

# The Importance of Sustainable Urban Development and Its Impacts on Turkey's Urban Environmental Laws

Azadeh Rezafar, Sevkiye Sence Turk

**Abstract**—Rapid population growth in urban areas and extinction danger of natural resources in order to meet the food needs of these population, has revealed the need for sustainability. It did not last long that city planners realized the importance of an equal access to natural resources with protecting and managing them in cities, in accordance with the concept of sustainable development. Like in other countries The Turkish Government is aware of the importance of the sustainable development in their cities. The government issued new laws for protection of environmental assets and so that the preservation of natural ecology. The main objective of this article is to emphasis the importance of the sustainable development in the context of the developing world by giving special information about the method of the Turkish Government for protecting nature with approval of difference laws in this area.

**Keywords**—Population Growth, Sustainable Development, Turkey, Turkish Urban Environmental Laws.

## I. INTRODUCTION

URBAN areas are vary from metropolitan cities to small cities. Day by days, the number of people, living in these different cities, are increasing all over the world. About 65% of the world's population is expected to live in urban areas by the year 2025 [2]. Cities are complex systems that affected by many factors such as social, economic and environmental factors. Since these complex systems use maximum amount of natural resources for rising standards of living for their citizens they are also sources of environmental pollution and ecological damage. Maximum use of natural resources causes degradation of ecosystems. As an ecosystem is a community of living organisms (plants, animals and microbes) in conjunction with the nonliving components of their environment (things like air, water and mineral soil), interacting as a system [3], degradation and threaten of it, results ecological, environmental and regional problems in cities. The loss of green space and biodiversity are the most common problems in cities which are not solve with conventional urban planning policies. Conventional urban planning in some literature defines as, the sequence of activities aimed to manage spatial development at urban and regional scales considering sociological, economic, political, technological and environmental aspects [4]. According to

today's standards, this planning system jeopardizes not only the future of the city but also citizens, with creating unsustainable regions. So that, the idea of sustainability is revealed by the movement toward planning societies and it became one of the most important concepts of the 20th century. It did not last long that planners realized the importance of an equal access to natural resources with protecting and managing them in accordance with the concept of sustainable development.

## II. SUSTAINABLE DEVELOPMENT

The concept of Sustainable Development first defined in The World Commission on Environment and Development (WCED, 1987). WCED also known as the Brundtland Report (Our Common Future) defined the meaning of the sustainable development as the development that meets the needs of the present without compromising the ability of future generation to meet their own needs [5]. However, several other definitions have been given to explain this concept; one of such emanated from the National Affordable Housing Agency of Britain, describing it as a means of ensuring a better quality life for everyone, now and for generations to come [6]. According to this definition sustainable development sets out to describe people, environment and the relationship between responsibilities of current generations with future generations. It contains two key concepts:

- the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs" [7].

Although, the visions of sustainability vary across regions and circumstances, a broad international agreement has emerged that its goals should be to foster a transition toward development paths that meet human needs while preserving the earth's life support systems and alleviating hunger and poverty [6]. So that The United Nations Conference on Sustainable Development promotes a framework for sustainable development that emphasizes a three pillar approach to institutional reform: economic development, social development and environmental protection as shown in Fig. 1 [8], [7]. Social sustainability refers to equitable access to resources whereby adding a sense of community among all to achieve social sustainability, divisions between the rich and the poor are eliminated to allow all an equal voice and an

A.Rezafar is PhD Student at Istanbul Technical University, Department of Urban and Regional Planning (e-mail: Azadeh\_Rezafar@yahoo.com).

S. S. Turk is Assoc. Prof. Dr. at Faculty of Architecture Istanbul Technical University, Department of Urban and Regional Planning (e-mail: turkss@itu.edu.tr).

equal opportunity to participate within society. Economic sustainability refers to capital and employment whereby a balance between supply and demand would be facilitated to smooth the progress of economic development without harm to the environment. Environmental sustainability requires the long-term viability of our resource use, especially in areas such as resource extraction, agriculture, transportation, manufacturing and building [9].

