



Prospects for Farmers' Support: Advisory Services in European AKIS
WP 4 – AKIS ON THE GROUND FOCUSING KNOWLEDGE FLOWS SYSTEM | Topic 3

Designing, implementing and maintaining (rural)
innovation networks to enhance farmers' ability to
innovate in cooperation with other rural actors

Anti-Mafia Innovation network: beyond social farming

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March, 2015



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 311994.

Please reference this report as follows:

Caggiano, M. (2014): Anti-Mafia Innovation network: beyond social farming. Report for the AKIS inventory (WP4 - Topic 3) of the PRO AKIS project. Online resource: www.proakis.eu/publicationsandevents/pubs.

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List of Acronyms

AKIS	Agricultural Knowledge and Information Systems
AAS	Agricultural Advisory Services
CRA	Agricultural Research Council
CRAA	Consortium for Applied Research in Agriculture
NCO	Nuova Cooperazione Organizzata, New Organized Cooperation
EIP	European Innovation Partnerships
MIPAAF	Italian Ministry of agriculture forestry and food policies
NGO	Non-Governmental Organisation
ProAKIS	Prospects for Farmers' Support: Advisory Services in European AKIS
WP	Work Package

Executive Summary

The overall objective of Work Package (WP) 4 of the PRO AKIS project is to provide comparative analyses and assessments of successes, strengths and weaknesses of specific knowledge systems through case studies. This report, as part of the topic 3 of WP4, explores the role of rural networks in enhancing innovation processes, questioning the features of the agricultural/rural networks could enhance farmers' ability to co-innovate in cooperation with other actors. The prospect of this investigation is also to provide interesting and significant experiences that constitute examples for the 'European Innovation Partnership' by increasing farmers' capacities to create, test, implement and evaluate innovations in cooperation with other rural actors.

To this end, this report focusses on the emerging rural innovation network in the so-called Land of Fires, an area between Caserta and Naples provinces in the Campania region (Southern Italy), known for the socio-economic and environmental impacts of more than two decades of waste crisis. The network involves cooperatives that work on land confiscated from the Mafia. It includes environmental activists, associations, public and private actors (citizens and companies) fighting against dispossession and contamination of territories, and against Mafia culture.

We analyse the "economic heart" of this emerging network and its formal components: the consortium of social cooperatives NCO (Nuova Cooperazione Organizzata, New Organized Cooperation). Confronting the present crisis of the European welfare state, the NCO cooperatives combined ideas around social inclusion of disadvantaged people (mentally ill people, former prisoners, immigrants and unemployed) in agricultural work, with the ambition of becoming sources of "ethic economic wealth".

The value of this experience concerns the innovative use of agriculture as means to achieve important economic, cultural and social changes according to the vision of a smart, sustainable and inclusive economy of the Europe 2020 strategy.

The ambitious project of NCO could be considered as a real social innovation that "meets several social needs (more effectively than alternatives) and creates new social relationships or collaborations" (Murray et al. 2010). These processes mobilize, create and combine multiple sources and forms of knowledge and in turn create new knowledge needs that pose very complex challenges to the traditional AKIS, because innovation processes involve different aspects, sectors and types of knowledge (practical, scientific, technical, organisational, etc.) in an interactive way. Consequently, this case study presents an "interactive innovation model" consistent with the new European Innovation Partnerships (EIPs) approach.

We investigate in depth this anti-mafia network, that we consider as a knowledge network, via interviews, literature review and participant observation, adopting an ego network approach (Wellman and Hogan 2006).

The case study highlights the synergistic effects between strong formal and informal ties in enhancing the NCO network to develop not only new skills, products and/or practices, but also new attitudes and values. This experience suggests a novel pathway of sustainable place-based community development (Magnaghi, 2000) that is shaped by network building. The co-innovations developed in this network are strategic in promoting sustainable agriculture, as well as revitalizing rural societies and improving rural development.

1 Introduction

This report focusses on the emerging rural innovation network in the so-called Land of Fires, an area in the Northern Campania region (Southern Italy) that is known for the socio-economic and environmental impacts of more than two decades of waste crisis. The network involves cooperatives who work on land confiscated from the Mafia, and include environmental activists, associations, public and private actors (citizens and companies) that fight against dispossession and contamination of territories, and against Mafia culture.

We analyze the "economic heart" of this emerging network and its formal components: the consortium of social cooperatives NCO (Nuova Cooperazione Organizzata, New Organized Cooperation). Confronting the present crisis of the European welfare state, the NCO cooperatives combined ideas around social inclusion of disadvantaged people (mentally ill people, former prisoners, immigrants and unemployed) in agricultural work, with the ambition of becoming sources of "ethic economic wealth".

In this emerging rural network agriculture plays a crucial role that emphasizes its multifunctional nature. Besides the key function of providing food and income, it also plays a key role in land protection and landscape rehabilitation, in the rediscovery of local culture, in improving environmental awareness, social capital and cohesion. The cooperatives associated in NCO have originally a background in social services, integrating agriculture activities only at a later stage. Therefore, the cooperatives have a need for agricultural knowledge, and face the challenge to integrate this knowledge in a systemic framework to deal with complex problems and changes, which are required to use agriculture in order to create economic, environmental, relational and social value.

This case study exemplifies the typical challenges that the multifunctionality of agriculture poses to the agricultural knowledge system, especially in the rural development framework.

The multifunctionality of agriculture¹ represents a key concept in EU rural development policies, and it is mobilized in several frameworks and practices that try to define sustainable and alternative pathways of regional development, both in rural and in urban areas (Knickel and Renting, 2000, Borsotto et al. 2013).

These processes, based on a non-sectorial approach to agriculture, result in systemic innovations that imply composite and increasingly diversified knowledge rarely owned by any one organization/actor. Enhancing the multifunctionality necessarily requires cooperation between and across organisations and sectors, emphasizing the role of networks in the creation and dissemination of knowledge. This is particularly true in the case of social farming with its innovative and inter-sectorial nature.

Social farming (also called care farming) indicates a farming practice that uses agricultural resources to provide rehabilitation, social or educational care services for vulnerable groups of people.

¹ The multifunctionality of agriculture may be defined as the full range of contributions of agriculture to economic and social development as a whole (Laurent 2001). The multifunctional properties of agriculture concern a wide range of issues: commodity production, food quality and safety (including consumers, farm labour and public health), environmental management, services (amenities for urban populations, landscape management, etc), contribution to social and economic cohesion in rural areas (through job creation, diversification of farm activities), and political functions (rural development, landscape management, food security).

During the last years, social farming has gained increasing political and theoretical attention at different levels, across and beyond the agricultural sector. Scientific evidence and awareness of its potential are spreading in parallel with the growth of practical experiences in many European and non-EU countries (Di Iacovo and O'Connor 2009; Dessein and Bock 2010).

Even if there is a controversial debate on the different practices to include in social farming², there is a general agreement that these processes are effective processes of social innovation, sometimes referred to as retro-innovation³. In practice, social farming "*meets several social needs (more effectively than alternatives) and creates new social relationships or collaborations*" (Murray et al. 2010). The combination of farming and care responds effectively to the crisis of welfare systems that are under strong pressure in all European countries (Hine et al. 2008). It matches with the logic of a decentralized, community-based model of "welfare-mix" (i.e. public-private integration) that has been spreading since the 1980s in Europe along with the shift from the biomedical model to tailor-made care for service-users.

In Italy, this transition was promoted by the Democratic psychiatry movement that takes as a starting point the *potential* of people who are deemed mentally ill or psychologically/socially different, rather than focusing on their limitations (Driest, 1997, Elings M. 2007). This attitude prevents that interventions move on a merely medical therapy terrain, fostering a more comprehensive social rehabilitation and empowerment. The idea of care is based on the integration of "disadvantaged people" into the social, economic, ecological and community framework. All life conditions are considered as constitutive factors of wellbeing: housing, training and work, interpersonal and social relations, a clean and nurturing environment. In other words, the fundamental rights of citizenship are assumed also as the most significant determinants of social health. These new ways of caring promote both social integration and empowerment (Dessein 2008). Moreover, the "care-for-the community", or community welfare, is not simply performed on individual problems, but it has intrinsic effects on the entire local community, since it aims to address the social causes of the disorder. In 1978, the Democratic psychiatry movement in Italy led to the so-called "Basaglia Law" (Law 180) that established a gradual shutting down of psychiatric hospitals, assigning prevention, care and rehabilitation in mental health to new community-based services. An important feature of this reform was the shift from a national health service toward a decentralized system based on local health districts. However, the implementation of this reform is still in progress resulting in local frameworks that differ strongly from region to region.

²The practices of social farming are usually integrated in the *Green care*. This is an inclusive term for many 'complex interventions', such as care farming, animal-assisted therapy, therapeutic horticulture and others. The common denominator of these diverse interventions is their use of *nature* and *natural* environment to improve or promote health (physical and mental) and wellbeing. It is essential to note that these interventions not include passive experiences of nature, but *active* processes (Sempik et al. 2010). However this classification is not universally accepted, because actually there are many practices not always clearly classifiable and definitely context specific, moreover they differ widely from one country to another (<http://sofar.unipi.it/>).

