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LAND TAKE AND URBAN SPRAWL: DRIVERS E CONTRASTING POLICIES

Introduction. – The land take is now a central and diriment issue in many disciplines due to the complex problems involved in the depletion of soil resource from an environmental, economic, urban and social perspective, but it is certainly linked to the phenomenon of urban sprawl.

In the short-medium term, the land take is a process as destructive as irreversible. Therefore, a research of the main drivers of this ongoing process should take into account a variety of factors and should focus on the urban space and its evolutionary dynamics.

Starting from a reading of the processes of urbanization, the present paper deals with the question of the fundamental drivers of «land take» and, through an examination of political initiatives and institutional actions at European and national level, focuses on some critical issues considered of particular importance for the containment of urban sprawl and land take.

Processes of urbanization, settlement patterns and land take. – It is undoubtedly that the intense urbanization processes are the main factors affecting land take. In fact, over the last two centuries, they have changed the structure of the Western cities and not only both in terms of functionality and morphology, closely related to the deep upheavals that have gone through the economic system.

We should consider that the urban population, which accounted for only 2% of the world population in 1800, over the past two centuries was constantly growing. This growth has been so strong that in 2009, for the first time in human history, the population living in urban areas has surpassed the one

established in rural. According to a report by the Worldwatch Institute (Potter, 2012), by 2050 the 70% of the world population will live in urban areas and by mid-the XXI century this percentage will increase, in industrialized countries, up to 84%.¹

In Europe, as remarked by a substantial literature (Dickinson, 1947; Chabot, 1963; Toschi, 1966; Choay, 1973; Roncayolo, 1988), the «modern city» takes shape in the XIX century, when it becomes an industrial city and begins to attract the masses of workers from rural areas. At the same time, the city began to expand in the peri-urban buffer zone, “devouring” agricultural and natural land. Throughout all the nineteenth century until the mid-twentieth century, the artificialization of soil has been the answer to needs deriving from the population growth (e.g. new housing demand) and the economic growth (e.g. new demand of production sites). In other words, for over a century, the three dimensions (economic and industrial development, population growth and expansion of urban areas) are bound together in a process of cumulative growth.

During this phase the predominant urban form remains the agglomerated one, characterized by a compact urban settlement. However, the *macchia d'olio* expansion² around historical centres follows criteria of functional zoning and sometimes clear physical separation between different parts of the city (or between workers and middle-class neighborhoods) so causing a shapeless development of actual metropolises and megacities. (Gottmann, 1970; Krier, 1996; Ciorra, 2010; Bencardino, 2014a).³

Then, after the World War II, the crisis of the Fordist model and the growth of the service sector marked a further acceleration to the physical and functional transformation of the city, which from the industrial city becomes “cities of services”. The factories start to move from the urban centres to the peripheral

¹Actually, in Europe, the 75% of the population lives in urban areas and by 2020 this percentage, according to the European Environment Agency (EEA, 2006a), will be of 80%. In connection with global and European trend, in Italy the urban population continues to increase, and, today, the 67% of the national population live in the first 100 cities (ANCE, 2012).

² Literally: oil stain expansion

³ Krier, an active supporter and scholar of the historical compact towns, considers that the division into functional zones of the cities, began with the Industrial Revolution, has been the most effective means to destroy their physical and social development. Instead, the solution lies in rethinking every district as a city within a city, integrating all functions into a space on a human scale.

areas or along the main roads. To the relocation of production sites follows the decentralization of the intermediate service activities, which utilize large surface (such as shopping mall, cinemas and structures dedicated to leisure).

However, the loss of productive functions does not limit the growth of the city, as would be expected. On the contrary, the proportion of urbanized population continues to grow, but this upward trend follows different urban models. In fact, larger cities begin to lose population in favour of the belt of the neighbouring municipalities.⁴

To this phenomenon that already for some time found a place in the theoretical model of the life cycle of the city, developed by the work group of the Wien Curb Center (van der Berg et al., 1982), is overlapped by a second more complex and pervasive model called by the Anglo-Saxon literature «urban sprawl». It is a process of urban diffusion that, since the seventies, is recognized to affect most of the American and European metropolis, even if at different times and with different intensities. The city loses all its contours, become «porous», it spreads in a confused and messy way into peripheral agricultural areas, with a low density and extremely fragmented housing (detached or semidetached houses, industrial buildings, etc.).⁵

This expansion happens, however, for the first time in a «misaligned way», or rather not connected to the real residential or productive needs. In other words, the urban area keeps growing even in the presence of demographic and economic stagnation (Dematteis and Bonaverò, 1997).

The issue of urban sprawl has been for years the focus of policy makers and the international scientific community. Nevertheless, there is no scholarly consensus on this issue which is still dealt with heterogeneous interpretations and perspectives.

