

What do Human Values and Emotions Suggest about Forest Planning? An International Review Focusing on the Alpine Region

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Abstract

For a long time now, utilisation of the forest's ecosystems has constituted the basis of the economy of the regions of the Alpine range. The socio-economic changes of the last few decades, however, have altered the traditional relationship between man and forest, a change in values reflected in the different order of priority expressed by the population of today with regard to forests. In the light of international literature, this work illustrates the evolution of the values of the forest in relation to the changes in society. It highlights the prevailing lack of a clear perception on the part of the public agencies, whose task it is to safeguard and manage the mountain ecosystems, of the entire spectrum of values and meanings attributed to the forest. An analysis of the phenomenon, with particular reference to the Alpine area, is proposed, underlining possible causes and consequences.

Keywords: Values, participation, forest management planning, multifunctionality, Alpine Region.

1. Introduction

More so than in the past, forest policy and planning today needs to know how people “see” and “use” the forest, as well as take into consideration the entire range of values attributed thereto, including those pertaining to the emotional sphere. First-world countries have seen a

progressive disinterest on the part of the population in the values traditionally taken into consideration within the ambit of forest planning, especially insofar as the production of wood is concerned. At the same time, there has been an increased sensibility towards important issues such as sustainability or biodiversity, and a new awareness today of a threat to the environment that, until recently, was considered inconceivable. All this has given rise to a surge of public opinion to claim the right of citizens not only to express themselves, but also to exercise a certain amount of direct influence in all matters pertaining to the forest.

Frequently, today as in the past, the source of conflict lies in mutual incomprehension brought about by the fact that forestry professionals and the public at large do not “speak the same language”, that is to say, they neither share a common basis of values nor do they attribute to the forest the same significance (Cantiani *et al.*, 2002; Cheng *et al.*, 2003; O’Brien, 2003; O’Brien, 2006; Schmithüsen and Wild-Eck, 2000; Tarrant and Cordell, 2002; Trakolis, 2001; Williams and Stuart, 1998). It is in the mountainous regions, and particularly in the Alps, that the problem is acutely felt nowadays. It is here that, until fairly recently, the importance of the mountain ecosystems in guaranteeing the wellbeing of the local communities was abundantly clear to all; similarly, the role of the forestry services in the conservation and management of the forests was, too, until fairly recently widely acknowledged. In the last few decades, the socio-economic changes affecting the Alpine area have altered the relationship between man and forest. This change is reflected in the new order of priority of values assigned by the people in relation to the forest. In the light of international literature, this work retraces the history of the evolution of the values attributed to the woods relative to the changes in society. It also highlights how forest planning has over the years tried to adapt to such changes. Today, however, there would appear to be a gap between the population on the one hand and the public agencies responsible for the conservation, planning, and management of forestry heritage on the other. Why has dialogue become so difficult to achieve? In this work an analysis of the phenomenon is put forward, with particular emphasis on possible causes and consequences; a possible strategy to facilitate reciprocal understanding and improve and enhance communication between public agencies and citizens is subsequently proposed.

2. Regarding Values

One has only to run through the headlines found in scientific magazines that host articles pertaining to the values associated with the forest to understand that the argument has raised ever-increasing interest on the part of researchers in numerous disciplines: contributions to the debate have been forthcoming not only from forestry professionals and natural scientists, but also scholars belonging to the most disparate of disciplines: sociology, economics, geography, psychology, anthropology, ethnology, and last but not least, philosophy. It is not our intention, here, to provide an exhaustive review of what can only be described as an impressive amount of work; rather, we are endeavouring to focus on certain aspects that may prove useful in understanding the problems that surround the Alpine range.

The values of which we speak constitute a lasting concept of worth, abstractions that emanate from social discussion (Arisi, 2013; O’Brien, 2003; Owen *et al.*, 2009; Tarrant and Cordell, 2002); they are cherished views (O’Brien, 2003) that profoundly influence people’s beliefs, attitudes, and conduct (O’Brien, 2005; Owen *et al.*, 2009; Tarrant and Cordell, 2002). These values are closely related to people’s feelings and emotions (O’Brien, 2006; Vining and Tyler, 1999), and it could be said, concurring with Satterfield (2001), that emotions are inherent in the values themselves.

