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THE ENHANCEMENT OF THE TYRRHENIAN COAST OF CALABRIA BY ENDOGENETIC/ENDOGENOUS DEVELOPMENT OF LOCAL RESOURCES

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Abstract

The study proposed here aims at putting into evidence the conflict on the use of soil between agriculture and other destinations along the Tyrrhenian Calabrian coast[1].

Analyses provide a learning and proposing picture relating to the lack of interaction between urban structure and agro-productive order, involving operationally the waste of space, especially the agricultural one and, as a consequence, the loss of values – potential and real – existing on coastal areas.

The valorization of "agricultural spaces" is intended here as an opportunity able to give inception to a process of integrate planning aimed at legitimizing the endogenous abilities (in the stratifications and potential uses) of agricultural private space to negotiate with various human pressures.

The Thyrrhenian Calabrian coast has been long delegitimated and depotentiated in its primary resources, so compromising (inside its natural vocation itself) the high abilities of sustainable development. An inversion of tendency is needed.

In emphasizing the absence of integrated planning between agricultural and urban sector, the paper shows the configuration of a settling system with respect to the values and the potentials of a territory, recognizing the incomprehensible richness of its complexity.

The coastal heritage of Italy. An endangered resource

How the Italian coast is being put to use

Over the last decades the Italian coastline has undergone an extreme transformation.

[1] The present work is part of the research activity performed by the Department of Environmental and Territorial Sciences (DSAT) of the University of Reggio Calabria, addressing particular attention to the quality of the territory also through integrated planning. It is the result of joint indications, and it is presented and coordinated by prof. Domenico Passarelli, with specific contributions by prof. Luisa Sturiale and Mr Salvatore Salamone, and with the scientific support by prof. Enrico Costa, director of DSAT. Mr Salamone gave his efficient and serious administrative support, as well as his technical contribution for data processing.

The main city ports have grown into vast industrial areas and the coastal plains, which were previously marshland, have now been reclaimed, turned into farmland and settled. The seaside tourist resorts, which date back to before the war, have grown into linear cities. The inland villages have been duplicated on the coast and the most attractive coastlines have become gradually built-up so that in some cases there are long stretches of uninterrupted built-up coastline". The Mediterranean Garden" which came from the merging of the heritage of Magna Grecia and the influence of Arab culture (scattered settlements with shady pergolas and gardens, wells and reservoirs, citrus groves, fig trees and palms all enclosed by dry-stone walls) has disappeared particularly in southern Italy. "The continuous urbanization of the countryside and the intensive building squeezed in along the coast make us appreciate today what until a few years ago was considered a sign of decay and poverty: abandoned villages, and the uninhabited landscape are a precious resource of space and silence". Despite this situation, the Italian Coast continues to be considered one of the main destinations for international tourism due to its beauty. Our Italian coastline is an irreplacable resource for our country and it must be protected and used to its advantage.

Italy is one of the most densely populated countries in Europe (the national average is 189 inhabitants to the square kilometer) where population rises to 500 inhabitants to the square kilometer on the plains and along the coast. The average population density in our coastal towns is 387 inhabitants to the square kilometer.

These are the first data to take into consideration when assessing the situation of the coastline of the peninsula. During the forty-year period from 1951 to 1991, there has been a progressive movement of the population towards coastal areas. This has caused the percentage of residents in these areas to grow by 30% of the total Italian population, slightly less than 18 million inhabitants, live in these areas. To these statistics, we must add the number of tourists who visit seaside areas. Tourism has become an important resource for the Italian economy, although in recent years, it has been penalized by bad programming.

In 1996 it was calculated that more than 30 million tourists arrived in seaside resorts, this means 130 million days spent by tourists in these areas. This influx of tourism has been met with a continual increase in facilities and accommodation. However, the intense development of building and roads has not always been successful in satisfying the needs both of the tourists and the protection of the tourist destination itself, that is, the Italian Coast. 52 % of the 7,122 kilometers of coastline is beach. The Italian coast is one of the most important environmental resources in Italy and also one of the most interesting in Europe, both because of the beauty of its landscape and its unpolluted sea. There are however some serious problems. The first is erosion, which is a phenomenon concerning about 1,500 kilometers of coast, particularly in Calabria, Sicily, Tuscany and Lazio. Then there is the tendency to increasingly use cement for quays of ports and for tourist accommodation which

spreads for over 600 kilometers. So unbuilt coastal areas are becoming increasingly smaller. It has been calculated that there are only six stretches of coast of over 20 kilometers and it is obvious that this is insufficient. Lastly there is the problem of pollution, pollution leads to bans on bathing in areas where it is present. About 600 kilometers cannot be used for bathing due to pollution and this often occurs in popular tourist resorts.

Built and unbuilt areas

The most recent Istat survey regarding built coastal areas shows that the main reason for serious, morphological alterations on the Italian coastline are due to the vast amount of existing buildings. Here are some statistics:

The total number of private homes in coastal towns is 7,765,172 which is equal to 325 of the national total: three million 150 thousand cubic meters. The equivalent of one continuous building about 8 thousand kilometers in length,10 meters in width and 15 floors in height: a sheer "wall" .A part of this cement "wall" consists of uninhabited houses which may only be in use in the holiday season (the concentration of uninhabited housing in coastal areas is 0.49 per hectare against a national average of 0.18). 2,096,600 houses remain almost uninhabited all year except for the summer months, equal to about 850 thousand cubic meters (four storeys of the hypothesized 15 storey building).

The following graphs illustrate the situation on the Tyrrhenian coast of Calabria.

Holiday homes are not the only reason for the transformation of the Italian coast. There are harbours and quays that occupy 4% of the coast which is a total of 259 kilometers. Thousands of kilometers are taken up by infrastructures which serve roads and railways. Following the wave of cement which has swallowed up our coasts in recent decades ,today only 5.4% of coastal territory can be considered as being wild and only 13.7% semi-wild. This territory can be found scattered here and there, patches of nature, imprisoned by man-made constructions. In the whole of Italy there are only six stretches of free, homogenous coastline of a length of over 20 kilometers and only 33 of between 10 and 20 kilometers (of these,not surprisingly, 14 and 12 respectively are in Sardinia). So it is also due to this that erosion attacks our wind and water line for at least 1,039 kilometers (196 in Calabria, 140 in Sicily,122 in Tuscany and 117 in Lazio).

With the help of Istat data we have put together a table and some graphs highlighting urban development along the Tyrrhenian coastline. These underline the vast differences which are to be found from one Calabrian coast to another.

Table 1.

General data concerning housing, both inhabited and uninhabited, in all the townships along the Tyrrhenian coast of Calabria, between 1971 and 1991. Particular attention has been given to the differentiated data for 1991 for uninhabited houses.

Graph 1.1

An increase in housing between 1971 and 1991 .Sizeable increases can be noted in the townships along the coastline, particularly in the Province of Cosenza (with high figures being reached for the townships of Diamante, Praia al Mare and Scalea). In the Province of Vibo Valentia (Tropea, Ricadi) and in the Province of Catanzaro (Falerna and Gizzeria). The rise in the figures for Reggio Calabria is less dramatic.

Graph 1.2.

On examining the figures for uninhabited housing, we can see that they are high in the Provinces of Cosenza, Catanzaro and Vibo Valentia. Surprisingly high figures can be seen for the townships of Scalea and Diamante. These are high increases but the figures are lower for Reggio Calabria.

Graphs 1.3,-1.4,-1.5.

Analyses of the differentiated data concerning the townships of Cosenza and Vibo show that more than 70% of the uninhabited housing is used in the summer months for holidays. The percentage of uninhabited houses in complete disuse is very low.

Trend figures are very similar for the Province of Catanzaro but they show a fall in the difference between housing used during the summer months and housing in complete disuse. This trend is inverted for the Province of Reggio Calabria (with the exception of Scilla) where the percentage of housing in complete disuse is higher (the phenomenon of unauthorized building is more marked here).

Graph 1.6.

This shows the total regional figures sub divided illustrating what percentage of housing is used for holiday homes.

Legislation and government strategies

Legislation, treaties and agreements

There is no existing body of legislation which regulates coastline protection in Italy, apart from Act number 547 of 1907 that safeguards inhabited areas. The most important measures that have been taken are Act number 1497 (29th June, 1939) for the "Protection of Sites of Natural Beauty" and the Galasso Act number 431 (8th August, 1985). The first act was aimed at the protection of “unchanging landscapes which possess exceptional natural beauty and are geologically unique” and groups of buildings of aesthetic and traditional value” and “views of panoramic beauty which resemble landscape paintings, views and 'belvederes', which are accessible to the public, from where spectacular sights can be enjoyed”. This environmental heritage

has been singled out due to its importance to the public. In 1982 one of the first environmental bodies of legislation was passed in our country, the act for the protection of the sea. The first article of this act provides for the drafting of a master-plan for". The protection of the sea and coastline".

The law of 1907 was necessary due to the absence of local bodies which would have been capable of providing complex interventions for the protection of inhabited areas, that is to say, works which are important and require more attention.

Today, however, the roles of the bodies dealing with the issue should be inverted: the regions and the townships should defend inhabited areas and the state should defend the coast, which due to its very nature requires planning and programming on a national level. This, among other things, seems to be the strategy put forward by the regions.

However in more strictly environmental terms, what needs to be done where the coast has been compromised?

Each individual case must be examined and the response must be multi-faceted; a response is to be found in the characteristics of the problem.

