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# **Impacts of Improper Land Uses in Cities on the Natural Environment and Ecological Landscape Planning**

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Additional information is available at the end of the chapter

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## **1. Introduction**

Irregular and unsound urban development is the common problem of all urban settlements today. The increasing continuation of this problem is inevitable in this order, where the economy-ecology balance is not taken into consideration and economic concerns always win.

Urban growth, the density of which is continuing increasingly with the population increase that has taken place in urban areas in the recent years, leads to the vanishing of an extremely limited number of natural resources and to the occurrence of irregular and unsound urban areas, along with impairing the agricultural lands (Brueckner et al., 2001).

When considered from another perspective, it might be stated that urbanization gained momentum with the industrial revolution. When urbanization and industrialization are evaluated together in this context, it follows that the share of industrialization in the concentration of the population in urban areas and in the environmental pressure it creates is a fact which cannot be ignored (Aksu, 2011). The technological development, the population increase and the rapid change in cities that particularly occurred upon the industrial revolution have upset the ecological balance; consequently, the process of rapid degradation of natural resources commenced. Having continued with a gradual increase in the need for new living spaces and areas of use, this process of degradation has substantially altered the working of the ecosystem with either conscious or unconscious planning.

It is impossible to make up for the natural resources which have been used up due to the degraded ecosystem; furthermore, the vital impacts of this process are increasing day by day. The cities and industrial areas (technoecosystems) which continue to develop on natural areas especially due to the shortcomings/mistakes in city planning are striking as one of the most important results of this situation.

Technoecosystems are ecosystems which occur with the rearrangement of natural ecosystems and on which urban-industrial societies live. Being relatively new on the earth, these systems provide their power from advanced technologies and non-self-renewing energy resources. In order for urban-industrial formations to survive on the earth with limited resources, it is imperative that they be made more compatible with the natural ecosystem than that of today and that an order which benefits both parties be created without the impairment of the working of the ecosystem (Odum and Barrett, 2008).

In conclusion, upon the impairment of the working of the ecosystem, the fertile agricultural lands which are particularly impossible to reclaim have been confronted with the danger of degradation and vanishing, along with the natural areas that must absolutely be conserved within the ecosystem. Therefore, preservation of the ecological balance and the concept of ecological landscape planning that developed accordingly are the primary issues on which one must strongly dwell today.

Considering the principle of integration of the urban ecosystem with the natural ecosystem, this study dwells on the impacts of improper use due to wrong urban development on the natural environment and the concept of ecological landscape planning. Within this scope, the subjects *“Improper Land Use, Planning and the Planning Hierarchy in Turkey, Ecological/Environmentally-Sensitive Landscape Planning and its Importance, and the Relationship between Sustainable Urbanization and Ecological Planning”* were included in the study.

At the next stage of the study, the losses of fertile agricultural lands resulting from the lands which were opened to development at the city center of Çanakkale, selected in order to explain the matter with a concrete example, are contained in the study with numerical expressions and figures. At the final stage, an overall evaluation of the planning hierarchy on the urban scale in our country was made, and the legal and administrative gaps in the improper use of the land were investigated thoroughly. Accordingly, the reasons for, the consequences of and the solutions to improper land uses frequently taking place in urban area planning were discussed.

## 2. Improper land use

The importance attached, and the priority given, to the environment and to urban ecological planning varies by society. Furthermore, it is possible to see the variations in the perspectives of the environment at various stages. Urban development is defined with the increase in production and consumption following the industrial revolution with the assumption that the natural resources were endless and with intensive construction activities. This stage involves some extravagant energy and land use at this stage. The growth of the city against agricultural lands is regarded as an essential indication of development (Eke, 2000).

Especially the process of metropolitanization causes cities to grow rapidly in the space and sprawl over extensive areas and to predominate, economically and socially, in all surrounding urban and rural communities. As a result of this, the natural resources remaining within the metropolitan area enter the process of being used up rapidly. This manifests itself with the unplanned and uncontrolled growth particularly against the rapid population increase in the metropolises of developing countries (Sezgin and Varol, 2012).

By the phenomenon of urbanization which appeared in this process of growth, the sprawl of cities, the absolute necessity for establishing new settlements and the fact that urban lands could easily be turned into a matter of speculation resulted in the rapid inclusion of fertile agricultural lands in urban lands (Keleş and Hamamcı, 1993).

The rapid decrease in agricultural lands upon rapid urbanization and industrialization is a phenomenon which is observed worldwide besides in our country. The construction activities of industrial establishments, roads which are their infrastructure, sports facilities and entertainment centers take place in fertile agricultural lands generally with the justification that they bring fewer economic losses (Çepel, 2008).

The reasons for improper use, meaning the use of agricultural land for nonagricultural purposes, include the gradual increase in urbanization, the rapidly developing industry and investments accordingly, and, finally, the gaps in laws and regulations. The economic earnings that develop depending on the construction of houses in rapidly growing areas where urban development is intensively felt are always higher and less risky than the yield of the activities to be carried out in agricultural lands, which manifests itself as the most primary reason why such areas are preferred as urban settlements.

Improper use generally takes place on the fertile agricultural lands which are generally Class I to Class IV agricultural lands, where any plant can grow, which are plain, which are well-drained, where the soil depth is high, and which definitely should not be used for nonagricultural purposes.

In this way, urbanization, one of the most serious threats for the world's biodiversity, most dramatically and permanently alters land use in our country, as it does worldwide (Ricketts and Imhoff, 2003; Yli-Pelkonen and Niemelä, 2006).

Upon the industrial branch which developed afterwards, the identification of these lands, which continued to exist as urban development areas, as areas convenient for any nonagricultural investment and their use for these purposes were supported. Since no laws or regulations to prevent all these things and to protect fertile agricultural lands have been made or since, even if they have been made, they lack the necessary restrictions, the improper use of fertile agricultural lands continues as a great national problem.

### **3. Planning and the planning hierarchy in Turkey**

With a wide variety of definitions, planning is an integrated system which involves a series of chaotic cases in theory and practice and which depends on various laws and regulations besides being a multidirectional and comprehensive concept. According to the definition by Keleş (1972), planning is regarded as the whole of decisions about the actions in the future, whereas planning also involves the absolute necessity for the rational use of the available resources and information. The process of preparation of the series of decisions aiming at attaining the targets which have been specified regarding the activities to take place in the future as a whole via the optimum means is called planning (Akay, 2009).

Article 166 of the 1982 Constitution is entitled “Planning” and assigns the state the task of planning which ensures *“economic, social and cultural development, particularly the rapid development of industry and agriculture at the national level in a balanced and compatible way, and the efficient use of national resources by making their inventory and evaluation”*.

There are numerous laws, statutes, regulations and circulars which direct development in our country, with the most determinative one being the Development Law No. 3194 and the regulations affiliated to it. Depending on the variety of the objects intended to be planned, a large number of types of plans are encountered in the development law. Some of these types of plans were organized in the Development Law No. 3194, while some of them were left to Article 4 of the law and the regulations to be made with special laws. It is possible to classify the plans which arise from the provisions of the Development Law as “types of plans for general purposes” and the plans which are for special purposes and which are envisaged for the areas that are the subject of a different planning regime as “types of plans for special purposes” (Table 1) (Erdem and Coşkun, 2009). Of the following types of plans, Upper-Scale Plans, the Physical Plan of the Country, the Regional Plan and the Land Use Plan are types of socio-economic and ecological plans, while the remaining plans are called “types of physical plans”.

Types of Plans for General Purposes	Types of Plans for Special Purposes
Upper-Scale Plans	The Development Plan for Conservation (1:5,000 and 1:1,000)
The Physical Plan of the Country (A five-year development plan)	The Development Plan for Tourism (1:5,000 and 1:1,000)
The Regional Plan (1:200,000, 1:50,000, 1:25,000, and 1:10,000) Natural resource inventory/analysis, Socio-economic resource inventory/analysis	The Plan for a Special Environmental Conservation Zone (1:25,000, 1:5,000, and 1:1,000)
The Land Use Plan (Conservation, Agriculture, Forest, Recreation, Settlement, Industry, etc.)	The Development Plan for Rehabilitation (1:5,000 and 1:1,000)
The Metropolitan Master Plan (1:50,000)	The Village Settlement Plan (1:1,000)
The Environmental Order Plan (1:25,000)	The Forestland Development Plan
The Master Plan (1:5,000)	The Coastal Development Plan
The Implementation Development Plan (1:1,000)	The Development Plan for Mass Housing Areas
Complementary plans which bring change	Planning in Agricultural Lands
The Additional Plan	Planning of Pastures, etc.
The Partial Development Plan	National Park Planning
The Revision Development Plan	Planning in Industrial Sites
An Amendment to the Plan	Planning in Water Basins

**Table 1.** Types of plans (Atabay, 2003; Erdem and Coşkun, 2009)

Even though most of the above-mentioned types of plans are in some way contained in the law, the majority are the types of plans with no implementation in practice. In Article 6, entitled “the Planning Hierarchy”, of the second section entitled “Fundamental Principles on Development Plans” in the Development Law No. 3194 that was shaped with an understanding which was extremely far from conserving the natural resources and that was primarily organized in order to ensure the shaping of urban living spaces, it is laid down that “Plans are prepared as “Regional Plans” in terms of the area they cover and their purposes, whereas development plans are prepared as “Master Plans” and “Implementation Development Plans”. In other words, spatial plans are collected in two main ranks as *Upper-Scale Plans* (the *Regional Plan*) and *Lower-Scale Plans* (*Development Plans*), although not clearly defined in the law. Development Plans are subdivided into two as “the Master Plan” and “the Implementation Development Plan”. Another type of plan included in Article 5 of the law, entitled “Definitions”, is “the Environmental Order Plan”. This type of plan should again be regarded as an upper-scale plan type both owing to the content provided in the definition and because it is not included in the definition of “Development Plans”. In conclusion, when the related articles of the Development Law are evaluated together, it is possible to speak of three main plan ranks, namely *Regional Plans*, *Environmental Order Plans* and *Development Plans*, although not defined systematically (Ersoy, 2006).

