Food and Territories “ALTER 2006”
Area 1: Rural Development, Environment, Heritage
TERRACING in VALTELLINA

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Main objectives: the historical and geographical frame of terracing; its past and present problems; the economic future and potentials the new millennium can offer; the importance of terracing as valuable landscape preservation

Methodology: field research-bibliography

Key words: Valtellina-terracing-decay-reclamation-landscape

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Introduction

After driving along the state road for Lecco and Colico, you arrive in Valtellina and take the road 38 that runs through the bottom of the valley. There is nothing especially interesting about the route. It is an endless series of uninteresting houses interrupted by small factories and anonymous warehouses. However this is not a “non place” because, if you look up to the ridge on your left, you will be captured by the steps carved into the ground as if by a miracle, steps that are all similar yet never form a geometric pattern.

This visual landscape is called “terracing”, an amazing result of the creative and industrious peasant culture whose close relationship with the land created a striking work of embroidery and, at the same time, made the land produce what was needed for survival.

This system of territorial organization can also be found in the Apennines, in the beautiful terraces of Amalfi and the Cinque Terre, on islands such as Pantelleria or in stone-walled field systems in Sardinia or Ibiza. The technique is widespread from the Middle East to Greece, from Italy to Portugal and North Africa. Here, however, in Valtellina, where there are 290,403 hectares of mountainous terrain, the technique seems to be a distinctive symbol of perseverance and attachment to the land of the inhabitants, who, over the centuries, saw their lands traversed and subjected by dominant invaders, and still had to manage the recurrent problems of the environment.
1.1 – Brief Outline of the Geography and History of Valtellina

Valtellina is one of the most interesting areas in the Lombardy region. Owing to its strategic position as a link between Lombardy and Rezia, Valtellina has been disputed, over the centuries, by different populations.\(^1\)

Beginning with the second millennium and for centuries afterward, the area has been inhabited, traversed, occupied by all sort of populations. All of them recognized its beauties spread across a physically varied territory.

The Retic Alps border Valtellina to the North: the Orobie Alps border it to the South. From East to West elevation goes from the 188 meters of Pian di Spagna to the 4,000 meters of Bernina. The northern side is sunny and terraced; the southern is thickly covered by the forests of the Orobie chain, which stretches with incomparable beauty from East to West. On both sides, man and nature have interacted for centuries. On the Retic side, sowing and cultivations have replaced forests; land has been tilled and laboriously terraced to accommodate vineyards, chestnut groves and cereals. On the Orobie side, ancient populations let forests take over. They equipped alpine pastures (locally known as “maggenghi”) with haylofts and animal sheds. And all along they faced the harshness of nature. The territory is marked by narrow valleys, steep descents toward the Adda River and large groves of fir larch and chestnut trees. Its unspoiled innermost areas have a rich flora and fauna.

\(^1\) “Retia” was the area of the Central Alps (Lombardy Alps) and “Lombardy” was composed of the lands seized from the Byzantines and the areas occupied by the Longobards.
In Valtellina, man’s transformative impact on nature is everywhere. In the mountainous environment, as forests gave way to pastures; in viticulture, whose terracing is “the main evidence of society’s relation with nature” (Scaramellini G., 2004); in the cultivation of cereals, originally for personal consumption; in the continuous expansion of apple groves. Less important, on the other hand, has been cattle-breeding on the Orobic side, which only picked up in the Nineteenth century (Torricelli R, 1998).

Terracing on harsh terrain is a symbol of Valtellina. When covered with vineyards, these are long-standing testimony of the area’s deep rapport with winemaking. Deep but also difficult, owing the demanding nature of the terrain. The immensely heavy character of the work is reflected in the local place names: Roncale di Lenno and Roncale di Cosio, Roncone di Tremezzo, Roncaglia di Piuro, di Civo, etcetera… for the “ronca” is the Italian sickle used in pruning and weeding.

It is actually hard to establish exactly when peasant ingenuity managed to clear and reclaim the stony terrain, but by the end of the Roman era Valtellina wines were already known for their high quality, even mentioned by Plinio, a native of the area around Lake Como.

It is however in the Fourteenth and Fifteenth centuries especially that Valtellina’s social and economic landscape takes shape. Owing to increasing specialization, the Retic side, all the way to Tirano and Tresivio, relied on its sunny mild climate to foster viticulture and winemaking, while the Orobic side was only marginally affected (Benetti D., 1998). The most important agricultural factor was the widespread development of vineyards and this gave rise to the oldest form of contract: land parcels assignment to families in the community (Zoia D., 2004). Not only were the vineyards important, but also the cultivation of chestnut groves, which provided a unique and important source of food for the peasants. At a higher elevation there were broad-leaved woodland areas, grassland or pastures (Benetti D., 1998). The colossal work of terracing could then be started, as rocks and stones were set aside and used to build the retaining walls. It would also have been extremely onerous to carry away these waste materials.

