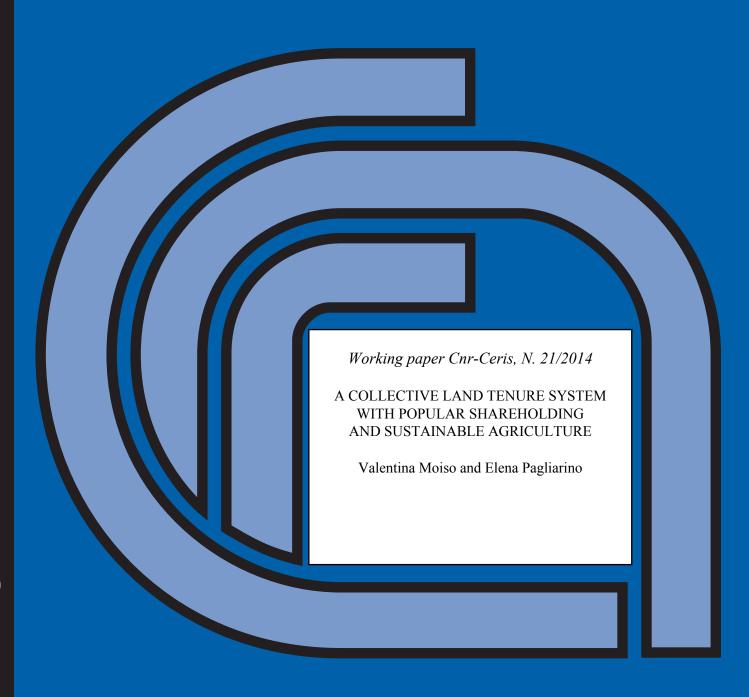


ISSN (print): 1591-0709 ISSN (on line): 2036-8216



Working Paper





WORKING PAPER CNR - CERIS

RIVISTA SOGGETTA A REFERAGGIO INTERNO ED ESTERNO

ANNO 16, N° 21 - 2014 Autorizzazione del Tribunale di Torino N. 2681 del 28 marzo 1977

> ISSN (print): 1591-0709 ISSN (on line): 2036-8216

DIRETTORE RESPONSABILE

Secondo Rolfo

DIREZIONE E REDAZIONE

Cnr-Ceris

Via Real Collegio, 30

10024 Moncalieri (Torino), Italy

Tel. +39 011 6824.911

Fax +39 011 6824.966

segreteria@ceris.cnr.it

www.ceris.cnr.it

SEDE DI ROMA

Via dei Taurini, 19

00185 Roma, Italy

Tel. +39 06 49937810

Fax +39 06 49937884

SEDE DI MILANO

Via Bassini, 15

20121 Milano, Italy

tel. +39 02 23699501

Fax +39 02 23699530

SEGRETERIA DI REDAZIONE

Enrico Viarisio

e.viarisio@ceris.cnr.it

DISTRIBUZIONE

On line:

www.ceris.cnr.it/index.php?option=com_content&task=section&id=4&Itemid=64

FOTOCOMPOSIZIONE E IMPAGINAZIONE

In proprio

Finito di stampare nel mese di Dicembre 2014

COMITATO SCIENTIFICO

Secondo Rolfo

Giuseppe Calabrese

Elena Ragazzi

Maurizio Rocchi

Giampaolo Vitali

Roberto Zoboli

Copyright © 2014 by Cnr-Ceris

All rights reserved. Parts of this paper may be reproduced with the permission of the author(s) and quoting the source.

Tutti i diritti riservati. Parti di quest'articolo possono essere riprodotte previa autorizzazione citando la fonte.



