

Peculiar drifts of urbanization in Albania: investigating the population and land-use change nexus along the Tirana-Durrës axis

Abstract

Internal migration movements in Albania during the last thirty years have been a major factor of extensive urbanization, while bringing in a drastic reduction or even full-scale depopulation in many Albanian regions. Existing research highlights the important role of dominant socio-political regimes in shaping the spatio-temporal processes, formulating the ground of what can be perceived as a rather unique and “peculiar” case, outstandingly different from both west-European and east-European urbanization models. The proposed paper seeks to contribute to research dealing with post-1990 urbanization in Albania, aspiring to assess the role of complex migration flows (out-migration, in-migration, return migration) in the transformation of the urban hierarchy. The nexus population-change/land-use is on focus, in particular with regard to urbanization and sub-urbanization of greater Tirana, as well as the axis Tirana-Durrës. We investigate the urban development of Albania post-1990, with particular focus on the post-2006 period, to comprehend the extent and locational characteristics of urbanization, while assessing its impact into space. Methodologically, we rely upon a) the study of census data on demographic/ population change in Albania in the last thirty years (2001, 2011, 2021), at region, district and -where available- village/commune level, b) extensive land use analysis, as derived by high-resolution satellite-driven data and their processing using geospatial methods. Results cast light into the complexity of the process, helping us identify the distinct character of the recent urbanization wave, and also extract a set of generalizable conclusions regarding urbanization processes in the Balkan region in the context of advanced globalization and neoliberal capitalism.

Keywords: Albania, population/demographic change, migration, urbanization/land-use change, geospatial methods.

1. Introduction

Internal migration movements in Albania during the last thirty years have been a major factor of extensive urbanization, while bringing in a drastic reduction or even full-scale depopulation in many Albanian regions. Existing research highlights the important role of dominant socio-political regimes in shaping the spatio-temporal processes, formulating the ground of what can be perceived as a rather unique and “peculiar” case, outstandingly different from both west-European and east-European urbanization models.

The paper seeks to contribute to research dealing with post-1990 urbanization in Albania, aspiring to assess the role of complex migration flows (out-migration, in-migration, return migration) in the transformation of the urban hierarchies. On focus is the nexus population-change/land-use, in particular with regard to urbanization and sub-urbanization of greater Tirana, as well as the axis Tirana-Durrës. We investigate the urban development of Albania post-1990, with particular focus on the post-2006 period, in an attempt to comprehend the extent and locational characteristics of urbanization, while assessing its impact into space.

The aim was to assess the evolution of spatial patterns, distinguishing between four temporal periods, including the late socialist period (pre-1990), the early post-socialist period (circa 2000), the latest official land use geodata (Urban Atlas, 2018), and examination of most recent trends (2017–2024). Innovations of the geospatial methodology applied include multi-temporal coverage across major political-economic shifts, use of best-available sources (Orthophotos, Urban Atlas, Sentinel-2) despite Albania's historical data limitations, combination of manual and semi-automated methods, adapting to available data for each period, Update of 2017–2024 trends using NDVI change, filling the absence of standard datasets.

Results cast light into the complexity of the process, helping us identify the distinct character of the recent urbanization wave, and extract a set of generalizable conclusions regarding urbanization processes in the Balkan region in the context of advanced globalization and neoliberal capitalism.

The structure of the paper is as follows: in the first section, the general framework regarding territorial organization in Albania is traced, with an emphasis in the peculiarities of the urbanization model during the socialist period and beyond. In the next section, the spatial pattern evolution of the period 1980-2024 is precisely assessed, with the aid of combined geospatial data and relevant methods of analysis. In the concluding section, major preliminary findings are summarized and the rapid transformation of the urban complex within the globalization/neoliberal global context is discussed.

2. Territorial organization and urbanization in Albania: peculiarities off the socialist-city paradigm

Existing research on urbanization in Albania highlights the important role of dominant socio-political regimes in shaping the spatio-temporal processes, formulating the ground of what can be perceived as a rather unique and “peculiar” case, outstandingly different from both west-European and East-European urbanization models. This said, it is interesting to note that there has been no unanimity on the features of the socialist city, coming from the East-European urbanization model.

2.1 The paradigm of the socialist city: a fervent debate

The identity of the socialist city fueled a fervent debate in the humanities and social sciences in the 1970s. Somewhat eclipsed during the first years after the fall of the Soviet bloc, it has resurfaced since the end of the 1990s. The abolition of relations of domination between the city and the countryside is the theoretical basis stemming from the Marxist literature, which inspired the communist regimes (Coudroy-de-Lille, 2009: 9). Socialist planning aimed at an optimal city size; this is to be taken into consideration together with the acknowledgement that overpopulation of major cities has been a common issue of modern countries, either in socialist or capitalist economies. In both regimes, urbanization has been essential for the desired modernization of the economy and social life. Typically, modernization in both systems has been driven by industrialization. The key difference in socialist urban development is thought to lie in the state's dominance in defining and controlling urban growth (Abitz, 2006: 32).

In the 1970s, theorists of the socialist city questioned its true uniqueness compared to a simple differential in development rates within a process marked anyway by industrialization and modernization throughout the 20th century, regardless of whether these were outcomes of socialism or the market economy. French and Hamilton (1979) were central to the debate, suggesting that political economy and production modes significantly shaped urban forms and functions. They identified several distinguishing factors of socialist urban settlements. These included rapid growth in less urbanized regions, functional zoning, the use of micro-districts in urban planning, the absence of land prices, predominantly public land ownership and management, high investment rates, mediocre service levels (except for public transport), and limited segregation. One key contribution of their synthesis was empirical intra-urban studies that revealed the social dynamics of these cities, challenging the literature that celebrated urban growth on a national scale. They demonstrated how socio-spatial divisions persisted despite the drastic transformations in urban appearance and sociology, and how the socialist city itself created unique segregation processes, contrary to the ideology of eliminating class differences¹ (Coudroy-de-Lille, 2009: 9).

The scientific debate on the "socialist city" resumed after 1990. In 2005, Hamilton, reflecting 35 years after his work with Richard French, emphasized that the identity of the socialist city was shaped by a significant urban split between 1945 and 1949, which, on the one hand was a distinguishing factor from the Western European city, and, on the

¹ For a detailed bibliography, see Coudroy-de-Lille (op. cit., note13).

other, was making socialist cities more alike². However, he noted that this divergence lessened in the 1970s as industrialization dynamics aligned cities with modern European urbanization at a macro level. Nonetheless, Hamilton and other Central European authors argue that the socialist city retains its distinctiveness at the micro level³. While the principle of industrialization appears to have uniformly influenced urban network growth, this uniformity diminishes at a finer scale due to political and socioeconomic mechanisms. State control – pervasive in nearly all aspects of urban development – directs property ownership and usage, housing production and allocation mechanisms, city financial resources, population growth control, and, ultimately, the social division of space (Coudroy-de-Lille, 2009: 9).

2.2 The Albanian singularity

Albania stands out in Eastern Europe for its effective control over urbanization, thanks to its state monopoly. This approach shifted from Stalinist to Maoist urban planning strategies. In Tirana, as in other socialist cities, urban planning aimed to address the problems inherited from capitalism and, thus, create a new city pattern reflecting a classless society. The principles were egalitarianism and planned urbanization, striving to provide equal living conditions for all social classes, ultimately aiming for a single working class across urban and rural areas (Abitz, 2006: 32).

The real Albanian singularity in the context of Eastern Europe became evident in 1960 when Albania shifted its foreign policy and aligned with Maoist China. This led to the launch of its "cultural revolution," characterized by anti-urban policies aimed at abolishing urban-upon-rural domination and maintaining a numerical balance between the two. According to Murray et al. (1988), Albania moved away from the Soviet model of primitive socialist accumulation, adopting a "zero growth" strategy⁴ focused on accumulating capital in rural communes and converting agricultural surplus into the development of a local industry⁵. Amid international isolation and authoritarian rule,

² For a detailed bibliography, see Coudroy-de-Lille (op. cit., note14).

