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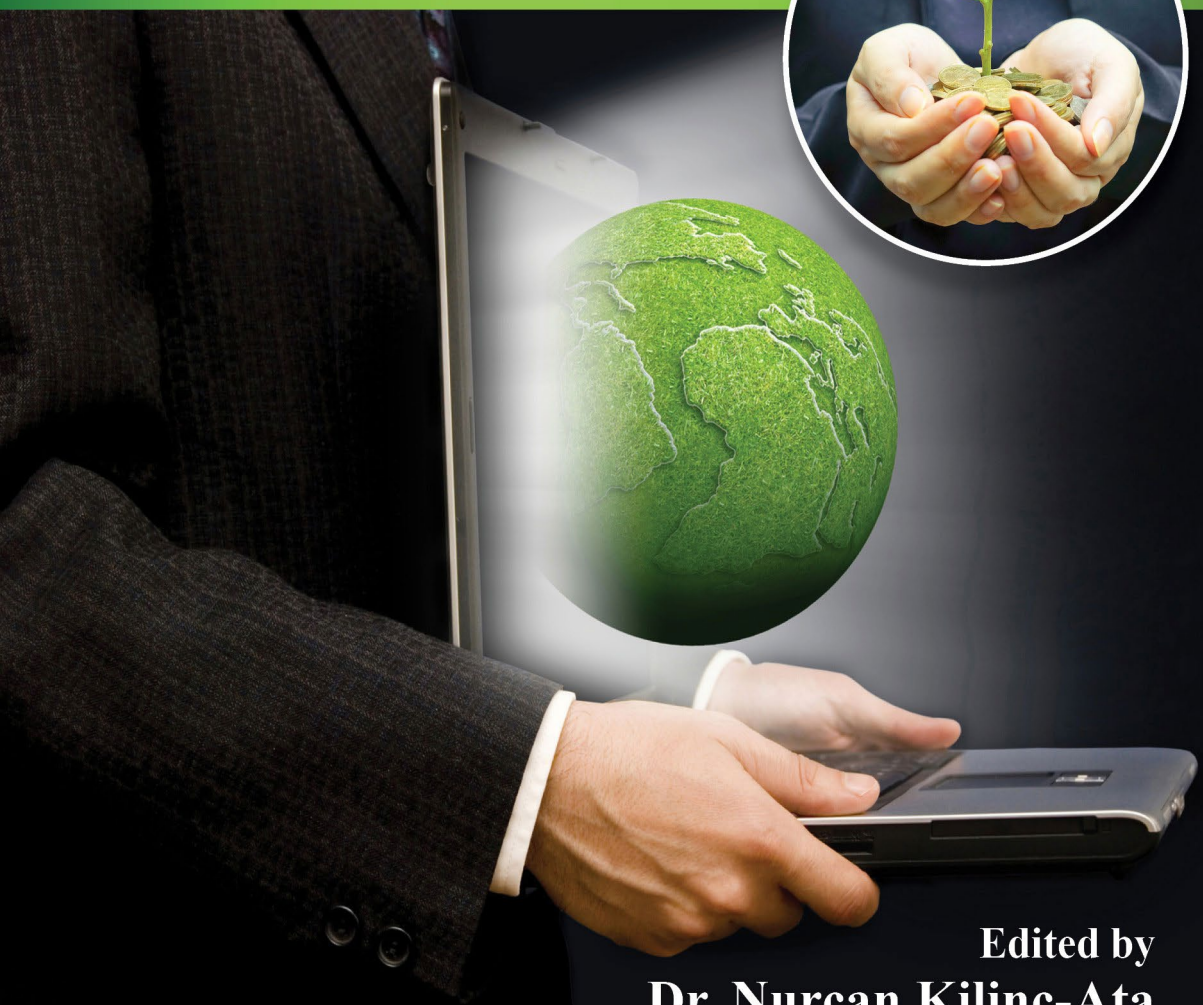
The Effects of Environmental Policies on Sustainability: Theory and Methods



Edited by
Dr. Nurcan Kilinc-Ata

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Preface

The chapters in *The Effects of Environmental Policies on Sustainability: Theory and Methods* seek to explain the developments in environmental policies to understand the main global challenges. The chapter's discuses the environmental policies, strategies, and variety of alternative ideas within the framework sustainability. This book bridges the understanding between the theory and methods exists the areas of environmental. The chapters have a balance between the discussion of policy and specific environmental issues and are written as part of sustainability. Topics covered include the environmental implications, awareness of social responsibility, economics perspectives, ecotourism, and sustainable land management.

The Effects of Environmental Policies on Sustainability: Theory and Methods is organized into three separate sections that provide comprehensive coverage of crucial topics. These sections are;

1. Environment, Social and Economic Sustainability Framework
2. Sustainable Architecture
3. Geomatics for Sustainable Development

Chapter 1 reviews the relationship between Turkey's environmental policies and economic growth. Nurcan Kilinc-Ata suggests with specific recommendations such as reconstruct natural environment construction planning, strengthening environmental application and incentive mechanisms, improving policy assessment and scientific support, enhancing environmental protection capacity, and filtering the environmental policies for key areas.

Chapter 2 is a descriptive survey that focuses on ecologic system based upon corporate social responsibility. The importance of environment for the corporate social responsibility practices is emphasized. Gulsum Simsek suggests that corporate social responsibility practices are important for the businesses to show their awareness to ecologic system and to take society's support.

Chapter 3 point out the green GDP in China. As China's government realized how important it is to re-launch the development of green GDP, it shows the hope in dealing with the rapidly worsening environmental problems but also alarming how pressing the issues are. With China's government strong calls to the benefits of green GDP, it is promising that the prosperity of economic growth in China will no longer suffer the environment without second thoughts.

Chapter 4 aims two queries on the research for "In the history of environmental protection and renovation work, what is the relationship of protection and landscape architecture?"In this context, the Daday specific recommendations were intended to improve the urban landscape design principles of a local governance model. Kastamonu with dense tissue in a historic area of research in the Daday District has been selected. Authors recommend that Turkey is focused on the protection of cultural heritage in this area, and it is important to carry out the universal dimension of cultural values if possible.

Chapter 5 assesses the surface site of Yesilyuva Nature Park encompasses the region's natural, social, economic and cultural characteristics and has become a marker of natural and cultural heritage. In this chapter, because of tourism and related opinions of local

residents and visitors alike in terms of their natural determination is an important cultural and historical feature aimed at evaluating the tourism potential of Yesilyuva Nature Park. This framework is designed to establish prospective tourism sustainability.

In Chapter 6, biocomfort is examined by mapping the Doganyurt coastline, and thus, this study aims to build pad similar studies in coastal areas with similar structures. To this end, the climatic data of Doganyurtar obtained; based on the equivalent temperature from the physiological index, biocomfort maps are prepared. To determine the structure of the biocomfort field, climatic data are collected from meteorological stations.

Chapter 7 deals with the ecotourism resources of Doganyurt that include its historical, cultural, and natural landscape to determine its potential classification in terms of values that can be a source of tourism activity and are intended to be mapped. For this purpose, the value of the tourism resources that constitute Doganyurt's values such as maps, photos, and surveys were evaluated in light of data collected as a result of work done in the area and of existing and potential ecotourism activities.

Chapter 8 is on protected regions of environmental value in Turkey and the relation with land tenure (property rights, responsibilities and restrictions) in the respect of the public interest on the legal platform. Belek Special Environmental Protection Area in Antalya is essential for biodiversity conservation. To stop many threatened or endangered species from becoming extinct this region is declared as "special environmental protection area". With the support of technologies of Global Positioning System (GPS) and Remote Sensing (RS), Geographic Information System (GIS) is applied to create the core protection zones with the help of biotope map by using ESRI products in the chapter.

Chapter 9 presents a part of the land policy in Turkey. In this concept the role of General Directorate of National Property (GDNP), which has more than half of the country's territory under the sentence and administration of State and under the private ownership of Treasury is mentioned and National Property Automation Project-Geographic Information System (NPAP-GIS) is explained. Finally it is discussed whether the spatial data and geographic information management systems produced or used by NPAP-GIS can be alternative for the solution of urbanization problems in Turkey.

This book provides researchers, administrators and all audiences with a complete understanding of the development of policies, strategies, and concepts in environmental sustainability. The research team exposures the scientific approach by combining social and environmental objectives for sustainable development strategies.

Signature

About the Editor

Nurcan Kilinc Ata holds PhD degree in economics department from University of Stirling in United Kingdom. She focused on renewable energy policies and their impacts on installed capacity in developed and developing countries.

Her research interests are energy economics (Renewable Energy Sources), energy market, energy policy, environmental economics, and econometric analysis (Demand Forecast). Her current interests lie in the nexus of energy policies and energy investment, particularly focusing on energy and environmental econometric modeling.

Also, she worked as foreign trade analyst, researcher, assistant professor in a wide variety of business, academia, and research center such as import-export analysis, renewable energy sources application and evaluation, energy policies, forecasting market share analyze for natural energy sources. She has over 7 years of academic and international research experience. She has conducted and participated in European research projects. Since 2005, she has produced over a dozen publications in a diversity of formats and presented at a number of national and international conferences.

At a personal level, she is a very energetic person who likes to take initiative and engage people in motivating and interesting. Outside of work, she enjoys travelling, meeting with her friends, and cooking.

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Dedication

This book is dedicated to my dear father, İzzet KILINÇ who helped shape me into the person that I am! May God rest his soul!

Dr. Nurcan Kilinc-Ata

Acknowledgement

The editor would like to express their gratitude to all the people who contributed to the book as authors, advisors, reviewers, and developers. I am happy that so many colleagues, from many different backgrounds and regions, were enthusiastic about the idea to develop this book. Their contributions made the book to overview sustainability. I am proud of the result an thankful to everyone who made it possible. I would also like to thank the colleagues at OMICS group. Their professionalism, and sometimes patience, was an important condition for the development of this book.

Nurcan Kilinc-Ata

Osmaniye Korkut Ata University, Turkey

Contents

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Environmental Policies and Economic Growth in Turkey: A Critical Review

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Abstract

There are three key energy sustainability objectives: energy security improvement, climate change mitigation, and the reduction of air pollution. In this paper, the existing environmental policies are reviewing in Turkey because the economic effects of environmental policies are crucial awareness to policy makers. This paper reviews the relationship between Turkey's environmental policies and economic growth. This paper concludes with specific recommendations such as reconstruct natural environment construction planning, strengthening environmental application and incentive mechanisms, improving policy assessment and scientific support, enhancing environmental protection capacity, and filtering the environmental policies for key areas.

