Some smart solutions towards rapid urbanization in Albanian cities

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Abstract
In the last two decades, Albania is going through the most dynamic economic, urban, and industrial transformations in its history. Economic opportunities in Albanian's cities are fueling rural to urban migration on a massive scale. The resettlement is thought to be one of the largest sustained migrations the country has ever seen, involving the relocation of a lot people from rural to urban areas each year.
For the last past decades, Albania transportation system was a combination of bicycles, mass transit, and walking. Today, with a growing fleet of privately owned vehicles and low density development, Albania's is quickly becoming a car-dependent society.
Meanwhile the growth of Albania's economy has improved the living standarts, swelling city populations, increased housing floor area, and the trend toward automobile dependency, have contributed to a host of environmental, health, and security concerns. Urban air and water quality are deteriorating, and greenhouse gas emissions are increasing rapidly. Cars flood city roads, causing severe traffic congestion and jeopardizing community livability.
How Albania's cities can manage the massive influx of new residents in the next two decades will set the framework for growth over the next years and beyond. The current urbanization pattern of sprawling, auto-dependent development poses a threat to public health, quality of life, the economy, and national security, and also strains natural and social resources. Albania most probably can correct its inefficient use of resources and avoid environmental deterioration by pursuing a "smart growth" pathway, which offers an integrated approach to development. This paper aims to propose some smart strategies for the solutions towards a rapid urbanization of Albanian cities, mostly of the Tirana capital.

Keywords: transportation, car, urban, city;

1. Introduction
The albanian governement opinion is that urbanization is in a stage of modernization and will mostly benefit our country economy,which has been expanding year by year for more than three decades. However, our leaders now realize that this transition, if not properly guided, may lead to serious environmental problems. Parts of the country are already facing serious environmental challenges, including increased water pollution, and declining air quality. While Albania is going through industrialization, it is also becoming a more car-dependent society. The pace of road building in Albania has also accelerated sharply in recent years and this trendy is potentially moving toward a damaging, sprawling, auto-dependent settlement pattern in which jobs, shops, and public services are placed out of reach of people without cars. The experience of other countries in the world demonstrates that unrestrained development can result in runaway urban sprawl, which undermines the environment, the economy, and the social fabric of neighborhoods. Indeed, many fast-expanding cities have already run into trouble. Unplanned or poorly managed expansion, together with the surging popularity of private vehicles, has led to a plague of "city diseases," such as traffic congestion, air pollution, and water pollution. The effects of the vast and rapid changes taking place in Albania, from increasing demands for oil and other resources to pollution, are being felt around the globe. The albanian policymakers are aware

of the need to manage migration and urbanization in a way that will ensure sustainable development. By carefully guiding urbanization patterns now, Albania can maintain dynamic development while mitigating harm to the environment and the economy.[1]

This paper presents a set of principles and policies collectively referred to as "smart growth." In contrast with development goals that focus solely on economic enhancement, smart growth policies aim to balance the needs of the economy, the environment, and the community. They promote more efficient use of land, services, and resources; put higher priority on building ecologically within existing communities; and encourage fewer and shorter automobile trips by promoting more attractive and effective transit alternatives. By integrating transportation and land-use development, smart growth policies have been effective in curbing urban sprawl while delivering tangible environmental and financial benefits. Albania can enhance its economy, protect its environment, and improve the lives of its urban residents by:

• continuing to invest in public transit, such as subway expansion projects;
• maintaining high density and redeveloping urban areas;
• promoting walking and cycling, as is done in many european cities;
• enacting policies to discourage car use and car ownership, such as the car license bidding system

1.1. Economic Growth Fuels Rural to Urban Migration

Albania's Population Size and Distribution.
Albania's population currently numbers more than 3 million with rapid economic growth presents a serious challenge to maintaining or improving environmental quality in Albania, with several impacts. Population pressures in Albania are aggravated by the strikingly uneven distribution of its people. At approximately 28 000 kilometer square in Albania's land area, albanian's population lives within the eastern third of the country, where climate and physical environment have historically favored human settlement. Absorbing this huge labor surplus has been a constant challenge to all levels of the albanian government, which has adopted polices to accelerate urbanization so as to lessen this pressure.[2]

These policies have largely been successful in creating greater economic and employment opportunities in and around albanian cities, which in turn have drawn a massive influx of workers from rural areas. To boost economic growth, lessen unemployment pressure, and reduce the income disparity between urban and rural residents, the albanian governement hopes to increase the urban population from 40 to 60 percent of the national total by 2022, effectively reversing the current urban-rural population split.

