The Role of Information Sharing and Social Community in the Evolution of Collaborative Food Networks

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Abstract In this exploratory analysis, we investigate the genesis and the evolution of local food-purchasing networks created and operated by consumers. In details, we describe how collecting and sharing information about food-products can become a central activity for some consumers’ communities and how these communities are starting to play an active role in the food supply chain. We define this community-based food-purchasing model as collaborative food network (CFN), and we analytically describe its characteristics and differences with respect to the traditional and industrialized agrifood supply chain models. A collaborative food network community in Italy, known as GAS (“Gruppi di Acquisto Solidale” – “Solidarity Purchasing Groups”), is introduced as an example of our analytical model. We will use this empirical example to present the strengths and weaknesses of the CFN model.

Keywords Collaborative Food Networks· Information Sharing· Self-Organized Social Community· Solidarity Purchasing Groups.

1 Introduction

In recent years, the agrifood sector has revealed tension between two opposing tendencies: at the global level, food production activities tend to be concentrated among a few key players (Heffernan 1999); and at the local level, new, dynamic and distributed models of commodity markets have emerged (Whatmore et al. 2003). This conflicting situation is likely the result of a broader transition that is affecting the rural economies and that is characterized by a shift from a productivist to a post-productivist food system (Ilbery and Bowler 1998; Schucksmith 1993).

In this dynamic and changing scenario, the genesis and growth of innovative and alternative food supply chain models are crucial factors in the evolution of the agrifood sector. Madison et al. (2000) support the importance of food chain models explaining that these models are the visible effects of deeper changes in the rural system. Furthermore, food chain models can be considered as building blocks for future policies that will drive the evolution of the agrifood sector (Renting et al. 2003). In this framework, we narrow our research domain to the analysis of specific types of alternative food network (AFN) models, as visible effects of a recent phenomenon that is still emerging and developing but can significantly influence the evolution of the entire agrifood sector.

In this position paper, we analyze a specific type of alternative food network that is generated by consumer-communities: the collaborative food network (CFN). Although a detailed description of CFNs is provided in the next section, we anticipate that these social models are based on networks of consumers who voluntarily collaborate in the development of a community-based food supply chain. To capture the social dimensions and characteristics of the research domain, we choose to adopt a social approach that is based on the community of practice perspective (Lave and Wenger, 1991). This choice is supported by the large recognition of the emerging but crucial role of social dynamics in the agrifood sector. For example, Marsden (1998) recognizes the role of social factors claiming that “food markets are becoming more differentiated on the basis of a range of socially constructed food quality criteria” (p. 107).
Following this socio-constructivist approach, we will adopt the community of practice perspective as an analytical lens through which we will examine our research domain. This approach will allow us to discover the processes that govern the participation of individuals and groups in the construction of their perceptions of social reality: an alternative and pro-active way to define consumers in the agrifood market.

Consistent with our methodological approach, we propose to investigate the role of intangible factors in the genesis and evolution of collaborative food networks by primarily focusing on factors that include information and trust (Pontiggia, 2001). We argue that the collection, sharing and interpretation of information pertaining to food and its characteristics are processes upon which CFN communities build their own identities and activities. The information that is “attached” to food products becomes part of the products themselves by assisting in defining its value. Although the importance of information that relates to food is widely recognized in specific cases (e.g., the certification of the place of origin, the list of ingredients), its effects are often under-evaluated, especially with regard to the type of information that is usually difficult for individuals to gather or to fully understand (e.g., the typology of production process, the adopted supply chain model). This exploratory study recognizes the role of social communities as a *nexus of information* (Martinez 2004), which both increases the possibilities for individual consumers to gather richer information pertaining to food to become proactive in the agrifood market and enables the construction of a deeper and shared awareness of opportunities for creating alternative and shorter food supply chains.

The pragmatic implications of this new model of purchasing food will be illustrated through the description of an empirically grounded collaborative food network community known as GAS (*Gruppi di Acquisto Solidale*). GAS comprises Italian networks of consumers who were so reactive to food characteristics that they began to re-shape the food-purchasing system that surrounded them. After briefly describing the genesis and the characteristics of GASs, we will proceed to extrapolate and discuss some empirical characteristics on the basis of our analytical approach. The strengths and weaknesses of this alternative food network model are discussed, and potential implications are presented.

