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**SUMMARY**

*The Italian mountains, particularly the peninsular ones, are undergoing a period of change. Following a social and economic crisis that caused their massive depopulation in the past thirty years, we are entering a new phase in which interest in this difficult environment has revived considerably.*

*The rugged landscapes of the central Apennines harbor phenomena of significant ecological and cultural value.*

*Man's ancient presence here is indicated by numerous historic town centres dating back to the 13th and 14th centuries, perfectly preserved in their original "castle" forms.*

*A large network of national parks which is motivated both by precious wildlife areas, rural landscapes and by the historic communities has recently been instituted through a national law. It provides also the last hope for returning that disappearing social vitality to these mountains.*

*The study presented here was carried out in Abruzzo, a region of the central Apennines which, due to the presence of very ancient architectural centres contained in vast national parks, constitutes an illustrative point of reference for the environmental protection policy and territorial recovery of all the Italian mountain ranges. The aim of the study is to analyze, in particular, the effect of the park institution on the social and economic conditions of the mountain populations. Moreover the new functional roles that the mountain centres might have in a context of national park have been studied.*

## **INTRODUCTION**

With more than 500,000 ha of National Parks, the central Apennines are in a unusual condition by now, if we consider that in Western Europe Parks with an extension of more than 200,000 ha are quite rare. The substantial difference with the other great Parks is that more than 120,000 inhabitants live in 170 centres, situated inside the protected areas. In this situation the Parks have mainly 3 objectives:

- a) - Conservation of rare natural resources, of national interest;
- b) - Conservation of the artistic, architectonic, historical, cultural resources of the mountain centres and of the rural landscapes;
- c) - Recovery of the conditions of social ed economic depression of the mountain populations.

Following the IUCN classification protected areas, which pursue the objectives a and b above, and which in Italy are defined "National Parks", belongs to Category II (National Park) and, at the same time, to Category V (Protected Landscape or Seascape).

The objective c, even if secondary with respect to the first two, takes on a particular importance, because mostly of the centres inside the Mountain Parks (CHIARIZIA G. et al., 1988, DELLA VALLE P, 1990)) are in depressed economic and social conditions, and the abandonment phenomenon is common to all the centres. It is clear that the recovery of these situations is the "sine qua non" condition to obtain the social consent, which is necessary for an effective environmental conservation.

The aim of the research carried out in our department is to characterize the abandonment typology (productive desertion or residential abandonment) and to analyze the relations between the objectives a, b and c defined above, studying, in particular, the effect of the park institution on the social and economic conditions of the mountain populations. Moreover the research has analyzed the new functional roles that the mountain centres can have in a context of national park.

## **AREA OF STUDY**

The Italian Apennine Range is the chain of mountains that extends longitudinally down the entire peninsular sector of the country from north to south.

Its geographical, geological and geomorphic characteristics are quite different from those of the Alps, the much more renowned mountain range that crosses the northernmost part

of Italy from east to west, and which is home to the Monte Bianco (4,810 m. a.s.l.) and several other of Europe's highest peaks (Fig. 1).

The Apennine Range is generally characterized by a calcareous or marly nature, which makes for a specific assortment of environments and landscapes.

Superficial water and high-altitude springs are generally rare because of the almost total percolation of waters by the limestone and the resulting widespread karst phenomena.

There are a few exceptions to this generalized "dry mountain" condition. In several poorly-drained areas there is a strong presence of superficial water flow even at high altitudes.

A further distinctive trait of the Apennines concerns its maximum altitudes: its highest peak is situated in the central part of the range, in the Abruzzo region, on the ridge of the Gran Sasso d'Italia, and reaches a height of 2,912 m. a.s.l. (Fig. 2).

But aside from this and a few other cases of marked orographic emergence, the average height of the Apennine ridge is generally below 2,000 m. a.s.l.

The limited altitudes and resulting, relatively mild climatic and morphological conditions, were all factors that allowed, since antiquity, for a widespread and almost intense human use of these mountains.

Agricultural, forest and pastoral activities took place over the whole mountain range, even reaching, especially with sheep herding, the ridge's summits.