Insofar as forest values are concerned, we have taken as a frame of reference Xu and Bengston’s (1997) classification, which fundamentally subdivides such values into two categories: instrumental and non-instrumental. As a matter of fact, this classification appeared to be particularly appropriated in relation with forest planning.

Within the realm of instrumental values, the authors distinguish between economic or utilitarian values (timber, firewood, grazing, fishing, hunting, mushroom and berry picking, recreation) and life-support values (soil conservation, hydrological cycle regulation, biodiversity protection, air quality improvement, and carbon sequestration).

It is principally these values, with priorities that differ according to the geographical and historical context, that are acknowledged in the planning of forest management. Traditionally linked to this is what forestry professionals call the “functions of the forest”, whereby “function” is intended not only as the description of a relationship between two systems, man and forest, but also the effects of such interaction (Bernasconi, 1996; BUWAL, 1996). We are dealing here with a decidedly anthropocentric view: on the one hand we have needs, on the other, goods and services provided by the forest for the wellbeing of man, with effects of both an economic and social nature. In European methods of management, generally, the individuation of the functions of the forest, and in the case of conflict between functions those considered a priority, plays a decisive role in defining the objectives set forth in the plan. Such objectives then take shape, and are contextualised on the ground, superimposing themselves on the type of forest vegetation, in the subdivision of the forest into working circles. According to the IUFRO (International Union of Forest Research Organisation) definition (2005), a working circle is “an area, forming the whole or part of a management plan area, organised with a particular objective and under one silvicultural system and one set of management plan prescriptions”.

The other category identified by Xu and Bengston (1997), that of the non-instrumental values, is in turn subdivided by the authors into two conceptual areas: on the one hand aesthetic values, on the other, ethical-spiritual values (we may count amongst the latter, for example, heritage, sacredness, the symbolic presence of trees as representing life, personal and community identity).

These values are not traditionally taken into consideration in forest planning.

Should a classification of this type present undisputed advantages of a practical nature, these ought to be observed, even though, as the authors themselves admit, it is not always easy to attribute such values to a precise category; not only are the lines between categories often blurred, but the values tend to overlap and intertwine. This system of individual and collective values is, by its very nature, extremely complex and multifaceted (Cheng *et al.*, 2003; O’Brien, 2006).

3. A Rapidly Changing Society

Post World War Two, the change, which had already begun in the industrialized world, accelerated significantly. Technological evolution, urbanisation, the development of transport networks, and progressive globalisation have all brought about radical change in lifestyles and a progressive weakening of those close, direct relationships that for centuries tied human communities to natural resources, a form of dependency essential for the very survival of man himself. Whilst the phenomenon did not manifest itself everywhere simultaneously, it was nevertheless widespread and characterised by great speed (Farcy and Devillez, 2005; Lewis, 2008; Lindhagen and Hörsten, 2000; Owen *et al.*, 2009; Rotherham, 2007), which often caught those in charge of natural resources policy and management wholly unprepared.

The results of such change are evident in the transformation of the landscape that characterises the age in which we live (Agnoletti, 2006; Agnoletti and Anderson, 2000; Lewis 2008; Rotherham, 2007).

The changing relationship between man and nature is reflected in the different perception and the different order of values expressed by the population with regard to the forest: “the

valuation of nature changes when it no longer represents the daily income” (Lindhagen and Hörsten, 2000, p. 144).

Insofar as the evolution of the values attributed to the forest is concerned, it would be interesting to retrace briefly the events of the last few decades in Europe and in North America. These areas, despite a geographical diversity, had to face similar problems in the environmental field, particularly when the relationship between mankind and forest are considered.

In the 1960s, following the economic boom, compared with forest production, tourism and recreation began taking on increasingly important roles, to the point where these functions became completely integrated into those of the management plan (Jacsmann, 1971; Roisin, 1975).

In the 1970s, the certainty of continued success in technology and the resultant improvement in the material quality of life began to waver as man became aware not only of the often irreversible damage being caused to the environment by human action, but also of energy resource limitations. It is this decade that saw the emergence of the activities of the Club of Rome, a group of scientists and thinkers whose focus was the fate of the planet (Meadows *et al*, 1972). From the moment that threats to the environment began rendering precarious the equilibrium of the ecosystems on which all those services not only depended, but were once taken for granted, life support values began assuming ever-increasing importance. At the same time, new players appeared on the scene of natural resources management, and in some cases the interests of the collective, rather than the individual, with regard to the forest began to dominate.