The types of plans and their definitions which are contained in the law are as follows (Ercoskun et al., 2004; Erdem and Coşkun, 2009; Demirel, 2010; the Ministry of Environment and City Planning, 2012):

**Regional Plan:** The State Planning Organization (SPO) makes the regional plans which must reveal the socio-economic development trends and the potential of settlements for development, or it has them made, when it considers necessary. Having appeared on the agenda following the establishment of the SPO after the 1960s, this plan hierarchy did not draw significant interest. Even if it is mentioned in the Development Law, it is not definite how a plan will be made or will gain legality, and it is not obligatory to make it either.

**Metropolitan Area Plans:** “*Metropolitan Area Plans*”, which are not contained in “Definitions” and “the Planning Hierarchy” in the Development Law No. 3194 but which are mentioned in Article 9 of the law although they must follow regional plans in the hierarchy of plans, are plans that must be between regional plans and environmental order plans in terms of scope and scale.

**Environmental Order Plan:** In Article 5 of the law, it was stated that “it is a plan which determines the decisions on settlement and land use, such as housing, industry, agriculture, tourism and transportation, in agreement with national and regional plan decisions”; however, no specific scale was mentioned. On the other hand, the scale of an Environmental Order Plan was specified as 1:25,000, 1:50,000, 1:100,000 or 1:200,000 in “the Regulation on Plan-Making” enacted depending on the same law and it was laid down that it was required to comply with regional plan decisions, if available. Aiming on the one hand to conserve natural resources and cultural, historical and environmental assets, but on the other, to guide settlement demands, this plan has a quality of directing the low-ranking plans.



**Development Plans:** These plans are organized in accordance with the resolutions on the higher-level regional or environmental order plans and bring details concerning the implementation. Development plans are spatial arrangements which are developed on the present maps so as to find the best solutions that might be provided among urban functions, such as residing, working, resting and transportation, by meeting social and cultural needs in order to provide good quality of life by offering the required standards of living to the residents of a particular locality. The municipalities concerned make these plans, or have them made, and these plans come into force after having been approved by the municipal assembly. *“The requirement for the ensuring of compliance of development plans with regional plan and environmental plan decisions (if available)”* is mentioned in Article 8/b of the law. Development plans are basically implemented at two stages, i.e. the master plan and the implementation development plan. In Article 5 of the Development Law, it is stated that *“implementation development plans will be drawn according to the fundamental principles of the master plan, and master plans will be organized to form the basis for the preparation of implementation development plans”*:

*Master Plan:* It is a plan which is recorded on the existing maps in agreement with the regional or environmental order plans, which is explained with a detailed report drawn up to form the basis for the preparation of implementation development plans, and which is prepared on the scales of 1:25,000, 1:5,000 and 1:2,000 with the new regulations. It includes the general ways of use of land pieces drawn with their cadastral status being recorded, if available, the types of regions, the future population density of regions, the building density, the development direction and size of various settlements as well as their principles, their transportation systems, and the solution to problems.

*Implementation Development Plan:* It is a plan on a scale of 1:1,000 which is drawn on the approved present maps – with the cadastral status being recorded, if available – according to the master plan and which shows in detail the city blocks of various regions, their density and order, the roads and the implementation stages that will form the basis for the development implementation programs required for implementation and other information. Moreover, in addition to this plan, *the Revision Development Plan, the Additional Development Plan and the Partial Development Plan* are also made when any type of plan on any scale fails to respond to the need or when it is impossible to implement it.

As also understood from these definitions and as also stated previously, when the recent legal regulations are read altogether, it is comprehended that the planning system in force consists of three main ranks, namely *Regional Plans, Environmental Order Plans, and Development Plans*. *“The Physical Plan of the Country”* at the top of the planning hierarchy is the planning which is not included in the law and has no implementation either. Instead, *“Development Plans”*, which had been in five-year periods until 2009 and which have been covering a seven-year process since 2009, are prepared by the SPO. No plan concepts or approaches at the national level are included in the spatial planning system in force in our country; furthermore, the expressions about Regional Plans are extremely inadequate. Regional planning is a rank whose technical content and sanctions have entirely been left in

uncertainty. The section which defines the plans in the Development Law in force contains no elaborate explanation with respect to “*Regional Plans*” that are the second upper-scale plans and that are indicated as the first step of the legal plan hierarchy. It is clearly seen that these plans, stated to be made by the SPO in the law, must be on the scales of 1:100,000 and above, despite the presence of no provisions on this matter in the law. Nevertheless, not enough plans on this scale have been made in our country; moreover, since there is no legal regulation in the materialization of the projects drawn up, no reality could be achieved about their implementation (Ersoy, 2006; Akay, 2009).

Although the concept of “*Environmental Order Plan*”, an upper-scale plan, is very frequently considered and discussed, it has not been finalized and clarified yet by which institution it will be prepared (Demirel, 2010). Especially the development about making an “*Environmental Order Plan*” is continually being disrupted due to the confusion of authority between the central government and the local government (Yılmaz, 2007).

Although the master plan and the implementation development plan are completely far from ecological concern in terms of their ways of implementation in our country, these plans are made to organize the utilization of soil (Keleş, 2012). However, “*the Environmental Order Plan*”, “*the Master Plan*” and “*the Implementation Development Plan*” should be ecological plans for environmental conservation. These plans should envisage the conservation, planning and management of sensitive ecosystems and the areas with naturally and culturally unique features. According to the existing planning system, some shortcomings and some cases which contradict with the definitions of plans occur in practice.

In fact, environmental order plans should not be the magnified copies of regional plans; master plans should not be the magnified copies of environmental order plans; and implementation development plans should not be the magnified copies of master plans. These plans must be documents whereby abstract-to-concrete plan decisions are taken and which contain different features and details (Ersoy, 2006). Thus, the inclusion of ecological planning in the planning hierarchy in the existing system (Table 2) appears an obligation (Tozar and Ayaşlıgil, 2008).

Brought forward as a solution to/remedy for the consequence that all of these approaches and the planning ranks also contained in the legal legislation nationwide are inadequate and up against a brick wall at some point, ecological landscape planning is one of the planning approaches, the importance of which is gradually increasing today and which might prevent the systematic destruction of natural resources.

#### **4. Ecological/environmentally-sensitive landscape planning and its importance**

Upon the population increase and the phenomena of urbanization and industrialization which developed accordingly, all living environments and the natural assets which must be conserved have been endangered by the intensive pressure of the unlimited use by people. It is impossible to stop this bad course with standard planning approaches. Therefore,



ecological planning is the most important approach among the approaches set forth in order to conserve and reclaim the ecosystem which is degrading rapidly today.

Name of the Plan	Planning Area	Scale	Authority of Plan-Making	Authority of Plan Approval	Legal Basis
<b>Regional Plan</b>	Region	Uncertain	The State Planning Organization	The State Planning Organization	Development Law No. 3194
<b>Provincial Environmental Order Plan</b>	The area which remains within the provincial boundaries	Uncertain	The Special Provincial Administration	The Special Provincial Administration and the Municipality concerned	Special Provincial Administration Law No. 5302
<b>Metropolitan Development Plan</b>	Metropolitan Area	Uncertain	The Ministry of Environment and City Planning	The Ministry of Environment and City Planning	Development Law No. 3194
<b>Environmental Order Plan</b>	Basin and Region	1:50,000 1:100,000	The Ministry of Forestry and Water Affairs	The Ministry of Forestry and Water Affairs	Environment Law No. 2872 which was amended by Law No. 5491
<b>Master Plan</b>	The area which remains within the boundaries of the Metropolitan Municipality	1:25,000	Metropolitan Municipality	Metropolitan Municipality	Metropolitan Municipality Law No. 5216
<b>Master Plan</b>	The Municipality and the Adjacent Area	1:5,000 1:2,000	All Municipalities	The municipality concerned	Development Law No. 3194
<b>Implementation Development Plan</b>	The Municipality and the Adjacent Area	1:1,000	All municipalities other than the Metropolitan Municipalities	The municipality concerned	Development Law No. 3194

**Table 2.** The existing planning hierarchy in our country (adapted from Ersoy, 2006)

Elimination of the pressure on resources and the carrying out of planning that is suitable for this are prerequisites for the economical use, and sustainability, of natural resources. In the ecological landscape planning studies which have substantially developed in the recent years, it is recommended not to disregard ecological convenience in land uses by developing a multidirectional way of ecological arrangement and planning (Dramstad et al., 1996; Makhzoumi and Pungetti, 1999; Ndubisi; 2002). In ecologically-based land uses, particularly the conservation of natural resources should be the fundamental objective, and the principle of integration of natural areas into the conventional urban land use planning should be adopted. The aim of ecological planning, in which the ecology-economy balance is absolutely taken into consideration in planning studies, is to utilize a region at the optimum level according to the existing physical factors and open it to multidirectional use (Cook, 1991; McHarg, 1992; Colding, 2007).

The ecological landscape planning studies date back to very ancient times, and the first and most fundamental work on this subject is “Design with Nature” – the most important planning book of the 20th century by McHarg (Akpınar, 2008). Ecological planning differs from physical plans in that it aims at a balanced organization among land uses. This is achieved when all existing and potential uses in an area maintain the negative impacts with the environment and among themselves at the minimum level (Kocataş, 2010).

So far, various definitions and explanations have been set forth on ecological planning/urban ecological planning – the most influential means of the protection of the nature, its development, and carrying it to the future. The following are some of these definitions with common goals:

According to Stitt (2009), ecological planning is defined as “the use of natural and socio-cultural information so as to suggest various probabilities and restrictions in the process of decision-making regarding the use of natural resources” (Özügül and Atabay, 2006).

