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Source: Mountain Research and Development, 34(4) : 315-325

Published By: International Mountain Society

URL: <https://doi.org/10.1659/MRD-JOURNAL-D-14-00012.1>

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New Family Farmers for Abandoned Lands

The Adoption of Terraces in the Italian Alps (Brenta Valley)

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Degraded terraced landscapes are one of the most characteristic “landscapes of abandonment” in the European mountains. Especially in the last few decades, increasingly terraces have been losing their functionality,

undermining the stability of slopes. Public initiatives and scientific surveys focusing on such landscapes have recently increased, but the problems of maintaining and managing abandoned areas are still acute. A project promoting adoption of abandoned terraces, which began in 2010 in the Brenta Valley in the Veneto region, Italy, is a small but interesting attempt to revitalize a traditional landscape through new forms of social management. The success of

this initiative provides an opportunity to reflect on new forms of family farming in periurban European mountain contexts that retain some characteristics of Alpine culture—generating new forms of community and solidarity, farming practices oriented toward multifunctionality, and relations marked by multiscale. These practices involving new family farmers differ from both traditional productive farming and modern market-based economy. However, in order to improve and expand, such new family farming will require innovative forms of governance and partnership between city and mountain residents, going beyond the tourism- and conservation-based models of the 20th century.

Keywords: Family farming; social innovation; rural development; Italian Alps; Veneto Region.

Peer-reviewed: April 2014 **Accepted:** July 2014

Terraced landscapes in the Alps: decay and rediscovery

Terraced landscapes are one of the most characteristic “landscapes of abandonment” in the European mountains. Mostly built during the period of demographic growth from the 18th to 20th centuries (Scaramellini and Varotto 2008), the terraces have in the last century often been dismissed as relics of the past that are useless in today’s era of agricultural mechanization and industrialization. These landscapes are widespread especially on the lower slopes of the southern Alps, starting in the valleys close to local settlements and suburbs. The general extent of alpine terraced areas is still unknown, except for specific surveys carried out at the local, regional, or thematic level (Alpter 2014; Cervini 2014). Bonardi (2010) distinguishes between great or regional terraced areas such as Valtellina (with more than 2000 ha of terraced vineyards) and local terraced areas such as those in the Brenta Valley.

Especially in the decades after World War II, terraced alpine landscapes throughout Europe were subjected to degradation and neglect that not only compromised their functionality but often undermined the stability of the slopes (Scaramellini and Varotto 2008). This seemingly unavoidable trend saw the first signs of a turnaround in the 1990s, when UNESCO (the United Nations

Educational, Scientific and Cultural Organization) recognized several such landscapes as World Heritage Sites. In Ifugao, Philippines, in 1995, and later in the Cinque Terre and Amalfi coast of Italy (1997) and in Wachau, Austria (2000) and Lavaux, Switzerland (2007), they were recognized as examples of harmonious human interaction with the natural environment (Bender 2010; Murtas 2013).

Public initiatives and scientific surveys focused on terraced landscapes have increased recently as seen in European projects (the Patter, Terrisc, Alpter, and Leader programs), associations and international partnerships (Proterra, Carrefour Européen de la Pierre Sèche, and Drystone Walling Associations), and local museums (Ecomuseum of the Terraces of Cortemilia-Cuneo). However, both tourism and research have often left the problems of managing and maintaining terraced areas unresolved or even exacerbated them.

The focus on terraced landscapes has shifted from the danger of neglect to the risks of mismanagement or conservation only for tourism purposes (Guimbatan and Baguilat 2006). The disastrous 2011 flood on the abandoned slopes of the Ligurian Cinque Terre, one of the most celebrated terraced areas in the world, demonstrated that failure to maintain terraced slopes can result in massive hydrogeological instability.

This awareness has promoted greater sensitivity to management of terraced landscapes, including everyday maintenance. The International Terraced Landscape Alliance, founded in 2010 during the First World Conference on Terraced Landscapes, held in the region of Honghe in China, produced the Honghe Declaration (Peters and Junchao 2012), which aims to establish cooperation among researchers, associations, and administrations around the world as a forum for mutual support and exchange of good practices. This commitment was renewed at the Second International Conference on Terraces on 14–22 May 2014 in Cusco, Peru (Condesan 2014).