Public forestry agencies sought ways to respond to the transformation of society by adopting a less commodity-based and more environmentally aware approach to forest management. Multiple-use oriented forest management then became widespread in both Europe and North-America.

During the 1980s and early 1990s, in Europe, and more particularly in the German-speaking areas of the continent, the importance of an analysis of the functions and the need for coordination between forest and territorial planning fuelled heated debate (Bachmann, 1990; Balsiger, 1989; Bernasconi, 1996; Krott, 1989): a real challenge for a generation of forestry professionals shaped by the “Kielwassertheorie”, according to which on-going timber production via a correct management of the forest automatically assures all the other economic and life support functions (Glück, 1987; Rupf, 1960).

Whilst forestry professionals in Europe succeeded to a certain extent in mediating and managing the conflicts surrounding the many interests and needs expressed by society in regard to the forest, in the 1980s in the United States huge environmental controversies erupted, centred around publicly-owned forests and in particular old-growth (Gericke *et al*, 1992; Solberg and Miina, 1997; Wondolleck, 1988).

By creating numerous and often divergent expectations, the approach to multiple-use oriented forest management in many cases enhanced rather than minimised the motives for conflict (Walker and Daniels, 1997). As a result, government agencies deemed necessary a participative approach to management, contained within the institutional and legislative framework, and generally structured according to rigidly formalised procedures (Gericke *et al*, 1992; Knopp and Caldbeck, 1990; Tipple and Wellman, 1989; Wondolleck, 1988). In the majority of cases, however, efforts to open the decision-making process were made in vain (Germain *et al*, 2001; Grumbine, 1994; Steel *et al*, 1994; Tabbush, 2004; Vining and Tyler, 1999).

In the 1990s, in North America, an analysis of this failure, together with that which Grumbine (1994, p. 28) defined as the “biodiversity crisis”, lent new impetus to the argument concerning values, begun in the preceding decades but never fully placated. The net result was an outright overturning of the natural resources management approach in favour of a more comprehensive approach that acknowledged the significance of the whole range of values.

The role of non-instrumental values was, in fact, underscored, and the crisis in forest planning attributed squarely to the failure to recognise such role (Vining and Tyler, 1999).

And so the concept passed from multiple-use forest management to that of multiple-value forest management (Rolston and Coufal, 1991; Tarrant and Cordell, 2002; Xu and Bengston, 1997). Ecosystem management was affirmed, which, according to Grumbine (1994, p. 27) “is not just about science nor is simply an extension of traditional resource management; it offers a fundamental reframing of how humans may work with nature”.

Observations on the change in the order of values expressed by society in regard to the forest were conducted simultaneously also in Europe, albeit in different social and cultural contexts (Farcy and Devillez, 2005; O’Brien, 2003; O’ Brien, 2005) and without culminating in standpoints as radical as those that had emerged in the United States of America. Such observations availed themselves of the debate on sustainable development fuelled by the Rio Conference (1992) and the Pan-European Process initiated in Strasbourg with the First Interministerial Conference on the Protection of European Forests (1990), and leading to the Helsinki (1993) and Lisbon (1998) Resolutions. Public involvement in attempts to open decision processes represented the first and most important response to the pressing new demands made by society (FAO-ECE-ILO, 2000). Different forms and different levels of participative approach were experimented with: in the formulation of national forest policy, in the different scales of forest planning, in regard to the creation of standards for sustainable forest management, and in the activation of fora on forest-related matters. Initially, experiments were launched primarily in Northern Europe (Appelstrand, 2002; Boon, 1999; Boon and Meilby, 2000; Bourriaud, 1999; Buttoud, 1999; FAO-ECE-ILO, 2000; Jensen, 2000; Kangas and Store, 2003; Leskinen, 2004; Loikkanen and Wallenius, 1997; Loikkanen *et al.*, 1999; Paldanius, 1997) and in Switzerland (Bettelini *et al.*, 2000; Finger-Stich, 2003; Jeanrenaud, 1999), but subsequently extended to other countries, becoming at the dawn of the third millenium a relevant argument in forestry research in Europe (Buttoud and Yunusova, 2003; Cantiani *et al.*, 2007; Cantiani, 2012; De Meo *et al.*, 2011; Hickey *et al.*, 2007; Martin and Borges, 2007; Secco and Pettenella, 2006).