Ecological landscape planning is an area of expertise within the scope of landscape planning studies and focuses on making a connection between ecological patterns and the processes. Moreover, it also encompasses social and economic dimensions in terms of human activities and cultural values. In conclusion, ecological landscape planning bases its research and plan suggestions on ecological spatial units (Akpınar, 2008).

On the one hand urbanization, industrialization and technological developments provide societies with better living conditions, but on the other, they lead to the degradation of the natural environment and cause natural resources to be used up and the environmental pollution to increase. It is these factors which make it imperative to attach more importance to cities in environmental conservation studies and to adopt an ecological approach in city planning (Eke, 2000).

The ecological planning approach in urban areas can be summarized as an approach to a sustainable urban life which prioritizes the methods and implementations that support the evaluation and development of urban data according to natural, i.e. ecological, criteria as well as conservation and reuse (Gül and Polat, 2009).

The natural environment and landscape have been evaluated in an integrated way in physical planning in the recent years when the environmental problems have reached the most advanced dimensions. Ecological planning is a planning process in which the favorable/restrictive conditions of an area and biophysical and socio-cultural data are used when determining the optimum places for land use in areas which have not degraded yet (Tozar and Ayaşlıgil, 2008). In other words, it is a planning approach which provides an opportunity of choosing the living space that is optimum in terms of natural potential among our living spaces and therefore has sustainability and which entails the spatial organization of different types of land uses (Çelikyay, 2005).

Ecological landscape planning is a process which encompasses land use planning besides decision-making with respect to the way of, and strategies for, using natural resources. Additionally, it is the whole of the objectives which the society wishes to attain in planning and the process of physical change resulting from the implementation of these objectives (Marsh, 1997; Steiner, 2000).

Ecological planning is one of the basic sections of physical planning, and it is generally related to the arrangement of the physical space for ecological objectives. The primary purpose of this planning is to enhance the optimum and continuous efficiency of the natural and artificial environments in all special physical planning. In other words, it refers to filtering special plan objectives (all wishes regarding the physical structure) through the filter of ecological planning that is the complementary planning (Köseoğlu, 1982).

Çelikyay (2006) states that the aim of ecological evaluations is to determine the negative effects of human actions and physical factors on natural resources. Ecological planning both is a link between the process of spatial planning which is particularly directed to land use and the process of effect evaluation for natural resources and constitutes the foundation of the effective management of natural resources.

The ecological planning approach envisages preventing environmental problems just before they occur and arranging the spaces where one will live accordingly. In this planning approach, first of all, natural-local resources are determined and the uses are arranged considering the features of these resources. The objective is not to repress the resource with the planning made but to prevent the damage caused by the uses through planning according to the resource (Uğur, 2009). Accordingly, ecological planning is the process of examining the physical and social factors about the determination of the optimum place for the types of land uses selected in order to reveal the opportunities of, and barriers to, decision-making regarding the use of natural resources (Akpınar, 2008).

According to Atabay (2003), when there is sustainability in planning, first of all, it is necessary to set forth the sustainable development strategies which are based on the natural environment, which is only possible through ecological planning. Atabay (2005) states that particularly country-, region- and basin-based "Ecological Master Plans" are needed in order to ensure the sustainable conservation and use of natural resources.

In conclusion, the ability of urban settlements to survive is directly correlated with the concept of sustainable development that also depends on the conservation and use of natural resources

(Cheng and Hu, 2009). In other words, urban sustainability can be achieved as a result of the conservation-use balance provided with ecological landscape planning.

## 5. The relationship between sustainable urbanization and ecological planning

Urbanization, expressed as the rate of people living in urban areas, displays rapid growth, with the values reaching about 80% in most European countries today (Antrop, 2004).

The population increase in the world began to manifest itself in all regions in the midst of the 18th century and went on increasing rapidly in the 1950s in particular. Recently, the world's population has approached 7 billion people, and this figure is estimated to reach 10.5 billion in 2050 (Kocataş, 2010; Aksu, 2011). Although it was expressed by Niemelä (1999) that 60% of the world's population lived in cities as of 2005, in the Sustainable Cities Development Report (2009) that was prepared by the United Nations in 2009, it was stated that urban and rural populations were first equalized in the history of the world in 2008 and that 70% of the world's population would live in urban areas in 2050 (Aydın, 2010).

Sustainable development has become an important problem of the agenda since the Conference of the United Nations that was held in Rio in 1992. According to "**the Report of the Commission on Environment and Development**", also known as "**the Brundtland Report**", prepared in 1987 by the United Nations, sustainable development is defined as *"development which meets the needs of the present without compromising the ability of future generations to meet their own needs"* (WCED, 1987).

According to "**the Sustainable Cities Development Report**" prepared in 2009 by the United Nations, it is stated that for sustainable development, far more ambitious policies are needed today for development and in order to limit the energy consumption and it is stressed that the first thing to do is to reduce pollution and conserve natural areas and arable lands (Naess, 2001).

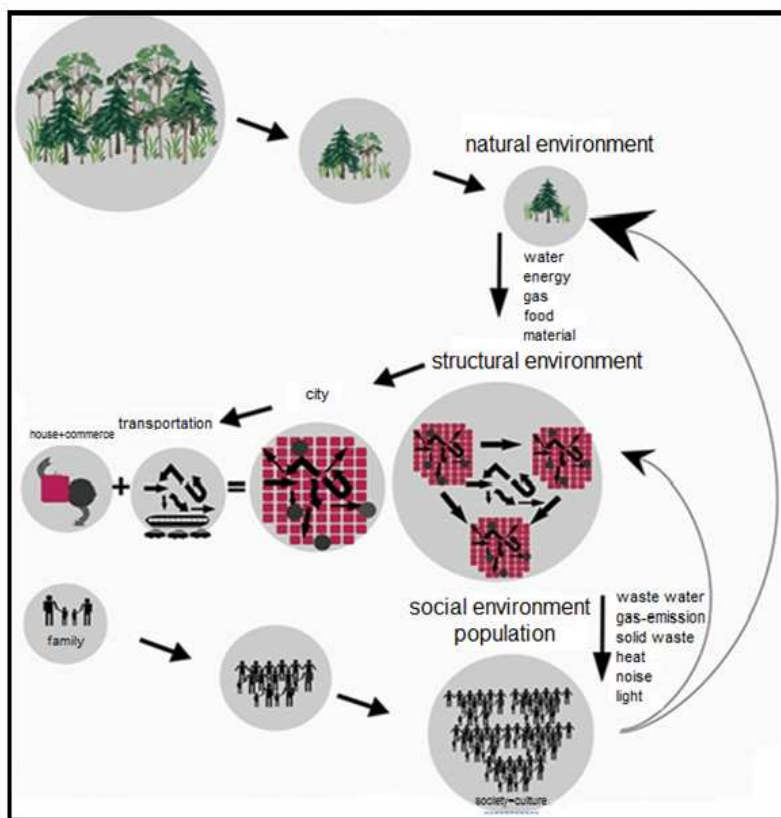
The main problems resulting from urbanization – one of the basic features of the European civilizations – are the upsetting of the ecological balance for reasons, such as the increase in building as a result of the human activities depending on the population increase and the improper use of natural areas, and the vital changes that have developed accordingly (Antrop, 2004; Berry, 2008).

Particularly when the losses of green areas and natural resources are considered today, it is evident that urban development over the urban nature is gradually increasing and that urbanization is an issue which should be considered with care (Yli-Pelkonen and Kohl, 2005). The concept of ecological landscape planning, which occurred as the minimization of the problems urbanization caused in the natural environment and as an organization that supported a sustainable urban life and on which various studies have been made for long years, is regarded as the only solution to the problems caused by urbanization.

Nevertheless, although the economic and ecological approaches are complementary when measuring sustainable development (Rennings and Wiggering, 1997), there has been a continuous conflict between economic gains and the ecological balance since the past. The natural areas which were opened to use with economic concerns are now confronted with many problems with the rapidly increasing urban development. Introducing a real solution to all those land uses which remain between two contradictory dimensions as ecological conservation and the economic life today, ecological planning advocates that natural resources such as water, air, soil and vegetation must definitely be conserved (Van Lier, 1998), for these natural areas are particularly in a position to be the lungs of urban ecosystems.

Urban ecosystems are able to survive by obtaining their large amounts of food, water, energy, minerals and other needs from nearby or distant agricultural lands, forests, mines and water basins. As urban areas grow, the need for resources and pollution create a gradually increasing pressure on water resources, aquatic regions, estuaries, forests, cultivated & planted lands, and untouched rural areas (Erdem, 2000).

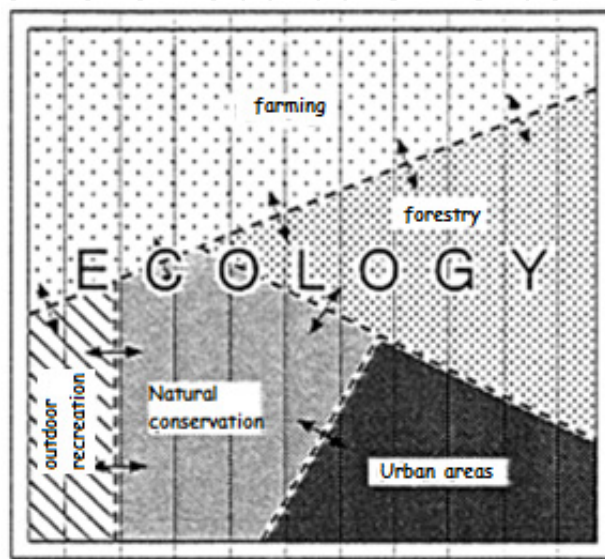
As also seen in Figure 1, when the relationship of cities with the environment is considered, their first-degree dependence on the neighboring ecosystems is striking. Cities meet their vital needs such as raw material, water, food and energy first of all from the ecosystems located on their fringe, and they leave their wastes again in these areas. That is to say, first of all, the conservation and continuity of these natural areas are indispensable for the continuity of cities (Aydın, 2010).