This multi-form activity led, over the centuries, to the spread of human settlements, both permanent and seasonal, which dot all areas of the mountains.

On many elevations, the amount of stretches of landscape modelled by man is comparable to, if not greater than, that of natural spaces.

Nonetheless, these landscapes are often beautiful and evocative, as well as of great cultural and historical value, and may be considered just as worthy of protection and conservation as the wilder natural environment.

Currently, human presences on the Apennines are greatly diminished compared to the years just after the second world war.

Since the forties, the unstoppable movement toward the cities has almost irreversibly impoverished the mountain settlements, and all attempts to limit the phenomenon have hardly had any appreciable effects.

Although it has slowed somewhat, the practice of deserting mountain centres is still current, comprising a continuous transfer of the younger generations to urban areas for instance in the study area around Abruzzo. As an example, we have compared two typical Abruzzo mountain towns (Lucoli and Castel del Monte) to the nearby city of L'Aquila and the city of Rome (Fig. 3).

The loss of productive and economic interests in mountain areas, along with the affirmation of typically urban lifestyle models, are the basic cause of this internal emigration which is all the more marked in mountain communities at high altitudes with limited environmental resources (Fig. 4).

It should therefore be considered that demographic losses suffered by inhabited mountain locations incremented the populations of major urban centers, especially of metropolises close to Abruzzo such as Rome.

This phenomenon is particularly evident starting in the early 1950s.

A comparative analysis of population developments, in the same 120 years, in several important centres of winter tourism in the Alps, (Courmayeur in the Valle d'Aosta region and Selva di Val Gardena in the Trentino Alto Adige region), several centres of winter tourism in the Abruzzo Apennines (Roccaraso and Pescocostanzo) and an Abruzzo mountain community with no special involvement in tourism (Santo Stefano di Sessanio) (Fig.4).

The diagrams demonstrate how the growth of tourism dating back to the 1930s in the two Alpine towns translated directly into strong recoveries of the resident population, indicating locally based management of tourist services.

Economic conditions tied to tourism were so favourable as to bring the quantity of residents to levels almost double those of a century ago.

Tourism in the Abruzzo mountains, though conspicuous, has not led to the same results. In fact, the towns analyzed, although they are two of the most renowned winter tourism centres of southern Italy, have perhaps stabilized their demographic levels, but without managing to register significant population recovery.

This is due to the fact that the receptive structures, which in the Apennines are largely made up of residences and second homes, are often built by outside contractor with few hotel or hotel-type establishments.

Besides the tourist sites named above and a few other isolated cases, in the Apennine areas winter tourism tied specifically to the skiing season is in any case not very widespread.

The low altitude together with the widespread ecological vulnerability of the Apennines, do not allow for significant economic investment in this sector as was possible in the Alps. On the other side, in the past little or nothing was done to increase the summer tourism, which surely has a less environmental impact degree.

The ecological vulnerability is due to the fact that the wildlife areas in the Apennines have relatively small extension, and therefore they are easily disturbed by every human activity, done in the surrounding areas.

While mountain agriculture has significantly diminished because of its difficulties and scarce economic gains, livestock-farming, especially of sheep, is still present.

## THE LEGAL FRAMEWORK

Among the government's attempts to sustain the mountain economy and try to re-insert it into the market, the most important is certainly the one accomplished with Law no. 1102 of 3 December 1971 - "New norms for mountain development" - which introduced a new type of territorial agency, the *Comunita' Montana* (Mountain Community).

This administrative agency is responsible for a mountain territory made up of the aggregation of many mountain townships, whose administrations participate through a federative system in the management of their own territory (*Associazione interregionale Camere di Commercio, 1975*).

The main goals of the law are:

- 1) to promote, within the framework of national and regional economic planning, the elimination of social and economic imbalances between mountain areas and the rest of the national territory, to protect the soil and nature;
- 2) to realize projects related to point 1 through zonal development plans to be drawn up and carried out by the Mountain Communities and to be coordinated within the framework of regional development plans.