4. The Alpine Region: A Case of its Own

Whilst indeed forming part of the European panorama, the Alpine range merits special consideration; straddling countries with diverse histories, cultures and traditions, the Alpine region nevertheless displays characteristics in common, a feature of its existence as a mountainous region. The Alpine area did not remain immune to the enormous socio-economic transformation to which Europe was subjected, but specific effects and implications arose as a result of its particular situation as mountainous territory. The Alps constitute Europe’s principal orographic system, extending as it does from France to Slovenia, involving a total of seven countries and a surface area of 190,000 square kilometres. The Alps are characterised by a geomorphological and climatic diversity, boasting at its western extremity summits in excess of 4,000 metres (Fig. 1).

Man has always enjoyed an extremely strong, direct dependence on mountain ecosystems, and in particular, the forest. An environment in itself inhospitable and physically fragile has nonetheless rendered it possible for man to survive thanks to the latter’s ability to take

advantage of the territory in which he finds himself. Since the remotest of times, human activities have, on the one hand, aimed at the production of food and raw materials sufficient to satisfy the needs of the local community; on the other, the construction of dwellings suitable for human habitation, particularly in relation to the necessity to defend the community from natural disasters (Messerli, 1989; Netting, 1981). The mountain habitat imposed diversified production strategies and appropriate forms of ownership and management; territories situated on high ground, where grazing and gathering prevailed, were generally common property and collectively managed, whilst the meadows and fields situated on lower ground, being privately owned, were individually managed (Viazzo, 1989). The aforesaid activities resulted in the creation, in the mountain ecosystems (forests, prairies, fields), of an equilibrium that, though in many ways far removed from what would naturally occur, was nevertheless able to guarantee the independent functioning of the ecosystems. The landscape that we know today, or, more to the point, where it exists still, is the result of a multiplicity of management methods of varying intensities, adapted to local circumstances, which gave rise to a virtually self-sufficient system of supply-and-demand. This was matched by the ways of life, characterised by its rhythms, knowledge, customs, and values (Cole and Wolf, 1974; Wolf, 1962); from a social and cultural point of view, the isolation of the valleys in fact enhanced extreme diversification. In guaranteeing the continuity of constant production, the traditional activities practised in the mountains, albeit within certain limits, had a stabilising effect on the territory, ensured the maintenance of an elevated ecological diversity, and collaterally – most likely, inadvertently – guaranteed the safeguarding of the landscape in all its diversity (Messerli, 1989).

In this context, it is evident that forest management has always had to take into account both the economic and the life support values of the forest, in particular those concerning soil conservation and the regulation of the water cycle. The so-called protective function of the forest, in a mountain environment, has always been considered a priority by forest planning. The goal of management, in the first instance, is to assure the forest the stability and functioning necessary to guarantee in a direct manner the protection of mountain villages and their infrastructure (against rockfalls, avalanches, and debris-flow) as well as indirectly the safety of built-up areas on the valley floor and of those cities situated on the plains (hydro-geological protection function).

The new models of development involving the Alpine region, mostly based on tourism, in only a few decades, have upset not only the balance in the ecosystems, but also that of the human communities, with severe depopulation of the mountain communities the primary casualty. Worse still, they disrupted the traditional modalities of interaction that characterised Alpine mountain society, causing the collapse of that principle of solidarity that once bound the members of Alpine communities, communities that, proud of a certain amount of autonomy in the management of their rather limited resources, tried their utmost to ensure their collective survival (Finger-Stich, 2005; 2006). At the conclusion of years of research conducted on the Swiss Alps, within the ambit of the programme Man and Biosphere, Messerli (1989) warned against a type of development that relied solely on activities related to tourism, and that discounted traditional activities, considered anachronistic and belonging to the realm of folklore: forestry and all the activities connected to the forest-timber chain, agriculture, and the zootechnics specific to mountains, including the economic spin-off associated therewith. Today, we are confronted with different kinds of problems:

- the biodiversity emergency, paradoxically, nowadays in the mountains linked not so much to excessive exploitation of resources as to the abandonment of traditional practices. In recent years, this argument has become one of the priorities on the European Union's agenda (EC-DGE, 2009; TEEB, 2009);
- the transformation of the landscape, tied in particular to the rapid and often irreversible loss of open spaces, with negative consequences for the conservation of

- biodiversity and, in many Alpine valleys, the development of tourism (Tattoni *et al.*, 2010);
- possible negative implications on the role assumed in the protective functions of the forests; forests that over the centuries have been altered by man nowadays are in need of management that is tailor-made to guarantee stability, functionality, and a capacity for regeneration;
 - the decline of tourist activity in medium-small ski resorts which produced a remarkable depopulation (Soliva, 2007) due to a long-term development planning mainly focused on winter tourism. This problem, likely, may be further exacerbated by climate change.
 - the current economic-financial crisis that has already begun to manifest itself also in some of the biggest and most famous tourist locations, and which today poses a threat to the socio-economic balance in certain Alpine valleys.

In what way can forest policy respond to such emergency? In what way can forest planning embrace the new and often contradictory demands made by society? The answer is neither simple nor obvious.

It would be opportune to start with some general considerations. The forest economy, which in the past has played a very important role in the lives of mountain communities, is today in the mountains of Western Europe a sector in grave difficulty. The causes may ostensibly be ascribed to the following: an increase in the cost of labour, but without a corresponding increase in the price of timber; an intrinsic weakness in the sector due to inadequate and ineffective organisation of what the sector has to offer; and a lack of marketing strategies to promote the region's niche products. Albeit with some exceptions (for example, certain Swiss cantons, certain sectors of the Austrian or Italian Alps), it has taken but a few decades for many forest areas to arrive at either a reduction or a complete abandonment of active management and a loss of competence and professionalism throughout the entire wood chain. That the function of producing has lost its importance is reflected in the disintegration of the close ties that once bound the population to its locus. It has been noticed that in the Alpine range the decline in interest in timber related resources is in fact one of the first symptoms of a loosening of ties on the part of the inhabitants in relation to their territory. It is also a signal of the loss of those traditions and habits that for centuries have constituted the cement that held together mountain communities, and formed the basis of their cultural identity (Bachmann *et al.*, 1999). That which has been observed in all industrialised countries is inevitably coming to pass also in the Alpine area: "A post industrial society emphasises higher-order needs (such as self-actualisation and life-style choices) over subsistence needs (e.g. basic needs and material acquisition) as the motivation for changes in social attitudes and behaviours" (Tarrant and Cordell, 2002, p. 700).

Public administrations and owners have therefore had to contend with:

- the crisis in the timber sector, which, in some cases was dealt with by looking for new opportunities in timber production (for example, supplying timber to a building industry where traditionally such use was not widespread, or the use of wood biomass for the provision of energy), or aiming at raising the profile of other functions of the forest in the tertiary sector;
- the necessity to take into account the new demands of the collective in relation to the forest, demands that increasingly diverged from those traditionally expressed by mountain populations.

Precisely when forest planning ought to be acknowledging the new interests, in general and in the long term, being expressed by society, the financial resources available to the forestry sector are being curtailed in practically every country in the Alpine region, causing a profound crisis in forest planning, traditionally based upon management plans.

In order, therefore, to invert this tendency, in those areas where the activities of the forestry sector have somehow managed to prolong their life, it has been necessary to revise, profoundly and radically, forest legislation as well as the structure of forest planning. Emblematic of just such a situation is the example set by the Trentino (one of the most important forest regions in Italy, situated in the Central-East sector of the Alps).

The new forest law of the Trentino, dated 2007, revises the forest planning structure in its entirety, introducing, in addition to the traditional management plan, an upper level, the landscape plan, whose area of competence extends to all the mountain ecosystems, covering a vast area, catch basin or sub-catch basin, irrespective of the confines of the land owned. The landscape plan has been entrusted with two tasks:

- take into account the general and long-term interests, and on the basis of this provide its subordinate levels with expedient information;
- by means of a single, coherent planning drive, address the various problems related to the conservation of nature and landscape, the physical protection of the territory, and the forest - timber chain.