One project focusing on the reclamation of abandoned terraces, launched in 2010 in the Brenta Valley, fits into this framework. Its goal is to lead to a functional recovery of terraced landscapes through forms of social innovation—conceived as new ideas for products, services, and models that are social in their ends and in their means (European Commission 2010). In an effort to overcome the lack of economic and institutional interest in dry-stone walls, cisterns, and other structures in abandoned landscapes, the project aims to support the return of families to the mountains—an increasing phenomenon in other valleys of the Alps (Dematteis 2011; Varotto 2013).

The Brenta Valley

The Brenta Valley is a steep, narrow valley in the Venetian Prealps. It is about 30 km in length, with an average width of about 2 km, and it links the mountains of Trentino to the Veneto plain, a few kilometers away from the city of Bassano del Grappa. In the past, the valley was a strategic passage between the Mediterranean area and northern Europe, a center since the late medieval age of timber traffic between Tyrol, Trentino, the Asiago Plateau, and Venice along the Brenta River.

Since the 17th century, the slopes of the valley have seen the spread of tobacco cultivation, which was supported in the 18th century by a monopoly of the Republic of Venice. Cultivation spread during the 18th and 19th centuries, leading to widespread construction of terraces, which reached their maximum extension in the late 19th and early 20th centuries. In 1881 tobacco cultivation covered more than 400 ha with more than 20 million plants (Perco and Varotto 2004).

Industrial development after World War II spoiled this traditional agronomic system, spurring an exodus from the valley. In a few decades, the Brenta Valley's population diminished by half (from about 20,000 to just over 10,000 today), while the population of the nearby city of Bassano del Grappa almost tripled, from 15,000 in the early 20th century to 43,000 today. Tobacco cultivation decreased gradually and has now disappeared.

Today, the valley's economic and spatial setting is comparable to many others in the hills alongside the

plains. The bottom of the valley clearly shows the effects of late industrialization, urban sprawl, and transport infrastructure (Bätzing 2005; Perlik 2010); its slopes are mostly abandoned and have undergone natural afforestation. In the terraced landscape, abandoned after two centuries of cultivation (Figure 1), most of the more than 230 km of dry-stone walls, built to support and extend the fields beyond the narrow bottom of the valley, have deteriorated and in some cases collapsed.

Since the early 1990s, however, the negative demographic trend has stopped, and signs of renewed interest in the area have emerged—including the first academic studies on the “landscapes of abandonment” (Varotto 2000), creation of a local ethnographic museum in 2004, and regional and international projects on terraced landscapes such as the Interreg IIIB project Alpter entitled “Terraced Landscapes of the Alps,” in which the Brenta Valley was a pilot area (Patassini and Fontanari 2008; Alpter 2014).

Research and other activities involving terraced landscapes have had two distinct phases. The first (1998–2007) involved mostly scientific surveys (Perco and Varotto 2004) of historic and ethnographic aspects of the tobacco-farming culture and the extension, distribution, and typologies of dry-stone walls. Hiking trails such as the Alta Via del Tabacco (Tobacco Trek) were established, as was the Ethnographic Museum in Valstagna in 2004.

A second phase (2008–2013) focused on action-research carried out in partnership with universities, local administrations, and the Veneto regional government, including increased involvement with inhabitants, establishment of a local landscape observatory in 2011, implementation of the aims of the European Landscape Convention (Castiglioni and Varotto 2013), and a PhD project funded by the European Social Fund in 2009–2011.

In recent years, the authors of the present paper have tried to substantially apply the suggestions that emerged from previous research, focusing primarily on different perceptions and valuations of abandoned terraced landscapes and attempting to reach agreement between “pragmatic” and “nostalgic” positions (Jean 2003; Guiseppelli 2006). Researchers and valley outsiders are inclined to consider this heritage as an active resource, while the inhabitants, though emotionally linked to the landscape, are unwilling to consider its utility beyond museum initiatives or tourism activities (Castiglioni and Varotto 2013). The challenge was to bring this desire for redemption into the valley, building a pact that would unite insiders and outsiders in the revitalization of a common heritage, managed on a larger scale than the valley itself.