However in most cases any further building along the coast is best avoided and the already-existing laws must be respected (like the Galasso law). Therefore there must be a stricter and more efficient regulation of building and, most importantly, the coast must be improved through the endogenous development of local resources.

More complex interventions are called for where erosion is concerned: These interventions should take into consideration river deposits, protective measures and the protection of the beaches.

This last issue should be the key stone in the Master Plan for the protection of the coasts, a plan which is still being drawn up.

The plan for coastal protection: some guidelines

A plan for coastal protection must take into consideration the emergencies which have already been identified on a national level. This is so because problems connected to development sustainability cross all political and local administration borders. Moreover, the heterogenity which characterises the socio-economic and cultural conditions of the Mediterranean basin and the sea that we share, make it clear that the states have a certain responsibility to shoulder. An intensification of the efforts already being made and a strengthening of environmental policies imply a change of direction and a plan of action which aims in particular at:

- A reinforcement of planning and policies and, if necessary, the drawing-up of regional and nationals plans for the protection of the environment;
- The application of systematic approaches for all possible scenarios to be developed, in order to establish coastal "Statutes" which involve the participation of local institutions, socio-professional organizations and the population;

- The study of employment polices for young people and the contribution which can be made in this field: Both the aims of environmental protection and an economically efficient use of natural resources are to be taken into account.
- The training of environment experts who would be able to guarantee the link between research, supervision, regulations and the employment of the new forms of development;
- A growing awareness of environmental problems on the part of elected representatives, local government officials and the national agencies which deal with development and territorial planning.

However, realistically speaking, what must we do to save our coasts without retarding their development and to develop that fundamental resource that tourism constitutes?

Working from the premise that the main causes of the damage to the sea are pollution and the destruction of land habitats, top priority must clearly be given to coastal development. As a first step, any new works should be directed towards the rehabilitation of already-existing structures rather than the building of any new infrastructures. Subsidies, such as government financing and insurance need to be eliminated in favour of new roads, canals and dams which are not part of a Master Plan of territorial development but which are principally directed at the protection of the environment.

The courageous demolition of unauthorised buildings situated near the sea, in conjunction with a policy that would promote a tourist-minded rehabilitation of abandoned historic buildings could be another effective initiative.

Steps aimed at the renaturalisation of the coast would have to be adopted in conjunction with this policy.

In the last few years some environmentalists have come up with several interesting proposals. There are some people who believe that the 362 areas which are more than 3 kilometres long and are almost completely free of settlement and infrastructures constitute the starting-point from which we can safeguard the coast: 2,500 kilometres of free coast which is scattered along the built environment at spaced-out intervals.

Therefore if, in the near future, this heritage is successfully safeguarded, then a renaturalisation of the Italian coast can be embarked upon in a situation where the quantitative datum is insufficient but not catastrophic. Other proposals have been put forward which involve the setting-up of a maritime authority which will be under the jurisdiction of the Presidenza del Consiglio, and which will be responsible for general planning guidelines: regional involvement in the implementation of a national plan for coastal protection and the safeguarding of the marine environment (which the Ministry for the Environment has kept in cold storage for years), the establishment once again of a national civil organisation to operate along the coast, vigilating and implementing anti-pollution measures: the co-ordinated management

of high-risk sea traffic, the illegalisation of non-selective fishing. More generally speaking, the real problem lies in the absence of an environmental awareness at all levels in our society.

Public opinion is not so well informed and interested in this area and so getting around or ignoring the laws is easy. Education needs to begin at school; the only way to beat those people who try to destroy nature is for them to come up against a well-informed public opinion, which is determined to defend its natural heritage. The programmes cannot and must not be inflexible, they must be an evoluted set of objectives and measures which require the participation of all the bodies involved. Our country occupies a front line position, but, generally speaking, all Mediterranean countries are participants. Considerable forces are currently at work, which can call upon a technical expertise and financial resources which, if well used, can lead to significant progress. For those who are genuinely interested in the rehabilitation of the threatened coastlines, the present climate of international co-operation offers a great opportunity to co-ordinate all efforts efficiently, everyone in their own specific field. The extent of the commitment to a new model of development on the part of the institutions will be seen if they manage to grasp this opportunity.

The tyrrhenian coast in Calabria. Its problems and prospects

The geomorphic characteristics and peculiarity

The Tyrrhenian coast, which is about 250 kilometres long from the outlet in Noce to the rock cliff in Scilla, contains numerous completely different kinds of environments. Seen from a geological point of view, the Tyrrhenian coast can be divided into various segments:

- the first most northern segment, extending down to Diamante, is essentially calcareous except for the alluvial plain in Lao;
- the second, which extends to Capo Suvero, mainly formed of clay and sandstone with some calcareous formations like the Scogliera dei Rizzi in Cetraro;
- the third being the immense alluvial drifts on the Piana di S. Eufemia;
- the fourth, coinciding with the Poro promontory, again of clay and sandstone often intersected with granite;
- the fifth, again alluvial drifts, on the Piana di Gioia and Rosarno;
- the last being the Costa Viola, which is mainly gneiss and mica-schist.

A frequent and easily legible geological phenomenon along the entire coast is the marine terracing, which contributes in making quite a unique landscape. The roughness of the coastal sand and conglomerate deposits from the Quaternary period have been smoothed by the waves, which in turn have distributed erosion and river debris.

Particularly integral parts of this landscape are the high plains on the western side of the Aspromonte.

The first most northern segment of the Tyyhrenian coast, from the outlet in Noce to that of Sangineto, is distinguished by the spectacular calcareous mountains in the north-western part of Calabria. The western slopes of the Massicccio del Pellegrino steeply descend towards the coastline, distancing about two kilometres from it, or even penetrating their steep promontories into the sea, like the Scogliera di Fiuzzi and the Capo Scalea. The mountains rise along the coast both in stretches of high precipices that can reach even a hundred metres, and stretches of slopes covered with garigue and meadows, and often picturesque small cultivations of vineyards, fruit orchards, and olive groves. Precious landscape components along this segment of the coastline are the two small islands – the only ones in Calabria – called Dino and Cirella which are found along the shores of Praia and Cirella. A second segment of the Tyrrhenian coast extends from the outlet of Sangineto to that of Savuto. The occidental slopes of the Catena Costiera come closely after, remarkably reducing the width of the sandy shores, even nonexistent in some stretches, and often forming small promontories which descend directly into the sea. The garigue and the Mediterranean colours definitely dominate, interrupted only by the mulberry cultivations which used to be quite diffused. Along the shore. between Belmonte and Amantea, there is a group of rocks called Isca, which someone wanted to identify as the remains of the Enotridi islands cited by the classic geographers. The entire area around these rocks has a wonderful sea floor and today it is an important blue oasis for the WWF. The luxurient slopes of Monte Mancuso, the continuation of the Sila, descend in beautiful marine terraces along the rich and sandy seashore, from the Savuto outlet. One must only penetrate inland towards the mountains to rediscover the unusual beauty of the antique agrarian scenery, with its huge durmasts, poplars, cork-oaks and holm-oaks that compete with the grapevines and the olive, cherry, pear, orange and fig trees. The Golfo di S. Eufemia begins at Capo Suvero. This gulf was probably the consequence of a sinking cirque originated from a fracture after the lifting of the Apennines. Most of the cirque was later filled with alluvial deposits from the Amato. The Piana di S. Eufemia, which extends behind the Golfo di S. Eufemia, was once a vast hydrophilous wood full of treacherous marshes.

South of the Golfo di S. Eufemia is the Punta di Briatico, which continues with a series of urbanized coastal areas.

Then the coast of the Poro promontory begins and ends at the Nicotera Marina after a long extension into the sea, characterized by very unique glimpses of scenery: rugged coastlines of tuff and granite that precipitate into the sea, tiny inaccessible dovetails that open suddenly at the base of the cliffs. The promontory culminates at Capo Vaticano which has an altitude of up to 107 metres, with burnished faces that drop into the sea. Capo Vaticano is the northern boundary for the Golfo di Gioia Tauro,

which extends to the outlet of the Petrace and is right off Gioia and Rosarno's alluvial plains, in the stretch between Marina di Nicotera and Capo Barbi. Vast centuries –old olive groves, which once substituted the ancient primitive forests, vegetate on the terrain enriched by remarkably rich deposits from the Mesima and Petrace rivers. They have adapted so well and are such impressive trees that they constitute real woods in some areas. The last segment, called the Costa Viola, is between Capo Barbi and the Punta di Scilla. This is an inaccessible mountainous rampart – interrupted every so often by ancient geological fractures and channels of impluvium from the meteoric waters – which precipitate into the sea from more than a 700 metre altitude. One can witness the enormous effort men had made to reclaim the vineyards where the morphology of the terrain permitted them to build the uncountable terraces sustained by admirable dry stone walls. These antique cultivations are almost completely abandoned at the present.

In collaboration with the Istat we were able to elaborate the charts and graphs, showing the variations in the areas utilized in agriculture in the different Calabrian provinces from 1971 to 1991.

Charts 2 - 3 - 4

Variations in the areas utilized in agriculture from l971 to 1991. Reductions in the province of Cosenza with scales for 30 to 40% of the total area.

Less pronounced in the province of Catanzaro where the reduction is around 20% and in some cases even less; an analogous situation is in the province of Reggio Calabria.

Agriculture has remained intense in these areas, especially in some communities specialized in particular cultivations, fruit orchards, vineyards and greenhouse farming in Catanzaro; olive groves and vineyards in Reggio Calabria.

Graphs 2 - 3 - 4

Variations in agricultural areas in the different provinces.

