Review

Not peer-reviewed version

Nested Markets and the Transition of the Agri-Marketing System towards Sustainability

Pierluigi Milone * and Flaminia Ventura

Posted Date: 19 January 2024

doi: 10.20944/preprints202401.1473.v1

Keywords: Market; Reciprocity; Agency; neo-institutional economy; network analysis

Review

Nested Markets and the Transition of the Agri-Marketing System towards Sustainability

Pierluigi Milone * and Flaminia Ventura †

Department of Civil and Environmental Engineering—Perugia University
* Correspondence: pierluigi.milone@unipg.it
† Deceased author.

Abstract We are currently witnessing a strong global transition towards new, more sustainable models of development and consumption. This transition is both activating and highlighting a series of discrepancies between the various actors in agri-food marketing systems, including the institutions that govern regulatory and trade aspects. These discrepancies highlight how, on a global level, the agri-marketing system is unable to provide adequate responses to the new principles of sustainability that are increasingly expected by civil society. This inability is often linked to the phenomena of opportunism, information asymmetries and lock-in effects (resulting from the slowness or inability of some sectors or actors to evolve technologically and culturally). The control of all these factors is often ineffective and often involves high transaction costs[1]. These conditions lead the global market into an ongoing state of failure, creating structural holes, in which new forms of exchange are born, in response to the principles mentioned above. We identify these as nested markets: hybrid market forms that, thanks to new information technologies, create a new form of proximity that transcends the classical concept of physical proximity. This new proximity directly links producers and consumers in relationships based mainly on two substantial values: reciprocity and reputation. Both of these values significantly reduce transaction costs which today play an increasing role in determining the form and repetition of exchanges. This condition is difficult to interpret from classical and neo-classical economic theories. To do so it is necessary to use a multidisciplinary approach. In this article we combine neo-institutional theory and network analysis to interpret phenomena that are increasingly emerging in all areas of the world. Using these two theories, and case studies from Brasil, North America, China and Europe, we try to highlight how the market is not only the place where the price of products and of their quantities are formed. Market is a complex social spaces, where more-or-less stable relationships are formed, based on the values of reciprocity and reputation that determine behaviour and codes of conduct aimed at containing opportunism and encouraging sustainable, autonomous, forms of self-regulation. These relationships are also the driving forces that ensure the ongoing continuation of the exchanges and the diffusion and preservation of knowledge over time and space. These relationships represent the beating heart of nested markets and their dynamic ability to adapt to the continuous changes that occur in the socio-economic and environmental context in which they are rooted. In this way sustainability is built as an expression of the co-production between different actors (producers, consumers, institutions) and natural resources.

Keywords: market; reciprocity; agency; neo-institutional economy; network analysis

1. Introduction

The transition of food systems towards new sustainable constellations implies radical, far-reaching and comprehensive re-grounding of primary agricultural production so that it is based upon

[1] "*Transaction costs can be divided into three broad categories:* search and information costs, *namely the costs incurred by the firm to acquire information about products and services, or to create new products;* bargaining and decision costs, *namely the costs necessary to reach an acceptable agreement with the other party, such as the drafting of a proper contract etc.; and* policing and enforcement costs, *incurred so that agreements are respected (often through legal proceedings)*" (Milone and Ventura, 2014, p. 56).

ecological principles, together with a profound reshuffling of the social relations between the many actors involved in these food systems (FAO, 2017; 2018; Marchetti, et al., 2020; McKenzie and Williams, 2015). The ecological and social dimensions of the needed transitions have, and are being, amply discussed in public debate as well as the scientific literature (Lamine 2011; 2015; Lang and Heasman 2015; Duru et al. 2015; Tittonell et al. 2016; Maye and Kirwan 2010; Hinrichs, 2014; Hubeau et al. 2017). The problem, though, is that they are rarely discussed together and not as mutually dependent. This omission carries considerable risks. As far as the social side of the required transition is concerned, the limited reach of the literature on food consumption is a case in point.

Many of these studies highlight the existence of barriers to the development of sustainable purchasing and consumption models (Quoquab and Mohammad, 2017; Tischner and Kjaernes, 2007; Blay-Palmer, 2008). In Norway, for example, a country that one might think of as a beacon of sustainability, the market for these products has failed to take off due to consumer distrust of organic products and production systems (Vitterso and Tangeland, 2015). Alongside this literature, there are also a number of studies focusing on the most effective ways to shift consumer behaviour to be more sustainable (summarised in White *et al.*, 2019). These studies show that consumers are more inclined to engage in pro-environmental behaviour when the message centres on psychological factors: social influence, creating 'better' habits, looking after oneself, feelings, cognition and tangibility. Several studies have suggested that consumers wish to make their food choices and consumption more sustainable but that doing so in practice is more problematic (see, for example, Grunert *et al.*, 2014). Thus, a change towards more sustainable consumption choices needs not only the availability of tangible alternatives but also the consumer's awareness of the possibility of being an active part of the needed transitions through increasing perceptions of the effectiveness of making such changes and in social peer pressure (Vermeier and Verbeke, 2006).

The shift towards sustainability can involve purchasing products that have a lower negative social and environmental impact or that make a positive contribution to addressing the challenges of sustainability (Schaltegger, et al. 2016). According to Hockerts and Wüstenhagen (2010) the transition towards sustainability in the market is characterised by two paths. The first is driven by few small companies offering products and services with a high sustainability level, that serve a small niche; the second is driven by large companies seeing an opportunity to capture market share, but which only provide a medium or low level of sustainability in their products. The problem is that the required transition can be achieved only if a significant part of the market and society adopt more sustainable patterns of production and consumption. The central question here is whether the market, as an institution, is able to govern the needs, relationships and behaviour of different actors by codifying shared rules co-created by farmers and consumers, that define ecological and social sustainability in the production of food, while also having economically sustainable production processes.

In the second path, characterized by large companies dabbling in sustainability, the limits of the market are evident as the productive system is very slow in responding to the emerging demands of civil society for more sustainable produce. The productive system which, inevitably, is based on 'economic logic' is slow to translate these social demands into more sustainable agricultural practices (that have a positive effect on ecological sustainability). In short there is a market failure, a chronic mismatch between citizens and consumers preferences and producers' practices.

This mismatch reflects a core weakness of neo-classical economics (and modernization theories in general), which holds that the market only regulates quantities and price levels and is not a place where values are expressed and embodied in products and services, and the way that these things are produced. This, narrow, view of markets, suggests that markets are solely a mechanism to arrive at the optimal production and price of goods or services, with no regard for their inherent qualities or provenance. It completely ignores the social and/or ecological dimensions of products or services, which are deemed to lie outside the sphere of governance of the market. This gives rise to substantial problems of information in the credibility of 'green' (i.e organic), 'ethical' and 'territorial' labelling, the opportunistic behaviour that these labels can give rise to and consumers' lack of confidence in these brands (Roberts, 2015; Vitterso and Tangeland, 2015). In addition, there is a policy driven lock

- in effect, which influences both technological and cultural investments that, in Europe, at least, through the CAP, drives farmers further towards intensification and specialization.

In reality, markets can be interpreted as adaptive systems. From this viewpoint the preferences of consumers can influence the concrete organization of production through the markets, and this can help improve ecological and /or social conditions and sustainability. Similarly, adaptations in production can help to modify consumer preferences and behaviour, which also has a positive impact upon social or ecological aspects. In this sense, the market represents the space of the economic system in which choices are influenced by the social and environmental context in which it is embedded. An economic system which supplies individual with the means of satisfying his material wants through "*….institutionalized interaction between himself and his natural surroundings*." (Polany, 1977, p. 20).

In a case of market failure or mismatch between citizens and consumers preferences and producers' practices, structural holes[2] may be generated in which consumers cannot get what they want. These structural holes are being filled by new markets that are nested in (or grounded upon) a dialogue and agreement between producers and consumers. These nested markets satisfy changing consumer preferences and allow for adaptations in production which, in combination, have positive impacts on society and ecology. Nested markets integrate what global markets keep apart: an alignment between social, economic and ecological preferences. They allow social considerations to directly influence the market thus helping to reorder the interrelations between social, ecological and economic preferences. The small size of these markets allows for the creation of a new synchrony between consumers and producers which leads to a relationship of true co-production which define new boundaries of behaviour and production practices. This leads to a 'tweaking' of the market, and the embedding of new codes of conduct within the market itself.

In this instance the market can be an efficient and effective institution for the creation of new and valuable guidelines that encompass different economic, social and ecological dimensions, in a coherent framework that is of mutual benefit to those involved. This can be said to be an adaptive market system in which, through markets, consumer preferences affect the concrete organization of production which in turn, affects ecological conditions and developments. Likewise, adaptations in production can help change consumer preferences and behaviour and also have a beneficial ecological impact. In short, a synchrony between different actors and environmental resources is created, this the contour of the first path that we identify as nested market.

