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# Micromunicipality (MM) and Inner Areas in Italy: A Challenge for National Land Policy

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Abstract: The following paper examines urban and territorial planning in Italy, where decisionmaking is entrusted almost exclusively to the almost 8000 small municipalities present in the country. Plans for and the transformation of built-up areas, infrastructure and social services of all types, and serving all purposes in a national territory of more than 300,000 square kilometers, are controlled by a multitude of Mayors, Boards and Municipal Councils that govern plots of land consisting of polygons of a few kilometers per side. This is generally achieved using urban planning tools developed without any general rule or protocol. Often, most of their content is even ignored as a result of national legislation that weakens them, making them largely irrelevant. This is a European example of urban mismanagement that should be brought to the wider attention of the European technical-scientific community because the debate developed so far on this topic—even by eminent and authoritative urban planners—has been almost entirely published in Italian only. Public and political attention around the issue is still extremely limited, although the serious effects of this "molecular planning" are beginning to be perceived: unjustified overurbanization and very disorganized, extremely energyintensive and ecosystemically destructive urban layouts that are completely at odds with the public interests of environmental and urban quality. In the following paper, we make some comparisons with other European countries and outline some possible directions—certainly very difficult to follow—to rethink and remedy these negative effects.

Keywords: local planning; land take; micromunicipality; sustainable planning



Citation: Romano, B.; Zullo, F.; Fiorini, L.; Montaldi, C. Micromunicipality (MM) and Inner Areas in Italy: A Challenge for National Land Policy. *Sustainability* 2022, 14, 15169. https://doi.org/ 10.3390/su142215169

Academic Editor: Christian N. Madu

Received: 9 September 2022 Accepted: 26 October 2022 Published: 16 November 2022

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#### 1. Introduction

This paper focuses on the role of "small" municipalities in determining the national framework for territorial transformations in Italy, meaning those municipalities with limited geographic–spatial size. The clarification is necessary because, in other cases, including normative ones, "small municipalities" are considered those below a certain population threshold. In the Italian case, however, there is a considerable alignment between small spatial and demographic dimensions, in that the 5600 municipalities with a smaller-than-average size (3820 ha) have, in turn, an average population of 4300, while the remaining 2360 municipalities with a larger area have an average population that is three times this size (about 15,000 inhabitants).

The theme of municipal dimension is closely associated with that of spatial planning and urban regeneration, to which bodies in Europe, but also on other continents, are particularly sensitive, as emerges from the relevant scientific literature [1–4].

These innumerable administrative units generate problems and pathologies for the territory, environment and social communities that may take on considerable modelling significance on an international scale too, highlighting the consequences of spatial planning lacking a strategic and far-reaching vision of objectives.

Spatial and urban planning in Italy, in terms of decision-making leading to concrete effects, falls mainly under the responsibility of municipalities. The latter act in a very

Sustainability **2022**, 14, 15169 2 of 16

independent manner from one another, unlike what occurs in other European countries where the strategic dimension of planned transformations is managed at broader territorial levels [5–11].

A fairly clear and comparative picture of the hierarchical planning system in European countries is laid out by González Pérez [12]: "Each country normally delimits three or four types of plans that correspond to each administrative level: national or federal, state or provincial, municipal or regional and partial or detailed. Common to all countries is a system of plans divided into two types: structural or indicative plans which deal with physical planning in more or less extensive territories (normally a municipality and, more rarely, a group of municipalities: a metropolitan region, region, inter-communal territory, etc.). This is where urban development plans par excellence belong (the Master Plan): The Plan General de Ordenación Municipal (General Plan for Municipal Development) in Spain, the Bauleitplanung in Germany, the Kommuneplaner in Denmark, the Schéme de Coherence Territoriale in France, the Piano Regolatore Generale in Italy or the Portuguese Plano Director Municipal".

Indeed, issues have been highlighted in this regard too, since a few years later Klaus and Kunzmann [11] wrote that, when neo-liberalism received growing political support, most European countries and the European Commission based their economic policies on the neo-liberal free-market ideology. It is this neo-liberal policy environment that has a considerably longer-term impact on planning, not the crisis. The crisis may have raised awareness among a few scholarly planners that former urban or regional development policies did not achieve their expected goals. As a rule, economic stakeholders and policy advisors consider planning in general to be rather detrimental to economic growth and development. This issue has also been taken up by others [13] and this last statement has been particularly relevant in the Italian case, more than in others, for a long time, if we consider that, 25 years ago, law no. 662/96, on "Measures for the rationalization of public finance" was introduced in the Italian legal system and is still in force. In order to ease planning constraints on economic freedom, this law proposed various forms of exceptions to municipal planning tools. This important aspect adds further ambiguity and uncertainty to "molecular" territorial planning managed autonomously by almost 8000 municipalities [14,15].

As already mentioned, several European countries, including Germany, Great Britain and France, have reformed planning since the 1970s by adopting legislation to strategically manage land use. In most cases, there are hierarchical structures of planning tools, as there have been in Italy since 1942, but with an operational consistency having an entirely different effectiveness.