The funds provided by the Italian government to sustain the economic recovery of the mountain areas have been funneled to the building of roads, land reclamation, hydraulic systems, irrigation, forestation, and service structures for mountain activities.

The total amount of government financing to back this legislative measure can be estimated, up to the present date, at about 2,000 billion lire (approximately equivalent to 1.25 billion US\$) for the entire national territory, just for routine administration.

Moreover, forestation, land reclamation and irrigation were supported by the governmental provisions for the south (CASMEZ) or by financing from the European Economic Community (EEC), which have always encouraged investments in the south Italy.

In substance, this law did not have a substantial effect on the sectors involved, and the tendency to desertion of mountain towns has continued (*Romano, 1990*).

The population on the inland Italian mountains has registered a numeric contraction, going from 11.3% of the total national population in 1971 to 10.7% in 1981 (ISTAT, 1991).

On the other hand, the mountains have been covered with supplementary human structures, not always realized with proper attention to the necessary landscape protection and nature conservation.

It can definitely be affirmed that the mountain economy, defined in terms of agricultural production, no longer has a credible possibility of playing a sustaining role, for reasons of income level and especially for social reasons.

The inversion, or rather containment, of the desertion phenomenon must be sought in the utilization of other resources, natural and environmental ones, which can make for various types of local economy.

It is necessary to motivate, over the course of the entire year, the presence of populated centres.

In any case, whatever the project undertaken, it must in the first place involve the creation of economic interests for current residents and, in the second place, the creation of additional interests to encourage the possible return of former residents who have strong ties of affection to their place of origin.

It is from this territorial and social framework that a recent legislative measure arose - Law no. 394 of 6 December 1991 - instituting new Italian national parks to be added to the five already existing ones.

These national parks, whose total size is 1,709,000 hectares, cover the mountain territory of the Appenines for about 996,500 ha, that is 58% (Fig. 1).

Italy's historic national parks are those listed here, along with the regions in which they are located and their size.

Particularly in the case of the central Apennines, the size of the protected areas is such as to presumably allow for an outright revolution in the economic system of the mountain country.

The region of Abruzzo, the area under study in the research project outlined here, has a total territorial size of just over one million hectares, of which 400,000 hectares representing 40% of the entire administrative district are under restriction as protected national or regional parks (Fig. 9).

All the region's largest mountains are under such restriction, thus creating a continuous chain of natural reserves unequalled in the rest of Italy.

The research illustrated here has analyzed the territory of the Abruzzo region to locate phenomena of residential and productive desertion in mountain areas (Rolli et al., 1993).

In a following phase, it compared these areas of desertion with the positioning of the national parks, especially the newly instituted ones.

Finally, several proposals were drawn up for the recovery of an active role for the deserted communities which would be related to new functions they might perform in the management of the parks.

This final part of the study also includes contributions coming from research projects carried out for the smaller area of the Gran Sasso d'Italia National Park (Rolli, Romano, 1988).

## **CRITERIA AND METHODS**

In the preliminary phase of research, the entire region (Fig. 5), measuring 10,794.13 Km<sup>2</sup>, was examined to identify conditions of residential and productive desertion of different communities.

The data examined, taken from the ISTAT (National Institute of Statistics) censuses of 1971, 1981 and 1989, was elaborated in order to identify a few particular indices which could be tied to residential abandonment and economic decline.

## Residential Abandonment

An *index of residential abandonment* was defined as follows:

$$I_{ar} = A/B$$

where:

A = the number of unoccupied rooms available for sale or rent, or abandoned by its owners (1981 census);

B = the total number of existing rooms in the community (1981 census)

This indicator is to identify, within a single community, the fraction of real estate whose owners seem interested in permanent use of the property.

This calculation clearly does not include residences which, though not permanently occupied, are continually used on a seasonal basis by the owners for tourism.

In order to limit the uncertainties inherent in the application of the  $I_{ar}$  index, further confirmation indicators tied to demographic dynamics were used (Fig. 6).