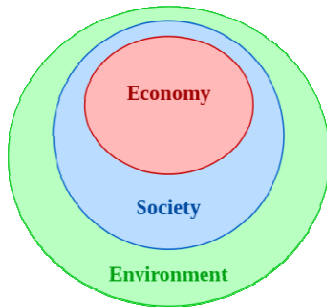


Fig 1 Three Pillars of Sustainable Development

In recognition of the pressing environmental and developmental problems facing the world, the 1992 Earth Summit in Rio-de Janeiro, adopted Agenda 21, which produced a global program of action for sustainable development in the 21st century stating as its primary objective the need to reduce absolute poverty of the world's poor by providing lasting and secure livelihoods that minimize resource depletion, environmental degradation, cultural disruptions and social instability. Thus, Agenda 21 stresses the importance of good governance through effective partnerships among stakeholders in improving social, economic and environmental quality in the urban areas [6]. As well as The United Nations (UN) brought out many significant issues related to sustainable development in their development programs by the beginning of the 21st century. Actions to battle unplanned urbanization and loss of biological diversity are the main strategies of Millennium Development Goals of the UN [1].

So, urban sustainable development does not mean the sustainable development of any single economic, social, or environmental subsystem, nor simply adding to the sustainability of these subsystems. Instead, it attempts to balance economic growth, ecological construction, environmental protection, and social progress [2].

### III. SUSTAINABLE DEVELOPMENT AND TURKEY

Turkey with 800,000 km<sup>2</sup> is one of the large countries that is link between Europe and the Middle East. As the major eastern- Mediterranean country, The Euphrates and Tigris both follow through this country. Also because of its location which is surrounded by the Black Sea, Mediterranean Sea and Aegean Sea that create 8333km coastline for Turkey, it can be considered as a rich country in natural resources and ecosystems (Fig. 2) [14]. Turkey provides shelter to thousands of animal and plant species with its different ecosystems

throughout the country. Turkey has international responsibilities for the waters of these seas and the Straits of Bosphorus. Also in Turkey there exist:

1. 32 national parks (while they may offer protection to wild flora and fauna against logging, hunting and fishing, national parks may also be exploited for recreation and tourism purposes),
2. 35 nature protection zones (aimed specifically to conserve rare and endangered species and ecosystems, nature protection zones offer strict protection and human activities are limited to scientific research and educational activity),
3. 15 nature parks (areas rich in flora and fauna and suitable for recreational use),
4. 54 nature monuments (areas formed by nature or natural events and having exceptional scientific value),
5. 699 cultural and natural heritage protected sites,
6. 118 wildlife protection areas,
7. 9 RAMSAR wetlands, and
8. 14 Specially Protected Areas (SPAs)

Also it should be noted that two of the four migration routes used by the birds pass through Turkey which represents an important biological factor for the natural richness [10].

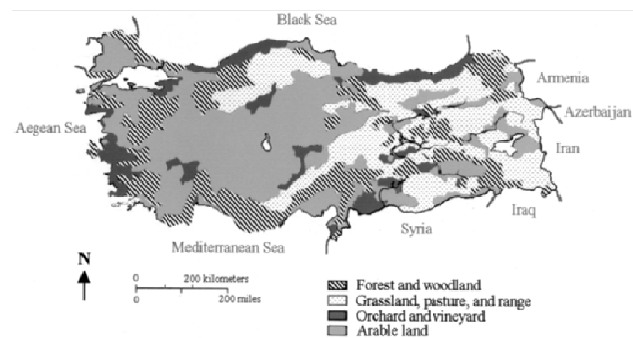


Fig. 2 Location and major land uses of Turkey

But these rich natural resources and ecosystems, especially in urban areas, are affected by different factors. The most important factor is population growth in urban areas. As in the other world's cities, immigration played a significant role to endanger natural resources, in Turkey's cities too. Improvements in trade and industry increased migration from rural to urban areas in Turkey, especially after 1950. Only 25% of the nation's population lived in cities in 1950; however, the percentage of the urban population increased to 38% in 1970 and 65% in 2000. According to the last census, more than 70% of Turkey's population lives in cities today [11]. Also coastal areas, which are the main natural resources areas of Turkey are affected by urbanization, tourism, industrialization and shipping. Population density in the coastal areas, between 130-40 people per km<sup>2</sup>, is twice the national average and is growing twice as fast [12]. This means tendency of all urban areas including coastal areas, towards a large expansion often through large-scale unauthorized construction and also the rapid depletion of natural resources.