Over the years, some authors (Brueckner and Fansler, 1983; Lowry, 1988; Hasse and Lathrop, 2003), have tried to define and measure the urban sprawl

⁴ A meaningful indication of the increase of the urban areas in Europe between 1950 and 1990 can be deduced by the projects MURBANDY (Monitoring Urban Dynamics) and MOLAND (MONitoring LAND use / cover dynamics) of the European Commission, which shows the evolution of many European cities, including the Italian Milano, Palermo and Padova-Venezia (Galluzzo, 2005). For Italy, an Istat survey quantifies the progressive loss of population of 16 large municipalities, to the advantage of the municipalities included in the neighbouring crowns, to the extent of 50-70% in 60 years (Giovannini, 2012).

⁵ From a morphological point of view the urban sprawl, is «the opposite of compact cities, full of empty spaces that indicate the inefficiencies in development and highlight the consequences of uncontrolled growth» (EEA, 2006b).

as «the amount of soil converted to urban use». Indeed, the concept of urban sprawl become an «umbrella term», so elastic and so generic that it has lost a precise meaning. In fact, the sprawl is now associated with a wide range of urban forms so vast, including both the *continuum* of the suburbs and the «leapfrog or scattered development» (Ewing, 1994; Peiser, 1989, 2001). Thus, as Audirac suggests, the definition of urban sprawl appears a «methodological quagmire» (Audirac et al., 1990).

In Italy, the issue was the subject of consideration by researchers of various disciplines, from Samonà writings (1959, 1968) on the «urbanized countryside», a concept taken up by Muscarà (1967), to Piccinato's works on «territorial city» (1962) or Indovina on «widespread city» (1990).

A much considerable series of studies at national and international levels is the one dedicated to the analysis of social, economic and environmental costs of urban sprawl⁶, starting from the work done in 1957 by Young and Willmott, entitled *Family and Kinship in East London*. In it the term «new town blues» is coined to describe a syndrome of alienation resulting from the difficult access to equipment and urban services in a rarefied city. Many studies have followed this first one, such as *The Costs of Sprawl*, undertaken by the *Real Estate Research Corporation* in 1974, where the boundaries of the issue are set and the need of measuring the diseconomies and inefficiencies of low population density is highlighted. More recent studies (Galster and others, 2001; Chin, 2002; Couch et al, 2007; Camagni and others, 2002; Bellicini, 2011) strongly state the environmental and socio-economic inefficiency of the dispersed city and try to measure it.

The drivers of land take. – Is also rich the literature dedicated to the causes of urban sprawl. These causes are examined in various ways depending on the different disciplinary approaches and the diversity of local contexts.

Most of the empirical studies and, in particular, those with a geographical background (Dematteis, 1997; Bencardino 2014b), identify as the leading causes of sprawl the residential decentralization processes, as well as the phenomena of depolarization and relocation of industries and services. These,

⁶ This element engraved so much on criticism of the English *towns* of first generation (direct emanation of the theoretical concept of "Garden City" expressed by Howard in his *Garden cities of Tomorrow*, 1902), and it represented the boost to define the *new towns* of the second generation, cities planned following more compact patterns.

in their turn, would be connected to both the urban land rent (the strong differences between the value of the soil of the central urban areas and the rural ones) and the better logistic potential of a placement in peripheral areas with high accessibility (along the main roads). According to some authors (Martinico and others, 2008), for example, in the central northern Italy the phenomenon of urban sprawl assumes a precise characterization, since it is closely linked to the birth and rise of the industrial districts of the «Third Italy». According to the «capability approach», developed by Amartya Sen and Nussbaum (Sen, 1985; Nussbaum and Sen, 1993), the main drivers of urban sprawl are connected to the new lifestyles and to the different way of thinking about the relationship between town and country, i.e. the desire of a growing part of the urban population to leave the chaos and congestion of the town in favor of surrounding rural places where it is guaranteed a greater «well-being» (Macchi, 2013). In peripheral locations, in fact, the «capability set» of goods and services are however guaranteed to citizens who can, at the same time, benefit of better living conditions in terms of environmental quality.

Similarly, another element contributing to the residential decentralization is the diffusion of a culture of increasingly individualistic housing, oriented toward independent living solutions, such as detached or semi-detached and energy independent house with garden. There is no doubt that these housing choices have been facilitated by increasingly intensive use of car and a transportation system heavily unbalanced toward roads and highway. So, some authors (Newman and Kenworthy, 1999) have spoken of an «automobile dependence», or of a «car-addicted society», to describe the Western phenomenon of building cities for the automobile.

In addition, a contribution to the land take is provided by a widening of the inequalities in development trends at global, national and regional scale and by an increase of immigration flows towards medium and large cities. Indeed, these flows create an housing demand in the destination places (usually medium and large cities), that consumes the soil and that sometimes leads to a redistribution of ground rent⁷, not compensated by any «ground gain» in places of origin (generally small towns), because of the decrease, sometimes

⁷ An urban income redistribution occurs when the neighbourhoods occupied by immigrants are progressively abandoned by the old inhabitants in favour of peri-urban areas.

irreversible, of the value of housing and abandoned soil.⁸ The result is an overall increase of the built-up area.

Equally harmful to the land take is the exploitation of coastal, mountain, hill and lake areas for tourism purposes. The building of holiday homes, hotels and residences in these areas, often with great value in terms of landscape and environment, assumes particularly dramatic connotations in Italy, where it is only partially limited by landscape plans. The propensity of families, mostly rich, to purchase a second home in places with high naturalness strengthens this trend.