³ "The potential of limited intellectual skills has been well-known in rural areas for decades. It should be noted that in the traditional peasant family the 'disabled' were unknown, at least as a specific category separated from the 'able', for all family members contributed to the running of the farm. Even those with reduced capabilities could perform a task, although limited or marginal. Disability became an issue of major concern when society moved away from the old rural economy and non-agricultural labor markets began to discriminate people with special needs" (Di Iacovo et al. 2006).

Social farming also responds to the new vision of agriculture and rural area reflecting the so called *slow food revolution* (Petrini and Padovani 2005), which is based on inclusive community wellbeing and on a new relationship between producer and consumer to promote responsible consumption, because as J. Pretty said: “eating is the most political act we do on a daily basis because of its effect on farms, landscapes and food businesses”⁴.

In Italy the first experiences of social farming started in the 1970s and 80s as experimental bottom-up practices rooted in strong mutualist values, often belonging to religious or political movements. Later on, the closing-down of psychiatric institutions stimulated their diffusion. Social farming initiatives were (and are) promoted especially by social cooperatives. In Italy they are the most common type of social enterprise that are constantly growing and increasingly play a key role within the national economy (Andreus et al. 2012). Social cooperatives found a legal framework in 1991 with the Law 381 that recognizes social cooperatives as private non-profit enterprises involved in “the human promotion and social integration of citizens”. Social cooperatives produce social services (type A) and manage different kinds of activities providing work integration of disadvantaged people (type B).⁵

Although there is no official data on social farming in Italy, it is estimated that there are more than one thousand projects of social farming. According to an Euricse survey, there are 389 agricultural social cooperatives of type B, which employ 3,992 disadvantaged workers and have a value of total production of €182,025,000 (Euricse/INEA 2012).

Another interesting specificity of social farming in Italy is the presence of social cooperatives that cultivate land confiscated from the Mafia. These lands were granted by the State to the cooperatives through a free loan, according to the law 109/96 on the social reuse of the property confiscated from criminal organizations. This law establishes the allocation of assets and illicit profits to those (associations, cooperatives, municipalities, provinces and regions) that are able to return them to the citizens, through services, job, promotional activities and social work⁶. In the case of land confiscated from the Mafia, the innovative practices of care farming extend beyond the farm and its direct beneficiaries, involving the whole local community. These experiences belong to the so-called “civic agriculture” that refers to the “emergence and growth of community based agriculture and food production activities that not only meet consumer demands for fresh, safe, and locally produced foods, but create jobs, encourage entrepreneurship, and strengthen community identity” (Lyson 2004).

Community development processes through agriculture pose additional and more complex challenges to the agricultural knowledge system. They ask for processes of social learning to develop collaborative

⁴ <http://news.bbc.co.uk/2/hi/science/nature/4312591.stm>.

⁵ According to the Italian law, disadvantaged individuals are: prisoners, ex-prisoners and prisoners on release programs, former drug addicts, the mentally, psychologically and physically disabled, alcoholics, working age minors in difficult family situations, and gambling addicts.

⁶ The National Agency for Administration and Destination of Assets Seized and Confiscated from Organized Crime, founded in 2010, manage the attribution of confiscated assets. Out of the 12,944 assets managed by the agency for confiscated assets, 5,859 land properties have been assigned to an entity having public interest. To this day, the agency has yet to find a destination for 3,995 assets. In Campania region there are 500 assets and 340 companies confiscated not still assigned. Bureaucratic procedures and their inefficient implementation, such as staff shortage, slow down the process of re-use of assets, often affecting their value.

knowledge and skills for joint action (Keen 2005). Therefore, they need to involve some level of co-production of knowledge including local and contextual knowledge, and perspectives to further the process of change and increased community wellbeing.

In this framework, the main research question of our report concerns the capacity of the NCO network to enhance agricultural, rural and community co-innovation in cooperation with other actors, focusing on agricultural knowledge flows originating from interactions within the network. Moreover, the analysis considers the influencing factors that encourage farmers' enrolment in these types of networks and how such networks link to existing knowledge infrastructures and advisory services. Finally, the report tries to identify the necessary support from the agricultural knowledge system to influence network development over time.

2 Selecting and delimiting the case-study

The network observed is located in the Northern part of Campania region, in Southern Italy, between the provinces of Naples and Caserta. Ancient Romans used to call this region *Campania Felix*⁷ (Fertile/Happy Campania) to indicate the mild climate and the fertility of the soil. This image has radically changed due to the socio-environmental impacts of more than two decades of illegal waste disposal and governmental mismanagement. Today, the area between Caserta and Napoli is better known as the “Land of Fires”.

The area is a large and complex urban/rural system stretching on 3.800 sq. km and inhabited by approximately four million people, which makes it the most densely populated area in Italy and among the highest in Europe (with peaks of 1,500 inhabitants per km²). The already fragile regional economy has been greatly affected by the recent economic crisis. The Campania region has the second-lowest GDP pro-capita among Italian regions (€14,834 in 2011) with an unemployment rate of 19.3% in 2012, the highest in Italy (ISTAT 2014). The agro-food industry, together with the manufacturing of metal products, is the main regional industry specialization. Campania mostly produces fruit and vegetables (especially tomatoes, peaches, apples, apricots, nuts), as well as flowers grown in greenhouses and dairy products.

In our fieldwork, the agricultural sector, still very important, is currently under threat of industrial plants, rampant overbuilding, contaminated areas, and waste management and disposal activities. During the last two decades the wide plain between Caserta and Napoli became the setting of contested socioecological transformations resulting from the intertwining of ineffective and authoritarian governances of urban waste management and illegal disposal of hazardous materials (D’Alisa et al. 2010). About 10 million tonnes of waste, including toxic waste, have been disposed in the Land of Fires (Legambiente 2013). Moreover, Campania is the core business of environmental crimes in Italy (Legambiente 2007).

These processes caused waste contaminations of air, soil and water with serious health impacts. According to surveys of the Campania Regional Agency for Environmental Protection, there are 2.551 contaminated sites in all of Campania, with the majority of them clustered in the area between Naples and Caserta. The pollutants found are mostly coming from incorrectly disposed urban and industrial waste (ARPAC, 2008). Several scientific studies connect the higher rates of cancer diseases among the population of this area to the presence of pollutants from waste (Senior and Mazza 2004; Fazzo et al. 2008; Martuzzi et al. 2009).

In these processes of accumulation by contamination⁸ (Demaria and D’Alisa, 2013), criminal organizations played a key role together with the complicity of complex networking of entrepreneurs, state officials, industry managers and landowners⁹.

⁷*Campania felix* comes from the famous sentence "Hinc felix illa Campania est" of *Pliny The Elder*, a well-known naturalist who lived in the 1st century AD.

⁸Such a strategy is the process by which the capital system socializes costs, through successful costs-shifting, which degrades the means of existence and bodies of human beings in order to find new possibilities for capital valorization (Demaria and D’Alisa, 2013).

In this area, the presence of rooted criminal organizations (the so-called *Camorra*) historically has a great impact on the regional economic, socio-environmental and cultural change¹⁰. *Camorra* groups are armed organizations including many different rival clans without central organization or even a confederation. Each clan operates through a complex criminal network, interlinking territorial control, service provision, political patronage, violence and the spreading of specific cultural values. By showing a great capacity to adapt to the economic situation, *Camorra* groups achieved a economic power that it is evident in the annual turnover of *Camorra* (estimated between 20M€ and 40M€) and its relative weight in the regional economy (the GDP of Campania region was 84M€ in 2013, while it was 95M€ in 2009, showing recently a significant decrease as a result of the crisis). In addition, *Camorra* tends to dominate not only economical transactions but also social and civil life. It impedes a suitable socio-economic development and it leads to a general deterioration of living condition with the result of a psycho-social oppression (Natale et al. 2013).

Along with the development of the "criminal economy" acting inside both legal and illegal frameworks, several forms of resistance to the Mafia culture and criminal practices of *accumulation by contamination* have emerged (De Rosa 2014). Local people started to increasing rebel against social and environmental injustice, especially as a result of the growing visibility of environmental and social impacts of the "waste crisis" affecting the whole population. In recent times, in addition to public demonstrations and protests to reclaim real democracy and social justice, grassroots movements are trying to organise themselves and to network for the construction of alternative development pathways.

In order to fight against the criminal economy, particularly interesting and effective are the attempts to explore social innovations to address the relationship between economic power and illegal activities. This is part of the experience of the NCO consortium with *civic agriculture*. The existence of a formal consortium facilitated the delimitation of the network to be observed, defining the boundaries of the case study.

The value of this experience concerns the innovative use of agriculture as a means to achieve important economic, cultural and social changes according to the vision of a smart, sustainable and inclusive economy of the Europe 2020 Strategy. The case study particularly meets one of three long-term strategic objectives for EU rural development policy in 2014-2020: achieving a balanced territorial development of rural economies and communities including the creation and maintenance of employment.

