

Review

Land Consolidation Associations and the Management of Territories in Harsh Italian Environments: A Review

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Received: 18 January 2018; Accepted: 9 March 2018; Published: 13 March 2018

Abstract: Land fragmentation is a phenomenon that reduces the mechanical management of agricultural and grazing lands and, consequently, leads to the abandonment of agricultural practices in harsh environments. It puts the agricultural and/or agro-pastoral businesses in a difficult situation as they have small surfaces to manage that do not allow for sufficient profit. Some worldwide land consolidation initiatives have been set up to reduce this phenomenon, such as land funds. In this context, this paper is dedicated to an Italian approach, which can be carried over to other realities, aimed at safeguarding and managing territories in harsh environments. This approach, known as the “Associazione Fondiaria (ASFO)”, which can be roughly translated as “land consolidation association”, consolidates small portions of abandoned land in a functional manner. Indeed, a land consolidation association not only stimulates new entrepreneurial agricultural activities, but is also able to create employment in depressed areas. A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was used to evaluate ASFOs, and their peculiarities were discussed.

Keywords: land consolidation association; sustainable land management; land fragmentation; abandoned land

1. Introduction

The phenomenon of land fragmentation has led to small property decline and is observed especially in harsh environments, due to the division and fragmentation of properties. Frequently, land fragmentation means that agricultural and/or agro-pastoral businesses do not have a large enough surface to manage to allow for sufficient profit [1,2], with obvious negative repercussions on the territory, leading to abandonment and a change in the ecosystem services rendered by meadows, pastures and forests [3]. Territories with problems and criticalities have been identified and labelled as marginalized and disadvantaged, when they represent an economic and social development that does not equal that of the surrounding territorial context [4–7].

This phenomenon has been an object of study the world over and is often seen as an obstacle to productivity and the modernization of agriculture. Although territory fragmentation is often associated with Europe, it has been documented the world over. Some examples can be seen in Taiwan, Malaysia, Japan, the United States, Kenya, Uganda, Peru and Mexico.

The absence of an international standard objective measure, related to the fragmentation of land, not only makes it difficult to compare countries, but also to decide when a farm is too fragmented.

It has been attested that inheritance is the root cause of the phenomenon of land fragmentation. Indeed, the inheritance laws applied in most countries facilitate, or require, equal division between all heirs. With the passing of generations, this has led to portions of land being increasingly divided up, creating very small pieces of land.

Small farms are the most important types of farms in many developing countries. FAO (Food and Agriculture Organization of the United Nations) reports [8] that Asian and African countries have the smallest average farm size, where 20/24 and 16/20, respectively, cover less than five hectares. Moreover, farms in almost half of the Central American and Oceanian countries are less than five hectares. The situation differs in South American and European countries, where 10/10 and 23/28 countries, respectively, have an average farm size of more than five hectares. In fact, the World Agriculture Census (WCA) of 2000 reported that the countries with the smallest farms in the world are in the Asia-Pacific region. The average size of a farm in Asia is about one hectare, compared to an overall average of 5.5 hectares for 114 member countries of the FAO. In the Pacific Islands, farmland ranges from 0.6 hectares in the Cook Islands to 3.6 in Samoa. Asian farms are traditionally fragmented; in fact, the average agricultural parcels per farm is 3.2 [9]. In some Asian countries, the percentage of small businesses with less than two hectares represents up to 90% of the total.

Although land fragmentation is often associated with European and Mediterranean countries, the phenomenon has been studied in many others; for example in South Asia, Bangladesh, Vietnam, China, Taiwan, Turkey, USA, Nepal, India, Ethiopia, Ghana and Rwanda, Israel, South Asian countries, Jordan, Peru and Syria [10].

The land fragmentation phenomenon can be reduced by various methods, i.e., land management approaches concerning land consolidation. Land consolidation, an important land management measure, is applied as a solution to land fragmentation and entails a reorganization of the space, with a new land ownership structure in terms of land parcels and landowners, as well as the provision of adequate infrastructures [11–13]. The most important land consolidation approach has been defined as land banking or land funds.

