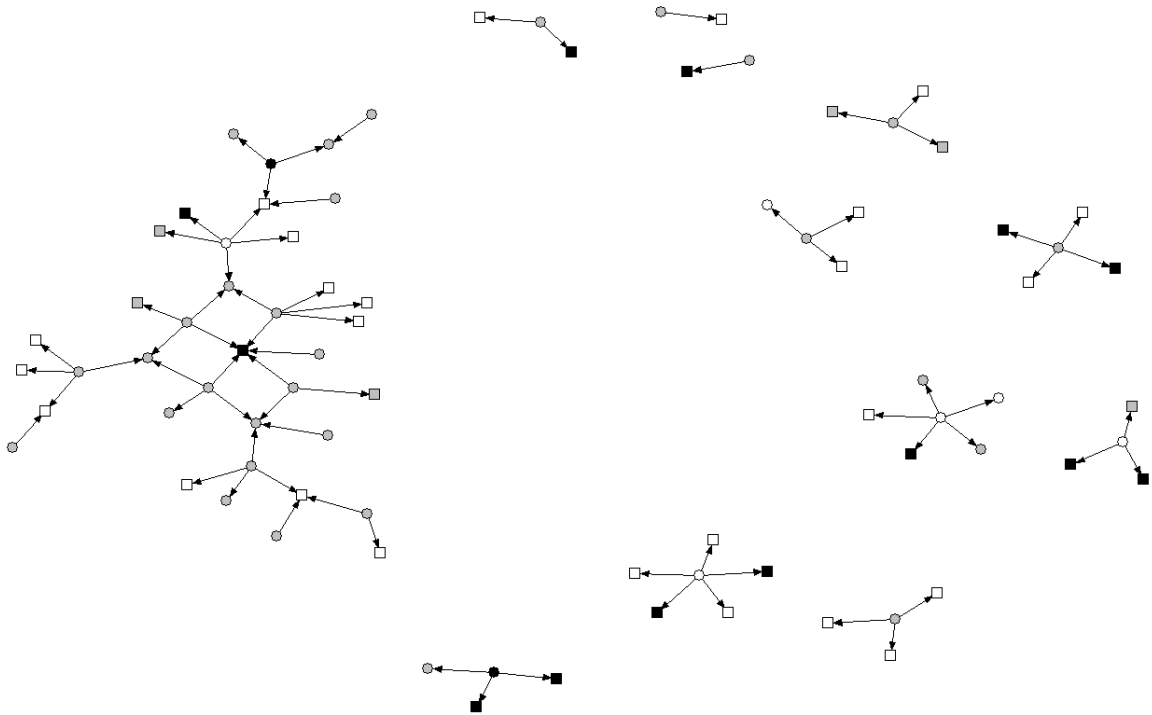


Fig. 29. Connections among organizations with environmental goals in the context of the whole network. Black= focus on environmental goals; grey=environment and other goals (social justice or health); white=not focused on the environment.