In Germany, the reorganization of procedures "on spatial planning" (Raumordnungsgesetz) has been implemented since 1965 and was later revised in 1975 ("General spatial planning program for the federal territory" —Raumordnungsprogramme fur die gross raumige Entwicklung des Bunclesgebiet) [16–18]. Physical planning occurs at the level of the 16 Länder (average size 22,336 km²) through "Territorial Plans" (Landesraumordnungsprogramme) and "Development Plans" (Landes Entwicklungsprogramme), which in turn control the Regional Plans (Regionalpläne), the Kreis plans and the "Building Plans" (Bauleitplanung) with highly efficient results, as Franco Archibugi pointed out 40 years ago [19], comparing them to the Italian situation.

In the early 1970s, territorial planning was reorganized in Great Britain in order to better integrate planning activities [20–26]. Pursuant to the 1971 bill, the most important local management bodies, having extensive autonomy, are the "Counties" which amount to 83 in total, including "metropolitan" and "non-metropolitan" ones (with an average area of more than 2500 km²). "Structure plans", approved by the Department of the Environment and containing indications of integrated territorial, socio-economic and physical planning, operate at this level. The counties are divided into 93 "districts" (EUROSTAT, 2007) which can draw up three types of plans: District plans (development and land use), Action area plans (urban renewal) and Subject plans (sector development). The integration of planning

Sustainability **2022**, 14, 15169 3 of 16

is ensured by the Development plan schemes drawn up by the County authority and by the close correlation between the local plans and structure plans.

One of the most complex reorganizational processes is the one implemented in France [27,28], which lasted from the 1970s until 2017 and led to the establishment of inter-municipal associations that manage the "Schéma de la Coherence Territoriale" (SCOT) which controls the municipal "Plan Local d'Urbanisme" (PLU). Local government was the subject of revision in national legislation again in 2015 (Law no. 991) with the substantial reduction of so-called "millefeuille territorial", by merging local authorities and encouraging intermunicipality [29].

We have limited our overview to only a few European countries, but experiences of comprehensive institutional frameworks can also be found in the Netherlands, Belgium, Denmark and Sweden [30–33].

However, the brief indications on the solutions that various European countries have adopted to solve problems similar to the current Italian one, such as the strong municipal administrative fragmentation, do not pretend to be exhaustive, since the aim of this paper is not to compile a comparative review of European planning systems. We have, therefore, limited ourselves to providing a quick overview that shows how other countries have long since detected the phenomenon being discussed and have been taking measures for decades. For an up-to-date and systematic comparative review of European planning, please refer to the ESPON 2018 Report, Comparative Analysis of Territorial Governance and Spatial Planning Systems in Europe [34,35].

By contrast, Italian territorial and urban planning is far more inefficient from the standpoint of results, owing to the excessive autonomy of municipalities in highly operational decision-making and weak overarching strategic control. This condition—in contradiction with the theoretical contents of national and regional regulations—has gradually increased over the past decades.

On this point, therefore, it should be pointed out that, at its origin (l. 1150/42 and subsequent norms), the Italian planning system is a multilevel system, which should be reformed in line with the constitutional principles of (vertical) subsidiarity, differentiation, adequacy and loyal cooperation between the state, regions and local autonomies. However, in reality, this system architecture, after having established itself in a rather widespread form until the 1980s, gradually lost energy until it left only municipal planning as the decisive protagonist of the spatial planning framework. This was undoubtedly due to the succession of a whole series of measures that, in line with a neo-liberal vision, considered planning as an obstacle to the exercise of the full prerogatives and economic potential of the territories, and a system reorganization was, in fact, never implemented again. Even the most recent reform of the local government system (Law 2014 No. 54 "Provisions on metropolitan cities, provinces, unions and mergers of municipalities") has provided ineffective solutions. There is no doubt that it would be of primary necessity to re-address the unresolved problem of the interscalar architecture of spatial planning in Italy, according to the principle of vertical subsidiarity, which implies relations between subnational levels of government, such as regions and local authorities, but this has not happened to date and, for now, no targeted initiatives are in sight, at least on the horizon and short-to-medium term.

However, its pathologies have emerged only recently. First and foremost, the excessive urbanization of national territory and its profound disorganization are clearly at odds with the public interests of environmental and urban quality, and with energy control requirements. Some Italian academics have pointed out these problems have been around since the 1980s, but, unfortunately, almost all the literature on this topic is in Italian and, therefore, scarcely disseminated at an international level [19,36–41].

Hence, it follows that the spatial dimension of municipalities is of central importance in the management of territorial planning which has to be based on the analysis of strategically relevant facts. Therefore, at least in the preliminary stages, it should concern sufficiently large territorial matrices in order to be able to identify the type and extent of phenomena affecting individual parts. In other words, it is quite unreasonable to develop public or

Sustainability **2022**, 14, 15169 4 of 16

market services in a given settled area if these are already available in sufficient quantity and quality in the immediate vicinity. This condition is almost the norm in Italy, where the excessive duplication and redundancy of certain market services are planned in individual municipalities without a broader overview.

When, however, municipalities are sufficiently large, these problems are reduced as they are absorbed by a substrategic vision, while disorganization is much more severe when municipalities cover very small areas which, in Italy, can be as small as a few dozen thousand square meters.

## 2. Materials and Methods

The data used in this paper refer to the latest dataset provided by ISTAT (Central Statistical Institute) in 2021 (https://www.istat.it/it/archivio/6789 (accessed on 10 February 2022)), and the classification by extension categories, therefore, refers to this data. The authors supplemented the ISTAT dataset with a substantial set of additional data made available as Supplementary Materials to this paper. In particular, the geographical dataset has been compounded by data from the ISTAT population censuses from 1861 to 2011.