Along with albania's economic prosperity and an overall improvement in living standards, the construction boom has resulted in people living in larger homes. In albanian's urban areas, the average per capital living space increased rapidly in these three decades, but this figure is still much lower than that of what an average european. urban resident enjoys, it is no longer a dramatic contrast to the average living space of residents in european cities.

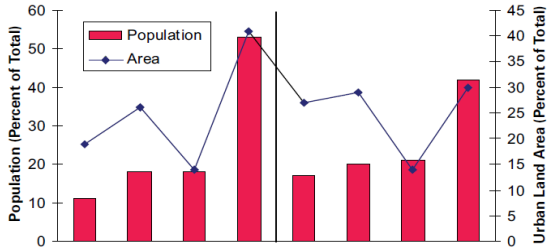

Figure 1
Source: Table 3 in Ho and Lin: "Converting Land to Nonagricultural Use" Coastal Provinces: Vol. 30, No. 1, January 2004

Figure 1. illustrates the difference in urban population density in small and medium cities (100,000–200,000) compared with large (500,000–800,000) in this region, a difference that has become more evident in recent years.[3]

In response to this trend, the albanian governement continues to urbanize, large cities rapidly expand outward, consuming more and more rural land. In Tirana capital, where the annual demand for land is expected to become greater year by year, has seriously hampered sustainable planning and policy efforts. In an attempt to reduce population density, city planners have encouraged the development of satellite cities outside the city proper. These residential cities and far-flung industrial parks that often separate workers from their jobs and put most daily activities beyond the range of walking or biking. New residential towns are often built at much lower densities, than their older counterparts, contributing to increased car traffic.

1.2. More Cars, More Roads, and a Shift to An Auto-dependent Society

Albania's privately owned cars reached more than 1.1 million by 2021 Its total civilian vehicle fleet numbered as one of the fastest-growing vehicle fleets in the last three decades.

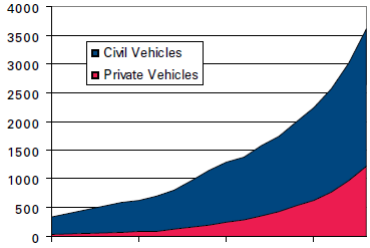

Figure 2
Source: Albania Statistical Yearbook 2018,

The market is still not saturated. Currently there are approximately three privately owned vehicles for every 100 households in Albania. [1]

Past projections have consistently underestimated the growth of vehicle demand in Albania According to a recent forecast, albania's annual demand will reach nearly 1.2 million in 2021 and increase to 1.5 million by 2025.

Rapid road expansion, as per albania's road network ranks among the sparsest in the world relative to geographic area and population.Governement policies have also contributed to the recent decline in bicycle use. In Tirana, for example, the municipal governement blamed bicycles for roadway congestion, yet many residents view the growing number of private cars as the true cause. [4]

Due to overwhelming public criticism it has since announced plans to build a downtown network of bicycle pathways to mitigate the trend that is pushing bicycles out of the city center.

In recent years, the albanian government has given strong support to the development of albania's auto industry and has encouraged personal car ownership as a means to stimulate consumer spending and reduce unemployment. The domestic market for family cars is heightened by poor land-use planning. By separating residential areas from employment, shopping centers, and schools, sprawling development increases automobile travel by virtue of the longer distances in people's daily routines.

1.3.Recommended Smart Growth Policies

Auto ownership is one of the strongest determinants of auto use. Research shows that auto ownership and use is principally correlated with income. But it can also be strongly influenced by governement policies, including private-vehicle registration and financing programs. As albanian urban income reaches a critical level, it may be necessary for certain cities to institute policies to curb the explosion of auto ownership. Tirana city try to use high registration fees and a public bidding process to limit the number of cars on the road. However, this price is always based on the albanian market and drivers can register its car in surrounding cities. Increased enforcement to ensure registration in a given city is granted only to that city's residents alongside local parking restrictions on vehicles registered outside of that locality can help assure that the registration system works as is intended.