Keywords: Economic Growth; Environmental Policies; Turkey

Introduction

Turkey has key environmental policy objectives, which are climate change mitigation, reduction of air pollution, improvement low carbon technologies, and its human health impact [1]. One of the central objectives of environmental policies is to foster innovation in environment friendly technologies and pave way towards 'green' growth. The other goal of environmental policies is to improve environmental outcomes, driven by the pursuit of objectives of broader wellbeing and ensuring sustainable growth. Environmental policies aim to achieve their objective by increasing the opportunity costs of pollution and environmental damage, curbing polluting behavior, supporting investment and inducing innovation in less environmentally harmful technologies and so forth. However, they are likely to affect purely economic outcomes as well, particularly in the shorter term; these effects are of interest to policy makers when choosing to take action to improve environmental performance and selecting the relevant policy instruments [2]. Political leaders across countries regularly discuss that motivated environmental and climate domestic policies so enhancing the competitiveness of the national economy and creating jobs [3].

Numerous studies have explored the relationship between environment, energy consumption, carbon emission and economic growth [4] but less research has been

conducted on the more specific relationship between economic growth and environmental policies and to date, no study has been conducted on this relationship in the Turkey. The goal of this chapter is to take a unique approach, compared to previous studies, to examine the link between environmental policies and economic development within the Turkey. Environmental policies are considered important elements of well-designed policies and economic growth. The objective of this paper is to review the existing literature on the link between environmental policies and economic growth in Turkey. The guiding questions of this paper are: What are the main environmental policies in Turkey? Which challenges need to be addressed in future research?

The topic of this chapter makes a contribution to the well-developed environmental literature on green innovation for Turkey. The present chapter finding that environmental policies encourage foreign innovation, economic growth means that these studies underestimate their overall impact.

Section 2 of this paper discusses the background intuition for the economic effects of environmental policies, including an overview of the different measures of environmental policies used in the literature. Section 3 reviews Turkey's environmental policies studies. Section 4 concludes with a summary of the main outstanding issues regarding investigation of policies.

Literature

Several studies have looked at the relationship between environmental policies and economic growth at the country or regional level. They look at economic growth and environmental pollutants nexus with the main objective being the testing of the validity of the Environmental Kuznets Curve (EKC) hypothesis. The EKC assumes that environmental degradation first increases as income increases then uplands when income reaches a certain high level and finally decreases. Empirical results in literatures regarding this converse U-shaped relationship between CO2 emissions and economic growth are many but inconclusive [5]. On the contrary, Saboori and Sulaiman, (2013) analysis for the short and long-run relationship between economic growth, carbon dioxide (CO2) emissions and energy consumption, using the Environmental Kuznets Curve (EKC) by employing both the aggregated and disaggregated energy consumption data in Malaysia for the period 1980–2009. The analysis result shows that there is bi-directional causality between economic growth and CO2 emissions. From the survey of these literatures, country studies show varying results on the validity of EKC and casual relationship with economic growth.

While most of the existing empirical studies focus on the impact of environmental policies on the creation of new clean technologies, using patents as an empirical proxy, a few empirical studies have begun exploring the effect of environmental or climate regulation on technological innovation. An early paper is Johnstone et al. (2010) who examined the general environmental policies considerably affect private innovators, though the strength of the effects varies over technologies. While quantity-based policy instruments such as obligations and tradable certificates were found to be most effective for wind technology, price-based instruments such as investment incentives, tax measures and tariffs proved most effective in promising innovation in solar. More recent work by Veugelers (2012) studied policy instruments to encourage clean innovating and the development and adoption of new clean technologies by the private sector needs to be guaranteed to decrease Green House Gas (GHG) emissions. In a follow-up econometric analysis, Dechezleprêtre and Glachant, (2013) and Wu et al. (2013) confirmed that mostly based on correlation analysis, which may not provide sufficient evidence of causality. Specifically, Wu et al. (2013) investigated China's environmental policies and economic growth empirically with using 2000-2009 data. They find that city-level environmental investment is statistically and economically significantly correlated with better environmental outcomes.

Overall, the econometric evidence from the economics literature is not unfavorable for the impact of clean environmental policies. Although the evidence suggest that the nature of the environmental effect (e.g. reducing CO2 emissions versus enhancing energy efficiency) all seem to matter for effectiveness, the paper still has a very incomplete view on which combination of policy instruments is most effective in stimulating clean innovation creation and diffusion. This comes on top of a lack of evidence on the effectiveness of public R&D infrastructure building and public procurement as parts of the technology policy mix for climate change.

There is a power relationship between environmental policies and economic growth. For the environmental technologies, we need government intervention, which also should be designed to lower emissions at the lowest possible cost for economic growth [6]. Environmental policies that guarantee the sustainable use of environmental assets can be seen as ensuring a certain level of aggregate economic growth over the long term. Generally, environmental policies are environmental taxes, tradable emission permits; water and wastewater treatment charges impose an additional production-related cost. Environmental policies is foster the creation of industries or activities [7].

Over the last decades, Turkey experienced a rapid economic growth. Turkey is ranked 109 on the environmental performance list prepared by Colombia University World Economic Forum, which is listed in the highly susceptible category on the Environmental Vulnerability Index. Turkey's environmental score is low, and the Turkish government, companies, and consumers should act to resolve this situation. Turkey is the world's 19th largest economy, a key member both in G20 and the OECD and the second most populated nation in Europe. Turkey is challenged with ensuring economic growth together with environmental and social progress to achieve sustainable development [7].

Environmental Policies in Turkey

Over time, a variety of energy related policies have been implemented by Turkish government in order to promote sustainable economic growth, to consider environmental issues. In other words, Turkey is challenged by providing economic growth together with environmental to achieve sustainable development.

There are some lack of integrated planning and environmental policy coordination for Turkey. Firstly, integrating environmental policies into other policies (such as energy policies) should continue to be the key consideration. Furthermore, some policies suffer from lack of adequate scientific basis, the earlier involvement of science and technology sectors also being insufficient, and early outcomes did not play an adequate role in resources development and ecological protection. Then, the eco-compensation policy lacks an general frame so the eco compensation criteria should be refined and further integrated, such as opportunity cost, treatment cost, willingness to compensate, and value of ecosystem services. Finally, an evaluation system for environmental policies needs to be established and improved. The performance evaluation for environmental policies has not fascinated sufficient attention [8].

Turkey has some of policy problems, such as environmental laws and policies effectively. It is very difficult to appliance and enforce environmental laws, which are implemented jointly with the Ministries of Environment and Forestry, Energy and Natural Resources, Agriculture and Rural Affairs, Tourism, Health, etc. depending on the framework of the law. However, in many cases there are no acceptable monitoring facilities for instance, there is no procedure at national level to calculate and publish periodic emission inventories of pollutants like volatile organic compounds or sulfur oxides [9].

The key environmental problems in Turkey include air and water pollution, land and forest degradation and loss of biodiversity and ecosystem services. For instance, Turkey's

Greenhouse Gas (GHG) emissions rose by 75% between 1990 and 2004 due to stable population growth and industrialization after the mid-1990s. In 2004, Turkey's per capita emissions are below the world and OECD with accounted 0.8% of the global emissions. For coming years, GDP anticipated to grow at over 6% per year so amount of carbon emissions are estimated to rise considerably, increasing at 6.3% annually and reaching over 600 million tons/year by 2020. Although low compared to advanced European economies, Turkey's per capita carbon emissions are increasing. In terms of air pollution Turkey has accomplished decoupling of CO2 emissions. Benefits from reducing air pollution are anticipated to be 3-9 billion euro. Environmentally associated taxes in Turkey contain taxes on fuels and on vehicles so huge returns come from taxes that can be associated to environmental issues. However, these taxes were not designed for environmental purposes [10]. Besides these, Turkey has opportunities that Turkey is richly endowed with solar, hydropower, wind and geothermal resources. These renewable energy sources are environment friendly.

Turkey is also facing a number of environmental challenges due to unsustainable production and consumption patterns. The general material intensity of its economy and pollution is still among the highest in the OECD countries. This can be clarified to some amount by the configuration of the Turkish economy and growth. For instance, Turkey imports large amounts of metals, which are transformed into metal products exported to the Middle East. It also imports cotton to generate cotton products to export to Europe. Environmental main concerns are not high in this perspective, for this; there are more pollution and environmental degradation. Likewise, continued economic growth increases motor vehicles ownership and traffic, as well as Turkey's economic growth and high production and consumption together with environmental concern pose a threat to the country's possibilities to achieve sustainable development [11].

Conclusion

Energy is one of the most important issues for counties position. However, energy consumption may have negative impacts on the environment. Thus environmental thoughts are very essential for governments and policy makers.

This chapter investigated the dynamic interaction between environmental policies and economic growth for the Turkey employing literature review approach. In this regard the aim of this chapter is to examine what environmental policies are more efficient and the examination in Turkey was essential for the completion of the research. Furthermore, fossil energy consumption is highly related to the increase of CO2 emissions so environmental policies should control CO2 emissions. Therefore suitable policies related to the efficient consumption of energy resources and consumption of renewable sources of energy is required.

The policy implications of this chapter's results are potentially important for Turkey since Turkey highlight the importance of decreasing the carbon emission. In this point, there are some crucial recommendations for Turkey's environmental policies. These are;

- Develop ecological environment construction planning in Turkey.
- Improve environmental law enforcement
- Adopt or change its national laws, rules and procedures so that the requirements of the EU are fully incorporated into national legislation Increase to use of renewable energy sources and decrease to use of fossil energy resources.
- Strengthen environment policy evaluation and technical support
- Strengthen environment protection capacity and infrastructure construction
- Provide the controls and punishments to ensure that the law is being complied with
- Enhance the environmental policies for key areas [12,13].

In conclusion, Turkey surfaces a considerable task to comply with the environmental laws of EU. In other words, The EU agreement and collaboration with the EU has had a substantial impact for Turkey to improve its environmental commitments and tasks.

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Corporate Social Responsibility And Awareness Of The Ecological System

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Abstract

This study is a descriptive survey that focuses on ecologic system based upon corporate social responsibility. The importance of environment for the corporate social responsibility practices is emphasized.

Along with the industrial revolution, mass production and consumption and environment pollution increased. Especially the environmental problems and the development problems of the countries and the businesses have gained importance since 1970s. Notably the western countries brought up international contracts in order to prevent the unconscious consumption of the natural sources, sea pollution, and ozone-depletion as a result of heating atmosphere, desertification and erosion. As a consequence of the changes happened in concurrence with the globalization, people started to react to the environmental hazards that the businesses causes. Legal obligations and the activities of environmentalist civil society organizations come into prominence at national and international platforms. For that reason, corporate social responsibility practices are important for the businesses to show their awareness to ecologic system and to take society's support.