Regarding the state of current municipal planning, we used the data contained in the 2019 INU Report (National Institute of Urban Planning). This report records the conditions of different levels and forms of territorial planning in Italy every two years [42].

The data on urbanization levels come from various sources: the 1950 time-section from the research conducted by the University of L'Aquila on an IGM basis [43], the 2000 time-section from the regional technical land use maps, while the data of later periods come from the ISPRA 2020 surveys (http://groupware.sinanet.isprambiente.it/uso-copertura-e-consumo-di-suolo/library (accessed on 15 November 2021)).

The method we followed was based on the establishment of a dimensional clustering of Italian municipalities, highlighting some striking cases of extremely small areas, and then analyzing the average size per region, showing even very significant differences in some geographical areas. The main result was the creation of regional phenomenological curves of the relationship between municipal size and regional distribution, compared with demographic size broken down per aggregate size class. This was followed by an investigation of the propensity of municipalities to update their urban and territorial planning, leading to some novel conclusions. The last part of our method simulated the minimum size convergence of municipalities on the national average area, showing that, in this case, it would be possible to cut the number of planning tools considerably, thereby achieving strategic territorial planning results which today are greatly hampered by the prevailing administrative fragmentation.

It is also appropriate to recall the references of other concepts implied in the work: the first one is the overurbanization that has affected Italy in the last 50 years and that has been treated by countless publications under the theme "soil consumption" and "land take" and for which we refer for synthesis to the work of the same authors of this article and to the activity of ISPRA (Italian Institute for Environmental Protection and Research) [43,44].

The second concept is related to the energy expenditure that dispersed urbanization implies on territory and, also in this case, there is extensive literature [45,46]. The topic of the impact of dispersed urbanization on ecosystems has also long been the subject of interest from multiple disciplinary fields and so we refer for related aspects to some significant publications [47,48].

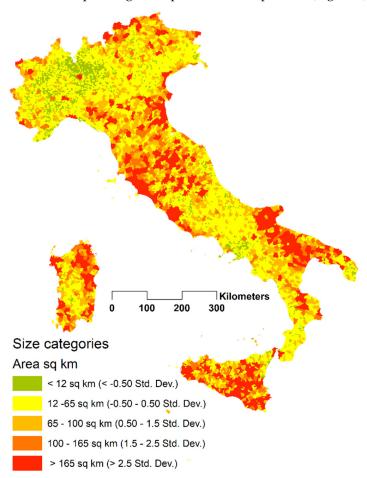
# 3. Results

### 3.1. Dimensional Characteristics of Municipalities

The smallest municipality in Italy is Atrani on the Amalfi coast in the province of Salerno in Campania, with an area of 120,600 m<sup>2</sup>, equal to a square of 347 m per side, with 880 inhabitants and almost 200 buildings. This is an area equivalent to around 14 soccer pitches and much smaller than some large urban parks or squares in international cities (3% of Central Park with 341 hectares and just over 1/4 of Beijing's Tiananmen Square with

Sustainability **2022**, 14, 15169 5 of 16

44 hectares). The second and third municipalities in the national ranking are decidedly larger, but only in comparative terms: Miagliano in Piedmont (province of Biella) with almost 67 ha is six times larger than Atrani, while Fiorano al Serio in Lombardy (province of Bergamo) ranks third with 1 km<sup>2</sup>. However, the entire country has municipalities of a very small average size, considering that this value on a national scale stands at 3822 hectares, an area corresponding to a square of 6.2 km per side (Figure 1).



**Figure 1.** Size classification of Italian municipalities (with clustering by standard deviation) <12 sq km = Very Small (VS), 12–65 sq km = Small (S), 65–100 sq km = Middle (M), 100–165 sq km = Large (L), >165 sq km = Very Large (VL).

The Italian region with the smallest average size of municipalities is Lombardy, with 1584 ha ( $3.9 \times 3.9$  km), while a group of five regions fall within the national average (Veneto, Molise, Abruzzo, Friuli V.G. and Calabria). Over half the regions have larger areas, up to peak values in Tuscany and Umbria with over 8400 and up to 9200 ha (equal to squares of just under 10 km per side) (Figure 2).

The classification shown in Figure 1, derived from the standard deviation, has made it possible to determine five size classes with fairly well-defined clusters (Table 1 and Figure 3).

The geographic distribution per region of the size categories is rather clear-cut and the cluster is evident in Figure 3, although it is rather difficult to geo-historically interpret the grouping of regions into the average size ranges of their municipalities. Indeed, there is no latitudinal gradient (Figure 2), which usually characterizes many Italian phenomena of all types [49], nor a morphological one, considering that the regions with a prevalence of small and very small municipalities are both in the mountainous and flat north and in the flat and hilly south. Moreover, although some literature is available [50,51], it is not possible to trace how perimeters have evolved over 10 centuries, even though we know that the

Sustainability **2022**, 14, 15169 6 of 16

determinants are geomorphological, proprietary, land tenure, production-related and, in some cases, even the product of military conquests.