One of the most effective ways to moderate the use of private automobiles is to properly price the social and environmental costs of driving. Government investments in road construction and parking spaces constitute implicit subsidies to drivers, yet drivers are not paying for the air pollution, congestion, and noise they produce. [7]

Schemes such as congestion pricing can help to recoup these costs. In addition, congestion pricing programs can help ensure that new roads are not overrun by personal vehicles and that extra capacity can be preserved for freight, commerce and mass transit. Congestion pricing has been implemented in european cities, where fees are charged as cars enter the downtown area. These fees are easy to pay online, or in advance and are strictly enforced. The scheme aims to alleviate congestion and pollution and to raise funds for the transportation system. London's experience has been a huge success. Bus schedules have

become far more reliable, and there has been a measured increase in cycling. This is not surprising; queuing theory and the effects of network capacity under conditions of extreme congestion are well known. Once network traffic approaches 90 percent of capacity, delays skyrocket and travel speeds decline exponentially. Conversely, relatively small reductions in total networkloading result in significant improvements in traffic flowand average speeds.[5]

1.3.1 Parking Management

The availability and cost of parking are among the most significant factors influencing a person's decision to drive to a given destination. Providing generous amounts of free or low-cost parking encourages people to choose driving over mass transit or other more socially and environmentally beneficial modes of travel. Furthermore, requiring new development to provide large amounts of parking pushes new growth out to the edges of the city.[6] Managing parking for smart growth represents a paradigm shift in which motorists' interests are no longer the highest priority. Parking should be properly priced for more efficient use, and where land resources are scarce, the availability of parking spaces should be limited, so as to encourage walking, bicycling, and using public transit. Shared parking facilities are one example of smart parking management; for instance, a restaurant can share parking with an office complex because peak parking demand occurs at different times for these uses. Higher parking fees are yet another option. Charging the real cost of parking would provide significant revenue and pass on some of the true cost of using cars to drivers. Some Albanian cities, are using parking fees to manage car use. Tirana Capital plans to restrict the availability of parking spaces and charge higher parking fees. It has also constructed large parking facilities in key areas where drivers can transfer easily to public transportation.[9]

1.3.2 Investing in Public Transit

While it is important to impose the real costs of auto use on drivers, providing efficient alternatives may prove to be more crucial in encouraging people to seek other modes of transportation. Many cities in Albania have been investing heavily in public transit. In Tirana, construction of new subway lines is programmed to be realized in a near future.

So far, these subways and light rail should be the two preferred modes of public transit. It is estimated that city governments around Albania have to invest a lot of money in subway and light rail construction. While it is an encouraging sign of commitment to public transit, the huge investment has become a financial burden. A less expensive alternative could be a Bus Rapid Transit system, such as the one established in other european cities. By using articulated and biarticulated buses on separate lanes, a BRT system can significantly enhance the capacity of traditional buses, while costing only a fraction of the investment required for subways or light rail. .[8]

Tirana has successfully prepared the operationof a BRT system. overcoming early operational challenges.

1.3.4 Promoting Walking and Cycling

Cities can promote sustainable modes of transportation by investing in space and amenities for bicyclists and pedestrians. Road lanes can be designated for cyclists; streets can be closed to traffic to provide pleasant spaces for pedestrians and bikes; pedestrian paths and sidewalks can be built as a complete network to ensure access to all areas of a region; and crosswalks and overpasses can make it easier to cross busy roads.

Another strategy is to build "green connectors"—networks of pedestrian- and bicycle-friendly avenues that feed into major transit routes—as replacements for asphalt jungles that take up valuable space. Green connectors have had enormous success in European and Latin American cities.[3]

Most albanian city planners have shown such a preference over human-scale sidewalks. These monumental highways in Albania will be promoted for their perceived function of alleviating traffic congestion, yet studies have shown that expanding roads does not automatically solve traffic problems. "Induced traffic," additional traffic attracted by the new lanes, will eventually clog the roads again, and the total capacity of the network will not be enhanced if measures are not taken to alleviate bottlenecks elsewhere.