Under the rule of the Visconti and then of the Sforza families (Fourteenth and Fifteenth centuries) viticulture took on a prominent role and wine was exported to the markets of Central Europe (Benetti D. Guidetti M., 1998), but it was mainly in the
Sixteenth century, when the Grisons took possession of Valtellina, that their reform of land assessment fully revealed the extent to which the area and its people were involved in viticulture (Benetti D./Guidetti M, 1990), as well as the extent to which ruling families had come to control the land and parcel it out for cultivation and assigned it in “livello” to the local peasants. 

The Grison valuation in 1531 was very useful in recognising the local importance of viticulture and identifying the location of the vineyards. The best were mainly in the Sondrio area, along the Retic shore of the Adda. Wine production and trading were governed by very strict legislation, because the Grisons recognized the great potential of such wealth. In fact they had vast financial interests with the great courts of Central and Northern Europe and this policy became vital to the economy of Valtellina from the Sixteenth to the Nineteenth centuries. When the area was no longer controlled by the Grisons, the demand for wine from Valtellina did not decrease, in fact the production augmented to the detriment of its quality.

In the second half of the Sixteenth century, there was a minor glacial period, with the result that cereals, fruit trees and, above all, vines could no longer be cultivated above 800 metres. It may have been this climatic condition that forced the peasants to exploit every tiny corner of land they could find, even the most acrid and difficult to work. As a result of their tenacity, the terraces multiplied, as documented by Lavizzari in the Eighteenth century, whose Storia della Valtellina began by narrating the “hill, exposed to the south for a continuous distance of forty-five miles, covered with expertly worked vines, the whole supported by “corone murate” (walled crowns) (Lavizzari, 1716, p. 14). This is a clear reference to the terraces, which are mentioned along with vast stretches of vineyards and not just a few scattered and isolated areas of cultivation.

Other writers, such as Von Weineck, in the Seventeenth century, and later F.S. Quadrio describe vineyards and the Valtellina soil, praising its fertility and richness (Quadrio F.S., 1755) (Guler Von Weineck, 1616).

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2 The “livello” was a perpetual lease by which the owner granted an individual and his successors the right to cultivate a piece of land in return for payment in kind or in money. The “cost of the lease” was calculated in the same way as in sharecropping: the owner took half the harvest as a return on his property; the leaseholder took the other half and was responsible for everyday expenses. The term of the contract was usually 29 years. If the lease was renewed a sum relative to the property had to be paid. It was the leaseholder’s duty to improve the land and he had the right to pass on his share of the lease.
However, it was in the Nineteenth century that the work of terracing was recognised as physical hard labour for planting vines or other crops not chosen for the generosity of the land, but necessary for sustenance (Scaramellini G., 1985). A sustenance the population’s survival had been tested in the Seventeenth century, with the great plagues and floods that had decimated the population, and whose numbers had only begun to increase at the end of that century and viticulture began to develop again.

The political and economic history of Valtellina remains entwined with its social development even after the expulsion of the Grisons and the arrival of the French in 1797. It is still tied to the physical environment and agriculture, with the complications of seasonal emigrants workers, who almost never originated in the areas of viticulture, but from farmlands devoted to woods and pastures (Scaramellini G., 1985).

When Valtellina fell under Austrian rule (1814), the administration undertook the foundation of an efficient, modern state, paying particular attention to the work of improving the highways network, especially the links with Brescia and Milan. The new Spluga and Stelvio roads were constructed (1818-1825), resulting in greatly increased transport of goods.

Beginning then, and further in more recent time, the problems and difficulties tied to the particular use of the terrain and its maintenance, the devastating destruction of woodlands became progressively clear. They were aggravated in the Nineteenth century by the phylloxera and peronospora infestations (Benetti D./Guidetti M., 1990). In the second half of the Nineteenth century, and progressively as we moved toward the two great wars, mountain agriculture declines. The causes were aging rural population; reduced markets and income; distance between farms and markets; the growth of the service sector; the harshness of the terrain coupled with the absence of economic assistance and political planning.
1.2- Terracing in Valtellina: rural farming methods

It is impossible to mention Valtellina without referring to the terraces on its mountainous slopes, the deep relationship between the local people and the land and their eternal perseverance in exploiting it to the full in the glorious Italian tradition of managing steep terrain and increasing the area available for agriculture.

Creating the terraces is a very long process; the area includes the land stretching from Berbenno to Tirano and is second in size only to the Portuguese Douro and the Swiss Valais.

A hundred years ago, on the sunny Retic side, the area devoted to viticulture amounted to 7,000 hectares. Today there are only 1,200 hectares, yet as long ago as the Sixteenth century there were twice that number.