A collective land tenure system with popular shareholding and sustainable agriculture**

Valentina Moiso*, Elena Pagliarino

National Research Council of Italy Institute for Economic Research on Firm and Growth CNR-CERIS Collegio Carlo Alberto - via Real Collegio, n. 30 10024 Moncalieri (Torino) – ITALY

*Corresponding author: v.moiso@ceris.cnr.it

+39 011 68 24 948

ABSTRACT: The Italian land structure displays some features which make access to land difficult for many farmers, in particular young people who have not received land by intergenerational transmission and who want to engage in alternative and sustainable agriculture. In Europe, innovative experiences facilitate the leasing of land for agricultural use, promote multifunctional agriculture, organic farming and short chain and, indirectly, counteract soil consumption and loss. These are forms of collective shareholding: the companies, which have small investors as their shareholders, own the land and lease it to farmers with long-term contracts. Similar solutions are in the planning phase in Italy, but they struggle to take off because of generally unfavourable structural and regulatory conditions. This article presents a preliminary overview of these experiences, highlighting risks and opportunities related to their different characteristics.

KEYWORDS: access to land, land tenure systems, sustainable agriculture, short chain, soil consumption, collective shareholding, alternative finance.

JEL CODES: Q14, R51, R52, Z13

^{**} We wish to thank Bruno Giau, Silvia Novelli, and Giuliana Strambi; the contents of this manuscript are the sole responsibility of its authors. The analysis draws on material collected thanks to the fellowship "A fund for the land" (Un fondo per la terra) founded in 2012 by the Fondazione Culturale Responsabilità Etica, the research is lead by a working group operating at CNR-CERIS of Moncalieri (TO). The paper was accepted at the ERSA 54° Congress, St. Petersburg 26-29 August 2014, Session on Natural environment, resources and sustainable development.



CONTENTS

1.	Introduction	5
2.	Popular shareholding originating in the so-called «everyday peasant politics»	6
3.	The Italian land structure	8
4.	Popular shareholding in Italy: a first comparison based on three main aspects	9
5.	Conclusions	11
Re	eferences	12



1. INTRODUCTION

etting up and effectively managing a farming enterprise requires the availability of a suitable *land base*, which is not easy to achieve in Italy due to extremely limited intergenerational transmission.

The two viable alternatives – i.e. renting or purchasing land – display some advantages and disadvantages related to Italy's peculiar land structure¹.

The purchasing of farmland is made difficult especially because of its great value (Tab. 1, see. Cardillo *et al.* 2012) but also because of the large number of owners with very small estates, often divided into several plots or abandoned.

The rental of farmland makes it possible to avoid investing large amounts of money, which can thus be used to increase the enterprise's working capital or to make improvements to the land, provided that this is done within a long-term strategy, allowing the entrepreneur to recover the resources invested.

Yet, this method, which might also facilitate access to land by young people, is often met with hostility by land owners, worried that they might, for instance, lose their rights of enjoyment due to a regulatory framework generally deemed imbalanced in favour of the lessee.

Furthermore, the Italian regulations, which have been elaborated over time in order to reorganise the land structure and promote the reclamation of unfarmed lands for production purposes, seem to indicate that Italy lacks fully-fledged policies aimed at rewarding the productive use of land, while also avoiding, at the same time, the use of fertile lands for purposes other than farming (i.e. the so-called soil consumption) or their abandonment.

For example, Article 846 concerning the minimum agricultural unit has remained dead letter, Law 444/1977 on reclaiming uncultivated, abandoned, or under-cultivated lands has achieved poor results, and the Draft Stability Law for 2014 eliminates any subsidies and tax breaks for the purchase of lands subject to an *indivisible parcel* limitation². The research constituting the basis for this article analyses an innovative instrument aimed at facilitating the leasing of farmland to farming enterprises.

This instrument involves the establishment of a subject tasked with gathering from small investors the financial resources needed to bring together sufficient farming areas (purchasing lands, obtaining usage concessions, managing donations, etc.), in order to lease them to farming entrepreneurs, while also ensuring the creation of units suitable for the chosen cultivations and supporting sustainable projects.

5

¹ The other available methods to acquire land are: acquisitive prescription (usucaption), emphyteusis, and usufruct.

² Art. 5 bis, Legislative Decree no. 228/2001.