1.3.5 Urban Redevelopment

In order to maintain high density, abandoned or underused lots in urban areas should be redeveloped before cities spread beyond their existing limits. One example of urban redevelopment is in Tirana area, where abandoned industrial facilities have been transformed into artists' residences, performance spaces, galleries, and restaurants. It has been demonstrated, how areas in urban centers can be reused, thereby preserving historic landmarks, avoiding expansion into undeveloped areas, maintaining high density, and making use of existing public transit.

1.3.6 Regional Planning and Public Involvement

Planning on a regional scale enables cities to take into account the broad environmental, social, and economic impacts of transportation and land-use decisions. To achieve smart, sustainable growth, the appropriate planning bureaus need to coordinate land-use and transportation planning, infrastructure investments, and revenue-sharing efforts at the regional level. It is helpful to coordinate these efforts through the creation of a strong and compelling regional vision.

Regional planning is the best way to envision, comprehend, and manage the growth of cities and the resource demands of growing populations. Just as an entire watershed must be examined in order to ensure clean water for a city, an entire region must be examined when planning for transportation and land-use needs. Research has shown that achieving strong regional accessibility corresponds to a balance among jobs, housing, and shops leading to lower levels of driving and auto use.[7]

Transportation projects are often large in scale and can dramatically affect a community. Projects that seek public input are more likely to receive community support, and public participation can improve project quality as engineers and planners learn more about the travel needs and pattens of the public.

1.3.7 Integrating Smart Growth and Green Building

We believe that smart growth without green buildingsis not very smart. Green buildings integrate design, equipment, materials, and technology choices to reduce negative environmental impacts in the use of land, water, energy, and resources, and to protect human health through good indoor environmental quality.[9]

Good integrated design synergizes disparate areas and utilizes appropriate strategies to achieve multiple benefits. The environmental benefits of smart growth and green building are amplified when the two strategies are used in concert. While smart growth is an environmental approach to larger-scale land use, green building techniques treat individual building sites as discrete environments. For example, smart growth policies that encourage a good balance of jobs and housing are complemented by building architecture that makes the relation of the building to the street and sidewalk inviting and attractive. In addition, the proximity of the building to public transportation decreases the use of cars by the workers and visitors to the building.[10]

Building techniques such as green roofs also reduce urban heat islands, making neighborhoods more comfortable. The location and design of parking is another way that building architecture complements smart growth in neighborhoods. Techniques that policymakers can use to promote synergies between green buildings and smart growth include giving green building developers higher density allowances around transportation hubs and providing incentives for mixed-use development that combines residential and commercial uses in the same structure along transit corridors. Large-scale developments should also be given incentives to promote the construction of green buildings.

2. Conclusions

The Albanian authorities should:

- Continue investing in public transit. Governemental resources should be diverted from highways to public transportation. While subways and light rail are popular forms of public transit and can form the backbone of an integrated transport network, BRT may be the most costeffective alternative for many cities.

- Maintain high density and redevelop urban areas. High density and economic strength can go hand in hand. The mixed land-use pattern and high densities already present in many albanian cities are desirable characteristics of smart

- Promote walking and cycling. Walking and cycling should be encouraged as attractive, effective forms of transportation. Bicycle lanes and sidewalks should be constructed to ensure accessibility while minimizing conflicts with other modes of transportation.

- Discourage car use. While discouraging car ownership through policies of limiting car registration can help reduce congestion and pollution, the fundamental objective should be to restrain actual car use through a combination of carrots and sticks.

- Internalize the social and environmental costs of driving and parking. Proper pricing schemes (such as congestion fees) and better parking management can limit excessive vehicle use.

- Plan regionally and involve the public. Planning on a regional scale enables cities to account for the broad impacts of transportation and land-use decisions. Public participation can help planners better understand the needs of the community and avoid possible misjudgments and potential conflicts.

- Develop and promote energy- and water-efficient green buildings. Governement should give green builders higher density allowances around transportation hubs. Developers should be given incentives for mixed-use projects that combine residential and commercial uses in the same structure along transit corridors.

We hope that the policies and visions outlined in this paper will help planners better manage the rapid development of Albanian cities, becoming optimistic that by following these recommendations, Albanian cities will grow "smart" and improve the lives of urban dwellers by meshing economic growth with environmental protection.

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