2 Background

2.1 Community of practice approach

To provide a theoretical reference framework, we briefly introduce some of the concepts that have been developed by the community of practice approach. We will use this theoretical background to provide a more structured interpretation of CFNs and their relationship with the community of agro-food producers. Communities of practice (CoPs) are social entities that consist of a group of people who share common experiences and practices (Wenger 1998). After consistently sharing activities, the members of these communities develop a collective interpretative perspective with regard to a specific portion of reality, such as lifestyles or food habits. Thus, each CoP cultivates its own identity, which is reinforced by social boundaries (more or less dense) that distinguish each specific community from other groups. Each individual may belong to several CoPs, which may include a group of colleagues, a group of university friends, a group of people with whom she engages in athletic activities. Each group has its own rituals, language, stories, and social dynamics, which have been built over time through shared experiences. Some of the words, expressions, and practices that constitute the identity of a specific group could lack meaning in the context of other communities.

CoPs must preserve their boundaries to maintain their identities and their characteristics. However, being a member of a community also entails playing an active part in managing relationships with other groups. According to several authors (e.g., Carlile 2002, Wenger 2000), the most valuable contributions and advantages are realized in connections among different communities. Facilitating the exchanges of tangible or intangible factors as information among different communities is crucial for improving the wellness of each group. Wenger (1998) defines the continuous and dynamic process of mutual agreement among different people or communities as a “negotiation of meaning.” Although we do not

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1 A social construct is a concept or artifact that is developed and interpreted through the shared and common experience of a particular group of people.
provide further details regarding this approach, we can observe that the exchange of information among members of different communities is central. The negotiation of meaning may involve language, social relations and other elements that constantly change the situation to which it gives meaning, affecting all the participants (Wenger 1998). In this sense, CFNs contribute in shaping alternative models of active participation in the agrifood supply chain. This approach supports our claim that CFNs are nexuses of information that enable a more effective method of sharing intangible factors among members of different communities.

2.2 Beyond the crisis: the genesis of alternative food networks

Several studies have highlighted the transitional process that has characterized the agro-food system in recent years (e.g., Rossi and Brunori 2010). The search for a new and more sustainable production and distribution model has generated two simultaneous and opposing tendencies. The first tendency has been the emergence of a few key players with a large role in production activities. Simultaneously, there has been an increasing diffusion of self-organized consumer associations that are building a common awareness of the characteristics of food products and creating independent and autonomous short and local supply food chains with local producers. These opposing phenomena symbolize the tension that is embedded in the evolution of the agrifood sector.

The emergence of “alternative” models of food production and distribution has been studied in recent years from various perspectives (Watts et al. 2005; Sonnino and Marsden 2006; Holloway et al. 2007a and 2007b; Goodman and Goodman 2007) and has attracted the attention of policymakers who are interested in the potential effects of these new organizational forms. In fact, as recognized by Renting et al. (2003), “the food chain dimension has become a key element enabling us to understand new patterns of rural development […] and potentially a significant building block for future policies designed to influence these” (p. 393).

Among all of the alternative models of food production and distribution, we decided to investigate alternative food networks (AFNs). AFN is broadly used as a concept that embraces innovative networks of producers, consumers, and other actors who are developing alternative forms of food supply and distribution in contrast with the traditional and standardized agro-food industries (Murdoch et al. 2000). As convincingly explained by Renting et al. (2003), the trigger conditions for the creation of AFNs must be sourced in the evolution of consumer perceptions regarding food and farming. We can track two different but mutually reinforcing phenomena that are concerned with the perceptions of consumers. First, increased public concern for topics such as ecology, fair working conditions and the fair treatment of animals (i.e., a new “food ethic”) has created alternative market opportunities for actors who are capable of distinguishing their food in a trustworthy way (e.g., organic, fair trade, local distinctive products). Second, customers increasingly distrust the quality and reliability of food that is produced by the industrialized agro-food sector. It is sufficient to mention the endless list of food problems, from salmonella and H1N1 to dioxin residues in milk and BSE, as a reminder of how public opinion has been negatively influenced by health issues that are linked to the standard mass production food system. Thus, despite the continuous attempts of governments, experts and producers to assure the safety of food products, distrust toward the entire food production system has become an embedded component of consumer perceptions (Goodman 1999). The combination of these two tendencies explains the need for an alternative and reliable food production system and the increasing interest that these alternative models are acquiring for producers, consumers and policymakers.