Introduction

Corporate social responsibility becomes compulsory for the organizations during globalization process in the changing world. Businesses prioritize to give the rights to the societies back and social benefits with corporate social responsibility understanding. Society expects the businesses to provide employment and to enhance welfare in this rapidly changing global and competitive world.

Organizations indicate to their target groups and shareholders that they have other purposes beside their economic targets. At that rate, the business fulfils the shareholders' social expectations. Thus, they show that they have other purposes beside the targets of the target groups. By this way, the business acquires a good place in the target groups' minds and reaching to the shareholders becomes compulsory [1].

Production and consumption habits as from the industrial revolution have destroyed the ecological balance. Started at the western countries and extended to many countries in the world, mass production polluted our world's water, air and soil. For that reason the countries started to search internationally binding solutions about cleaning the world in 21st century [2]. Reducing the environment pollution may be the most important responsibility of the businesses. In order to fulfil their responsibilities about the environment, the businesses must evaluate the production with the environment and show environmentally sensitive approaches. For that reason, the businesses must use environment-friendly technological devices to show their sincerity towards environments [2].

Corporate social responsibility takes places within the important communication studies in order to differ from the competitors in terms of health, education, art, environment etc, to be confident about the future and to create sustainable development. During globalization process, with the intent of minimizing the harms to environment as a result of production and fulfil their responsibilities to the society, businesses that get their share from technology, communication, laws and political changes focus on social responsibility practices. Thus ecologic awareness of the corporate social responsibility will be handled.

Corporate Social Responsibility

As a consequence of the crises have aroused recently (Enron, World Com, Parmalat, Qwest, ImClone etc.) the society's confidence towards the businesses and the authority has decreased. This situation helped the concept of social responsibility to come into prominence. At the same time, international organizations (United Nations, OECD, ILO, and European Union), standards and signed contracts about human rights, environment employee's rights etc provided the businesses to behave more carefully in terms of corporate social responsibility [3].

Corporate social responsibility is the social responsibility that the organizations are accountable to public that provides to research the activities which protect and develop the social welfare in the fields they work [4]. However concept of social responsibility is handled in a wide range. Whereas establishing a school and supporting education, healthcare etc are evaluated as corporate social responsibility, according to some people the content of raw material that the corporations' use, the durability of the society and producing goods and services that support the environment etc are evaluated within the scope of corporate social responsibility [5]. At the same time corporate social responsibility is a strategic management understanding that benefits the corporation for a long and short time, which is based on voluntariness, audited by the laws, required to consider the social sensibility at the phases of purchasing, production and R&D activities [5]. According to Kotler and Lee [6], "business practices which have a social responsibility are the business practices and investments that the corporation employs and conduct, and support the social subjects such as developing the society's welfare and protecting the environment."

Historical Development of Corporate Social Responsibility

Social responsibility's becoming important for the organizations dates back to industrial revolution. With the industrial revolution, fabrication and mass production provided the businesses to develop their production policies by creating new employment fields. "Everything is lawful" understanding prevails at the second half of the 19th century. This aspect caused the ignorance of subjects such as consumer rights, environmental hazards and social utility. Society started to show negative reactions to the businesses over time by occurrence of situations such as imbalance of the ecology, environment pollution, child employment, ignorance of the people's and employers' rights, unhealthy production conditions etc where the large-scaled businesses reside in [7].

During industrial revolution process, the accepted opinion is capitalism. According

to Adam Smith's "invisible hand principle", "people's property rights are above all" and individuals' personal interests protect the general interests of the society. For that reason it is unnecessary to deal with the subjects other than the subjects that are about increasing the production and incomes. However, Wall Street collapsed in 1929 and "Great Depression" emerged, it caused unemployment and production loss. The invisible hand principle paradigm ended, the businesses contended with social responsibility because of their activities [8,3] .

Explaining the meaning of corporate social responsibility as it is today and taking place in the literature dates back to 1950s. The period before 1950 was the period that amateur social responsibility enterprises happened. For that reason, this concept belongs to 20th century. According to Archie B. Carroll [5], Howard R. Bowen is the first scientist to study in corporate social responsibility field because of his work "Social Responsibilities of Businessmen". In 1960s, civil society organizations acquired importance, women's rights, racial discrimination, employees' rights, minimum wage, environmentally-conscious production, consumers' rights and insured employment etc issues were discussed. In 1970s notice to partners, advertisement ethics, environmental consciousness and activities' society benefit took place within corporate social responsibility understanding. When it came to 1980s, the issues were recycling, development of the working conditions, monetary aid for the families in bad financial situation etc. Today, organizations activate their corporate social responsibility activities with strategic plans [3]. Whereas many countries obligate the corporate social responsibility by the laws, this concept is evaluated as corporate communication projects of the businesses within the frame of "voluntariness" in Turkey [5].

Fields of Corporate Social Responsibility and Interacted Concepts

There are a lot of responsibility fields that the businesses are responsible for. Determining the social responsibility fields, the businesses should evaluate some issues like social development, economic growth, social justice and environment etc. While planning their corporate social responsibility plans, the organizations should evaluate the ethic, environmental and social values-rules as a whole and they should determine their strategies accordingly. (3P: planet, people and profit determine the integrated social responsibility fields of the corporations [8].

Whereas social responsibility is evaluated in 10 fields (employers, costumers, society, regional development, international society, investors, suppliers, competitors, civil society organizations and government and local authority) according to Coşkun (2010: 63-89), Goodpaster (1989: 89-90; Pelit et al, 2009: 21) examined it in six big fields. These are shareholder, partners, employers, consumers, and locals, national and international society. Dalyan states the corporate social responsibility fields as: protecting the natural life, increase the welfare of the employers, responsibilities towards consumers, locals, media and local-national authority [9]. Organizations develop social responsibility projects about environment, health, society, education, culture-art, sport etc issues according to the target groups they have problem with.

Social responsibility campaigns consist of many constituents such as prestige, image, public relations, marketing and partner management, culture, identity, communication and sustainable development. At all of the practised social responsibility campaigns, there are interactions with these constituents (Coşkun, 2010: 91).

Corporate social responsibility is important as it affects the corporate and brand image of the businesses. Businesses' perceptions about social activities give shape to brand perception and attitudes. According to Rust et al (2000), ethic and social activities increase the brand value. These also affect the brand loyalty of the target groups [10]. Business and Sustainable Development that make researches related to sustainable development in business world. According to the result of their researches in 2006, it is revealed that the businesses' corporate social responsibility activities affect the consumers' brand choice by 43% in America, 20% in Europe, 23% in Latin America and 8% in Asia [11].

Corporate social responsibility is the main factor to manage the corporate prestige. Social responsibility campaigns corroborate the prestige of the businesses, increase their respectability and provide to be perceived at high rates (Coşkun, 2010:101). The prestige enables the brands to be realized and to be ahead of the game. According to Fombrun and Shanley (1990; Broon and Vrioni, 2001:210) the prestigious brands are more advantageous than the other companies at the market. Corporate measurable prestige reveals with social responsibility. There are four contributions that provide the relationship between the company and partners. These are: product and service quality for consumers; developing relationships with the employers; responsibility against the environment and communication; management quality, adaptation to the changes at the business environment and being proactive [12].

Corporate social responsibility has many benefits to the businesses. The major benefits are: creating a social identity, providing a competitive advantage, creating company loyalty, prestige and branding issues [3].

<table>
<tr><th colspan="2">Advantages for Business</th><th></th></tr>
<tr><td colspan="2">Increase in value of equity shares
Creating brand value
Active risk management
Providing prestige
Access to critical investors and financial sources
Increasing corporate image
Increasing benefit
Social prestige</td><td>Attracting and keeping the qualified employers
Corporate learning and creativity
Customer loyalty
Activity in businesses
Getting into new markets easily
Efficiency and increase in quality
Competitive advantage
Cooperation development</td></tr>
<tr><td colspan="3">Advantages for the partners</td></tr>
<tr><td>In-house partners</td><td colspan="2">Out-house partners</td></tr>
<tr><td rowspan="2">To managers:
To be honoured and glad
Human resources policies that improve motivation
More awareness for ethic subjects
Have more confidence in employers for the ethic tendencies
Act up to the trends
Adoption and internalization of the business purposes by the employers
Occurrence of creative ideas and practises</td><td colspan="2">To customers:
Fair price and qualified product
Information provision during purchasing process
Definition and fulfilment of the requests
Consideration and solution of the customer complaints
Act in an organized manner</td></tr>
<tr><td colspan="2">To competitors:
Information and comparison example
Fair competition, ethic advertising</td></tr>
<tr><td rowspan="2">To shareholders:
Increase of the investments to the company businesses
Easy fund provision to social responsibility investment projects
Increase in business value
Easiness for capital provision
Briefly sharing the information about the business
Social performance criteria setting</td><td colspan="2">To suppliers:
Correctness at pricing and payment conditions
Financial support for the suppliers that will support the activities</td></tr>
<tr><td colspan="2">To society:
Development of the human rights
Investment in education, health and culture fields
Preventing exploitation of woman and child labour
Contribution to sustainability</td></tr>
<tr><td rowspan="2">To employees:
Safe work environment
Active human resources policies
Better working conditions
Less conflicts at labour relations
Decrease in employment costs
Increase in in-house communication and efficiency
Equality of opportunity and rights of access
Improvement at worker standards</td><td colspan="2">To government:
Adherence to the laws, fighting against the corruption
Investment in public fields, supporting economic and social problems
Creating employment</td></tr>
<tr><td colspan="2">To environment:
Decrease of environment pollution
Protection of the cultural heritage
Protection of the flora and fauna
Cleaner production processes, power economy, recycling
Eco-efficiency
Usage of environmental technology</td></tr>
</table>

Table 1: Corporate social responsibility's advantages for the business and the partners Source: [3]

Awareness of the Ecological Environment

Ecology is defined as “a science that deals with the relationships between groups of living things and their environments” (Webster Dictionary). Ecology deals with the relationships between the living things and the nature. People and the living things mistreat the nature and this destroys the balance between the nature and life. “In any case economic development” understanding that started with the industrial revolution gave its place to sustainable development by the globalization. Western societies have started studies with intend to protect the global environment and tried to find solutions to resolve the problems between the economic development of the businesses and the environmental balance since 1980s (Kaypak, 2011: 19)[13]. For that reason, the companies’ responsibilities towards the ecologic environment were determined at Stockholm Declaration of United Nation Human Environment Conference. According to the declaration: “Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations “. The slogan of the United Nation Environment Program is “the world is not a heritage from our grandparents, it is the heritage we will entrust to our grandchildren”[14].