There are two key elements in this article. The first is represented by the evidence found in many areas of the world of the emergence or creation of new forms of markets where exchanges are a consequence of actor's habits and behaviour and the social and natural surroundings. The cases illustrated do not represent original studies, but simply evidence from studies carried out by other researchers in very different and heterogeneous areas that have the sole purpose of representing what is happening in different part of the world and similarities that emerge. The second is that these forms are characterized by a strong specificity of the base of resources used, strongly rooted in the territory and reproduced through sustainable practices. The market exchanges are based on aspects such as reciprocity and reputation that become the foundation of the relational capacity of actors to exercise agency assuring their repeatability over time.

2. The Coexistence of Alternative Paths towards Sustainability

The two paths mentioned above, whose development is based on different technological, social and ecological trajectories evidently coexist. Time will determine the evolutionary and developmental capacities of each, the impact that they have on economic, ecological and social dimensions and their durability.

---

[2] We refer here to Burt's definition "*A structural hole is a relationship of nonredundancy between two contacts. The hole is a buffer, like an insulator in an electric circuit. As a result of the hole between them, the two contacts provide network benefits that are in some degree additive rather than overlapping*." (1992, p. 48).

The scultered, unequal and slow adaptation of food production systems to the general demand of sustainability is largely due to the existence of interdependencies in the various elements of the current socio-technological system which creates lock-in situations and economic, social and political barriers, although also to the globalization of the food system itself (EEA Report No 09/2019). Thus - economic and political conflicts of interest - create important barriers to the transition, not only of consumption, but of the entire system, towards sustainability.

These barriers mean that the problem of sustainability, whilst at the centre of political and social debates, is tackled in a fragmented way by researchers, by institutions, businesses and consumers. Companies try to adapt their processes and products to meet sustainability objectives, while minimizing the costs of their adaptation (DeCastro, 2017). Past choices influence the (economically feasible) options for pursuing the transition towards sustainability[3].

In the agricultural and food production sectors, the new focus on sustainability, based on 'sustainable intensification' does not undermine the homologation of agricultural and industrial standards and knowledge creation processes that have characterized the modernization of the agri-marketing system. There needs to be an important change in the development and utilisation of knowledge: from the standardised receipt of off-the-shelf packages to locally specific techniques of production, based on local agro-environmental parameters. While the new technologies of precision farming do take into account locally-specific parameters and elaborate specific interventions that are based on them, such knowledge creation remains external to the farm and its market relations. What emerges is technologically-driven and standardised sustainability standards, such as those set out by the SAI Platform[4], that are designed by transnational companies. This platform allows farmers to make a self-assessment of the sustainability of their practices using the latest industrially-defined sustainability standards. However, neither farmers nor consumers participated in the elaboration of this definition of sustainability or the practices needed to obtain it. These elements "*has increased the simple reproduction squeeze on peasant producers and exploitation of rural workers*" (Vergara-Camus and Jansen, 2022, p. 463) and paving the way for farmers and consumers to seek for new strategies towards the market. Vargas-Camus classified these new strategies into three types: market avoidance, market integration, and market creation (Vergara-Camus, 2018). Three types, from self-consumption and self-provisioning that regret market relation to market integration and to the creation of new markets, that are strictly linked to the base of common resources (labour, land, knowledge, capital) and the property rights expressed over them. In this article we'll focus on the creation of a new markets or nested market (van der Ploeg & Schneider, 2022) that () take the form of fairtrade network, organic production, local farmers markets, alternative labelling, and certification schemes, etc. (Vergara-Camus and Jansen, 2022, p. 464). It is through these new markets that economic, environmental and social sustainability is generated as a result of the exchange between producers and consumers bond by common and shared goals and objectives.

The coexistence in the market of different paths to sustainability ensures that, for consumers, sustainability remains an ill-defined concept that has very weak links with personal experience (Krystallis et al. 2021). This leads consumers to distrust the sustainability objectives and practices set out by large companies and discourages them from purchasing such products (BEUC, 2020) and search for new and direct relation with small producers that can guarantee sustainable practices and genuine products.

3. Structural Holes and Nested Markets

[3] For example, there was a lag between the decision to ban plastic bags, dishes, straws etc. and their actual disappearance from the markets due to the needs for technological change and to use up existing stock.

[4] The SAI Platform brings together over 130 member companies and organisations that promote 'sustainable agriculture' worldwide.

Structural holes are the outcome of the ongoing hegemony of the modernisation paradigm that stresses that progress proceeds as an outcome of technological and institutional changes that originate 'outside of the main markets'[5].

This is because, within the modernization paradigm, the decisions on *how* to produce have been, and are, taken outside the market. Neoclassical economic theory sees the market as a place where prices are set by repeated buying and selling transactions, not one in which values are constructed, and consequently embodied, in the exchanged products and services (a socially-constructed market). It sees the market as self-regulating. By contrast, the neo-institutional economic perspective and network analysis see markets as complex adaptive systems that differ in many ways from those described in neoclassical models (Saccomandi, 1998; Beije & Groenewegen, 1992). Economic agents continually adjust their market decisions, creating new patterns in response to perceived behavioural changes which are also linked to limited rationality and information. The markets that they operate in are both dynamic and powerful but also imperfect. In this sense, using Arthur's words (2014), the resulting economy is not a well-ordered machine, but a complex, evolving, system that is imperfect, perpetually constructing itself anew, and brimming with vitality.

The speed of change may vary according to how firms adapt to changing consumer demand, new legislation and other exogenous factors (Bleischwitz, 2004). Consumers' demands are often initially vague and co-evolve with the changing available range of products and services. From this perspective, market dynamics can be seen as incrementally changing both production methods and consumer expectations.

Food markets show considerable dynamism and heterogeneity. The global market sometimes fails to meet this dynamism and/or heterogeneity, thus producing structural holes (Burt, 1992; Ploeg, 2014) within which new standards can be set and new modalities of exchanges developed (see also Marsden, 2000; Hebinck *et al*.2014) that meet new social needs (and unsatisfied demands).

These structural holes allow new markets to emerge, following new rules that differ from those that guide the global market. These new markets are nested markets: nested in new rules that invoke new forms of governance, new modalities for generating and redistributing value, new codes of conduct and new property rights. In this way, new codes of conduct are created that link producers and consumers in search of a new equilibrium and new mechanisms aimed at reducing market imperfections and preventing future market failures. These mechanisms mainly rely on two central elements: reputation and reciprocity which, together, create new forms of coproduction. Links between producers and consumers based on these two values allow, in areas with very different economic, social, cultural and environmental conditions, these nested markets to 'subvert' the outcomes of market exchange often characterised, in the agri-food system, by numerous distortions and imperfections. Instead of maximum profit, creates a second best solutions that prefer coherence, collective and environmental well-being and, above all, the durability of the exchange over time. A kind of self-enforcing agreement that everyone respects without the need of external enforcement mechanism but based on reciprocity and reputation. The value of coproduction as a coordination mechanism between producers and consumers/citizens has been identified as crucial by several authors (Brunori et al., 2012; Ostrom, 1996, 2012; Cahn, 2001; Di Iacovo *et al.*, 2013).

Nested markets emerge from the uniqueness and novelty of experiences and not from regularity, stable relationships and/or uniform sequences. According to Palermo (2009) uniqueness and novelty give rise to local development processes. At the territorial level innovative (or revalorised) processes

---

[5] One aspect that deserves greater empirical and theoretical analysis is the motivations and conditions that determine the process of the birth of a nested market. Following Hirshmann (1958), the interactions that lead to the development of a nested market are the result of "partial perturbations concentrated in space and in some sectors of intervention that determine temporary situations of imbalance". The partial perturbation or market failure, creates the structural hole that generates unexpected effects that influence the expectations and conduct of the actors bringing "hidden, dispersed or badly-used resources" to the fore (*ibid*).

 doi:10.20944/preprints202401.1473.v1

can lead to the development of new nested markets, each with its own degree of complexity and risk. These remain hidden until the process itself emerges as an 'alternative'. This can generate both competition and cooperation between the different processes.

4. Reciprocity and Reputation

Nested markets have the ability to create a new coherence between the needs of producers, consumers and the environment. A key element of nested markets is that their sustainability relies on changes in the behaviour of both producers and consumers, reclaiming social responsibility through the rediscovery of reciprocity. Reciprocity is based on "*the idea of interdependence, on caring for the other, on the alliance between generations that chain themselves to each other*" (Servet, 2013, p. 199). Nested markets are not simply a mechanism through which goods and services are produced and distributed. They are a social, economic and environmental space where coproduction between producers, consumers and nature determines a new code of conduct, wealth redistribution and autonomy based on dynamic self-regulation that, continually influences the behaviour of the actors involved. Reciprocity refers to the specific quality of the relationship between the actors. This relationship can be characterized by, at one extreme, mutual friendship (positive reciprocity) or, at the other, mutual hostility (negative reciprocity) (Gregory; 1994). This qualitative aspect of reciprocity enables particular exchanges to be distinguished from exchanges in general. A code of conduct, based on the concept of dynamic reciprocity, implies or includes a moral obligation to maintain a fair distribution of the wealth produced in the exchange. One example happened during the Covid pandemic, when producers around Rome made home deliveries at no additional cost. This resulted in an increase in direct sales from farmers to consumers and helped them reduce their losses in other sales channels and to survive (Zollet et al., 2021). In this, "*reciprocity overcomes the limits of unconditionality proper to elementary social structures, favoring the balance between freedom, autonomy and security*" (Gaiger, 2022, p. 15).