Intervention policies and legislation

The results of our analysis arise from an evaluation of how the Calabrian economy is organized and from the conclusions drawn from the research carried out in this field. They provide an adequately clear outline of the weak points in the regional economy. These weak points must constitute the basis for a political strategy concerning the territory. In practice, this strategy is based on the real needs of the territory and its business communities. It uses an endogenous development model, which aims at the exploitation of local resources (labour, capital, skills etc) and is integrated in the overall Calabrian and Southern economy. Therefore, the need to re-draft regional policy in our country, in agreement with community authorities, has sprung from the

evolution of Italy's economic geography but not only from this. The most important points of the new regional policy, which, however, must be in line with the legislation which regulates competition, are:

- A streamlining of automatic aid and more selective and discriminating interventions.
- Greater attention to be paid to small businesses and to the services required by these (the basins and productive areas).
- "Real" interventions are to be priviledged rather than financial ventures.
- Priority to be given to interventions concerning light infrastructures.
- However, the level of financial intervention must be in proportion to the level of development and employment.

The situation described above portrays the context in which local and regional authorities must act in order to resolve the present problems of the productive fabric of the Calabrian coastline. The obstacles, which are strangling the regional economy, are the same as those which gravely damage the majority of southern local economies, including, of course Calabria.

Without a doubt, the interventions, while taking into account the local situations, must be inserted in a general strategic context and must contain a synergy between local and central institutions.

To date there have been numerous measures aimed at promoting and providing incentives for agricultural and tourist policies in the Mezzogiorno, generally speaking, and in Calabria, in particular:

- The "Cassa per il Mezzogiorno" with law number 717/1965 set up 29 areas destined for tourist development. This was done with the technical assistance of IASM.
- However, the town planning framework of the area plans (which didn't have the legal weight of a coordinated territorial plan) didn't turn out to be effective in triggering off the desired development.

The Regional Government in Calabria:

- With the Economic Programme 1971-75, reorganized peripheral tourist amenities (E.P.T. and A.A.S.C.T.) and established development objectives (typological diversification of the amenities and facilities in this sector; the promotion of the archaeological, monumental natural and cultural heritage; the active participation of the Calabrian population in tourism; ecological protection).
- With the document programmed for 1978-81, methodological guidelines for how the territory is to be put to use and tourist policy were laid down, taking into particular account integration with other economic sectors, the lengthening of the tourist season and the creation of tourist itineraries.

- At the end of the eighties the strategy plan "Emergenza Calabria" (Emergency Calabria) was drafted. This plan defined regional intervention, special intervention, ordinary intervention (F.I.O.) Community intervention (Pim and E.U. Funds). In the tourism sector this plan aimed at restoring a territorial equilibrium where the hinterland was concerned, at an improvement in the quality of hotels available and at a rehabilitation of our buildings and monument heritage.
- To date, the regional territorial plan drawn up by the University of Calabria and the University of Reggio Calabria has not been approved. The Regional Government of Calabria has also planned other laws specifically aimed at this sector:
- Regional Law n° 14/73 "Measures for the protection of the coast pending the approval of the Regional Urban Plan
- Regional Law n° 23/73 Intervention favouring the improvement of agricultural estates.
- Regional Law n° 2/74 "Intervention in favour of agriculture and farm management subside.
- Regional Law n° 5/75 "Law to incentivate tourism in Calabria arriving by air", to be followed by
- Regional Law n° 10/83, Regional Law n° 21/86, Regional Law number 6/95.
- Regional Law n° 26/75 "Intervention in the sector of rural infrastructures and public works for rehabilitation".
- Regional Law n° 13/85 "The organization and development of tourism in Calabria putting into effect Law n° 217/83" and subsequently Regional Law n° 14/95 and Regional Law n° 2/98.
- Regional Law n° 23/90 "Laws regarding Regional planning and directions to follow, for the implementation of Law n° 431/85 (Galasso Law).
- Regional Law n° 9/98 "The appointment of the Administration to be responsible for agriculture, forestry/hunting, fishing, rural development, farmhouse tourist accommodation and governmental aid allocated to the Region by Lan n° 143/97"
- Regional Law n° 14/98 "Financial reorganization of agricultural development services in the Region of Calabria.

The dynamics of the employment of land in Calabria

Following the evolution of the Italian economic system, relevant modifications have strongly influenced how land and the rural landscape have been used. As it can be seen from what we have already stated above, in the closing decades of the last century more and more land has been removed from the agricultural and forestry sectors to be used for housing, industrial buildings or recreation.

In Italy, particularly during the period of industrialization (as in other countries which are undergoing economic development) the demand for land for urban/ industrial use has been greater than the demand for recreation use. This is because the industrial development itself directly causes urbanization. So progressively more and more land is taken from farming to build housing facilities and infrastructures. It was in the following post-industrial period that there was a rise in the demand for land for recreational use. This was partly due to stability in the demand for farming and urban/industrial land and partly to a growing "Environmental conscience": People were beginning to realize that natural resources are limited so they must be-used so as not to compromise the satisfaction of the needs of future generations2. "When modern man has satisfied his basic needs of food and secondary needs of industrial goods and facilities, he realises that there is a limit to natural resources and understands the importance of the natural environment where he lives"[3] (Caiati G. 1987).

Various bodies of research documentation show that the phenomenon has been present all over the National Territory. Although it is diversified according to socio-economic situations present in different Italian territorial areas.

The dynamics for land use in Calabria is shown in Tab.a for the period from 1971-1990[4]. Specific attention has been given to modification occurring in: (SAU) surface of agricultural land in use, woodland, other surfaces and unproductive areas.

A progressive fall in SAU[5] can be seen between the first and last years of the period concerned with figures falling from 808,263 hectare to 663.418 hectares, with a decrease of almost 18%, whereas the relative incidence for the total territorial area decreases from 53.6% in 1971 to 44.0% in 1990. As far as the woodland[6] is concerned, the phenomenon is different to the one concerning agricultural areas. In fact, from 1971 to 1985, there was a rise from 401.787 hectares to 424.669 hectares. This means a rise of 5.7% for the territorial area, with incidences of 26.6% and 28.2% respectively for the peak years, while in 1990 there was a reduction of

[2] In synthesis this is the basis for sustainable development which, as it is known, has been defined as "….. Development which satisfies the needs of the present without compromising the possibility of future generations satisfying their needs (definitions given by the World Commission for the Environment and Development –WCD- the so called Bruntland Commission, 1987).

[3] Caiati G: Conflict between agriculture and other destinations in land use: the case of Lombardy; by Capozzi B, Paolillo P.L., Polelli M: Enhancement and protection of agricultural land: the case of Binaschino, Franco Angeli, Milano, 1987.

[4] The specific period of time was chosen for the research because official Regional reports divide statistics for the surface of farmland according to land use until 1990 but afterwards relative information was fragmentary and published irregularly. The authors chose to analyse only the years from 1971-1990. This period happens to be that which coincided with the 2nd and 4th general Agriculture Survey and the data resulting from this survey have been used for research carried out at town council level so results can be compared.

[5] SAU data come from the sum of land surfaces used for sowing, agricultural woodland cultivation, permanent pasture land, family vegetable gardens, nurseries and seed plots (excluding forestry nurseries and those belonging to the Corpo Forestale dello Stato (The State Forestry Commission).

[6] The woodland includes chestnut groves, poplar groves and the Mediterranean undergrowth.

woodland to 396.195 hectares (with a reduction of 1.4% compared to 1971) with a relative incidence in the Calabrian territory of 26.3%. This constitutes an interesting aliquot that is above the national average, which was, in the same year, at 22.4%[7]. Therefore, the woodland in Calabria constitutes an important heritage, which must be safeguarded and enhanced, not only for its productive value but, also, for its irreplaceable environmental function. This function is an essential part of the tourist-recreational, panoramic, cultural and sanitary-hygienic aspects as well as those regarding the preservation of the natural environment, to name the more important.

Looking at the analyses that deal with the "Other" areas, a progressive decrease of the corresponding areas has been highlighted. The area decreased between 1971 and 1990 from 195.589 hectares to 80.375 hectares (a reduction of almost 60%), with incidences in the Calabrian area that go from 13.0% to 5.3% respectively in the time span mentioned. Under the statistical heading we find subdivisions which are quite heterogeneous[8], so it is quite difficult to give a precise interpretation of this phenomenon. This phenomenon will probably continue into the 90's, although at a slower rate, as has happened in other Italian regions, which have been characterised by an advanced economic development. In these cases, after the initial phase, this phenomenon of abandoning the land tends to slow down.

Finally, focusing attention on unproductive land[9], there has been a progressive increase in the relative size, which, from 1971 to 1990, went from 102.391 hectares to 368.039 hectares (an area which has triplicated itself) with the overall rise in the regional territory going from 6.8% to 24.4%.

What has already been seen at a regional level has also been seen in a similar way at a provincial level. This is shown in table.b, where, during the same period, there has been an evolution in the use of the land in the provinces of Cosenza, Catanzaro and Reggio Calabria. In particular, considering the changes that have occurred between 1971 and 1990, there has been a generalized reduction in the SAU, with a slightly higher rate than the regional one (-17.9%) for Cosenza and Reggio Calabria, whereas in Catanzaro the reduction was15.2%. The situation is different for the woodland where there has been a rise of 2.4% of the total area in Cosenza and 10.6% in Reggio Calabria, while in Catanzaro a decrease of 16.5% has been recorded, which is far higher than the regional decrease of 1.4%.