The environment problem that threatens our world’s future was first evaluated at Stockholm-Human and Environment Conference in 1972. The main target of the Stockholm Conference is the acceptance of the responsibilities towards environment by all of the countries, and thus it’s the basic of sustainability of human life on Earth. After Stockholm Conference, UNEP (United Nations Environment Pact) was established in 1972. UNEP supports that humans have right to live in a healthy and balanced environment consists of air, water and soil. After that, environment protection started to enter the texts of the European Commission, OSCE and European Union. According to our constitution’s 56th article, in Turkey[2] “Everybody has the right to live in a healthy and balanced environment. Developing the environment, protecting the environmental health and preventing the pollution are duties of the government and the citizens”. According to our constitution’s 90th article, “international agreements that are brought into force in due form are statutory decrees”. However, by virtue of recent investment decisions in Turkey, environment protection principles are regarded as obstacles that should be tackled with. For that reason, by introducing contrary laws against constitution and international agreements, the current environment regulations are changed in line with investment decisions [15].

2 THE CONSTITUTION OF TURKISH REPUBLIC (*) Law Number: 2709 Acceptance Date: 07.11.1982 ARTICLE 56-“Everybody has the right to live in a healthy and balanced environment. Developing the environment, protecting the environmental health and preventing the pollution are duties of the government and the citizens. The government exclusively plans and arranges the health institutions with the intent of providing sustainability of the people physically and mentally healthy and execute the cooperation by increasing savings and efficiency of the human and material power. The government fulfil this duty by benefitting from the public and private health and social establishments. A general health insurance can be executed in order to fulfil the health services widely”.

The wastes as a result of the human’s production and consumption cause environment pollution and decrease the liveable environments in the world. Population growth, urbanization, technological developments and industrialization are the basic reasons of environment pollution. These polluting factors cause air, water, soil and noise pollution. Fossil fuels and smoke-gases from the factories, vehicles cause air pollution; chemical and radioactive wastes cause water pollution; fertilization-pest control-over irrigation and erosion cause soil pollution and the high decibel sound causes noise pollution [16].

Environment protection ensures the sustainability of the ecologic balance. Environment protection program within social responsibility consists of two parts. These are protection of

the natural sources and prevention from the pollution. By protecting the ecologic balance, the sources can be used in most effectively way and thus, the social needs of today and the future are considered. Recycling is different way of protectionism [8]. For that reason recycling practices and retrench take place in environment pollution activities [7].

Using the sources effectively and having environmentally friendly technological equipment is important. While taking an economic decision, both benefit-cost analyses in and out of the business and external benefits should be considered. The wastes as a result of the businesses' products and services are evaluated as polluting and socially external costs. For that reason the businesses should make their investments without polluting the environment and damaging the society [17].

From the 1970s, a large number of internationally binding agreements and protocols were signed about environment in order to protect the air, water, soil, seas and ecologic environment. The international environment conventions to which many countries became a party to protect the environment and to prevent pollution are: 1971 Ramsar, The Convention on Wetlands of International Importance: 1972 Paris Convention concerning the Protection of the World's Cultural and Natural Heritage; 1972 Stockholm, United Nations Conference on the Human Environment; 1973 Washington, Convention on International Trade in Endangered Species of Wild Fauna and Flora; 1976 Barcelona, Convention on Protection of the Mediterranean Sea against Pollution; 1979 Bern, Convention on the Conservation of European Wildlife and Natural Habitats; 1985 Conservation of European Wildlife and Natural Habitats; 1985 Granada, Convention on the Protection of the Architectural Heritage of Europe; 1989 Basel, Control of Transboundary Movements of Hazardous Wastes and Their Disposal; 1992 Valetta, Convention on the Protection of the Archaeological Heritage of Europe; 1992 Rio, Convention on Biological Diversity; 1992 Rio, Biological Diversity-Climate Change-UN Forestation Principles; 1994 Paris, Convention on Combat with Drought and Desertification in Africa; 1997 Kyoto, Kyoto Protocol United Nations Framework Convention on Climate Change; 1999 Aarhus, Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters; 2000 Florence, European Landscape Convention; 2009 Cartagena, Bio-safety to the Convention on Biological Diversity; 2012 Rio 20, Conference on Sustainable Development (Union of Turkish Bar Associations, 2014: 5-6).

Our country got involved in many international conventions that lots of countries signed in order to protect the environment and prevent the damages and wastes from the businesses. Turkey is participant of these conventions: Florence, European Landscape Convention; Bern, Convention on the Conservation of European Wildlife and Natural Habitats; Barcelona, Convention on Protection of the Mediterranean Sea against Pollution; UN Convention on Biological Diversity; United Nations Framework Convention on Climate Change; Marpol, Convention on the Prevention of Pollution from Ships; Convention on Protection of the World's Cultural and Natural Heritage; Stockholm Convention on Persistent Organic Pollutants; Convention on International Trade in Endangered Species of Wild Fauna and Flora; Vienna, Convention on Protection of Ozone Layer; Convention on Combating Desertification; Ramsar, The Convention on Wetlands of International Importance; Convention on Civil Liability for Oil Pollution Damage; International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage; Control of Transboundary Movements of Hazardous Wastes and Their Disposal and Convention on Long-Range Transboundary Air Pollution (http://izindenetim.cevreorman.gov.tr/Access: 01-08-2016).

Besides the involved international conventions in order to combat with the environment problems and prevent the pollution, there are a lot of national and international civil society organizations. If the environmentalism understanding between the environmentalist civil society organizations and businesses is positive, they cooperate; unless they conflict. Determining their organizational targets, the businesses cooperate with the civil society organizations, this is called public relations. Environmentalist organizations' efforts

acquire more importance in the changing world [14]. On this purpose, these international environmentalist civil society organizations make activities: Greenpeace, WWF- World Wildlife Fund, OXFAM - Oxford Committee for Famine Relief, (WCS) Wildlife Conversation Society, (IUCN) International Union for Conversation of Nature, (KEW) Royal Botanic Gardens, (RSPB) Royal Society for the Protection of Birds, (Birdlife International) International Committee for Bird Protection, (DWCT) Durrell Wildlife Conversation Trust, (CI) Conversation International, Survival International. Some of the national environmentalist civil society organizations are: (TEMA) The Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats, (ÇEVKOR) **The Foundation for Environmental Protection and Research**, (TÜÇEV) Foundation for Protecting Environment, (ÇEKÜL) Foundation for the Protection and Promotion of the Environment and Cultural Heritage, (DOÇEV) Nature and Environment Foundation, (TÜDAV) Turkish Marine Research Foundation and (DHKD) Society for the Protection of Nature. In addition to these, Ministry of Environment and Forest, Ministry of Environment and Urbanization, Ministry of Culture and Tourism and Ministry of Agriculture and Rural Affairs are among the establishments that involve in the environmental problems in Turkey.

Businesses may take joint action with environmentalist civil society organizations while executing their corporate social responsibility actions related to the environment. Besides, environmental and green marketing concepts come into prominence within the frame of sustainable development in changing world during globalization process. Businesses give importance to increase their interest rate and respond to the consumers' sensibility about the environment. The reasons of environmentalist productions are: businesses take advantage of environmentalist marketing for their environmentalist purposes, they use these environment activities as a pressure factor to their competitors; businesses cooperate for decreasing the wastes, they exercise recycling activities that reduce the costs and they use the sources efficiently and the legal obligations [18].

Social Responsibility Examples Concerning Ecologic Environment

Businesses intend to create awareness for their target groups by their corporate social responsibility activities concerning the protection of the environment and pollution. Businesses cooperate with the companies, civil society organizations and their public relations departments in order to carry out their social responsibility projects concerning the environment. Some of the social responsibility

executions about the environment in Turkey are:

Akbank-Carbon Disclosure Project

Name of the project: Akbank – Carbon Disclosure Project

Corporation: Akbank

Public Relations Agency: Image Public Relations

Time: 11-01-2010 / 01-01-0000

Content

Akbank has supported the Carbon Disclosure Project (CDP) in cooperation with Sabancı University in order to minimize the effects of their practices towards the nature since 2010. The project is a non-profit corporation that evokes the businesses to explain their policies related to greenhouse gas emissions and climate changes and make comparison between the sectors within the direction of this information. 2500 businesses from 60 countries gauge their greenhouse gas emissions with Carbon Disclosure Project and inform the public about their routes concerning the climate change. The businesses which may find chance to explain their strategies in this field in the right place are noticed by international

corporate investors. According to the project report of the first year with 20% participation, 10 companies (that are involved in Istanbul Stock Exchange Index-50) and a volunteer company participated in the project. Akbank is the first and the only corporation that represents Turkey at 2010 Global 500 report by participating in Carbon Disclosure Project that prepares the only global report about the climate change in the world (http://www.altinpusula.org/pdf/10-ap-kitap_1397485469.pdf / Access: 02-08-2016).

Children's Fruit Gardens

Name of the Project: Children's Fruit Gardens

Corporation: Coca Cola Turkey / Cappy

Public Relations Agency: Caretta Communication and Consultancy Limited Company YADA

Time: 01.09.2009-30.06.2011

Content

Cappy executed "Children's Fruit Gardens" project with Ministry of National Education and Ankara University, Centre of Practice and Research the Development Studies (AKÇAM). It is intended to change the suitable areas of the primary schools into fruit gardens, students' participation in planting and caring the saplings and thus gain experience about sapling growth. The children grow with the fruit gardens.

Within the frame of the project, the number 1500 people including students, families, managers and teachers in Istanbul and Izmir participated in 2009. The project carried out in 7 cities (Ankara, Istanbul, Izmir, Bursa, Adana, Antalya and Gaziantep) at 70 schools and 2800 students participated in 2010. 70 fruit garden clubs were established in order to carry out the caring of the fruit gardens. Festivals and opening ceremonies conducted with the public participation during sapling planting. The project was announced to the country by a national publicity campaign. In consequence of the project, 70 fruit gardens were established on 22.000 m^2 area by planting approximately 3000 saplings (http://www.altinpusula.org/pdf/10-ap-kitap_1397485469.pdf/ Access: 02-08-2016).