Other reasons related to political, legislative and governance issues are joined to the reasons set out above.

⁸ Often the emigrants keep ownership of abandoned housing because they are no longer marketable.

Tab. 1. – *A classification of Italian cities by population size (Istat, 2011) compared with the indicator of Pileri*

Class	Population class	Numerosity	Frequency Percentage	Land area	Marginal land take (Pileri) ⁹
Metropolises	> 1.000.000	2	0,02%	0,49%	
Big cities	500.001 – 1.000.000	4	0,05%	0,22%	
Middle-sized towns	100.001 – 500.000	40	0,49%	2,65%	
	50.001 – 100.000	95	1,17%	4,57%	-478 m ² /ab.
Small-sized towns	15.001 – 50.000	583	7,20%	13,59%	
	5.001 – 15.000	1.666	20,59%	23,92%	
Village	2.001 – 5.000	2.139	26,43%	25,87%	-785 m ² /ab.
	1.001 – 2.000	1.612	19,92%	15,31%	-1.382 m ² /ab.
Small village	501 – 1.000	1.103	13,63%	8,21%	-3.902 m ² /ab.
	≤500	848	10,48%	5,10%	-14.396 m ² /ab.
Total		8092	100%	100%	

Source: Our elaboration on Istat (2011) e Pileri (2013a)

They are not necessarily distinct and independent from the previously discussed drivers, nor less important, but they take in Italy a specific

⁹ The Pileri's indicator is calculated only for the municipalities of the Lombardy Region, but in the paper it is extended to the entire Italian territory.

peculiarity. This applies, in particular, to the role played by the administrative fragmentation and land rent.

A recent study by Paolo Pileri (2013a) shows that in Lombardy region - and there is no reason to believe that this does not happen on the whole national territory - for each new inhabitant, land take in villages and small villages is significantly higher than that in cities or middle towns (tab. 1). Specifically, this study finds that smaller villages¹⁰ (e.g. those with less than 500 inhabitants) show the highest land take, ie with a marginal variation of agrarian landscape of -14,396 square meters *pro capite*. But it seems to be even more significant, even if marginally lower, the land take measure of the village (those between 1,000 and 5,000 inhabitants). These represent almost 46% of all Italian municipalities and occupy about 41% of the national territory. For them, the estimated consumption comes to be up to three times that of medium-sized towns.

Such a conspicuous presence of administrative entities of the lower level (7,368 municipalities with fewer than 15.000 inhabitants) represents an administrative weakness, considering that they govern and decide the land use on the 78% of the entire Italian territory. The highest *pro capite* value of land take for these ones might be attributed on the one hand to the lack of the necessary skills to pursue strategies and government policies oriented to regional sustainability, on the other hand to a poor bargaining power or poor capacity for dialogue towards private investors able to exert lobbyist pressure (builders, commercial centres, energy companies, etc.).

This means that a legislative reform on land use needs to be accompanied by an administrative reform of the State and its local authorities, which points to the abolition of administrative autonomy of the village or at least to strengthen the shared management of planning.

Closely related to the issue of administrative fragmentation is the issue of land rent, which in a way is the real crux of the problem of land take.

The distortions related to the mechanism of formation of land rent were already known in Italy during the Second World War, as evidenced by the reform attempt led by the government committee chaired by Fiorentino Sullo. The proposal, formulated and rejected in the spring of 1963, planned to reduce the yield spreads ie the gap between the value of agricultural and buildable land, through a process of expropriation by local government of areas

¹⁰ The classification of the cities is an abstraction of the authors that only takes into account the population class, the reflections of Iommi and Marinari (2013), of Tocci (2010) and the Final report of ESPON *The Role of Small and Medium-Sized Towns* (2006).

identified by the Plan as susceptible to expansion, in change of a compensation commensurate with the acquired rent. According to this scheme, the subsequent conveyance to private users should concern only the building lease (eg the right to erect buildings upon those lands) at a price that would take into consideration the infrastructure works supported by public administrations and according to mechanisms of public auction, so devoid of strong speculative interests (Salzano, 1998).

After half a century no legislative correctives able to effectively regulate ground rent has been introduced. Such correctives might have limited the inequities arising from that «guadagno immeritato» ('undeserved earning' to cite the felicitous expression coined by Aldo Natoli¹¹) represented by the capital gains accumulated by real estate brokers the transformation process of the city (Pileri, 2013b).

Indeed, the situation has worsened in the last two decades. In fact, since the mid-eighties real estate investments have become in Italy the most profitable business. A first justification for this can be found in the speculation linked to the increasing financialization of the real estate sector. However, this is not a typical Italian phenomenon but instead it seems to have an international dimension, having interested to differing degrees most of the advanced countries, from Spain to Ireland, from the United States to Great Britain and France. The real estate overvaluation is the basis of the so-called «decoupled land take», so defined in European documents and recalled by Bonora in his *Atlante del consumo di suolo*, which is an occupation of land with a building purpose not proportional to the real housing or productive demand.