As in the other countries The Turkish Government is aware of the importance of the sustainable development in their cities as well as protecting natural resources with sustainable development. The passing of environmental legislation and the creation of the Environment Ministry are examples of the adoption by the Turkish government of sustainable development as the guiding principle of their environmental policies [12]. The government issued many laws for protection of environmental assets and so that the preservation of natural ecology between 1980 and 2000. Then, the most of them has been changed with some additions to the laws in 2000s. Therefore, the laws can be examined in two periods. While first period comprises the laws that came into force between 1980 and 2000, second term includes after 2000.

In the first period, laws for protection of environmental assets and the preservation of natural ecology are "Law of Conservation of Natural and Cultural Assets"(1983/2863, 1987/3386), "Bosphorus Law" (1983/2960), The Law on the Protection of Coastal Areas (No: 3830), The law on Forests (No: 6831), The law on the National Parks (no: 2873).The "Law of Conservation of Natural and Cultural Assets" (1983/2863, 1987/3386), which has gone through a number of changes, sets the foundations of conservation in the urban and natural areas through registering particular assets as well as urban sites, archeological sites and natural sites. "Board(s) of Conservation" have been established to register the assets which are to be preserved, to define the temporary conditions of development until the approval of the plan and to approve the "Conservation-Aimed Development Plan". Removing the restrictive rules and regulations for those areas which have lost their identities are also subject to the approval of the Conservation Boards. In the other words, local governments which have planning authorities due to the Planning Law are under the planning authority of the Conservation Boards within the conservation areas.

"Bosphorus Law" (1983/2960) is a protection law for a specific area that defined their borders in the Law. Planning and the approval of Development Plans for a considerable portion of the Istanbul metropolitan region are separate from the procedures defined by the Planning Law. In the Bosphorus region, four different zones are defined: Bosphorus Shore Zone and the Bosphorus Front View Zone are under the jurisdiction of greater Municipality of Istanbul. Bosphorus Back View Zone and Impacted Zones are under the jurisdiction of District Municipalities (second level of municipal governments in the local governmental system).

The aim of "the Law on the Protection of Coastal Areas (No: 3621/3830)" is to set out the principles for protection of the sea, natural and artificial lakes, and river shores, and the shore strips, which are extensions of these places and are under their influence, by paying attention to their natural and cultural characteristics, and for their utilization towards the public interest, and access for the benefit of society [13]. Besides the Law of Coastal Areas, the complex domain of planning legislation applies to the coastal developments. There is an uncoordinated management as regards coastal planning. More than twenty institutions are in charge of the sea and

coastal areas resulting in responsibility overlaps and gaps. There are additional legislative rules of protection for the coast of lakes and the water reservoirs. Especially in large cities, the water catchment zones of the lakes, which supply drinking and all-purpose water, are subject to the "Regulation of Water Pollution Control". If this legislation is more restrictive than the Law of Coastal Zones, then has the priority in the implementations. Despite the dual protection, the illegal developments or the developments through Local Development Plans in these areas are quite common [15]. Responsibility for the enforcement of the Shore Law is given to municipalities within their borders and in their adjacent areas, and to the provincial governors in all other localities. The rights of the related ministries relating to the control and enforcement of shore and shore strip areas are to be respected.