The ambitious project of NCO requires the mobilization and networking of numerous actors and local resources in order to promote innovation. This case study presents an "interactive innovation model" according to the new European Innovation Partnerships (EIPs) approach.

⁹ The *Parliamentary Commission of Inquiry on Illegal Activities Related to the Waste Cycle* (2013) recognised that: "We can certainly say that the administrative apparatus has favored substantially illicit interests. [...] It is evident that the system, at this point, appears to have been reprogrammed so to operate as a machine capable certainly of producing profits, but not solving the problems, because solving the problems would obviously stop any possibility of making profits with the waste cycle".

¹⁰ "Mafia is any set of criminal organizations (...) acting in a large and networked relational context, setting up a system of violence and illegality aimed at the accumulation of capital and at the acquisition and management of positions of power, which makes use of a cultural code and enjoys a certain social consensus" (Santino 1999).

The innovative nature of this case study concerns a wide range of different aspects; they regard organizational and productive assets, employment, access to land, and marketing. Social innovation is also a central element of the Europe 2020 strategy, as in 2011 the President of the European Commission said: "... this idea of innovation is indeed a major issue for the Commission I am proud to lead. ... In a nutshell, social innovation is for the people and with the people. It is about solidarity and responsibility. It is good for society and it enhances society's capacity to act. I strongly believe that today our strong European tradition of social innovation is more needed than ever".

Knowledge is a key resource in any innovation process. In our case study, knowledge needs are particularly complex because innovation processes involve different aspects, sectors and types of knowledge in an interactive way. Consequently, this case study poses a complex challenge to the knowledge system and to the traditional AKIS.

Innovation is a result of social interaction and networking that allow the NCO network to develop not only new skills, products and/or practices, but also new attitudes and values. All together these innovations are strategic not only to promote agriculture's sustainability, but also to revitalize rural societies and to improve rural development.

For all of these reasons, the network selected might constitute a good example for the EIP. This case study can provide several relevant elements for the EIP especially on some key insights, such as the importance of adopting a systemic approach to innovation and to address complex problems in their social and cultural context, the needs to support the emergence of networks that include new stakeholders along with the traditional AKIS actors, and the need to build supportive relationships between rural and urban areas.

3 General description of the case study

The NCO (*Nuova Cooperazione Organizzata* – New Organized Cooperation) is a consortium, founded in 2012, involving five so-called ‘social cooperatives’ that share common interests, principles and have the same vision of their community. Formally, only four cooperatives joined the Consortium (Al di là dei sogni, Eureka, Agropoli, Millepiedi), but in our analysis we also include the cooperative Resistenza whose adhesion procedure is relatively advanced.

NCO cooperatives are the key nodes in our *core network* and are formally linked to the Consortium. It ironically takes the acronym of the *Nuova Camorra Organizzata* (New Organized Camorra known as NCO), a powerful mafia organization founded in the late 1970s by Raffaele Cutolo to renew the old rural Camorra and create a business organization. The vision of the Consortium contends that it is necessary to organize people and to build networks for joining forces in order to fight against the Mafia while also struggling with the prejudices against disadvantaged people.

The cooperatives began to collaborate in 2009 within the Christmas initiative "Let's give Camorra a package"¹¹, a joint sale of the products of cooperatives, associations and private companies that denounced racketeering or that were involved in the fight against criminal organizations. After the success of this initiative, some cooperatives decided to leave their label and to commercialize their products together under the umbrella brand NCO to increase consumer awareness and improve visibility. Progressively, the strategic alliances among cooperatives reached organizational and productive assets, developing a common frame and work plan that facilitated knowledge exchanges and that affected the partnering organizations’ performance.

Regarding differences within the case, the individual cooperatives were established in the 2000s thanks to the effort of a strongly motivated small group of people attempting to develop innovative experiences of community welfare and social inclusion of disadvantaged people. A commonality of the cooperatives is the tradition of antipsychiatry or Democratic Psychiatry and specifically the "Basaglian revolution" as a prism to look at the mental illness. The Basaglian reconfiguration of psychiatry as a mean for the well-being of the entire society is the paradigm that frames the cooperatives work.

The cooperatives put people and community, rather than profit, at the center of their missions, adopting an integrated and innovative approach in their narratives and daily practices. Thus, as the natural consequence of seeking the wellbeing of the community, the cooperatives pursue a fight against Mafia culture coupled with a fight against social and environmental injustice.

The cooperatives started to collaborate with public health and social services to provide a different kind of health, social and educational services; they also organized several cohabitation groups within the towns to ensure people with mental illness or other problems may live autonomously but not excluded.

Over the years, towards the end of the decade, the NCO began to link agricultural practices and care services and to implement different social farming activities, including elements of healthcare, social rehabilitation, education or employment opportunities for various vulnerable groups. The choice to

¹¹The name is an ironic reference to the popular Neapolitan expression "*fare un pacco*" (give a package) that means "cheating".

practice agriculture combines the potential of agricultural activities to involve and integrate “problematic people” with the objective to promote community wellbeing, thereby mobilizing the multifunctionality of agriculture.

Moreover, NCO cooperatives decided to invest in agriculture in order to achieve their own autonomous economic sustainability with the aim to reduce their dependence on public funds for health and social services, which are too often delayed or discontinued.

Only one of the NCO cooperatives, Agropoli, does not practice agriculture but it runs a restaurant located in a villa confiscated from the mafia where some products of NCO cooperatives are transformed. The other cooperatives cultivate land confiscated from the Mafia, apart the cooperative Millepiedi that created the social farm “Fuori di zucca” on the land of the old mental hospital of Aversa.

The use of land confiscated from criminal organizations allows cooperatives to carry important symbolic value in the fight against Mafia culture, because the assets are a symbol of Mafia power. Indeed, at the beginning of the endeavor nobody wanted to cultivate Mafia land: *“This land was seized in 1991, confiscated by the State in '94 and transferred to the municipality in '98. We made an application to have them only in 2005, whereas before no one had ever noticed their existence”* (S. P., coop. Al di là dei sogni). Similarly, a high symbolic value is associated with the activities in the ancient mental hospital as a collective regeneration of an old symbol of segregation and social injustice.

However, cultivating confiscated land also has a very important material value: it represents an innovative way to address the constraints of accessing land (and other productive assets) by young people. The cooperatives’ choice of farming thus comes both from the availability of land and from believing in the so-called *one-straw revolution*, as the Japanese visionary and environmentalist Masanobu Fukuoka framed it: “the ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings” (Fukuoka 1978).

The cooperatives utilise agriculture as the focus of a new approach to build a fairer and healthier relationship with the environment in every way: physically, mentally, spiritually and also politically, engaged as they are in practices of Food Activism (Counihan and Siniscalchi 2013). The aim of NCO cooperatives is not only to break the mechanisms of the criminal economy, but also “to challenge the agro-industrial food system and its exploitation of people and resources” (*ibid.*).

In the Land of Fires, marked by unemployment and by irregular and exploited work, especially in the agricultural sector, the cooperatives promote fair and horizontal work relations, even with marginalized people. They practice mostly organic agriculture, avoiding pesticides and inorganic fertilizers, and adopting crop rotation systems to replace nutrients in the soil. They minimize and recycle any farm waste, and use their own compost as fertilizer. The cooperative also tries to regenerate and use local seeds and plants, sometimes in cooperation with a regional research institute, becoming both users and custodians of biodiversity in connection with local knowledge and farming communities. The agricultural value is not only measured in an economic perspective but also in terms of social value provided for and with the community.

The cooperatives faced many problems in the implementation of their projects, particularly in the startup for the rehabilitation of managed assets, due to the lack of funds and the difficulty to get loans from banks which hampered access to technical equipment. This was associated with the difficulties of mismanagement in public administration. For example, in 2011 the amounts due to social cooperatives for the rehabilitation programs were delayed for more than 11 months by the local health centers.

Cooperative members resorted to a hunger and thirst strike to protest against this situation because it threatened the survival of the cooperatives.

In addition, initially the cooperatives did not have agricultural technical knowledge and experience. Practicing organic farming has been a major challenge, as the area lacks the specialized advisory services as well as a supply chain capable of utilizing and adding value to organic products. To solve the latter problem, in 2014 the cooperatives opened a small processing plant reserved for organic agricultural productions that will enable the cooperative consortium to transform their products with a significant cost reduction.

Despite the difficulties, NCO cooperatives have achieved many results, producing positive externalities for the local community through innovative actions in different areas, such as the rehabilitation of several disadvantaged people, the creation of jobs, bringing derelict properties and land back into use, promoting organic agriculture, and preventing illegal waste disposal in rural areas.

Considering only the four cooperatives who are formally members of the Consortium, they have a total turnover of approximately € 2,500,000 and employ about sixty people, including part time. Furthermore, there are several seasonal contracts and volunteer workers, for instance one of the NCO cooperative employs about thirty seasonal workers for three months a year in order to manage the educational farm. Very relevant is also the educational work carried out by NCO cooperatives to spread the anti-mafia culture and to raise citizen awareness. Their educational efforts include the organization of festivals and other public events, structured projects with schools and volunteer work camps. NCO cooperatives achieve relevant educational goals through their daily work and through being immersed in the local community, building relations with their neighbors, with local farmers, with schools and associations.