In Italy, this trend has been further encouraged by the decline and loss of competitiveness of the manufacturing sector, which has led a part of our entrepreneurial class to invest in less competitive and more profitable sectors. In other words, real estate investments have become a refuge and opportunity of speculation for the industrial system affected by the crisis (Bellicini, 2011), a capitalization which, as claimed by Bonora, do not introduce value in the process of wealth production, but it passively awaits return"(2013, p. 13).

On the other hand, we cannot say that the real estate investment has been promoted only by a small circle of real estate agents. Instead, as Bellicini notes (2013, p. 115) everybody have contributed to the real estate investments'

¹¹ Natoli, acting as city councillor in Rome from '52 to '66, led a tough battle against urban speculation during the boom urbanistic years.

expansion: “All have invested in real estate: Italian families, property developers, criminals, banks, local authorities”¹²

The real dimensions of the phenomenon, at national level, are not known exactly, but an indicative measure of “decoupled” built is given, for example, by a study of Nomisma¹³ which found 13,643 new unsold houses in the province of Bologna.

The survey on environment annually carried out by ISPRA (Italian Environment Report) also brings out that the speculative driver tends to be stronger in the less urbanized areas, where the availability of space is greater and the purchase cost of land is significantly more content. As emphasized by Dall'Olio (2013, p. 78), «the real business does not consist in buying and subsequently building on an already buildable area (...), but in acquiring not buildable areas such as agricultural ones, and then exerting appropriate pressure on the city administration to convert them in residential or commercial areas».

The speculative interests of private investors meet the cash needs of local administrations. In fact, the drastic reduction of government financial contribution to local administrations and the decentralization of power in their hands (with the Bassanini laws and the reform of Title V) drive local administrations to easily grant permissions for housing development and construction in order to recover resources through property taxes and infrastructure charges. The situation has worsened since 2001, when for the first time the Finance Act allowed municipal administration to use part of the urbanization costs to pay current expenses (transitional rule later extended in subsequent financial law). In this way, the same municipal governments, delegated to protect the territory in the general interest of the community, have turned into «propelling driving forces behind the urban sprawl» (Dall'Olio, 2013, p. 79), in fact, the real estate speculation without ever understanding and fully appreciating the mechanisms of formation of ground rent.

Lastly, recent studies (Camagni et al.; 2013) on ground rent highlight another important aspect of the matter: the large gap between the public and private operators in the redistribution of resources resulting from the income of the urban transformation. In Italy the portion of urbanization costs on the value of

¹² According to CRESME data in Italy the real estate sector represents the 60% of household wealth.

¹³ Nomisma is a consulting company founded in 1981 in Bologna by a group of economists, including Romano Prodi, with the support of some banks or large economic organizations.

the built is, indeed, guiltily limited; it is, for example, of 5-8% in Milan and of 3-5% in Rome (compared with a rate of profitability of the private operators which varies between 75 and 245%). On the contrary, in Germany governments obtain through local taxation, between four and six times more than Italian local administrations.

The policies put in place in Europe. - The question of the regulation of land uses, for a long time guilty underestimated in Italy, has acquired an increasing importance in the European Territorial Agenda.

The European Commission delivered some Communications¹⁴ that have stimulated the institutional debate and encouraged the launch of several EU research projects (Salata, 2013), despite it has not promoted a binding directive on the issue¹⁵. In particular, through the *Roadmap to a Resource Efficient Europe* (COM 2011/571) the Commission has proposed the aim to achieve no net land take by 2050. Moreover, through *The implementation of the Soil Thematic Strategy and ongoing activities* (COM 2012/46), the Commission reviews the situation on the implementation of the Soil Thematic Strategy of 2006 and defines four themes as the pillars of the strategy: awareness raising, research, integration, legislation¹⁶.

Again in 2012, The Commission approved a general document entitled *Guidelines on best practice to limit, mitigate or compensate soil sealing* (EC, 2012). This document, whilst leaving to national governments the right to concretely apply measures to contrast soil consumption, tries to guide the action of Member States to three specific objectives, hierarchically organized and sequentially enforceable: limitation, mitigation and compensation. To achieve the first goal, pursued as a priority, the Commission proposed these possible strategies: to encourage the re-use of already built-up areas, e.g. brownfield site (also taxing

¹⁴ It comes to following Communications COM 2002/179, COM 2006/231, 2006/232, 2011/244 COM, COM 2011/571, COM 2012/46.

¹⁵ The Framework Directive proposed in 2006 as part of the Soil Thematic Strategy (EC, 2006) sank during the Environment Council in March 2010, due to a blockade imposed by a minority of countries, averse to concede their sovereignty national pertaining to the regulation of land uses.

¹⁶ It is worth noting that the issue of regulatory legislation is placed as the last issue, in an ordinal scale suggesting the primary importance of awareness and research as fundamental preconditions so that the legislation can be effective.

secondary residences), to improve the quality of life in large urban centers, to strengthen public transport infrastructures (including the introduction of limits on the use of private cars), to protect the quality of urban and peri-urban agricultural zones, to develop an integrated management of the stock of office buildings in cities, to co-plan the development of commercial areas, to sensitize local authorities and communities on the issue of land take, to encourage a sustainable land management especially by municipalities (smaller communities), to use cost calculator programmes for defining inner-urban development potential and providing cost transparency for new projects.