The first international meeting on land banking was organized by FAO and the Ministry of Agriculture of Denmark, at Tonder, in 2004. Jack Damen gave the definition of land banking during this meeting. It was a structural acquisition and temporary management of land in rural areas by a state agency, with the purpose of renting or redistributing land in order to improve the agricultural structure or to reallocate land for other purposes, with a public interest [14]. Indeed, the results of the implementation of land banking in Central and Western Europe have been reported in several studies [14–18]. Another approach is activated by the landowners themselves, when the process of land consolidation is managed by a landowner who is not interested in extending the land, but rather in allowing the land to be used by other farms. This type of cooperative agriculture involves a joint land cultivation by a group of farmers [19,20]. This voluntary land exchange amongst landowners is more efficient as the goal is to group the neighboring lots of each landowner.

In this context, the competitiveness of agricultural and agro-industrial systems is one of the objectives set by the European rural development policy [21–24], and it is closely related not only to the improvement of land management, but also to the environment. Indeed, several fields of activity have been identified for the environment, like that of improving the living conditions in rural populations [25,26]; local product sale practices [27–29] and creating an integrated exploitation of human, natural and cultural resources, including landscaping and quality production [30–37].

European policies acknowledge that agriculture follows differentiated development paths, depending on the territory involved. Just how diffuse agriculture is and its economic and social importance can be measured according to various aspects. These include the relationship to the population occupied within the sector, the number of existing production units, the economic value of agricultural production and the role that these productions play in the local economy. In this context, farm concentration, relating to the aggregation and extension of medium-sized businesses [38], is functional for the modernization of production processes and can be considered a consequence of

modified patterns of agricultural activity management and economic remuneration. The various regional contexts differ and also depend on the specific characteristics of the resources available.

Marginal areas have significant weaknesses, which, if not adequately mitigated by policies, aimed at revitalizing the productive, social and cultural texture, may well represent a threat to the enhancement and safeguarding of these territories [5]. For example, farms are exposed to the effects of many environmental and climatic limitations, which impede the establishment and development of activities.

In this context, land fragmentation contributes to the restriction of the development of the agricultural and forestry sector, as well as the ability of single businesses to reach an adequate economic dimension. In light of the aforementioned information, it can be seen that the Italian land consolidation associations (Associazione Fondiaria—ASFO) make a valuable contribution to the territorial management of disadvantaged areas reducing land fragmentation.

2. The Phenomenon of Land Fragmentation at an EU Level

The fragmentation of territorial ownership is a widespread phenomenon at a European level. A useful unit of measure for fragmentation is the Utilized Agricultural Area (UAA). In 2010, the average UAA of European farms was 14.1 hectares, and in countries such as the United Kingdom and Denmark, the value exceeded 60 hectares. On the other hand, Italy is characterized by a widespread fragmentation, with an average UAA value of 7.9 hectares, which is higher than the values recorded in Slovenia (6.5), Croatia (5.6), Greece (4.8), Romania (3.4) and Cyprus (3.0), but lower than those of all the other 28 EU Countries. The relationship between the UAA and the number of enterprises shows territorial differences: apart from the average 152 hectares for farms in the Czech Republic, the states with the largest enterprises include: the United Kingdom, 84 hectares, Slovakia, 78, and Denmark, 63. Amongst the other EU members, Germany has an average UAA of 56 hectares per farm, France 54 and Spain 24 [38,39] (Table 1).

Table 1. Structure index by country: years 2000–2010. UAA, Utilized Agricultural Area.