**Figure 1.** The relationship among natural, structural and social environments (Aydın, 2010)

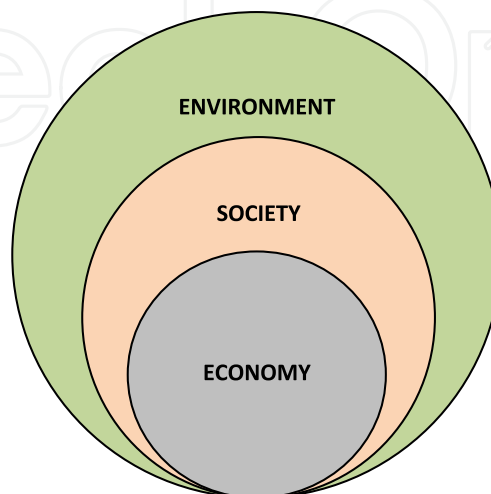


Particularly from the environmental problems cities have caused in the recent years, it follows that the city must also be in harmony with its environment and that cities must also be considered an ecosystem. Every entity that is randomly (in an unplanned and uncontrolled way) and rapidly growing without considering the bearing capacity of the life support system means that it is also preparing its own end rapidly. When the infrastructure necessary to support and carry on this rapid growth is unavailable, every rapid growth will inevitably be followed by a rapid end. As Odum and Barrett (2008) also state, the natural ecosystem and the urban ecosystem must absolutely be integrated in the understanding of sustainable city planning (Figure 2).



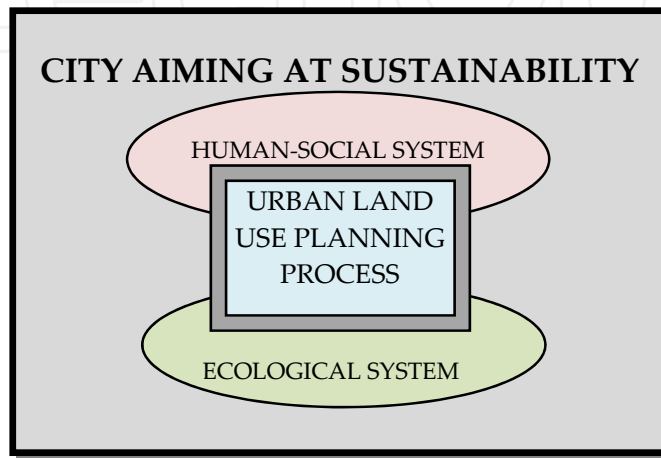
**Figure 2.** The schematic integration of ecologically-based land use (Van Lier, 1998)

It is impossible to speak of any sustainable society and environment with sustainable urban planning as long as it is failed to conserve and develop natural resources. The environment and natural resources are important restrictive elements today and at the point of the possibility of meeting social and economic needs of the future generations (Cheng and Hu, 2009) (Figure 3).



**Figure 3.** The relationship of the environment with economy and social development (Cheng and Hu, 2009)

Today sustainable city planning and sustainable development are concepts which are widely used in the development of urban areas and in environmental issues (Yli-Pelkonen and Niemelä, 2005). Sustainable city planning, a phenomenon with economic and social dimensions besides its ecological dimension (Figure 4), is an understanding of planning that is developed against the use of the environment as a resource without attaching importance to its consumption and loss. It is a contemporary evaluation which considers not only the addressing of the environment only to the users of that period and its provision of the most benefits but also the right of the future generations to use the environmental resources (Ercoskun, 2005).



**Figure 4.** A simple conceptual framework to ensure urban sustainability - The connection between the human-social system and the ecological system in the planning process (Yli-Pelkonen and Niemelä, 2005)

As Lyle (1993) also states, the cities of the future must embrace the ecology of the landscape that surrounds them (Odum and Barrett, 2008). The conservation of natural habitats has gradually gained importance depending on the increase in people's sensitivity to the conservation of the natural environment particularly in the last fifty years. Accordingly, ecology and ecological landscape planning approaches have gained importance as a response to the questions of how sustainable cities can be formed and how improper land uses will be prevented.

In conclusion, the first thing to do in city planning that is based on the conservation of the ecological structure is to determine the natural and cultural resource inventory of the area and to carry out planning accordingly. An ecologically-based planning approach is also imperative for the sound development of cities besides the conservation of natural & cultural resources (Niemelä, 1999; Termorshuizen et al., 2007).

## 6. The sample area: the city center of Çanakkale

The city center of Çanakkale, selected as the sample area, is located between 40° 09' and 40° 18' northern latitudes and 26° 33' and 26° 48' eastern longitudes and covers an area of about 17.83 km<sup>2</sup> (Figure 5). The sample area was specified as the municipal boundaries of the central district of Çanakkale (Çanakkale Municipality, 2011).



**Figure 5.** The geographical location of the sample area, Çanakkale, Turkey

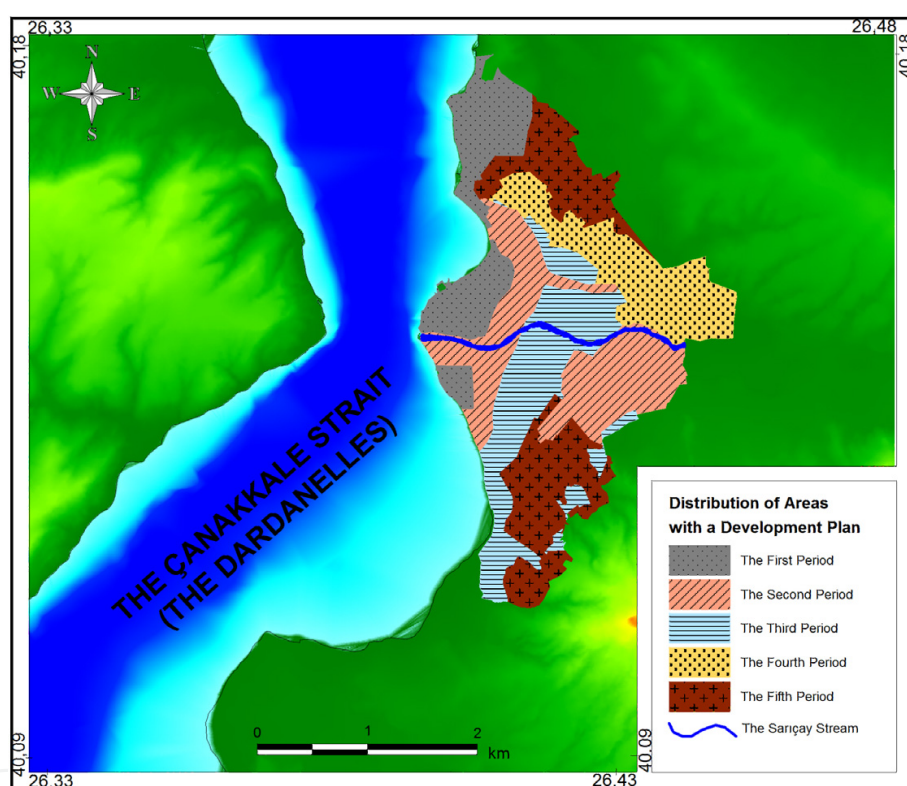
#### *Improperly Used Natural Areas According to the Development Plan Periods*

At this stage of the study, first of all, the areas with a development plan at the city center of Çanakkale selected as the sample area, were classified into five periods by utilizing Koç (2006), and they were digitized by means of the GISs (the Geographic Information Systems) and computerized. Accordingly, the development periods in Çanakkale can be listed by date as follows (Figure 6): a) Areas with a Development Plan in the First Period (between 1949 and 1963) b) Areas with a Development Plan in the Second Period (between 1963 and 1978) c) Areas with a Development Plan in the Third Period (between 1978 and 1984) d) Areas with a Development Plan in the Fourth Period (between 1984 and 1993) e) Areas with a Development Plan in the Fifth Period (between 1993 and 1995).

Secondly, “the Previous Land Use Map” included in “the Land Inventory” on a scale of 1:100,000 in the Report on the Provincial Land Asset of Çanakkale, prepared in 1999 by the Directorate General of Village Services, was digitized by means of the GIS and computerized in order to express concretely the amount of the loss of agricultural lands according to all development periods.

At this point, attention should be drawn to the fact that the soil classification was entirely amended by “the Soil Conservation and Land Law” No. 5403, and different definitions were made under the headings of absolute agricultural lands, planted agricultural lands, marginal agricultural lands, pasture, forest, settlements, and other areas (such as rushy areas, marshes, and rocky areas). There is a “Land Asset Map” that was prepared in 2008 according to this new type of classification by the Provincial Directorate of Food,

Agriculture and Animal Husbandry of Çanakkale. However, in order to express the loss of fertile agricultural lands more clearly at this stage, a re-classification was made according to the law concerned besides using “the Previous Land Use Map” with an earlier date, i.e. 1999. According to this classification, the uses were collected under the headings of urban area (settlement, recreation, and airport), agriculture (irrigated and rain-fed agricultural lands), planted agriculture (olive, fruit, and vineyard), forest, and pasture.



**Figure 6.** Distribution of the areas with a development plan by development plan period

To express the losses of fertile lands of the development periods more clearly and to show the periodic losses of each development period, the five development periods and “the Previous Land Use Map” were overlapped in the computer medium by means of the GIS. To what use the boundary of each development period corresponds on the previous land use map and their numerical values are provided in the following maps and tables (Figures 7, 8, 9, 10 and 11; Tables 3, 4, 5, 6 and 7).