When the limitation is not practicable, mitigation measures should be incentivized aiming to reduce the impact of artificialisation. Such measures include the use of permeable materials alternative to cement or asphalt, the development of green infrastructures and natural systems of water purification. Finally, if the first two strategic options are not enough, they could be supplemented by compensatory mechanisms. The Commission indicates four ways to compensate the loss of soil (and its functions) caused by waterproofing: the re-use the excavated topsoil, the de-sealing (soil recovery in compensation for sealing elsewhere, the development of a system of *eco-account* or trading of development certificates and introduction of a tax on the consumed soil to be used for the soil protection or other environmental purposes.

We can observe that many countries have already adopted in their own territories several of the measures identified by the Commission to counteract land take.

The UK before other European country has had to face the problems related to urban sprawl, and so the English experience on land take is undoubtedly the oldest and well established among the European countries. The idea of containing the growth of cities through the design of physical barriers (absolutely not buildable greenbelts) in fringe spaces goes back, in fact, to the thirties of the last century¹⁷. It was then regulated by the *Town and Country Planning Act* of 1947, which is still at the center of English land law and has

¹⁷ Already in the late nineteenth century, the movement called *Garden City*, argued the need to create more compact environments settlements with large green spaces. The garden city proposed by Howard is, in fact, conceived as a combination of the characteristic elements of both the city and the countryside. It is a self-contained settlement with a limited population, located within a rural area. In the first years of the '900 the first «garden cities» were built and a few years later, in 1935, this same research stream proposes to create a green belt around the Greater London.

avored the creation of as many as 14 «green belts» around the major cities (London, Manchester, Oxford, Cambridge, York, etc.) and, in some cases, around whole counties¹⁸. Another important measure more recently introduced in the field of land take is the *Planning and Compulsory Purchase Act* (approved in 2004) which, in addition to establishing a regulatory limit to the density of housing (at least 30 units per acre), prescribes the obligation to build at least 60% of the new buildings in already urbanized areas (with a retroactive application of the rule to the already approved plans). What is more, it establishes the principle that both the used and abandoned agricultural areas should always be protected regardless of their rent.¹⁹

However, this legislation has been questioned many times. In fact, over the years, some governments had been trying to revise the legislative system and they have opened up the possibility of building houses on land previously considered inviolable, in the name of modernity or with the excuse of having to address housing shortages (Hasting, 2006; Jones, 2007; Weaver, 2007).

However, the English experience is not the only one to refer to. Since the '80s, Germany has started a fervent legislative activity to regulate land uses, so that we can speak of a real «German model» that is oriented towards a more closely regulative approach than the English one, which also looks at the morphological design of the city. It dates back to 1985 the *Federal Soil Protection Act*, which recognized for the first time the need to counter the expansion of urban areas in rural areas. It was followed by the establishment in 1998, by the Minister for the Environment Angela Merkel, of the national observatory on land use aiming to bring by 2020 the consumption of soil from 130 acres per day (recorded in 2000) to 30 hectares per day.

The goal of 30 hectares, which was endorsed by successive governments, was inserted in 2002 in the “National Strategy for Sustainable Development”.

¹⁸ The role of urban containment assigned to green belts has recently been confirmed and strengthened by the *Planning Policy Guidance Note 2 Green Belts* (approved in 2001), which assigns to these areas, in addition to the agricultural function, leisure and sport functions.

¹⁹ Already the *Planning Policy Guidance Note 3 Housing* of 2000 imposed to obtain from already urbanized areas (brownfield sites) at least the 60% of the space required for the development (Schirru, 2012). In addition new criteria were established which subordinated settlements to the environmental impact, to the residual capacity in urban areas, to the reachability of the workplace and basic services by foot or by public transport.

Then, it was variously implemented in the programs of development of the individual *Länder*²⁰.

In 2009 the Soil Commission established at the Federal Office of Environment prepared a *Road map* that sets a new target of zero acres a day to be reached by 2050 and identifies a series of regulative (such as equalization) and fiscal (such as differential taxation, systems of incentives and disincentives) instruments.

Among the most innovative proposals, there is the introduction of a system of trading of “certificates of surface” among the municipalities, as it happens in the energy sector and in industry, with the exchange of certificates of CO2 emissions. The proposal has recently materialized with the starting of a pilot project that provides that a certain amount of building areas outside the urban fabric is assigned as a certificate of surface to each Municipality. If this quota is not used, the Municipality may sell the whole amount or part of it to other municipalities, obtaining revenues to be used for example for the redevelopment of existing settlements.