Countries	Farms, Year 2000	Farms, Year 2010	UAA (ha), Year 2000	UAA (ha), Year 2010	Average UAA Per Farm (ha), Year 2000	Average UAA Per Farm (ha), Year 2010
Italy	2,153,720	1,620,880	13,062,260	12,856,050	5.5	7.9
Austria	199,470	150,170	3,388,230	2,878,170	16.9	19.2
Belgium	61,710	42,850	1,393,780	1,358,020	22.6	31.7
Denmark	57,830	42,100	2,644,580	2,646,860	45.7	62.9
Finland	81,190	63,870	2,218,410	2,290,980	27.3	35.9
France	663,810	516,100	27,856,310	27,837,290	41.9	53.9
Germany	471,960	299,130	17,151,560	16,704,040	36.3	55.8
Greece	817,060	723,010	3,583,190	3,477,930	4.4	4.8
Ireland	141,530	139,890	4,443,970	4,991,350	31.4	35.7
Luxembourg	2810	2200	127,510	131,110	45.4	59.6
Netherlands	101,550	72,320	2,027,800	1,872,350	19.9	25.9
Portugal	415,970	305,270	3,863,090	3,668,150	9.3	12.0
United Kingdom	233,250	186,660	15,798,510	15,686,440	67.7	84.0
Spain	1,287,420	989,800	26,158,410	23,752,690	20.3	24.0
Sweden	81,410	71,090	3,073,200	3,066,320	37.7	43.1
EU 15	6,770,690	5,225,340	126,790,810	123,217,750	18.7	23.6
Bulgaria		370,490		4,475,530		12.1
Cyprus		38,860		118,400		3.0
Croatia		233,280		1,316,010		5.6
Estonia		19,610		940,930		48.0
Latvia		83,390		1,796,290		21.5
Lithuania		199,910		2,742,560		13.7
Malta		12,530		11,450		0.9
Poland		1,506,620		14,447,290		9.6
Czech Republic		22,860		3,483,500		152.4
Romania		3,859,040		13,306,130		3.4
Slovakia		24,460		1,895,500		77.5
Slovenia		74,650		482,650		6.5
Hungary		576,810		4,686,340		8.1
New members		7,022,510		49,702,580		7.1
EU 28		12,247,850		172,920,330		14.1

Source: Authors' elaboration on [38–40].

The size of an enterprise depends both on the shape of the land itself and its use. The largest farms are those for the cultivation of arable crops in the major plains of Central Europe; whilst permanent cultivation, typical of Mediterranean countries, covers smaller surfaces as more substantial investments are required [41]. However, in Italy, the average size of farmland increased in the period 2000–2010, shifting from 5.5 hectares of UAA per company to 7.9 (+44.4%). This is due to a sharp reduction in the number of active farms and livestock companies (−32.2%), which is reflected in a drop in the less cultivated areas (−2.3%) [38,40].

The impact of community policies and market trends has led to numerous small businesses leaving the sector, favoring the concentration of agricultural and zoo-technical activities into larger units, thus reducing the gap between Italy and the European average [38]. The average corporate size in terms of TAS (Total Agricultural Surface) is also higher than it was in 2000. In fact, there was an increase from 7.8–10.6 hectares [38,41].

As there are numerous Less Favored Areas (LFAs) in the European Union (EU), interest in this phenomenon is very high [42,43]. Currently, there has been a rise in the abandonment of agricultural areas in the EU (−2.82% of UAA, in the period 2000–2010), due to depopulation and a decline in traditional activities, leading to a reduction in economic, social and cultural systems in LFAs.

Indeed, numerous authors have reported that marginal areas have permanent natural handicaps due to topographic and climatic restrictions on the economic activities [4,7,42,43]. Therefore, land fragmentation is a current phenomenon, and territorial consolidation offers a solution to the safeguarding of territories.

Basically, there are three ways to obtain land consolidation, i.e., voluntary, mandatory or a hybrid of the two. Voluntary land consolidation has been carried out in countries like the Czech Republic, Denmark, France, Switzerland and the Netherlands. However, the process has, at times, been slow and has led to unsatisfactory results [44–46].

Mandatory land consolidation, i.e., that imposed by governments, has led to issues such as poor cooperation and landowner resistance. One such example is that of Slovenia, where the owners contested the government's decision to proceed with mandatory land consolidation. Another example is connected to the German land consolidation law that stipulates that the Land Consolidation Authority may start a project only if there is a long tradition of success, making for a slow process [45]. The hybrid solution, as the name implies, is a combination of the two aforementioned systems. Therefore, a voluntary partial consolidation means that when some landowners agree with the implementation of the project, then others might follow. Furthermore, the landowners in favor of land consolidation usually hold a substantial amount of land, in terms of area or economic value [45,47].