[7] According to ISTAT, in 1990 the woodland area was 6.750.686 hectares and the territory covered 30.127.721 hectares.

[8] "Other" areas covers: abandoned land, uncultivated land or occasionally cultivated land to be used as a building area, parks and public gardens, the areas owned by agricultural concerns, farm yards, etc.

[9] Unproductive areas are those where there are buildings, roads, unfertile land, waterways, etc. [1] Ce sont des lieux, que M. Foucault (1994) définit étérotopies de crise; il dit encore que nous vivons à l'époque du simultané, de la juxtaposition, à l'époque du tout près et du tout loin, du côte à côte et du dispersé…comme un réseau qui croise des noeuds.

For the "Other" areas there has been a notable decrease that varies from 52.3% in Cosenza to 68.7% in Reggio Calabria, whereas the regional level has almost reached 60%.

From the evidence provided there has been a notable reduction of the regional SAU over the course of time studied, even though the rate is different at a provincial level. This is due to the fact that land is in high demand. This demand becomes more accentuated near urban centers, where there is a high urban-industrial demand rather than an agricultural one. It is, however, important to note that the request for land for recreational use is continually growing, this demand is expressed through public intervention of an urban planning nature and the protection of the landscape.

In fact, in this present phase of economic development, there is a strong desire to use the land to its best advantage, which takes into consideration the agricultural and productive aspects as well as the well being of the environment and the protection of the rural landscape.

Therefore, a process of territorial evolution must be thought of, which, at the same time, allows for an economic and rational use of the resources. It must be taken into consideration the fact that the environmental and natural resources are irreplaceable, and necessary for a better life style.

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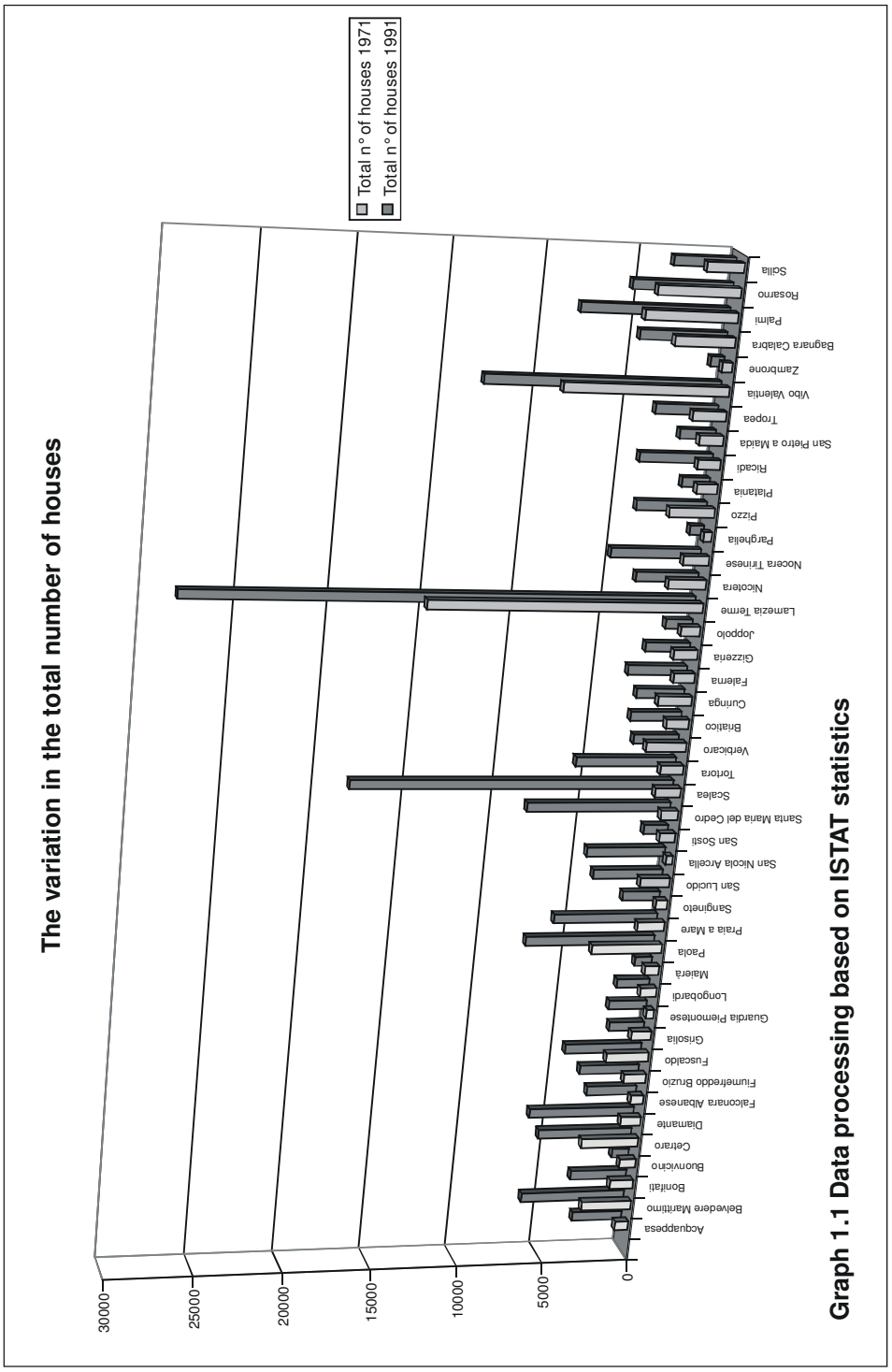
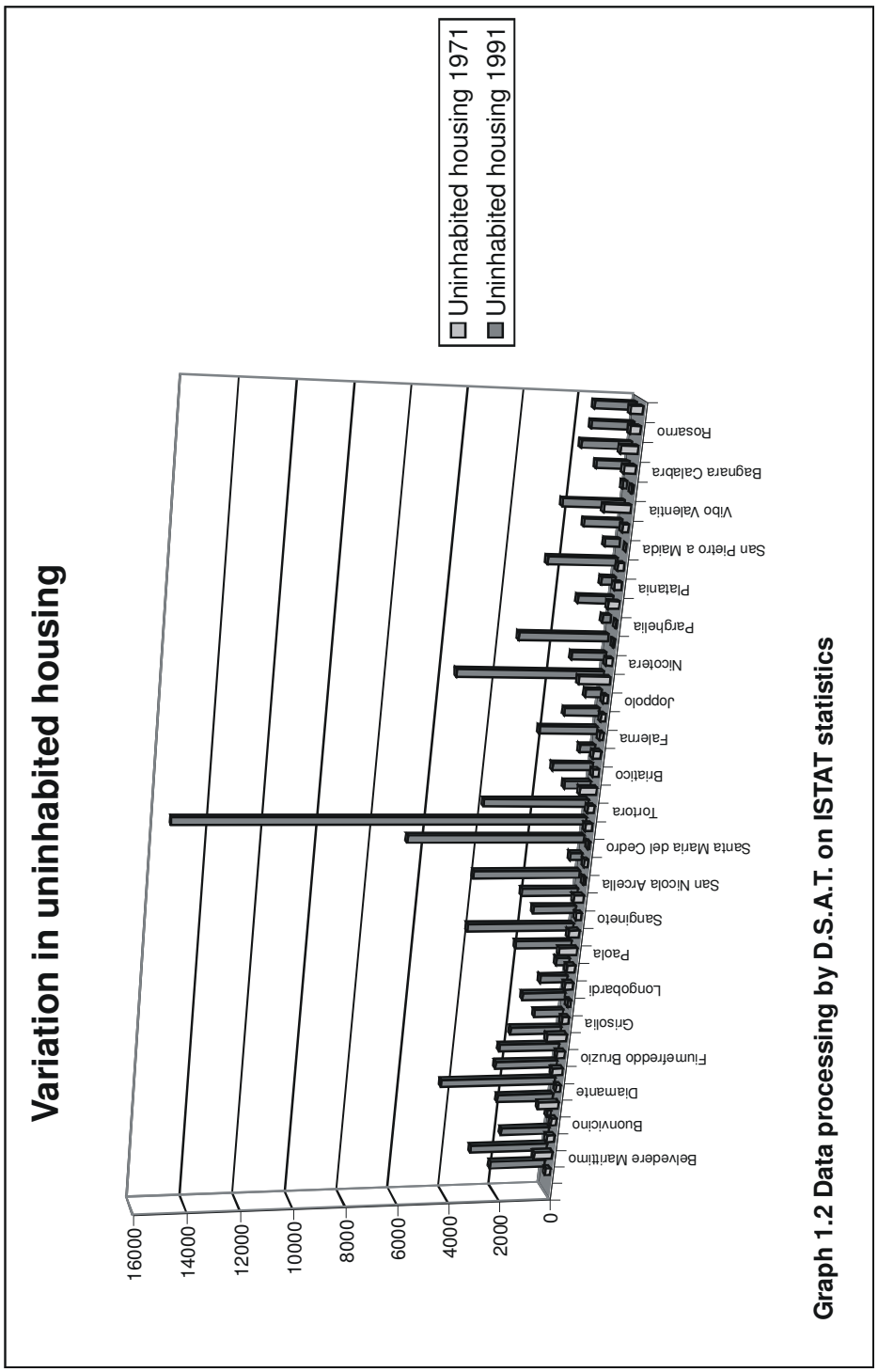
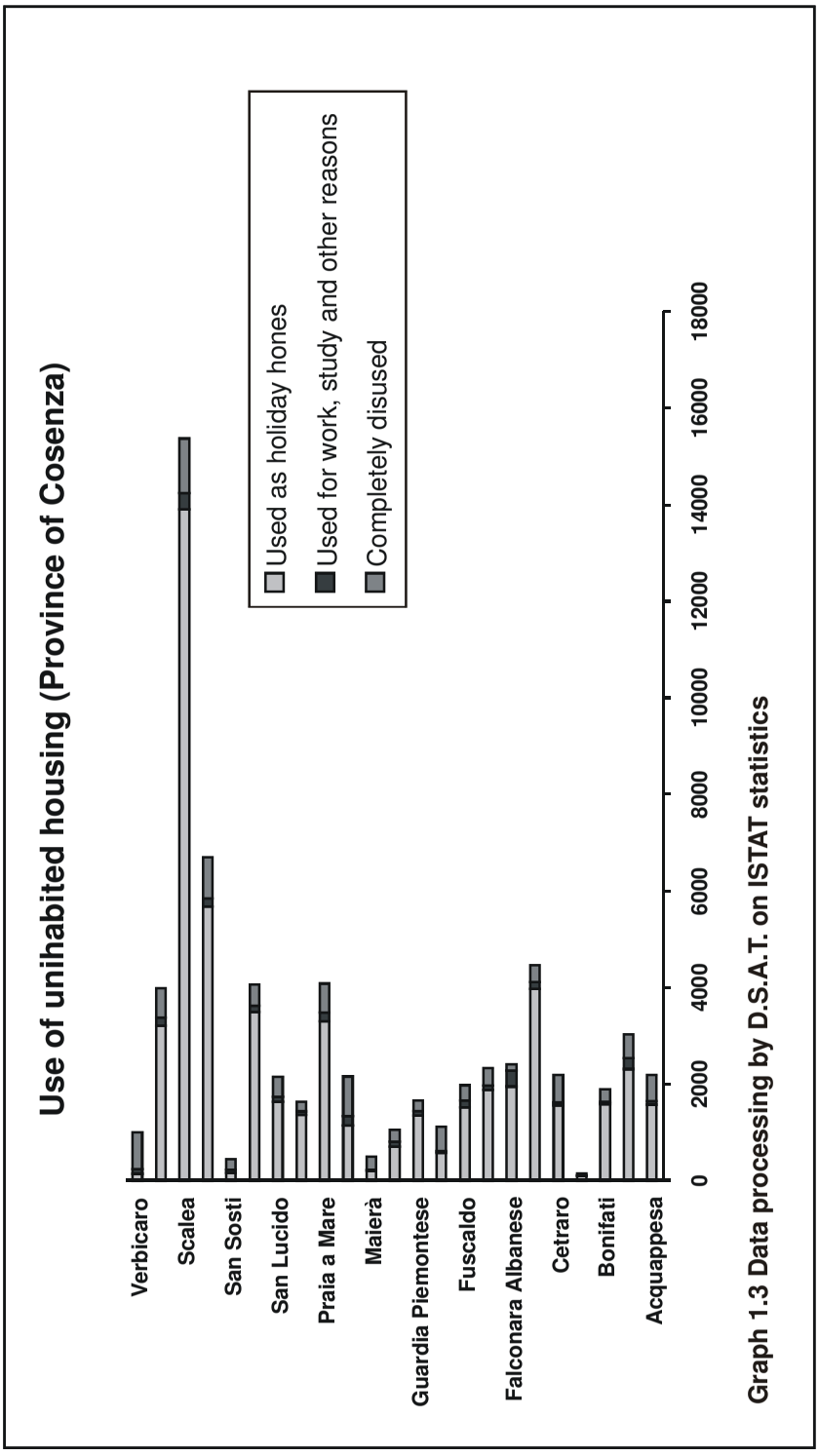
Tab. 1 Data processing based on ISTAT statistics