Leo PR / MS&L Turkey "Tema / Seize" Project

Name of the Project: Tema / Seize

Corporation: Leo PR / MS&L Turkey

Public Relations Agency: Caretta Communication and Consultancy Limited Company YADA

Time: 00.05.2005-21.03.2006 (Project advertisement date)

Content: TEMA is a civil society organization that deals with the environmental problems in Turkey. "Sustainable Development Project" is renamed as "Seize" in order to prevent the fertile soil loss, raise awareness of the public, motivate and provide perpetual income and support. Announcement of and support to the project are to motivate the public by raise their awareness of preventing the fertile soil loss. The ultimate aim of the project is to help to grow up responsible and sensitive individuals that have environmental consciousness, care about the desertification danger of Turkey and support the development.

Due to the campaign, 6 of 10 targeted villages were economically supported. 5 villages were supported by big companies (Ülker, Evyap, Metro, and Cash & Carry). From the sales of the t-shirts, scarves, shorts etc which were prepared by the volunteers (Boyner, Kaprol and Memecan, Vakko), 12.000 TL was earned and as a result of the donation program aired on CNN Türk 150.000 TL was collected. Campaign's 2 years target was reached at 10 months. This project had widespread media attention. Writers such as Hakkı Devrim, Tuna

Serim, Meral Tamer and Ayşe Aygör provided the publicity of the project [5].

"Falım" We are Instilling Love to Gumwoods Project

Name of the Project: We are Instilling Love to Gumwoods

Corporation: Falım

Time: 2008-2016

Content

Falım targeted at planting 20.000 gumwoods at the 149 hectare area of Izmir Advanced Technology Institute on Çeşme route, in order to awake the historically and locally valuable gumwood culture, contribute the income of the locals in Aegean Region and draw attention to the gumwoods which are almost extinct.

Due to the ecological balance that only exists in Aegean Region, the hometown of the gumwood is considered as Çeşme Peninsula and Chios. Falım gum brand hosts the project as it established its corporate identity and brand on "protection of traditional and local values" and as its bestselling product is "gum mastic". In order to advertise the campaign and raise awareness, "We are Instilling Love to Gumwoods Project" was announced to public by a press meeting in October, 2008. Television advertisements, documents on National Geographic Channel, activities in Alaçatı and Çeşme, private programs on radios and store activities were executed and the celebrate Mehmet Okur supported the campaign within the scope of the project. In consequence of the campaign: the aired campaign advertisement received more appreciation than the other gum advertisements; project awareness reached to 47%; Falım's brand image strengthened at 87% rate; it is selected as "The Greenest Project of the Year" by MediaCat readers in 2009 [5].

General Assessment

Organizations carry out social responsibility practices on various fields (health, education, culture, sport, art etc.) for the benefit of society. One of the important areas for the social responsibility practices is "environment". The businesses carry out social responsibility practices concerning the environment through their targets with intend to create positive image, prestige and brand value, sustainable development and bring the businesses to future. In the globalizing world, in order to reach a different position than their competitors and increase the benefit rates, the businesses have to respond to the voice, expectations and needs of the public with the projects and practices.

As a result of the legal rules of international agreements and the pressure from the civil society organizations, businesses' responsibility towards the environment and the public increases. For that reason, the businesses prepare report related to investments based on social responsibility. Dow Jones sustainable index is one of the indexes that determine the social and environmental criteria during the businesses' international investments on social responsibility. This index shows that businesses have social and environmental responsibilities to attract the funds from the investments and these social responsibility performances are evaluated by the global companies, moreover the companies with this index have more benefits than the traditional company performance. Some companies make investment only to the companies that show socially and environmentally suitable performance and this situation strengthen the economical energy of the businesses in long term (Thompson and Zakaria, 2004; Clikemen, 2004; Başar and Başar, 2006: 215). Companies that prepare social responsibility reports build trust during the negotiations with the partners and increase the transparency; contribute to increase the market share, customer loyalty and brand value; promote and ease the application of management system in order to track the environmental and social risks better; help the businesses to show their awareness for environmental and social subjects [19].

One of the important factors that develop the social responsibility is "sustainable development". Sustainable development was first mentioned at United Unions Environment Conference in Stockholm, in 1972 and it was described in "Our Common Future" report in 1987. The main purpose of the sustainable development, which has economic, social and environmental dimensions, is "this generation's fulfilment of their needs without removing the next generations' talent for fulfilment of their needs". For that reason, within the scope of corporate social responsibility, corporate sustainability is both an obligation and a strategic fact to stand out among the rivals in the sight of the society. Establishing a balance between the environment and human, the businesses can provide development with sustainable development without consuming the next generations' needs [20]. The focus of the sustainable development is protection of the environment. While developing, the environment shouldn't be damaged; development and environmental sensitivity shouldn't conflict with each other [20].

In spite of these developments about corporate social responsibility and environment today, corporate social responsibility is evaluated as a part of public relations in Turkey. Laws at the national and international agreements about the environment are seen as obstacles and environment protection laws are tried to be changed [15]. Nonetheless, corporate social responsibility is an important fact that is advantageous for both the ecological environment and the business; brings the business to the future and raises the economic performance in long term; increases the image, prestige and brand value of the businesses.

Result

Corporate social responsibility is a concept that came into prominence in the later 20th century and its effectiveness is increasing. As a multi-dimensioned concept, corporate social responsibility involves various factors such as brand, image, prestige, sustainable development, public relations, communication, media, marketing etc.

Corporate social responsibility practices are executed about the environment in order to prevent the hazards that businesses cause to the environment and the environment pollution and to provide recycling. National companies which execute corporate social responsibility practices draw the global companies' attention at international platforms and the economic size grows. At the same time, the public keeps these businesses ahead because of their social and environmental sensibilities.

Corporate social responsibility practices concerning the environment are supported by both national and international laws and civil society organizations. Moreover, the businesses cooperate with the civil society organizations while executing corporate social responsibility practices. Today, corporate social responsibility continues its existence with increasing importance as a strategic communication management because of its benefits for the business, society and the environment.

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The New Path of Green GDP in China

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Introduction

Gross Domestic Product, also known as GDP, is the conventional index in measuring the productivity from the prospective of economic growth. In other words, it is the monetary value of all the finished goods and services produced within a country's borders in a specific time period [1]. It can be measured within a country's border or in a region, and the time frame can be quarterly or annually. An alternative concept, gross national product, or GNP, counts all the output of the residents of a country. The OECD defines GDP as "an aggregate measure of production equal to the sum of the gross values added of all resident and institutional units engaged in production, plus any taxes, and minus any subsidies, on products not included in the value of their outputs [2]. Total GDP can also be broken down into the relative contribution of each industry or sector of the economy [3].

GDP is the world's most important macroeconomic indicators, has many advantages. First, it covers all the industrial activities generated by the material and non-material production sectors, which reflect the economic situation within the statistical scope comprehensively and systematically; secondly, it calculates the sum of added value of all sectors, effectively distinguishing the transfer value and new Thirdly, it can provide detailed information on the economic operation status of various industrial sectors, which will help the industrial sector in the convergence and overall balance; Fourth, the production and promotion of GDP will help In countries on economic control, good service to the world economy [4].

By definition, the monetary value is created when the finished goods and services is transferred or delivered from one hand to the other in the market with a price tag. For example, when household cleaning services is provided to customers by a company, the GDP of a country has been increased through the transaction. However, as it represents the computable value in a market, when the same service is performed by one in a household, no GDP is considered to be added to one country's economic growth.

Similarly, when the raw materials such as timber, water and mineral resources are exploited or used during manufacturing process, GDP should increase because it usually involves with certain transaction in acquiring the materials. However, when the natural resources stay untouched in natural state, no GDP appears by the commonly recognized definition. As a consequence, the concept of t economic growth has been actively encouraging governments and companies to exploit natural resources and produce as many commodities as possible to increase the GDP. The biased calculation for the value in one country or in one region has brought catastrophic results to lots of developing countries over the last

few decades through the low-wage based industrialization that almost countries have gone through. Take China for example, its GDP has grown in the rate of 7% per year since 1990s till now, following the renowned economic reform since 1978 led by Deng Xiaoping [5]. In exchange, China has suffered from the notorious airpocalypse in major metropolitan areas such as Beijing and Shanghai due to the pollution from the nearby manufacturing activities. In January 2013, the monitoring stations in Beijing recorded particulate matter 40 times higher than guideline levels set by the World Health Organization (WHO) [6]. Estimated 1.6 million people in China die premature in 2015 due to the air pollution, and that more than 70% of China's groundwater is polluted. If that number is not unreasonably high enough, it represents 4,400 deaths per day in China because of air pollution [7].

The problem associated with the conventional in calculating GDP has therefore raised huge concerns to the economists, environmentalist and policy makers worldwide. When China's environmental crisis becomes one of the most pressing challenges to emerge from the country's rapid industrialization, environmental degradation does not only appear in China, but worldwide. In fact, China's air pollution has been proved to spread to the western U.S. across the wide Pacific Ocean [8]. A recent research has quantified the relationship between the pollution extent in the U.S. and China. This is just one example that recent researchers proved the correlation exists for transboundary pollutants in different continents. The other dire issue related to China's growing GDP is the rapidly increase in greenhouse gas emissions, which tends to intensify climate change globally. This could eventually results in even worst catastrophe if the increase in temperature is not controlled within 2 degrees based on the findings of Intergovernmental Panel on Climate Change (IPCC) [9] All of these pressing issues have urged us to re-examine and re-design the definition of the conventional GDP.

Alternative Indicator: Green GDP

The formula for GDP is quite straightforward by adding several numbers together:

$$GDP = C + I + G + (Ex - Im).$$

It means that GDP equals to consumers plus investment by businesses, government spending and net exports. Although the current GDP has so many drawbacks, it is by far the most commonly applied formula in calculating a country's monetary value. The concepts of adding all the computable numbers altogether has made it the easiest standard in comparing the productivity of a country with another in terms of ranking. Recognizing the imperfection of GDP formula, many economists has considered the alternative indicator – Green GDP to correct the neglected value of natural resources, clean water and air.

Unlike the conventional formula for GDP, green GDP takes environmental consequences into consideration while computing economic growth. Still developing and definition varies, Green GDP typically can monetize the loss of biodiversity, or the costs caused by climate change. This will allow a mechanism to identify the wealth and assets that underlie gross output [10]. Green GDP was first introduced in 1972 by William Nordhaus and James Tobin to measure the annual real consumption of households, called the Measure of Economic Welfare (MEW) [11]. In 1989, Repetto discussed the impact from the failure of resource-based economies to account for the depreciation of their natural capital could have [12]. Green GDP has grown more than 25 years since then and has gradually become more and more important, as governments face severe environmental challenges at a much higher frequency than before.