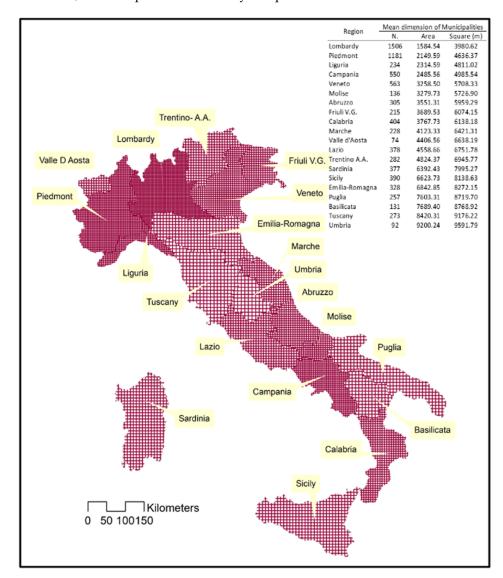
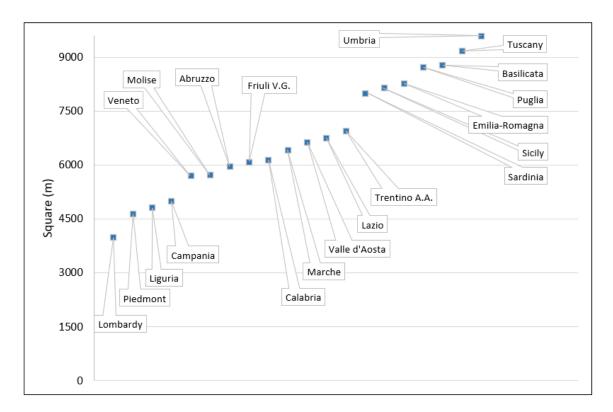


Figure 2. Average size patterns of municipalities in Italian regions.

**Table 1.** Size classes of municipalities and their average side square.

N f		Nati				
Municipal Category	Area (ha)	Area	Number of Municipalities	Square (km Side)		
VS	1,757,515.08	0.058	0.292	<3.5		
S	13,007,923.82	0.431	0.558	3.5-8.00		
M	6,477,570.89	0.214	0.098	8.00-10.00		
L	3,135,081.78	0.104	0.029	10.00-13.00		
VL	5,828,509.53	0.193	0.030	13.00-max (36.00)		
Total Italy	30,206,601.10					

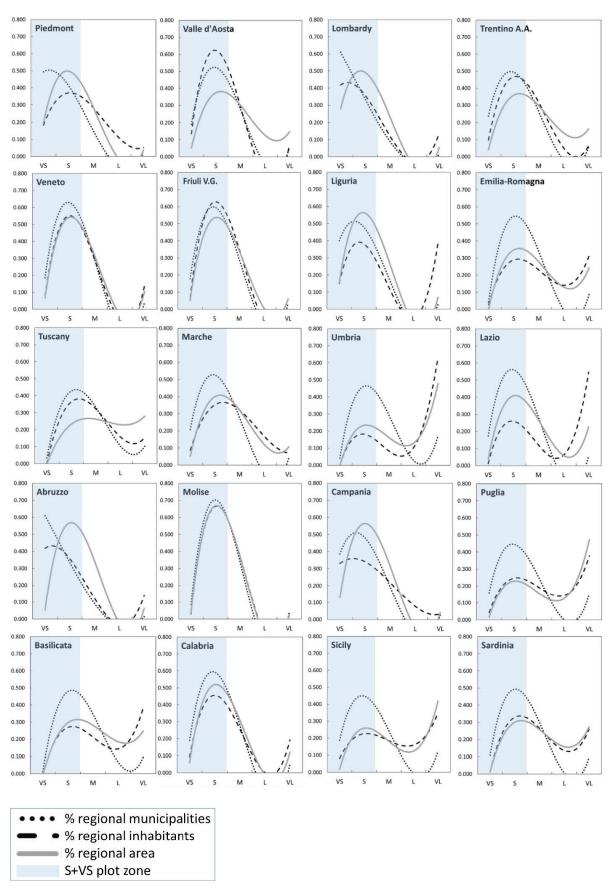
Sustainability **2022**, 14, 15169 7 of 16



**Figure 3.** Distribution of Italian regions by average square of their municipalities (a square is the side of the square in meters equivalent to the surface area of the municipality).

In historical terms, the prevailing small size of the municipalities in northern Italy can be attributed to their development between the mid-11th and early 12th centuries as an autonomistic push by the numerous large and small towns and rural communities against the weakened feudal power of the Emperor. This process developed in a very widespread and capillary manner, especially in northern Italy and, only later, extended to other parts of the country, which remained for a long time still characterized by feudal management, with large territories entrusted to the noble and religious classes. In southern Italy, the solidity of the Norman Kingdom did not allow for the development of forms of autonomous government that would only express themselves, on the basis of large fiefdoms, between the 12th and 14th centuries. The development of municipalities has also affected other European countries and, for example, France is characterized by the presence of very small municipalities. The size of municipalities has not changed much over time, the most recent of which date back to the era of the Fascist government and, subsequently, to very few cases of voluntary amalgamation managed directly by some administrations. Regional curves (Figure 4) show the distribution of the three rates of municipal size, population and regional surface coverage in the five categories VS, S, M, L and VR processed by means of the classification obtained through the clustering procedure described in Figure 1.

Sustainability **2022**, 14, 15169 8 of 16



**Figure 4.** Distribution rate of the number of municipalities, surfaces and inhabitants on a regional basis per size category.