One of the main aims of the EU policies has been that of reducing disparities between urban and rural areas, by improving the rural conditions of its member states. Indeed, the EU has included land consolidation as a measure within its overall rural development policy. Some countries have made decisions on how to manage the issue. Indeed, Greece, the Netherlands, Portugal and Sweden have adopted a majority agreement. This states that before a project can be started, more than 50% of the land owners, in terms of size/value of the territory, must be interested in taking part. Many countries have legislations that allow for mandatory land consolidation to be applied in special cases, usually when it is part of an integrated rural program. However, the success of land consolidation is strongly dependent on landowners' acceptance, as it involves the management of their property directly [48–50]. In this context, an approach, which may be carried over to other countries, has been implemented to reach the goal of land consolidation in both France and in Italy.

3. The Land Consolidation Association Approach

The first initiatives designed to contain the phenomenon of land fragmentation and the abandonment of land in rural areas were implemented in France through the establishment of the Association foncière pastorale and the Groupements pastoraux [51]. These approaches are aimed at a productive recovery of abandoned surfaces and the establishment of territorial bases for organized

pastoral use, in agreement with producers' associations and local consortiums. The French legislation is functional, and initiatives are supported and encouraged by the state and local communities [52,53].

The first Italian project was implemented by the Piedmont Region, which regulated land consolidation associations by the Regional Law on "Provisions to promote the establishment of Land Consolidation Associations and the development of agricultural and forestry lands". The Piedmont Region has undertaken to repay the costs incurred for the setup of land consolidation associations, up to a maximum of 80%. A further incentive comes from granting those private landowners who join a land consolidation association the sum of 500 Euro per hectare assigned, provided that the commitment lasts for no less than 15 years; an initiative that can be adopted elsewhere.

The Piedmont Region recognizes and promotes land consolidation associations to incentivize the enhancement of landowners' properties. A land consolidation association operates mainly on four lines of action:

- the associated management of the plots conferred or assigned by participants;
- the writing and implementation of a management plan for the plots conferred or assigned by participants, where the best technical and economic solutions are identified according to the objectives of agricultural and forestry production, as well as environment and landscape conservation;
- participation, in agreement with the municipality/municipalities, in the identification of silent land and its productive reclamation, according to the Italian law 440/1978;
- ordinary and extraordinary maintenance of land and landscaping works (Regional Law 2 November 2016, No. 21).

Currently, there are 13 Italian ASFOs, which have either been established or are in the process of being so. The first two were established in 2012 as a private initiative in Piedmont, in the municipalities of Briga Alta (Cuneo) and Carnino (Cuneo) and in the municipality of Avolasca (Alessandria). The proposal convinced the owners of abandoned land to associate with the aim of promoting the use and conservation of the productive potential and landscape value in those areas.

However, before 2012 in Piedmont, as in other Italian regions, there was no regional law regulating ASFOs. This legislative omission has incentivized the establishment of voluntary land consolidation associations amongst the owners of abandoned land in one or more municipalities.

Currently, 10/13 ASFOs are in Piedmont, 4 in the province of Cuneo, 3 in the province of Alessandria and 3 in the province of Turin. Whilst, in other Italian regions, there is 1 in the Aosta Valley, 1 in Friuli-Venezia Giulia and 1 in Lombardy.

Founding members establish an ASFO by signing the charter and drafting and signing membership minutes. This documentation can be regularly registered at the Registry Office without any notary fees. Public authorities, such as individual or associated municipalities in the Union, play a key role in promoting initiatives aimed at disseminating associative culture among landowners. They can provide information and technical support to associations and assign fallow and abandoned plots on the basis of a plan. The mayors of the municipalities assign abandoned, fallow land and silent land, i.e., the owner is unknown, to land consolidation associations [54].