Development of Green GDP in China

More than a decade ago, China's government has made several attempts to incorporate natural capital into its GDP, but did not succeed. China first embraced the implementation of green GDP in reflecting the environmental consequences to truly realize the value of natural

capital in 2004. The task was led by the Bureau of Statistics and Ministry of Environmental Protection (MEP). The Green GDP indictor used then, was calculated as conventional GDP minus the input of natural resources and costs to environment. Wen Jiabao, the Chinese premier, announced that the green GDP index would replace the Chinese GDP index itself as a performance measure for government and party officials at the highest levels.

At that time, the experiment was supported in some areas. In October 2004, when the green GDP accounting pilot work was initiated, Zhejiang Province immediately expressed strong interest in a few months after the start of the pilot work. It is noteworthy that the then General Secretary of the Zhejiang Provincial Party Committee was Xi Jinping, the current General Secretary of the Communist Party and the President of China. Xi stated that, "inefficient model of economic growth caused many problems in resources and environment, which is forming a forced mechanism and pressured Zhejiang Province to a node position." [12,13] This expressed Xi's deep concerns over the extensive economic model that China encouraged.

Pan Yue, associate director of the MEP said that One of the purposes of establishing green GDP is to "promote ecology and greenness" among leading cadres in the decision-making process. To promote the self-awareness among the leading cadres has long been emphasized by the high authority of the Communist Party as one of the core managing rules. Nevertheless, one might find unexpected that China's first attempt to initiate green GDP was not for benefit of the general public as a whole, but more into the training towards its leading cadres. Even so, this still gave China a chance to probe into the serious issues of environmental degradation in early 21st century.

The first governmental report is the Framework based on the Green GDP, published in 2001. It set up the framework according to the international experience and the actual situation in China. The basic idea and method of the accounting are clarified, the basic accounting contents are defined, and the basic accounting table is defined to provide the overall framework guide for specific and local environmental accounting [14]. Additionally, the first green GDP accounting report, for 2004, was published in September 2006. It is called the China Green National Accounting Study Report 2004 (Public Version) [15-16] These two reports are the corner stones of the China's green GDP development and laid a solid foundation for the establishment of green GDP.

The Study Report consists of three parts: (1) environmental physical accounting; (2) environmental value quantity accounting; and (3) accounting for GDP adjusted by environmental pollution. The so-called physical quantity accounting, is based on the national economic accounting framework, the use of physical units (material Units of measurement) to establish different levels of physical accounts, describing the economic activities corresponding to the production of various types of pollutants volume, removal (handling capacity), emissions and so on. In the Study Report, it separates the physical quantity accounting to water pollution, air pollution and solid waste pollution. It also contains the volume of pollutants and the sector which is responsible for the main contribution.

The environmental value quantity accounting is based on the calculation of the physical quantity, to estimate the various environmental pollution and ecological damage caused by loss of monetary value. The value accounting of environmental pollution includes the virtual treatment cost of pollutants and the nuclear cost of environmental degradation. Respectively, the use of governance costs and pollution losses. Mainly include the following aspects: the regional water pollution, air pollution, industrial solid waste pollution, urban domestic waste pollution and pollution accidents accounting for economic losses. It also includes the pollution accidents accounting for economic losses calculated by each department.

The environmental adjustment of GDP accounting, that is, the economic activities of environmental costs, including environmental degradation costs and ecological damage

costs are deducted from GDP and adjusted to arrive at a set of combined indicators from the center of the comprehensive domestic output (Environmentally Adjusted Domestic Product, EDP). The result showed that the financial loss caused by pollution was 511.8 billion yuan ($66.3 billion), or 3.05% of the nation's economy. In that year, China enjoyed 10.1% GDP growth rate, one of the highest in the world [17]. This means, China's GDP should deduct the 3.05% to truly reflect enormously expensive costs in consuming environment.

Based on the joint statement of Qiu Xiaohua, director of the National Bureau of Statistics, and Pan Yue, this number is even underestimated. China's green national economy should account for at least five major items of environmental degradation costs, including environmental pollution and ecological damage, and the cost of natural resource depletion, such as arable land, minerals, forests, water resources, fishery resources. Limited by the lack of data and statistical techniques, in 2004 they only calculated the environmental pollution costs of environmental degradation. Of the 20 environmental pollution loss indicators, only ten of them were calculated when the Study Report was made ready. But even so, the results have been so staggering [18].

The implementation of green GDP is not welcome in every department in China. At the Economic Summit Forum," then the National Bureau of Statistics Li Deshui, has objected publicly against the calculation of the green GDP while other countries still do not use it. He raised the issues such as auditing complexity towards green GDP, which can be extremely difficult and subjective, yet with recognized standard. He cited the Huaihe River as an example. "If the sewage from the upper reaches of Henan has affected downstream Anhui, according to the green GDP, is the tax deducted for Henan or Anhui?"

Not surprising, China's government retreated from the implementation of green GPD once the number is published. The reason for terminating the program is never revealed. But in 2008, China's government has abandoned to work on obtaining the value of green GDP completely accordingly to the report [19]. And the officials in the Bureau of Statistics considered the implementation of green GDP in China is mission impossible in 2006 [20].

However, continued eruption of environmental pollution across the continent, so that Chinese President Hu Jintao, Premier Wen Jiabao did not take it lightly and explicitly supported the green GDP research. An environmental expert, who asked not to be named, said the Chinese government restarted the study, saying that it was right to admit that the idea was correct, but took a detour in the middle. The current leader has long recognized the importance of the Green National Accounting System, so it is necessary to re-launch the study. As a result, at the beginning of 2011, green GDP reservations Li Deshui, was removed from office and Qiu Xiaohua, who is more active in promoting green GDP took over the National Bureau of Statistics. At a sudden, Beijing, Tianjin, Chongqing, Hebei, Liaoning, Anhui, Zhejiang, Sichuan, Guangdong, Hainan and other provinces and cities have also taken the initiative to join the pilot project to produce local green GDP [21].

In 2013, at the national organization work conference, President Xi stressed that China can no longer depend on GDP growth rate to determine who is hero. Instead, China needs to improve the assessment of economic and social development evaluation system. At the same time, resource consumption, environmental damage, ecological benefits and other indicators must be included to reflect the status of ecological civilization and consider these numbers into the economic and social development evaluation system [22]. In the Third Communication of the 18th Central Committee of the Communist Party of China (CPC), it clearly put forward the "designated ecological protection red line," which for the first time emerged in the official document of the CPC Central Committee [23]. The designation of the ecological red line is particularly meaningful because it represents the central government's decision in combating the limitation caused by environmental pollution. To broaden the channel in financing the development of many national policies, such as green GDP, China created the culture property rights exchange to encourage the open trade transactions among the stamps, currency and electronic cards with value. Through the newly established exchange platform, China's government received significant transaction tax revenues while

promoting the development of culture industry instead of manufacturing. This is become the most popular channel in investment among China since 2015 and continues to grow [24].

Obstacles of the Development of Green GDP in China

As discussed above, the operation of green GPD is uneasy, mainly for two reasons. First, most local officials have a weak awareness of environmental protection and do not really realize the importance of protecting the environment for sustainable development. At the same time, for determining the traditional performance appraisal, GDP is the largest proportion of performance appraisal indicators. For this reason, some local officials believe that the implementation of green GDP will affect their own political future, and that might be true if the higher authority still use the conventional GDP as indicators for political performance [25]. This is probably the major concern for local officials to implement lots of proactive environmental policies, including calculating green GDP and giving up potential opportunities in profiting through development.

The second reason is the standard has yet be set up and renders the system fairly vague to follow. Many have criticized that the value of clean air or clean water is not up for calculation, meaning most natural resources are free public goods and should not be put a label of price. This argument is a double-edged sword. One one hand, it correctly depicts the character of natural resources or clean air or clean water, that they should be shared by public at large and it is hard to determine the value of it. On the other hand, the argument is misleading as it tends to picture all the public goods "free" and therefore has no value.

Think about the pain and suffering in any torts case in the U.S., the insurance company will usually use the actual damage from the hospital bills or lost wages as base number, then times it to certain index ranging from their experiences that are acceptable by the plaintiff. Many plaintiffs' attorneys use the method for calculating pain and suffering. Alternatively, many plaintiffs' attorneys use a per diem, or called per day approach. Based on the method, a certain amount is assigned to every day from the day of the accident until the plaintiff reached maximum recovery [26].

Similarly, the same approach can be used in providing the formula in calculating the value of natural resources. For example, how much will it cost to purchase bottle water per person if there is no drinkable water from the pipe? How much does it add to one household's electric bill by purifying polluted air through the air purifier? The loss in monetary value could be one indictor in determining the value of the natural resources, and help reflect the value of them. Also, this can be evidenced by the evolution of GDP throughout the years and could be eventually quantified by more complete equation. Same for the green GDP.

Conclusion

As China's government realized how important it is to re-launch the development of green GDP, it shows the hope in dealing with the rapidly worsening environmental problems but also alarming how pressing the issues are. Like the iceberg from the sea surface, the real problem is usually worsen than one can see. To effectively implement green GDP, China has to make several reforms in the prospective of political, economic, regulatory and statistical. On the political level, CPC should alter the performance rating for officials based on purely economic growth, regardless of the environmental consequences that may bring. Only with fundamental changes in official performance appraisal system will allow the local officials to really follow the guidelines in accessing green GDP and to avoid degrade environment. On the economic level, China is facing overcapacity in production and the need for industrial transformation. This could take years, if not decades, to shift away from the position of world factory.

It is essential for the central government to accelerate the transformation and promote service sector or manufacturing in more sustainable model. The regulations and rules ought to follow up for backing the implementation of green GDP policies. So it becomes clear for the officials and public to abide. Last, the Bureau of Statistics plays an important role in

evolving the fair and acceptable principles to compute the value of green GDP. All the tasks are equally indispensable to successfully bring green GDP back to life, while the political and economic changes should be taken info actions the earliest for laying the foundation. With China's government strong calls to the benefits of green GDP, it is promising that the prosperity of economic growth in China will no longer suffer the environment without second thoughts.