What is terracing? It is a technique for tilling the ground by means of consolidating it with dry stone walls. The stones are taken from the land itself and the area is filled with soil. The most difficult operations are building the walls, creating the boundaries of the area to be worked and a drainage system. Everything must be perfect and completely secure in order to protect the mountainside. For a dry stone wall on “a granite slope, practically all the work of preparing the stones has to be done by man, whereas in areas of sedimentary rock nature has often unwittingly done much of the work for him…” (Bonardi L., 2005). Indeed, the farmer is confronted with land whose underlying geological strata are extremely diverse and are therefore worked with a greater or lesser degree of difficulty. The stones must be well compacted to ensure that rain runs off easily to an “open” area. Preparation of the soil depends on the plants to be grown. For
example, vines have very different requirements from cereals (Ythier, 1995). In general, on the very sheer slopes, one hectare of terraced land requires two kilometres of retaining wall (Bonardi L., 2005). The average vertical surface area is over 2,000 m$^2$ per hectare, and even if the figures are only approximate it is easy to see why the terracing is described as “heroic”.

Stefano Jacini said: “… what exactly does ‘vineyard’ mean in Valtellina? More often than not, it is nothing more than bare rock on which the farmer builds a little wall to contain the soil he carried on his back from the valley bottom and used to cover that rock” (Jacini S., 1858, p. 46).

Access to these areas is very difficult, so that extraordinary efforts and considerable financial input are required for maintenance.³

1.3- Rural emigration, reduction and expansion of terracing.

In the Eighteenth century, because of the climate, Valtellina was the last outpost of the Central Alps where vines could be grown and this was another reason for the spread and intensification of their cultivation (Schlegel W., 1972, pp. 74/76). To the problems related to the development of agriculture and workers in the sector one must add the political changes that took place in Valtellina. When administration of the valley passed from the Grisons to Napoleonic rule, the changes that came about were still linked more

³ When the terraces are bounded by a valley with a very steep escarpment and a grassy covering, these are known as “vigilonamento” (ledges). If the terraces are used for vines, the traditional system is “rittochino”, i.e. the rows are planted perpendicularly on the mountainside, allowing the grapes to be exposed to the south. Recently, however, in order to reduce the workforce, the new businesses – by which we no longer mean independent farmers – have gone over to “girapoggio” (planting the vines across the slopes, following the curve of the land), thus eliminating the need for dry stone walls and introducing partial mechanisation (Bulgarelli G.-Faccinelli S., 2005, Consorzio Tutela Vini Valtellinesi Pro Vinea).
to political and administrative factors than to the economy (Scaramellini G., 1985). For this reason and because of the difficult nature of the terrain, the owners made no move “to encourage the peasants to take up other arts and crafts, because leaving the land uncultivated would have caused extensive damage…” (Scaramellini G., 1985, p. 17).

There was a renewal of the deep bond between the land and the people who had kept the agriculture alive, but with an almost total absence of innovation. Not being forthcoming from the landowners, innovation would certainly not come from the peasants, whose efforts were focused essentially on their own survival and their own piece of land. There was no regional centre, no decision-making body to give guidance on better economic policies. The landowners continued the perpetual leases that set out conditions for agricultural methods (rotation and combination of crops), and the farmers increasingly tried hard to produce the maximum possible yield from the land, cultivating even the most inaccessible area. Without the finances to improve the quality of the terrain most suited to high quality viticulture, they continued to survive, unable to envisage any more attractive prospects for the future.

The emigrations that began to be noticed at the beginning of the Nineteenth century mainly affected the areas not used for vines, but also some where the product was of inferior quality. Many people were involved because the object was to expand production as much as possible, even to the detriment of quality, and in practice: “… viticulture continued to be not really an economic choice, with a view to definitive market penetration, but more a score that had to be settled with the landowner…” (Scaramellini G., 1985, p. 160).

At the end of the Nineteenth century, owing to the growing infestations of peronospora and phylloxera and the falling price of wine, emigration again increased and was at its worst between the two great wars. The emigration to Switzerland, Germany and France was temporary, but those who had begun to move away at the beginning of the
Nineteenth century did not return: figures show 6,000 people a year leaving the province of Sondrio for the American continent (Benetti D.-Guidetti M., 1998).

Emigration affected those agricultural sectors dedicated to viticulture and the areas that were most difficult to work, far from habitation. Thus it caused a decrease in terraced land that continued to diminish until, in 1950 only 3,800 hectares, and in 1972 only 3,300 hectares were cultivated in this way (Benetti/Guidetti, 1990). The result was a decrease in population up to present day in the poorest farming areas (Bonardi L., 2005).

Still today the difficulties of the harsh terrain is at the centre of all problems, as the cultivation and maintenance of terraces which require as many as 1180-1200 hours’ work per hectare per year (ProVinea, Sondrio Province, 2005). Such labour is inconceivable without a serious aid programme especially when compared, for example, to the 60 hours per hectare in Franciacorta.