4. Methodology

This paper evaluates how a land consolidation association is able to improve the territorial management of LFAs. On the one hand, the rationalization of homogeneous areas maximizes the potential of a marginal area and solves the problem of land fragmentation. On the other, new forms of territorial management can be analyzed to permit a convenient combination of abandoned surfaces. In this context, the purpose of land consolidation is to activate production recovery processes in these areas, ensuring sufficient profitability for agro-pastoral companies [2] and safeguarding ecosystem services rendered by meadows and pastures [3].

One of the most useful tools to predict the effectiveness of the decisions to be made in the field of strategic planning is SWOT analysis. Therefore, it was chosen as a tool to evaluate the phenomenon to

pursue the objective of this study. The SWOT matrix is organized into four sections and evidences the salient points of the ASFO area-related analysis. This technique combines the evaluation of the internal and external favorable and unfavorable factors of the organization under study. Indeed, the term SWOT is the acronym for Strengths (internal favorable factors), i.e., the peculiarities of the association that give it an advantage over others, Weaknesses (internal unfavorable factors), i.e., the characteristics that place the association at a disadvantage compared to others, Opportunities (external favorable factors), i.e., the features of the external environment that the association could exploit to its advantage, and Threats (external unfavorable factors), i.e., the features of the external environment that could cause problems for the association [55,56]. SWOT analysis is a supportive choice analysis that responds to a need to rationalize decision making processes. This technique was developed to support business strategies in contexts characterized by uncertainty and strong competitiveness. It is a cognitive tool that allows for the definition of an intervention program in a sectorial or territorial context, based on the identification of the potentialities and criticalities of the system under analysis [55].

The use of this method has been extended to territorial diagnosis and the evaluation of regional programs [57]. This analysis may refer to the territory covered by the intervention, to the sector concerned, individual sectors and to the priority issues where a program is developed [56], maximizing the potential of creating value [58]. One such example of its application was its support of the Sicilian agro-food production and its application to strengthen the producers' role in the supply chains [59]. The aim of this study was to verify the potential of the theoretical model based on a SWOT analysis. Moreover, it has been demonstrated to be an effective tool for the analysis of the internal and external competitiveness of a system [60].

Indeed, taken as a whole, the SWOT analysis methodology is useful to support the decision making and operational activities of public and private actors involved in strategic goals [61] and can facilitate the evaluation of phenomena affecting the territory [62,63]. Decision making processes related to interventions on the territory are characterized by an integration of many tools, such as SWOT analysis, with the aim of creating synergies and feasibility for the definition of complex territorial policies [64,65]. In this context, this model of analysis is a process providing systemically accessible information on a specific theme, such as ASFOs. Therefore, this analysis applies a matrix to the ASFOs that have already been established, as well as those still to be established.

5. Results

This work is based on the ASFO review of a bibliographic collection, searching for those that emphasize interrelations between managing and the safeguarding of territories in harsh environments. A SWOT matrix was developed where the most relevant aspects were highlighted and classified as strengths, weaknesses, opportunities or threats (Table 2).

Table 2. The Associazione Fondiaria (ASFO) SWOT analysis matrix for managing and safeguarding territories in harsh environments.

Strengths:	Weaknesses:
- resumption of sustainable and qualified crop systems on large surfaces, that represent an alternative to intensive systems;	- land fragmentation;
- a variety of feasible production guidelines;	- long search processes to find the owners and their unwillingness to take part;
- the innovative integration of various areas, with the association of affiliated companies for complementary activities;	- the lack of management plans for correct land management;
- consequently improving the operators' quality of life;	- new management with cost-related difficulties, the motives behind the original abandonment;
- positive environmental impacts	- the lack of resources to accomplish land improvement activities

Table 2. Cont.

Opportunities:	
- starting sustainable forms of agriculture on aggregate land;	
- the reduction of pesticides by integrated companies, focusing on quality and health;	
- recovery, in terms of land productivity;	
- the expansion of land surface with only one management;	
- an increase in the use of agricultural land (UAA);	
- the multipurpose use of the territory;	
- the conservation of biodiversity and increased soil fertility;	
- the participation in funding calls for land improvement and surface management;	
- improvement in how the territory is made use of for tourism	
Threats:	
- the pastoral management carried out by some farms is not always optimal for the territory;	
- the lack of technical and financial resources to eliminate weeds;	
- insufficient technical expertise for agro-pastoral management;	
- the possibility of there being bad soil conditions;	
- the definition of ASFO boundaries.	