The government has put into place the necessary laws to protect the forests, to enlarge the areas and take precautions. The forest areas in Turkey are protected by a special law passed at an early stage of urbanization. However, some critical items of the "Law of Forest" (Law no. 6831) are of a nature that facilitates the illegal developments. The government supervises all forests. The property right of the state forests cannot be given to another owner. According to the state government law, these forests are managed and run by the government. These forests cannot be owned with prescription and can be the subject of servitude other than public benefit. None of the other activities that will destroy the forests are allowed [16]. However, one of the most controversial items is the item 2B. Under this item, it is stated that publicly owned forest areas which have lost the characteristics of being a forest and which contain a large number of dwellings, can be taken out of the forest zone of restrictions. The development rights of the areas falling under 2B and their legal standing frequently come to the public attention, especially at the times of elections [15]. According to forestry, in private forest, local physical plan can be made. To make local physical plan, a permission is need to be received from Ministry of Environment and Forestry Ministry. After getting permission, local physical plan can be made. In this plan, plot ratio is %6. All social and technical infrastructures are included to this ratio. The law on the National Parks (no: 2873) defines National Parks in Turkey. This law also provides the identification of areas which possesses values of national and international importance and management of these areas without degrading their values and characteristics. National park is principally state-owned land of at least 500ha that carries high natural, historical, archaeological, recreational, scientific and aesthetic values and in which wood gathering, timber cutting, mining, and hunting is prohibited. National the parks include different zones. Protection zone, buffer zone, settlement zone Administrative authority over national parks is General Directorate of Forestry [17].

The condition of pastures has been a concern of the government. The Great Assembly of Turkey enacted The Pasture Law (Law No: 4342) in 1998. This Law brings a series of new regulations to major issues of pastures such as:

ownership regime, rights of use, control mechanism for management systems and so on. Objectives of the Law are as follows: assignment of grazing areas to villages or municipalities after defining their boundaries, enabling suitable management and use of these areas according to determined rules and procedures, development of their productivity through applying improvement programs, development of a system of supervision of utilization for better protection of the pastures. Another important innovation with the Law is that a Pasture Fund has been set up to provide a source of finance for management and improvement of grazing land. The Law provides new regulations for the renting of grazing land. Considering laws for protection of environmental assets and so that the preservation of natural ecology in the first period, it can be said that there is an over-fragmented legal and institutional structure. This creates difficulties on mechanisms of coordination. There is no coordination between the institutions which are granted planning authority is either insufficient or underutilized. The other common point is to be determined 'special purpose plan' approach. Each 'Special purpose plan' can be considered as a type of regulatory plans. Although this type plans have some positive sides, this type plans have negative sides. In one hand, in this approach, there is certain decision making process and planning applications are faster. Decision-making is consistent each other. On the other hand, in this approach, decision-making is inflexible, plan making is quite slow. Also, plans are unresponsive to both individual and community.

In second period, while some new laws have come into force, some additions have been made to some of the existing laws. One of new laws for protection of environmental assets is Law on soil conservation and land use (No.5403) that came into force in 2005. The aim of law is to conserve and develop soil quality and quantity while using soil. The law requires soil users (holders) to take precautions that indicated in the Law to protect/conservate soil functions while using their property rights. The Law requires The Ministry of Food Agriculture and Livestock to prepare land use plan and restrain the use of agricultural lands for other purposes than indicated in the land use plans, save for exceptions indicated in the Law. Legal arrangements are carried out in order to prevent the fragmentation of agricultural lands. Within this scope, "Indivisible Parcel Size" was determined. It was hindered the fragmentation of special product lands and marginal agricultural lands to less than 2 hectare, cultivated agricultural lands to less than 0,5 hectare and the greenhouse agricultural lands to less than 0,3 hectare. In second period, the other important change is related to 'Conservation of Natural Assets'. According to decrees having force of law no.648 that came into force in 2011, Environment and Urbanism Ministry is responsible for the registering of natural sites. Environment and Urbanism Ministry constitute new boards to define natural sites and register them instead of Board(s) of Conservation in "Law of Conservation of Natural and Cultural Assets". In second period, important amendments has made to the Law on the Conservation of Cultural and Natural Assets in 2004 (Law no.5226) that pave the way for new conservation practices. In