This represents a clear intent on the part of the legislator to “force” the different Services of the public administration in charge of the safeguarding and management of the territory not only to engage in dialogue amongst themselves in their analysis of the problems, but also to cooperate in the resolution of such problems. This responds to a precise need, highlighted at European level (Andersson *et al*, 2000; Farcy and Devillez, 2005), to consider the biological, physical, and socio-economic systems in a transverse dimension and from a networking perspective.

The success of the efforts undertaken in this direction largely depends on the extent to which those responsible for the planning and management of the natural resources (despite not everyone being aware of it as yet) are capable of recognising and interpreting the entire spectrum of values, including those of a non-instrumental nature, that bind man to the forest. Equally imperative is that those responsible comprehend the meaning of the emotions manifested in relation to the forest, and understand how the totality of things influences opinions, attitudes, expectations, and the behaviours of the people.

5. What do Human Values and Emotions Suggest about Forest Planning in the Alpine Region?

One of the main problems encountered in natural resources management is that often the decision-makers, be they politicians, planners, or managers, have no clear perception of the bonds that unite the population to its locus or the landscape that characterises such places (Cheng *et al*, 2003; Davenport and Anderson, 2005; Lewis, 2008; O’Brien, 2006; Vining and Tyler, 1999; Williams and Stewart, 1998), nor do they recognise in its entirety the ample and complex range of values and meanings that individuals and communities attribute to the forest, and which often go way beyond the concerns of managers and planners (Jensen, 2000; Kohsaka and Handoh, 2005; O’Brien, 2005; O’Brien, 2006; Schmithüsen and Wild-Eck, 2000). According to Schmithüsen and Wild-Eck (2000), technicians, for the most part, base their decisions on personal knowledge and professional experience, and if necessary try to compensate for the fact that they have no knowledge of public opinion either by interpreting their own, personal opinion as corresponding to that of the general public, or adopting as “public opinion” that which emerges from the mass media and political debate. Both of these efforts at compensation give rise to a misleading and unrealistic picture of reality. Similarly, also generally neglected is the role played by sentiment and emotions in determining people’s devotion to their territory, and the scale of values implicit in their attitudes and behaviours. Often, these emotions are written off as irrational (O’Brien, 2003; Vining and Tyler, 1999)

and therefore considered irrelevant in practical terms. According to Vining and Tyler (1999), all things considered, this is quite understandable in that negative emotional reactions are often directed at the very person whose job it is to manage the territory, forcing him onto the defensive. Rather than being underestimated, emotions ought to be understood and valued as a key to interpreting whatever values are capable of uniting managers and population. In fact, “Emotion plays a major role in motivation and is an indicator of caring” (Vining and Tyler, 1999, p. 31); “Emotion is frequently a signal that powerful underlying values are at stake” (Vining and Tyler, 1999, p. 32).

In our opinion, there are two risks confronting the mountain environment:

- on the one hand, the progressive detachment of the people from their territory;
- on the other, the progressive detachment of the public agencies, and in particular the forestry services, from the people.

Nowadays, forestry professionals often find themselves isolated from the social context, and, from the heights of their somewhat conservative stance, are sometimes incapable of effective communication with the general public (Cantiani *et al.*, 2002). This happens despite there being all the elements present for profitable and constructive dialogue: technical competencies and knowledge of the territory, aided by a certain structure that the forestry services possess in many areas of the Alpine range. In fact they are organised in a central headquarters with coordination responsibilities, and operative cells spread out in the field, whose responsibilities include control and management. This distancing of the population on the part of those who manage the forest becomes even more problematic in a rapidly evolving situation such as exists today.

An essential condition for the conservation of the landscape and biodiversity, for the physical protection of the territory, and for the safeguarding of all those values associated with the culture and local traditions is to maintain vital communities in the mountains, a problem common to the entire Alpine region. In order to render this possible, it is also necessary that the population be involved in the management of the territory; listening attentively to their needs and expectations, and thoroughly understanding the values they attribute to the forest represents an ideal starting point.