³ For a detailed bibliography, see Coudroy-de-Lille (op. cit., note16).

⁴ See Murray & Szelenyi (1984), as well as Murray et. al. (1988). According to this thesis, some socialist states in the so-called "third world" (at the time) experienced a decline in urban development following the revolution, while others opted for zero urban growth. In Europe, underdeveloped urbanization was attributed to the widespread practice of housing industrial workers in rural areas.

⁵ It is to note, however, that the "zero growth" hypothesis has been later contested by Sjöberg (1992), who offered an alternative to this thesis. Sjöberg explored several conceptual and empirical uncertainties in the model of the city in transition to socialism, as proposed by Pearse Murray and Iván Szelenyi (1984). Notably, he showed that two of the four stages in their model—under-urbanization and zero urban growth—share many similar characteristics. To address the need for reconceptualization, he offered an alternative explanation, highlighting the significance of the detailed aspects of the traditional central planning model. He argued that investment patterns and enterprise behavior, rather than 'primitive socialist accumulation' and 'extensive growth,' are the main factors influencing urban growth patterns in Soviet-type economies. Even more importantly, strict migratory controls are pinpointed as crucial for achieving zero urban growth as defined by Murray and Szelenyi. A case study focusing on patterns of "diverted migration" and the growth of non-urban settlements on the outskirts of the Albanian capital, Tirana, demonstrates how the explanation proposed by Sjöberg was helpful in reinterpreting urbanization specifics under orthodox socialist governance (Sjöberg, 1992).

Albania showcased its capability to implement the principles of the planned economy (Aliaj, 2003; Jarne, 2018: 3).

In summary, the image of the urban/territorial development in Albania is not at all linear. The development of Tirana before 1960, the "imposed" stagnation of the communist period (with growth lower than that of the average growth of the country), and finally the recovery – after 1990 – of the post-war trend of urban growth, are spectacular. New cities were developed during the period of industrialization, especially during the 1950s. Then they developed at the expense of the development of Tirana, but their growth was only slightly higher than the growth of the Albanian population in general (Kokkali and Rembeci, 2024: 51), as we will try to present briefly in the following section.

2.3. Territorial organization and urbanization in Albania: a brief history

Urban life in Albania began relatively early, as evidenced by numerous archaeological findings. As early as the 7th-6th centuries BC, Greek colonies emerged along the coastline (Pollo & Puto, 1974). During the Roman era, urban civilization flourished with the construction of the Via Egnatia, that traversed Albania from west to east, connecting Durrës to Ohrid through the Shkumbi valley. Via Egnatia has been a vital link between East and West, easing trade between Italy and Salonika, letting caravans travel across the Mediterranean basin. The economic growth of the regions along this road was enhanced, leading to the establishment of stopping points, markets, and even towns like Elbasan. Consequently, in the Middle Ages, a network of Adriatic cities emerged, thriving due to their access to maritime ports (Durrës, Shkodra, Vlora) and well-maintained road links (Elbasan, Lezh). The interplay between geography, trade routes, and strategic positioning during the Ottoman occupation significantly shaped the growth and decline of cities (Odile, 1978: 62-63).

According to Daniel Odile (1978), the Ottoman invasion drastically transformed the region. In the fifteenth century, the influx of Ottoman forces prompted city residents to escape to the mountains for safety. Many also fled abroad, leading to the establishment of Albanian communities in Friuli, Sicily, and Calabria, known as the "Arberesh" colonies, some of which still exist today. As a consequence, many of the cities that flourished in previous times, now, reverted to village status. According to Odile, another reason for the decline of the cities of the region during the Ottoman era is the mountainous landscape: three-quarters of the Albanian territory is made up of mountains, that is areas of scattered settlement. Yet, habitat was not favorable in the coastal plains either, because they were vulnerable to invasions, or in swampy regions that were prone to malaria, thus unsuitable for agriculture (Odile, 1978: 62). Besides, it is possible that the partition of the territory into *sandjaks* (which were almost autonomous provinces) has been detrimental to the development of urban centres (op.cit., 64). Since the 15th century strategically situated cities have emerged at crossroads, shielded by a mountainous hinterland. For instance, Shkodra and Elbasan exemplify how geographic positioning together with Ottoman policies for territorial control (e.g. garrison towns) fostered urban growth, cultural exchange, and economic development. These two cities became focal points for regional influence respectively in the north and in the central region of Albania (Odile, 1978: 64).

Albania becomes an independent state in 1912. It is important to stress that this is not the consequence of a somewhat "national revival" as it is often implied in the relevant

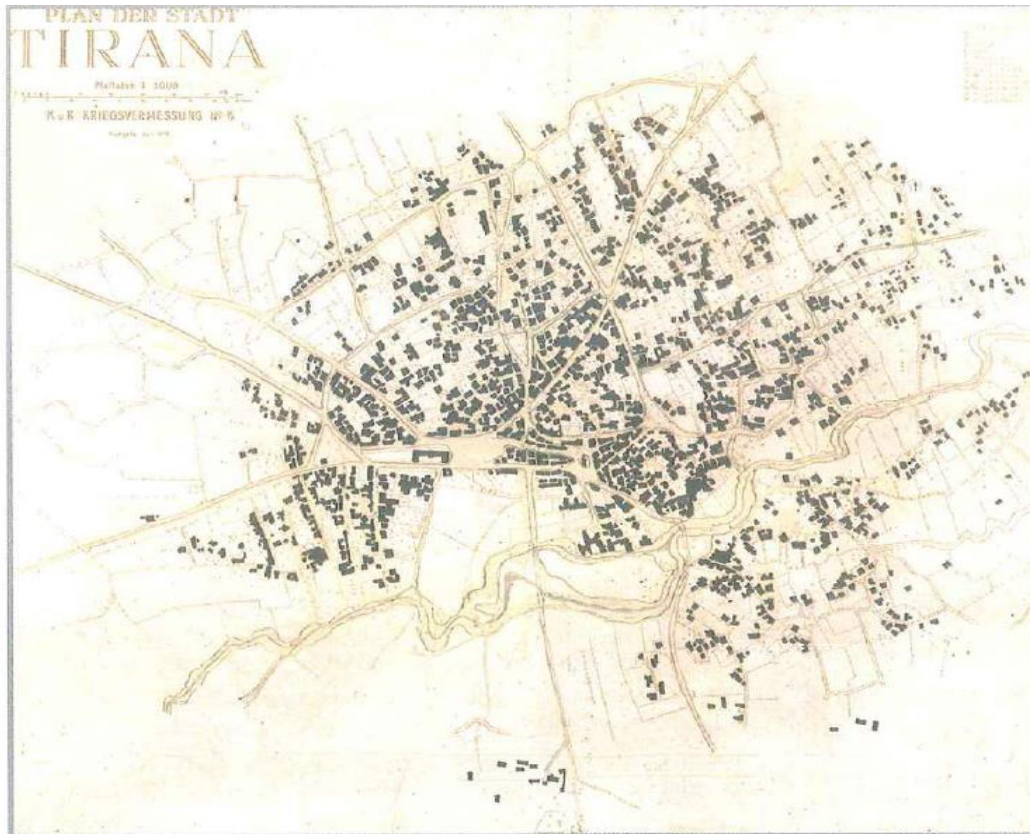
literature (e.g. see Odile, 1978: 65). The seminal work of Natalie Clayer (2007) sets the Albanian nationalism in a dialectical relationship with the nationalisms of the other Balkan countries, within the Ottoman and European frameworks of the time. The development of Albanian nationalism indeed unfolded within the broader context of similar movements in the Balkan region, reflecting both shared and distinct political, social and regional patterns. Clayer highlights the significant diversity among the "Albanians," referring to the multiple geographical, socio-economic, linguistic, religious, and political conditions across the different vilayets and sandjaks. She demonstrates that this heterogeneity gives rise to multiple interpretations of "Albanianness", which has been shaped by different "national visions" (Anagnostopoulou, 2008; Clayer, 2007).