TOWNSHIPS	1971 Inhabited Housing	1991 Inhabited Housing	1971 Uninhabited housing	1991			
				Uninhabitet housing			
				Reason for non inhabitation			
				Used as holiday homes	Used for work, study or other reasons	Complete disuse	Totale
Acquappesa	586	737	194	1574	74	534	2182
Belvedere Marittimo	2178	3035	723	2312	221	499	3032
Bonifati	1076	1399	300	1591	47	256	1894
Buonvicino	745	841	205	94	13	37	144
Cetraro	2532	3273	798	1561	54	579	2194
Diamante	1003	1652	171	3972	140	352	4464
Falconara Albanese	335	494	401	1948	331	134	2413
Fiumefreddo Bruzio	985	1127	299	1879	93	362	2334
Fuscaldo	1693	2480	770	1513	149	312	1974
Grisolia	887	913	259	570	42	501	1113
Guardia Piemontese	316	542	112	1356	85	214	1655
Longobardi	613	832	310	706	95	249	1050
Maierà	509	482	315	204	19	275	498
Paola	3334	5271	692	1140	193	823	2156
Praia a Mare	1135	1871	411	3297	190	592	4079
Sangineto	435	508	197	1370	65	195	1630
San Lucido	1326	1824	378	1635	103	412	2150
San Nicola Arcella	301	411	74	3498	129	443	4070
San Sosti	756	936	135	164	59	224	447
Santa Maria del Cedro	886	1463	79	5676	177	846	6699
Scalea	1191	2776	258	13912	329	1131	15372
Tortora	1045	1698	260	3209	171	600	3980
Verbicaro	1624	1565	636	141	95	763	999
Briatico	1054	1345	229	655	655	220	1530
Curinga	1598	2121	305	245	46	282	573
Falerna	1046	1146	136	1484	159	540	2183
Gizzeria	1171	1174	173	772	180	363	1315
Joppolo	921	903	167	473	39	95	607
Lamezia Terme	14009	22628	1171	2177	674	2649	5500
Nicotera	1878	2199	232	888	62	344	1294
Nocera Tirinese	1372	1698	53	2496	336	513	3345
Parghelia	410	481	37	200	41	54	295
Pizzo	2105	2608	412	827	151	332	1310
Platania	893	1014	264	193	69	254	516
Ricadi	1031	1451	230	2089	180	326	2595
San Pietro a Maida	1327	1416	4	353	14	185	552
Tropea	1618	2062	227	1058	127	221	1406
Vibo Valentia	8036	10618	995	1204	305	777	2286
Zambrone	494	588	65	110	35	7	152
Bagnara Calabra	2855	3566	429	479	99	632	1210
Gioia Tauro	3620	5796	306	294	162	1014	1470
Palmi	4427	6271	637	1076	115	650	1841
Rosarno	4143	3906	374	235	199	1121	1555
Scilla	1580	1855	445	849	111	568	1528