In particular, we used indices for the variation of the population in the periods from 1971 to 1981 and from 1981-1989:

$$I_{vp1} = (N-M)/M \quad I_{vp2} = (L-N)/N$$

where:

M = the number of residents in the community in 1971;

N = " " " " " " " " 1981;

L = " " " " " " " " 1989.

## Productive Desertion

The *index of productive desertion* was defined as follows:

$$I_{ap} = (C-D)/D$$

where:

C = the number of residents with jobs in 1981;

D = the number of residents with jobs in 1971.

This indicator shows the decrease in the population of residents gainfully employed in various production sectors over the course of a decade.

The loss of occupied work force in a community is associated with the level of production decline in the community itself.

The phenomenon is further supported by the evaluation of two confirmation indicators, obtained as follows:

#### Index of age of population

$$I_V = E/F$$

where:

E = the number of residents aged over 65;

F = " " " " " under 15;

Both figures are taken from the 1981 census.

#### Index of employment in individual communities

$$I_{OCC} = G/H$$

where:

G = the number of residents gainfully employed in businesses within the community (1981 census);

H = the total number of gainfully employed residents (1981 census).

The **age index** ( $I_V$ ) is to evaluate where the phenomenon of production decline in a community overlaps with the further phenomenon of serious decline in population of young people.

The **index of employment in individual communities** ( $I_{OCC}$ ) instead represents the commuter phenomenon in each community under examination.

It also is an indirect indicator of the likelihood of a further population decline within the community as a consequence of workers moving to areas closer to their workplace (Fig. 7).

These indicators of residential abandonment and production decline were read together, and determined the map of **global abandonment** in the entire region (Fig. 8).

The areas affected by such desertion widely coincide with the internal mountain areas, and cover about 350,000 ha, representing 35% of the region's area.

Some of these communities could recover a more functional role by improving the roads connecting them with principal commercial and industrial centres, thus reducing their isolation from the most important social services (Rolli, 1984).

This could allow for the preservation of permanent residential functions, also tied to better levels of standard of living that a rural community can offer compared to a large productive centre.

In any case, only a few communities have such possibilities. In most cases, the reintroduction of a new territorial centre must be examined according to policies for the protection and constructive utilization of the abundant environmental resources of these abandoned mountain areas.

By comparing the distribution of areas affected by the desertion phenomenon with the geographical outlines of the parks, we can see that 44% of the former fall within the perimeters of the protected areas (Fig. 9).

This particular situation brings with it the possibility of these areas improving their social and economic conditions by taking advantage of economic incentives for national parks provided by the enabling legislation.

The total amount of financing allocated by law for newly established national parks is about 130 billion lire in three years, or about 100,000 lire per hectare if the investments are compared with the size of the protected areas.

In terms of economic planning, these funds will be aimed in part at conservation and protection of nature, while another part will be used to set up structures for the management of the parks, with attention paid to alternative and ecologically compatible utilization of resources.

An important aspect in the plans for such structures involves the location of administrative and directive offices as well as various public services.

This aspect is also the one that, since it requires buildings to house such services, directly involves the residential communities.

As we mentioned at the beginning of this report, many of the communities in the Italian Apennines, particularly in Abruzzo, have a long history, on average dating back to the 13th and 14th centuries, and are therefore characterized by the presence of numerous structures of historic, architectural and monument value (Fig. 9).

These same centres also have a very high incidence of abandoned buildings.

To illustrate this point, it is sufficient to consider that in Abruzzo, the hypothetical availability of abandoned housing to be re-utilized for tourist reception adds up to 800,000 beds.

To better understand the extent of this phenomenon, consider that the number of beds currently available in hotels and hotel-type structures is around 75,000, while there are around 400,000 beds in so-called second homes (CRESA, 1993), (Fig. 10).

The latter are residences which, though not permanently occupied, are used seasonally by the owners or temporarily let out for holidays.

Therefore, as we can see, the housing availability inside the parks is quite high, even if the figures cited above diminish because of inevitable cases of unavailability for various reasons.

The re-utilization of this wealth of housing, however, raises some complex problems.

Without a doubt, the presence of these new parks will draw widespread tourist interests, which will have inevitable effects on the property market in these communities.