In 1920, Tirana was designated as the provisional capital of Albania, a decision that sparked considerable debate. Shkodra, Durrës, Vlorë, and Korça were argued to be better choices for the capital, as all were previously significant cultural and economic urban centers and have historically served as regional capitals or administrative hubs in the region. Tirana had certain advantages, including being one of the few Albanian cities at the time that did not have foreign armies present. Its central position was an additional factor. Located in the southeastern area of the central plain of Albania, Tirana was very close to the port of Durrës (just 40 kilometers), making it relatively accessible to the outside world (Kera, 2010).

In 1920, Tirana was a town covering an area of 305 hectares, with the residential zone making up 98.2% of the town's space and a population of 15,000 residents, resulting in a density of about 50 inhabitants per hectare. The town developed around the central old bazaar, with residential areas primarily expanding to the north and east. The following year, the population increased by 15% and the town began to expand northeast and southwest. In 1922, cemeteries that had been located near the mosques were moved outside the city, allowing for the creation of several public gardens in their place. That same year, Austrian architects and engineers established the first regulatory town plan.

In 1925, the Italian architect Brasini drafted a master plan for the reorganization of the new center of the capital; this plan would be implemented later with some adjustments. From 1926 to 1928, another three regulatory plans saw the day (Aliaj *et al.* 2003: 28, 30, 32-33). In the 1930s, Tirana was subject to major changes. The uninhabited area that was called New Tirana, which until then was state property, was divided in plots and sold at favorable prices to Albanian civil servants for the construction of private dwellings. Two-storey modern residences with straight streets were gradually built, contrary to Old Tirana that has remained still, with few urban changes (expanding mainly around the Old Bazaar from the Ottoman era). At the time, Tirana had no water supply and sewage system, no asphalt roads, and the houses were mainly built with mud bricks. From 1929 to 1938, Tirana experienced significant development marked by the construction of several new roadways (Aliaj *et al.* 2003; Kera, 2004).

Fig.1: Urban Plan of Tirana drafted by Austrian architects and engineers in 1916. Scale 1/5000



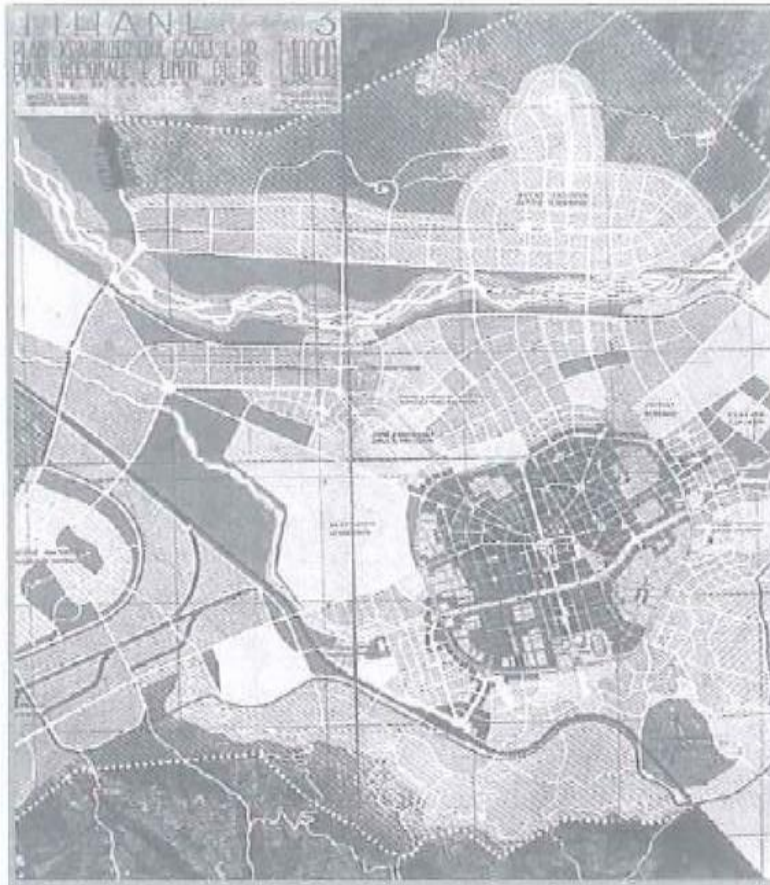
Source: Aliaj et al. (2003): 27.

In 1939, Italy occupied Albania, and the Italian government now aimed to transform Tirana into a colonial urban center. In the following years, a new master plan for Tirana was drafted by two Florentine architects, Gherardo Bosio and Fernando Poggi, which did not address exclusively the city centre, but included new residential, military, and industrial zones (Aliaj *et al.* 2003: 43; Pojani, 2010). In 1937, Tirana counted 35,000 inhabitants, who reached 40,000 by 1939, when the implementation of the regulatory plan started (Aliaj *et al.* 2003: 43).

When the partisans gained control over Albania in 1944, Tirana was a city of 50,000 inhabitants. Although more than 85% of the population lived on agriculture at the time, this latter was rudimentary. Besides, there was almost no manufacturing industry (Abitz, 2006: 33). Following the founding of industry in 1949, the expansion of Tirana marked a significant transformation of the city and was aimed at fostering economic growth. To minimize pollution *inter alia*, the Directorate of Urban Planning developed a new area to the west of Tirana, 5 km from the city center, along the road Tirana – Durrës (Odile, 1978: 69).

The relatively rapid urbanization of Albania from 1945 to 1960⁶ has led to the depopulation of a number of southern mountain districts⁷. Tirana has absorbed most of this urban growth. Pandi Geço (1970⁸) has shown that Tirana has importantly grown due to immigration from the southern part of Albania, which was also the most advanced from the economic and societal points of view (Sivignon, 1975: 333).

Fig.2: Urban Master Plan (1942)



Source: Aliaj et al. (2003): 43.

Fig. 3: Urban situation of Tirana (1965)



Source: Aliaj et al. (2003): 54-55.

In 1960, there is a major shift in the urbanization of Albania. The "cultural revolution" of the country triggered – among other things – a set of “anti-urban” policies that sought to abolish urban-upon-rural domination. This mainly meant to maintain a numerical balance between the “urban” and the “rural” populations. In this context, although urban growth rates remained high, they were only associated with a very high birth rate, while only small new towns ("exemplary" cities) continued to benefit from some migratory influx. In all the others, and in particular in-migration towards Tirana was prohibited (Kokkali and Rembeci, 2024: 51; Jarne, 2018).

We can distinguish, after Vullnetari (2014), two phases of internal movements which are very relevant to the state of urbanization in Albania; the first, corresponding roughly to 1945–1965, characterised by large-scale internal movements, and, as aforementioned, a high degree of urbanisation. The vast majority of these movements were designed to supply much-needed labour to industrialisation projects across the country, in the late 1940s. Many of these projects concerned existing towns; yet, others triggered, as aforementioned, the creation of new cities. Indeed, by 1974, a total of 63 localities were designated as cities, with some having fewer than 1,000 residents (Sivignon, 1975: 334). During the years 1945–1989, about 43 new towns were established throughout Albania, half of which related to metal extraction and energy resources (Bërzholi, 2000; cited in Vullnetari (2014). These towns, such as Bulqizë, Laç, Kurbesh and Ballsh, absorbed a large proportion of rural-urban migratory movements until 1989; but, they collapsed demographically when their adjacent industries closed. They became, therefore, important ‘expulsion’ centres after 1990.

As aforementioned, the second phase of internal movements refers to a policy of rural retention and minimal urbanization that was pursued in Albania from the early 1960s onwards. This was largely achieved through administrative restrictions to movement, primarily rural-to-urban migration and especially prohibitive of settlement in the capital (Vullnetari (2014). To control urban growth, city limits – the so-called "*yellow line*" – were established around each city. City limits represented the real division between the "rural" and the "urban" territory, and it was impossible to allow urban expansion beyond it. If population increase was leading to urban development at the edge of the yellow line, potential new residents were directed to other localities. Special permits were used for those who aspired to relocate to specific urban centers, who, still, needed to provide evidence of employment (Aliaj & Dhano, 2023: 98).