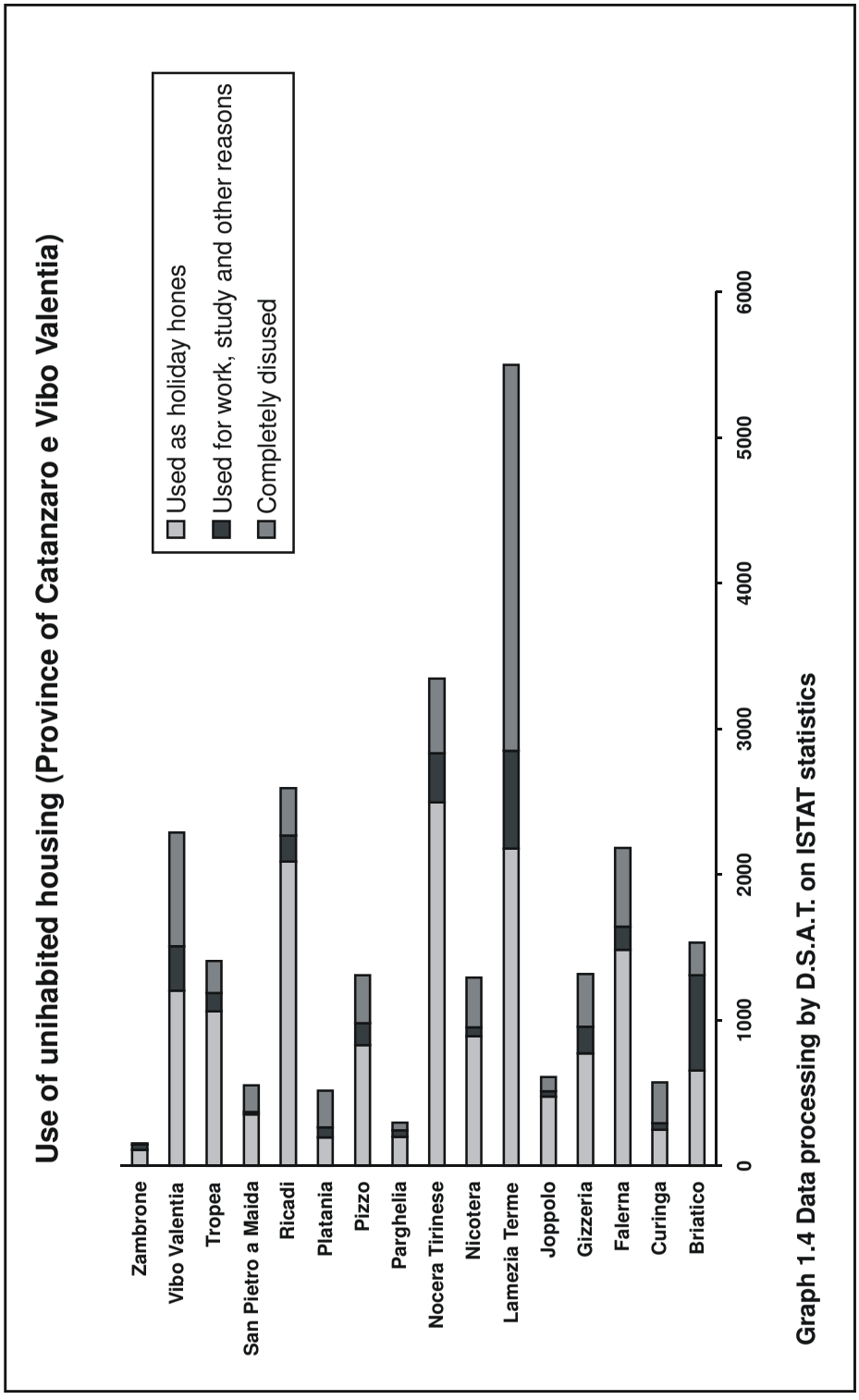

Total n° of houses 1971
Total n° of houses 1991
The variation in the total number of houses
30000
25000
20000
15000
10000
5000
0
Acquappesa
Belvedere Marittimo
Bonifati
Buonvicino
Cetraro
Diamante
Falconara Albanese
Fiumefreddo Bruzio
Fuscaldo
Grisolia
Guardia Piemontese
Longobardi
Maierà
Paola
Praia a Mare
Sangineto
San Lucido
San Nicola Arcella
San Sosti
Santa Maria del Cedro
Scalea
Tortora
Verbicaro
Belmonte Calabro
Cunnga
Falerna
Gizzeria
Joppolo
Lamezia Terme
Nicotera
Nocera Tirinese
Pargheliа
Pizzo
Platania
Ricadi
San Pietro a Maida
Tropea
Vibo Valentia
Zambrone
Bagnara Calabra
Palmi
Rosarno
Scilla
Graph 1.1 Data processing based on ISTAT statistics



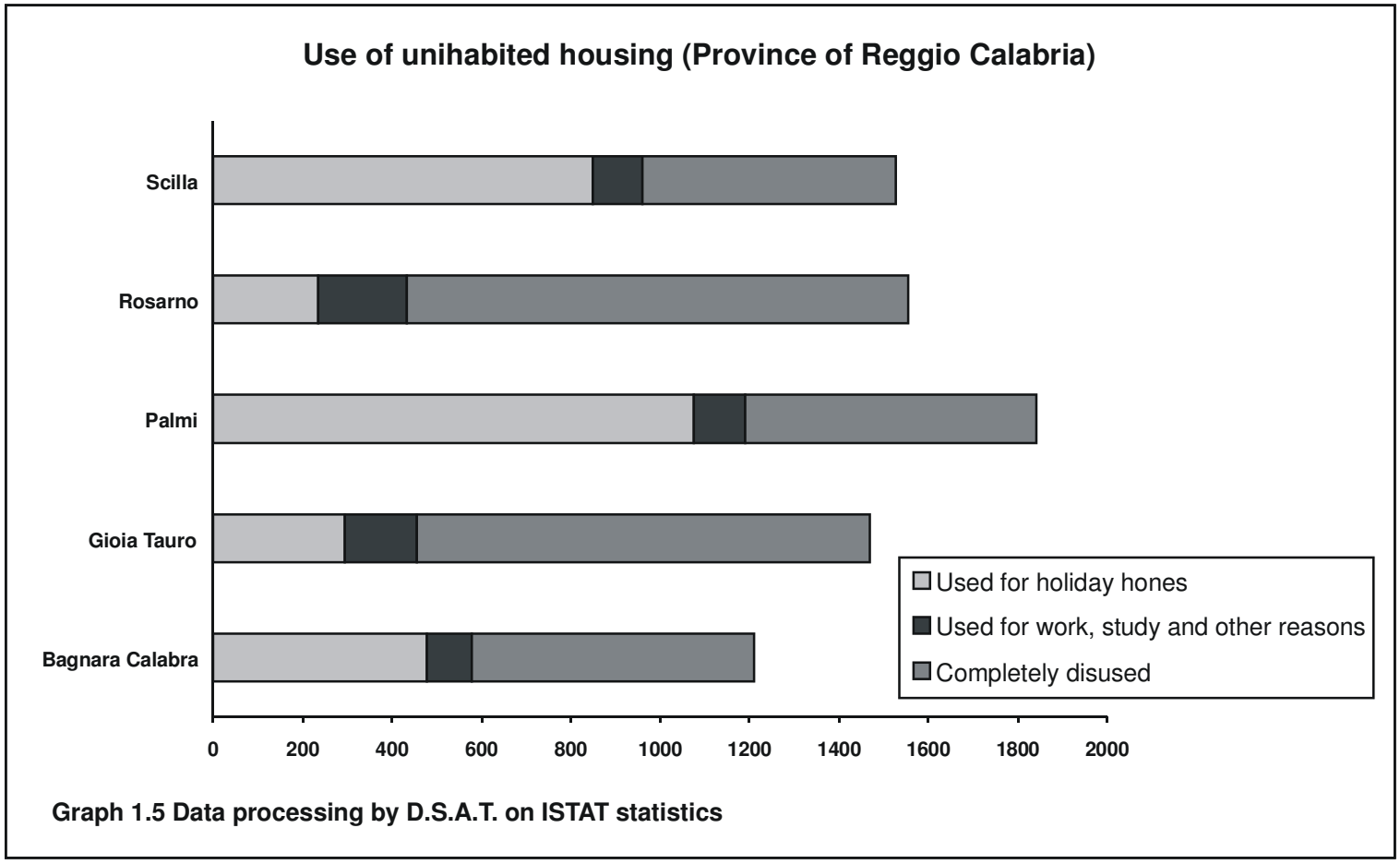
Graph 1.2 Data processing by D.S.A.T. on ISTAT statistics



Graph 1.3 Data processing by D.S.A.T. on ISTAT statistics

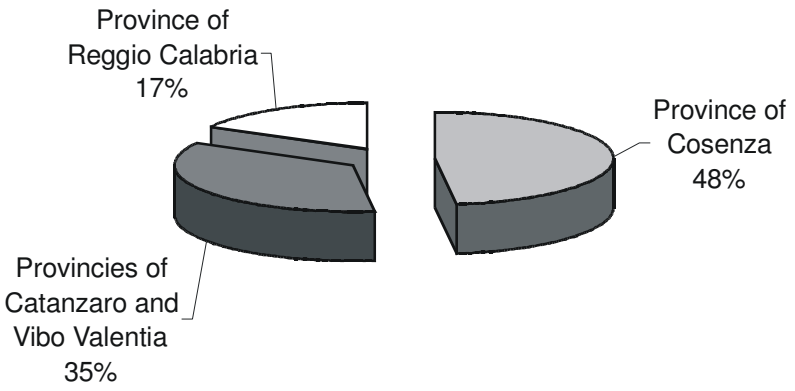


Graph 1.4 Data processing by D.S.A.T. on ISTAT statistics



Graph 1.5 Data processing by D.S.A.T. on ISTAT statistics

Figures for uninhabitad housing used as holiday homes (Graph 1.6 Data processing by D.S.A.T. on ISTAT statistics)



Tab. 2 The surface of farmland according to land use in the township (land surface in hectares) years 1971 - 1991 Province of Cosenza

COMUNI	land surface used for agricolture								wodland areas		other land surfaces		Total land surface	
	sowable land		permanent cultivation		permanent pastures and andyrazing land		Total							
	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991
Acquappesa	174,78	86,97	241,08	103,93	104,01	4,65	519,87	195,55	528,87	881,94	525,89	89,06	1574,63	1166,55
Belvedere Marittimo	841,68	290,54	547,67	430,35	260,61	77,21	1649,96	798,10	859,67	282,52	473,15	357,11	2982,78	1437,73
Bonifati	327,53	258,96	288,82	173,07	175,11	214,01	791,46	646,04	267,10	458,4	1303,8	320,2	2362,36	1424,64
Buonvicino	333,34	175,79	345,22	263,18	279,22	364,91	957,78	803,88	1763,11	1507,43	198,89	228,96	2919,78	2540,27
Cetraro	941,49	728,90	2123,93	384,52	1442,65	406,89	4508,07	1520,31	640,57	1819,15	1083,33	736,96	6231,97	4076,42
Diamante	154,47	56,54	369,31	189,04	61,83	108,45	585,61	354,03	39,05	35,59	141,67	9,99	766,33	399,61
Falconara Albanese	410,51	172,66	22,39	21,30	206,94	252,33	639,84	446,29	495,31	400,6	154,39	67,9	1289,54	914,79
Fiumefreddo Bruzio	1059,82	289,93	227,79	65,34	586,71	43,05	1874,32	398,32	359,59	242,78	213,59	111,92	2447,50	753,02
Fuscaldo	1003,76	696,02	141,81	207,26	559,31	71,97	1704,88	975,25	2720,91	885,87	691,97	251,6	5117,76	2112,72
Grisolia	340,23	181,22	216,93	166,26	506,82	2,26	1063,98	349,74	3019,04	2321,27	508,13	75,18	4591,15	2746,19
Guardia Piemontese	47,81	52,41	74,55	45,81	57,87	41,35	180,23	139,57	954,22	854,99	591,26	259,02	1725,71	1253,58
Longobardi	486,99	288,07	53,89	305,82	144,73	321,03	685,61	914,92	483,88	669,52	544,26	51,97	1713,75	1636,41
Maierà	244,11	171,79	130,98	161,90	304,42	73,82	679,51	407,51	532,16	415,32	292,79	147,86	1504,46	970,69
Paola	595,07	346,63	122,18	114,15	833,88	43,19	1551,13	503,97	2361,21	210,02	160,38	98,27	4072,72	812,26
Praia a Mare	204,56	275,92	161,71	193,39	495,61	808,58	861,88	1277,89	868,64	394,32	55,48	219,24	1786,00	1891,45
Sangineto	208,29	116,71	178,3	64,82	374,3	6,4	760,89	187,93	567,56	214,57	821,31	101,54	2149,76	504,04
San Lucido	628,01	420,22	40,18	148,2	768,76	182,68	1436,95	751,10	932,22	656,03	116,09	172,5	2485,26	1579,63
San Nicola Arcella	123,76	26,88	84,64	57,47	193,62	57,53	402,02	141,88	22,17	178,57	615,66	12,2	1039,85	332,65
San Sosti	853,7	422,42	524,69	460,72	406,22	1160,64	1784,61	2043,78	1789,81	184,85	279,18	73,81	3853,60	2302,44
Santa Maria del Cedro	350,64	319,07	312,16	326,83	51,75	2	714,55	647,90	163,7	139,6	578,67	77,26	1456,92	864,76
Scalea	608,54	400,17	131,4	85,01	82,63	91,2	822,57	576,38	24,65	3374,37	232,29	43,95	1079,51	3994,70
Tortora	532,04	283,92	279,05	48,86	283,87	128,37	1094,96	461,15	2981,22	61,26	1287,31	32,22	5363,49	554,63
Verbicaro	478,74	147,21	420,2	302,46	731,03	83,3	1629,97	532,97	809,48	156,8	543,71	173,76	2983,16	863,53