particular, the arrangement that earmarks 10% of property tax collected to the care and restoration of cultural assets addresses a problem that has been neglected for years. Other important change is the entrance of strategic planning concept into conservation practices. Also, important amendments have been in the Law on the Protection of Coastal Areas in 2005. The privatization projects have been implemented on coastal areas. Additionally, cruise ports are built on coastal areas where the building is forbidden. Considering laws for protection of environmental assets in the second period, it can be said that there is also an over-fragmented legal and institutional structure. There is also no coordination between the institutions which are granted planning authority is either insufficient or underutilized. The other common point is to be determined 'strategic planning' or 'project based approach' or 'site management' approach. Although these approaches have some positive sides, they also have negative sides. In one hand, in these approaches, there is flexible decision making process and plan making is speedier. On the other hand, in these approaches, decision-making is not certain, decision making processes is arbitrary. Fig. 3 has been prepared as a summary of these laws.

First period of laws about environmental assets protection and preservation of natural ecology (1980-2000)			
Law (number)	emergence year and Change	Administrative Authority	The aim of the law
national parks,	1983/2873	General Directorate of Forestry	This law provides the identification of areas which possess values of national and international importance and management of these areas without degrading their values and characteristics
Bosphorus law	1983/2960	Bosphorus Shore Zone and the Bosphorus Front View Zone are under the jurisdiction of greater Municipality of Istanbul, Bosphorus Back View Zone and Impacted Zones are under the jurisdiction of District Municipalities	This is a protection law for a specific area that defined their borders in the Law. In the Bosphorus region, four different zones are defined: Bosphorus Shore Zone, Bosphorus Front View Zone, Bosphorus Back View Zone and Impacted Zones
The law on the protection of cultural and natural values	1983/2863 1987/3386	Board(s) of conservation	This law sets the foundations of conservation in the urban and natural areas through registering particular assets as well as urban sites, archeological sites and natural sites.
Law of Forest	6831 (passed at an early stage of urbanization)	The government supervises all forests	The aim of this law is to protect the forests, to enlarge the areas and take precautions.
Coastal areas	3621/3830	(More than twenty institutions are in charge of the sea and coastal areas) Responsibility for the enforcement of the Shore Law is given to municipalities within their borders and in their adjacent areas, and to the provincial governors in all other localities	The aim of this law is to set out the principles for protection of the sea, natural and artificial lakes, and river shores, and the shore strips, which are extensions of these places and are under their influence, by paying attention to their natural and cultural characteristics, and for their utilisation towards the public interest, and access for the benefit of society
Pasture law,	1998/4342	The right to use is belongs to one or more village or the municipality	assignment of grazing areas to villages or municipalities after defining their boundaries, enabling suitable management and use of these areas according to determined rules and procedures, development of their productivity through applying improvement programmes, development of a system of supervision of utilization for better protection of the pastures.
Second period of laws about environmental assets protection and preservation of natural ecology (after 2000)			
Soil Conservation and Land Use Law	2005/5403	The Ministry of Agriculture and Rural Affairs	The aim of law is to conserve and develop soil quality and quantity while using soil.
Conservation of Natural Assets According to	648/2011	Environment and Urbanism Ministry	Environment and Urbanism Ministry constitute a new Boards to define natural sites and register them instead of Board(s) of

Fig. 3 Turkey's Environmental Laws

#### IV. CONCLUSION

Turkey, like other countries, has expanded significantly, spatially during last decades, due to rapid population growth.

There is an urgent need to achieve sustainable development to protect limited natural capital and also to prevent damaging of environment with unauthorized urbanization. The aim of this article is to emphasize the importance of the sustainable development in the context of the developing world by giving special information about the method of the Turkish Government for protecting nature with approval of difference laws in this area. It can be said that the government have issued many laws for protection of environmental assets and the preservation of natural ecology until now. According to findings of the paper, there are important differences in the logic of the laws when considering the periods. In the first period (between 1980 and 2000), it can be seen that 'special purpose plan' approach is dominant. In the second period (after 2000), it can be seen that 'strategic planning' or 'project based approach' or 'site management' approach are dominant. However, in both periods, there is an over-fragmented legal and institutional structure. This creates difficulties on mechanisms of coordination. There is no coordination between the institutions which are granted planning authority. Sometimes these coordinations are either insufficient or underutilized. Here, two points are important. First is to decide which planning approaches can provide the sustainability and protection of environmental assets in Turkey. Second is to find how over-fragmented legal and institutional structure is removed.