Visible consequences are soil erosion and landslides, owing to lack of hydro-geological maintenance and hence the failure of terracing to contain rainwater. In fact terraced steps and the practical way in which they collect the rain are the best means of preventing landslides and an excellent hydro-geological defence mechanism for the area (Tremolaterra, 2004). The same is true for the terraces covered in chestnut groves and the inherent critical nature of the terrain reaches dangerous levels when urbanisation takes place in these areas.

Weather and time have fast expanded land degradation. In the second postwar, at least one third of the land devoted to vineyards has been invaded by forest undergrowth, itself susceptible to fires. It means that, without focused incisive intervention, these areas so transformed by man, hence fragile and vulnerable, will not be able to find a new equilibrium (Bonardi L., 2005)

Article 9 of Regional Law 29/6/98 no. 10 and national law 102/90, better known as the “Valtellina Law” – a law issued after the disastrous 1987 floods that damaged almost the entire province of Sondrio – recognised the need for emergency measures to protect and restructure the terrain (Article 3) as well as to rebuild and develop. In fact, nothing much was done. One main concern of the law was preservation of the landscape and its aesthetic value. According to “Valtellina law” some progress has been made in the valorization of local products, the reorganization of landed property and support for the Fojanini Foundation for Superior Studies. In recent years, the Foundation has been
working to make small producers competitive again and return on the market, so as to revive terracing.

The hydro-geological damage mentioned earlier, which was to be repaired under the Valtellina Law, nonetheless continues to cause ruinous landslides similar to the one on the terraced slopes overhanging Tresenda, which killed 16 people in 1983 (Tremolaterra, 2004) and the one on Mount Candela which, in 1987, completely destroyed the villages of Sant’Antonio Morignone and Aquilone and parts of the Valdisotto community and took many victims. In November 2000, there was a landslide at Buglio in Monte and in the same month similar devastations occurred in Regoledo di Berbenno.

1.4 – The present situation: problems and future potential

The reduction in mountain agriculture has upset the delicate balance of the terraces and despite special measures (e.g. the Valtellina Law) being taken to avert the constant problems caused by this state of neglect and the consequent decay of the terrain, the difficulties are serious and are the subject of research and investigation by a number of universities, associations, national and international organisations.

Milan State University’s Institute of Human Geography and the Earth Sciences Institute have formed an international partnership with IREALP (Institute for Economic and Ecological Research in the Alps) known as Interreg Project Alpter III B - Alpine Space4. They have organised a well-constructed programme to study and find ways of managing the landscape of mountainous environments, in particular terraced slopes. The programme is designed to run from 2004 to 2007 alongside pilot studies in other areas (Brenta and the Cinque Terre are two of them).

The measures outlined for the terraced zones and the assistance that has been coordinated may be included in the Rural Development Programme 2007-2013, the second pillar of the Common Agricultural Policy, and integrated into the agro-environmental policies of the European Union. On the basis of research so far, in addition to extensive

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4 “Interreg Project Alpter” was created to counteract the desertion of land in the Alpine regions, a problem that only recently involved the institutions and populations concerned. This desertion leads to the loss of productive land, of biodiversity and of an invaluable cultural inheritance and entails environmental risks of serious proportions. The aim is therefore to map all these areas, to reclaim them and to create a network of productive pilot schemes through the launch of a common analytical protocol (www.1).
descriptive, photographic and cartographic materials, recognition of the hardships and crisis has resulted in a series of indicators of the situation, facing not only the Valtellina farmers but all who work on terraced land (the Apennines and the Italian islands, to name but a few areas): financial and technical problems, land ownership problems, social and legal problems (Bonardi L., 2005).

The financial problems have a long history. It has always been difficult to make a living, to commercialise the product, or to obtain long-term credit and the situation is worse now that viticulture has reached levels of refinement and specialisation that lead to increased competition. The technical problems have always been related to the harsh nature of the land under cultivation. Unknown in the past, some wine growers now use small cable car or monorail systems which, however, fail to sufficiently reduce the number of working hours. The problems of land ownership are the same as ever, because they perpetuate the perennial plots of land and the pressure to use the terraced slopes or other purposes, such as tourism. Social problems relate to the aging farming population, who cannot see the younger generations continuing an activity which returns so little profit for so much work and in which they feel cut off. Finally, the legal problems are the ones that must be met and overcome, because only serious plans for the land, backed by financial and legal support, can save and sustain this agriculture, which takes place in what amounts to a real “open air museum”.

The value attributed to this kind of slope and the opportunities for reclamation combine perfectly with the greater attention paid to the landscape over the last decade, taking into account its social factors and viewing its improvement as an enormous potential for a better quality of life. Conservation and the improvement of the countryside are themes at the forefront of current interest, because all those abandoned or decaying terraced areas not only allow nature to take over and gradually wipe out all traces of history (buildings, churches…) but lead to a greater incidence of fires and general negligence so that other economic problems are added to the damage done by such desertion.