More than any other city, Tirana was the focus of internal moves – the most desirable destination especially for young Albanians, yet out of reach for most of them. Following this restrictive policy for settlement in the capital, the share of Tirana in the total population of the country declined after the 1960s (Vullnetari (2014).

Nonetheless, in 1975, Tirana stands out as the only major city in Albania, with a population of around 180,000, that is seven times larger than what it was in 1938. In contrast, Shkodra, the next largest city, has 55,000 residents. Tirana is also the fastest-growing city, and we could only find similar growth rates – at the time – only when looking at newly established towns, such as Qytet Stalin, which emerged due to the oil industry and did not exist in 1938 (Sivignon, 1975: 334).

Fig. 4: Expansion of Tirana, 1917- 1987

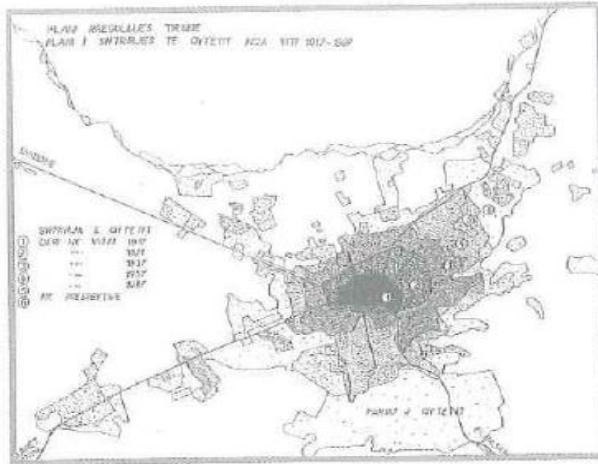
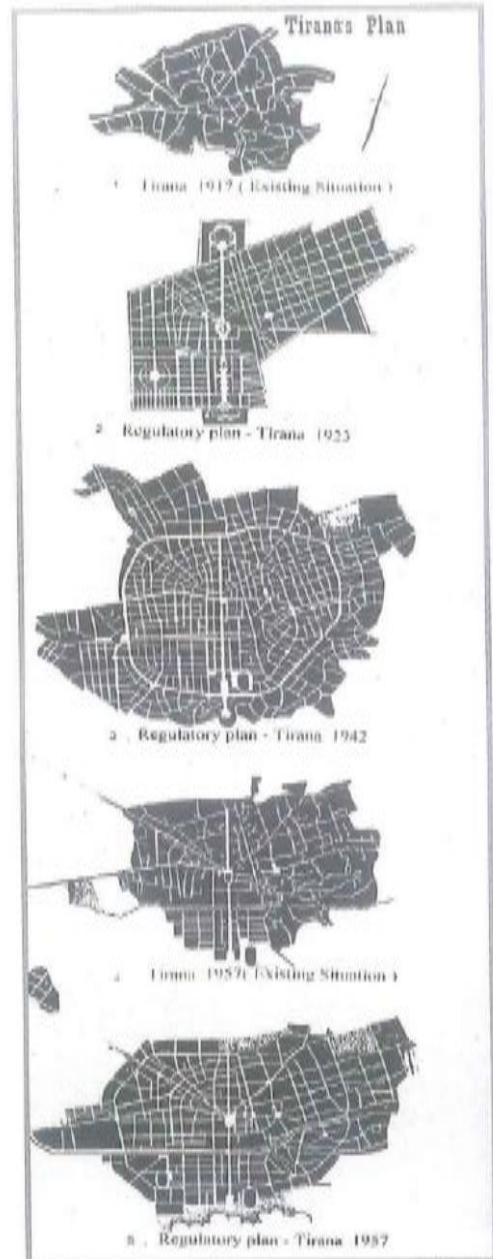


Fig. 5: Expansion of Tirana, 1919- 1957



Source: Aliaj et al. (2003): 64-65.

Despite the strict migratory controls for achieving “zero urban growth” (Murray & Szelenyi, 1984) in Albania since the 1960s, some movement heading to Tirana did exist. In introducing the concept of "diverted migration", Sjöberg (1992) interpreted the development of the capital's suburbs, that is the growth of non-urban settlements in the outskirts of Tirana, reinterpreting, therefore, urbanization specifics under orthodox

socialist governance. Sjöberg showed that, in the absence of an opportunity to migrate to Tirana, movements between rural areas across Albania took place, fueling settlement in agricultural cooperatives in the capital region (Kokkali, 2025). Since most would-be-migrants were not able to obtain permission to move to Tirana proper, they managed to migrate to one of the rural cooperatives or state agricultural enterprises in the periphery of the city. In turn, these 'diverted in-migrants' contributed to the formation of densely populated 'extra-urban settlements' (Sjöberg 1992, 13), a prelude to post-communist patterns (Vullnetari (2014).

During his visit to Albania, in the mid-1970s, French geographer Michel Sivignon describes these "diverted migrations": *"Further afield, the influence of the city is felt through the intermediary of commuting movements that go up to 20 km, and some villages, such as the railway junction of Vora, became suburbs of Tirana"* (Sivignon, 1975: 342).

Sivignon also foresees "a kind of linear urbanization from Tirana to Durrës", in the long term, considering that the two cities are only 25 km away (Sivignon, op. cit.).

In any case, Albania's approach to urbanization has been unique amongst the Eastern-European and the Mediterranean countries. The share of the urban population in the mid-1970s was counting for only one-third of the total, despite a broad definition of the "city", which included any locality in which more than half of the workforce was engaged in non-agricultural activities. The pace of urbanization, which was relatively fast until 1960, stabilized by 1975, with the urban population share remaining nearly the same as in 1965. This stagnation was rooted in a political strategy spiring to keep people in their places of origin; as aforesaid, to achieve this the spread of industry across the country was a major choice (Sivignon, 1975: 333).

With the fall of the regime and the consequent liberalization of migration, there is a recovery of urbanization processes with the contribution of rural populations. These latter, through self-housing practices, settle in new "arbitrary" settlements in the suburbs mainly of Tirana (Kokkali and Rembeci, 2024: 51).

Julie Vullnetari (2014) notes that, since it was clear that the regime was about to collapse, a widespread disregard for law and order ensued. It soon became obvious that the state's ability to enforce law was rapidly dissolving. This apprehension meant that everything public (irrigation systems, orchards, vineyards, warehouses, but also harvest in the fields), which until then was considered as common property, was stolen or brutally destroyed as this was the case in other Eastern European countries, such as Bulgaria.

In 1992, the privatisation process in urban areas gave the chance to urban dwellers to own their dwelling by purchasing it at a symbolic price. Yet, the destiny of land of the agricultural state enterprises was more ambiguous. This land was distributed on a usufruct basis for a 15-year period or longer. It is to note that, initially, the privatisation process excluded former owners of land and other immovable property, who were not compensated by the communist regime for the land confiscation and collectivisation⁶. Apart from large-scale internal movements, most of the 1990s were characterized by land

⁶ However, most land distribution in the north of the country followed the lines of previous ownership.

grabbing in urban and peri-urban areas, followed by squatter settlements, especially in the Tirana-Durrës conurbation. Julie Vullnettari (2014), citing Felstehausen (1999: 13), refers to a typical process of squatter settlement claim in peri-urban Tirana:

'The head of a family locates an unoccupied piece of land (men were the only ones observed to engage in land claims). The interested party asks existing neighbors if they have any objection to having a new family mark out a house plot. If there are no objections or serious warnings about conflicts, the new claimant "places the stones," a ceremony marking the four lot corners, usually with white rocks. This ritual is conducted in the presence of witnesses. By placing the stones, the new claimant has established a personal and family right to a homestead – a place to live. Customary rules give some protection to new citizens of the community. [...] Hundreds of unauthorized claims like these are created every month. It is unclear how they will be ultimately resolved' (Vullnettari, 2014).