Rossi and Brunori (2010) stated as follows: “the growth of AFNs can provide the necessary diversity allowing the development of that plurality of organizational forms that is more suitable to the rising needs of society and in a context of strong environmental changes. At the same time it can stimulate broader and permanent changes in the current system” (p. 1913). Although AFNs have long been advocated as potential solutions for problems in peripheral rural regions, we claim that the genesis and diffusion of these innovative and

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2 For a more detailed interpretation of the community of practice approach, refer to Bolici (2005).
“alternative” food supply chain models have the potential to influence the entire agro-food sector, including other well-developed and industrialized regions. The magnitude of this influence would depend on several factors, some of which will be analyzed in the following sections.

2.3 Collaborative food networks

Elaborating on the alternative food network concept, we specify a particular type of AFN that we define as a collaborative food network (CFN). CFNs are networks of consumers who voluntarily collaborate in the development of a common, short food supply chain. In other words, CFNs emerge as self-organized social communities that create cumulative food orders and buy directly from local producers without any intermediation. Sharing practices and activities among their members, these communities can be considered as specific types of communities of practices.

The key peculiarity of CFNs is the emergence of a dense social network of relationships among its members and between consumers and local farmers. CFNs are not simply places in which consumers can collectively purchase specific food. These networks also become nexuses, in which information regarding food (e.g., its characteristics, its producer, its productive process) can be easily gathered, accessed and shared following the “negotiation of meaning” process. CFNs construct their own identities on the basis of their activities and influence the relationships between the members of these communities and other actors in the agrifood market. Through the CFN, consumers perceive a direct link to local producers, and by trusting other CFN members, consumer confidence in the agricultural system and products increases. In this sense, the main value of CFNs is social because these networks enable the creation of a new agro-food system that can gain the trust and respect of customers. The capability of agrifood actors to regain consumer trust could be a major factor in the future development of food markets (e.g., Council for Rural Areas 1998).

The social influence of CFNs is also visible in the effect of a broader diffusion of information, especially information regarding innovative and sustainable models and lifestyles. Members of CFNs often share similar preferences in terms of values and social behaviors. Although conclusive studies on this topic are scarce, the members of CFNs seem to be interested in the following values: health habits, fair distributions of trade profits, sustainable lifestyles, green economy and ecological industrial development, organic food and direct relationships with food producers. Brunori (2011) stated as follows: “one of the major peculiarities of alternative business with respect to earlier practices is that it directly involves consumers in a political project. In fact, alternative products are components of a political discourse that addresses all of the sources of power; by choosing alternative products, consumers sustain economically alternative networks and consolidate alternative discourses in the broader hegemonic struggle” (p. 3-4). Thus, CFNs can be viewed as social communities building an alternative model of food purchasing that broadly influences the agro-food sector.

To provide an enhanced understanding of the characteristics of the CFN, we propose a brief comparison between the CFN model and industrialized food supply chains in Table 1.

<table>
<thead>
<tr>
<th>Trade Relationship</th>
<th>Mass Production Model</th>
<th>CFN Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin of a product</td>
<td>De-localized (listed on the label)</td>
<td>Localized and guaranteed by CFNs (and/or direct observation)</td>
</tr>
<tr>
<td>Product Quality Standards</td>
<td>Eurep GAP, private schemes</td>
<td>Negotiation between farmers and consumers</td>
</tr>
</tbody>
</table>

Table 1 Differences between the Mass-Production Model and the CFN model. Based on Rossi and Brunori 2010.
The table above shows the consistent and crucial differences between the two food supply systems. Interestingly, we can observe that most of these differences are derived from the distinct ways in which information is managed in the two models.

In the mass production model, information regarding a product is limited to the description that is printed on the label. This constraint is imposed by the long supply chain, in which food is transported from producers to consumers through an elongated list of brokers and intermediaries (of which consumers are often unaware). Because the supply chain is long, the only way to deliver reliable information to customers is to print this information on the product itself. Thus, most of the information that is printed on labels is both generic and synthetic and does not provide any insight regarding the supply chain itself.

In contrast, the CFN model establishes a direct connection between consumers and farmers. Producers and consumers (or at least some members of a consumer community) build direct relationships by meeting face to face every time that they negotiate prices or deliver goods. The lack of external intermediation facilitates the restoration of direct contact, which enables the negotiation of meaning among communities of producers and consumers. By shortening the supply chain, both the demand and the supply sides gain clear advantages in terms of delivery time, transportation costs, final price and revenue. Farmers and consumers coordinate their activities through a mutual adjustment mechanism, which reciprocally influences the behavior of both parties. For the same reason, information regarding production processes can be accurate and gathered directly from producers; therefore, reciprocal trust among actors is increased. CFNs do not limit their activities to the collection of information from farmers; they also elaborate on and share this information and thus provide a social environment in which new ideas and practices can easily emerge and spread. Thus, we can conclude that the collection, sharing and interpretation of information regarding food and its supply chain constitute the crucial factor, the *nexus*, upon which CFN communities build their own identities and activities. Therefore, the information that is embedded and attached to food products becomes part of the products themselves and thus contributes to the value of such food.