Reciprocity underpins a second key element of nested markets: reputation, which affects both producers and consumers. Reputation is at the root of social responsibility, based on a mutual understanding between the producers and consumers of sustainable food – that they need each other in the short as well in the long run. The reputation of actors is key to the relationship of trust between actors in nested markets that ensures the continuity of trade and helps minimise transaction costs. It is expressed and embodied in co-produced rules of conduct that define the products' characteristics and production processes and the distribution of value, simultaneously guaranteeing the continuity of the farmer's economic activities and consumer loyalty. In this way nested markets define their autonomy from the global market and leads to the restructuring of agricultural and exchange practices allowing them to become more focused on the reproduction and conservation of natural resources and their productive capacities. At the same, nested market time redefines the boundaries of the market through a new concept of proximity which is not merely geographic, but, thanks to modern ICT tools, can take on global dimensions. In this way, the nested market becomes the central institution of reference, not only for the survival of local economies, but also for new rural-urban networks (Milone and Ventura, 2011).

5. Theoretically Explaining Nested Markets

There are two different theoretical approaches, which have some aspects in common, when it comes to explaining the existence and evolution of nested markets: neo-institutional economics and network analysis.

Nested markets arise within structural holes as a response to the inability of the global market to meet the needs of agricultural producers and consumers. For producers, the main problem lies in reproducing the assets over which they exercise property rights, (i.e., land, labour and knowledge) within the context of the global market. Many consumers, by contrast, seek products whose characteristics have a personal value. The market mechanism, based mainly on price, has led, and is leading, to a selection of producers, a definition of what, how and when to produce and market their products, mainly based on logistical and distribution requirements. A striking example is that of fruit

and vegetables, for which the taxonomy of flavours, shapes and sizes has been reduced by large retailers on the basis of their needs for long product shelf-life and standardisation. This has led to the disappearance of many traditional varieties and the standardization of available varieties (Ventura *et al*., 2015). This process leads to a series of global market failures in terms of the inability of trade to respond to the expectations of the producers and consumers[6]. This creates a disconnection or rupture which generates a structural hole, leading different actors to search for new ideas, initiatives and forms of governance. Reciprocity is a common element that characterises these new forms of trade, which can be understood as the ability *"...to make people on both sides of a structural hole aware of interests and difficulties in the other group."* (Burt, 2004, p. 355). Burt views the first level of intermediation as the ability of people to create value. However, this only represents the beginning of the creation of a new mediation method, which may, over time, encompass multiple levels in its attempts to overcome the conflicts, confusions or misunderstandings underlying the structural holes. In this way, a new mode of trade or market is born, the nested market, in which reciprocity and common knowledge of the difficulties, objectives and peculiarities that characterize the various participating players, are key elements.

The existence of these new social structures or markets, can be explained with neo-institutional economics and network analysis. Both these approaches address the problems of how social structures transmit market information and define the standards and procedures that determine the forms of governance of exchange.

The forms of governance and associated regulations allow for transactions and define both the market boundaries and the object of exchange, thus permitting self-reproducing modalities. Therefore, when we talk about nested markets as a new form of market, we need to analyse how these regulations and forms of governance are constructed through real and specific processes, involving different actors, including public institutions, that have different goals that need to be aligned.

Farmers seek stability that allow them to recover the investments they make for production and to remunerate the factors of production over which they exercise property rights. Consumers, on the other hand, seek greater assurances with respect to the safety, origin and content of products. Sotte (1997) refers to this as the "New Social Pact" between farmers/and consumers. Such pacts reduce uncertainty by creating bilateral dependence, which is greatly facilitated by the new possibilities of relational interactions offered by ICT and social media.

In nested markets, these dependencies are governed by mechanisms that are usually informed by reputation and by informal negotiations based on trust. Reputation and trust guarantee the transparency of the rules of distribution of added value and the characteristics of the products. In neo-institutional theory this is referred to as a "hybrid form"[7] (Coase,1988; Menard, 2004).

---

[6] Market failures today are also related to the inability of global market transactions to respond to the exigencies of sustainability in economic, environmental and social terms, either in terms of creating positive externalities or reducing negative ones. The presence of market failures, in general, leads to the search for new forms of governance to stimulate the participation of, and learning among, (and beyond) market actors (Bleischwitz, 2004). Markets need guidance and rules for stimulating participation and learning. Such guidance and rules can be provided by appropriate governance structures (North, 1990; Stiglitz, 1998). In nested markets, participation and learning are guided by reciprocity through mechanisms of co-construction and co-evolution of the actors involved.

[7] Hybrid forms of exchange are intermediate forms of governance lying between the extremes of the market and hierarchy (or integration). They can be defined as quasi-organizations: i.e. forms in which the different actors are part of different business units but who belong to the same organization with shared rules that effectively stabilize the organization or network; quasi-markets, in which the actors involved in the exchanges engage in cooperative behaviour or are involved in contractual arrangements that effectively replace the market. It should be emphasized that hybrid forms are

According to Coase such hybrid forms of transaction between market and firms are quite common in the agri-marketing system and are becoming a dominant method of organising transactions between firms (Menard, 2004).

Nested markets are governed through such hybrid forms of the coordination of transactions. They are characterized by having a socially-constructed network and coordination mechanisms that are based on the sharing of knowledge and values in a collaborative, yet competitive, environment of actors participating in the same network.

The functioning of networks in nested markets is often based on the principles of complementarity and reciprocity. This means that the actors will participate in such networks only if they are open to learning from other actors in the network (complementarity) and if the transfer of knowledge is bi- or multilateral (reciprocity) (De Bressone and Amesse, 1991). A new relational capacity of actors to exercise agency is built. Following van der Ploeg and Schneider here the concept of agency does not refer to the attributes of individual actors, but as the results of collective action rooted in specific sets of activities and practices. (van der Ploeg and Schneider, 2022, p. 532; Long and van der Ploeg, 1994; Long 2001).

The networks mentioned above, where actors' preferences are interdependent, are often more stable than market relations which rely on formal negotiations and are more flexible than contractual instruments (Cantner and Graf, 2006). These characteristics help the networks assume a strategic importance in the birth and consolidation of nested markets despite the specificity of the resources and dynamic change creating highly complex negotiating environments. In these environments the costs of governance are high but can be minimized by the reciprocity and complementarity brought by the networks which, thus become 'hybrid forms' of organizing exchange.

In this sense nested market generate a new form of autonomy understood as "a set of practices that result in the production and reproduction of resources (networks included) through which it is sustained, thus allowing for the pursuit of trajectories that would otherwise have been impossible." (van der Ploeg and Schneider, 2022, p. 531)[8].

6. The Characteristics of Nested Markets

The nested market has been defined as "...a specific segment of a broader market that typically has different price levels and different value distribution systems and specific relationships between producers, distributors and consumers with respect to the global market ..." (Ploeg, 2014, p. 17). Nested markets have different specifications of product quality and rules of exchange to those of the global market. In a nested market, the products and services exchanged and the rules of exchange are not subject to consolidated regulations or standards are not defined by external actors and thus are subject to the same rules that govern the global market. Rather, they are the result of negotiations that take place between the actors directly involved in the exchanges. In other words, in the nested market the product, the quality and the distribution of the value generated are socially defined (Ventura and van der Meulen, 1994; Ploeg, van der, Ye and Schneider, 2022). Nested markets are a promising practical response from farmers and the rural world to meeting the goals of sustainability. These

constitutionally flexible and incomplete and therefore characterized by continuous and dynamic changes that can reconfigure their boundaries, dimensions and shapes. This characteristic determines what Saccomandi (1998) defined as the 'polymorphism' of the forms of governance of exchanges that occur as part of the organizational innovation cycle.

[8] Here autonomy is defined () as a social construct that refers to the self-organizing capacity of people, communities, and movements. Such capacity assumes both resources and agency. Autonomy is three-pronged: (1) it is a set of goal-oriented activities that aim to build resources; (2) the combination of these resources materially represents a distantiation from capital; and thus (3) it allows for agency: the capacity to define relatively autonomous courses of action. (van der Ploeg and schneider, 2022, pp. 531-532)

 doi:10.20944/preprints202401.1473.v1

markets can be very heterogeneous and have varying degrees of dynamism. Their evolution can lead to new global markets, as in the case of organic production, or stay at a niche level, as in the case of some quality production (e.g., some PDOs or PGIs, although others have a global reach) or artisanal production. The evolution of nested markets is strongly dependent on the availability and specificity of the resources on which the market is based, on the actors and on their institutional context.

6.1. The Protagonists

Nested markets are not born by chance but are the direct or indirect result of social struggles resulting from market failures, through which different actors redefine and defend their rights and realise their aspirations (Schneider, *et al*., 2014). There are four main protagonists involved in such struggles.