## REFERENCES

- [1] A. Tezer, N. Uluğtekin, Ç. Göksel, Ö. Ertekin, F. Terzi, "Ömerli watershed ecological assets and bird atlas", I.T.U. Faculty of Architecture Urban & Regional Planning Department, Prepared under TUBITAK Project, No.108K615, pp. vii
- [2] F. Li, X. Liu, D. Hu, R. Wang, W. Yang, D. Li, D. Zhao, "Measurement indicators and an evaluation approach for assessing urban sustainable development: A case study for China's Jining City", *Landscape and Urban Planning*, Volume 90, Issues 3–4, 30 April 2009, pp. 134–142
- [3] <http://en.wikipedia.org/wiki/Ecosystems>
- [4] C.M. Agudelo Vera, A. R. Mels, K. J. Keesman, H. H. M. Rijnaarts, "Resource management as a key factor for sustainable urban planning", *Journal of Environmental Management*, Volume 92, Issue 10, October 2011, pp. 2295-2303
- [5] Brundtland Commission, World Commission on Environment and Development(WCED), [http://en.wikipedia.org/wiki/Brundtland\\_Commission](http://en.wikipedia.org/wiki/Brundtland_Commission)
- [6] J. Adesoji David, "Sustainable Urbanization: Issues and Challenges for Effective Urban Governance in Nigeria " *Journal of Sustainable Development*, 2011, pp. 211-224
- [7] A. Rezaifar, "Eco-cities in different climate zones, preliminary proposal for the completion principles of ecological urban design for Turkey" Institute of Science and Technology Gazi University, Ankara, Turkey, December 2011, pp. 8-9
- [8] A. E. Beck, "Understanding Urban Sustainability And Quality Of Life: A System Dynamics Approach", Bachelor Of Science University Of Illinois, Urbana-Champaign 2006, pp. 8-10
- [9] E. K. Ferriter, "the sustainability of new urbanism case studies in maryland", A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Urban Affairs and Public Policy, Fall 2008, pp. 32-40
- [10] B. K. Taşeli, "Nature conservation efforts set for specially protected areas of Turkey", *Environmentalist* (2007) 27, pp. 315–327
- [11] A. Karaburun, A. Demirci, I. ShianSuen, " Impacts of urban growth on forest cover in Istanbul (1987-2007)", *Environ Monit Assess* (2010) 166, pp. 267–277
- [12] J. Ferenc, "Environmental Policies in Turkey", Organisation for Economic Cooperation and Development, *The OECD Observer* 177, (Aug/Sep 1992), pp. 29.
- [13] Turk, C.; Turk, S. S. (2006), *Land Readjustment with its Legal and Technical Dimensions (Hukuki ve Teknik Boyutları ile Arazi ve Arsa Düzenlemesi)*, BetaYayınevi, İstanbul.
- [14] F. Evrendilek, H. Doygun, "Assessing Major Ecosystem Types and the Challenge of Sustainability in Turkey", *Environmental Management* Vol. 26, No. 5, pp. 479–489
- [15] Unsal, F. (2009) Critical evaluation of legal and institutional context of urban planning in Turkey: The case of İstanbul, PLPR Conference, Aalborg, Denmark. 11-13 February 2009
- [16] Ünal, Y. 2008. *Türk Şehir Planlamave İmar Mevzuatının Kentsel Dönüşüm ve Deprem Ağırıklıklı İncelenmesi*, Yetkin Kitabevi, İstanbul
- [17] Gümüş, C., 2004. *Ormancılık Politikası* Cilt 1, KTÜ Orman Fakültesi, ISBN: 975-6983-39-6, Trabzon.