Some important aspects of ASFOs emerged from the SWOT analysis: most of them can be traced back to land fragmentation, environmental sustainability and stakeholder management opportunities.

5.1. Land Fragmentation

Marginal land cannot ensure the preservation of agricultural activities in hilly and mountainous areas, if the problem of greater short-term profitability for the farms involved is not solved. This could be achieved through a functional expansion of their size and product valorization. The western and central Alps and the hilly areas of Italy are more penalized than the eastern Alps, where valleys tend to be easier to cultivate and public administrations are more open to resource-conscious management, favoring the conservation of many functional companies [66].

A landscaping and historical cultural heritage, the result of a multi-century woodland-agropastoral cycle, seems to have survived in numerous alpine valleys and hilly areas [67]. However, an in-depth analysis highlighted that a precarious situation is connected to the initiatives taken by individual farmers, as they are rarely linked to an overall project that was requested and supported by the community as a whole to introduce a different use of the mountains and/or hills [68,69]. Land recovery instruments, such as buying, exchanging or renting plots, cannot be used for fallow, abandoned and/or fragmented land.

Farms operating in the territory belong to the private and public sectors. The first is characterized by family businesses working closely with local resources. Their success is linked to resource enhancement and the adaptive ability to take advantage of multifunctional features. Agricultural products build chains with many valorization activities and maintain strong identity ties with the area of origin. There has also been a widespread depopulation of the mountainous and high hilly areas since the Second World War, which was followed by rapid changes in agricultural working conditions. The decline in farms has not been offset by a corresponding increase in the average size of farms in almost all Italian mountain and high hill areas.

If the phenomenon of land fragmentation is to be contrasted, the integration of public actions is a must. These are to be carried out at a local and regional level and should, at the same time, enhance businesses, their productions and the economic and social activities in their territories, with support actions based on the promotion of natural resources, ensuring their correct exploitation and sustainable use. The Italian ASFO instrument is placed in this context.

5.2. Environmental Sustainability

Land consolidation associations have different functions and properties, which can be summarized in the conservation of plant and animal biodiversity [70,71] and of pastures and alpine vegetal

biodiversity through different vegetation formations [67]. Only if there is a mosaic of different habitats with a large proportion of herbaceous formations can a territorial high biodiversity be maintained. Moreover, agro-pastoral management contributes to an increase in biodiversity and “cultural” landscapes. In this context, ASFOs enhance attractiveness for tourism and recreation. The wide variety of vegetation formations make for more enjoyable landscapes that may be used in numerous summer and winter touristic activities. Correct and attentive management, like grazing, can reduce the risk of fire, as turning the grass over eliminates the accumulation of flammable dry phytonutrients almost completely.

Another interesting aspect is the increase in soil fertility and a reduced danger of hydrogeological instability. Through the fertilization process, regular use of agro-pastoral surfaces contributes to the enrichment of organic matter content present in the soil, with beneficial effects on the pedosphere. Here, again, ASFOs have an excellent level of sustainability and are capable of improving landscape and environmental conditions in both the public and private interest. Moreover, the environmental sustainability of ASFOs can also be evaluated on the basis of the potential and productivity of pasture surfaces that can support pastoral business realities.

5.3. Stakeholders and Opportunity Management

In order to ensure that commitment to an ASFO can lead to a long-term recovery of the territory, its objectives must be defined. Therefore, the identification of crops suitable for soil typology, quota and exposure is the first step towards enhancing the final product. The same goes for the forest plan, i.e., the planning of a wood supply chain that takes into account the areas of intervention, the lots and the type of timber.

This is a clear point in the Italian regional legislature that foresees among the priority activities of an ASFO that of the drafting and implementation of a land management plan that identifies “the best technical and economic solutions, depending on the objectives of agricultural and forestry production and the conservation of the land, environment and landscape” (Regional Law 2 November 2016, No. 21). Working within an ASFO will strongly incentivize farmers, who can benefit from an effective management plan for better resource utilization and improved product offers. In fact, the plan will lay the basis for the compilation of the cadaster, which is the cognitive approach to the pastoral resource, with a description of the individual production units. It makes a quantitative evaluation of the dairy and zoo-technical production that can be obtained by each fodder unit, as a prerequisite for certification of their origin and appropriate valorization [72,73].