1. Farmers turn to nested markets to achieve greater autonomy than they can obtain through participating in the global market. One example is the (re)development of farmers' markets (Schneider *et al.* 2011, Ventura *et al*., 2015; Wu *et al*., 2014).
2. Consumers in search of genuine food whose origin and production methods are known (Di Iacovo *et al*., 2014): an exemplary expression is community supported agriculture (Woods *et al*., 2017).
3. The state that defends the principle of food and nutritional safety, as occurs in the case of the new institutional markets created in Brazil (Schmitt *et al*., 2014), the consumption policies based on United States' Food Stamps (Pepperl, 2012) and rural development policies such as those implemented by the Chinese government (Wu *et al*., 2014) and the European Union (Broekhuizen and Oostindie, 2014).
4. Social and religious movements claiming the right to conserve and pass on their own ethnic traditions and belief systems that find a tangible cultural expression in their food practices and/or to assist the downtrodden or "*communities that are struggling with more immenent social problems*" (Figueroa, 2015, p. 500). Examples are American movements that focus on to the connection between food, race and social justice (Bowens, 2015) such as the Healthy Food Hub in the city of Chicago, a place where products are exchanged according to the tradition of urban-based communities (Figueroa, 2015 and see the case studies later on in this article)) and the new networks for the social inclusion of immigrants or other marginal sections of society (Zeppa *et al*., 2018; Galera and Argenta, 2018; Lo Cascio, 2018; Iocco *et al*., 2018).

6.2. The Features

Regardless of their origin, nested markets can be distinguished from conventional markets by their characteristics which are summarized below.

1. The sharing between producers and consumers of the joint attribution of value to the resources and the objects of the exchanges. This attribution of values relies more on social and psychological motivations than on the maximization of profit. This is because nested markets are rooted in agreements, often informal, between producers and consumers[9] (Schneider *et al*., 2014). This means that the exchanges incorporate relational and symbolic dimensions, which enable the differentiation of the product or service and the way that the added value is distributed within the network. The network can have local or even global dimensions, since the 'proximity' created is not just geographical, but also cultural and/or social (Milone and Ventura, 2011)
2. The presence of a process of institutionalization, i.e., the definition of behavioural rules, often informal, that go beyond the logic of supply and demand in neoclassical terms (that is to maximize the profit of traders). In these markets there is a component of collective utility, a utility that is shared among parties who do not directly participate in the exchange, as local institutions or citizens, but who contribute in different ways to the construction of the socio-institutional context that helps to create the nested market and sustain it over time. The nested

[9]The rules of the market are not external to this, but are built into it through relationships of complementarity and reciprocity.

 doi:10.20944/preprints202401.1473.v1

market itself is a common collective asset, a resource that helps to give added value to a specific economic activity (Ploeg, 2014; Schneider *et al*., 2014).

3. The ability to trigger multifunctional and/or circular development processes [10] in which resources are, simultaneously, the input, output and interdependent element between processes, which also informs their economic and productive performance[11]. This translates into what were by-products or production waste (both within the company itself and within the territory) being redefined as resources, a process that novelty production strongly contributes to (Wiskerke and Ploeg, 2004; Milone and Ventura, 2004).
4. The relational dimension helps minimise transaction costs. Nested markets operate as a social interface that redefines relationships between farmers and consumers/citizens through which, over time, a sense of belonging is created among the actors. This makes it easier to resolve conflicts and incompatibilities between groups of actors with different interests and allows for a new mode of knowledge production that empowers farmers (Long, 2015)[12]. It is this relational dynamic that leads to the creation of a reputational identity and to relationships of reciprocity that guarantee the repetition of the exchange over time.

6.3. Different Types of Nested Market

There are several types of nested markets.

1. Completely new markets, i.e., markets where the object of exchange is completely new, as is the case in the markets for products and services that incorporate public goods, in particular: environmental ones. These include the maintenance and reproduction of biodiversity and the landscape, water conservation and the reduction of greenhouse gases as well as new services or services produced and supplied in new ways, such as agritourism, educational and social farms. Here the multifunctionality of farming plays a central role (see note 4).
2. Markets that are constructed through the segmentation of existing ones with a differentiation of the product, as in the case of quality products and regional specialties that have particularly emerged in European food markets over the last twenty years, although some have been established for much longer.

---

[10]This involves multifunctional and/or circular development processes that are widely found in the peasant model conceptualized by Ploeg (2003, 2009) who shows how farmers exploit the circular element to cope with different emergencies or to respond to their own or familial needs. In economic terms this capacity is often referred as the ability to implement economies of scope (Milone and Ventura, 2001, Teece, 1980) or proximity (Ventura, 2001). The rediscovery of this capacity has allowed the formalization of the new paradigm of rural development based on multi-functionality (Ventura, 2001; Ploeg, et al., 2000; Milone, 2009) within which farmers redefine the boundaries of their businesses (Milone and Ventura, 2004). The new element that emerges in this model is represented by the new culture of consumption that rewards the reuse of natural resources and their reproduction in the production cycle. The 'culture of sustainability', typical of the peasant model, acquires a social value, initially being remunerated by political means and subsequently through the market. The peasant model makes it clear that what is often conceived of as waste, can be reallocated as a product or input within new markets or nested markets that, over time, can also evolve into competitive or contestable markets (Milone and Ventura, 2014).

[11]For example, the water captured by irrigation networks can be used to produce energy that can be used to reduce the energy costs involved in distributing water to the fields, used for farms' energy needs or be sold on the market.

[12] In these markets knowledge is born from the convergence of various horizons. New information and cultural approaches are incorporated into existing knowledge and methods of value assignment, which are then redefined through the relational process.

 doi:10.20944/preprints202401.1473.v1

3. Markets that are rediscovered and constructed as new, as in the case of farmers' markets, that can now be found globally, including regions where they had once all but disappeared, where farmers directly sell their products to consumers.
4. Policy-driven markets established to allow and/or promote access to local food to specific groups of the population. This was the case with the agrarian reforms in Brazil which allowed the development of family businesses and consequently of local markets and access to these by the poorest part of the population through policies for school meal programmes (Schneider *et al*., 2011). There are also new markets coming from school canteens, as in the case of Scotland where the purchases are, as much as possible, made locally and used to prepare traditional meals (Morgan and Sonnino, 2008).
5. Markets built by social/religious movements to facilitate the social, as well as economic, inclusion of vulnerable groups of the population such as immigrants, prisoners or the poorest communities in emerging countries.

Nested markets are all characterized by the presence of two important dimensions: an autonomy of the networks that govern the markets [13] and the creation of new institutional arrangements/contexts[14] that allow the defence and/or development of the main actors (i.e., farmers and consumers), the products and services. As such, there are always important interactions between producers and public and private institutional actors.

Nested markets represent promising alternatives that coexist within broader market spaces differing from them in that they follow different principles focus on "*guarantee a just price for producers, link producers and consumers in more ethical ways, and support local development or short local circuits*." (Vargara-Camus and Jansen, 2022, p. 464).

In brief, we can conclude with two central elements of nested markets:

1. are alternative forms in which, using Polany's words, () the normative, cultural and institutional foundations of market relations are emphasized where elements such as reciprocity, redistribution and householding, suggest the possibility of consciously organizing markets differently (Polany, 1977 in Vargara-Camus and Jansen, 2022, p. 464). This allows the market to be seen as a social space whose contours, rules and conduct are closely dependent on the type of actors, specificity of products, culture, scientific, technological and practical knowledge, customs and habits, laws and policies, and traditions. In this social space, which is the market, alternative modes of conduct and different forms are possible and can coexist. In this article, I do not go into the concept of coexistence or what may be successful versus what is not, but the focus is to highlight that, today, there are many evidence of alternative forms of the market that are misaligned from conventional concept that () essentially see the market as a self-regulating

[13]Market governance can be defined as the ability to control and strengthen markets and to build new ones. It is closely linked to the way in which the distribution chain is organized and how the value created is distributed among the different actors. The forms of market governance are influenced by economic, social and political variables and can be grouped into three major types: the neo-liberal one; that of the welfare state and that of corporate social responsibility (CSR) (Midttun, 1999, 2004, quoted in Vihinen and Kroger, 2008).

[14] Institutions can be generically understood as structures and mechanisms of social order and cooperation that govern the behaviour of individuals. Most of the time they are conceived as a set of rules, laws, norms and traditions that are drawn up through, and to guide, human interactions and are often visible in organized structures (North, 1990). They shape human activities, particularly economic ones and are a significant instrument in regulating the exchange and allocation of resources. In addition, institutions provide incentives for reducing transaction costs and facilitate collective action (Knickel *et al*., 2008). The main functions of a new institutional structure within a nested market are to facilitate positive interrelations, to produce efficient connections between the different actors involved and to develop links with the different levels of governance that affect market development.

 doi:10.20944/preprints202401.1473.v1

mechanism that functions regardless of its location in time and space, the people acting in it and/or the products or services that they trade (Roth 2018 in van der Ploeg, Ye and Schneider, 2022, p. 1).

2. allows different actors to regain the freedom to choose over not only the concept of profit maximization, but with a view to defending their property rights exercised on the basis of the resources used in production processes (land, labor and capital). A new form of autonomy is springs based on () a set of practices through which resources are created that allow people to follow paths that deviate from those prescribed by capital. (van der Ploeg and Schneider, 2022, p. 532).