The local Agricultural Knowledge and Information Systems (AKIS)

Following the general decentralization of Italian AKIS, Campania region has its individual AKIS where public actors play, directly and indirectly, a crucial role, although has decreased over recent years. The public Agricultural Advisory System (AAS) in Campania, established with law LR 7/85 and subsequently modified by laws LLRR 11/91 and 8/00, was recently reorganised by law n. 612/2011. However, its implementation is still ongoing and the resulting structure is not yet clearly defined, thus currently it is still operating according to the old organization.

Before this reform, the AAS had a capillary structure including:

- A coordination centre (SeSIRCA) in the regional Department of Agriculture, with programming, coordination and orientation tasks;
- Five provincial offices (STAPA) responsible for the implementation of advisory activities;
- 28 operational local centres (CESA), that provide technical and administrative advisory services to the farms; and
- A regional experimental farm (Azienda Agricola Sperimentale Regionale Improsta).

As evidenced by interviews, in 2014 there were a total of 290 regional advisors (including employees of Improsta experimental farm), of which 58 were employed in the plant protection service. Our interviews also showed that funding for the public AAS has been drastically reduced in recent years. A few years ago

the figure was about EUR 10 million, compared with EUR 2,8 million in 2014, of which EUR 1,3 million was allocated to the assets and personnel of Improsta experimental farm.

The AAS provides important technical support services (such as agrometeorological¹² and plant protection services), they manage applied and experimental research programs, agriculture databases, programs to improve the variety and quality of agricultural production, promotion of local products, etc. In addition, AAS provides also the administrative management of the RDP measures.

This system has an active role in supporting the agri-food sector of Campania and its innovation processes. Over the years, the role and the objectives of the regional AAS have changed. They followed the general direction of EU agricultural and rural policies, with the main objectives being focused on integrated rural development and sectorial competitiveness. Nowadays, however, the advisors are increasingly engaged in bureaucratic and administrative tasks while losing contact with the field work. Other important service providers in the regional AAS are the local units of the Italian Farmers Unions (Coldiretti, Confagricoltura, CIA), the Regional Breeders Association of Campania, the sixteen local fruit and vegetable producer organizations, the downstream and upstream industry (especially seed, fertilizer and pesticide providers) and the private professional advisors (there are sixteen advisory bodies accredited for the FAS measures of RDP).

The Region of Campania plans, manages and finances vocational training on agri-food, and also has a relevant set of research institutes specialised on agri-food working at international level, such as the University of Agriculture of Portici (NA), the Istituto Sperimentale Zooprofilattico del Mezzogiorno (Experimental Zooprophyllactic Institute of South), three research units of the Agricultural Research Council (CRA) and three research units of the National Research Council (CNR) specialised on agri-food, the Consortium for Applied Research in Agriculture (CRAA), established by the Region, and the University of Naples Federico II, University of Salerno and University of Sannio.

¹² The regional AAS manages an Irrigation Advisory Plan with an experimental advisory service for irrigation already available in several areas of the region. It is based on the combined use of Earth Observation data, GIS and Information Technology to provide crop water requirements information from the field scale (>1 ha) to the irrigated basin scale (3000 ha).

4 Methods and data collection, local stakeholder involvement

In order to study the emerging anti-Mafia innovation network in the Land of Fires we started from the consortium NCO that is considered as a network of five formally linked cooperatives. In parallel, we analysed a broader network that includes it using an *ego network approach* (Wellman and Hogan 2006). We considered the consortium NCO to be at the centre of this network (core network) to identify all of the actors to whom it has a connection, to report what the ties are among these actors and to understand for what purpose these links are activated.

This study was developed by integrating information from multiple data sources and collecting primary empirical data as far as possible. We conducted a literature review in order to undertake a context analysis. We referred to several documents from the press, official sources (trials and police investigations, government projects and reports), institutional bodies (national statistic institutes) and unofficial documents (internal reports).

In-depth, semi-structured, open-ended interviews were the primary instrument for data collection. We conducted 23 in-depth interviews with key stakeholders (including representatives of cooperatives, private control bodies for organic farm certification, public research institutes, activists and farmers). Interviewees were identified through snowball sampling methods, using a non-discriminative snowball sampling. This method is especially useful when the population is not clear from the beginning (Wasserman and Faust 1994), which was the case for this network in which stakeholder boundaries were blurred.

Interviews took place in two rounds. In the first, carried out between April and May 2014, we started from the presidents of NCO cooperatives who were well placed to offer a strategic overview of the organization and to identify other stakeholders. We also conducted site visits to each organization's current premises. All interviews were tape-recorded and the most relevant were transcribed. We approached the analysis with the intent of exploring the network elements of organizational processes following the NCO set-up. The second round occurred between July and August 2014. Respondents of the second round indicated that the majority of stakeholders related to the specific theme had been identified and we therefore assumed saturation. Additional information was provided through a tool that NCO cooperatives used more for external communication, i.e. the constant monitoring of their social network. We were confident to have included all relevant actors in the network, reducing the boundary specification problem common to an egocentric approach (Marsden 2002).

During the interviews, detailed information was collected on each organization with a specific focus on the nature and extent of cross-cutting ties, member interactions and the organization's involvement in informal and formal networks. We also carried out a historical analysis to assess how these interactions and the interconnected networks evolved over time.

We aimed to understand how different types of interactions and collaborations help or hinder access to knowledge as a key resource and how these ties shape the network capacity for collective action. Our focus was specifically on the transfer of innovative knowledge. With this aim, in our interviews we asked the actors to consider different stages or situations in knowledge production, knowledge use or knowledge integration relating to their farming activities, and to describe their experience. We included open questions about their ordinary farm management, problems faced and the adoption of innovations. The stories that emerged were useful to highlight the mechanisms of innovation and

learning. They allowed to define what kind of knowledge NCO cooperatives mobilise both in their daily management and to solve problematic issues when routine is not sufficient and innovations have to be implemented. Our analysis was also able to reveal the diverse network strategies developed by the NCO cooperatives and to identify their sources of knowledge.

5 Results

5.1 The rural network

5.1.1 The core network: the consortium NCO

As already described in the previous section, we identified an "economic hearth" in the emerging anti-Mafia innovation network in the so-called *Land of Fires*: the consortium NCO. It is possible to represent the NCO as a network whose nodes are the five member cooperatives that are strongly linked by interpersonal and professional relationships. These formal and informal ties have developed since the establishment of the cooperatives; in fact some NCO cooperatives arose as spin-offs. They were launched by people who had working relationships with other NCO co-operatives. The cooperative *Al di là dei sogni* was founded by a worker of the cooperative *Un Fiore per la Vita*, the oldest cooperative of the group. The cooperative *Resistenza* was born as a result of an internship that its founder completed in the cooperative *Al di là dei sogni*.

The founders of the cooperative *Eureka* were previously members of the co-operative *Agropoli*. Adapting the notion of intertwining proposed by Robey et al. (2003) to examine the nature of network interactions, we can say that the NCO interactions are intertwined because they present the characteristics of reinforcement¹³, complementarity¹⁴, synergy¹⁵ and reciprocity¹⁶. This intertwining improves the performance of individual elements and the mutual involvement between network participants, facilitating a high degree of commonality and trust.

In practice, the NCO cluster is organized around common values and culture, sharing interests and goals. These strong ties allow effective communication and knowledge sharing, improving the innovation capacity of both Consortium and individual co-operatives. Due to the small number of nodes with very high connectivity, collaboration for mutual benefit and collective action results in this knowledge network are highly efficient. Collaboration and communication among the nodes are also facilitated by the presence of strong, passionate and mutually accepted leaders in each cooperative that usually manage the different external relationships.

Moreover, this network is perceived as a stable organization with common vision and objectives, and their members recognize that there is a clear benefit to belong to it, so the actors are highly motivated to share information and make joint investments. It was important that the Consortium achieved early successes visible to members which motivated them to be engaged on more challenging long-term projects.

The entry of new actors in the network is highly selective, and the criteria for inclusion are based on shared values of social economy, integration and enhancement of disability, and a sense of responsibility and ethical conduct.

¹³ The relationship is strengthened by the addition of an element that amplifies the effect of another element.

¹⁴ Each element offers unique characteristics. When combined with the other, the two compensate for each other's weaknesses.

¹⁵ One element interacts with the other to produce effects that exceed the effects from the individual elements.

¹⁶ Elements are mutually interdependent, each depending on the other.

Cooperatives started to formally collaborate within the already described initiative "Let's give Camorra a package", a commercial project promoted by the Peppe Diana Committee. Over time, cooperatives began to jointly run more and more aspects of farm management, until they defined an official and stable framework for their cooperation through the creation of the NCO consortium. This structure offers coops a relatively high level of autonomy. The relatively lean organizational structure creates full awareness of each other's activities at an individual and a cooperative level, thus enhancing knowledge-transfer.