The tourism in the parks, attracted by spectacular mountain scenery, by alpinistic opportunities, by wildlife (bear, wolf, chamois, roe, deer, eagle, linx), by history and culture of these sites, mostly will lie on the historic centres, for facilities.

This phenomenon, if left to its own spontaneous development without any regulation, could provoke enormous damage to historic and cultural monuments, as has already occurred in many Italian tourist spots of international renown.

It would most certainly be fairly simple to re-utilize the abandoned historical communities by transforming them into "tourist villages" or "horizontal hotels" for a middle-upper-market clientele.

It would probably be just as simple to insert these elite services into the international tourism circuits managed by large tour operators.

The results could certainly be economically satisfying for the entrepreneurs.

Furthermore, the European Economic Community provides funding aimed at initiatives to set up tourism structures of this kind.

The ideological orientation of this research does not, however, coincide with this method of tourism development, which may even be positive but remains completely foreign to the cultural, social and traditional context of the territory in question.

Life in these historical centres is profoundly rooted in the territory, connected to it by a series of exchanges.

Live-stock herding, limited agriculture, and commerce led residents to an intimate relationship with the territory in which they lived.

Choosing a development model based on a type of tourism which is certainly "rich" and remunerative would at the same time mean excluding potential entrepreneurship by residents themselves to manage local initiatives (De Vecchis, 1992).

It would mean transforming the current residents into living museum objects, robbing them of their cultural depth, reducing them to collecting the crumbs of a lively tourism through

the banal activities like the sale of souvenirs or the management of the most insignificant receptive and food services.

This feared situation should not be seen as a fantastic imagined scenario, but as a sort of true chronicle transposed onto the areas in question here from the experience of what has already occurred in other famous Italian tourist spots.

In many holiday spots, especially in southern Italy, tourism is largely managed by external economic forces which only marginally involve residents in totally secondary initiatives.

We do not believe that this method would be a correct and ecologically permissible development of the Appenine mountain localities.

The only credible possibility for historic mountain towns to recover a new importance and renewed models of living is the motivation of internal entrepreneurship and the full and most extensive possible involvement of locally available work force (IUCN, 1993a,b).

A very important action in this respect is the intentional motivation of local entrepreneurship in hostelry and catering through family businesses.

Agricultural tourism formulas seem especially ideal for this end, since several such experiences have already been successful.

In Italy the agricultural tourism implies hospitality in farms, located in rural centres, and is associated with recreative activities, such as equestrian tours or trekking, and with taste of typical food and wines.

Another choice which has been emphasized in our proposal concerns the irrevocable need to locate the directional and administrative offices of the parks right inside the mountain towns, and not give in to the temptation to locate them in the urban centres bordering the protected territories.

While recognizing the need to have branch offices in the principal capitals of Italy's administrative regions, we have stressed the arrangement of the primary and central offices in the historic settlements inside the parks, in buildings adequately renovated for such ends.

This would inherently mean personnel recruitment among the resident population, and the movement of people, information and interests with respect to the urban centre.

In short, it would mean the enlivening of the social fabric with inevitable effects on the local economy.

Furthermore, many potential communication difficulties due to the geographic conditions of mountain communities can today be overcome with the spread of telematic technologies.

The process we have illustrated, as an alternative to the quick tourism exploitation of external origin, may take longer to realize and consolidate, since it depends on the speed of reaction of the local population to economic and cultural incentives that arise under the new conditions.

But in any case it carries the advantage of not leading to ephemeral and estranging results in which the tourist clientele influences the resident culture and not vice versa.

It remains clear that to a large extent the historic towns will have to simultaneously transform themselves into adequate structures to service tourists, re-utilizing historic buildings according to appropriate conservation criteria, but with very different assumptions and a different involvement in local life and culture.

**Fig. 1**

Mountain areas on the Italian territory account for 35.2% of the entire national surface area, and possess the largest concentration of wildlife reserves in the country. In 1991 a law was passed establishing many new national parks to be added to the five already existing, bringing the size of protected territory to 1,680,000 ha, equal to 6% of the national surface area.