(Data processing by D.S.A.T. on ISTAT statistics)

Tab. 3 The surface of farmland according to land use in the township (land surface in hectares) years 1971 - 1991 Provincie di Catanzaro e Vibo Valentia

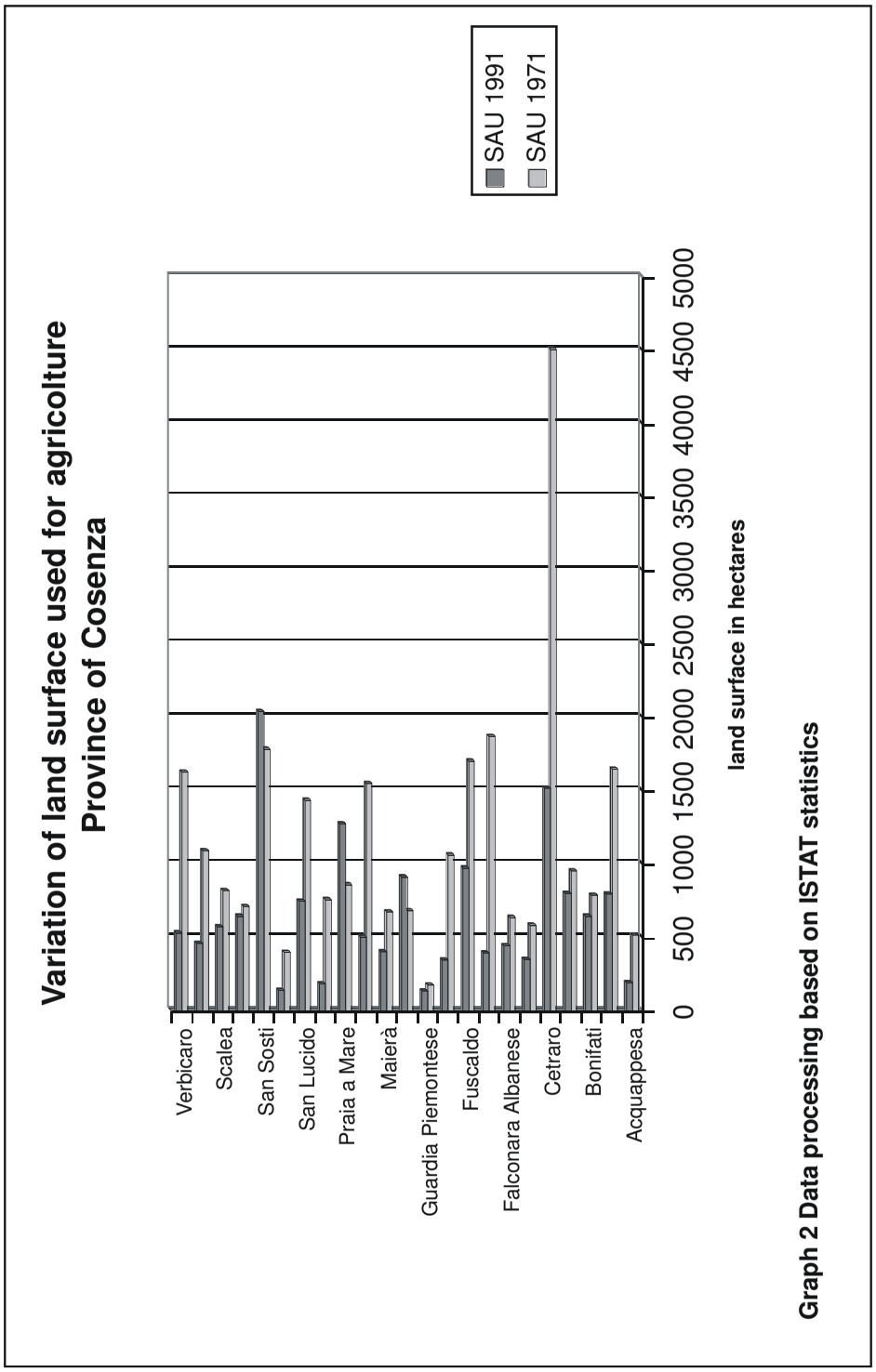
COMUNI	land surface used for agricolture								wodland areas		other land surfaces		Total land surface	
	sowable land		Permanent cultivation		permanent pastures and andyrazing land		Total							
	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991
Briatico	1442,08	842,88	772,85	739,13	88,45	34,03	2303,38	1616,04	1,48	117,42	123,92	126,93	2428,78	1860,39
Curinga	1821,10	1011,22	2149,99	2487,12	258,99	37,83	4230,08	3536,17	520,69	434,71	248,25	350,15	4999,02	4321,03
Falerna	591,02	156,06	630,81	381,34	269,38	42,31	1491,21	579,71	286,27	364,19	222,77	164,23	2000,25	1108,13
Gizzeria	494,61	311,24	1108,97	1201,37	592,81	218,47	2196,39	1731,08	392,30	415,91	126,60	181,39	2715,29	2328,38
Joppolo	820,46	419,08	309,66	202,75	193,43	107,71	1323,55	729,54	59,44	5,63	235,97	138,53	1618,96	873,70
Lamezia Terme	3620,92	1959,01	7897,44	5900,28	586,31	191,46	12104,67	8050,75	469,00	943,28	526,94	531,42	13100,61	9525,45
Nocera Terinese	986,94	998,75	1625,25	1446,10	479,70	196,47	3091,89	2641,32	949,63	1010,99	170,00	470,06	4211,52	4122,37
Parghelia	197,98	91,83	149,21	53,81	62,91	1,61	410,10	147,25	0,00	4,15	195,28	63,37	605,38	214,77
Pizzo	349,75	422,04	558,69	561,95	102,18	56,05	1010,62	1040,04	160,77	25,50	164,76	658,30	1336,15	1223,84
Platania	493,09	451,57	392,22	280,25	391,42	54,82	1276,73	786,64	452,45	520,21	645,15	334,97	2374,33	1641,82
Ricadi	1105,18	665,51	305,32	188,92	42,23	16,39	1452,73	870,82	41,69	2,93	100,82	134,72	1595,24	1008,47
S. Pietro a Maida	221,47	137,18	1037,83	850,75	137,61	0,00	1396,91	987,93	241,60	205,94	36,69	31,98	1675,20	1225,85
Tropea	123,13	130,00	140,19	28,72	15,40	4,00	278,72	162,72	6,36	2,00	7,07	14,27	292,15	178,99
Vibo Valentia	1919,92	823,48	1118,69	716,00	92,65	138,77	3131,26	1678,25	63,63	62,74	667,32	85,69	3862,21	1826,68
Zambrone	835,59	542,50	271,75	141,61	4,78	2,90	1112,12	687,01	58,77	0,00	149,00	146,68	1319,89	833,69

(Data processing by D.S.A.T. on ISTAT statistics)