7. Discussion and Evidence from Fields

The case studies presented below do not represent original elements as they have been widely cited and described by several authors (van der Ploeg and Schneider, 2022; van der Ploeg, Ye and Schneider 2022; Radomsky *et al.*, 2014; Figueroa, 2015; Wu *et al.*, 2015) but they do allow us to highlight how, in economic terms, hybrid forms of exchange can be generated even in the presence of highly specific products and a common pool resources (van der Ploeg and Schneider, 2022) involving high transaction costs minimized by the two central aspects found in all cases: reciprocity and reputation.

The concept of *reciprocity* and reputation are the cornerstone of all the case studies discussed below. Reciprocity spurs the redefinition of the code of conduct that characterises a nested market, allowing reputation between producers and consumers to be created, which facilitates the repetition of exchanges over time and minimises opportunistic behaviour and the transaction costs opportunistic behaviour gives rise to.

In addition to the aspects mentioned above, all cases study share similarities and the presence of other two fundamental elements that characterize the birth of nested markets and their ability to respond to the sustainability criteria that are guiding the transition of the agri-marketing system.

The first element is the presence of specific infrastructures, defined by Ploeg "as the set of specific artefacts and rules that are used to channel flows of goods and services between places and people" (Ploeg 2014, p. 24). The infrastructures that root the nested market to the territory, also allow it to extend its boundaries beyond the merely local dimension. This allows the products flowing through nested markets to reach geographically-distant consumers. Common resources emerge from the virtual and material infrastructure and the distinction of the nested markets, insofar as they allow participants to share their knowledge and build collective values that are locally embedded and shared by larger groups through trust and reputation. This explains why, despite being strongly rooted in a locality or territory, nested markets can reach distant consumers and other agents who share the same values (Radomsky et al., 2014).

The second element is characterized by the *creation of networks,* based on the sharing of common values and involving different actors. Often institutions, at different levels, play a central role in the development of these networks.

The cases presented here highlight how the mainstream agri-marketing system is a complex system and often unable to address the questions emerging around the issue of sustainability. There are simply too many discrepancies and the costs involved in directing the behaviour of the actors towards multidimensional and multilevel sustainability are too high. But these problems can be overcome through other approaches: in a wide range of situations. The cases show how hybrid market solutions continue to be born and to organize themselves according to codes of conduct that escape the principle of maximizing profit and orient themselves towards those elements of sustainability demanded by civil society. These forms are nested markets, dynamic spaces that are consolidating and expanding over time. They are spaces created within the structure of the global market, where structural holes appear as a result of the reduction in relationships and the presence of strong information asymmetries. It is the presence of these structural holes that provokes some actors to assume the role of brokers, harvesting the value buried in structural holes and bridging them with new networks where the diversity of information is wider and new ideas emerge (Burt, 2004). Institutions often play a fundamental role in catalysing this process.

 doi:10.20944/preprints202401.1473.v1

7.1. The Ecovida Agroecology Network in Brazil

The Ecovida Agroecology Network, was established in 1998 in the southern part of Brazil (Parana, Santa Caterina and Rio Grande do Sul). It was the result of the confluence of social organization, resistance and political struggle by small family farmers seeking to adopt new production practices and techniques, as well as 'another way of doing farming' and to share knowledge and resources (Radomsky *et al.*, 2014).

Reciprocity and the social construction of quality within the network are based on the active participation of consumers in the definition of the quality of the products and the way of certifying this, which is codified in a set of rules related to farming practices, which is jointly defined between peasants and consumers: "Ecovida's system of certification is guided by the principles of co-responsibility, active participation and involvement and a specific farming lifestyle based on co-production between nature and society" Radomsky et al. (2014)."

Reciprocity within the Ecovida Network is the base of the exchanges. One of the principles of the network is the requirement to establish a price list that must be assessed regularly, in order to guarantee that the work of farmer families is fairly remunerated and that the products are accessible to consumers (Rover, *et al.*, 2017). The principles of Ecovida are oriented to sustainability (all the production practices are agro-ecological) and fairly valorising family farm, social and environmental services. A new infrastructure has been created that regulates relationships and behaviour on the basis of reciprocity and the reputation that the different actors build on a daily basis, based on their experiences and needs. This infrastructure is organised in local, interconnected, networks. The networks exchange information and knowledge, as well as products, over long distances. Trade inside the networks is based on the principal that the primary goal is not profit but making a contribution to labour incomes and increasing the diversity of available agroecological produce in each region where the network is active (Rover, et al. 2017). This principle also strengthens reciprocity within the network. The infrastructure is based on multi-level participation that aims to create a new trust with consumers through an innovative participatory certification system. This participatory certification system creates and maintains credibility and presupposes the joint involvement of all the actors involved in the network. Networks where family and peasant farms, which could not access conventional market channels and large-scale distribution, can now market their agroecological products over a wide area. This is a concrete example of how sustainability can be enhanced by peasants elaborating ways to use and reproduce natural resources under ecological conditions and at a scale at which human communities can live, survive and thrive. The reciprocity with other peasants and consumers over a broad and extensive geographical area and the reputation that characterised the relationship among them results in a strong minimization of transaction costs strong minimization of transaction costs that allows this new market to exist, make itself autonomous and coexist with the dominant food regime.

7.2. The Nested Market for Hand-Made Glass Noodles in China

Glass noodles are made from sweet potatoes are considered a delicacy in China. In Sanggang Village, located in Yixian County within Hebei Province, they are produced by local peasants, from their own harvest, and processed using traditional techniques. They have a unique taste and are a favourite food in northern China. Many people from nearby villages and towns, and even from Beijing, come to the village to buy noodles. Many of them are relatives or friends of the peasants who made them or friends of friends who learned about the quality of the traditional noodles (Wu *et al.*, 2015). In this way a small market developed, that has subsequently been extended. This market is based on a social network, held together by the reputation that farmers have built over time due to the high quality of the product that is strongly rooted in local traditions and natural resources. A form of co-production has been generated between visitors/consumers from the nearby township or city and local farmers in which the former are willing to pay more for an artisanal and quality product and the latter follow a strict code of conduct aimed at maintaining that quality and the traditional production process as well as transferring the older peasants' knowledge to the younger generations.

 doi:10.20944/preprints202401.1473.v1

After a time, this social network developed a new infrastructure for ordering through the internet and for the villagers to deliver the orders to Beijing (Wu, Ding and Ye, 2015, p. 110). This has resulted in a considerable increase in prices than before that have increased farmers' incomes' by between 30 and 50%. (*ibid*,).

This example is also a case of socially constructed quality linked to traditional processes of production and the local knowledge of farmers, which is based on a common definition of the quality and value of the product. The exchange is based on direct knowledge, on the reputation of the peasants and on relationships of reciprocity between them and consumers. The reciprocity acts as a tool to guarantee food safety, which is considered very important in China due to numerous food safety scandals. The peasants also consume the produce that they sell, thus are perceived as using the same care that they do for their own food. This reciprocity keeps transaction costs extremely low and there is no need for a label or a middleman as is usually the case in Chinese markets. The market relation is based on trust, the producers know who will buy their produce, while the consumers know about the producers and how they produce, process and distribute their products (Wu, Ding and Ye, 2015, p. 111). It is this last aspect that leads peasants to maintain a code of conduct, thus creating their own identity and reputation, which is the basis for the birth of a sense of pride and belonging to their village. Thanks to this code of conduct the transaction costs are minimised open the way to the expansion process.

The development and expansion of this market was made possible also by the creation of a social and technical infrastructure initially managed by the China Agricultural University in Beijing, and which subsequently evolved into a new organization of peasants, who established a new set of protocols to plan production, safeguard tradition and manage logistics and deliveries. This has evolved into the organizing committee in the village which has equipped itself with computers, digital cameras and internet access (*ibid.*). The added value is fairly divided between peasants and consumers and is so profitable that it has induced some villagers to return to farming.

The protocols also focus on the environmental sustainability of the traditional practices implemented by the farmers which are characterized by a low use of chemicals and agronomic techniques that aim to enhance the fertility of the land. In this way, the network has re-appropriated the right to decide what, and how, to produce. Again, we are in the presence of the creation of an autonomy that reinforces the ecological, economic and social aspects of sustainability.

The expansion of these markets has made it possible to bring sustainable and genuine products to the large market of the city of Beijing and at the same time, maintain and expand traditional and local farming and processing practices.

7.3. The Experience of Nested Markets in USA

Healthy Food Hub, is "a community-based cooperative market on the South Side of Chicago. The Healthy Food Hub utilizes collective purchasing of food items, mainly grown in Black farming communities, as a means of not only getting good food for less money, but also building cultural ties and creating economic opportunities for community members" (Figueroa, 2015, p. 500). The hub is typical of many alternative food networks in the USA that are addressing the issues of fair trade, relocalization, urban agriculture, and access to healthy and adequate food, particularly in communities of colour (Alkon & Agyeman, 2011, in Figueroa, 2015, p. 501).