Worthy of note is the action taken in France, where since the end of the nineties, important legislative innovations have been introduced in the field of urban and territorial planning, and administrative reorganization²¹. In particular, the *Solidarité et Renouveau Urbain* act of 2000, better known as SRU, assigns a central role to the planning at regional or metropolitan level («*area vasta*»), considered the most suitable scale to pursue sustainable development strategies and strategies for containing the sprawl. Thus, the *Schémas de la cohérence territoriale* (SCOT), made by associations of municipalities, are more dirigiste and prescriptive of previous framework plans (the optional *Schémas directeurs*), reinforced by a new democratic mandate²². In fact, besides

²⁰ The eco-bill introduced in 2003 in Bavaria is an interesting example of a measure of ecological compensation. It can be compared to a bank account that each municipality opens generating a deposit of eco-credits (and strategic areas available for attitude local ecological), from which it is possible to collect the virtual credits with which to balance the damage caused to ‘natural environment’ by the territorial transformation. Every compensation operation (eg, re-naturalization of rivers, reforestation and afforestation, sustainable cultivation practices) should allow the switch to eco higher than that of departure.

²¹ The reference is to to the *Voynet Act* (1999), for the reorganization and sustainable development of the territory, to the law *Chevenement* (1999), for reinforcing and simplifying inter-municipal cooperation, to *Gayssot-Besson Act* (1208/2000), known as *SRU (Solidarité et Renouveau Urbain) Act* and more recently to *Loi de réforme des collectivités territoriales* 2010/1563.

²² In 2010, the *Loi de réforme des collectivités territoriales* introduced the election of intermunicipal governments in order to have more democratic legitimacy of these institutions, but also a social control of the choices that often, as in the case of Lyon, tend to protect large areas and

delimiting in an unquestionable way the natural and urbanized areas under protection, the SCOT fixes the principle of «*extension limitée de l'urbanisation*» according to which in the absence of an approved SCOT, the municipalities cannot urbanize new territories or build large commercial areas²³. In addition, it is prescribed that the new urbanization are subordinated to a full exploitation of the soil of already urbanized areas and a good supply of public transport. It was finally introduced a criterion of inter-compensation, which provides that revenue generated by territorial transformations are shared also with municipalities that do not have increased urbanization on their territory. In this way, in addition to getting a more rational development of built-up areas within the «*area vasta*», contributes to reduce the traditional propensity of individual municipalities to take land in order to raise funds.

In Italy, the issues of urban sprawl and land take have long remained restricted to the academic world. Only recently the need to develop a political-institutional discussion around these issues was recognized. This interest, prompted by the alarm on soil sealing launched by the European Commission, as well as by a higher public sensitivity towards sustainable land use, has produced a proliferation of initiatives on the legislative front.

The first attempt, in recent times, to legislate in these matters has been signed by the former Minister of Agricultural Policy, Catania, approved by the government in 2012 but not ratified by the Parliament (despite having passed the preliminary stage of the State-Regions), because of the early dissolution of the Parliament. The DDL “*Salva suolo*” (*Save the land*), today draft law²⁴, aims to promote agricultural areas and contain soil consumption through the following actions: all the land that are intended for agricultural use in the planning instrument, regardless of whether they are used for this purpose, are recognized as «agricultural land»; the introduction of a quota of agricultural lands convertible into building (that is) defined at national level; the prohibition

centers of great value but generate the risk of burdening especially the weaker social classes (Ferlaino, 2010).

²³ This principle, that the SRU Act applied to all municipalities that are located no more than 15 km from the suburbs of an agglomeration of 15,000 inhabitants, was made more flexible by Raffarin government initiative which, with an amendment introduced in the *Urbanisme et habitat Act* of 2 July 2003, has raised the threshold demographic reference to 50,000 inhabitants.

²⁴ Catania, although no longer Minister but deputy of the new Legislature, has resubmitted the law to the Chamber. After collecting signatures of 30 members of the majority parties, he deposited it in May of 2013, as "Draft Act framework for valorization of agricultural areas and containment of soil consumption".

of changing the intended agricultural use to the land that has received State or Community funding; the abrogation of the rule that allows municipalities to use the taxes paid for urbanization works for current expenditure. Then, other proposals were added to that of Catania and currently the submitted proposals are 19, of which 12 in the Chamber of deputies and six in the Senate²⁵. Although these proposals demonstrate an increasing interest in this issue, they do not always respects the relationship between national and regional competences or are only partially considering the complexity of the matter. The principle of the containment of land take was introduced by the *Rules for the development of the green areas* ACT (10/2013). This act allows Municipalities to provide instruments to encouraging reusing and reorganizing existing residential and productive areas. Moreover, it introduces appropriate measures for conserving and restoring not yet urbanized areas such as rural or forest landscape present in the jurisdiction of the municipal administration²⁶.

Contrasting the land take. – In order to counteract the land take, it would be useful also to regulate the “*vexata quaestio*” of the acquired building rights too overestimated in the old General Regulatory Plans²⁷. In the same way, it would be important to fully implement what the Article 42 of the Italian Constitution states about the expropriation for reasons of general interest. In this way, many empty urban spaces could be reused²⁸. Instead, causes of concerns come from

²⁵ In July of 2014 19 Devices Norms for containing soil consumption was under examination by the Eighth Commission (Environment, Territory and Public Works) or not yet assigned to its examination (senato.it).