Since 1991, Tirana and its suburbs have been growing in a spectacular way. On the contrary, the network of the so-called "exemplary" cities gradually collapsed after 1991, as lifting the travel ban worked mainly for the benefit of the Tirana-Durrës metropolitan area. It is to note that some cities initially resisted the decline, since emigration to Tirana and abroad was offset by intra-regional influxes of rural population; still, since the 2000s, all these cities have lost population, with the exception of Saranda, a coastal city, which was the only one to develop outside the Tirana-Durrës metropolitan axis (Jarne, 2018; Kokkali and Rembeci, op.cit.).

During the period 2001-2011, there is a remarkable drop in immigration towards the small centers: there were about 30,000 newcomers in the previous decade (1991-2001) compared with just over 10,000, in 2001–2011. In terms of attractiveness, immigration in these local centralities is lower than in rural lowland communes, and barely higher than in the mountain communes. Their internal migration ratio was balanced by the contribution of neighboring villages. However, it seems that the internal migrants who had settled—in the previous decade—in these local centralities offering some degree of urbanity, were in transit there, since they did not remain during the second decade (Jarne, 2020, p. 286).

Generally speaking, during this decade, outflows came mainly from rural areas (84%), and half of these flows (52%) headed to the prefecture of Tirana. Rural areas are the destination of at least half of the flows from intermediate or urban areas. If we aggregate all internal flows, albeit the area of origin, almost half of them head to the prefecture of Tirana (Table 2 in Annex). These arrivals to the prefecture of Tirana (112,180 new residents coming from other prefectures) have a significant demographic effect, since they represent 18% of the population in 2001. They thus reinforce the concentration of the Albanian population in the prefecture of Tirana, where, in 2011, resides more than a quarter of the total population of the country (27%). The urban and coastal residential concentration of the Albanian population has significantly increased in 10 years, benefitting in particular Durrës, in which reside 15% of internal migrants between 2001 and 2011. These developments result in the prefectures of Tirana and Durrës being the only ones to have a positive migration balance of 100,000 and 24,000 persons, respectively (Kokkali, 2024: 283-285; Parant, 2020: 43–44; INSTAT, 2019).

3. Assessing spatial pattern evolution (1980-2024)

Against this background, our choice to study the Tirana-Durrës axis seems well justified. Both cities appear to expand rapidly in the post-socialist period, while the transportation corridor between them gained particular concentration of industrial and commercial facilities, alongside public infrastructure, educational facilities, forming an almost continuous development zone connecting the two urban cores.

This is in sharp contrast to the urban organization of the socialist era. During the late 1970s, both Tirana and Durrës exhibited compact urban forms shaped by the principles of centralized planning as implemented in Albania post-WWII, and in particular after the “cultural revolution” of the 1960s. The ban to movement and the restrictions imposed by the “yellow lines” are – without any doubt – at the core of this compact urban shape. Tirana encompassed a core built-up area of approximately 1300 hectares, complemented by some detached industrial clusters, particularly along river-side zones, leading to a total artificial surface of around 1800 hectares. Similarly, Durrës presented a compact structure, with a core urban footprint of approximately 400 hectares and an adjacent industrial extension of roughly 200 hectares. At this stage, the Tirana–Durrës corridor did not exist as a continuous urban feature. The space between the two cities was primarily occupied by agricultural lands, small villages (notably the Radë–Rubjek–Billalas–Karreç complex), mining sites, and isolated industrial facilities, especially on the northern side near the river. Tirana’s western edge also hosted the airport facility, integrated into a largely rural landscape. Thus, in 1980, urban development was still tightly controlled, compact, and clearly separated from the surrounding rural matrix.

3.1 Methods applied for geospatial analysis

To precisely map and characterize the evolution of spatial patterns in the Tirana-Durrës corridor in the most recent period (1980-2024), methodologically, we relied upon: a) extensive land use analysis, as derived by orthophotos, high-resolution satellite-driven data and their processing using geospatial methods. b) the study of census data on demographic/ population change in the past decades (2001, 2011, 2023), at the local (municipality and municipal department) level.

An integration of multiple spatial datasets spanning nearly five decades was conducted, aiming to track and interpret the evolution of urban expansion in the Tirana–Durrës corridor, that appears to be particularly dynamic in the post-socialist era.

The datasets employed are summarized in Table 1.

Table 1: Datasets used

Dataset	Source	Temporal Coverage	Format/Details	Notes
Administrative Boundaries	HDX Albania Boundaries	Updated 2019	Shapefile (SHP)	Levels 0–3 (Country, County, Municipality, Locality)
Land Use (1976–1980, 2000)	ASIG Geoportal	1976–1980; 2000	Orthophoto interpretation; manual digitalization	Manual vectorization; low sprawl in 1980s facilitated aggregation
Urban Atlas 2018	Urban Atlas 2018 - EEA	2017–2019	Vector data	17 urban and 10 rural land classes; MMU: 0.25ha (urban)
Sentinel-2 NDVI Analysis	Google Earth Engine	2017–2024	Satellite imagery	NDVI-based land cover change detection

The aim was to analyze at least four temporal periods including the late socialist period (pre-1990), the early post-socialist period (circa 2000), the latest official land use geodata (Urban Atlas, 2018), and examination of most recent trends (2017–2024). To achieve this, research methodology involved a multi-step approach:

Manual Orthophoto Interpretation and Digitalization: Land use for 1976–1980 and 2000 periods was manually extracted through careful interpretation of historical orthophotos. Aggregation techniques were applied, especially in low-density residential zones, in order to maintain the consistency of urban fabric interpretation across periods.

Urban Atlas 2018 Data Processing: Vector-based land cover classes were reprocessed. An aggregation algorithm (ArcGIS Aggregate Polygons) was applied with a 20-meter threshold to integrate adjacent urban patches and reclassify narrow transport corridors embedded within urban tissue as "urban land."

Recent Trend Analysis (2017–2024): As no updated official data were available beyond 2018, recent trends were analyzed through NDVI change detection using Sentinel-2 satellite imagery on the Google Earth Engine platform. Specific steps included: a) Setting spring-summer periods for 2017 and 2024. b) Filtering clouds using the Sentinel-2 Scene Classification Layer (SCL). c) Calculating mean NDVI for each period, applying a median filter to smooth values. d) Computing NDVI difference; areas with significant NDVI change were identified as indicative of new artificialization. NDVI < -0.5 change was used as a rough but reasonable proxy for new artificialization, however, NDVI does not always distinguish between urbanization and other land cover changes (e.g., forest clearing, mining, dirt fields). To handle this, visual control was taken, with a focus on new large-scale development.

3.2 Results

The collapse of the socialist regime in the early 1990s triggered a profound transformation of urban dynamics. By 2000, Tirana had expanded its artificial footprint to approximately 4400 hectares, reflecting a 150% growth compared to 1980 (Fig.6). This expansion was notably sprawling and low-density, occurring in all directions, but especially pronounced north of the river, characterized by disorganized, leapfrogging urban patches. The expansion of Durrës followed a similar pattern, reaching approximately 1500 hectares (+150% growth). The major eastward expansion of Durrës' layout plan occurred post-1994, while expansion towards the coastal areas largely preceded this period. Despite the noticeable sprawl in both cities, the corridor connecting Tirana and Durrës remained relatively undeveloped. The in-between landscape retained its predominantly rural character, indicating that early post-socialist urbanization was primarily city-centric rather than corridor-driven.