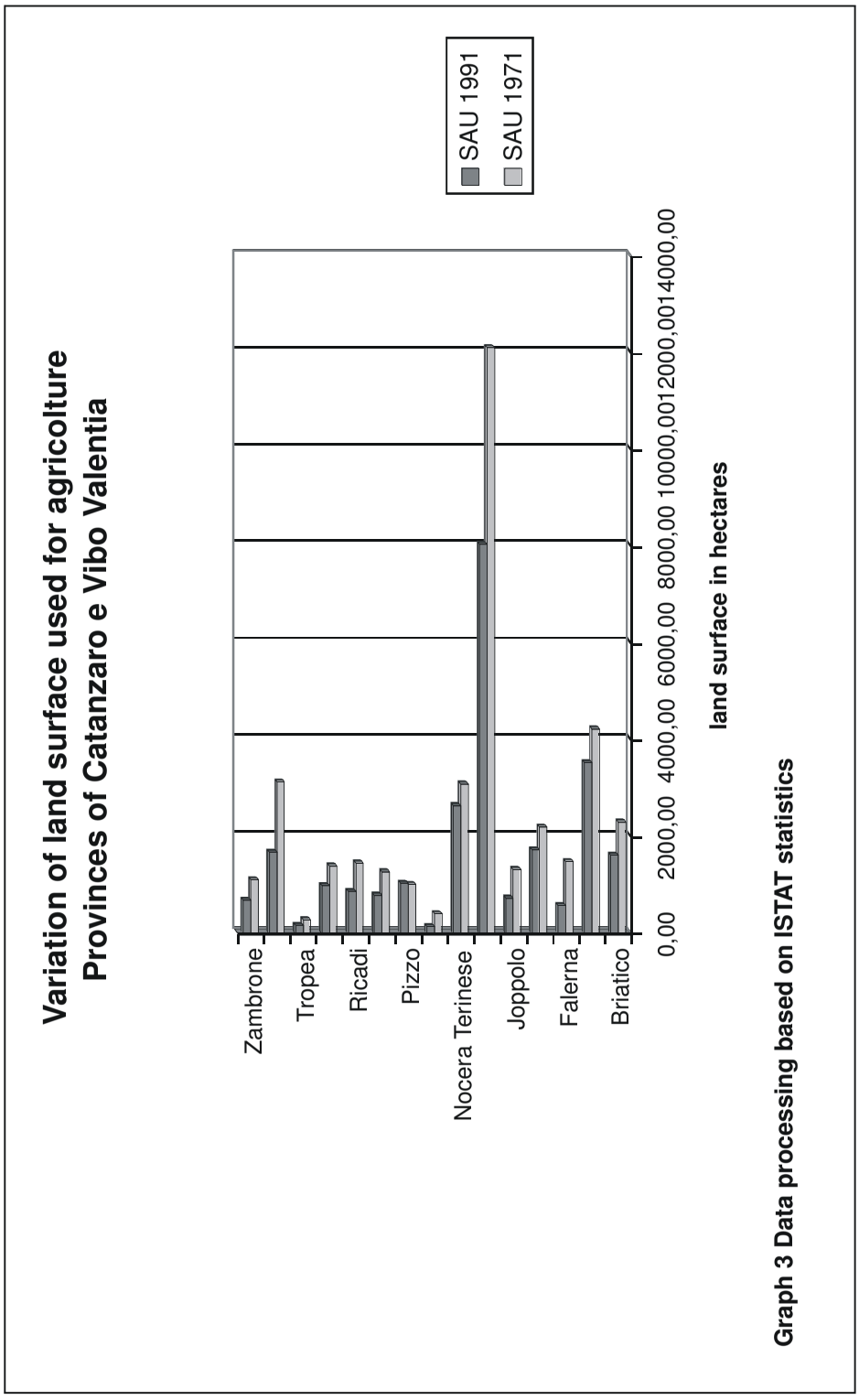
Tab. 4 The surface of farmland according to land use in the township (land surface in hectares) years 1971 - 1991 Province of Reggio Calabria

	land surface used for agricolture													
COMUNI	sowable land		permanent cultivation		permanent pastures and andyrazing land		Total		wodland areas		other land surfaces		Total land surface	
	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991	1971	1991
Bagnara Calabra	461,79	283,41	574,09	263,69	108,98	10,82	1144,86	557,92	1729,40	659,23	131,5	95,35	3005,76	1312,50
Gioia Tauro	296,83	193,73	2755,79	1986,03	63,16	0,00	3115,78	2179,76	95,67	5,98	97,8	125,89	3309,25	2311,63
Palmi	113,98	36,43	2296,1	1458,00	176,55	5,00	2586,63	1499,43	27,85	34,59	27,85	257,24	2642,33	1791,26
Rosarno	177,75	65,10	4388,48	2600,45	112,45	0,00	4678,68	2665,55	2,00	0,5	95,33	85,42	4776,01	2751,47
Scilla	333,14	440,69	238,73	132,42	262,32	47,40	834,19	620,51	1274,31	1883,66	399,15	112,32	2507,65	2616,49

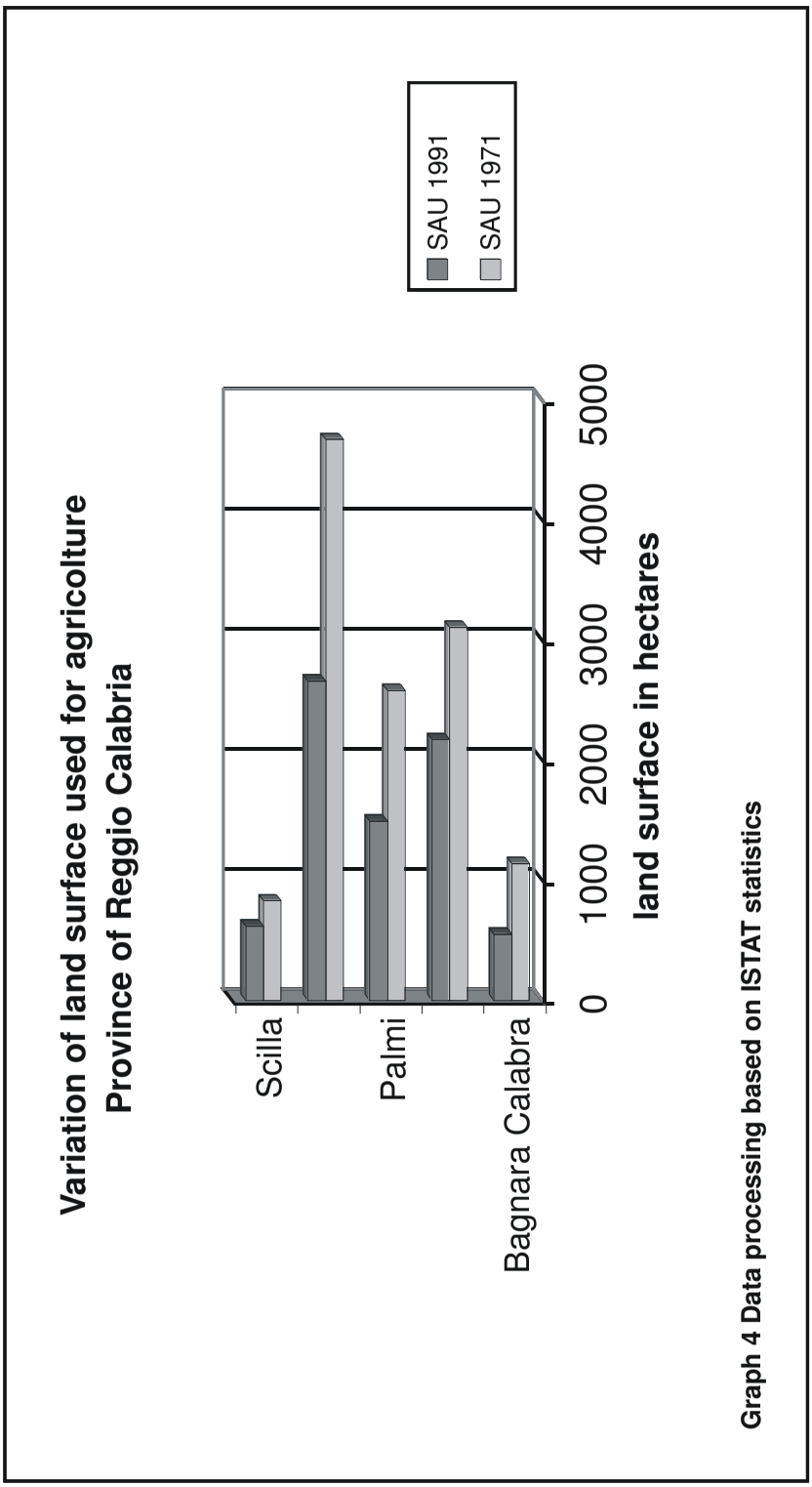
(Data processing by D.S.A.T. on ISTAT statistics)



Graph 2 Data processing based on ISTAT statistics



Graph 3 Data processing based on ISTAT statistics



Graph 4 Data processing based on ISTAT statistics

TAB. (a) - Dinamics of land use in Calabria from 1971 to 1990 (*)

Anni	SAU (1)		woodland		other surface (3)		unproductive surface (4)		territorial surface	
	ha	%	ha	%	ha	%	ha	%	ha	%
1971	808.263	53,6	401.787	26,6	195.589	13,0	102.391	6,8	1.508.030	100,0
1975	789.562	52,4	422.520	28,0	187.029	12,4	108.915	7,2	1.508.026	100,0
1981	778.464	51,6	424.198	28,1	188.565	12,5	116.800	7,7	1.508.027	100,0
1985	798.370	52,9	424.669	28,2	124.104	8,2	160.884	10,7	1.508.027	100,0
1990	663.418	44,0	396.195	26,3	80.375	5,3	368.039	24,4	1.508.027	100,0

(*) Source: ISTAT: Annuario di Statistica Agraria. Roma,different years.

(1) SAU data come from the sum of land surfaces used for sowing, agricoltural woodland

(2) chestnut groves, poplar groves and the Mediteranean undergroweth are included

(3) These include: abandoned land, uncultivated land or occasionally cultivated land to be used as a building area, parks and public gardens; areas owned by agricoltural concerns farmyards

(4) Unproductive areas are those where there are buldings, roads, unfertile land, waterways etc.