Sustainability **2022**, 14, 15169 9 of 16

In the regions of Veneto, Friuli, Molise and Calabria, there is strict proportionality between the number of VS+S municipalities that also cover a high proportion of regional territory and population (between 40 and 60%). In other regions, such as Emilia-Romagna, Tuscany, Umbria, Lazio, Puglia, Basilicata, Sicily and Sardinia, although smaller municipalities are numerically significant (always close to 50% of the total), larger municipalities cover most of the regional surface area and have the highest number of inhabitants. This is even more evident in regions with the largest average size of municipalities, such as Tuscany, Umbria, Basilicata, Puglia and Sicily.

In three regions (Figures 3 and 4), namely Lombardy, Piedmont and Campania, almost all municipalities (over 90%) are classified as VS+S. They account for 85% of all Italian municipalities, as opposed to just 8% of the L+VL group. The municipalities in the VS+S group, occupying about half of the national surface area, also concentrate half of the country's population (approximately 54% of the entire national population surveyed in 2011) of over 30 million inhabitants with well over 8 million (13.5%) within the VS category alone having an average surface area of less than 10 km². This figure should be compared with less than one-third of the population residing in the L+VL municipalities, including one-fifth in the VL group. This underscores a nationwide condition where demographic loads are spatially independent from municipal size, despite ongoing decades-long urbanization. Inner areas are clearly disadvantaged: 1336 VS+S municipalities fall under the SNAI (Inland Areas National Strategy) "peripheral" and "ultra-peripheral" categories with an area of 37,627 km² and 2,410,297 inhabitants, where SNAI represents an innovative national policy of development and territorial cohesion that aims to counter the marginalization and phenomena of demographic decline peculiar to the country's inland areas [52].

In other words, 20% of the VS+S municipalities are located in inland areas, accounting for a quarter of their total area and only 8% of their inhabitants, with a demographic disproportionality that explains the impoverishment of these municipalities from this point of view. However, overall, the VS+S municipalities have shown significant demographic energy, considering that, in the 40 years between 1951 and 1991, their population increased by 21.7%, followed by a further 9% in the 20 years between 1991 and 2011. The largest percentage increases in population in the 20 years between 1991 and 2011 were recorded in these municipalities and in the L+VL municipalities (Table 2), while in the 1991-2001 decade the increase continued to affect the VS+S category (almost 10%), but not the L+VL category which, on the contrary, dropped by 2%. The reasons for this phenomenon have been well known for some time and are essentially tied to the demographic densification of municipalities surrounding major urban areas and the decreased residential desirability of the latter for reasons of congestion and high real estate prices [53]. While the demographic growth of the VS+S municipalities is undoubtedly high, it is still extremely limited compared with the increased urbanization in the same municipal territories which, between 1950 and 2000, reached approximately 260% (Table 2), almost entirely similar to that of the M and L+VL municipalities. Hence, it follows that the plans of the smallest municipalities, i.e., those that are less manageable by means of broader strategies, have to face significant urban growth dynamics in many cases.

The VS+S municipalities also account for the highest urbanization density: over 8%, higher than the national average of about 7%, falling to 5% in the next class (M) and then as low as 6% in the largest classes of municipalities (L+VL) (Table 2). The urbanization density is expressed as follows:

$$Ud = \frac{U_a}{M_a}$$

where:  $U_a$  = Urbanized area,  $M_a$  = Municipal area.

Sustainability **2022**, 14, 15169 10 of 16

Municipal				Population			Urbanization Level						
Size Categories	Area (kmq)	1951	1951 1991		Variation Rate '51-'91	Variation Rate '91–2011	1951	Urbanization Density 1951	Post 2000	Urbanization Density 2000	Variation Rate ′50–2000		
VS+S	147,654.39	24,212,321	29,469,982	32,009,567	0.22	0.09	3441.30	0.02	12,287.03	0.08	2.57		
M	64,775.71	7,428,223	8,034,560	8,424,734	0.08	0.05	777.80	0.01	3117.97	0.05	3.01		
L+VL	89,635.91	15,952,048	19,356,122	18,999,745	0.21	-0.02	1314.60	0.01	5129.66	0.06	2.90		
	302,066.01	47,592,592	56,860,664	59,434,046	0.19	0.05	7484.70	0.02	20,534.66	0.07	1.74		

Table 2. Data on demographic and urbanization variation in the size categories of Italian municipalities.

The reasons for the average high urban density in the VS+S municipalities are many and very often influenced by local social and economic aspects. However, it is also true that, since the 1950s, the administrations of smaller municipalities have planned extensive new urbanization in an attempt to counteract the phenomena of abandonment and loss of economic and productive interest. Until the 1980s, when the strength of the construction sector was substantial, this resulted in widespread urban growth, both for second homes and for housing in municipalities closer to the large metropolitan poles.

Again, in Table 2, we see that almost 60% of Italy's current urban areas fall within municipalities in the VS+S group. Hence, they are planned and managed dimensionally and functionally by them, through over 6700 separate administrative units with decision-making powers limited to territories corresponding to areas of about 16 km². Moreover, one-fifth of this quantity, that is 12% of national urbanized areas, falls in 2300 VS category municipalities that govern even smaller territorial areas of about 12 km². These considerations introduce the theme of urban and territorial planning, which will be addressed in the next section.