5 In fact, terracing fits perfectly into the Traditional Knowledge World Bank (TKWB) promoted in November 2005 by UNESCO and Ipogea at the Nairobi conference on desertification, which is a databank that collects information on techniques for protecting the ecosystem and sustainable development (www.2).
1.4.1- Two case studies

The area selected for the pilot scheme consists of the agrarian terraces of Chiavenna, in particular the terraced slopes of Pianazzola and Uschione, whose reclamation could, in the near future, take the form of an open-air museum, with a wealth of interesting and evocative nature trails.

The area includes extensive stretches which were abandoned in the mid-Nineteenth century. The walls have all completely collapsed, the drainage systems are totally dilapidated and the irrigation grid is in a dangerous state whose temporary inactivity might suddenly change to create a situation that could not easily be contained.

The remains of the terracing are of many different kinds. The work was done on areas of different sizes and in places that pose problems because of their exposure to the sun and because they are almost inaccessible. The crops were vines, fodder and chestnut groves and their location in such difficult spots was probably due to the size of the population. Local farmers made use of small slip roads, cultivated narrow strips of land and built pathways to get around so as to create a subsistence system that allowed them to survive.

The walls need to be restored, crops replanted wherever possible and drainage systems reopened in order to reproduce the historic conditions that moulded the originals and, above all, to display to a prepared and attentive audience a kind of open-air museum in which the landscape and man’s unceasing manual toil are the incomparable works of art. Potential monitoring tools have been identified that could create a network to study ongoing operations and could be used by the University research group.
Another area, in the same critical state and also abandoned (if to a lesser extent) and with the same potential for reclamation of the landscape and crops is the one that the Municipality of Sondrio, IREALP and the Fojanini Foundation were involved with from 2002 to 2005. With this area’s possibilities for economic development and tourism, the project was called: “A pilot scheme for the reclamation and improvement of terraced slopes”. The pilot area is to the West, on the Retic slopes behind Sondrio. Geographically, the eastern border is the stream called “Maione” and on the west it shares the boundary of Castione, as far as Triangia.

The area consists of a number of tracts that wind between the terraces of vines and the woods located upstream from the cultivated zones, linked by ancient footpaths and lanes between the farms. Here we find terraced vineyards; on the Triangia terrace are fields and meadows and, finally, at the top there is a wooded belt. The pilot area presents the classic characteristics of the terraced Retic slope and the model could be reproduced in future in other areas in need of similar reclamation. Here too the desertion of agriculture for the rapidly expanding service sector has caused a number of changes to the landscape, the decay inherent in the elimination of terraced areas and problems with water management. These terraces are small or middle-sized, on steep or medium slopes, from 250 to 700 metres above sea level and account for almost half the pilot area. As well as the vineyards, on the lower slopes there are seed crops and, on the high ground, some forest trees in addition to the broad-leaved woodland. Around 2/3 of the terraced area produces a celebrated red wine, Sassella, classified as DOCG.

One of the zones considered most difficult to maintain is the long rocky area above Triasso, where for years walls have continually had to be rebuilt and streams channelled and controlled. These are the operations – making safe or rebuilding the retaining walls,
consolidating the slopes and rock walls, controlling the water supply – that need to be carried out in the pilot area.

All the actions taken on the basis of this pilot scheme are in accordance with Law 102/90 (www.3).

This work falls within the main objective of exploiting the possibilities hampered by decay, some of which may eventually lead to the development of a tourist industry that could soon involve visits to vineyards, wine-tasting, culinary experiences or day trips of an environmental nature.

All these purposes are part of IREALP’s targets: revitalise the socio-economic life of the region through an emphasis on the importance of agricultural activities; pay attention to the needs of the local people by providing them with coherent incentives to return to their traditional occupations; greater environmental awareness.

1.5 - New ideas and policies for recovery

Recovery of the environmental and scenic value of the terraces cannot be separated from the revival and economic redevelopment of viticulture which, for centuries, was the main agricultural activity in most of the terraced areas. It is vital to ensure that viticulture will increasingly meet the needs of its workers through sustainable development, balancing market requirements with pressing environmental demands.