Cooperatives also abandoned their individual brands to adopt the umbrella brand NCO. Gradually, cooperatives began to make collective purchases of seeds and plants, then they prepared annual cultivation plans together, and started to manage a common production plan that enhances agronomic characteristics and climatic conditions of each individual farm.

To add economic value to their agricultural production they adopted a vertical integration strategy. At the beginning, each cooperative had its own food processing company, and then they adopted a unique food processing company, which had its plant outside the region. Despite the higher costs due to remoteness, this choice was dictated by the search for a company devoted only to organic production and without any kind of connections to organized crime. Finally, in 2014 they opened a food processing plant inside one of the cooperatives, obtaining further economic benefits.

5.1.2 The social economy network in the Land of Fires

The NCO is a stable structure that links to other actors and networks inside and outside the area, creating a social economy network in the Land of Fires. This network includes individuals, groups and organizations, linking with a varying degree of formalization and bureaucratization. The network relationships may be more or less dense; they could be activated with a specific goal or for several objectives, consequently investing into a single issue or different aspects. The innovation capacity of the NCO emerges as a result of many interactions and alliances that over time the Consortium and its cooperatives are developing with external actors and clusters. These ties allow them to rapidly combine and deploy resources and knowledge in order to create many different opportunities and to promote innovative practices and products in several areas, such as in health and social services, education, agriculture and food production.

The following reports a non-exhaustive description of the main nodes of this network, including the knowledge and advisory infrastructure. We illustrate the links between these actors and the NCO, as well as their contribution to ongoing innovation processes.

Regional and local authorities of healthcare and social systems

Italian health care and social systems are highly decentralized to regional authorities; they are mainly public financed with a mixed service provision (public, private, NGO). The delivery of services at territorial level is organized mainly through a network of Social and Health Care Districts. These facilities unite social and health care functions; they were established in several regions according to the Law 328/2000 that defines the framework for the integration between social fields and health aspects.

The legislation of Campania region in healthcare and social systems has supported the NCO cooperatives development by allowing them to manage health, social and educational services and other activities (agricultural, industrial, commercial and service) aimed at helping vulnerable persons, thanks to special agreements with the local authorities that define personalized care programs with specific budgets. These agreements identify individual plans and objectives based on the evaluation of personal needs, and the social and health services needed to reach them.

The collaboration between NCO cooperatives and territorial authorities of healthcare and social systems plays a key role for the cooperatives activities. These innovative collaborations, establishing a co-management of health services, present a great challenge for both social cooperatives and public authorities to find and test innovative solutions for the care services provision. They imply continuous collaboration and knowledge transfer for problem solving, for testing new solutions and achieving desirable outcomes. However, cooperation between these actors is not always easy and sometimes it becomes conflictual due to differences in objectives and languages, bureaucratic problems and payment delays. Nevertheless, they are able to produce very positive impacts for users and local communities, enabling people to reach their full potential as individuals and community members. Among other things, community care solutions represent cost effectiveness and budget savings measures respect to public spending (Hassink et al. 2007, Sempik et al. 2010).

Forum Nazionale Agricoltura Sociale (Social Farming National Forum)

The *Forum Nazionale Agricoltura Sociale* is a national network built in 2011 to promote and facilitate knowledge and experience sharing between the very different actors involved in the care farming processes (framers, associations, families, disadvantage people, universities, local authorities, educational facilities, etc.). Within the national network, some regions also organized regional fora for social farming.

NCO is part of the Social Farming National Forum and in Campania promoted the creation of the regional forum. In fact, its regional representative is the president of NCO. The Forum is extremely important for knowledge sharing, allowing NCO cooperatives to learn from other experiences about the service provision (organizational form, agricultural activities, type of service offered, and relations with users), financing methods and business models, regulatory frameworks and any other relevant information to improve their organization. This is an essential opportunity to deal with innovative challenges posed by social farming and actively participate in the national debate.

Consumers

NCO market strategies focus on connecting social cooperatives and ethical consumers and citizens that show a willingness to pay for products with an added ethical value as forms of political/social engagement. Generally cooperatives prefer short food supply chains (including direct selling, farmers' markets, and Community Supported Agriculture groups), however they also adopt online selling.

Local communities and grassroots movements

Over time, the NCO cooperatives have reached closer relations with local communities despite initial mistrust, especially in regard to living with mentally ill people as evidenced by a member of the coop Agropoli: «At the beginning local people complained, they were afraid of "crazy" people, and then it happened that the police arrested a dangerous fugitive living right next to our apartment. People had more fear of the mentally ill people than of a dangerous Mafia member wanted throughout Italy».

NCO cooperatives also are part of the emergent network of grassroots movements that fight against social injustice and strive to obtain real democracy in the Land of Fires. Formal and informal ties facilitate the connection between cooperatives and movements. For instance, some grassroots committees establish the venue of their meetings in the cooperatives, or cooperative members are themselves part of committees. In addition, the grassroots movements consider the NCO as a concrete step toward the imagined future of an ecological society. Cooperatives and environmental movements promote in more

or less explicit ways mutually reinforcing activities for a cultural and physical re-appropriation of territory (Escobar 1998), acting in close relation with their community.

The struggle of these movements for social justice has led to the development and dissemination of an autonomous body of knowledge that questions the mainstream knowledge and makes a complaint against illegalities in the area. New narratives concerning the local history of pollution and health impairments were produced through the investigation of past and present contaminating activities and collecting personal histories of sickness.

With the involvement of scientific experts and by linking national and international networks, movements politicized the uncertainties and the biases of scientific knowledge, thus valorising the historical perceptions of environmental change experienced by local people. For instance, using simple technological devices and internet platforms, activists map the area to monitor environmental conditions and to make visible the land degradation. These strategies act as sources of knowledge production to propose solutions that cope better with the circumstances of their local communities and frame collective change efforts.

Local institutions

Cooperatives also have many relationships with local authorities and other bodies dealing with the allocation of land confiscated from organized crime, such as the Provincial Observatory for Security and Legality of Caserta, the Foundation Pol.i.s. -Integrated Security Policies- of the Campania Region. These relationships can be cooperative or conflictual. They mainly concern bureaucratic issues that may nevertheless influence the NCO innovation processes.

Libera and Libera Terra Mediterraneo

To promote the anti-Mafia culture, NCO works in close collaboration with local and national organizations. These formal and informal links, at local and national level, have been very relevant in supporting cooperatives in hard times, when, for instance, they received intimidation and damage by the Camorra. In some cases, these relationships are formalized with the official participation in committees or associations that fight against mafia, such as Libera.

"Libera. Associations, names and numbers against Mafia" was established in 1995 to support the fight against Mafia and organized crime. Thanks to this organization, Law n. 109/96 that allows the social use of assets confiscated from the Mafia was promoted in Italy. Libera is presently a network of more than 1600 regionally-based associations, groups, and schools. NCO cooperatives joined Libera and they are an integral part of its territorial units. Often, NCO members are actively involved in their management. Together with this association they organize several project and events, such as the volunteer work-camps, educational projects promoting democratic legality, activism against corruption, and actions against exploitation. This participation is extremely important to connect NCO to a national and well-known network, promoting knowledge acquisition and exchange beyond the boundaries of local community.

Libera also promotes the emergence of social cooperatives that cultivate the land confiscated from the Mafia. These cooperatives joined the consortium *Libera Terra Mediterraneo* (Free Land Mediterranean). It was created in 2008 and it brings together nine social cooperatives in Southern Italy. The Consortium supports its members in the production process and it directly manages the processing and marketing of agricultural products with a common brand: *Libera Terra*. These cooperatives also benefit from the

advisory support of the non-profit organization "*Cooperare con (Cooperating with) Libera Terra*". This is an association promoted by cooperatives and associations that are members of Legacoop and joined by subjects committed in the organic and quality production sector. It coordinates the global *Libera Terra* project and promotes the economic-entrepreneurial development of its members, providing several advisory services, including management consulting, business plans and budgeting, professional training, marketing, promotion and fundraising, while agronomic advisory services to the Libera cooperatives are directly provided by the consortium Libera Terra Mediterraneo.

In the Land of Fires there is only one cooperative that adheres to Libera Terra Mediterraneo: Le Terre di Don Peppe Diana. NCO cooperatives have different relations with this cooperative, sharing several promotional and commercial projects, as the initiative "Let's give Camorra a package" or the RES project (that is described below). However knowledge exchange, especially agronomic, is limited between them. Although they jointly participate in several official events, informal and everyday links are relatively rare.

While adhering to the association *Libera*, NCO cooperatives decided not to join the consortium *Libera Terra Mediterraneo (Free Land Mediterranean)*. This decision stems from the desire to be a local project aiming to keep closer links with local community and to have a full power of self-determination. For NCO cooperatives, the adhesion to Libera Terra could have resulted in an effective strategy to improve competitiveness, and to develop or stabilize their financial returns. On the other hand, this is a further proof that the strategy of cooperatives is not mainly driven by purely economic and commercial motivations.