6. Discussion and Conclusions

Land consolidation aims at supporting rural development towards the reorganization of land, where the fundamental action of the consolidation process is the rehabilitation of the territory, implemented on a voluntary or compulsory basis, i.e., it depends on local policies. Some land consolidation projects have been successful. Indeed, the phenomenon of land banking is a mandatory factor for the reallocation of multipurpose land [14]. Moreover, land funds contribute to overcoming a key constraint on the ownership of agricultural land [15]. This paper shows that the land consolidation association focuses its attention on the creation of active companies and can take an active part in the land consolidation process and development of the territories, in line with other territories like Western Europe [15]. It is a useful approach to the concentration of land and takes into consideration the conditions of land ownership and land registry problems, as well as contributing to overcoming a key constraint as to the ownership of agricultural land, as reported by Van Dijk [11,12] and Van Dijk and Kopeva [15]. Moreover, it represents a feasible approach to implement the expansion and consolidation of farms and satisfies the reallocation of multipurpose land [14]. However, a land policy applied to one country may not be likewise applicable to another, as reported by Van Dijk [11]. In this context, through the analysis of ASFOs as an approach for territorial management of disadvantaged areas, this paper evidences how a participatory process involving the stakeholders present in the

territory, i.e., municipal administrations, consortiums, landowners, citizens, agro-pastoral companies and agronomists/forest experts/experts in agro-pastoral management, is an indispensable point if the final goals are to be achieved.

The ASFO distinguishes itself in its aim to identify technical advice in the area of agro-pastoral management. It provides guidelines on how to solve existing business criticalities and improve the landscape, the environment and the profitability of companies, also through the promotion of touristic activities. Moreover, it can endorse associated management of agro-pastoral areas to coordinate and manage existing experiences and expand them to plots still lacking associated management.

Moreover, it must not be forgotten that an ASFO is a common association between individuals, which can be formed under the guidance of a municipality and/or a union of municipalities. Public authorities, especially municipalities and their aggregations, are an important ally in ASFO activities. They act as promoters of the initiative and support it on technical aspects, like the identification of cadastral particles and their owners, the presence of water and access roads to the plots. Their contribution becomes indispensable when it comes to uncultivated and/or silent land where there is no known owner. Therefore, the responsibility of locating land exposed to hydrogeological and fire risk and that of conferring it to the local ASFO lies with the municipalities. The public authority, exercising this substitute power, as a remedy to owners' inertia, takes on both the function of a guarantor and monitors the maintenance and good use of the land. It also commits itself to the restitution of the allotted land to the legitimate owners should they legitimately claim the property back. In this context, municipal administrations could supervise and stimulate this process by encouraging new landowners to join and adopt solutions that ensure greater solidity and functionality for the realities created.

7. Limitations, Implications and Future Research

As the ASFO phenomenon is a relatively recent one, the time span our analysis has been able to cover is limited, meaning that further research is to be carried out before a detailed evaluation of whether or not the expected benefits have been effectively achieved. In Piedmont, the 2016 Regional Law is facilitating the creation of new ASFOs, through the incentives made available, leading to the revival of agro-pastoral companies. It would be desirable to implement a pathway towards National and European legislation, disseminating ASFO competences to all rural areas in the EU.

A future analysis of the ASFO phenomenon is ongoing to assess the efficacy of this type of approach by a survey dedicated to active ASFOs. Furthermore, an in-depth analysis of the ASFO management, technical and relational features will be carried out with the aim of reducing land fragmentation and safeguarding/reproducing biodiversity and local resources.

Acknowledgments: The authors thank Barbara Wade of the University of Turin, for her linguistic review.

Author Contributions: The authors contributed fully and equally in this study.

Conflicts of Interest: The authors declare no conflict of interest.

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