The food products purchased by the food hub are organic products that come from rural farms in the historic Black farming community of Pembroke Township, Illinois, located about 60 miles south of Chicago. HFH is a membership-based organization, serving around 500 families in several South Chicago neighbourhoods (*idem*). The hub holds a market every other Saturday but the main mechanism for obtaining supplies is through pre-ordering via the website or by phone (for more details see Figueroa, 2015). The network that has been created between citizens and black farmers is strongly based on the principles of reciprocity. The hubs other activities include seminars on agroecology, organic agriculture and farmers' knowledge. The hub has also trained more than 40 young farmers.

 doi:10.20944/preprints202401.1473.v1

The hub is a community response to the deindustrialization and economic crisis that devastated South Chicago, creating conditions of poverty that the dominant food system did not respond to. This opened up possibilities (i.e., 'structural holes') for alternatives. The HFH is an example of the many possible paths to a just and sustainable food system. It has drawn on a pragmatic reconfiguration of the memories, histories, resources, and knowledge of its members. A reconfiguration led to the construction of a new infrastructure that is culturally-grounded, self-determining, and resilient and has enabled community survival and independence from the global food system. In this reconfiguration, sustainability is an expression of the reciprocity and reputation of its members; farmers and consumers, who share a strong interest in the principles of healthy, organic and natural food. A new form of nested market has been created.

7.4. The Experience of Nested Markets in Europe

For Europe we take two Italian cases, although similar phenomena can be found, and have documented in all regions of the European Union and beyond (Hebinck, *et al*., 2014; Milone *et al*., 2015; Grivins & Tisenkopfs, 2018; Schermer *et al*., 2011). The first is the Red Cow Consortium, which was born out of attempts to diversify the Parmigiano Reggiano system. The birth of the consortium made it possible to create a new market relationship with consumers which allowed, unlike the downward trend in the price of Parmigiano Reggiano, an increase in the reference price, with a higher remuneration of milk for producers. The new organization created stricter sustainability rules in terms of animal feeding (greater use of fodder and a reduction in the use of concentrates), biodiversity (the maintenance of the historic Reggio breed), and the management of the herds (more use of grazing) (Swagemakers, *et al*., 2019). The consortium, as a collective entity, involves reciprocity between producers, which is its binding force. Membership of the consortium is voluntary and involves making commitments that are established by mutual agreement between participants. The consortium is the only channel through which the product is marketed, thus creating a real monopoly that allows for the exclusion of opportunistic behaviour.

The second example is the experience of a new generation of farmers, who are choosing more sustainable production approaches and direct relationships with consumers. These relationships allow them to decide what, when, and how much to produce, according to the needs and requirements expressed by their consumers and the objectives that they have co-defined (Milone and Ventura, 2019). These new forms of exchange also make it possible to find solutions to problems at public institutional levels such as the re-cultivation of abandoned area with a high environmental value, such as in Molise region were a group of young farmers, using new ICT technologies, has restored abandoned olive groves to cultivation, marketing the produce in northern Italy at prices that ensure the economic sustainability of the businesses. The cultivation techniques are organic and traditional and generate a high level of employment (Ievoli et al., 2019). The selling price is not based on market mechanisms, but on the existence of consumers' awareness of the value of this product and of the principle of reciprocity.

8. Conclusions and Future Recommendations

All the experiences mentioned above highlight *"..the interconnected roles various communities and localities play in constituting the global process…"* of an autonomous path to sustainability that reproduce their heterogeneity (resources and knowledge), *"revealing conditions of [a] possibility for uniting spatially and culturally disparate forms of struggle*" (Figueroa, 2015, p. 500), as "opposed to adopting an iterative 'impact' framework, in which global processes impose themselves on local communities" (*ibid*).

The social dimension, based on the centrality of reciprocity rather than the efficiency of the exchange, is the element that unites all the experiences related to the concept of the nested market. Reciprocity is an economic concept: a way to mould and interlink economic activities. Nested markets are highly heterogeneous and strongly linked to their local contexts, which creates many points of coordination in a global network in which sustainability is rooted in reciprocity. This means that, despite the dominance of market globalisation, there is still space for producers and consumers to

 doi:10.20944/preprints202401.1473.v1

reacquire and maintain socially, culturally and locally specific autonomy. In a food system in which the pursuit of sustainability is often seen as dependent on biotechnology and digital technology, the cultural autonomy of producers and consumers is a means to maintain a strong bond between 'man and nature'. This is in stark contrast to the disconnection induced by the increasing engineering of food, which only pays attention to nutritional and economic aspects and not to the socio-cultural and ecological elements.

At same time, there is a flourishing of nested markets that have, as their distinctive element, the specificity of the common pool resources. These markets generally start from just a few exchanges. However, the centrality of the social and cultural dimensions in the exchanges, and of the reciprocity that governs actors' relationships, allows them to drastically reduce transaction costs and create the conditions for their evolution, through a more equitable distribution of the added value and more environmentally-friendly production techniques. This, as documented in the case studies, attract new players into the market. In this way, nested markets can expand into broader markets and can be considered as laboratories for the creation of new values and products that respond to the global exigencies of sustainability. Nested markets help to keep different trajectories open for developing a more sustainable food system. This has a great importance in a period of transition in which prudence dictates that different pathways should be kept open and explored. It is better to keep different pathways of agrarian growth and food production open and not just to bet on one trajectory.

Nested markets are empirical evidence of the existence of structural holes in the dominant system, which are being filled by initiatives that allow for the reproduction of the heterogeneous natural, human, cultural and social capital resources that characterize rural areas and agricultural systems around the world.

We also want to highlight that nested markets are often also characterized by extended networks where the co-production of artefacts between producer and consumer is embedded in new institutional and infrastructural frameworks built by public and private institutions. In nested markets, the actors, exchanged products and infrastructures play an important role in the construction of interactions within the network. The main difference is that the infrastructures and stream of products are created solely by the actors within the interactive network. This means that their existence and their flow are designed to satisfy the needs and aspirations of actors within the network. These infrastructures are different from those that underlie the flow of products and services in global and/or conventional markets, which are the product of choices and objectives of the dominant players in the market that, over time, assume the mantle of 'food empires' (Ploeg, 2003). But these choices generate the structural holes referred to earlier, i.e., real market failures that stymie flows of goods and services and the development of relationships and transactions, thereby marginalizing actors and sometimes entire areas and leading to the disappearance of existing products or the capacity to create new ones.

As a result, the exchanges that occur in nested markets are not the result of some Darwinian selection of existing products, but the result of a new conscious process of construction that has taken place within a network in which each actor has assumed a commitment.

The intervention of the state in the creation of a nested market can be justified by the importance that these markets have in the economic development of rural areas and in helping to safeguard and protect locally-specific resources, relationships, cultures and traditions. However, the interventions or policies implemented by the state often fail to have the expected impacts, even though the objectives and the instruments are clear. This happens because policies are not the outcome of interactions with existing realities but are often the result of mediations of different actors with different interests, each with their own culture, level of knowledge and understanding of reality. The most successful policies have been those that have supported initiatives aimed at translating emerging opportunities into new practices. These policies were not initially structured, but capable of structuring paths, programmes, processes and emerging movements, even if only in an embryonic phase, in the social, economic and political contexts that were the focus of policy concern.

Public intervention is very important during the birth and development of nested markets, which can initially be extremely fragile. Many nested markets, from American farmers' markets, to

 doi:10.20944/preprints202401.1473.v1

the institutional markets of Brazil, have mainly developed because of the presence of policies that have supported them, often in very different ways. A review of the various public policies related to nested markets is made by Schneider et al. (2014). It identifies 11 different support modalities, ranging from regulation of the quality and certification of products, to the creation of material infrastructure, to the recognition of the specificity of products and processes and making the modalities of exchange exempt from more general regulations.

Future research should focus on how to guarantee the coexistence of the phenomenon of nested markets alongside the dominant trajectory of the technologically-driven sustainability of production and consumption of food.