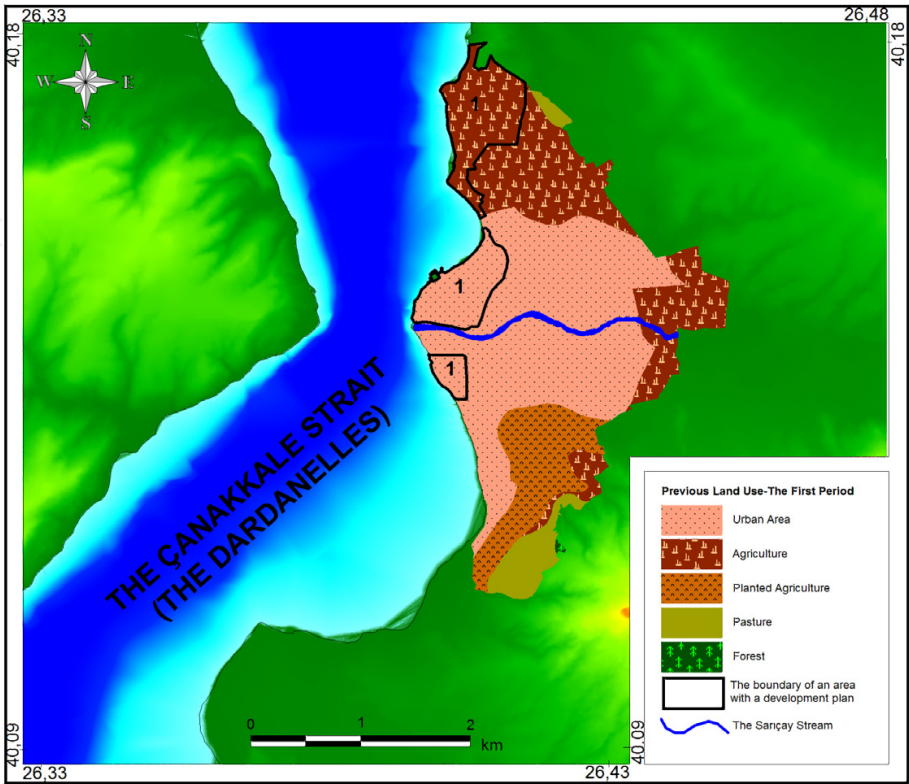


Figure 7. The loss of fertile agricultural lands in the areas with a development plan in the first period

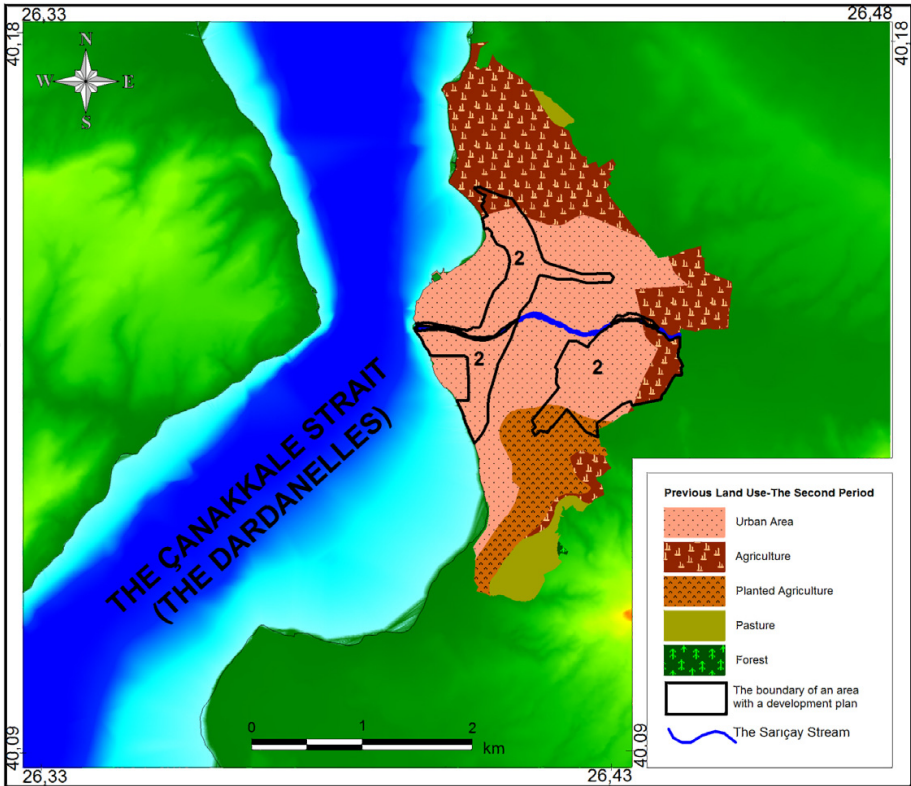


Figure 8. The loss of fertile agricultural lands in the areas with a development plan in the second period

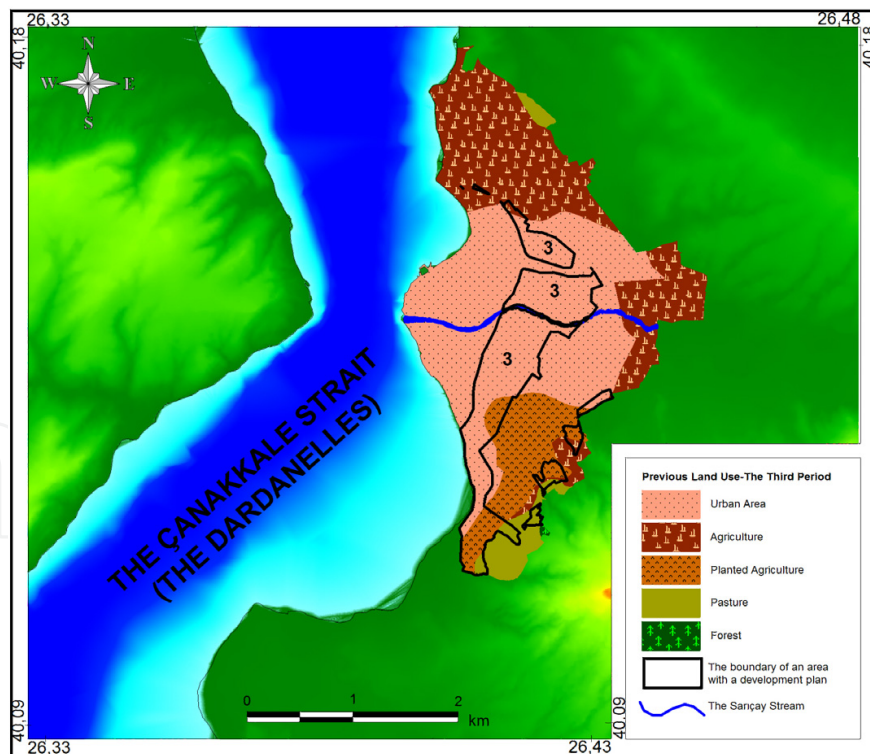


Quality of the Area	Covering Area (km <sup>2</sup> )	Covering Percentage (%)
Urban Area	1.32	46.48
Agriculture (Irrigated and rain-fed)	1.52	53.52
<b>Total</b>	<b>2.84</b>	<b>100.00</b>

**Table 3.** Distribution of the losses of fertile agricultural lands in the areas with a development plan in the first period

Quality of the Area	Covering Area (km <sup>2</sup> )	Covering Percentage (%)
Urban Area	3.48	82.46
Agriculture (Irrigated and rain-fed)	0.54	12.80
Planted agriculture	0.20	4.74
<b>Total</b>	<b>4.22</b>	<b>100.00</b>

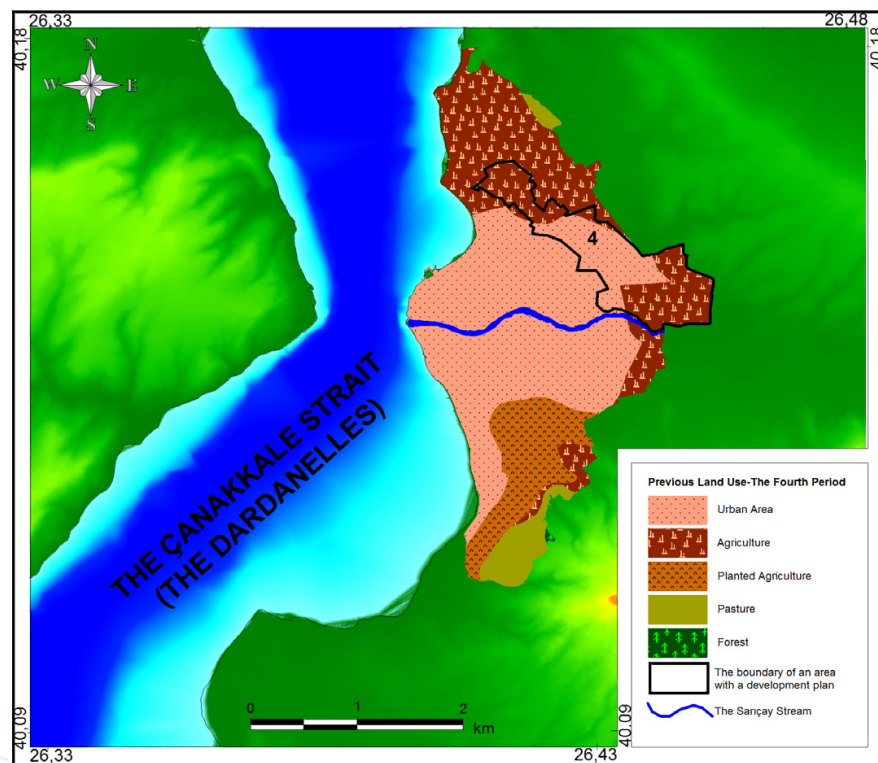
**Table 4.** Distribution of the losses of fertile agricultural lands in the areas with a development plan in the second period