Mountain areas of the Abruzzo region, in the central Apennines, were those most affected by the plan for instituting new national parks, with over 280,000 extra ha of protected land represented by the Laga-Gran Sasso and Maiella parks.

**Fig. 2**

Comparative altimetrical profile of the mountainous chain of the Alps and the Italian Apennines.

**Fig. 3**

This figure shows resident population trends over 120 years in two typical Abruzzo mountain communities not included in traditional tourist circuits (Lucoli and Castel del Monte) compared to the nearby city of L'Aquila and the city of Rome.

It is in fact too evident that demographic decline suffered by mountain communities served to increase the population of major urban centres, especially in metropolises close to Abruzzo, such as Rome.

This phenomenon was particularly evident after the second world war.

**Fig. 4**

A comparative analysis, once again of resident population trends over 120 years, between two popular winter tourism spots in the Alps (Courmayeur in the Valle d'Aosta region and Selva Val Gardena in the Trentino Alto Adige), two winter tourism spots in the Abruzzo Appenines (Roccaraso and Pescocostanzo) and one Abruzzo mountain community with no great involvement in tourism (Santo Stefano di Sessanio).

The diagrams show how the development of tourism in the Alps, which occurred in the 1930s, has directly caused a strong recovery of resident population, signifying local management of tourist services.

Tourism on the Abruzzo Appenines, though conspicuous, has not led to similar results; in fact, the two communities analyzed, among the most important for winter tourism in southern Italy, have perhaps stabilized their demographic levels, but have not managed to register significant population recoveries.

**Fig. 5**

Area of study, Abruzzo region.

## **Fig. 6**

### Residential abandonment

1. Communities with  $0.15 < I_{ar} < 0.24$  (serious phenomena);
2. Communities with  $I_{ar} > 0.25$  (very serious phenomena);
3. Communities with  $I_{vp1}$  negative and  $I_{vp2}$  positive;
4. Communities with  $I_{vp1}$  and  $I_{vp2}$  both negative.

Where:

$I_{ar}$ = Index of residential abandonment;

$I_{vp1}$ = Index for the variation of the population 1971-81;

$I_{vp2}$ = Index for the variation of the population 1981-89.

## **Fig. 7**

### Productive desertion

1. Communities with  $0.20 < I_{ap} < 0.35$  (serious phenomena)
2. Communities with  $I_{ap} > 0.35$  (very serious phenomena)
3. Communities with  $I_{occ} < 0.50$
4. Communities with  $I_v > 250$

Where:

$I_{ap}$ = Index of productive desertion;

$I_{occ}$ = Index of employment in individual communities;

$I_v$ = Age index.

## **Fig. 8**

### Global abandonment

1. Communities with  $I_{ar} > 0.15$  and  $I_{vp1}$  and  $I_{vp2}$  both negative;
2. Communities with  $I_{ap} > 0.20$ ,  $I_v > 250$  and  $I_{occ} < 0.50$ ;
3. Communities which, even if not belonging to the cases above described, are characterized by one or more parameters, showing the presence of serious instability phenomena in social and economic conditions ( $I_v > 250$ ,  $I_{ap} > 0.35$ ).

## **Fig. 9**

In the area under study, the Abruzzo region, there are three national parks (Laga-Gran Sasso, Maiella, and Parco d'Abruzzo), managed by central government, and one regional park (Velino-Sirente) for a total of around 400,000 ha of protected land.

The regional parks are always protected areas of high natural and cultural values, which are founded and managed by administrative regions and not by central government.

Forty-four percent of the communities affected by population desertion are inside the perimeters of these parks.

The presence of a large concentration of historical communities allows us to put forward several credible hypotheses for recovery from these conditions of abandonment.

## **Fig. 10**

Policies for tourism in Abruzzo have always favored the proliferation of "second homes" at the expense of hotels and hotel-type receptive structures.

In fact, while there are around 400,000 beds available in second homes, there are only 75,000 beds available in hotels, inns and hostels.

It is evident that the largest concentration of such houses are on the Adriatic coast of the region and in the major ski resorts of the interior.