	NORTH-WEST		CENTRE		SOUTH	
	2000	2010	2000	2010	2000	2010
Inland mountains	10.0	5.0	12.7	7.6	11.7	6.7
Coastal mountains	25.3	26.0	19.6	10.3	19.2	10.0
Inland hills	30.0	21.2	19.4	11.3	18.3	10.7
Coastal hills	64.4	77.0	27.6	16.8	28.2	16.5
Plains	49.9	34.9	37.0	19.9	26.4	15.1

Tab. 1 Land value per hectare in Italy (thousands of Euro)

Source: INEA (2011)

This is a form of *collective shareholding*, a solution based on $alternative^3$ and participative finance, which has already been adopted in some European countries (especially France and Germany) but is struggling to develop in Italy also due to arising from the regulatory difficulties framework.

The following paragraphs deal with the theoretical and methodological approach, then present the main problems of the Italian land structure and describe the first cases of collective shareholding in Italy.

2. POPULAR SHAREHOLDING ORIGINATING IN THE SO-CALLED *«EVERYDAY PEASANT POLITICS»*

The literature concentrates especially on regulatory actions in the agricultural sector, i.e. taxation and law factors which have an impact on land mobility, identifying a series of measures which should make the sale and purchase of lands easier. More recent studies, however, underline the need to draw attentions to politics aspects - how power is distributed among the actors involved in a conflict over a given issue, such as, for instance, the intended use of a plot of farmland – in combination with *policy* aspects - the designing and application of public policies (Saturnino M. Borras 2009; see Van Der Ploeg et al. 2000). In other words, farming politics can be divided into three broad categories:

 - «official politics» which gives rise to fiscal and regulatory actions;

³ The Italian world of *ethical* financing, in the narrower sense of the definition, acknowledges the seven principles of the 1998 Manifesto of Ethical and Inclusive Finance and attaches great importance to the «socially relevant ethical objectives» of the individuals and enterprises with which it operates. It is a niche sector, comprising 60 organisations in Italy, with 230 staff members and 300 volunteers, for a total added value of 11 million Euro (Obi-One 2009). The field can be extended by adopting the broader definition of useful financing (Messina and Andruccioli 2007), which also includes operators dealing with local financing, cooperatives, and non-profit organisations, characterised by «a different way of conceiving the exchange relationships between those who have and those who do not have liquidity (...) placing emphasis on relational networks and not only on asset guarantees (...) and conceiving itself as an instrument for human and social development» (Messina and Andruccioli 2007, 9). In this case, the data available before the financial downturn included in this broader sector around 450 banks, with 30,000 employees and 5 billion Euro/year added value (Obi-One 2009).



- «everyday peasant politics», i.e. changes to the regulations ascribable to actions directly initiated by the farmers and by the social actors with whom they interact;
- «advocacy politics», targeted and organised actions to demand appropriate advocacy, for instance through strikes and demonstrations.

In the world of agriculture, the second type of politics plays a crucial role. As a consequence, studies focusing solely on the analysis of official regulations lose sight of the farmers' everyday actions and of the relationships existing within the so-called *rural network*, a multidimensional entity made up of individuals, activities, sectors, resources, and enterprises through which the implementation of official reforms is processed (Pérez-Vitoria 2007).

For what concerns land mobility, one of the most interesting phenomena which can be ascribed to everyday peasant politics is the diffusion, at the European level, of initiatives aimed at facilitating access to land by young alternative farmers through financial instruments (Rioufol e Volz 2012; Moiso 2012; Moiso and Pagliarino 2013). These are forms of collective shareholding, which see the direct involvement of small investors -i.e.families of money savers -, who are offered the opportunity to purchase farmlands that will be assigned to farmers. Land ownership is, in this case, collective, neither public nor private, following the age-old custom - which is, however, not recognised by the Italian Constitution - of civic usage and collective properties (Nervi 2003). Hence, the leasing of farmlands takes on a crucial role, since the landbase of a farming enterprise is no longer seen as its "baggage", something difficult to change, but rather as a variable factor on

which the farmer can intervene depending on the type of crop and cultivation methods he/she intends to adopt. As a consequence, those potentially interested in this opportunity are not only farmers who do not possess any initial landbase but also farming entrepreneurs who want to increase the size of their business or implement production restructuring actions.