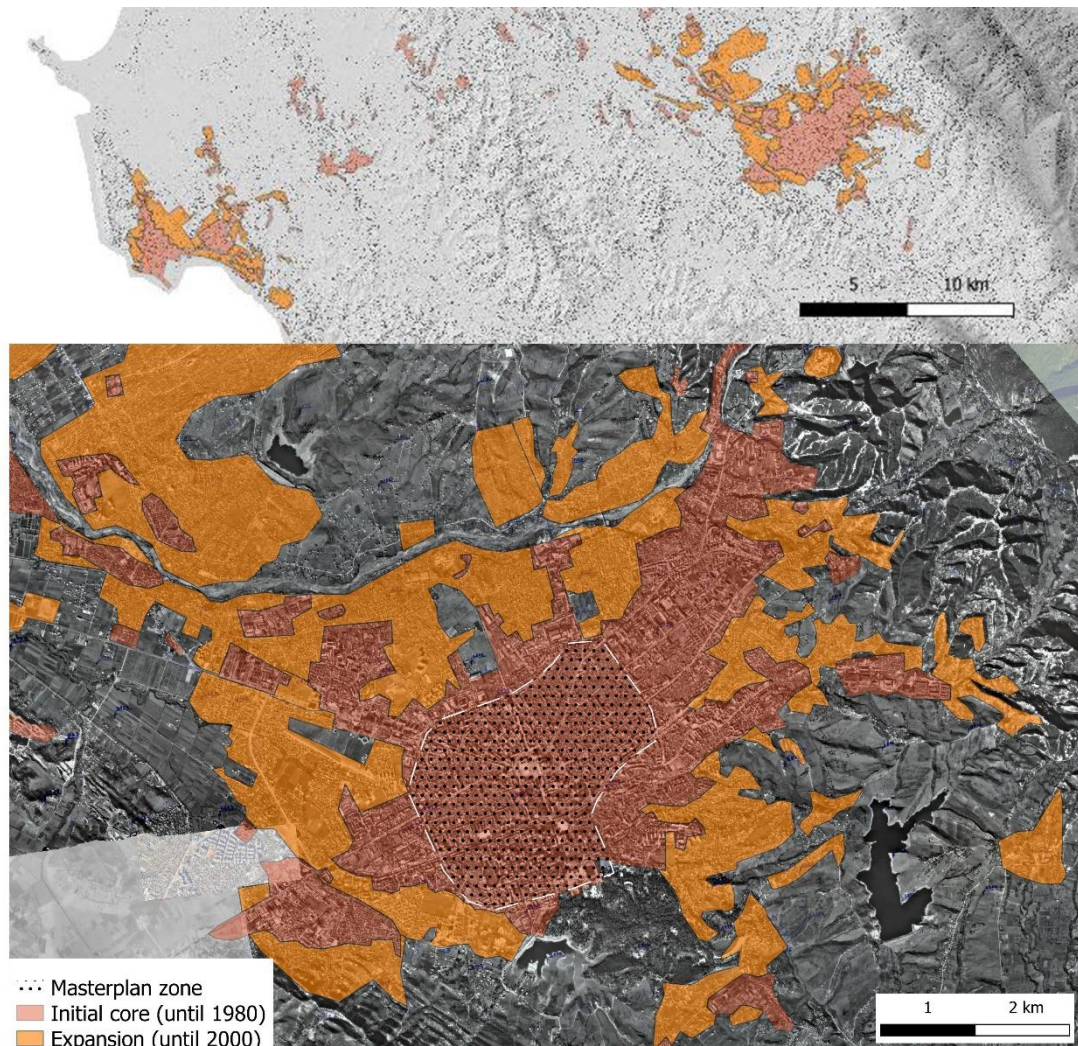


Fig.6: The initial core and expansion until 2000 (up: Tirana-Durrës corridor, down: Tirana)

This first wave of growth seems to be driven by a semi-illegal, spontaneous settlement formation process resulting into a “chaotic” (dead-end street) layout that evolved in the outskirts of Tirana after 1990 (Fig. 7). This is particularly linked with land grabbing in urban

and peri-urban areas, followed by squatter settlements, especially in the Tirana-Durrës conurbation (as explained in the previous section).

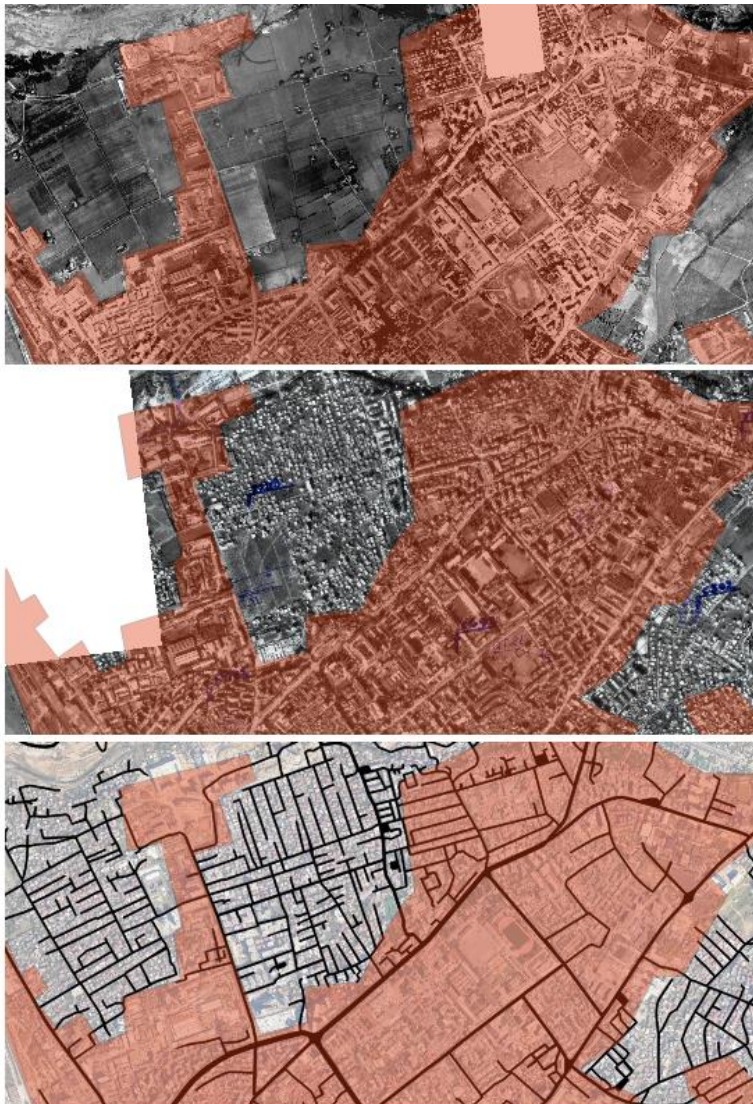


Fig. 7: Expansion areas mostly driven by spontaneous residential development in the peri-urban zone of Tirana after 1990, resulting into an irregular spatial plan with dead-end roads (up: 1976-1980, middle: 2000, down: Street layout)

After 2000 and until about 2018, the urban fabric of the Tirana–Durrës region had already undergone a decisive metamorphosis, ultimately leading to the emergence of the polynuclear metropolis, where formerly discrete urban centers began merging into a continuous urban region. This development was fueled by several parallel processes, most notable the massive suburbanization around Tirana, with intensification of earlier expansion fronts, and the formation of clear linear urban axes: Tirana–Durrës corridor (northwest), Southern suburban axis, Tirana–Elbasan axis (southeast). Artificial land use expanded dramatically, reaching approximately 11,000 hectares, a 165% increase relative to the 1980s base. Within the broader administrative area, total artificial surfaces accounted for around 18,000 hectares, corresponding to approximately 11% of the entire administrative region (Fig. 8). The once-rural corridor between Tirana and Durrës now exhibited an almost continuous urban strip, marking a fundamental shift in the region’s morphology from isolated urban centers to an interconnected urban network.