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Restoration process of Kastamonu-Tufekciler Village houses for potential eco-tourism purposes

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Abstract

In modern times, there is a need for the real world to translate to the virtual environment usingthree-dimensional visualization for the restoration and promotional modeling of historic sites in protected areas. Visualization models have also become a very important basis for the creation of three-dimensional Geographic Information Systems. The protection of historical and cultural heritage and documentation in Turkey as well as other parts of the world is an important issue. This heritage is a bridge between the past and the future of humanity. In many cases, historical and cultural heritages suffer neglect for reasons arising from natural causes. The purpose is to determine the current status of the work and documenting of information from the selected buildings. This process is important for the conservation and renovation work that might be done in the future. Kastamonu is one of the historical cities in Turkey with a number of historical buildings. However, Tufekciler Village is not famous or popular with visitors, even though it includes several historical buildings and a peaceful landscape. Digital terrestrial photogrammetry is one of the most important methods used in the documentation of cultural and historical heritage. First, measurements such as picture size were made that primarily focused on creating polygon mesh and 2D model drawings of the structures to be modeled onto images for the move to digital media. Second, a restoration project was offered to the village with aconcept of ecotourism forall scales, from interior space to landscape design.

Keywords: Ecotourism; Restoration; Sustainability; Cultural Village; Design

Introduction

Startingfrom the perspective of conservation efforts in the restoration of historic monuments, restorationshowed up to protect the historic fabric and urban development. Historical environmental protection and renewal objectives are to ensure cultural and historical continuity and the identity of revitalization while maintaining healthier living conditions in line with a contemporary historical environment and to evaluate historical structures for the protection of the urban landscape and traditional settlement patterns. Changing lifestyles should be in harmony with nature rather than man's humane urban fabric, and the technological development of the city has unknownspeed to occur [1-5].

The process of making peace with a city inhabited by people, starting with the planning approach and then ongoing protection principles and decisions, covers a range of urban design projects and application work enshrined in the third dimension. Modernization is preserving the cultural identity of our city and is really considered the most important source for the future accumulation of the past. It is a vital necessity. The same attention is given to protecting the cultural heritage and dignity of different cultures and to ensuring the entrenchment of peace and brotherhood in the global world, and it will create a driving force in the development of a rich and colorful cultural mosaic. People under the influence of climatic and topographical elements have demonstrated unique designs that harmonize with their own cultures [4-6].

Kastamonu managed to enter the list for the configuration of the house after examining the design criteria and emphasizing the importance of transferring it to future generations. Due to the climatic conditions experienced in Kastamonu, the open courtyard of the Turkish wood house was converted to a different plan that resulted in a covered courtyard shape. The main floor has a sofa in the living room and a hall next to it. Although this type is to be found in cities such as Kastamonu as the planned house, it is said to have the most beautiful examples in Kastamonu [7,8,9].

A number of Kastamonu houses are facing the danger of extinction today. For the nearest house in a neighborhood with a lot of time, it was found that the neighborhood, which consisted of about 10 houses, had been completely destroyed. Natural and cultural heritage and the number of houses to be protected by the Protection Board hasdeclined as the days go by [10-15].

The future of the structural elements used in homes in Kastamonu to date have not been given the required importance in photographs for generations and were made in order to ensure the transfer. Houses need wall updates, wooden windows and doors, and corner windows, and attempts were made to introduce them [4,5].

Only one of the Kastamonu 400 to 500 immovable cultural properties situated in the city center constitutes more than a century of civil architecture. After the Western Black Sea region of registered civil architecture, building stock makes up the majority of the city center in the ranking. In terms of Kastamonu Inebolu host density, Stone Bridge comes, and Tosya is our district. Mansions in Kastamonu stand out in the preservation of the cultural identity of the city, along with other historical buildings. Civil architectural elements are due to various factors in Kastamonu geography. In terms of human geography, they are in accordance with local building techniques and offer a rich diversity in design. At first, the elements of the different architectural design and aesthetics of each building's facade is being brought to life, especially the most important features of the mansions located in the city center. This is significant in the sense that "Kastamonu Mansions" are not the emergence of a phenomenon, and 400 refers to the presence of different architectural typology. This features Kastamonu in thousands of years of culture, especially in the Emirates and as an administrative center during the Ottoman period, and managers, civil servants, soldiers, artisans, and traders from all over the country explain the nature of eclecticism here as

coming from the existing cultural infrastructure of the merger with their own cultures ([4,8,12,13].

Another important difference in Kastamonu mansions arises when compared with other cities that are famous for their mansions. Kastamonu is on the ground floor of the two-story mansion and is not deaf, as in other cities, where one to one floor is the life, and the daily life begins to drop. The common areas of the first floors are used for family life, and the second floors are designed as dedicated private spaces for guests of the house.

The basic idea of civil architecture in the building structure is to use your neighbors to block the sun for shade and to block the view. This is the best way to evaluate the area, where in one of the mansions in Kastamonu it is seen in the best form. Painted with ocher façades of the API in red and especially blue, they provide a striking beauty with colors such as white.The houses often have discrepancies in the benchbecause of their steep slopes. With the two-story façade showing, the rear façade shows four times the actual height of the mansion.

Due to the structure in the main mansion, applications include double staircases leading up to the upper floors in the interior, and the apartments are made in a way that meets the needs of style independently from each of the other floors. This is the type of structure that we place on the beach along the Black Sea outside Inebolu, Abana, and Bozkurt, and it can also be seen in Catalzeytin and other settlements.

Protected settlements, not dead museum areas, and living environments contribute to the planned development of the region or city in which they are important. However, the conservation and restoration of mostly carried out renovation work on historic buildings, gardens that complement the buildings, and streets are included in part of the urban equipment protection work.

Therefore, I aimed two queries on the research for “In the history of environmental protection and renovation work, what is the relationship of protection and landscape architecture?”In this context, the Daday specific recommendations were intended to improve the urban landscape design principles of a local governance model. Kastamonu with dense tissue in a historic area of research in the Daday District has been selected.

Material and Methods

The main material of the research constitutes the historical texture of Daday. This area was chosen because of the intense presence of historical buildings to be used, the socio-cultural structure continues to be present, and the protection of the village is primarily from this area. The District Daday has houses of 1/500, 1/100scale urban layouts. Date photos were obtained from the survey work done on the tissue, camera shots, sketches, and verbal interviews with those living in the area. On the subject of public institutions, universities, and libraries, theses, papers, and documents were obtained from domestic and foreign books and the relevant Municipality of Kastamonu. Other information was obtained from interviews with competent people from universities and public institutions and Internet browsing, and AutoCAD 2016 is used in the creation of map software. The research was carried out in several stages.

Literature and Data Collection: This phase was formed in part through the preparation of the theoretical foundations related to the research topic, and the other part of the plan to Daday, sketches, photographs, etcetera, are provided as graphically visual data. Fieldwork: 1/100 Daday Reconstruction layouts treated with tap sheet dateare compared to the spatial properties of the existing situations in the field. These layouts have courtyard-garden-street relationships, floor heights in the study area, ground floors, land use, ownership, decisive points, dominant view points, nodes, and transportation system layouts. Also, photo and camera shots are made in the field, and those who were born or who grew up in Daday were interviewed.

Tufekciler Village is located in the province of Kastamonu, Tüfekci in Daday. The village Tüfekci map position 41° 27'28.0728" North and 33° 26'38.6628" East are the GPS coordinates. Tufekciler Village is 3 kilometers away from the town center and is connected to Daday. The distance from the village Tüfekci to Kastamonu city center is about 29 kilometers.

Creating a Work Team

The working team at Kastamonu University Department of Landscape Architecture constitutes 36 students attending their fourth semesters. The experts made a way for students by means of a research assistant and an assistant professor. Students are required to participate in the study as a participant in the group with the aim of producing different options by dividing the essence. After speaking to the owner of the house, they commit to areas requiring attention. Face to face interviews were conducted with local landlords. In this way, it has been studied by the expert group who created different perspectives and produced different recommendations for each building.

Students were selected for case analysis and functional analysis of the existing building distribution for each building.

Discussion and Conclusion

Natural and socio-cultural characteristics of this part of the research were examined. In the analysis, 15] roads were used during visual analysis, decisive points, nodes/focus, and borders to the extent processed on an existing case sheet on the basis of strengths and opportunities and constraints and weaknesses, and owned research analysis was determined.

It used a two-story residential building with numbers located at or adjacent in discrete order, usually available in the garden in the rear. Floor heights and roads were planned on a human scale. Roads were very narrow with trees and an organic structure.Wooden houses located in the historical district bear the characteristics of Kastamonu province. Homes usually have two-story stone foundation walls and wooden upper floors, and roofs are covered with Turkish-style tiles.

For date of tissuestructures built forthe public before 1930, the overall garden structure relationship can be observed in three different ways. A garden has a small garden and large garden structures.The entrance to the street or directly from the street to the building structure is in the garden. Another option is given a second entrance from the street corner, especially in construction. The main façade is located toward the street, and the floor of the courtyard is stoneor compacted soil. The walls are made of stone or brick. The houses have small garden coniferous shrubs and not much space for trees. It is mostly used as a vegetable garden, and fruit trees are preferred. Other facades have garden walls as a vertical limit of the street, and factors that affect visual perception have been considered. Floor height between the street and the street width (in general1:2 to 1:3) was found to be the rate. This rate, along with people's perception of historical building facades, provides a sluedstreet.

We identified the physical and socio-cultural situation in the field of research with this analysis, and the history of environmental protection and renewal operations during the strengths and opportunities of assessment have been investigated along with what could be done for the elimination of translating and restricting the strength status of weaknesses.

Analysis showed that protecting the city's original housing pattern leads to the existence of people living in sustainable traditions in order to be close to the natural and cultural history of the area. This has been identified as a research strength.

As well as leading to the complete restoration of dense housing and ancient trees, it involves supporting the strengths that have no research that contributes to the urban identity of the natural formation. This is a positive approach to the issue of environmental protection in the history of the municipality, and the date of the public and environmental protection as a historical tool in protecting the environment is good for tourism activities when opportunities need to look hot. However, there is an absence of the hierarchy path for transport, and it is narrow and not suitable for vehicular traffic due to steepness, activity, and other inadequacies. It is not far from the research areas and will provide open and green spaces that allow for passive recreation but with a lack of pedestrian areas, historical buildings for today's nuclear family model, and the great interiors of the study area. These are the weaknesses of the changes to be made, as they are far from the comforts of modern life. Also, the street with the completed restoration of several historic buildings is located in the garden in the neighborhood, and ignoring compliance with urban equipment has led to an increase in weaknesses.

All students are in restoration façade houses with doors, windows, walls, and gardens. All of the sides of houses are restored. As shown in Figures 1-12, there are restorations of the houses by making all the students carry out the research in the above mentioned materials and methods, concluding with a series of suggestions for the maintenance and environmentally-friendly restoration of architecture and,thus,for the improvement of restoration conditions and ecotourism performance of traditional buildings. Proposals concerning the building envelopecan relate to the façade, doors, windows, walls, inclines, flat roofs, open areas, and gardens.