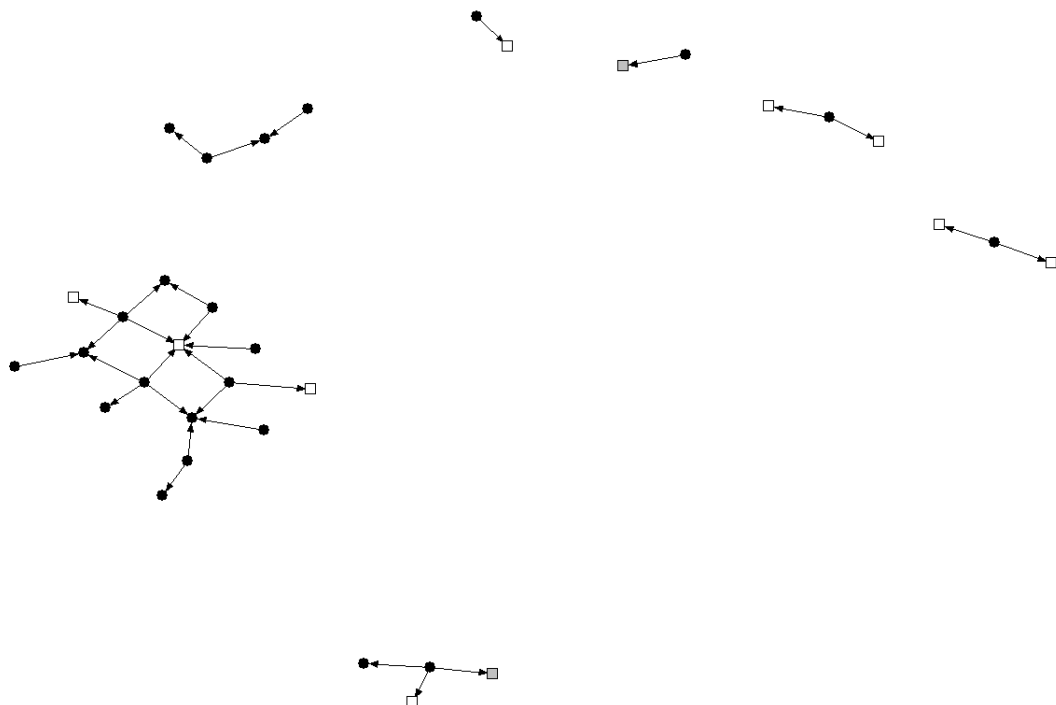


Fig. 30. Connections among organizations with environmental goals, isolated (black circles=AFOs in our sample; grey=food organizations not in the sample; white=non-food organizations)

There is significant overlap of environmental and social justice goals of organizations (Fig. 30 and 32), which contributes to the similar patterns displayed by both types of actors. The relations among social justice organizations, making up 38.4 percent of the total, are also more frequent than among organizations with distinct goals (Fig. 32 and 33). Hence social justice goals underlie the propensity for homophily in political networks too<sup>9</sup>. Like the organizations with environmental goals, many of these social justice organizations are food based. Organizations exclusively focused on social justice are cited only once. Thus, they remain accidental and peripheric in the combined network of AFOs’ personal contacts, while mixed-goals actors are more central.

Finally, health-focused actors form significantly fewer ties in political networks than other relations studied (Fig. 33 and 34). Moreover, there is no organization focused exclusively on health – all of those included in the network have at least one more additional focus such as the environment or social justice<sup>10</sup>.