²⁶ The procedures for implementing the norm are defined by Government, in consultation with the Unified Conference, while the Councils and the Provinces, according to environmental accounting systems to be defined prior agreements with the Regions "provide an annual account, in their websites, about containment or reduction of the urban areas and the acquisition and refurbishment of public green areas designated by the urban planning tools in force".

²⁷ Recently, the question has been put under discussion by some acts. In particular, the decision of the Council of State has recognized 6656/2012, to a Salentine Municipality, the right to transform an area that previous urban planning had destined for expansion to an urban green area. Such a decision recognizes that does not exist an acquired building right which can limit the action of urban planning and that such a right is not unchangeable on not yet built soil.

²⁸ Two resolutions approved by the Administration of the City of Naples, which prescribe the reuse, for social purposes, of abandoned properties go in this direction. These resolutions

the recent draft Law presented by the Minister Lupi, *Principles of local public policies and urban transformation*²⁹. In fact, in contrast with Constitutional principles, it states that in the territorial governance private property is recognized and guaranteed. (Baioni, 2014).

However, looking forward to a clearer national legislative framework, we can observe that some Regions have already implemented measures to contrast land take³⁰. For example, with the Regional Planning Act 1/2005, Tuscany introduced the principle of containment of land take and, since 2011, it has been launching a monitoring program of the intended land use prescribed in the municipal urban planning. Afterwards the new Regional Act approved in 2013 establishes that the occupation of new soil for residential or infrastructural purposes, can take place exclusively inside the urbanized area (bounded by the municipalities), while outside this area only transformations to productive, infrastructural and commercial (supermarkets) destinations are allowed.

However, the national and regional policies aimed to contain land take, need to be accompanied by adequate territorial policies and local urban planning. Otherwise, they risk not to produce significant results.. It appears essential a change of direction in the planning and governing models of the Italian territory³¹.

It is undoubtedly that the metropolitan area (*«area vasta»*) would be the most suitable level to pursue effectively strategies aimed to save soil. However,, as it is widely known, this geographical level has never had real centrality in urban planning. Indeed, In Italy the focus of territorial planning has been fluctuating, for far too long, between regional and provincial levels, without ever finding an organic structuring. In fact, although already in L.U.N. n. 1150/1942 the legislator had identified in the Territorial Coordination Plan the instrument able to coordinate the urbanistic activities of the single municipalities, this plan

establish that once a property loses its social function, it should return in the availability of the Community. This principle is also perfectly consistent with Article 42 of the Constitution, as Paolo Maddalena, Vice President Emeritus of the Constitutional Court, states (Maddalena, 2014).

²⁹ That Act, presented as a new urban planning Act, establishes general principles in different subjects, including the soil consumption , principles which Regions & Cities will have to translate in their administrative action (mit.gov.it).

³⁰ On the contrary, other Regions move in opposite directions, such as Campania Region that reopens the terms for the demands for regularizing not accepted illegal construction carried out between 1985 and 1994.

³¹ According to Perrone (2012), new models are needed where technique (spatial planning) and political (territorial government or spatial governance) recover each its own role.

is fully implemented only by Act n. 142/1990. However, after a few years, by the Act n. 56/2014 (which defines the territorial changes of provinces and metropolitan cities) provincial organs are again deprived of functions and they no longer have universal suffrage³².

So, while in France the SCOT are created and the election of intercommunal government is introduced, Italy follows an opposite direction. Therefore, it is as timely as ever the proposal concerning the territorial reorganization promoted by the Italian Geographic Society aiming to create new territorial areas (instead of regions and provinces), that would also have the optimal size to implement policies designed to contrast the land take.

Today are still the municipalities to ultimately decide on the use of their territory. This causes heavy consequences on the land take, because, as we have already noted (par. 2), these municipalities especially those smaller (Pileri, 2012), have less bargaining power than building contractors,

Therefore, the operative techniques to monitoring the land take at the local (provincial and municipal) scale are mainly related to three prevalent approaches. The first is regulative and aims to include in the plan a clear separation between buildable areas and areas where building is not permitted (the *no development areas*); the second, based on the English model, points to a physical control of land changes, through accurate planning of the urbanized areas and green or open areas. Finally, the third approach uses fiscal leverage in order to deter through taxation the transformation of not buildable land and, conversely, to encourage the reuse of brownfield or underused areas.

Here, it is not possible to review, for each of these approaches, all measures and instrument that can be used on a local scale for saving soil, and exhaustively deal with the issues related to *land use* policies. Therefore, we limit to put attention on three issues considered particularly important for urban sprawl containment and land take.