The instruments that may be useful for the elicitation of these values are many: questionnaire surveys, in-depth interviews, focus-group discussions, field trips, analysis of scenarios, etc.. A study of the literature reveals an ample panorama of possible methodologies, based on the utilisation of different instruments, related both to the specific situation under examination and, often, to the academic qualifications of the researcher. Nowadays, where possible, there is a tendency to favour an interpretivist approach for the elicitation of environmental values, often in contrast to a positivist approach (Davenport and Anderson, 2005; O’Brien 2003; Satterfield, 2001). The latter generally avails itself of its own economic methods, often based on large-scale statistical surveys. Researchers who instead resort to interpretivism are interested in understanding particularly the most profound meanings that lie at the heart of the attitudes and behaviours of the people, motive for which they rely principally on their own qualitative methods of research, such as in-depth interviews and discussion groups.

On the basis of our experience, we believe that it’s not possible, *a priori*, to say that one approach or one particular instrument is better than another: the choice depends essentially on the objectives one intends to attain.

In the Trentino, where we are conducting part of our researches, self-reported questionnaires aimed at the general public as well as in-depth interviews aimed at specific interest groups, in a perspective that tends towards the interpretivist, have produced satisfactory results.

The primary aim of our research based on the questionnaire was to investigate, at a regional scale, the connection between population and territory, their cultural identity, and the priority of values they attribute to the forest (Betta *et al*, 2009; Paletto *et al*, 2013).

The Alpine range, particularly for the Italian area, is rather new to this kind of research conducted on a regional scale. Where research does exist, it is mainly aimed at addressing particular functions (generally those of a recreational nature) or specific problems, such as the acceptance by the population of protected areas (in Italy, see for example, Bottarin *et al*, 2004). At times, such investigation is conducted at local level, at the specific request of agencies such as the parks board, for instance, but without ever being published. Then, of course, there are investigations based on the use of questionnaires conducted on a national scale, a fairly common practice particularly in central and northern Europe (Granet and Dobré, 2009; Hunziker and Bauer, 2009; Kleinhüchelkotten *et al*, 2009; OFEFP, 2000; Rametsteiner and Kraxner, 2003; Rametsteiner *et al*, 2009). Their primary function is to provide the information required to guide forest policy at national level, without necessarily precluding any useful spin-offs on a regional scale. Interest in this type of investigation is found to be heightened when the same is repeated using standardised criteria at regular intervals, as in the case of the Swiss project WaMos (Waldmonitoring soziokulturell) (Hunziker *et al*, 2013; WSL-BAFU, 2010;). As a matter of fact, providing questionnaires at regular intervals to the population allows decision makers to promptly identify ongoing tendencies and facilitate communication.

On a regional scale, the questionnaire does not exclude, but in fact integrates perfectly with, the use of in-depth interviews or other instruments that allow one to delve more deeply into particular attitudes or behaviours. We mention, as an example, the researches conducted by Finger-Stich (2005, 2006) in six communities of French and Swiss Alps. These researches, which were inspired by the theory of social interaction, were based on in-depth interviews. The interviews made possible to highlight reasons and circumstances that were on the grounds of perceptions and actions of residents in relation with their local forests.

We may conclude by maintaining that the construction of a solid and enduring relationship with the public ought to become the primary objective of the boards entrusted with the safeguarding and management of the forest and mountain ecosystems in general. This becomes even more imperative given the rapidly changing times in which we live. The biodiversity emergency has been anything but overcome; other emergencies, such as those related to climate change, urbanisation and pollution, continue to advance. The current economic crisis could cause the strongly anthropocentric vision that at the end of the second millennium had seemed to have run its course, to resurface, principally in relation to a renewed interest in wood as a raw material. At the same time, the need for novelty and intense sensations on the part of today's consumer society has given rise to other "extreme" forms of exploitation of the forest for recreational purposes such as, for example, apart from the now widespread adventure parks, the more recent paintballing war games played in woods and forests.

Today, as an alternative to those based on "consumption" of the territory and its resources, it is still possible to imagine new models of development for the Alpine mountain, without excluding the possibility that timber may yet return to assume, in the future, also an important economic role as a renewable resource.