The adoption project

The concept of terrace adoption, intended mainly as a part-time voluntary commitment oriented toward

FIGURE 1 The terraced landscape of Valstagna in 2006, with a recent snowfall highlighting the abandoned lands over Lora and Londa. (Photo by Edy Zatta)



production agriculture, environmental protection, and cultural preservation, was developed with the goal of making abandoned lands available for sustainable reuse. The key question was how to transfer the historical and environmental value recognized by outsiders into specific recovery practices inside the valley.

A fundamental challenge was the need to overcome the barriers of hereditary ownership of the abandoned lands, through an agreement between citizens and landowners and a governance model able to bring together local inhabitants and people from neighboring urban areas. The new form of cultivation was envisioned as neither commercial nor subsistence agriculture but an “in-between” form of small-scale hobby farming. The project was realized within the framework of the University of Padua European Social Fund–PhD project “Cultural Landscapes between Heritage and Innovation” (Lodatti 2012).

Approach and methods

In October 2010, a committee named Adopt a Terrace in the Brenta Valley was set up as an institutional partnership between the Department of Geography of the University of Padua, the Municipality of Valstagna, and the Italian Alpine Club. The committee had the following tasks:

- Identify unused and potentially adoptable lands.
- Contact the owners (many of whom had left the area for other parts of Italy or abroad) to request use of the land as a free loan.
- Manage the assignment of lands to applicants based on renewable 5-year contracts.
- Ensure compliance with a set of good management rules.

Press releases and a bilingual website (www.adottaunterramento.org) were created to promote the initiative and facilitate long-distance adoptions through an annual fee from dues-paying members to the committee for the repair of dry-stone walls. A documentary film, *Piccola Terra* (“Small Land,” available on YouTube with English subtitles), was produced (Trentini and Romano 2012) about people who adopted abandoned land, comparing their lives with those of a tobacco-farming family documented 50 years before in the 1963 film *Fazzoletti di Terra* (Handkerchiefs of Land) by Giuseppe Taffarel.

Communication between land adopters, the managing committee, and the local community has been promoted through newsletters, conferences, workshops on techniques for repairing dry-stone walls, expert advice

TABLE 1 Characteristics of adopted terraces in the Brenta Valley.

Adopted terraces	Characteristics
Number adopted (as of December 2013)	109
Total surface	40,990 m ²
Average terrace surface	376 m ²
Average surface adopted by each caregiver	603 m ²
Average height of dry-stone walls	2.5 m
Average altitude	215 masl
Average distance from carriage road	110 m
Average distance from water (well, spring, or cistern)	48 m
Condition of terraces at time of adoption	36% fairly good (still occasionally attended) 30% mediocre (in early stage of vegetational succession, with brambles and bushes) 34% bad (in advanced stage of vegetational succession, with tall trees)
Land use after adoption	78% horticulture (potatoes, beans, and other vegetables) 13% recreational use 5% apiculture 3% viticulture, orchards 1% aromatic herbs (mint)

from teachers from the Agricultural Institute Parolini in Bassano del Grappa, and cooperation with associations of organic farmers in the exchange of heirloom seeds.

Monitoring and evaluation

The project monitoring system included a register of adoptions—a digital database with information about the allotments (altitude, width and surface of the terraces, length and height of dry-stone walls, distance of the plot from the nearest carriage road and from water sources, initial terrain features and condition, end use, and final conditions) and about the new farmers (age, job, education, residence address, and distance from the project area). A geographic information system was also developed, based on the cadastre of the Valstagna municipality, and linked with the database.

These data were recorded and updated every year by the project's management committee, in collaboration with the geography staff of the University of Padua, after a survey on the conditions of all the allotments. Also, seasonal collective restoration work by the volunteers on the adopted terraces made it possible for everyone involved to discuss the status and any problems occurring during land restoration. Some of these data were used to regularly update the project website, with a list of ongoing adoptions.