The first issue concerns the absolute necessity of measuring this phenomenon. It is clear that a complete information framework on agricultural and natural

³² Nonetheless, it should be noticed that starting from 2015 ten metropolitan cities are provided by the Act 135 of 2012, and the intention of abolishing provinces is still alive. Therefore, it is likely that the issue of planning wider area will become central. Such a power will probably be assigned to the regions, which in turn will lose many skills. Therefore, in the project of the legislator the relationship between central government and unions of municipalities (still political institutions of the second degree) becomes vital and the regions may act as programming intermediate entities.

land (internal and external to the urban area), derelict and underused areas³³ could drive the programming decisions of local administrations and be used for taxation, incentive or compensation mechanisms, applicable to a local scale. Unfortunately, Italy is still far behind from this goal. In fact, at national level, the range of information about the land cover/land use is wide but very fragmented and heterogeneous (Munafò, 2013). The heterogeneity of this data comes from the adoption of different ranking systems, the diversity of territorial and temporal coverage, the use of different levels of analysis, the different level of accuracy of information, the disparate purposes of the survey. The result is that this data are difficult to compare and scale on the national territory.

The second question concerns the social redistribution of ground rent. The question that the rent must be appropriately taxed is generally shared. Firstly, because a significant portion of rent comes from public goods: roads, parks, stations, airports, mobility networks and communication service. In fact, all these infrastructures require a national or local public capital expenditure (investments) or current account (management and maintenance fees) (Camagni, 2013, p. 127). Secondly, because the resources derived from fees can be usefully employed for the production of new public goods, new infrastructure, new services, able to activate «a great virtuous circle of cumulative growth».³⁴

³³ In this regard, it is useful to mention two interesting civic initiatives that contributed to partially measure underused areas, as well as to a growth of the level of collective awareness of the topic. The first action, carried out in 2012 by the Forum of the movements for the land and the landscape "Save the Landscape", has supported a homonymous campaign addressed to all Italian municipalities and asking for making public the number of unused, abandoned or vacant homes and industrial buildings. The second initiative instead regards, the campaign "We reuse Italy" promoted by the WWF and aiming at achieving a census of brownfield sites, susceptible to transformation. The key concept was centered on the involvement of local Communities, invited to identify sites and to suggest possible strategies for reuse. At the end of the campaign were collected 575 reporting forms of abandoned sites all over Italy with proposals and social and environmental reuse projects, largely drafted by citizens' groups and associations already active in the area.

³⁴ In this regard, the experience of the Helvetic Confederation is worthy of interest. It recently approved a Federal Act (Revision of the Territorial Planning Law (LPT), 2014) that allows each County to tax (with a tax by 30 to 50%) the real estate surplus caused by the implementation of the local urban plan «without any effort of the owner». The revenues from the taxation are placed in a municipal fund to be allocated in two main ways: 1) to compensate the owners of areas which previous plans have declared as buildable areas for cancelling the

The third issue refers to the need to include land use policies into the urban, agricultural, and environmental infrastructural policies of our Nation. For example, in order to prevent an uncontrolled growth of the urban space it is necessary to estimate the value of agricultural or natural areas in economic, environmental, landscaping and cultural terms. Compared to urbanized land which continues to grow, very often the agricultural soil becomes «a per-urban parenthesis that only fills residual gaps» (Erba, 2010), subject to all the negative consequences of urbanization (pollution, mobility network overlapping, urban decay, etc.).

Instead, in a global scenario characterized by growing food insecurity (and water supply) an accurate reflection about the protection and the enhancement of the agricultural areas and the food sector (which still represents the second economic compartment of the Nation in terms of added value) should be made.³⁵

At the same time, if it is absolutely essential for a correct approach to the restriction of land take, to preserve «what is outside» the urbanized space, equally important is to requalify "what is inside" the city (Arcidiacono and others, 2012, p. 284): the existing building patrimony, the brownfields, the spaces of public interest. This requires an integrated approach to urban building policies, able to take into account the economic, social, cultural and environmental development factors of the city. Moreover, with the adoption of the Seventh Environment Action Programme (European Parliament and Council, 2013) the European Union recognized the need to consider the direct and indirect impacts that European policies generate on land use.

It appears, finally, absolutely obvious that both the forms of territorial government and the measures and instruments to control urban sprawl and soil consumption should be based on an explicit territorial project considering the territory as a common good. Such a project should be addressed to protect landscape from the "seeds of disorder inherent in urban and suburban growing" (Gottmann, 1995). Finally, it should be focused on a sustainable growth perspective based on the research of a lasting balance between the

acquiring building rights previously assigned (the notorious acquired rights); 2) to build areas of public utility, such as squares or parks.

³⁵ The centrality of the problem of food insecurity at the global scale, which affects about one billion people on the planet, is also highlighted by the choice of the theme for Expo Milano 2015: *Feeding the Planet, Energy for Life*. Therefore, it is expected that, even in this context, the issues addressed can be translated into operational projects and best practices internationally.

supply of fundamental environmental resources such as soil, air, water, or landscape and the demand for using these resources.

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LAND TAKE AND URBAN SPRAWL: DRIVERS AND POLICY ACTIONS OF CONTRAST – Starting from a reading of the processes of urbanization, the present paper deals with the question of the fundamental drivers of «land take» and attempts to describe and interpret critically the ways in which the phenomenon is structured in Italy. Then, through a reviewing of actions and policies designed and implemented at the European level and the national level, some critical issues considered of particular importance for the containment of urban sprawl and land take are analyzed.

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