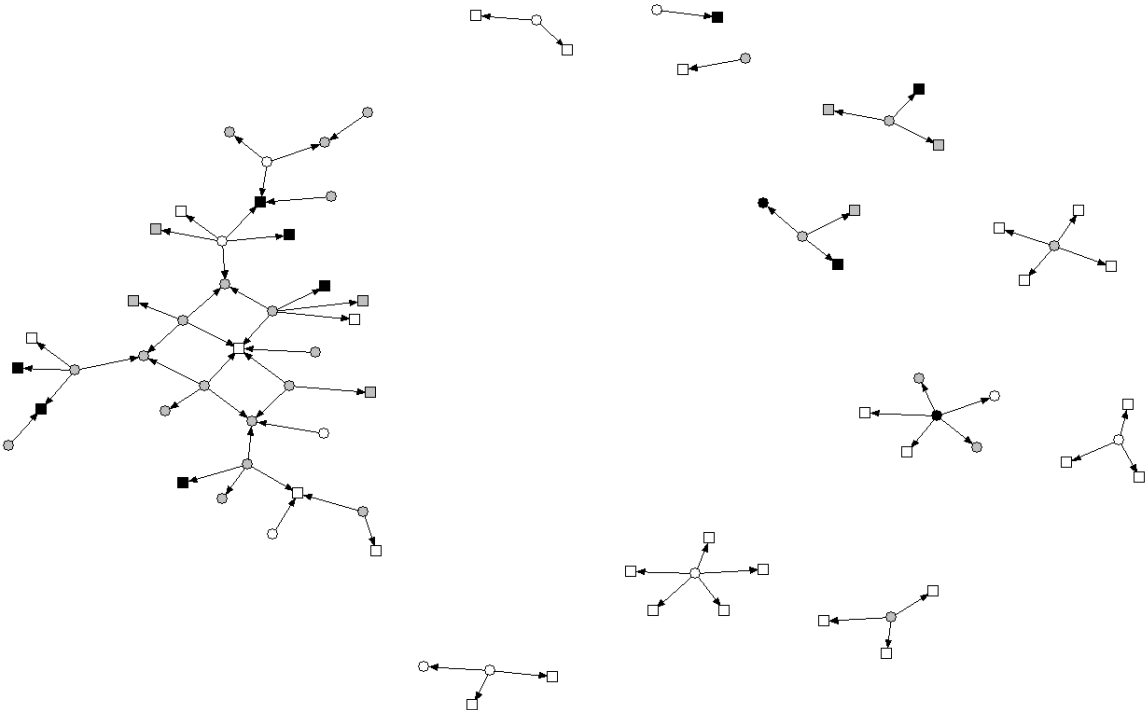


Fig. 31 Connections among organizations with social justice goals in the context of the whole network. Black = focus on social justice; grey=social justice and other goals (environment or health); white = not focused on social justice.

<sup>9</sup> The value of the E-I index based on social justice goals is -0.1507.  
<sup>10</sup> A homophily test yields a slightly confirmative E-I index of -0.0411.

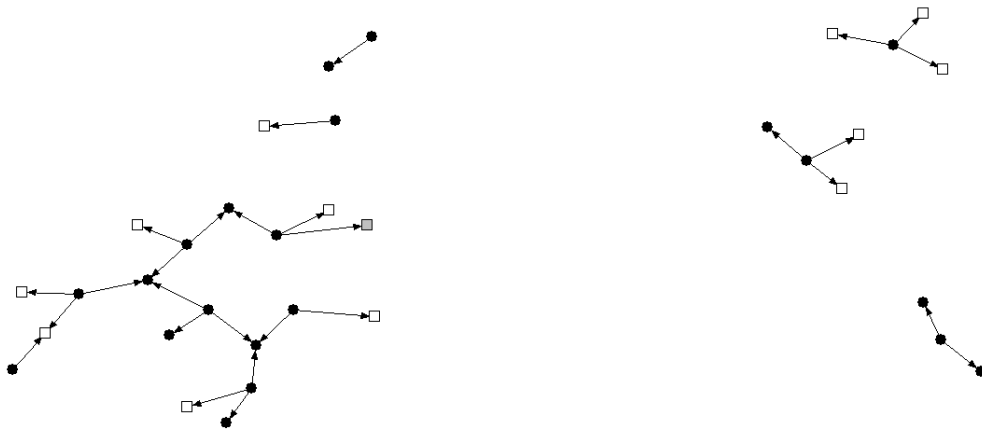


Fig. 32. Connections among organizations with social justice goals, isolated (black circles =AFOs in our sample; grey = food organizations not in the sample; white = non-food organizations)