References

1. Arthur, W. B. (2014), *Complexity and the Economy*, Oxford University Press, pp. 192.
2. BEUC (2020), One Bite at the Time: Consumers and the transition to sustainable food, The European Consumers Organizations, Brussels.
3. Beije, P.R. & J. Groenewegen (1992), A network analysis of markets, *Journal of Economic Issues*, 26:1, 87-114, DOI: 10.1080/00213624.1992.11505263
4. Blay-Palmer, A. (2008), *Food Fears: From industrial to sustainable food systems*. Ashgate Publishing Limited, Hampshire, England.
5. Bleischwitz, R. (2004), Governance of sustainable development: The co-evolution of corporate and political strategies, *International Journal of Sustainable Development*, 7, 1, 27-43
6. Bowens, N. (2015), *The Color of Food: Stories of race, resilience and farming*. Gabriola Island, British Columbia: New Society Publishers.
7. Broekhuizen R. van der and H. Oostindie (2014), Rural governance and the unfolding of nested markets in Europe, in P. Hebinck, J.D. van der Ploeg and S. Schneider (eds.), *Rural Development and the Construction of New Markets,* Routledge, UK.
8. Brunori, G., A. Rossi and F. Guidi (2012), On the new social relations around and beyond food. Analysing consumers' role and action in Gruppi di AcquistoSolidale (Solidarity Purchasing Groups), *Sociologia Ruralis*, 52 (1): 1-30.
9. Burt, R. S. (1992), *Structural Holes*. Cambridge, Mass. Harvard University Press.
10. Burt, R. S. (2004) Structural holes and good ideas. *American Journal of Sociology*, Vol. 110, No. 2, pp. 349-399.
11. Cahn, E. (2001), No More Throwaway People: The co-production imperative, Essential Books, Washington DC.
12. Cantner, U. and H. Graf (2006), The network of innovators in Jena: An application of social network analysis, *Research Policy* 35 (2006) 463–480.
13. Coase, R. H. (1988), The nature of the firm: Origin, meaning, and influence. *Journal of Law, Economics, and Organization*, 4 (1): 3-59.
14. DeBresson, C. and F. Amesse (1991), Networks of innovators: A review and introduction to the issue. *Research Policy* 20 (5): 363–379.
15. DeCastro, D. (2017), Sustainability in business: Adapting to new trends, *Honors Senior Capstone Projects*, 28.
16. Di Iacovo, F, M. Fonte and A. Galasso (2014), Agricoltura Civica e Filiera Corta. Nuove pratiche, forme d'impresa e relazioni tra produttori e consumatori, Working Paper no. 22, Gruppo 2013, Coldiretti, Roma.
17. Duru M, O. Therond & M. Fares (2015) Designing agroecological transitions; A review. Agronomy for Sustainable Development 35(4): 1237 – 1257. https://doi. org/10.1007/s13593-015-0318-x.
18. EEA (2019), Sustainability Transitions: Policy and practice, Report no 9.2019, European Environment Agency, Brussels.
19. FAO (2017). The Future of Food and Agriculture—Trends and Challenges; FAO: Rome, Italy.
20. FAO (2018). The Future of Food and Agriculture—Alternative Pathways to 2050; FAO: Rome, Italy, p. 224.
21. Figueroa, A. (2015), Food sovereignty in everyday life: Toward a people-centered approach to food system, *Globalization*, 12:4, 498-512, DOI: 10.1080/14747731.2015.1005966.
22. Gaiger, L.I (2022) Reciprocity: A way to understand the role of the social and solidarity economy in the past and in the future. *Congreso International del CIRIEC* (International Centre of Research and Information on the public, social and cooperative economic) Valencia 13-15 June 2022, pp. 1-18.

23. Galera, G. and M. Argenta (2018), Sfide e opportunità dell'accoglienza in un contesto montano marginale: Il caso della Cooperativa Sociale Cadore, paper presented at *"Scambi anomali. I mercati nested per le aree rurali fragili"*, Rovigo, 2-3 March.
24. Gregory, C.A. (1994), Exchange and reciprocity, in T. Ingold (eds), *The Companion Encyclopaedia of Anthropology*, Routledge, UK.
25. Grivins, M., & T. Tisenkopfs, 2018. Benefitting from the global, protecting the local: The nested markets of wild product trade. *Journal of Rural Studies* 61: 335–342.
26. Grunert, K. G., S. Hieke, and J. Wills (2014), Sustainability labels on food products: Consumer motivation, understanding, and use, *Food Policy*, 44, 177–89.
27. Hebinck, P., S. Schneider and J. D. van der Ploeg (eds) (2014), *Rural Development and the Construction of New Markets*, Routledge, London.
28. Hinrichs C.C. (2014) Transitions to sustainability: a change in thinking about food systems change? *Agriculture and Human Values* 31(1):143–155. https://doi.org/10.1007/s10460-014-9479-5.
29. Hirschman, A.O. (1958), *The Strategy of Economic Development*, Yale University Press, New Haven.
30. Hubeau M, F. Marchand, I. Coteur, K. Mondelaers, L. Debruyne L. & G. Van Huylenbroeck (2017) A new agri-food systems sustainability approach to identify shared transformation pathways towards sustainability. *Ecological Economics* 131:52–63. https://doi.org/10.1016/j. ecolecon.2016.08.019.
31. Hockerts, K. and R. Wüstenhagen (2010), Greening Goliaths versus emerging Davids: Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing*, 25, 481-492.
32. Ievoli, C., A. Belliggiano, D. Marandola, P. Milone and F. Ventura (2019), Information and communication infrastructures and new business models in rural areas: The case of the Molise Region In Italy, *European Countryside*, Vol. 11, No. 4, p. 475-496.
33. Iocco, G., L. Niang, G. Pugliese and N. Quaranta (2018), Lavoratori migranti, la costruzione di mercati agro-alimentari nidificati e processi di sviluppo locale sostenibile: l'esperienza di SOS Rosarno e della cooperativa Mani e Terra, paper presented at *Scambi Anomali. I mercati nested per le aree rurali fragili*, Rovigo, 2-3 March.
34. Knickel, K, S. Schiller, H. Vihinen and A. Weber (2008), New institutional arrangements in rural development, in J.D. van der Ploeg and T. Marsden (eds), *Unfolding Webs. The dynamics of regional rural development*, Van Gorcum, Assen, The Netherlands.
35. Krystallis A., K. G. Grunert, M. D. de Barcellos, T. Perrea and W. Verbeke (2012), *Consumer Attitudes Towards Sustainability Aspects of Food Production: Insights from three continents*, Pages 334-372 Published online, https://doi.org/10.1080/0267257X.2012.658836
36. Lamine C (2011) Transition pathways towards a robust ecologization of agriculture and the need for system redesign. Cases from organic farming and IPM. *Journal of Rural Studies* 27(2):209–219. https://doi.org/10.1016/j.jrurstud.2011.02.001
37. Lamine C (2015) Sustainability and resilience in agrifood systems: Reconnecting agriculture, food and the environment. *Sociologia Ruralis* 55(1):41–61. https://doi.org/10.1111/soru.12061
38. Lang T. & M. Heasman (2015) Food Wars: The global battle for mouths, minds and markets. Routledge, London
39. Lo Cascio, M. (2018), Contadinazioni: Autoproduzioni contro ogni sfruttamento, paper presented to *Scambi Anomali. I mercati nested per le aree rurali fragili*, Rovigo, 2-3 March.
40. Long, N. (2015), Activities, actants and actors: Theoretical perspectives on development practice and practitioners, in P. Milone, F. Ventura and J. Ye, *Constructing a New Framework for Rural Development, Research in Rural Sociology and Development*, Volume 22, 31-57.
41. Maye D, Kirwan J (2010) Alternative food networks. Sociology of agriculture and food. Entry in *SOCIOPEDIA.ISA®* Cheltenham: University of Gloucestershire, UK.
42. Marchetti L., V. Cattivelli, C. Cocozza, F. Salbitano and M. Marchetti (2020), Beyond sustainability in food systems: Perspectives from agroecology and social innovation, *Sustainability* 2020, 12, 7524; doi:10.3390/su12187524.
43. Marsden, T.K. (2000), Food matters and the matter of food: Toward a new food governance?, *Sociologia Ruralis*, 40 (1), pp. 20-29.
44. McKenzie, F.C.; Williams, J. Sustainable food production: Constraints, challenges and choices by 2050. *Food Security*. 2015, 7, 221–233. [CrossRef]