## 3.2. Planning and Municipal Size

Referring to the data set forth above, according to which municipalities larger than the national average have more than three times the average population of the others, one can link the latter to a likely greater economic and transformative energy whereby, in regions with larger average municipalities, one should expect forms of planning responding to greater strategic needs and also, perhaps, the need for the more frequent updating of urban planning instruments due to the greater scope and rapid evolution of local economic phenomena and interests. This is not the case in reality and the following data demonstrate the existence of inconsistency in this logic. To delve into the issue, however, it is also worth taking into account that planning in Italy generally lasts for many years and is affected by the sometimes frequent turnover in municipal governments. An urban planning tool is rarely initiated and completed within the five years of the maximum term of office of a local government. Even if planning has already been initiated, new governments taking over, especially if formed by different political parties, tend to profoundly revise what has been accomplished by the previous government. This leads to an extension of the time required to implement municipal plans that often exceeds 10 years, or even more, with national cases lasting as long as 20–30 years.

Available data [42] show that the municipalities that tend to plan more frequently are those in the S+VS group: 53% of the plans updated after 2000 (covering a third of the national territory and 37% of inhabitants) can be ascribed to this category, compared to about 4% in the L+VL group (20% of territory and 24% of inhabitants). Even if we look back to the last decade (after 2010), we see that 11% of national territory is planned by the same group of S+VS municipalities, which is double the planning areas managed by the L+VL group (5%) (Figure 5). This is probably due to the fewer difficulties in planning approaches and in community-wide and participatory dialogue that, on average, are found in smaller municipalities with a limited number of inhabitants. In these cases, large economic and entrepreneurial interests, pressure to transform land and lobbying actions against local governments are statistically more moderate. Consequently, a significant part of Italian territory, just under half, is planned with greater continuity by local governments that

Sustainability **2022**, 14, 15169 11 of 16

manage very small territories, corresponding, as mentioned above, to squares ranging between 3 and 8 km per side.

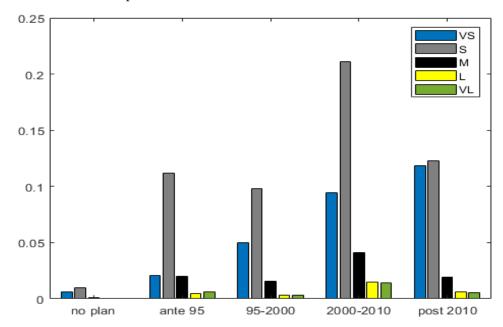


Figure 5. State of municipal planning updates by size category (source INU, 2019).

In other words, there is probably a tendency to plan more where it is easier, but also where it is less useful strategically speaking, mainly because of the localistic individuality of this planning due to the oft-reiterated administrative fragmentation.

In the current situation in the country, reducing or eliminating the planning sovereignty of municipalities, conferred by Law no. 1150/42 and reaffirmed by other regulatory measures, is unfeasible. However, regulations could be enacted to prevent very small municipalities from planning independently, thus forcing them to merge (planning alliances). If the recompacting of municipalities from the perspective of more strategic planning was proposed, small and very small municipalities could be grouped in aggregations equal in size to the average Italian ones considered mandatory for the drawing up of plans. Currently, there are 6715 S+VS municipalities covering 50% of the country (14,765,438 ha) and the national average is 3822 ha. Furthermore, over 70% of the total number of Italian municipalities falls into the smaller-than-average size category.

Through hypothetical reorganization consisting of aggregating municipalities according to size, based on the national average, for planning purposes only (Table 3), the country would have approximately 2000 fewer municipal plans, that is to say about 6000, instead of the current almost 8000 plans. Statistically, there would be a sharp increase in strategic importance considering that the average size of the VS+S planning areas would go from a range of squares of 3658 to 6196 m to 4636 to 9591 m in terms of the equivalent average square side (from 2198 to 3821 ha in terms of the average national area of VS+S aggregation). These aggregations should be left to the initiative of administrations. The only binding factor should be the geographical adjacency of the municipalities concerned, without entering into specific "planning alliances" involving relationships between local governments, territorial and social affinities, and common goals. This would surely help optimize the governance of national territory and cut public spending for services, general equipment, roads and transport to achieve better organization of facilities and public spaces. If this measure was compounded by land equalization tools (TDR) and the regulation of settlement patterns (de-sprawl, de-sprinkling), better results could be achieved towards the central goals of ecosystem services, biodiversity conservation, adaptation to climate change, reduction of land uptake and, more generally, environmental sustainability of settlements, Sustainability **2022**, 14, 15169

strongly called for by international programs such as the National Recovery and Resilience Plan (PNRR) [54–57].

**Table 3.** Possible size-based aggregation of municipalities according to the national average for planning purposes (planning alliance).