Table 1 Area, no. of holdings, yields from terraces: Ardenno to Tirano

<table>
<thead>
<tr>
<th>Year</th>
<th>Area</th>
<th>No. of holdings</th>
<th>Yield in hectolitres per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>1864*</td>
<td>5310</td>
<td>58314</td>
<td>24</td>
</tr>
<tr>
<td>1970</td>
<td>2781</td>
<td>12537</td>
<td>96</td>
</tr>
<tr>
<td>1982</td>
<td>2298</td>
<td>9817</td>
<td>84</td>
</tr>
<tr>
<td>1990</td>
<td>1772</td>
<td>7329</td>
<td>77</td>
</tr>
<tr>
<td>2001</td>
<td>1020** 1200***</td>
<td>3040</td>
<td>55</td>
</tr>
</tbody>
</table>

* Three-quarters of the wine-growing area declared for 1864 includes vineyards on alluvial fans and level ground.
** Land Office figures
*** Estimated area
Table 2 Size of Holdings

<table>
<thead>
<tr>
<th>Size</th>
<th>&lt;0.2 ha</th>
<th>0.2-1 ha</th>
<th>1-3 ha</th>
<th>&gt;3 ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (%)</td>
<td>16</td>
<td>49</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Growers (%)</td>
<td>52</td>
<td>44</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Fojanini Foundation, May 2006

The vine terraces stretch from Chiavenna to Tirano and their extent has reduced considerably, right down to the 1,200 hectares we see today, a decline ranging from 27 to 70%. Of these, (the ones from Ardenno to Tirano) 877 are classified as DOC and DOCG. Nebbiolo (a species of vine called *Chiavennasca*) accounts for over 80% of the DOCG and DOC.

Clearly, continued quality improvement with a view to major re-entry into the market for wine has become part of economic policy. The areas are divided as follows:

- Valtellina Red DOC 240 ha
- Valtellina Superiore DOCG 181 ha
- Valtellina Superiore DOCG (Sassella) 130 ha
- Valtellina Superiore DOCG (Inferno) 55 ha
- Valtellina Superiore DOCG (Grumello) 78 ha
- Valtellina Superiore DOCG (Valgella) 137 ha
- Valtellina Superiore DOCG (Maroggia) 20 ha
- Sforzato di Valtellina DOCG 8
- Retic Terraces IGT 36 ha
- Total 877 ha 9

6 The Ministry of Agriculture recognised the DOC classification for Valtellina and Valtellina Superiore wines in 1968. Valtellina Superiore has four sub-classes: Sassella, Inferno, Grumello and Valgella. Sassella comes from the Sondrio district; Grumello from the Valtellina mountains; Inferno from Tresivio and Valgella from the Chiuro and Teglio areas. In 1998 production reached its peak with the DOCG classification for Valtellina, Valtellina Superiore, Sforzato di Valtellina and a sub-class, Maroggia.

7 The DOC and DOCG areas form a narrow belt from Ardenno in the west to Tirano in the east, along a much deformed metamorphic substratum.

8 Classification granted to the whole DOC and DOCG wine-growing area.

9 The size of the area used for vines declared by growers in Valtellina is registered in the “Albo dei vigneti DOC DOCG” (Vineyards Register) at the Sondrio Chamber of Commerce with the geographical classification recognised by the Ministry for Agriculture.
There are over 3,000 wineries, whose average holding is little more than 3,000 m$^2$. 1,080 hectares are on terrain at an angle of 30% and 420 hectares of terracing is on land over 500 m high. The wine-growing area of the valley is divided physically into 4 vast “landscape units”.\textsuperscript{10} Although these interlink, their internal features have a prevailing character (escarpments or terraces on moraine; escarpments or terraces on roches moutonnées) (Amministrazione Provinciale di Sondrio /Fojanini Foundation, 2004).\textsuperscript{11}

Viticulture in Valtellina is very fragmented and 90% of it is part-time.

These two aspects constitute the critical point in the vine to wine chain. Only 4% of the business is a full-time occupation; the workforce accounts for 70% of the total cost and 1200 hours’ labour per hectare per year.

\textsuperscript{10} The “landscape units” are areas with similar geophysical features and vegetation as well as a precise geographical description.

\textsuperscript{11} The Fojanini Foundation has for many years been much involved with the problems of terracing and developing the activities of the farmers and has provided considerable aid and support. Funding members include the Province of Sondrio; the local Mountain Communities Association; the EU; the Regional Agricultural Development Board (ERSAF); the Sondrio Chamber of Commerce for Industry and Crafts.
Steps must be taken to give young people a greater interest in the wine industry, to provide incentives and job satisfaction. If no satisfactory policy is put in place, in the next 10-15 years 100-150 hectares of vines will be at risk because of the unsolved social problems. It will be a repeat of what happened after 1970, when the wine-growing area fell from 3,000 to the present 1,200 hectares. That loss spread among the less traditional areas but today the downside is that the desertion is scattered like a leopard’s spots, resulting in greater problems for the terrain, which is suffering decay and degradation almost everywhere.

Current production costs are around € 15,000 per hectare p.a. (€ 15,401 to be precise) and the percentage of grapes produced by businesses and small-holdings totals 4,300 metric tons (32% from businesses and 68% from small-holdings) (Source: Fojanini Foundation, 2006).

What prospect is there of any practical strategy to break such a vicious circle?