Don Peppe Diana committee

Don Peppe Diana committee is a local association nurturing the legacy of a famous anti-Mafia priest killed by Camorra in 1994. The Committee encourages the reinforcement of anti-Mafia culture and community empowerment. It promotes legality, justice, and the social use of confiscated criminal assets to boost models of social economy as alternative to the criminal economy. Over the last years, the Association has organized several events (such as the Festival of Civil Involvement, conferences, projections, etc.) and sponsored projects (documentary production, training projects) to support knowledge exchange and the acquisitions of learning and skills to manage assets confiscated from organized crime.

The Committee performs brokerage functions in this network, supporting innovation by establishing ties, recombining and transferring knowledge and organizational assets, for instance the Committee promotes the initiative "Let's give Camorra a package" or the *RES – Rete Economia Sociale (Social Economy Network)* project.

Universities and public research institutes

NCO cooperatives have formal and informal links with regional Universities and research centers. For instance, the University of Salerno carries out the analysis of NCO products to check their quality and the absence of contaminants, while the Political Science Department of the University Federico II of Naples organizes a master's degree on the "analysis of organized crime phenomena and social strategies for reuse of confiscated assets". This involves NCO cooperatives through Libera and the Don Peppe Committee that support this initiative. Concerning agricultural knowledge, an interesting collaboration was established with the CRA-Centre for Research in Horticulture of Pontecagnano (SA) within the research project *Agritrasfer-in-sud*, a more complex project funded by the Ministry of Agriculture to support the transfer of research results and innovation to the agro-food sector in Southern Italy. In

Campania this project, coordinated by the regional AAS and carried out by the CRA of Pontecagnano, focused also on grain legumes to compare industrial and local varieties. Variety tests were carried out on experimental fields organized within the NCO cooperative "Al di là dei sogni". The consortium have hugely benefited from the results of experimental tests and from the connections activated with the Research Centre to improve the recovery of local crops and seeds.

Agricultural Department of Campania region

The Agricultural Department of Campania region carries out different activities that directly and indirectly influence knowledge and innovation processes of NCO coops, such as the technical support of the agro-meteorological and plant protection services, the promotion of social or organic farming, and the management of the RDP measures. These tasks are carried out through the regional AAS and also through other regional units. However, these are mainly promotional and information activities rather than technical advice.

Two NCO cooperatives (Al di là dei sogni and Fuori di zucca) are also educational farms and they are enrolled in the official register of educational farms of the Campania Region. They benefit from the communication and promotion programs specially established by the region on educational farming, among others, Campania region funds school educational projects and visits carried out in accredited educational farms. The Region also periodically organizes training courses that are attended by the heads of educational farms of NCO cooperatives. They proved very useful to obtain knowledge on legislation, practices and existing experiences.

Farmers' Unions

Each NCO cooperative adheres to a different local structure of the Farmers Unions (Coldiretti, Confagricoltura, CIA), depending on personal and historical reasons. The cooperatives do not receive agricultural technical advice from the Farmers Unions, but mainly knowledge and assistance related to tax, bookkeeping, legal services, administration and the management of EU subsidies. Moreover, local Farmers Unions participate actively in the promotion of the social cooperatives, especially to support their anti-Mafia activities and they are also partners in the RES project. Cooperatives also adhere to the Confcooperative Campania, who recently organized together a training course on social farming.

Accredited Certification Bodies for organic farming

In Campania there are about 11 bodies dedicated to certifying organic produce and products that, as independent accredited third party, are responsible for the inspection of all operators in accordance with (EC) Regulations 834/2007, 889/2008 and 1235/2008 relative to organic farming in the European Union.

Every farmer, processor and importer in the organic farming sector is inspected at least once a year to ensure their compliance with the regulation. NCO cooperatives, for personal and historical reasons, have chosen different certification bodies for their production, consequently they are followed by different inspectors, which however for each cooperative remains stable over time. Thanks to this continuity cooperatives establish a relationship of trust and cooperation with the inspectors who, in addition to their role of inspection, also provide agricultural advice. However, while in accordance with the rules the inspector can explain the organic regulations he is not allowed to provide advice on how to farm or how to overcome identified barriers to certification. Despite this, according to our interviews, inspectors of certification bodies represent a major provider of organic agricultural advice for NCO cooperatives.

Structural hole and network dynamic

The previous paragraph highlighted how this network brings together very heterogeneous actors working across several sectors or domains of knowledge, however we can identify a structural hole in it: the lack of specialised technical advice and extension services for organic farming. While there is a strong need for knowledge and skills required to run organic production successfully, in practice this demand is not met. According to the report of Italian Ministry of Agriculture this is a common problem in the Italian organic sector (MIPAAF 2013).

This lack of advice on organic production is especially true for small and medium farms, such as NCO cooperatives, which have limited access to private advisory services due to economic difficulties. They have limited experience in organic farming and hence need knowledge in this highly complex field, however, they have limited support and resources. That emphasizes the role that informal ties play in effective knowledge transfer in this network.

There is currently an attempt to institutionalize this network, formalizing the working relationships in a governance structure that would strengthen collaboration and facilitate the planning and implementation of joint actions. The "*RES – Rete Economia Sociale*" is an ambitious project founded with €889.200 by the *Fondazione con il Sud* (a bank foundation). It involves a network of 31 public and private organizations¹⁷ with the main objective to promote social economy through the use of property confiscated from the Mafia in eight municipalities of Caserta province. The focus is on the development of three main sector chains food, tourism and social communication, working to set up a "Joint Network Program" and a "Solidarity Fund" to provide financial support.

In July 2014, eleven enterprises (including NCO cooperatives) signed a network contract¹⁸ as part of the RES to enhance their innovative capacity and competitiveness. The document envisages a firm cooperation to achieve five main objectives: promoting and supporting an incubator for start-up of social enterprises using assets confiscated from criminal organizations; the creation and promotion of a collective brand "RES - Network of Social Economy - The Land of Don Peppe Diana"; the realization of an e-commerce platform; the creation and promotion of a Community Foundation; the development of sector supply chains, particularly agri-food chain, responsible tourism, social communication, renewable energy and other functional use of confiscated assets. NCO has been officially identified as the management body (Organo Comune) to carry out the activities in the network contract.

The project is still in the start-up phase that proves extremely slow and complex due to numerous actors involved with high transition costs. However, it represents an ambitious program of local development through a network that promotes the social economy as antidote to the criminal economy.

This project tries to establish a formal framework for a large part of the network that we have identified in this report. It could be a useful tool to enhance the economic sustainability of these initiatives and to

¹⁷ Such as the Province of Caserta, Camera di Commercio Caserta, Seconda Università di Napoli (SUN), the University Federico II, farmers unions, Legacoop Campania, Libera, Arci, Git Caserta, Banca Etica etc. – for further information: <http://www.esperienzeconilsud.it/res/scheda-del-progetto/>.

¹⁸ The network contract is a legal tool introduced into Italian legislation in 2009 aimed at enhancing collaboration among enterprises to increase their potential for innovation, research, and development. SMEs adopting the network contract access to specific financial aid measures and simplified administrative procedures.

improve their growing out of the niche. However fiscal and financial incentives related to network contracts are occasional and the risk is that a highly bureaucratic tool is created whose transition costs are higher than the real benefits.

5.2 Processes and dynamics to generate and exchange knowledge for co-innovation

This anti-Mafia network could be observed as a knowledge network within which effective knowledge sharing mechanisms enhance the capability of participants to learn and innovate effectively in several areas. For the purposes of this report we focus on the knowledge processes developed within this emergent network on farm practices. NCO cooperatives have a background in social and health issues, the subsequent integration of farming required the acquisition of new skills and knowledge. Practicing organic farming was and still is a major challenge for the Consortium.

Organic agriculture requires a strong cognitive investment in farm management and this is especially true in the Land of Fires. Adopting organic farming in this specific context, where it is at a very early stage of diffusion, represents a radical innovation in this system, moreover due to the lack of expertise on this subject in the local agricultural knowledge system. In addition, the common available agronomic knowledge about organic farming is frequently too general, therefore not sufficiently context-sensitive to be of any use in this very specific area. Consequently, NCO cooperatives are obliged to actively process this new knowledge in order to assimilate it, by experimenting with its application to new problem domains and environmental contexts.

NCO cooperatives are actively engaged in continuous experimentation and learning processes about organic farming that combine and enhance tacit ("...we can know more than we can tell... ", Polanyi 1966) and contextual knowledge (situated within a geographical, social and economic context, Becattini and Rullani 1993) with explicit knowledge¹⁹. These processes of social learning can be described by adapting the Knowledge Spiral as suggested by Nonaka and Takeuchi (1985). NCO cooperatives started with the internalization of contextual knowledge. At the beginning of their farming activity, each cooperative employed a local farmer to fill their agricultural knowledge gap. These actors work as bridges between cooperatives and local farming cultures; through them cooperatives acquired local knowledge and traditional skills. However, this solution was not sufficient to address the emerging knowledge needs of the organic food chain, because these farmers practiced conventional agriculture. Therefore, it was necessary to create new knowledge within the network and to channel it from outside.