		Current Condition													Reorganization Proposal					
Region	Regional Area	n. Mu- nicipal- ities	Mean Area (ha)	vs	s	М	L	VL	Area VS+S (ha)	Mean Area VS+S (ha)	Mean Square VS+S (m)	% n. VS+S	% Area VS+S	Area (VS+S)/ Mean Area	n. Mu- nicipal- ities (VS+S) Cur- rent - (VS+S) Sce- nario	Mean Area VS+S (ha)	Mean Square VS+S (m)			
Piedmont	2,538,670	1181	2150	561	575	45	14	2	1,928,269	1697	4120	0.962	0.760	897	-239	2150	4636			
Valle d'Aosta	326,085	74	4407	12	47	8	5	2	156,483	2652	5150	0.797	0.480	36	-23	4407	6638			
Lombardy	2,386,310	1506	1585	901	572	35	4	4	1,971,576	1338	3659	0.978	0.826	1244	-229	1585	3981			
Trentino A.A.	1,360,472	282	4824	62	161	43	16	10	564,161	2530	5030	0.791	0.415	117	-106	4824	6946			
Veneto	1,834,479	563	3258	84	436	40	8	6	1,242,361	2389	4888	0.924	0.677	381	-139	3258	5708			
Friuli V.G.	792,422	215	3686	32	154	25	4	2	495,946	2666	5164	0.865	0.626	135	-51	3686	6071			
Liguria	541,613	234	2315	88	135	9	1	1	432,093	1938	4402	0.953	0.798	187	-36	2315	4811			
Emilia- Romagna	2,245,221	328	6845	9	201	77	21	23	775,424	3692	6077	0.640	0.345	113	-97	6845	8274			
Tuscany	2,298,658	273	8420	8	122	83	34	27	476,098	3662	6052	0.476	0.207	57	-73	8420	9176			
Umbria	846,422	92	9200	3	46	22	6	15	176,962	3611	6010	0.533	0.209	19	-30	9200	9592			
Marche	940,118	228	4123	42	142	30	11	4	448,279	2436	4936	0.807	0.477	109	-75	4123	6421			
Lazio	1,723,172	378	4559	56	252	47	11	12	802,864	2607	5106	0.815	0.466	176	-132	4559	6752			
Abruzzo	1,083,150	305	3551	41	229	30	4	1	733,315	2716	5212	0.885	0.677	206	-64	3551	5959			
Molise	446,044	136	3280	6	118	12	0	0	348,409	2810	5301	0.912	0.781	106	-18	3280	5727			
Campania		550	2486	199	318	26	6	1	1,057,588		4523	0.940	0.774	425	-92	2486	4986			
Puglia	1,954,052	257	7603	37	131	38	17	35	469,670	2796	5287	0.654	0.240	62	-106	7603	8720			
Basilicata	1,007,311	131	7689	1	65	42	11	12	253,380	3839	6196	0.504	0.252	33	-33	7689	8769			
Calabria	1,522,161	404	3768	63	294	32	9	7	983,096	2754	5248	0.884	0.646	261	-96	3768	6138			
Sicily Sardinia	2,583,202 2,409,979	390 377	6624 6393	67 34	198 213	60 72	22 29	43 29	694,685 754,778	2621 3056	5120 5528	0.679 0.655	0.269 0.313	105 118	$-160 \\ -129$	6624 6393	8139 7995			
Total	30,206,601	7904	3822	2306	4409	776	233	236	14.765.43		4689	0.850	0.313	3864	-129 -1928	3822	6182			

#### 4. Discussion

The theme of small municipalities emerges periodically in the interests of national government and the latest case is the so-called village-saving law (no. 158 dated 6 October 2017) which allocates rather limited economic resources until 2023 for territorial maintenance and the safety of roads and schools. These works concern what are defined as "small" municipalities with populations of fewer than 5000 inhabitants and where a total of more than 10 million citizens live. A first critical reflection concerns this primary selection criterion: a municipality having "only" 5000 inhabitants does not necessarily denote a condition of suffering. There are Italian regions in the Apennines where the average population of municipalities is below 5000 inhabitants (Abruzzo—4200 inhabitants, Molise—2306, Basilicata—4412, Calabria—4789) and municipalities with this demographic size are local territorial polarizers. On the contrary, in hilly and flat regions (such as Tuscany—13,162 inhabitants and Emilia Romagna—13,000 inhabitants on average), the situation is different, so perhaps it would be more appropriate to differentiate demographic size on the basis of geographical areas. Then, Art. 1, paragraph 2, of Law no. 158/2017 introduces the following other, numerous criteria:

"2. For the purposes of this law, small municipalities mean municipalities with a resident population of up to 5000 inhabitants as well as municipalities established as a result of mergers between municipalities each with a population of up to 5000 inhabitants. Small municipalities may benefit from the financing granted pursuant to Article 3 if they fall into one of the following categories:

- (a) municipalities located in areas affected by hydrogeological instability;
- (b) municipalities featuring significant economic backwardness;

Sustainability **2022**, 14, 15169 13 of 16

(c) municipalities where there has been a significant decrease in the resident population since the general population census conducted in 1981;

- (d) municipalities characterized by conditions of settlement disadvantage, on the basis of specific parameters defined on the basis of old-age index, the percentage of employed persons in relation to the resident population and rurality index;
- (e) municipalities characterized by the inadequacy of essential social services;
- (f) municipalities located in areas with communication difficulties and are distant from major urban centers;
- (g) municipalities whose resident population density does not exceed 80 inhabitants per square kilometer;
- (h) municipalities that include hamlets having the characteristics referred to in subparagraphs (a), (b), (c), (d), (f) or (g); in this case, the financing provided under Article 3 is intended for works to be carried out exclusively in the territory of the aforementioned hamlets;
- (i) municipalities belonging to the unions of mountain municipalities referred to in Article 14, paragraph 28, of Decree-Law no. 78 of 31 May 2010, converted, with amendments, into Law no. 122 of 30 July 2010, or municipalities which in any case mandatorily exercise in associated form, pursuant to the aforementioned paragraph 28, the basic functions referred to therein;
- (j) municipalities with territory totally or partially included in the perimeter of a national park, a regional park or a protected area;
- (k) municipalities established as a result of mergers;
- (l) municipalities falling within peripheral and ultraperipheral areas, as identified in the national strategy for the development of inland areas of the country, referred to in Article 1, paragraph 13, of Law no. 147 dated 27 December 2013."