**Figure 9.** The loss of fertile agricultural lands in the areas with a development plan in the third period

Quality of the Area	Covering Area (km <sup>2</sup> )	Covering Percentage (%)
Urban Area	2.86	76.68
Agriculture (Irrigated and rain-fed)	0.09	2.41
Planted Agriculture	0.61	16.35
Pasture	0.17	4.56
<b>Total</b>	<b>3.73</b>	<b>100.00</b>

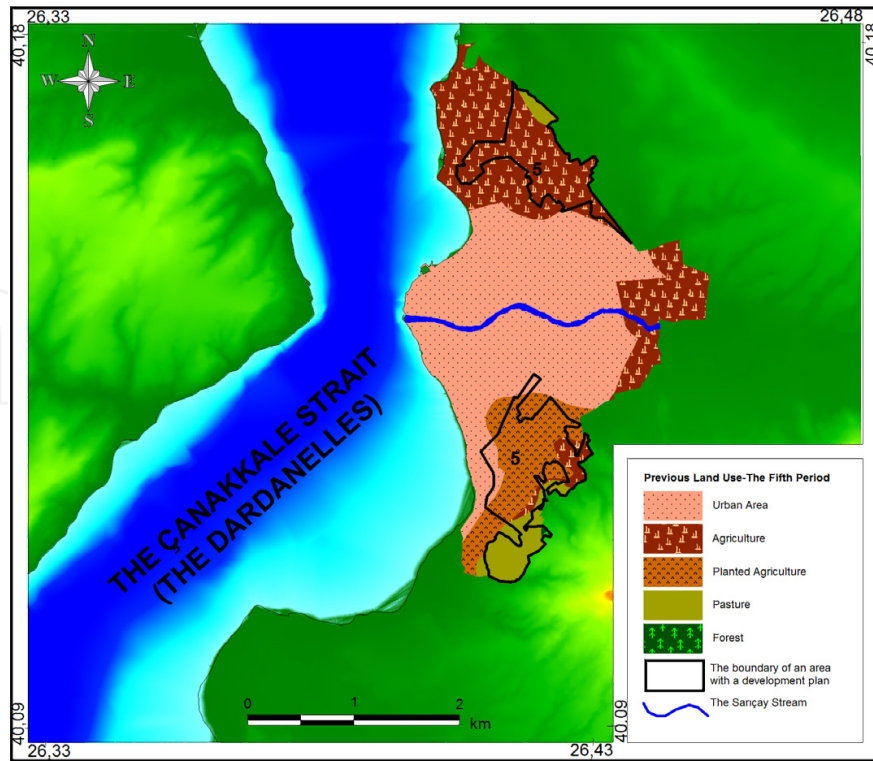
**Table 5.** Distribution of the losses of fertile agricultural lands in the areas with a development plan in the third period



**Figure 10.** The loss of fertile agricultural lands in the areas with a development plan in the fourth period

Quality of the Area	Kaplama Alanı (km <sup>2</sup> )	Kaplama Yüzdesi (%)
Urban Area	1.17	40.91
Agriculture (Irrigated and rain-fed)	1.69	59.09
<b>Total</b>	<b>2.86</b>	<b>100.00</b>

**Table 6.** Distribution of the losses of fertile agricultural lands in the areas with a development plan in the fourth period



**Figure 11.** The loss of fertile agricultural lands in the areas with a development plan in the fifth period

Quality of the Area	Covering Area (km <sup>2</sup> )	Covering Percentage (%)
Urban Area	0.19	4.71
Agriculture (Irrigated and rain-fed)	1.84	45.66
Planted Agriculture	1.27	31.51
Pasture	0.71	17.62
Forest	0.02	0.50
<b>Total</b>	<b>4.03</b>	<b>100.00</b>

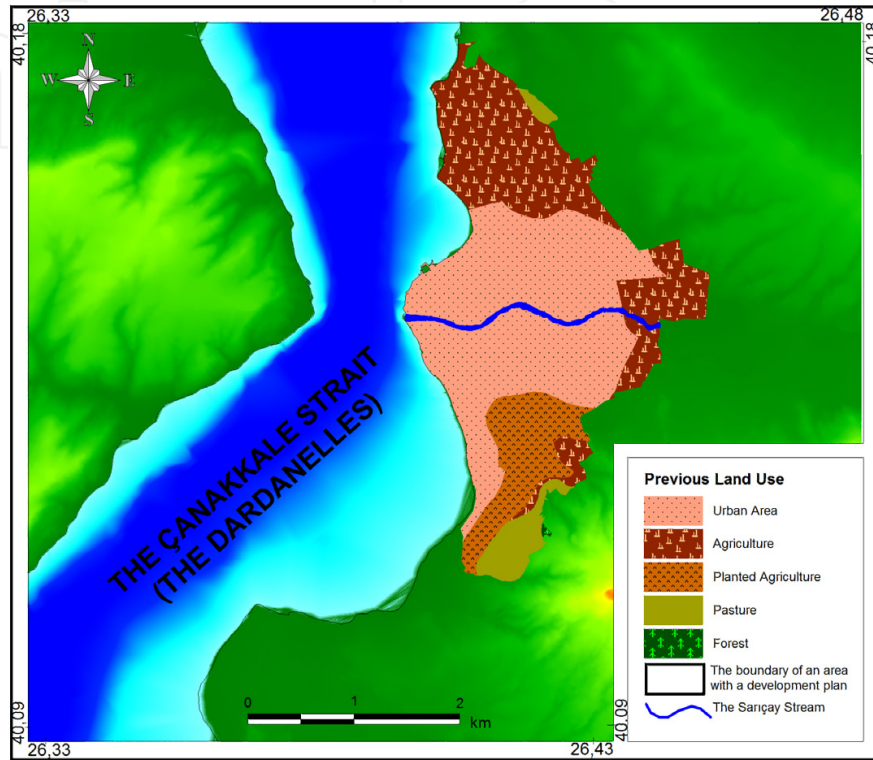
**Table 7.** Distribution of the losses of fertile agricultural lands in the areas with a development plan in the fifth period

Even though there were losses of fertile lands in the second and third periods as well, serious losses took place especially in the first, fourth and fifth development periods. While it is observed that as the city expanded towards its fringes, these losses were in irrigated and rain-fed absolute agricultural lands in particular, the planted agricultural lands also experienced significant losses, along with the areas that were opened to development.

The following is the numerical distribution of the land asset in all areas with a development plan – i.e. the sample area – according to the data by the Directorate General of Village Services (1999) (Figure 12, Table 8).

When all the areas opened to development as of 2011 are considered according to the table above, it is seen that only 50.59% of the land asset map corresponds to the urban area. When the other land uses are considered, it is seen that 31.91% are rain-fed and irrigated

agricultural lands and 11.67% are planted agricultural (olive, vineyard, and garden) lands. There is a small amount of pasture areas in an area with a rate of 4.93%.



**Figure 12.** The previous land use in areas with a development plan

Quality of the Area	Covering Area (km <sup>2</sup> )	Covering Percentage (%)
Urban Area	9.02	50.59
Agriculture (Irrigated and rain-fed)	5.69	31.91
Planted Agriculture	2.08	11.67
Pasture	0.88	4.93
Forest	0.02	0.11
The Sarıçay Stream	0.14	0.79
<b>Total</b>	<b>17.83</b>	<b>100.00</b>

**Table 8.** The previous land use at the city center of Çanakkale (km<sup>2</sup>/%)

Accordingly, as also understood from this table, the master and implementation development plans of the entire sample area with a size of 17.83 km<sup>2</sup> were made and, as a result, the areas transformed into an urban settlement by being used improperly are 7.77 km<sup>2</sup> of fertile agricultural lands (43.58%) – 5.69 km<sup>2</sup> of irrigated and rain-fed agriculture and



2.08 km<sup>2</sup> of planted agriculture. From this result, it is understood that almost half of the entire area has a “fertile agricultural land” status and that an area with such a dimension has been transformed completely into an urban area with the master and implementation development plans prepared.

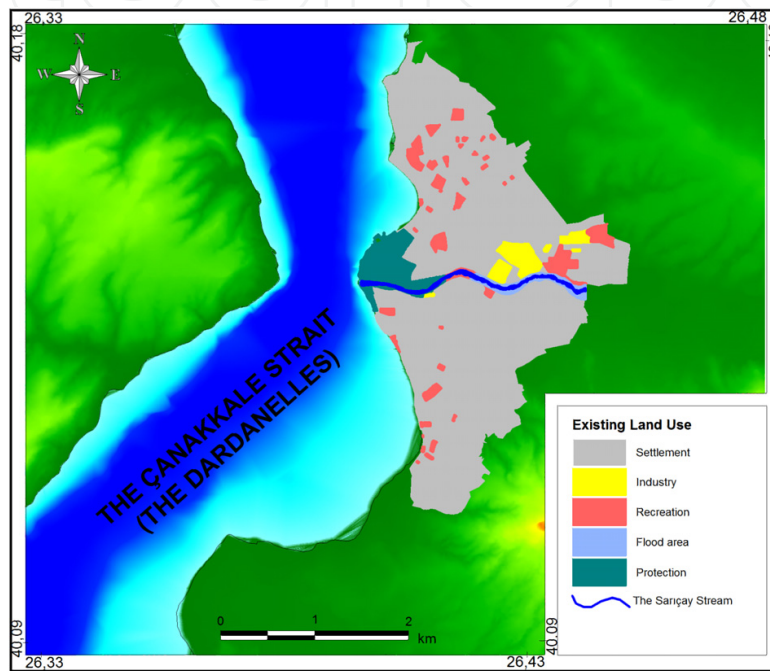
As also understood from the tables and figures, quite substantial losses of fertile agricultural lands took place in all development periods. The Master and Implementation Development Plans of all areas with a development plan, also indicated in periods above, were made and the activities of house construction are still ongoing in the agricultural lands located in these areas. Although the agricultural activities are still ongoing in the fertile lands which have remained in a small amount within the city, all of these lands have been excluded from the agricultural land status and transformed into an urban area with the development plans made (Figure 13).