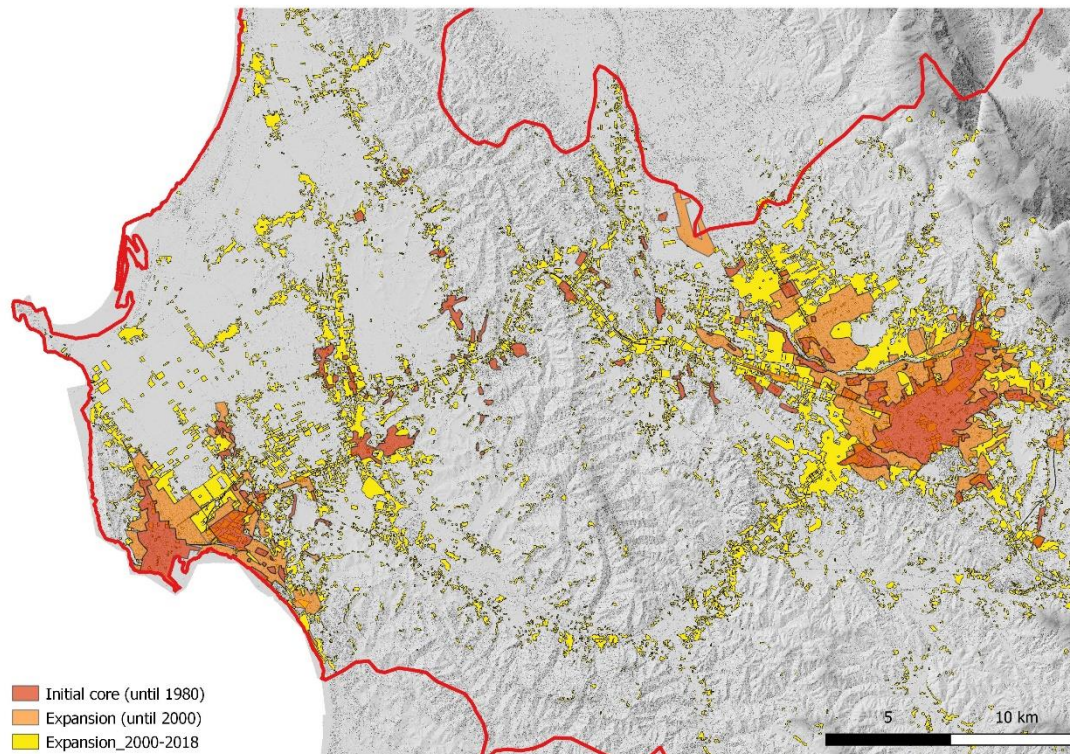


Fig. 8: The Tirana-Durrës urban complex and the emerging industrial/commercial corridor after the 2000-2018 expansion.

Analysis of the distribution of different land use classes mapped by the Urban Atlas database in 2018, certified that a sprawling/low-density pattern is also prevailing. Taken together, the low-density urban fabric and very low-density urban fabric make up about 37% of total artificial areas in 2018, in comparison to about 30% of high and medium density urban fabric areas. The industrial/commercial areas are mapped together with public and military facilities, together making up 19.2% of total artificial areas. Mapping those land use classes in Fig.9 and comparison with the previous maps reveals that almost all recent expansion takes the form of low density “sprawling” development, while the Tirana-Durrës corridor development is mainly driven by industrial/commercial large-scale infrastructure, ultimately creating an almost continuous industrial/commercial linear strip.

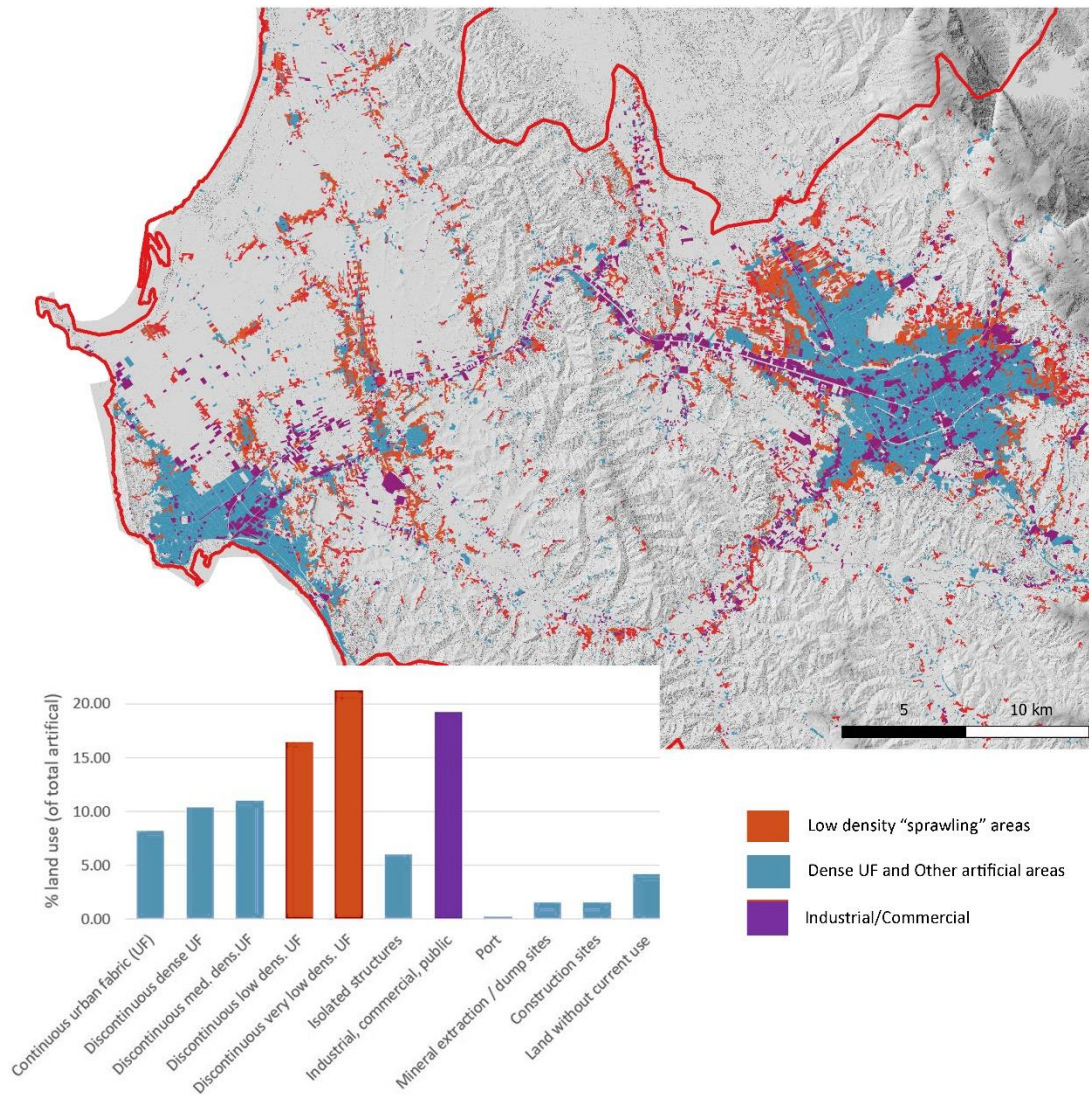


Fig.9: Land use distribution, urban sprawl and the emerging industrial /commercial corridor

To capture post-2018 trends, NDVI-based change detection from Sentinel-2 imagery revealed an ongoing acceleration in artificial land expansion. Expansion trends were particularly intense along pre-existing corridors, reinforcing the metropolitan connection between Tirana and Durrës. Some of the new buildings are particularly high-rise, contrasting with low-rise development of previous periods. Other developed areas, mostly related to touristic development and high-class housing, are spotted around natural areas including Farka lake (Fig. 10).



Fig.10: Large-scale development hotspots after 2017, identified from Sentinel-2 imagery analysis.

3.3 Population dynamics

Spatial pattern analysis is consistent with population dynamics examined during the same period. Population change was examined at the community level for period 2001-2023 (Census data of 2001, 2011, 2023, obtained from INSTAT and <https://citypopulation.de/en/albania/mun/admin/>). Results are mapped at the level of the 29 municipal departments of Albanian Level-3 (locality) administrative boundaries (<https://data.humdata.org/dataset/cod-ab-alb>).