As is only too clear, it is rather complex to make a selection of the municipalities affected by this regulatory measure, since we are dealing with over 5000 municipalities (covering 55% of national territory) where, as of 2011, there are approximately 10,000,000 inhabitants (300,000 fewer than in 1981 and 1,400,000 fewer than at the beginning of the 1900s). Taking into account that even only one of the criteria established by the law determines the inclusion of the i-th municipality among the beneficiaries of financing, it is reasonable to imagine that almost all municipalities will be included in some way in these funding measures, providing very limited resources, as mentioned earlier. With regard to costs, municipalities with fewer than 5000 inhabitants are a challenge for the public treasury: in half a century, they have lost 1,200,000 inhabitants (10%), but after World War II, they had about 170,000 hectares of urbanized land (1%), which then became 572,000 after 2000, i.e., a 3.32-fold increase at an estimated rate of 22 ha/day. This accounts for more than one-quarter at the similar rate calculated for the entire country [43]. Approximately 3800 municipalities, i.e., 66% in number, but 77% in terms of surface area, are distributed between mountains and inland hills, and 2000 of these (46% in terms of territory) are mountainous. Hence, besides the number of inhabitants that might also be insignificant, most suffer from a condition of marginality determined by their unfavorable morphology. It is no coincidence that the almost 2000 municipalities with fewer than 1000 inhabitants (including 800 that do not even reach 500) are located almost entirely in the Alpine and central Apennine areas. Only a third of them are located in the other Italian morphological units of coastal mountains, coastal hills and plains. This shows that the attention paid by central government to the issue of "small" municipalities has failed to address inefficiencies in territorial management and, therefore, in planning. Attention has been focused solely on disadvantage, without delving into the causes, but merely applying a very simplistic equation in the cataloguing of the entities concerned.

It must evidently be stated that the proposed solution of "planning alliances" could also lead to negative effects: for example, a further slowdown in planning dynamics that could be even more pronounced than that evidenced by today's data, but this aspect should not be left to the "spontaneous" behavior of municipalities and, thus, make use

Sustainability **2022**, 14, 15169 14 of 16

of a minimum of rules. It is equally true that the application of superordinate planning procedures (regional, provincial) already widely introduced in Italian regulations could, with its revitalization and strengthening, greatly improve the current picture; however, no significant and landing thrusts in this direction are visible for now, not even in the medium term. In concrete terms, however, it cannot be forgotten how the subject of municipal planning affects the much broader framework of urban planning policy choices, for which there are important and numerous international experiences [32–60].

# 5. Conclusions

One of the first consequences of planning at the MM scale is a serious lack of strategic planning itself. This makes it largely impossible to implement policies based on the subnational coordination of planning actions, such as those tied to ecological networks [61], but also those concerning ecosystem services, as well as various forms of risk control [62,63]. These are typical system policies that cannot be effectively managed other than at very large scales of agreement and planning, and at least at the regional level. This is hardly an insignificant issue which, in all likelihood, will show its pathologies in the course of the projects following the National Recovery and Resilience Plan, one of the most important of which is the Renaturation of the Po Valley area. This very important geographical section of Italy actually constitutes a vast integrated system (47,800 km<sup>2</sup>) involving almost 2500 municipalities and five different regions, hosting one-third of the national population and over 40% of the country's urbanized areas. There is probably no better example in Italy to clarify the issues raised by this article than if we consider that, from the 1950s to 2000, the dynamics of these urbanized areas, which grew over three-fold, were managed solely through so-called "molecular" planning [14] by the aforementioned 2500 municipalities having a much smaller average area than the national one.

Uniformly managed spatial and urban planning for larger administrative aggregations, i.e., over larger municipal territories, would certainly entail a number of positive consequences, especially in terms of efficiency and cost savings. These would translate into the more effective management of collective services (such as schools and social facilities), less duplication of market services (especially commercial ones), more optimized and, therefore, more efficient and economical hub-and-spoke public transport systems, and better organization of other network services, such as ICT, but also energy distribution and other urban wiring.

**Supplementary Materials:** The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/su142215169/s1.

**Author Contributions:** Data curation, F.Z.; Formal analysis, L.F.; Methodology, B.R.; Software, C.M.; Supervision, B.R.; Writing—original draft, B.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** The sources of the data used have been indicated in the "Materials and methods" section, including links to the relevant websites. All data processed by the authors are available on request to any interested parties.

**Acknowledgments:** This paper picks up stimuli and research contents that are being developed within the following projects developed by the University of L'Aquila: 2020–2022-Sost.EN.&Re "Sustainability, Resilience, Adaptation for Ecosystem Protection and Physical Reconstruction in Central Italy". National Strategy for Sustainable Development, Ministry of Ecological Transition-Abruzzo Region. We thank Cheryl Di Lorenzo for her precious collaboration in the preparation of the text and the anonymous reviewers who, with their comments, have allowed us to significantly improve the quality of the paper.

Conflicts of Interest: The authors declare no conflict of interest.

Sustainability **2022**, 14, 15169 15 of 16

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Sustainability **2022**, 14, 15169 16 of 16

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