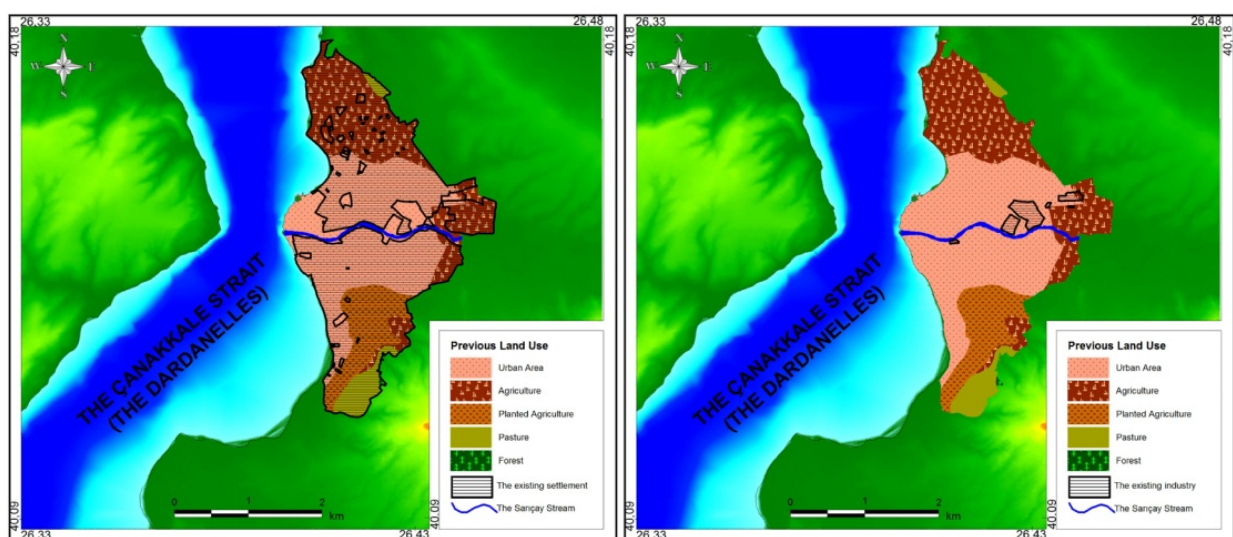
**Figure 13.** The agricultural lands with a development plan at the city center, Çanakkale, Turkey (a-b: on the Çanakkale-Lapseki ring road, c-d: Şekerpınar locality, e-f: around the airport in Barbaros District)



At this stage of the study, “the Existing Land Use Map” prepared in 2011 (Çanakkale Municipality, 2011) was used as the basic data so as to make a clearer and more accurate evaluation. At the next stage, to detect the areas used improperly, the boundary of “the Previous Land Use Map (1999)” and “the Existing Land Use Map (2011)” were overlapped in the GIS medium. Accordingly, how much of the industrial and settlement areas currently in use was used improperly and excluded from the agricultural land status was expressed with concrete data (Figures 14 and 15, Table 9).



**Figure 14.** The existing land use



**Figure 15.** The previous land use and improper land uses

Existing land use Previous land use	Settlement		Industry	
	km <sup>2</sup>	%	km <sup>2</sup>	%
Settlement	7.41	47.78	0.43	93.48
Agriculture (Irrigated and rain-fed)	5.14	33.14	0.03	6.52
Planted Agriculture	2.06	13.28	-	-
Forest	0.02	0.13	-	-
Other	0.88	5.67	-	-

**Table 9.** Improper land uses

As understood from the figures and the table above, of the urban settlement area in current use which is totally 15.51 km<sup>2</sup>, 8.20 km<sup>2</sup> (46.42%) with a fertile agricultural land status have been used improperly and opened to settlement. It has been detected that of the industrial area again in current use which is 0.46 km<sup>2</sup>, 0.43 km<sup>2</sup> (93.48%) must indeed be used for settlement.

## 7. Discussion and conclusion

*“All living things are either directly or indirectly soil-dependent for survival. In other words, soil is a natural space in which all plant species and intra-soil living things survive and a natural resource by which food is provided” (Kocataş, 2010).*

As a result of the population which has piled up in cities, urbanization gave rise to the need for accommodation. This led to the use of the land for nonagricultural purposes and caused the housing sector to capture the land. The limited arable lands and the gradually increasing improper use of these lands gave rise to a serious problem of degradation and loss of agricultural lands (Keleş and Hamamcı, 1993; Ercoşkun and Karaaslan, 2009).

The perception of the concept of “Development” merely as the opening of new settlement zones to development in the process of planning of cities or settlements leads to consequences that are impossible to compensate for in the ecological dimension in terms of cities. The important thing here is the materialization of upper-scale plan decisions by local governments and the production of policies for conservation. In this context, the upper-scale plan decisions developed in line with the objectives and strategies concerning both the city and the conservation of the components of the city are of vital importance to the prevention of the consequences concerned (Erdem and Meşhur, 2005).

Today the uncontrolled growth of cities and the issue of how they can respond to the needs of the public are among the significant planning problems of countries. The most important issue that must be carried out in order for settlements to display regular and planned development is how development affairs will be done with a joint interdisciplinary study in the light of technological and scientific developments (Akay, 2007). The planning hierarchy in our country is just a ball of problems in this sense. The entry of institutions into each other’s area of authority with the continually amended laws and regulations further complicates the already complicated system; consequently, our natural resource assets are being destroyed day by day.

The most serious problem in the planning hierarchy is the absence of Regional Plans that must be made by the State Planning Organization (SPO). *“The decisions & main strategies, whose main headings are given as the ensuring of interregional balanced development by using the regional potential and the determination of where public investments and the private capital will be located and which should be decided by Regional Plans”* have unfortunately been assumed by the Environmental Order Plans (Demirel, 2010). Furthermore, Environmental Order Plans are not made with a continuous and serious approach but only when they are considered necessary by the authorized institutions. However, the physical plan which is directive and binding at the highest level in Turkey is “the Environmental Order Plan” (Akay, 2007; Cengiz and Gönüz, 2011).

The fact that “the Regional Plan” and “the Environmental Order Plan”, upper-scale plans, are made only when considered necessary by central governments according to the Development Law can be expressed as another serious problem. Many urban and metropolitan settlements do not have such a planning approach. This negative situation prevents the formation of an integrated and a sound strategic planning approach. For the formation of the sound planning approach concerned, the plan decisions from the upper scale to the lower scale should be consistent with each other. At this point, within the framework of the principle of “graded coexistence” of plans, each lower-scale plan must contain more information and details than the one upper-scale plan. An original plan which also encompasses the new information and data required by the respective original scale of lower-scale plans but which preserves the main decisions of the one upper scale is expected (Öztürk, 2004; Ersoy, 2006).

Atabay (2005) expressed

*“the inclusion of provisions like ‘The State Planning Organization makes the regional and basin plans to be prepared in order to determine socio-economic development trends, the potential of settlements for development, sectoral objectives and activities, and the distribution of infrastructural services unique to these activities, or has them made, when it considers necessary’, its definition by ignoring natural resources, and its leaving of this important planning stage optional”,*

in Paragraph a of Article 8 in the Development Law No. 3194 with respect to regional planning, as a great shortcoming for the Development Law.

At this point, although the inclusion of some decisions in the law makes no sense, leaving of the planning decisions directly concerning the conservation of natural resources to arbitrary administration is striking as an extremely disadvantageous approach with no sanctions.

Additionally, there is quite great chaos in our country about the planning hierarchy which is a serious problem. Accordingly, “the Special Provincial Administration Law” No. 5302, which came into force in 2005, is essential in terms of the affiliating of public services to single administration and, through this law, the authority of “the Provincial Environmental Order Plan-Making and Approving” was granted to “the Special Provincial Administrations”, appearing the most influential institutions today (Demirel, 2010). With

the “Law on Environment” No. 2872, amended by Law No. 5491, the Ministry of Forestry and Water Affairs was empowered to make “the Environmental Order Plan”. When the recent case in the authority of plan-making is considered, it is the Ministry of Forestry and Water Affairs which is empowered to make “the Environmental Order Plan” on the scales of 1:100,000 and 1:50,000; it is the Ministry of Environment and City Planning which is empowered to make “the Metropolitan Area Plan” on a scale of 1:50,000; and it is the Metropolitan Municipalities which are empowered to make “the Provincial Environmental Order Plan” on a scale of 1:25,000 and “the Master Plan” and “the Implementation Development Plan”, which are lower-scale plans, in metropolitan provinces.

At this point, it appears an appropriate decision that the plans on a scale of 1:25,000 have been organized as an obligation particularly for metropolitan municipalities, regarding “the Provincial Environmental Order Plan” – one of the most important rings of upper-scale planning. Nevertheless, the failure to form a relationship between the authority of the central government that is empowered concerning “the Environmental Order Plan” and “the Provincial Environmental Order Plan” which local governments are empowered to make upon this recent regulation paves the way for the probability of the occurrence of some problems on this matter (Yılmaz, 2007).