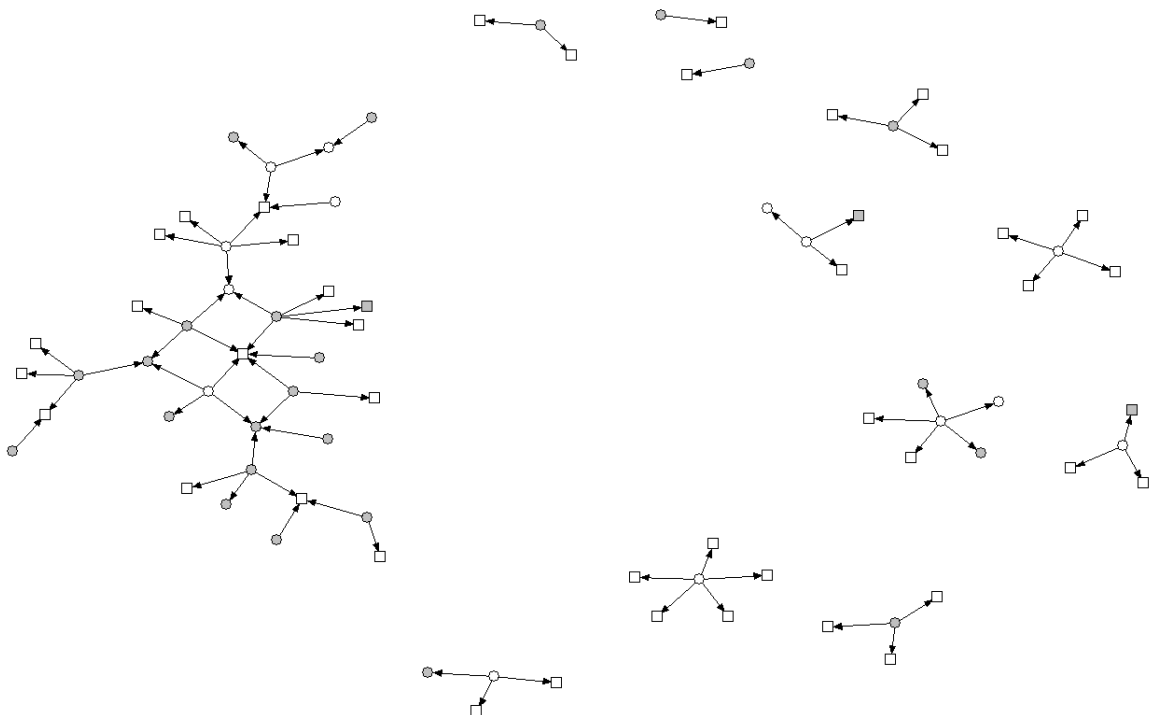


Fig. 33. Connections among organizations with health goals in the context of the whole network. Black = focus on health; grey = health and other goals (environment or social justice); white = not focused on health.

As for group formation, the personal networks developed by the AFOs for political projects form a relatively large component that groups 40 ties (55 percent of the total) (Fig. 36). This shows that the AFOs, together with their contacts, could collectively mobilize to a significant rate for a shared goal. The rest of the networks remain separated into small ego-networks.