A project financed by the Lombardy Region has already been underway for three years: “Image and Improvement of the wines of Sondrio and Como” involves a number of small producers, some of them young, who have inherited or bought vineyards and bottle the wine on their own premises. The aim of the project is to promote the image of the bottled product – the best way to increase income for the winegrower. The added value from bottled wine (which sells from € 6 per bottle) not only allows producers to make a profit but also encourages a business-like mentality with more social and cultural attractions as those involved exchange of ideas. As a professional, the wine-grower’s aim must be to
produce quality grapes and wine, with reduced time and production costs and, by the use of mechanisation where possible, to create a better future for terraced vineyards.

The new approach resulted in the introduction of 5 new wine labels in April 2006; another 10 new products should be presented in the market by 2007, which represents the work of about 30 new wineries from Ardenno to Tirano.

The same trend has being followed by Aosta Valley, which, after a period of crisis, has created new possibilities for wineries. Presently, 60% of the Valtellina production comes from three “non local” growers: Negri, Triacca and Plozza.

Domenico Triacca started a modernization of vine culture by means of machineries designed to deal with the site’s difficult morphology. 40% of the holding has been turned over from “rittochino” to “girapoggio”, but obviously this cannot be done everywhere. In the areas producing Grumello and Sassella the terrain is unsuitable for “girapoggio”. Compared to the 1,200 terraced hectares already mentioned, the system is in use on 30-40 hectares and mechanisation is possible because of the “girapoggio” planting.

Apart from the technical innovations favoured by his business, Domenico Triacca is also President and founder member of the ProVinea Foundation, established in 2003, which is concerned with preserving and maintaining the terracing on the Retic slopes, in the belief that the scenery, environment, history and economy are unequalled and should be protected not just as vineyards, but as a manifestation of mankind’s history.

Its social aims include one that is particularly ambitious: together with the Sondrio province, has asked the Ministero dei Beni e delle Attività Culturali to include the terraced vineyards on the Valtellina’s Retic side in the UNESCO’s proposed list as a “paesaggio culturale evolutivo vivo”.

Another important action to save the terraced Retic slopes falls under the implementation of the Valtellina Law involving the reconstruction and revitalisation of Valtellina and the surrounding area. Sondrio District Council has voted to set aside €4.5 million to finance operations to maintain the Retic terraces. The resolution,(December 27th, 2004), also assigned the responsibility for the enterprise to ProVinea, asking to prepare the documentation requesting a share of the operating capital. These funds will be allocated to owners and managers in the 35 municipalities and four Mountain Communities in the Province of Sondrio, with the obligation to maintain vineyard production in its entirety and to guarantee careful management aimed as
preserving the land (Mountain Communities of Valchiavenna; of Valtellina di Morbegno; Valtellina di Sondrio; Valtellina di Tirano and the Municipality of Sondrio (www.4)

In March 2006 was announced that in addition to the other € 630,000 a further € 185,000 had been set aside for aid to about ten smallholdings in Traona and Tirano. The loans are at 0% interest for a period of 6 years and a maximum of € 75,000 p.a. can be requested by owners and managers.

Evidently, initiatives are being taken and the aims are similar to those of the Fojanini Foundation with practical benefits in co-operating. The Foundation places great importance on farmers managing their own land in a way that is linked to tradition but with a view of the future that believes in innovations of the increasing number of new joint ventures. For example, the one in Berbenno, with about 20 members who, in 5 or 6 years have revived viticulture in the area and, with it, hope and pride in their own work. Similar small ventures with the same aim are being created thanks to the Valtellina Law, that has made the recovery of many decayed areas.

Other funds for replanting vineyards have been provided by the Lombardy Region, which has recognised Valtellina’s right to twice the usual grants for replanting, fencing and in-fill (problems with failed crops, suckers…) (€ 40,000). Moreover, according to Regulation 7 for the Mountain Communities (mountain agriculture improvement works), other aid will be forthcoming for new plant and machinery.

Co-operative efforts are beginning to converge in a large and promising programme and, if no problems arise to delay or halt this “virtuous circle”, success is on the horizon for improvements to the area, always bearing in mind the importance of product quality.

Assisted by all these efforts, many totally new ideas are springing up: for example, a sort of Vineyard Bank, an organisation that finds a “temporary owner” for an abandoned vineyard. In an emergency, a holding will not be left uncultivated but will be given to someone to look after so that irreversible damage is avoided until it is bought or rented. This kind of management might be undertaken by co-operatives formed to monitor and maintain abandoned areas so as to prevent decay having a domino effect. Something of the kind has also been done in the Cinque Terre.
Another interesting idea is the code of practice for the self-government of viticulture and the wine industry put forward in April 2006. Processors were also involved in drawing up the code, which will be effective both in cultivation and in processing the wine in the cellars. Standards have been established for the reduction of pesticide residues in wine by at least 50% more than the legal requirements, again with a view to becoming increasingly competitive. The Fojanini Foundation has been promoting this initiative since 2003 and will print the regulations. Compliance will be voluntary and should give further added value to the product, enhancing it not only from the organoleptic point of view, but also in regard to the health of the consumer.