In addition, the chaos experienced in the planning hierarchy in our country worsened upon the transfer of the authority of making Master and Implementation Development Plans to metropolitan and district municipalities from the central governments with the Development Law No. 3194. With this amendment in the law, rent-based approaches in the division of city block lots and implementations of poor quality in building increased substantially.

While the need for integrated ecological planning in this process is evident, it is extremely saddening that only the understanding of city planning generally predominates in the society in general and in the governments and that the efforts remain on a personal scale. The fact that planning has been stuck between “the Master Plan” and “the Implementation Development Plan”, two plans implemented only in practice, causes this vicious circle to continue. However, within the scope of the conservation and development of natural and cultural resource assets found within the settlements, the plans with a special purpose (such as the Development Plan for Conservation, the Plan for Tourism & Recreation, the Special Environmental Conservation Plan, the Development Plan for Rehabilitation, the Agricultural Land Conservation Plan, and Land Consolidation) must absolutely be produced and materialized by the local governments concerned, along with upper-scale plans (such as the Environmental Order Plan and the Regional Plan), with adhering to the planning hierarchy and first of all with an approach that aims to conserve and carry on the ecological balance (Cengiz and Gönüz, 2011).

It should be the main goal to carry out upper-scale planning studies at a level whereby the balance between urban sprawl and the natural ecosystem can be achieved, make them widespread, and turn them into a state policy. At this point, when the legal regulations in



the planning hierarchy are considered, there is no doubt that the confusion of authority among the institutions which results from empowering several institutions to make certain plans will soon give rise to various problems as well, although the developments about upper-scale planning in particular are promising.

The actual problem in the continuation of the chaos experienced in the legal process is experienced in the process following the completion of these plans. It is an essential and functional requirement for the creation of sustainable cities that primarily the professional group of landscape architecture have a say in taking the decisions on land use accurately, particularly in landscape and ecological planning (Atıl et al., 2005). The fact that naturalists are not included in the team in these projects that are predominantly prepared for the objective of using natural and cultural resources by conserving them causes these plans, which are made in some way, to fail to attain their target in practice (Demirel, 2010). Besides, various professional disciplines about the matter (e.g. Geographer and Biologist) should also have a say in decisions and implementations when taking planning decisions and preparing plans. The necessity for target-oriented interdisciplinary studies should be kept at a high level in city planning studies which aim at preserving the ecological balance (Sılaydın, 2007; Cengiz and Gönüz, 2011).

At this stage, planners must first of all regard ecology and environmental assets as an integral part of their professional ethics and disciplines in the context of their position and the task(s) they have assumed in the society (Arapkirlioğlu, 2003).

One of the most important and negative results of urbanization is the continuous increase in the need for new urban areas. The generally pursued urbanization policies pit economy and ecology against each other, and this event culminates in the destruction of the natural environment. Nevertheless, "ecology" is the element which must rank first in the formation of urban environments (Tunçer and Ercoşkun, 2007).

Economic concerns are remarkable as the primary factors in the opening of fertile agricultural lands to development. Especially the problem of opening fertile agricultural lands to development is because the professional disciplines that are specialized in the subject do not take part in the teams which prepare all these planning approaches and these plans.

Article 45 of the 1982 Constitution contains the provision

*"The state is liable to prevent the improper use and destruction of agricultural lands as well as meadows and pastures".*

Besides, the provision

*"Agricultural lands cannot be planned in order to be used for nonagricultural purposes without obtaining the permits stated in the Soil Conservation and Land Use Law" in Paragraph c of Article 8 in the Development Law No. 3194 regarding the preparation of plans and putting them into effect supports this expression too.*



The laws and regulations enacted to ensure the prevention of the destruction of fertile agricultural lands in particular and the natural resources in our country are full of legal & administrative gaps which will lead to extremely restricted and wrong implementations in terms of content. The recent example of this is striking with many aspects in “the Soil Conservation and Land Law” No. 5403 that came into force on 03.07.2005. Even though in the law it seems that the improper use of agricultural lands is prevented, the law actually contains various clear expressions on the facilitation of using these lands for other purposes. In fact, the first thing to do in such laws should be to determine the fundamental principles to encourage the use of agricultural land for agricultural purposes and make this widespread but not to determine the fundamental principles for the improper use of agricultural land.

It is an inevitable outcome that the phenomena of house and industry are always in front of agriculture in the urban growth patterns due to their economic yield. Thus, to increase the economic yield of agricultural land besides its conservation, new regulations should be made in “the Soil Conservation and Land Law” No. 5403 that is in force now for this purpose or various legal and administrative studies should be made on this matter.

The conservation of natural areas before all depends on the use of land in a way which is suitable for the nature. This approach basically contains the division of national territories into “Land Use Capacity Classes” in terms of suitability for various purposes of use (Kışlalıoğlu and Berkes, 2009). This is indeed a sound approach for the conservation of national territories and for utilizing them more accurately. Previously made by the Directorates General of Village Services, these plans have not been made for long years. Upon the establishment of the Ministry of Food, Agriculture and Animal Husbandry in 2011, it was expressed that studies such as land planning and soil classification would be carried out by the Department of Agricultural Land Utilization of the Directorate General of Agricultural Reform that was affiliated to this ministry. Nevertheless, the problems occurring in practice and their outcomes are more important than the making of such plans by the institutions concerned. That is, the articles on

*“ensuring the use of an agricultural land basically in agriculture and the allocation of an agricultural land for nonagricultural purposes under the condition that this be confined to obligatory cases” and “evaluating the demands for nonagricultural land use”* among the duties of the Directorate General of Agricultural Reform actually confirm that agricultural lands have not been taken under conservation yet and are in some way left to nonagricultural sectors.

It is possible to multiply such examples in the law. It is obvious that it is not enough to enact laws for an efficient implementation and a successful outcome on this matter. In conclusion, the laws and regulations on the matter are inadequate and open to exploitation to the same extent. In order for urban formation to survive, there is a need for radical change in the vision of urban planning. In this new planning vision, it should be ensured that cities form harmonious integrity with the nature and with their environment (Ercoşkun and Karaaslan, 2009). It is impossible to preserve the ecological balance with the standard understanding of city planning; moreover, this integrity is only possible through the

integration of the phenomenon of “Ecological Planning” into the existing planning system in our country.

Especially the planning studies which remain only on the urban scale are stuck at some point and remain inadequate to produce the expected solutions. The true implementation of ecological planning is only possible within a planning system that continues systematically from the highest rank to the lowest rank and that will take place on an integrated scale. On the other hand, the ecological planning studies considered within a narrow scope by ignoring the integrated scale serve the process of postponing the problem rather than a solution. As Silaydın (2007) also states, the ecological conservation studies produced on the urban scale only become meaningful within an integrated ecological planning construct based on natural boundaries (e.g. the basin boundary).

Losses of natural areas will continue increasingly as long as urban planning decisions are defined independently of upper-scale plans and as long as upper-scale plans are not included in the planning hierarchy. At this point, the ecologically-based “Regional Plans” which preserve their place as upper-scale plans in the planning hierarchy in our country but which lack adequate implementations must be materialized comprehensively.

Besides, “the Basin Plan” is also recommended as an upper-scale plan rank in some studies. Basins define the natural boundaries required for the conservation of the water cycle and the natural resources depending on it. Basin-based planning is an important stage of the planning understanding for the conservation of natural resources. Thus, a planning rank with the mental power of comprehending the nature in an integrated way for ecological planning is formed with “the Basin Plan”. Besides the fact that “Basin Plans” are of great importance to national and regional planning, it is useful to underline that “the Ecological Basin Master Plan” is an indispensable method in the context of the sustainable development of a country. The basin-based planning understanding has not been included in any planning rank yet. However, it is an issue which “the Regional Development Commission” – a working sub-commission of the State Planning Organization (SPO) – strongly considers (Silaydın, 2007; Efe and Aydın, 2009; Küçükali and Atabay, 2013).

In conclusion, the running out of natural resources is striking as one of the most serious ecological problems at the present. A wrong understanding of city planning is expressed as one of the most fundamental causes of this problem, for the selection of locations for the ways of land use in the present city planning is done without considering the existence of natural resources.

In addition, the natural areas in our country are continuing to be damaged rapidly as “Ecologically-Based Landscape Plans” have not been included in the legal processes and upper-scale plans implemented in our country yet and as the implementations in the law remain inadequate (Şahin, 2009).

Turkey has turned “the European Landscape Convention”, a framework convention on the conservation, management and planning of natural and cultural landscapes as a whole, into a part of its domestic law with Law No. 4881, dated 10/06/2003. Thus, it is also extremely

important that the environmentally-sensitive/ecological planning approach introduced by the convention to the planning understanding be integrated into the legal process and be applicable (Erdem and Coşkun, 2009).

However, although a period of nine years passed, there have not been any constructive studies that support the convention either in the plan hierarchy or in laws and regulations. This is saddening in terms of the development of the process concerned and worrisome in terms of the timeout experienced. The fact that ecological conservation now remains merely in theory postpones the solution process, and more concrete approaches are needed at this point. As Turan (2007) also states, the conditions of the European Landscape Convention and the infrastructures brought about by the conditions (such as laws and regulations and institutions) should be interpreted very carefully at the current stage and materialized rapidly. In this context, the requirements of the convention should be formulated with landscape architects, city planners, jurists, and the other disciplines concerned, and they should take their part on the regional scale.

Our country is not at an irreversible point yet with respect to the prevention of improper land uses and the allocation of the necessary place to “Ecological Landscape Planning” studies in the planning hierarchy. The prevention of improper land uses for new development areas in particular and the endeavors on the matter by local governments stand out at this point. The full inclusion of “Ecological Landscape Planning” in the plan hierarchy is an extremely important step for the sustainable city planning understanding. In this context, first of all, the phenomenon we call “Ecological Consciousness” must descend to the public level, and the nongovernmental organizations must do what falls to them regarding this matter.

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