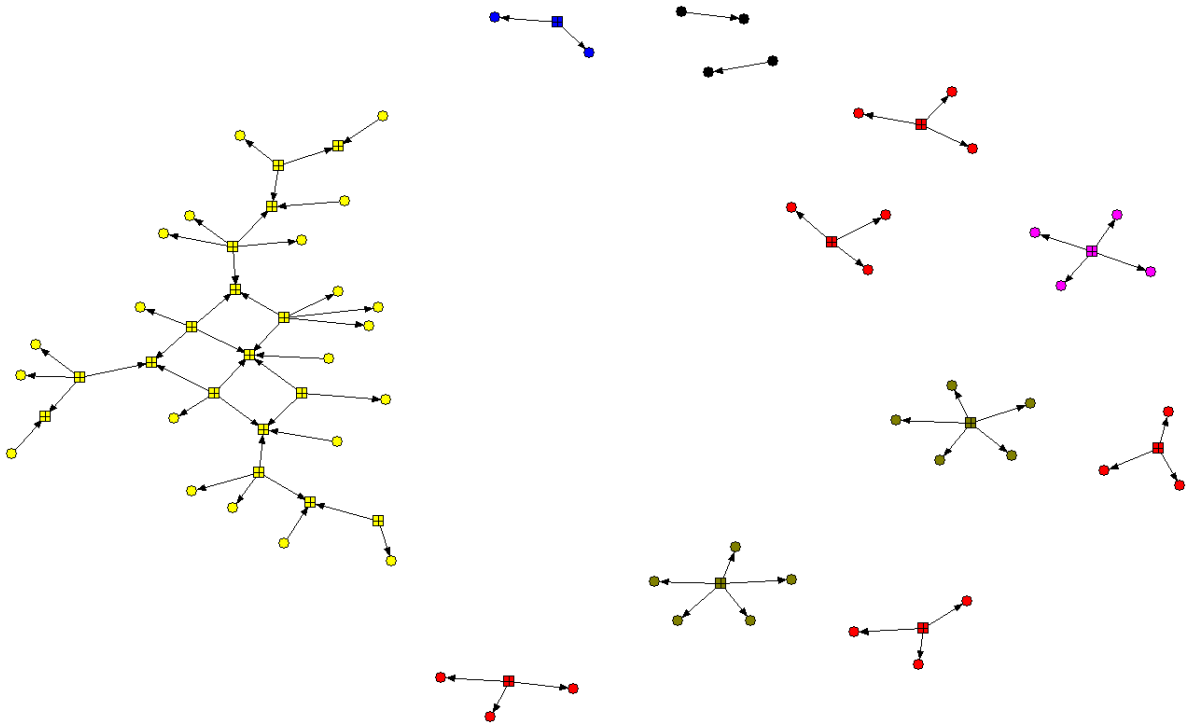


Fig. 34. Components by size and cut-points: yellow (40 ties), olive (5 ties), fuchsia (4 ties), red (3 ties), blue (2 ties), and black (1 tie). Box symbols illustrate cut-points.

**Conclusion**

This section of the report offers an overview of the networking approaches of the AFOs. Its primary purpose is to describe and visualize the data collected through a common name-generator procedure on three types of relations developed by the AFOs. These relations are information exchange, co-organizing events and participating in joint political projects. By combining these data in a single matrix and presenting it as a single network, we aimed to visualize the commonalities in the AFO social behavior, as well as the underlying characteristics of the interactions of AFOs among themselves and with external groups. This visual and descriptive exploration can serve as a basis for more in-depth quantitative analysis

of the personal network data, or for the collection of qualitative data on the motivations and experiences of key actors.

The most common reasons for the AFOs to interact with other entities are the exchange of information and the organization of events: slightly over a third of the AFOs acknowledge developing connections as a result of these relations. Around a quarter of them also foster connections as a result of participating in joint political projects. Information exchange yields the highest overall number of alters and the highest number of connections per organization, a result of larger and more interconnected personal networks. The organization of events generates the weakest density of connections but larger networks than political mobilization.

As far as the composition of networks, apart from the expected food and non-food organizations such as CSOs, public and private organizations and the occasional mass media outlet, a significant presence is registered by entities without organizational status. These are initiative committees, unformalized networks, or web platforms. Their presence is particularly noticeable in the event organizing and in political mobilization networks, where it represents more than 10% of the contacts.

The most common interactions of the AFOs, across the three types of relations occur with other food organizations. While it is not always the case that the food networks are larger, they have considerably denser ties than among the AFOs and non-food entities, such as CSOs, public organizations, private enterprises and the others. For the most part, the difference between the popularity of food and non-food organizations as contacts is made by the ties among the AFOs themselves, which are the densest regardless of the type of relation observed.