The Valtellina terraces, most dedicated to vine-growing, seem to have entered in a very promising phase and there are in sum a number of initiatives intended to reinsert them in the local economy also in light of its cultural and tourism value.

There are research projects showing the most efficient methods of recovery: for instance, the “Valchiavenna Project” mentioned earlier, based on interdisciplinary studies, whose aim is to obtain as much information as possible in order to manage the alpine ecosystem and be in possession of all the necessary tools to delineate an intelligent and rational working approach to the problems.

**Finance is available from the Lombardy Region and the European Union** to make unavoidable operations feasible.

**Partnerships between international organisations** are studying the area with a view to preserving these valuable zones, which can take their place with other similar areas, and which, according to the environmental protection promoted in Europe and consolidated by Maastricht, cannot be ignored.(Project Alpter, 2004-2007 Interreg IIIB; Rural Development Program 2007-2013; UNESCO)

**Local associations** have been established to improve and spread a sustainable management on these areas but, most importantly, Valtellina’s population is understanding the value of its heritage to which they wish to return to work, produce and live.
Conclusion

This study about Valtellina and its terraces presents a unique perspective of many other world populations that have used the technique of terracing to survive. Terracing is one of the most typical ways in which the landscape has been altered, its area that incorporates the hills and mountains around the world is vast and indeed greater than the Chinese waterways and their large reservoirs combined.

Terraces are “the best management practice” for controlling erosion, slowing down or preventing overflows in cultivated areas on hills and mountains, not only to the countries mentioned in the Introduction, but also to North America (terraces in Vermont and Massachusetts), to Central and South America, to Australia, China, the Philippines, Indonesia.

Man carved the landscape to grow rice, building terraces following the natural curves of precipices, as in magical Bali; there are terraces in Southern China, in Yunnan Province and in South-East China, where the lack of arable land has forced farmers to use their ingenuity to cultivate hillside terraces.

The terraces found in many rice-growing countries are not steep and are easily worked, taking the form of gentle downward slopes for easier cultivation and harvesting.

In contrast, the Incas in Peru succeeded in developing areas of unimaginable difficulty, building terraces to grow the grains that would best survive at very high elevations and planting less resistant strains on the sunnier terraces with better exposure. Terraces were a means of retaining the workable terrain and the inhabitants developed a system of aqueducts and canals to irrigate the land and render it more fertile.

Everywhere the use of terracing inhibited landslides and in some regions of the Andes it is still part of agriculture today. Potatoes were the most common crop on the terraces of Central and South America and it seems that the most ancient system of agricultural terracing was found in a Mexican valley (Teotihuacan). Equally famous is the Cajete Terracing System in Tlaxcala (which is thousands of years old) (www.5). Such terraces have practically been abandoned in Latin America for engineering reasons and because of the distribution of water supplies, but also to a great extent because of rising labour costs and socio-economic factors. In the Tlaxcala region, increased erosion is clearly the earth’s response to the tractors that do not adapt easily to the variable nature of the terrain and the use of such practices requires improvements better suited to this kind of land.
Thus the common theme of terracing becomes one of the most widespread and extraordinary cultural bonds that unites and permeates survival systems all over the world, bringing together peoples who are different yet similar, due to their strong relationship with their land.

In the past, terracing was linked to sustaining only the basic necessities; now it has acquired a cultural stimulus to safeguard parts of our history from decay and desertion. The terraces and with them the health of the wine-growing industry expanded or diminished by the events related above, constitute the defences of the environment, cultivation and culture of Valtellina, and the multi-functionality associated with them is increasingly recognised both by the local population and by other types of producer. They contain the seeds of an economic, ecological and environmental wealth that has yet to be developed and exploited, seeds that can contribute further added value to the valley with the development of a sustainable tourist industry, which some associations are already promoting. It is this enormous added value that could win for this very special area, whose agricultural landscape, that so strongly symbolises the valley's identity, is a “mark of quality” that other geographical areas do not have.

Its landscape is a cultural landscape, “the manifestation and particular sedimentation of lifestyles that, with time, have forged the character of a terrain which, in its turn, has imposed its own characteristics on the lives and minds of the people who have dwelt there…” (Corna Pellegrini, 2004, p. 153).

You start to feel this pride when you talk to the people of Valtellina and you see that this rediscovered sense of security can contribute to the valley’s progress after decades of problems that marked and impeded the development of its potential. After this brief summary of future policies for the terraces, mostly devoted to viticulture, it could be said that these programmes should be based on the economic return of a wine industry centred increasingly on production and quality that will gradually be able to put more emphasis on external markets, and on the value of a heritage that goes beyond production and is part of the defence of this unique scenic and environmental heritage that few in Europe can claim.
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