### 2.4 Empirical lessons from the Italian GAS network

In this section, we introduce a brief description of the Italian GASs - "Gruppi di Acquisto Solidale" (Solidarity Purchasing Groups) as an empirical example of our theoretical definition of
collaborative food network. Usually, GASs are established by a number of consumers who cooperate to buy food directly from producers at a discounted rate and thus benefit from economies of scale. However, even if GASs can assure a competitive price for the products that they trade, their objective is not entirely devoted to gaining economical advantages. As their guidelines indicate, the main focus of GASs is to develop and promote a sustainable food-purchasing model, fair trade and a healthy lifestyle.

Each GAS is completely independent from other GASs and can autonomously select farmers and producers on the basis of their adherence to sustainable production principles. GASs are self-organized communities, in which all of the tasks, including ordering and distributing food and related coordination activities, are decided together on the basis of volunteer roles.

The first GAS was founded in Italy in 1994. Since that time, the number of GASs has consistently and rapidly increased. Figure 1 has been constructed on the basis of the data published by retegas.org, an association of the GAS (a network of networks), and this graph shows a consistent growth in the number of GASs that are enrolled in the association. At the end of June 2011, 809 GASs were registered at retegas.org. Considering that each GAS has between 40 and several hundred members (with an average of approximately 100 members), we can conclude that approximately 80,000 people are involved in these communities. These data consider only the GASs that are registered in the meta-network. As retegas.org estimates in its own reports, at least the same number of GASs is active in the market without being registered in their network.

In addition to the steep growth in the quantity of registered GASs, the number of members who belong to each community is also increasing. However, there is a structural limit in the size of a GAS; when this threshold is reached, independent spin-offs are formed to decrease the complexity of managerial and coordination activities. Considering the economic perspective, the statistics at retegas.org show that a family of 4 people spends an average of 2,000 euros per year on products that are purchased through a GAS.

This constant and steep growth in the number of GASs can also be explained by a study that was recently published by Coldiretti/SWG, the association of Italian farmers (2011). The results of this study show that 54% of Italian consumers prefer local food rather than products that are made by multinational companies (12%) and that 65% of these consumers would prefer to buy a product that is branded by an association of farmers rather than a product that is branded by industrial companies (13%) or distribution chains (8%). The interviewees explained that their preferences for local and relatively small producers result from their perceptions of high-quality products (29%) and lower prices (5%).

Although the operational procedures of GASs differ from community to community, some common ordering and delivering processes can be observed. In most cases, each GAS has several volunteers who act as coordinators and facilitators for specific sets of products. Each product coordinator directly contacts local farmers, negotiates prices and delivery, and organizes distribution among GAS members. Distribution is typically structured according to the characteristics of specific products: for example, distribution will consist of weekly deliveries for vegetables, fruits, bread, and eggs; periodical orders for meat, cheese, wine, pasta, cereals and sauces; and seasonal orders for olive oil and specific types of fruits. Such products are then collected in a common structure.

3 “When a purchasing group does not merely search for low prices but also values people and environment before profits, the group becomes a solidarity purchasing group. A solidarity purchasing group chooses products and producers on the basis of their respect for the environment and the solidarity between the members of the group (i.e., traders and producers). Specifically, these guidelines lead to the choice of local products (which minimize the environmental effects of transportation), fair-trade goods (which respect disadvantaged producers by promoting their human rights, particularly the rights of women, children and indigenous people) and reusable or eco-compatible goods (which promote a sustainable lifestyle).” Quoted from www.retegas.org, last access: July 2011.

4 These statistics are provided on the basis of the information that was retrieved at www.retegas.org [last access, July 2011].
(which is provided at no cost to consumers by many associations), where each member can go to collect her own products.

Given the nature of GASs, communication activities are crucial. Although most communication exchanges are mediated by technology (e.g., Internet, phones), GASs also organize monthly meetings among their members. The bulk of the information that pertains to GASs is stored online on websites, forums and mailing lists that enable the flow of organizational information and an intense exchange of opinions regarding a large variety of topics, from sustainable consumption and production to broader political issues. This updated and dynamic flow of information supports the identification of common rules, the definition of common infrastructures, the organization of various initiatives and interaction with external actors. In other words, this flow of information contributes to building the community identity that is described in the CoP approach.