Quantitative and qualitative methods were used to carry out the following types of evaluation for all land adopters and terraces:

1. Environmental evaluation (including sustainability of cultivation methods, avoidance of chemical pesticides and herbicides, use of traditional water collection and drainage systems, introduction of local or adaptive cultivars, and adoption of protection measures against wild animals);
2. Social evaluation (including degree of personal motivation and satisfaction, relationship between land-owners and new farmers, intergenerational cooperation, and participation in cooperative work projects);
3. Functional evaluation (including extent of recovery activities, number and quality of plots adopted, final results and problems experienced, end conditions of the allotments, safety of the dry-stone walls, and need for or sharing of farming tools).

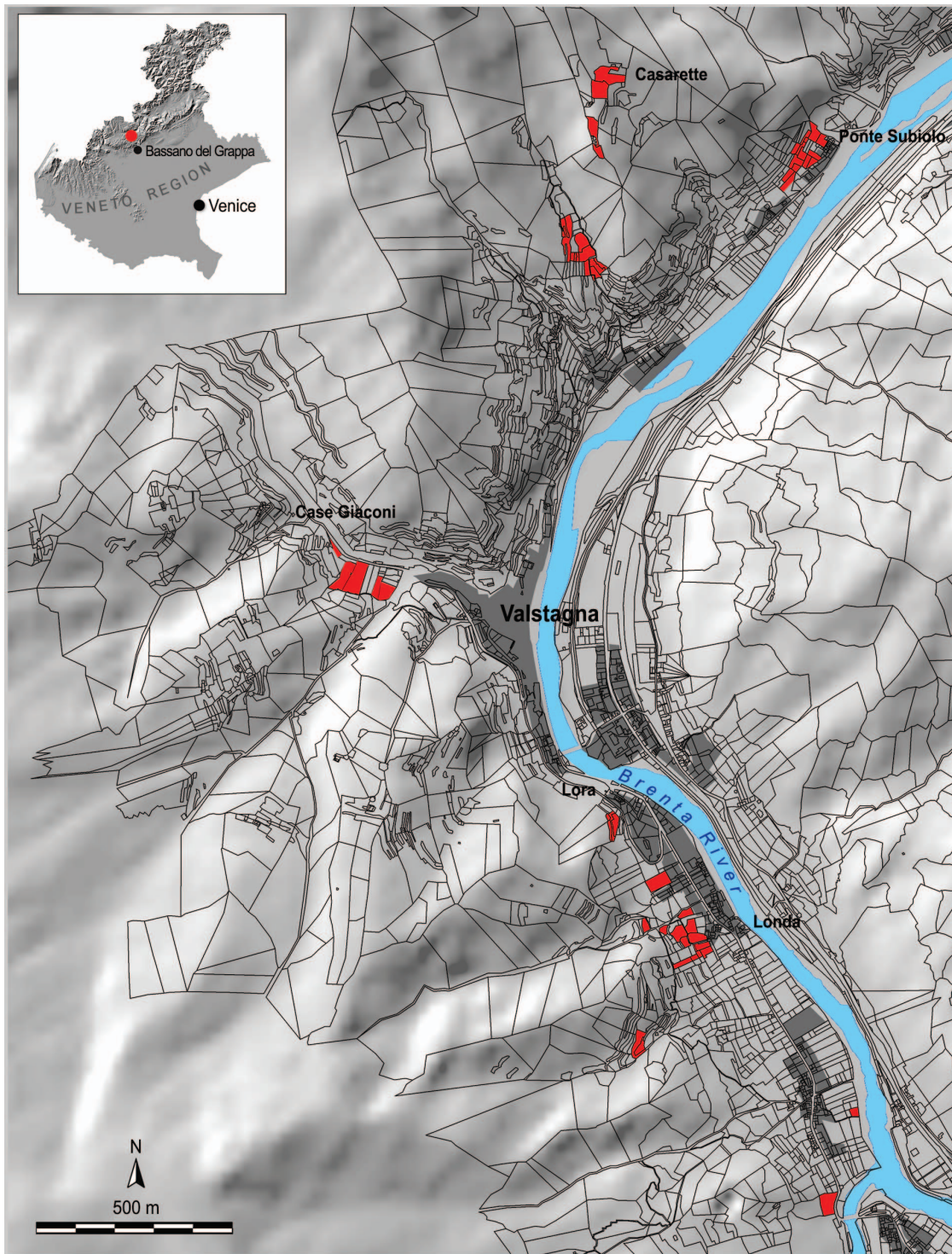
The principal outcomes of these monitoring and evaluation activities, carried out 3 years after the launch of the project, are summarized below.