Cooperatives are engaged in a process of socialization of knowledge: they learn from each other to accomplish tasks and solve problems. They are continually active in reciprocal exchange relations and imitation processes, empathizing the proximity as an important precondition for knowledge sharing, knowledge transfer and technology acquisition (Gertler, 1995). A key figure in the network for farm management is the president of the Cooperative *Un Fiore per la Vita*. As an agronomist, he was the only internal expert in agriculture at the beginning and he still represents an important knowledge source for the other cooperatives. They frequently seek his advice both regarding daily management and problematic issues.

¹⁹Polanyi stressed that explicit and tacit knowledge were not divided but should be seen rather as a continuum between wholly explicit knowledge and a wholly tacit form of knowledge. Above all, Polanyi saw that explicit knowledge indeed required tacit knowledge for its interpretation (Polanyi 1966).

In this network, incremental learning becomes available continuously over time, experimentation and testing are used to accumulate practical knowledge and experience through trial and error; the resulting knowledge is externalized via practice and routines and combined with other sources of knowledge. Finally, network actors internalize relevant available knowledge from external sources. Agricultural knowledge is mainly accessed through informal channels, such as from other external cooperatives or neighbouring farmers. These sources allow the NCO cooperatives to acquire the knowledge needed for conventional farming, but they prove to be inadequate for organic farming due to the lack of expertise on this subject. In addition, as mentioned earlier in the area there is a lack of specialised technical advice and extension services for organic farming.

The main sources of advisory work are the suppliers of plants and seeds. Over time cooperatives have selected common providers that offer relevant information and specific advisory services. Another important source of advice are the inspectors working in private control bodies for organic farm certification. Although there is a conflict of interest, they are a reference point when intervening in problem solving in matters of organic farming.

NCO also promotes the use of local seeds and traditional farming practices cooperating with local farmers and with public research centres. In this respect it was very important for the project to test local grain legumes in experimental field that the public research institute CRA activated inside the cooperative *Al di là dei sogni* in 2012 and 2013.

Organic farming involves knowledge needs that are not limited to the production stage, but also concern supply and distribution. Gaining consumers' trust and choosing correct sales and distribution channels are important issues associated with selling organic produce and they require special skills and knowledge. In order to overcome the bad reputation associated with the Land of Fires, NCO cooperatives not only adopted organic certifications, but they also have additional product safety certification.

NCO cooperatives learned through experience and by comparison with other sector operators to sell through the right channels. In the past, their organic products were also sold in conventional channels obtaining prices that were unable to cover their production costs. At this point, a strategic decision was to opt for transforming their production by investing in an internal common processing plant dedicated to organic production. It resulted in higher added value products that avoid the more complex fresh food supply chain.

Another important element is the involvement of outside actors in the network. Especially the external collaborations with consumers and with other outside networks, such as Libera or the National Forum of Social Agriculture, are not only providing access to different kind of knowledge but they allow an interactive process of knowledge sharing and creation with these actors.

This combination of 'inside-outside' sources of knowledge provides an important mix of relevance to enhance innovation processes that concern both the core network and the whole anti-Mafia network.

"Learning by interacting" is the engine of these innovation processes, based on formal and informal links. Strong, direct ties provide beneficial effects on information flows. They offer the conduits through which valuable information travels (Hägerstrand 1952) and avoid the lack of trust typical affecting this area. The primary basis for the creation of trust is informal ties based on the mutual respect of ethical values and a clear consistency between theory and practice. This trust in turn is crucial for knowledge sharing to take place in practice. However, also formal ties prove to be helpful for knowledge transfer and innovation, due to the involvement in co-innovation processes of institutions and other local stakeholders with which collaborative relationships are formalized. These repeated interactions build a

shared understanding that can in turn facilitate transfer of further knowledge also through informal channels. This suggests a synergistic effect between formal and informal ties that enhances the innovation capacity of this knowledge network.

All actors involved feel as part of a common project and this motivates them to invest in this joint program and to exchange knowledge, their sense of belonging represents the basis of this “associative approach” and “associative governance”.

NCO is a real Community of Practice, according to the definition proposed by Wenger, as “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.” In the NCO network we can find the three crucial characteristics that are required in order to be a community of practice according to Wenger: the domain, the community and the practice. NCO has “an identity defined by a shared domain of interest”, the “members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other”, developing “a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short, a shared practice.”

The strengths described in the preceding paragraph makes the selected network a good example for the European Innovation Partnerships. This experience also highlights how knowledge networks and communities of practice already exist in most contexts, even in frameworks characterized by negative social capital and conflicts. The first challenge of EIP policies is not to create them, but to simply clearly identify them, to make them visible to themselves and to the rest of the community, and to strengthen their potential.

5.3 The knowledge flows within the anti-Mafia network

Knowledge flows identified as relevant for the innovation processes of this case-study are depicted graphically in the Figure 1 below. It includes the main actors and their interactions as described in more detail in section 6.1.

Figure 1: The network map



6 The performance of the knowledge flows and identification of best-fit practices for advisory services

The emergent anti-Mafia network is the locus of co-innovation processes that work across several sectors and domains of knowledge. Considering only the Consortium NCO, we can identify several innovations relating to business management that can be synthesized in adopting the classical typology:

Product innovation: for instance the reintroduction of native seeds and plants; the introduction of various processed agricultural products; the provision of several innovative social and health services in partnership with local authorities.

Process innovation: such as the implementation of organic farming techniques; the introduction of processing plants for agricultural production; the experimentation of significant changes in the delivery of social and health services.

Marketing innovation: such as the introduction of NCO brand, the joint selling "Let's give a Camorra a gift", the adoption of innovative product promotion including an impressive symbolic dimension.

Organisational innovation: such as creation of the Consortium NCO with a joint management of several issues related to production, strategy and marketing; the implementation of innovative institutional and informal arrangements to cooperate with local and external stakeholders, and the creation of the RES.

These innovations bring many economic and non-economic benefits to NCO cooperatives. The multitude of advantages that come from their belonging to the network includes both aspects of their management (such as fair market prices for their products, access to new markets, strong customer loyalty, greater employment opportunities, etc.) and more political goals (such as opportunities to strengthen community bonds, economic and social growth in the community, etc.).

All these processes of innovation can be seen as parts of a common brand driver innovation process (Roscam Abbing 2010). The brand NCO, as already mentioned, mocks the acronym of an old local criminal organization (New Camorra Organized) and it deploys the Consortium in an explicit anti-Mafia strategy. The value of the NCO brand results from the alignment of actions, mission, values, identity, and image of the organization. This builds a clear and effective brand positioning. This brand is more than a means of external communication, as it becomes an internal and external source for strategic direction. It creates organizational cohesion, concentrates focus, and reinforces shared values, connecting what the company believes in and what the user values.

The symbolic dimension of NCO is incorporated in the so called "value laden information" (Renting et al., 2003), which includes the information related to the nature of the product, its provenance, the modes of production, its quality and also the struggle against the Mafia, the ethics and the inclusive job opportunities of the cooperatives. Consequently, their brand also represents a tool for the network to enhance common vision and values, which in turn support the joint project of *civic agriculture*.

Indeed, the benefits of this network extend beyond its boundaries, since its main objective is to promote an innovative local path of territorial development with the transition from criminal economy to social/ecological economy. Networking supports social innovations that are able to unlock local economic potential by overcoming local barriers/problems such as:

- *Limited access to land*, by managing and restoring assets and agricultural land confiscated from the Camorra;

- *Limited access to startup capital*, by mobilizing several sources of funding and donations through relations of trust and joint projects;
- *Unemployment and irregular/exploited work*, especially in the agricultural sector, by promoting fair and horizontal work relations, even with marginalized people;
- *Crisis of the welfare system*, by co-managing health, social and educational services with local institutions;
- *Mafia culture and social injustice*, by promoting anti-mafia culture and citizen empowerment through their daily actions and specific projects (such as volunteer workcamps, festivals, etc.);
- *Agricultural crisis and bad reputation of the production from the Land of Fires* by adopting organic certified farming and other mechanisms to build trust;
- *Illegal waste disposal* by land monitoring.

This network is engaged in a real process of revitalization and co-production of place, according to the vision of territory as a set of relationships, a relational space, instead of a mere physical space or geographical area (Dematteis 1985). The alliance between these actors aspires to define and share a new local community's self-narration, together with the implementation of new practices and the settlement of an ethical framework (including values, norms and rules).

As mentioned, the innovation capacity of this network is mainly based on a synergetic effect between formal and informal ties. This suggests that innovation may be enhanced by suitable combinations of both formal and informal knowledge sources that best fit local context. This experience reinforces also the idea that proximity is an important condition for cooperation, but also that the distance, as heterogeneity of subjects and contexts, is an important driver of innovation (Burt 2004).