Α key element for the economic sustainability of these initiatives determining the share of interests to be awarded to the small investors involved. In some cases, no capital yield is envisaged; in other cases, the investors are presented with other options such as, for instance, using the products from the lands being farmed. As for the reasons why savers might invest their money to support these initiatives in exchange for a partially alternative yield, no specific analysis is available, but it is possible to detect some similarities with the phenomenon of cultural consumerism (Sassatelli 2004; see Moiso 2011). Having distanced themselves from speculative finance and feeling scared by the economic downturn and countless financial scandals, families might stimulated to invest their savings in projects strongly linked to the real economy and perceived as "clean and green", i.e. as having beneficial effects on human health and as promoting sustainability in social environmental terms (Brunori et al. 2008; see Froud et al. 2010; Gallino 2011). The allocation of money to endorse alternative projects - a niche experience unlikely to be supported by traditional banking institutions – is a growing trend confirmed by the popular phenomenon of crowdfunding (Castrataro and Pais 2013). Focusing now on the specific cases investigated here, the experiences of Terre de Liens (France) and Regionalwert AG

(Germany) confirm that these initiatives have good chances of success⁴: thanks to the contribution of small investors, Regionalwert AG has acquired around 230 hectares of land, while *Terre de Liens* has 2,500 hectares of land farmed by 200 farmers.

These project can be initiated by local committees, thus following a bottom-up approach, or be implemented according to a top-down model by a third party, such as a banking institution or a national organisation, whose duty is to coordinate the activities and monitor their economic, environmental, and social sustainability. This also helps to voluntaristic overcome the naive and approach which often characterises new agricultural enterprises, thoroughly assessing the feasibility of their entrepreneurial idea and monitoring in particular the abovementioned but often overlooked coherence between available lands and types of crops chosen.

Starting by the analysis of these projects, the main purpose of our research is to remove the obstacles preventing farms from growing and reaching a suitable size for their business activities. Especially when local environmental conditions limit the range of viable crops, the lands available for farming become a crucial element for economic success in this sector. Furthermore, limited mobility seems hinder land to development of new farming enterprises - in particular, those managed by young farmers⁵

 and deny small entrepreneurs the opportunity to access lands to be used for agricultural activities geared towards greater sustainability.

This paper is a result of the first step, aimed at knowing the Italian main problems and also the other realities with the same purposes that our already operative in Italy.

3. THE ITALIAN LAND STRUCTURE

In Italy, the lands managed by farming enterprises – defined as its *landbase* and not as its *land assets*, which refers to much more than the mere plots of land – display some peculiar characteristics ascribable to limited *land mobility*, which has a negative impact on the performance of existing farming enterprises and on the setting up of new ones.

Data from the most recent Agricultural Survey (ISTAT, National Institute for Statistics, 2010) concerning the physical size of Italian farming enterprises and the number of plots of land (or *land units*) confirm the existence of two main phenomena: a tendency towards farmland concentration⁶ and the persistence of enterprise fragmentation – more noticeable in the case of large enterprises or

8

⁴ Parallel projects have recently been implemented across Europe, for example *Terre-en-vue* in Belgium, and other organisations have been set up following similar principles, such as the *Soil Association* in the United Kingdom.

⁵ Thus partially neutralising the positive effects of support measures targeting these categories, especially the measures on land settlement included in the Rural Development Programmes of the European Union.