Outcomes

More than 100 terraces covering more than 4 ha have been recovered (Table 1) in different parts of the valley (Figure 2) (Lodatti 2013). Although this is a relatively small area when compared to the hundreds of hectares of abandoned land in the valley, it does represent the first turnaround in the decades-long decline of the land.

More than 100 people are involved in the land adoption project, most of them not valley residents (Table 2; Figure 3). Their number is the equivalent of about 5% of the population of Valstagna, the municipality involved as an institution in the project committee and the main village in the valley. Participants

FIGURE 2 Cadastral map of the territory of Valstagna, with the land adopted as of the end of 2013 highlighted in red. (Map by Luca Lodatti)



are about 60% men and 40% women. The men are often supported by women and vice versa; the adoptions are almost never managed individually. There are 27 couples as well as a large number of other groups made up of

friends, scouts, or members of associations or cooperatives.

Although the average age is quite high (42% of participants are 50 or older), all age groups are well

TABLE 2 Characteristics of land adopters in the Brenta Valley.

Land adopters	Characteristics
Number of adopters (as of December 2013)	110
Types of adoption	Individual (37), family (27), associations (5)
Gender	67 men, 43 women
Age	18–35 years: 28% 35–50 years: 30% 50–65 years: 42%
Educational status	More than one-third have a university degree. Almost all have a high school diploma.
Distance between residence and terrace	Average: 23 km Range: 0–100 km
Time spent working on terrace	Average: 2–3 days per month Range: 2–3 days per week to 2–3 days per year

FIGURE 3 Transfer of the first abandoned land in Valstagna, near Case Giaconi, covered by bushes, to 2 retired teachers from the city of Bassano del Grappa in 2009. (Photo by Luca Lodatti)



FIGURE 4 A cooperative work party clearing weeds in 2012 from adopted lands near Ponte Subiolo. (Photo by Luca Lodatti)



represented. Thanks to the efforts of the local agricultural college, scouting groups, and the local chapter of the Italian Alpine Club, even school children are involved. The project is helping to keep cooperation between generations alive.

Participants' professions are varied; more than a third possess a university degree, and virtually all have a high school diploma.

Fewer than 10% of participants are valley residents. Most come from Bassano and its urban hinterland, 20–30 km from the adopted terraces; some, mostly members of the Alpine Club, come from the urban areas of Vicenza, Padua, and Venice, 50–100 km away. The amount of work done is generally proportional to participants' distance from the terraces and ranges from 1–3 days per week for those who live nearby to less than 10 days per year for the most distant.

The average size of the parcels is around 600 m² (sizes range from less than 100 m² to plots of more than 2000 m²). Terraces' condition at the time of adoption

varied depending on how long they had been abandoned. Many of the terraces closest to the village were still occasionally worked, while to those at higher elevations and farther from roadways were more overgrown. In the latter cases, to facilitate adoption, the committee organizes collective work parties (Figure 4).

Four-fifths of the terraces are used for horticulture, so the experience is closer to that of many urban allotments, but plot location and shape (which depend on the needs of the assignee) vary considerably, making a wide range of uses possible, including beekeeping, fruit growing, raising of aromatic plants, and agricultural experiments. The growing of Moroccan mint is one example of cultural hybridization and integration (Rossetto 2008; Figure 5).

The recreational aspect of the adoptions is more important than may be obvious from the statistics, as recreation and creativity are arguably an important part of the experience for all participants, and a priority for those affiliated with organizations involved in education and training (such as scouting groups and the Alpine Club).