For this to happen, however, a strict "alliance" between forestry services and citizens is necessary, alliance that can only be founded on the clear knowledge and understanding, on the part of the former, of the true perception of the people regarding the forest. On the other hand, the results of research into forest values are not of interest to the forestry services alone. In fact, the forest often assumes a wider symbolic meaning that it would be best not to underestimate: it could form an integral part of the cultural identity of a people, with the

forest being identified itself with the mountain, the landscape, and the very concept of Nature itself.

For this reason, forest management is linked to more general aspects of management and conservation, which, particularly insofar as the Alpine environment is concerned, could invite criticism of the work being done by the public agencies. No-one today would benefit from aggravating any potential conflict. The stakes in fact are very high: what we are dealing with here is the sustainable management of mountain territories that are closely tied, all things considered, to the sustainability itself of the development of an entire country.

Figures:

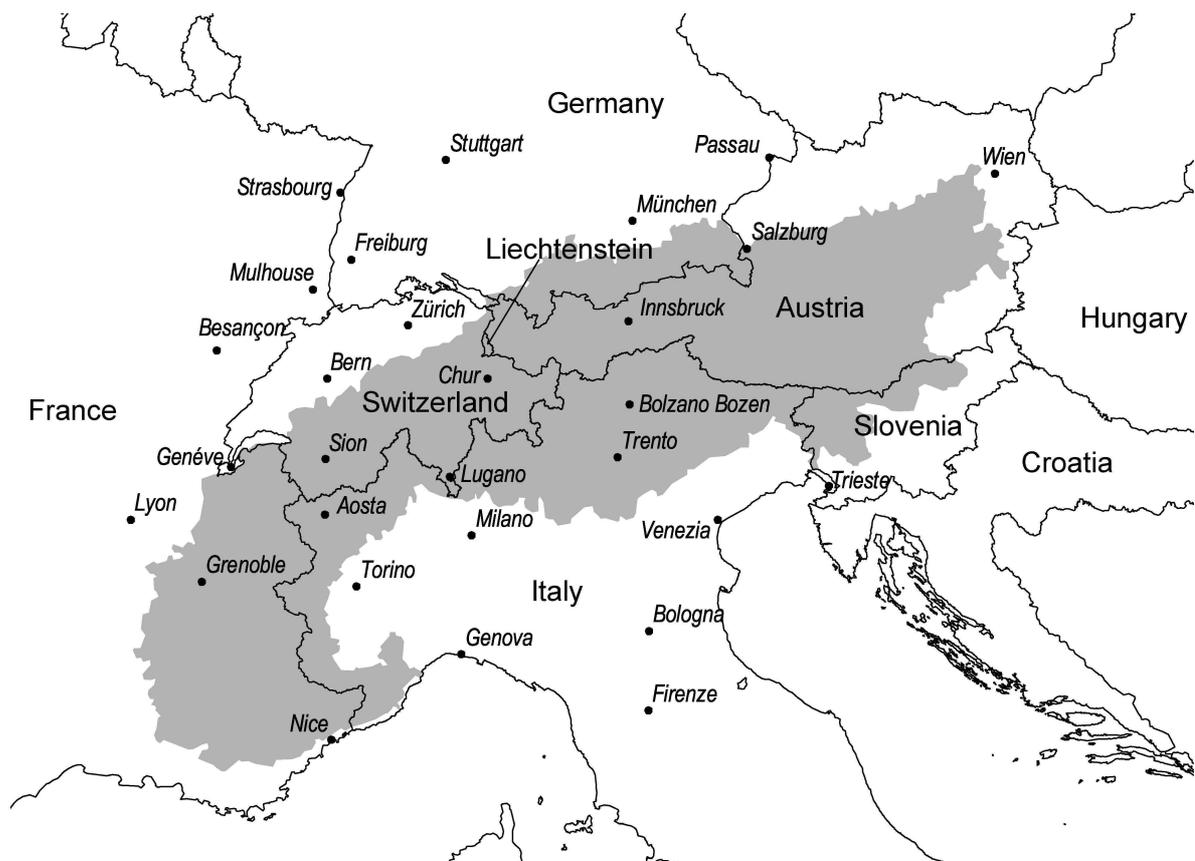


Figure 1: The Alpine Range

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