⁶ More than half of the farming enterprises with size under five hectares are made up of one or two land units (respectively 83% of farming enterprises under one hectare and 61% of farming enterprises with size between one and five hectares), whereas farming enterprises with size over five hectares are more fragmented, with a greater frequency of two or six-ten land units. Since the 1980s, the number of farming enterprises having a Utilised Agricultural Area (UAA) under 20 hectares has decreased by half, whereas the number of farming enterprises with UAA above 20 hectares has grown (in particular, there has been an increase in the number of farming enterprises with UAA between 50 and 100 hectares).



enterprises in mountain areas – combined with considerable distance among the different plots (the so-called land *dispersion*).

These phenomena hinder land mobility, along with other factors of a different nature, such as:

- economic factors, among which: already mentioned high price of farmland units; uses other than farming (soil consumption due to the urge to build residential and commercial complexes and, more recently, facilities for the production of energy, such as photovoltaic stations); the nature of farmland as a store of value, which leads to land immobilisation by nonowners; and farming a difficult relationship with the credit system, along with problems in accessing bank loans.
- political factors, among which the distorting effect of EU bonuses (see Ciaian et al. 2008).
- legal factors, in particular contractual rules and repeated alterations to the legislative framework of reference.
- fiscal factors, among which: a taxation criterion, applied to a portion of farming enterprises, based on land registry information, i.e. land ownership, rather than on actual income; the inheritance system; tax breaks for the purchase of farmland; and the introduction and subsequent elimination of a property tax (the so-called IMU).
- social factors, among which the following can be included: informal relationships between land owners and lessees; local conflicts among groups with contrasting interests regarding the different intended uses of farmlands; and urgent matters concerning how farming enterprises and land are handed down to the younger

generations, linked to the old age of farmers, the absence of successors, and land abandonment, with consequent deterioration of the landscape and the environment due to lack of human presence and care⁷.

4. POPULAR SHAREHOLDING IN ITALY: A FIRST COMPARISON BASED ON THREE MAIN ASPECTS

Italy has recently seen some attempts at developing popular shareholding initiatives with the purpose of facilitating access to land. The main difference among the three initiatives investigated here concerns their type of business entity: one is a cooperative, one is a participatory foundation, and one is a joint stock company⁸. They are compared below on the basis of three main aspects: the networks of actors created, the distribution of power within each of these organisations, and the level of trust they are able to activate.

The cooperative was established by a local promoting committee, thus following a bottom-up approach, and it has strong links with the local community. The actors involved simultaneously play a range of different roles, since they are members and financial backers of the cooperative, as well as consumers. This feature facilitates the building of interpersonal trust, an important element to ensure long-term cooperation

⁷ In the more marginal rural areas – for instance, in mountain areas – the institutions which try to implement land reorganisation actions often find it difficult to contact the owners of non-cultivated agricultural plots of land.

⁸ As explicitly requested by some of the subjects involved, the names of the organisations are not quoted due to the embryonic state of their initiatives.



among the actors involved. On the other hand, the small size of the cooperative causes its political relations to be limited to the local level and prevents it from influencing regional development plans.

As for the participatory foundation, this legal form is not explicitly regulated by the Italian Civil Code and it falls somewhere between a foundation and an association, the displaying some of limits opportunities of both. The participatory foundation was established on the basis of a top-down approach: it created a network of pre-existing national associations and companies with consolidated reputation among their members and customers. The purpose is to facilitate the turnover of small investors participating in the project, thus making their long-term commitment less crucial, and to enable the activation of preexisting communication channels for lobbying activities at the national level. However, this might jeopardise the reputation of the foundation niche among consumer movements.

The joint stock company has registered a trademark and elaborated organisational protocols detailing its operations, which must be accepted by all its members. At present, it does not consider it a priority to establish relationships with political decision-makers.

For what concerns the distribution of decisional power, in the cooperative this is equally shared among its members according to the *one head one vote* principle. The general assembly of its members decides how the lands should be allocated and can even vote to change the intended use of certain plots of land if the majority no longer supports the original project. In order to avoid this situation and to prevent the development of

major internal struggles, the setting up of the cooperative required long and intense preliminary negotiations to build up its social base. The promoters of the initiative want to establish *close links* with potential members, in order to be able to assess their attitude and protect themselves from the risk of "hostile takeovers", i.e. the chance that the managerial board might fall into the hands of actors whose aims are different from those of the original group. The cooperative does not share out its profits, which must be completely invested in its main activities; however, its members enjoy alternative financial yields⁹, equally distributed among all those involved.