As shown in Fig. 11, the territories of Kashar, Farke and Dait, present the most prominent growth rates (“Very High Growth”) concentrating about 160.000 people in 2023, in respect to about 33.000 in 2001. Territories of Pasjujan, Kamez and Berxulle, are modelled as “High Growth”, with rates of 30-65%, while Tirana, Rrashbull, Zall Herr, Peze, Xhafzotaj, Paskuqan, present “Moderate Growth (10-20%)”, with Tirana Division alone gaining about 60.000 people in a two-decade period.

It is important to note that all growing territories are in close proximity to the major urban centers, and particularly Tirana, with a certain dynamic observed in the Durrës-Tirana axis (Kashar) and the south-eastern suburbs of Farke and Dait. Together the 6 periurban municipal divisions around Tirana gained 160,000 people in two decades, with an overall rate of growth 153%. Durrës municipality presents population losses, while the urban core (Durrës municipal division) gained about 15.000 people from 2001 to 2011, presenting negative trends in the 2011-2023 and stabilizing to a population of about 100,000 people in 2023.

Taken together all the stable/declining territories and settlements (grey color in the map) present a total loss of 73.000 people in the respective period.

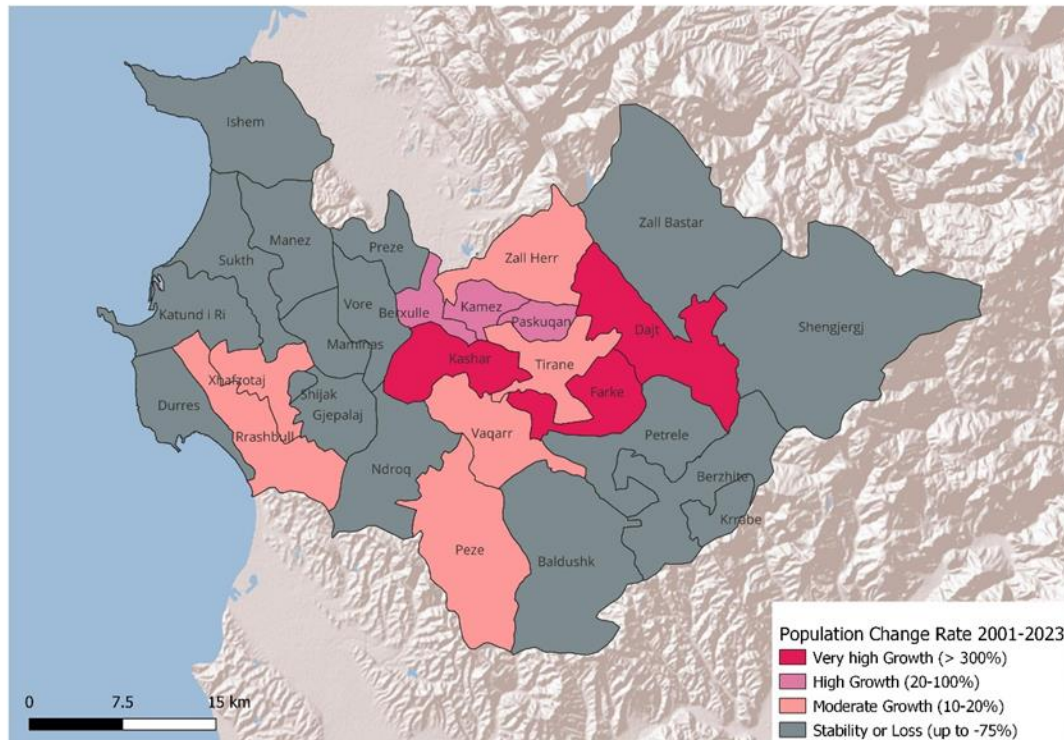


Fig.11: Classification of municipal divisions, according to population Change trends 2001-2023.

4. Preliminary conclusions

Overall, the multi-temporal analysis confirms acceleration of artificial land expansion, the emergence of a linear industrial/commercial corridor, and the fragmentation of agricultural land by low-density “sprawling” development after 2000; these being deeply intertwined with broader processes of neoliberal transition, global integration, and internal socio-economic restructuring. The patterns of urban expansion exhibit rapid transitioning through various stages, from relatively compact spontaneous outer growth beyond the previous expansion fronts (late socialist era), to linear/axis-driven development along major transport corridors (after 2000). Vertical intensification, visible in the proliferation of high-rise buildings particularly within Tirana, is also observed in the most recent period.

The Tirana–Durrës agglomeration provides a vivid case study of the radical shifts associated with post-socialist urban transformations; namely, among other things, the privatization of land and property, and, in turn, the gradual extinction of the vast public green spaces, agricultural land, and low-density districts that used to characterize the Albanian cities, Tirana included. The area’s evolution encapsulates the political, economic, and spatial upheavals that Albania has undergone over the past four decades. A switch from compact, state-controlled urbanization to a sprawling, market-driven metropolitan region. In the most recent period, expansion close to important natural areas is observed.

Internal migration movements within Albania during the last thirty years have been a major factor of extensive urbanization of the Tirana–Durrës agglomeration, which is the only one to benefit from very positive population growth rates, while bringing in a drastic

reduction or even full-scale depopulation in many other regions. In this paper, we focused on the nexus population-change/land-use, in particular with regard to urbanization and sub-urbanization of the Tirana-Durrës agglomeration. Further discussion is however needed on how these spatial transformations are linked not only with population dynamics, but also with socio-economic processes that may reflect a broader transition towards capitalist urban forms; which are essentially characterized by urban sprawl, market-driven land use decisions, and socio-spatial polarization among other things. There is also the need to discuss the absence or inability of urban planning regulations to address the needs of a growing suburban population. Besides, the processes that currently feed urban sprawl are also to be further investigated: once they were spontaneous, led by land grabbing in the afterday of the collapse of the regime. Is this still the case today? The 'urban talk' in Tirana stresses different processes, such as money-laundering, the absence of housing policies and protection measures for the urban dwellers, and so on.

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Annex

Table 2: Internal migration matrix

Prefecture 2011	Prefecture 2001												
	Berat	Dibër	Durrës	Ebasan	Fier	Gjirokastrë	Korçë	Kukës	Lezhë	Shkodër	Tirana	Vlorë	Total
Berat		283	154	673	2123	398	636	450	59	58	418	2852	8104
Dibër	569		154	774	1168	816	280	205	173	102	265	140	4646
Durrës	3098	10,064		4772	2045	1066	2055	3649	2160	1978	2791	381	34,059
Ebasan	664	534	362		1418	194	2320	717	345	1384	1141	278	9357
Fier	3023	588	339	2084		2384	808	1685	225	443	1626	2832	16,037
Gjirokastrë	401	177	69	134	529		220	92	65	85	780	287	2,839
Korçë	609	624	241	2258	964	194		430	190	427	589	463	6989
Kukës	102	255	117	95	212	99	102		181	409	326	73	1971
Lezhë	1152	1936	868	2230	315	161	392	356		4016	2241	143	13,810
Shkodër	421	1046	1881	416	718	581	475	945	1356		869	462	9170
Tirana	9811	21,279	6048	10,120	13,968	7527	10,985	13,965	5230	8159		5088	112,180
Vlorë	1405	248	248	825	2200	2002	521	623	272	552	894		9790
Total	21,255	37,034	10,481	24,381	25,660	15,422	18,794	23,117	10,256	17,613	11,940	12,999	228,952

Source : INSTAT (2014, p. 19).

Note: The table shows the number of individuals who changed their usual place of residence between 2001 and 2011. For example, between 2001 and 2011, 283 people have moved from the Dibër prefecture to the Berat prefecture, while 10,064 people have moved from the Dibër prefecture to the Durrës prefecture.