FIGURE 5 Planting mint in 2011 in a terrace in Valstagna near Ponte Subiolo adopted by a family of Moroccan immigrants. (Photo by Marco Romano)



The committee, in addition to coordinating land assignments, provides technical and agricultural-extension support. It also organizes cooperative efforts to support the most demanding activities, thus having constant contact with participants and monitoring any problems that emerge from the adoptions.

Strengths, weaknesses, and originality of the initiative

The adoption project is neither the only nor the first of its kind. In the Italian Alps, adoption initiatives for cows, goats, olive trees, and fruit trees have flourished in recent years (Lodatti 2012) as instruments used to set up new forms of multiscale economic support for rural life and to preserve the landscape mosaic as part of an urban society sensitive to the environmental and cultural value of mountain areas. However, some of its aspects are original:

- *Institutional partnership among academia, local governments, and associations.* The adoption committee includes representatives of the University of Padua, the municipality of Valstagna, and the local section of the Italian Alpine Club. This inclusive and multiscale pact combines rural mountains and urban plains, requiring a greater coordination effort while ensuring the initiative's medium-term strength, as well as scientific, social, and political legitimacy. Member institutions support each other in aid of a common purpose, and this is very important, especially in marginal contexts characterized by poor resources and lack of initiative.
- *Using wasteland and overcoming the limitations of private property.* The main challenges of the project do not lie in physical effort, as might appear at first glance, but in finding the owners of the abandoned lands, many of whom have immigrated to other continents and some of whom are unaware that they still own the land. This problem has long been recognized; in Italy, it was

TABLE 3 “In-between” model of family farming emerging from the case study activities.

	Traditional model	In-between model	Modern model
Social sphere	Continuity, land to heirs	Social mobility	Stability of family company's property
	Customary law	Hybridization and social innovation	Competitiveness and technical innovation
	Utilitarian approach	New natural values and multifunctional approach	Marketing of tradition
Economic sphere	Subsistence economy	Hobby farming and nonprofit activity	Market-based economy
	Low innovation	Dialogue tradition–innovation	Innovation versus tradition
	Labor intensive	Labor cooperation and self-produced food	Capital intensive
Environmental sphere	High reproductive costs	Social agreement for environmental restoration	Externalization of environmental costs
	Organic farming by need	Organic farming by choice	Conventional agriculture
	Soil and water conservation	Soil and water conservation through sustainable innovation	Pollution and depauperation of soils and water

addressed by a recent legislative proposal to encourage the re-use of long-abandoned lands (Quartiani 2008), which, however, failed in parliament. Lacking legal instruments to facilitate reuse of land, the committee (whose authority is granted by the institutions it represents) offers a creative solution to the problem of land fragmentation. By signing a contract for a free loan of the land with specific use restrictions, the owners are protected against the possibility of adverse possession. This allows free access to the land, relief from bureaucracy, and orientation to the proper use of the land, even if the committee initially faced the suspicion and distrust of the landowners.

- *Adoption as a means of enhancing a nonprofit and multifunctional approach to the land.* The new land use does not have strict production requirements, unlike many adoption initiatives that support business activities. Reuse of rough terrain—which is often accessible only by foot and sometimes has water supply problems—by people from miles away may not be easy to justify from a strictly economic viewpoint. Yet this weakness reveals the strength of new values: the role of identity in returning to the land, acquisition and transmission of knowledge, a desire to experiment, the social value of meetings and collective work, the symbolic prestige of taking care of a landscape and century-old dry-stone walls, the relaxing and therapeutic contact with mountains and nature. Two small cooperative farms have recently tried to establish a profitable activity on adopted lands, but in general the recultivation of abandoned lands cannot be seen as an economic activity in classic terms. However, its

economic sustainability could be partially seen as enhancing food quality, food safety, and food self-sufficiency for urban families.

These factors demonstrate the deep, multifaceted significance of the return to the land, which finds no adequate means of support and representation within the policy sector (whether agricultural or urban) and which is unable to embrace the complex implications of the relationship with the land and the phenomenon of a return to peasant agriculture that it implies throughout Europe (van der Ploeg 2009). In this sense, the mechanism of adoption seems to naturally lead to multifunctional terraced landscapes, embodying the ecological, economic, and social value of the relationship with the land in urban and periurban areas (Donadieu 2006; Scaramellini and Varotto 2008).