The nature of the participatory foundation makes it possible to render the purpose of its business unmodifiable, thus preventing changes to the intended use of the farmlands. Furthermore, this solution ensures more flexible voting rights, distinguishing among different types of members enjoying varying degrees of decisional power. Hence, it is possible to separate the power of money from the power to manage the farmlands: most shareholders do not decide directly how the lands should be allocated but simply monitor the actions of the less numerous managing members. This principle has also been adopted by Terre de Liens, but it is heavily criticised by the promoters of cooperatives, due to limited participation by the small investors involved in the project as a whole.

The approach adopted by the joint stock company is diametrically opposite, since the enjoyment of voting rights varies depending on the financial contribution of each member. The capital invested is awarded a 12.5%

10

⁹ By means of the so-called 'free share capital increase', the members are granted a revaluation of their shares in the undertaking.



yearly yield. Like voting power, earnings also vary depending on the financial capabilities of each member.

Trust plays an important role in ensuring the economic sustainability of these initiatives and the quality of the products grown by the farmers renting the lands.

As partially explained above, the crucial point is to stimulate the participation and cooperation of different subjects, making sure that they will support a common objective for a relatively long period of time, in order to allow the business-agricultural enterprise to fully develop and achieve economic stability. In other words, the target is to accumulate patient capital – just like in the typical case of start-ups -, so that the projects will be able to grow and reach their full potential. This objective can be achieved by pursuing a wide range of strategies and trust is paramount especially in the case of the cooperative, as it implies the building up of strong, long-lasting relationships with local actors relying mainly on interpersonal trust. In the case of the participatory foundation, it is possible to the render the purpose of business unmodifiable, thus making the development of the project as unconnected as possible to the social make-up of the actors involved. Similarly, the joint stock company has put in place economic disincentives and limitations on the withdrawal of capitals during the early years of operations.

As for the methods to certify product quality, the cooperative has implemented participatory guarantee systems, the participatory foundation relies on official organic certifications and trademarks, whereas the joint stock company has devised a standardised production protocol, which can be replicated across all production units. In

the latter case, the characteristics of the project cannot be influenced by the network of subjects involved, and said network is important only in order to promote the initiative. On the contrary, resorting to official certifications mostly stems from the participation of businesses growing certified organic products, and networks take on a much more significant role in determining the characteristic of the projects supported.

5. CONCLUSIONS

In Italy, the implementation of popular shareholding actions aimed at making access to land easier for farmers – in particular young farmers and those who want to engage in sustainable agricultural projects – revolves around the activities of three main types of subjects, with different characteristics for what concerns their legal form, their inner workings, and the degree of involvement envisaged for small investors.

The three solutions analysed here – a cooperative, a participatory foundation, and a joint stock company – have adopted different strategies to prevent conflict among the subjects involved and to lead them to cooperate, in order to ensure the operational continuity of their projects until economic sustainability is reached. This is an essential element to allow the achievement over time of the results set by the projects in terms of social and environmental responsibility However, the above is no easy task, as confirmed by the fact that, at present, the only fully operational organisation is the joint stock company, the most standard and least participative of the three initiatives.

The Italian land structure and regulations make it harder to set up organisations similar



to the ones that have already been operating in other countries for some time. The latter have proven to be effective in curbing land consumption and limited land mobility, as well as in supporting the development of sustainable and multifunctional agriculture. Given the extent and complexity of the topic, the reasons for these difficulties should be investigated in detail by means of interdisciplinary researches, in order to provide the operators concerned with answers and reliable guidelines to overcome them.