Fig. 1 The growing number of GASs in Italy since 1994 (data source: www.retegas.org)

In large cities, where several GASs co-exist, a meta-group is often established to coordinate the tasks that can benefit from higher economies of scale, such as for non-local products that must be bought and transported from other areas. Moreover, GASs establish relationships with other local and regional networks, such as farmers’ markets, small farmers’ associations, fair trade organizations and social movements. Temporary teams that are composed of representatives of all of these associations frequently organize joint initiatives that are designed to increase the social connections among their respective communities.

At the national level, GASs present a higher level of coordination, which is often characterized by political dimensions. At this level, the communication flow and sharing among national representatives and members of GASs is primarily facilitated through web-based communication channels and annual national meetings.

However, the increasing importance of GASs in the Italian agrifood sector has some potential limitations and weaknesses. The main concern is regarding the size of this alternative production distribution model. GASs can still be considered as market niches, which are characterized by a relative small number of customers with sophisticated preferences for high-quality products and ethical processes. The diffusion of this model to the entire agrifood sector would create crucial organizational problems related to the management structure that is necessary to coordinate a larger number of actors,
both within a single group and among multiple groups. Although GASs have demonstrated their effectiveness in managing the identities and practices within each community, problems with regard to the coordination of activities among different GASs still persist. The building of a GAS meta-network is still a work in progress and faces several problems related to the choice of appropriate coordination mechanisms, the volunteer nature of most of the GAS members and the difficulties of building a broad social identity among all communities. The potential diffusion of GASs to a wider portion of the agrifood sector is also related to the ability of these communities to involve a larger number of producers in their activities. These limitations of the model are typical of organizational structures that are based on strong social factors and volunteer activities and those that are geographically distributed. However, these challenges have been successfully solved in other domains that are characterized by the intangibility of their products (e.g., open source software development); therefore, it could be interesting to study the mechanisms that could be applied in the agrifood sector (tangible products) to enable the GAS diffusion.

3 Conclusions

In this paper, we analyzed the genesis and evolution of specific alternative food networks generated by social communities. We adopted a community of practice approach to analyze these self-organizing groups of consumers. By employing this approach, we explained how the direct and social-based flow of food-related information between consumers and producers constitutes a key activity for alternative agrifood systems.

We defined collective food networks as AFNs that are characterized by the following set of attributes: strong social factors; short food supply chains; local producers; self-organization of consumers communities; mutual and direct adjustment between demand and supply; and fair prices. We also highlighted how all of these attributes rely on a crucial, intangible and determinant factor: the flow and sharing of information.

In addition, we described how CFNs could become places in which consumers can develop and diffuse a new and more sustainable awareness with regard to ecological, social and economical settings. CFNs become nexuses of information and knowledge that have been collected from producers and consumers, discussed and developed within a community and then diffused among participants and external actors.

Finally, we described the experience of GASs in Italy, a growing phenomenon that is rapidly increasing its dimensions. Thus, although GASs are still niche experiences, they are likely to influence the entire agrifood industry. This influence could be consistent with the organizational ecology paradigm (Hannan and Freeman 1977), in which organizations with a better fit within a new environment have a greater likelihood of surviving and reproducing their model.

The increasing number of people who join or create a GAS can be a great opportunity for many farmers, especially those who are disadvantaged in the standardized commercial relationships (e.g., small farms) or those who are committed to working on products with high-quality standards and alternative productive procedures (organic and green farms). However, as recognized by Rossi and Brunori (2010), the production side of the market has not yet been able to completely satisfy this growing demand for an alternative model of food purchasing. Policymakers and farmers’ associations could exert greater efforts to explain and support this alternative supply model among small and local farmers.

In conclusion, several factors in the agrifood sector are radically changing; thus, it could be interesting to study whether and under which conditions CFNs could represent a better fit with the environment or whether GAS must maintain their niche dimension to maximize their value. This open question remains to be investigated by further research.

The crucial challenge for GASs is related to the possibility for this model to be applied outside of its niche dimensions and to re-invent itself on a larger scale. As highlighted by Sonnino and Marsden (2006), this transactional phenomenon of combining CFNs and industrialized agrifood industries to find a new and more sustainable development model will require further analytical and empirical efforts.
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