A new, “in-between” farming model

The debate on the definition of family farming in the world today is very lively, given the variety of forms it takes in different countries, from subsistence agriculture in the poorest countries to family-run agribusiness in developed countries (Crowley 2013). A definition cannot be merely the sum of the terms “agriculture” and “family.” Rather, it requires us first to rethink the meaning of those terms in an age of high mobility and deep change: the experience of adoption suggests a third way to foster family farming, between the traditional forms of mountain agriculture—often unsustainable except in a romantic way (Grau and Aide 2007)—and the capital

TABLE 4 New family farming approaches with Alpine-specific goals.

Strategic goals	Main aspects
Multiscale cooperation and governance (Social sustainability)	Involvement of local governments, universities, and associations
	Adoption of terraces by outsiders and maintenance of land ownership
	Community-supported agriculture
	Acceptance of different kinds of families and intercultural interaction
Adaptive approach (Environmental sustainability)	Use of traditional knowledge for organic and biodynamic agriculture
	Rediscovery of historic seeds
	Recovery of dry-stone walls and ancient drainage systems
	Research on low-impact technologies
Multifunctionality (Economic sustainability)	Historical landscape and heritage preservation
	Green care and educational activities
	Leisure activities
	Food quality and food sovereignty

intensive approach of some family farms in developed countries (Table 3).

Within this debate, the adoption project promotes a shift in the role of agriculture from economic production toward environmental care, and a shift in the concept of family away from the parental structure and inheritance that legally define it. In fact, we cannot specifically speak of business activity within the adoption experience as being mostly forms of hobby farming, nor can we, strictly speaking, talk about families in the traditional sense of the term. Many participants are friends, couples, or small groups not related by birth. Yet their efforts take on the character of a family effort, combining traditional agriculture (the use of traditional cultivars, farming for one's own consumption, solidarity and cooperation, support of reproductive costs for the maintenance of ecological and hydro-geological equilibrium) with elements of modernization: hobby farming, green care (Haubenhofer et al 2010), mobility and multiscalarity of relations, awareness of the landscape's cultural values, and horizontal transferability of knowledge (Bettini 2011). This new mix must be recognized and supported, because it keeps key aspects of Alpine culture alive—adaptability to the environment, cooperation, multifunctionality, and multiscale relationships (Table 4).

The adoption experience suggests different potential future developments. On one hand there is the expansion of noncommercial agriculture by residents of neighboring urban areas, who receive the products of the terraces in exchange for their work. This type of agriculture, oriented to home consumption, is well described in the documentary *Piccola Terra*.

On the other hand, a group of young participants aims to develop small-scale commercial agriculture by

cooperative companies that are being established with public funds in at least two restored areas in the valley. These developments also open the possibility of project transferability. In order to maintain and extend such practices into similar contexts in the middle mountains adjacent to urban areas that are also experiencing the conflicting trends of intensification and abandonment, it would be useful to do the following:

1. Strengthen the role of the public through new governance models fostering cooperation between cities and mountain areas (Donadieu 2006; Luginbuhl 2007; Scheytt 2007), oriented to involvement of new stakeholders, which is crucial in the context of global mobility.
2. Promote “third mission” (E3M 2012) activities in the universities to stimulate, guide, and monitor such practices.
3. Adopt legal instruments recognizing the importance of public utility in the maintenance of abandoned lands, overcoming obstacles created by the rights of ownership.
4. Research and invest in projects of social innovation, adapted to changing mountain contexts, to strengthen cooperation and share good practices (Messerli 2008, 2012).
5. Give access to European Common Agricultural Policy (CAP) funds to other entities besides farms (such as nonprofit organizations, associations, and cooperatives) through regional rural development programs that take charge of maintenance projects based on a multifunctional approach to the landscape and an appropriate management plan.

The sustenance of family farming in the mountains, as a leading characteristic of historical assets (Wymann von

Dach et al 2013) and a sustainable way to manage resources, cannot be separated from its redefinition, from experimentation, or from the recognition of new

ways to remain faithful to and renew the idea of family farming, along with human and environmental sustainability.

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