The revolutionary challenges outlined still exist, and leave room for debate. Specifically, we would like to point out some critical limits and risks that are inherent in these processes. A critical key point is how to get out of a niche while maintaining full adherence to ethical principles and to the vision of community wellbeing. Indeed, systemic change as the transition from criminal economy to social/ecological economy calls for the growth and the consolidation of these experiences so as to reach that critical mass that would enable a new frame for the institutional setting. NCO cooperatives, as small-scale economic entities, are not very competitive. Their current challenge is to gain economic self-sufficiency on the market, while actually their main sources of income are the public contributions received from public health care for their rehabilitation activities. These public revenues are problematic because they are not continuous, and too often the payments are delayed.

Cooperatives see agriculture as the key to achieve complete economic sustainability compatible with a community well-being. In order to strengthen their agricultural activity, however, it would be important to have the support of an advisory system that provides reliable and relevant knowledge. So far, the structural gaps caused by the lack of an advisory system that caters for organic agriculture has been addressed through the use of informal channels and practices of self-experimentation, but the future availability of advisory services could have an important role in promoting a qualitative leap in the development of this experience.

7 Conclusions

In this report we argue that the emergent anti-Mafia network in the Land of Fires supports social innovations that "meets several social needs (more effectively than alternatives) and creates new social relationships or collaborations" (Murray et al. 2010). These processes go beyond care farming to evolve into a pathway of sustainable place-based rural development (Magnaghi, 2000).

This network supports systemic changes linking a very heterogeneous group of actors, including public (such as health services authorities, research institutes), private (farmers, local entrepreneurs) and civic associations (such as social cooperatives). These links allow to combine and deploy internal and external resources and knowledge in order to unlock the potential of local development. These innovations, working across a broad range of dimensions, act jointly to promote a transition from criminal economy to social/ecological economy.

The NCO is a typical example of "pooling forces to achieve breakthroughs" accordingly to the vision of the EIP. In addition, this experience of civic agriculture by networking presents a high level of ambition closely connected to the strategic objectives of the European Union. Indeed, it is fully consistent with the main objective of Europe 2020 strategy: to support a sustainable and inclusive economy with high levels of employment and social cohesion. For this reason, we consider that this emergent network could be a good example for the EIP to draw new solutions to critical social challenges, maximising social and territorial cohesion, via interactive innovation models that enable cross-fertilisation between heterogeneous actors and sectors.

The report puts forward a number of suggestions on how best to learn relevant issues from this case study, following the main research questions common to the topic 3 of PPRO AKIS WP4.

- **What features of the agricultural/rural networks enhance farmers' ability to co-innovate in cooperation with other actors?**

This network has a good balance between stability and flexibility that shows a beneficial effect on innovation processes. The *core network* is a stable organization with a clear strategy and objectives, while alliances built with the other actors are more or less mutable; they could include a broad spectrum of issues or be functional to a very specific aim. The boundaries of the entire anti-Mafia network are variable, but in both networks the entry of new actors is highly selective. Stability creates an enabling environment for trust, experimentation and long-term investments, whereas flexibility makes the network more dynamic allowing new combinations of knowledge and skills.

The network actors possess different levels of connectivity, particularly the core network has a high connectivity, based on interpersonal and professional relationships. We observed that high degrees of connectivity, together with high levels of commonality and trust, enhance effective communication and knowledge sharing, thus improving innovation capacities.

The adhesion to common and clearly stated anti-Mafia values is a crucial key element in binding actors together, creating a clear identity that enables cooperation and innovation. The Committee Peppe Diana plays an active role in this process of identity building, promoting shared concerns, values and common objectives. In practices, in this knowledge network the Committee assumes brokerage functions as 'boundary spanners' and 'bridge builders': it promotes mutual understanding, facilitates processes of social interaction, helps to address the issues of organizational change and facilitates the transfer of knowledge across different actors. In each cooperative there are strong, passionate and mutually accepted leaders that usually manage external relations, which in turn facilitates effective communication.

The combination of "distances and proximities" taking different forms (organisational, social, cultural, functional, or geographic) among the network's actors provides an important mix of relevance to enhance innovation processes. If proximity is an important precondition for knowledge sharing, knowledge transfer and technology acquisition (Gertler 1995), innovations are most likely found in heterogeneous group of actors through the connection of heterogeneity of knowledge (Burt 2004).

As pointed out in the previous paragraphs, other combinations relevant for the success of the network are the synergistic effects of formal/informal links, formal/informal knowledge and tacit/explicit knowledge sources.

- **Which are the influencing factors encouraging the farmers' enrolment in these types of networks?**

As resulted from our interviews, people involved in this emergent network are strongly motivated and very proactive. Members recognize that not only there is a clear benefit to belong to this network, but networking is a clear need: its ambitious challenge cannot be solved by any single organization, tools, sector, or knowledge domain.

The objective to promote a transition from criminal economy to social/ecological economy necessarily requires the cooperation of many actors, resources and activities. The primary motivation is clearly ethical: actors are mainly motivated by the NCO explicitly addressing social needs, building opportunities for the disadvantaged, and demonstrating that ethical livelihoods and lifestyles can also be sustained in difficult conditions. However, economic reasons are also important because agents clearly realize the economic advantages of cooperation: joining forces is crucial to avoid lock-in and overcome obstacles, such as access to land and to funds, or achieving greater visibility.

Especially in the agricultural sector, the activity of this network is crucial to regain the confidence of the markets in the presence of a very strong crisis exacerbated by the bad reputation of the Land of Fires. These advantages are evident so that many local farmers ask to become enrolled in the network.

In addition, this network has an effective mix of longer-term systemic targets and short-term operational goals. This network aspires to drive large scale and systemic change, its objectives are extremely ambitious and difficult to achieve in the short term, however, its strategy is to achieve a transition through small changes that produce visible effects even in the short term, keeping its ambition high. It

was extremely important that networking achieved early successes visible to members which motivated them to be jointly engaged on more challenging long-term projects.

- **How do networks link to existing knowledge infrastructures and advisory services? (Including unsatisfied knowledge needs, gaps in existing infrastructures and advisory services)**

This case study exemplifies the typical challenges that the multifunctionality of agriculture poses to an agricultural knowledge system, especially in the rural development framework where the diversity of rural actors and farming systems raises complex and dynamic knowledge needs. The social innovation processes described in this report result from a bottom up learning network, which mobilizes, creates and combines multiple sources and forms of knowledge (tacit and codified) rarely owned by only one organization/actor. At the same time, these processes create new knowledge needs that pose very complex challenges to the traditional AKIS, because innovation processes involve different aspects, sector and types of knowledge (practical, scientific, technical, organisational, etc) in an interactive and dynamic way.

This network brings together very heterogeneous actors within and outside the formal, institutionalized, AKIS, working across several sectors or domains of knowledge; however we underlined a structural hole: the lack of specialised technical advice and extension services for organic farming. While NCO cooperatives express a strong need for knowledge and skills required to run organic production successfully, in practice this demand is not met.

Cooperatives see agriculture as the key to achieve a complete economic sustainability compatible with community wellbeing. In order to strengthen their agricultural activity, however, it would be important to have the support of an advisory system that provides reliable and relevant knowledge. So far, the structural hole given by the lack of an advisory system specialized in organic agriculture has been addressed through the use of informal channels and practices of self-experimentation, but the future availability of advisory services could have an important role in promoting a qualitative leap in the development of this experience.

According to transition theory, to spread these practices on a larger scale, niche developments have to be linked to regime developments (Geels and Schot 2007). This implies greater efforts of traditional AKIS to adopt a territorial approach working across sectors and disciplines and to address the knowledge needs of small and diversified actors. The presence of small economic actors and public goods emphasizes the key role of policy and public services. However, this requirement has to comply with the financial constraints and the general divestment in public AKIS that are ongoing in Italy and in Campania region (Caggiano 2013).

Summarizing from this experience we can underline the following suggestions for enhancing the ability to co-innovate:

- A good network (e.g. operational group in the EIP) must strike the balance between flexibility and stability, between "distances and proximities" of its actors, between formal/informal links, tacit/explicit knowledge sources and interpersonal/professional relationships;
- High-level and mutually accepted leadership enables communication and relationship-building,

- Shared concerns, value and common objectives, as well as a clear identity of the network, play a key role to enable cooperation and innovation; accordingly it is important that a broker fosters identity building and a sense of belonging to the network. A critical step in this direction is to build trust among its actors;
- It is important to find the right balance between longer-term systemic targets and short-term operational goals, combining ambitious objectives of large scale and systemic change with practical objectives;
- Actors need to be motivated through a mix of economic and non-economic incentives; and
- A strong mission, together with a powerful vision, enhances the ability to work across several sectors or domains of knowledge.

Finally, the implementation of European Innovation Partnerships is a challenging task. In order to keep this tool flexible and to better suit local needs the EU is non-prescriptive regarding its practical implementation. However, in several contexts, policy makers and local actors are quite uncertain on how to deal with this opportunity, this case study highlights how knowledge networks and communities of practice already exist in most contexts, also in frameworks characterized by "negative social capital" and socio-economic conflicts. Therefore, we argue that the implementation of EIP networks and operational groups should not start from scratch, but it should build on existing practices and experiences, making them visible to themselves and to the rest of the community, and encouraging networking to strengthen their potential.

8 References

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