45. McMichael, P. (2014) Historicizing food sovereignty, *The Journal of Peasant Studies*, 41:6, 933-957, DOI: 10.1080/03066150.2013.876999
46. Menard, C. (2004), The economics of hybrid organizations. *Journal of Institutional and Theoretical Economics*, 160 (3): 345-376.
47. Milone, P. (2009), *Agriculture in Transition*, Van Gorcum, Assen, the Netherlands.
48. Milone P. and F. Ventura (2000), Theory and practice of multi – product farms: Farm butcheries in Umbria, *Sociologia Ruralis*, Vol. 40/4, pp. 452-465.
49. Milone P. and F. Ventura (2004), Novelty as redefinition of farm boundaries, in J. S. C. Wiskerke & J. D. van der Ploeg (eds), *Seeds of Transition*, Van Gorcum, Assen, pp. 57-91.
50. Milone P. and F. Ventura (2011), Networking the Rural: The future of green regions in Europe, Van Gorcum, Assen.
51. Milone P. and F. Ventura (2014), The visible hand in building new markets for rural economies, in P. Hebinck, J.D. van der Ploeg & S. Schneider, *Rural Development and the Construction of New Markets*, Routledge, UK. Pages 41-60.
52. Milone, P. and F. Ventura (2019), New generation farmers: Rediscovering the peasantry, *Journal of Rural Studies*, Volume 65, Pages 43-52
53. Milone, P., F. Ventura, and J. Ye (2015), Constructing a new framework for rural development, *Research in Rural Sociology and Development*, Vol. 22, pp. 1-16. https://doi.org/10.1108/S1057-192220150000022021
54. Midttun, A. (1999), The weakness of strong governance and the strength of soft regulation: Environmental governance in post-modern form, *Innovation: The European Journal of Social Science Research*, 12:2, 235-250, DOI: 10.1080/13511610.1999.9968599
55. Midttun, A. (2004), Realigning business government and civil society: CSR model compared to the neo-liberal and welfare state models. Paper for the *Third Annual Colloquium of the European Academy of Business in Society*. Gent, Belgium.
56. Morgan, K and R. Sonnino (2008), The School Food Revolution. Public food and the challenge of sustainable development, Earthscan, UK
57. North, D.C. (1990), Institutions, Institutional Change and Economic Performance, Cambridge University Press, NY.
58. Ostrom E. (1996), Crossing the great divide: Coproduction, synergy, and development, *World Development*, Vol. 24, No. 6: 1073-1087.1.
59. Ostrom E. (2012) The Future of the Commons: Beyond market failure and government regulation, Annual Iea Hayek Memorial Lecture, 29 March 2012.
60. Palermo, P. (2009), I Limiti del Possibile-Governo del Territorio e Qualità dello Sviluppo, Donzelli, Roma
61. Pepperl, N. (2012), Putting the 'Food' in Food Stamps: Food eligibility in the Food Stamps Program from 1939 to 2012, DASH, Harvard University.
62. Ploeg, J.D. van der (2003), The Virtual Farmer: Past, present and future of the Dutch peasantry, Royal van Gorcum, Assen.
63. Ploeg, van der, J. D. (2009), *I Nuovi Contadini*, Donzelli, Roma.
64. Ploeg J.D. van der (2015), Newly emerging nested markets: A theoretical introduction, in P. Hebinck, J.D. van der Ploeg and S. Schneider (eds), *Rural Development and the Construction of New Markets*, Routledge, UK.
65. Ploeg, J. D. van der, H. Renting, G. Brunori, K. Knickel, J. Mannion, T. Marsden, K. De Roest, E, Sevilla G. and F. Ventura (2000), Rural development: From practices and policies towards theory. *Sociologia Ruralis*. V. 40, nº4: 391 – 408.
66. Ploeg, J. D. van der & S. Schneider (2022), Autonomy as a politico-economic concept: Peasant practices and nested markets. Journal of Agrarian *Change. https://doi.org/10.1111/joac.12482.*
67. Ploeg, J.D. van der, J. Ye and S. Schneider (2022): Reading markets politically: on the transformativity and relevance of peasant markets, The Journal of Peasant Studies, pp. 1-26, DOI: 10.1080/03066150.2021.2020258.
68. Polanyi, K. (1977). *The livelihood of man*. Academic Press.
69. Quoquab, F. & J. Mohammad (2017). Managing sustainable consumption: Is it a problem or panacea? In: Leal Filho, W., D.M. Pociovalisteanu & A. Al-Amin (eds) *Sustainable Economic Development.* World Sustainability Series. Springer, Cham. https://doi.org/10.1007/978-3-319-45081-0_7.
70. Radomsky, G. P. Niederle and S. Schneider (2014), Participatory system of certification and alternative marketing networks: The case of the Ecovida Agroecology Network in South Brazil, in P. Hebinck, J.D. van der Ploeg and S. Schneider (eds), *Rural Development and the Construction of New Markets*, Routledge, UK.

71. Roberts, B. (2015) Organic Food and Drink Shopper – US 2015, *Press review Mintel Office.*
72. Rover, O. J., B. C. de Gennaro and L. Roselli (2017), Social innovation and sustainable rural development: The case of a Brazilian agroecology network, *Sustainability*, 9, 3, pp1-14; doi:10.3390/su9010003.
73. Saccomandi, V. (1998) *Agricultural Market Economics*, Van Gorcum, Assen.
74. Schaltegger, S. F. Lüdeke-Freund and E. G. Hansen (2016), Business models for sustainability: A co-evolutionary analysis of sustainable entrepreneurship. In *Innovation and Transformation, Organization & Environment*, Vol. 29 (3) pp. 264 – 289
75. Schermer, M., H. Renting and H. Oostindie (2011), Collective farmers' marketing initiatives in Europe: Diversity, contextuality and dynamics, *International Journal of Sociology of Agriculture and Food* 18, 1: pp.1-11.
76. Schmitt, C. J., R. Maluf and W. Belik (2014), Family farming, institutional markets and innovations in public policy. Food and nutritional security as a driver for governmental intervention, in P. Hebinck, J.D. van der Ploeg and S. Schneider (eds), *Rural Development and the Construction of New Markets*, Routledge, UK.
77. Schneider, S., S. Shiki and W. Belik (2011), Sviluppo rurale in Brasile: Il superamento delle ineguaglianze e la costruzione di nuovi mercati, *Rivista di Economia Agraria*, n. 2, Anno LXV - April - June 2010, Roma.
78. Schneider, S., J. D. van der Ploeg and P. Hebinck (2014), Reconsidering the contribution of nested markets to rural development, in P. Hebinck, J.D. van der Ploeg and S. Schneider (eds), *Rural Development and the Construction of New Markets,* Routledge, UK.
79. Servet, J.M. (2013), Le principe de réciprocité aujourd'hui. Un concept pour compreendre et construire l'économie solidaire. In: Hillenkamp, I. and J.L Laville (Eds.). Socioéconomie et démocratie: l'actualité de Karl Polanyi. Toulouse: Eres, pp. 187-213.
80. Sotte, F. (1997), Per un nuovo patto sociale tra gli agricoltori e la società, *La Questione Agraria*, n. 65, pp. 7-15.
81. Stiglitz, J. (1998) The private use of public interests: Incentives and institutions, *Journal of Economic Perspectives*, Vol. 12 (2), pp. 3 – 21.
82. Swagemakers, P., M. D. Domínguez García, P. Milone, F. Ventura and J. S. C. Wiskerke (2019), Exploring cooperative place-based approaches to restorative agriculture, *Journal of Rural Studies*, 68:191-199.
83. Teece, D. J. (1980), Economies of scope and the scope of the enterprise, in *Journal of Economic Behavior and Organization*. No. 1, pp. 223-247.
84. Tischner, U. and U. Kjaernes, (2007), Sustainable consumption and production in the agriculture and food domain. In S. Lahlou and S. Emmert (Eds.), *SCORE Proceedings: SCP Cases in the Field of Food, Mobility and Housing*. pp. 201–237.
85. Tittonell P, L. Klerkx, F. Baudron, G.F. Félix, A, Ruggia D. van Apeldoorn, S. Dogliotti, P. Mapfumo & W.A.H. Rossing (2016) Ecological intensification: Local innovation to address global challenges. In: *Sustainable Agriculture Reviews: Volume 19,* pp. 1–34. https://doi.org/10.1007/978-3-319- 26777-7_1.
86. Vihinen, H. and L. Kroger (2008), The governance of markets, in J.D. van der Ploeg and T. Marsden (eds), *Unfolding Webs. The dynamics of regional rural development*, Van Gorcum, Assen, The Netherlands.
87. Ventura, F. (2001), *Organizzarsi per Sopravvivere,* PhD Thesis, Wageningen University.
88. Ventura, F. and H. van der Meulen (1994), Transformation and the consumption of high quality meat: the case of Chianina meat in Umbria, in Ploeg J.D. van der and A. Long (eds) *Born from Within*, Van Gorcum, Assen.
89. Ventura, F., A. Schiavelli and P. Milone (2015), *Direct Food*, Saggine, Donzelli Editore, Roma.
90. Vergara-Camus, L. (2018). Peasant Alternatives to Neoliberalism. In The essential guide to critical development studies, edited by Henry Veltmeyer and Paul Bowles (pp. 426–434). Routledge. https://doi.org/10.4324/9781315612867-36.
91. Vergara-Camus, L. and K. Jansen (2022). Autonomy in agrarian studies, politics, and movements: An inter-paradigm debate, Journal of Agrarian Change, n. 22 (pp. 455–472).
92. Vermeir, I. and W. Verbeke (2006), Sustainable food consumption: Exploring the consumer "attitude – behavioural intention" gap, *Journal of Agricultural and Environmental Ethics*, Volume 19, 169–194. https://doi.org/10.1007/s10806-005-5485-3.
93. Vittersø, G., & T. Tangeland, (2015). The role of consumers in transitions towards sustainable food consumption. The case of organic food in Norway. *Journal of Cleaner Production*, 92, 91–99.
94. White, K., R. Habib and D. J. Hardisty (2019), How to shift consumer behaviors to be more sustainable: A literature review and guiding framework, *Journal of Marketing*, Vol. 83(3) 22-49

 doi:10.20944/preprints202401.1473.v1

95. Wiskerke, J.S.C. and J.D. van der Ploeg (2004), *Seeds of Transition*, Van Gorcum, Assen.
96. Woods, T., M. Ernst and D. Tropp (2017), *Community Supported Agriculture. New models for changing markets*, U.S. Department of Agriculture, Agricultural Marketing Service, Web.
97. Wu, H., B. Ding and J. Ye (2015), The construction of new nested markets and rural development in China, in P. Hebinck, J.D. van der Ploeg and S. Schneider (eds), *Rural Development and the Construction of New Markets*, Routledge, UK.
98. Zeppa, M., G. Rastaldi and S. di Passio (2018), Rise Hub: Ruralità, associazionismo ed Erasmus+ nella Valle di Comino, paper presented at *Scambi Anomali. I mercati nested per le aree rurali fragili*, Rovigo, 2-3 March.
99. Zollet, S., L. Colombo, P. de Meo, D. Marino, S. R. McGreevy, N. McKeon and S. Terra (2021) Towards territorially embedded, equitable and resilient food systems? Insights from grassroots responses to COVID-19 in Italy and the City Region of Rome, *Sustainability*, n. 13(5), 2425.