Among the AFOs, producer and consumer organizations are the most active both in reaching out to form contacts and in intermediating them. While this relation was not formally tested, the pattern is visually noticeable in all outdegree and betweenness centrality graphs associated with the three types of relations. Conversely, distribution-centered AFOs and auto-production AFOs seem to assume different roles under different circumstances. Both categories are more active in information exchange than in other relations. Some distributors also reach out to collaborate in political action,

The role of the different categories of AFOs is also visible in bringing personal networks together. Our representation of these networks as an ensemble, combined in an overall network, allows us to visualize that the personal networks reported by the AFOs are interconnected. Since the survey did not request data on the relations among alters, these connections reflect the extent to which the AFOs cited the same alters. In most cases, in the three types of relations, these are other AFOs. Production and consumption oriented AFOs dominate the principal component in

political organization, while the main components in information exchange and the organization of events are brought together by a mix of organizations. The principal component analysis reveals that, from the sample of information exchange relations reported, three quarters are aggregated into an interconnected network where the information can circulate. More than half of the event organizing and political mobilizing networks are also forming common components. This offers a glimpse into the extent to which the AFOs can bring their contacts together for different activities.

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## Appendix.

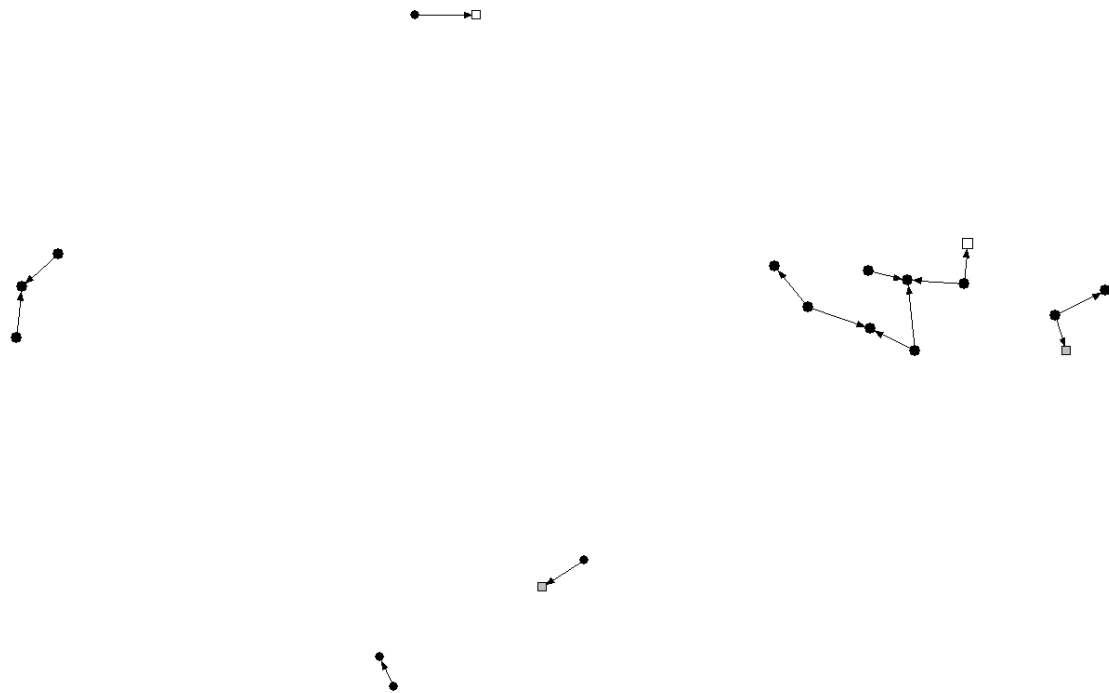


Fig. A1. Connections among organizations with health goals, **isolated** (black circles=AFOs in our sample; grey=food organizations not in the sample; white=non-food organizations)

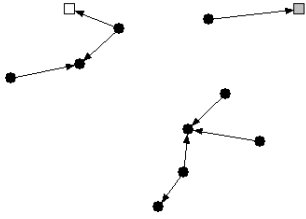


Fig. A2. Connections among organizations with health goals, isolated (black circles=AFOs in our sample; grey=food organizations not in the sample; white=non-food organizations)