REFERENCES

- Brunori G., Guidi F., Lari A., Rossi A. (2008). Consumatori consapevoli e sviluppo sostenibile: riflessioni sul cibo. *Sociologia Urbana e Rurale*, 87: 171-187.
- Cardillo C., Gabrielli G., Gioia M., Mari F. (2012). Il valore della terra. Un contributo alla conoscenza del mercato italiano dei terreni agricoli attraverso i dati della RICA, Quaderno INEA.
- Castrataro D., Pais I. (2013). *Analisi delle piattaforme italiane di crowdfunding*. Italian Crowdfunding Network: italiancrowdfundingnetwork.org.
- Ciaian P., Kancs D., Swinnen J. (2008). Study on the functioning of Land Markets in the EU Member States under the influence of measures applied under the Common Agricultural Policy. Centre for European Policy Studies (CEPS), Brussels.
- Froud J., Johal S., Montgomerie J., Williams K. (2010). Escaping the Tyranny of Earned Income? The Failure of Finance as Social Innovation. *New Political Economy*, 15, 1: 147 164.
- Gallino L. (2011). Finanzcapitalismo. La civiltà del denaro in crisi. Torino:Einaudi.
- Inea (2011). Annuario dell'agricoltura Italiana. Volume LXIV, Roma: Istituto Nazionale di Economia Agraria.
- Manifesto della Finanza Etica (1998). promosso in occasione del Convegno *Verso* una carta d'intenti per la finanza etica italiana, Firenze.
- Messina A., Andruccioli, P. (2007). *La finanza utile*. Roma: Carocci.
- Moiso V. (2011). I fenomeni finanziari nella letteratura sociologica contemporanea: l'emergenza di nuove prospettive. *Stato e Mercato*, 92: 313-342.

- Moiso V. (2012). *Un fondo per la terra*. Rapporto di ricerca Fondazione Culturale Responsabilità Etica.
- Moiso V., Pagliarino E. (2014) La gestione collettiva dei terreni tra azionariato popolare e agricoltura sostenibile, in Culture della sostenibilità, n. 13/2014, pp. 202-211. ISSN 1972-5817.
- Nervi P. (2003) (a cura di) *Cosa apprendere* dalla proprietà collettiva. La consuetudine fra tradizione e modernità. Padova: Cedam.
- Obi One (2009). *Primo rapporto nazionale sull'altra economia in Italia*. Roma: rapporto Obi One (Open Business Ideas Open Network Economy).
- Pérez-Vitoria S. (2007). *Il ritorno dei contadini*. Milano: Jaka Book.
- Rioufol V., Volz P. (2012). Civic initiatives an Access to Land for Local, Sustainable Farmers in Western Europe. Wp on-line Die Agronauten, http://www.agronauten.net/de/publikationen.html (visitato il 24/10/2013).
- Sassatelli R. (2004), The political morality of food. Discourses, contestation and alternative consumption, in M. Harvey, A. McMeekin e A. Warde (eds.), Quality of Food, Manchester, Manchester University Press.
- Saturnino M., Borras Jr. (2009). Agrarian change and peasant studies: changes, continuities and challenges an introduction. *Journal of Peasant Studies*, 36, 1: 5-31.
- Van Der Ploeg J. D., Renting H., Brunori G., Knickel K., Mannion J., Marsden T., De Roest K., Sevilla-Guzmán E., Ventura F. (2000). Rural Development: From Practices and Policies towards Theory. *Sociologia Ruralis*, 40: 391–408.





Working Paper Cnr-Ceris

Download

www.ceris.cnr.it/index.php?option=com_content&task=section&id=4&Itemid=64

Hard copies are available on request, **please, write to**:

Cnr-Ceris
Via Real Collegio, n. 30
10024 Moncalieri (Torino), Italy
Tel. +39 011 6824.911 Fax +39 011 6824.966
segreteria@ceris.cnr.it www.ceris.cnr.it

Copyright © 2014 by Cnr-Ceris

All rights reserved. Parts of this paper may be reproduced with the permission of the author(s) and quoting the source.