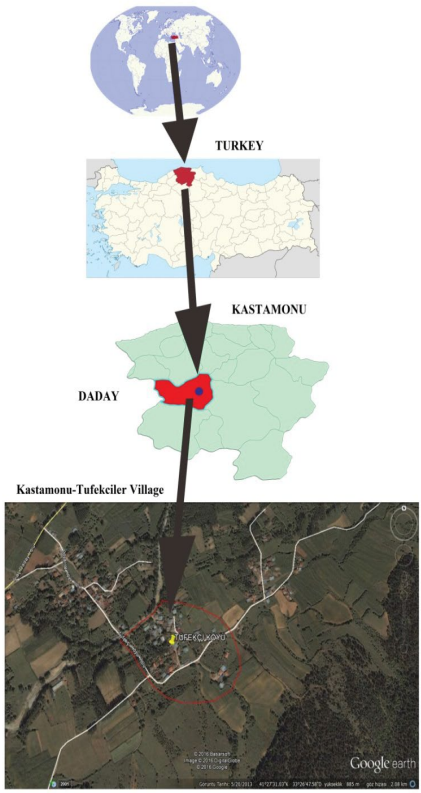

Figure 1: Location of study area by Ugur Canturk.

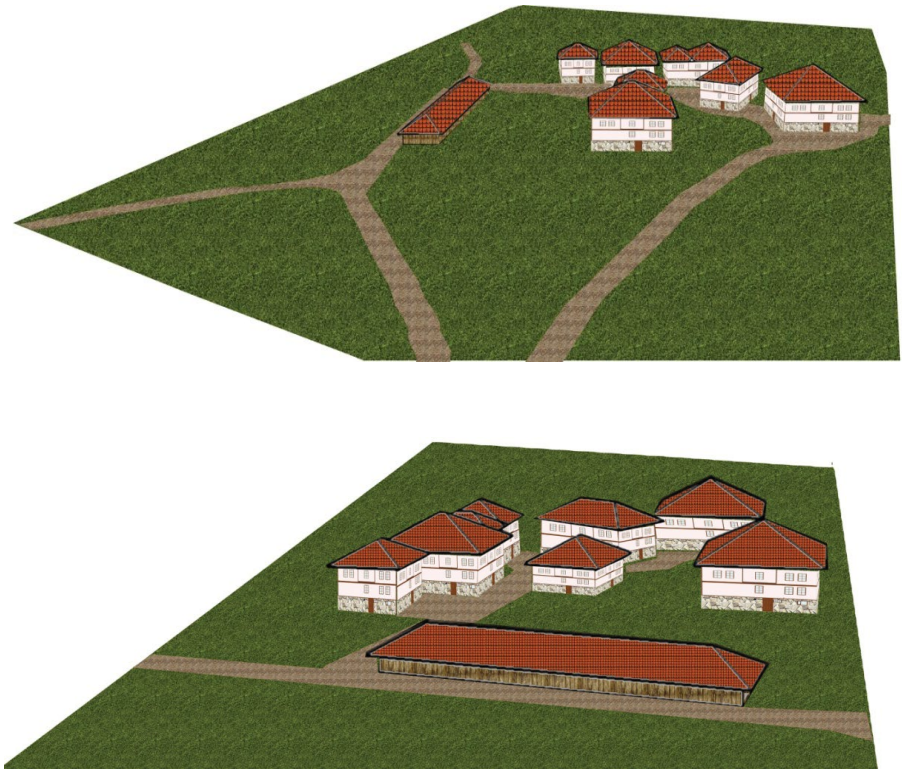

Figure 2: General view of village by Ugur Canturk.

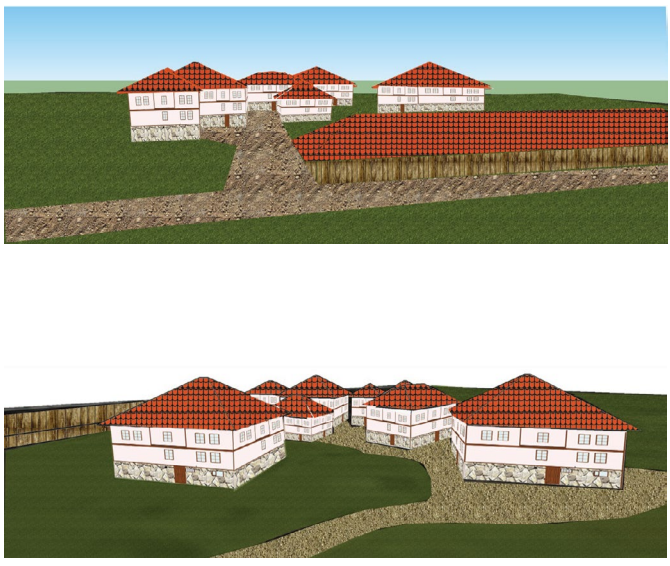

Figure 3: Facade of house by Ugur Canturk.

Figure 4: Restoration walls of house by Ugur Canturk.

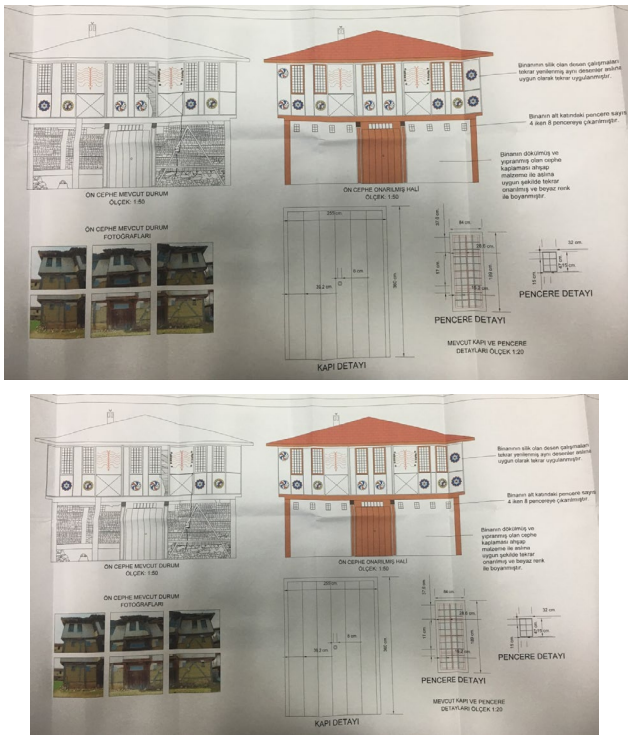

Figure 5: Restoration walls of house by AhmetSaat.

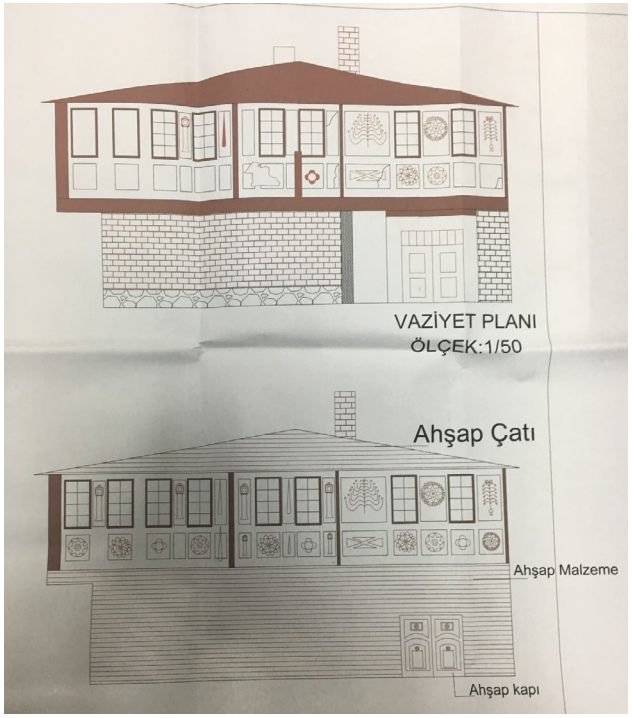

Figure 6: Restoration walls of house by Omer FarukSulhan.

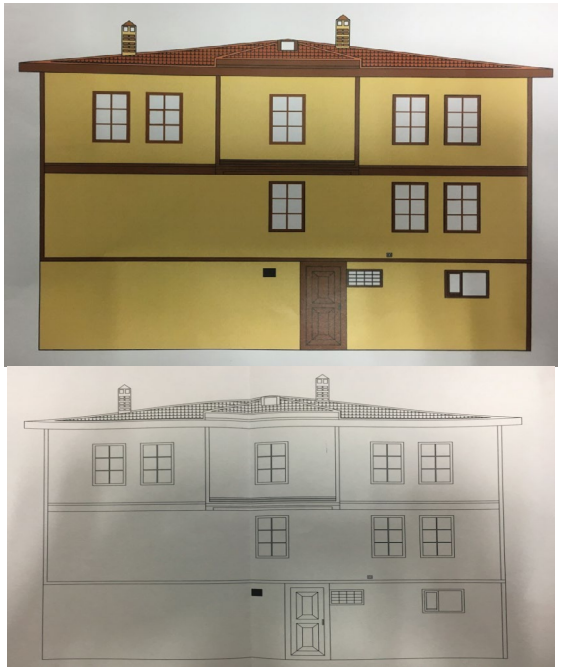

Figure 7: Restoration windows of house by Kubra YagmurAkbudak.

Figure 8: Restoration of courtyard of house by ZeynepHunerel.

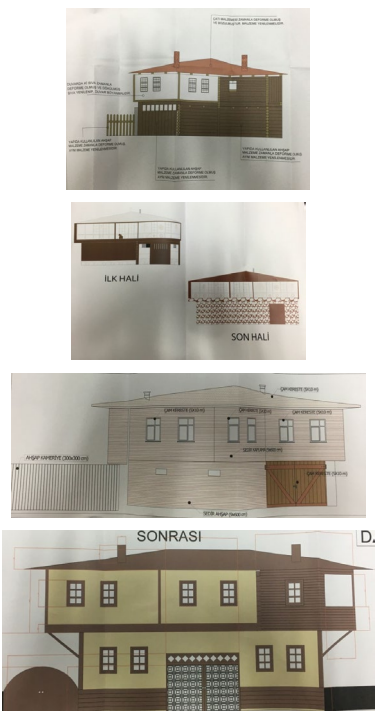

Figure 9: Details of walls, doors, and windows by SametKeskin.

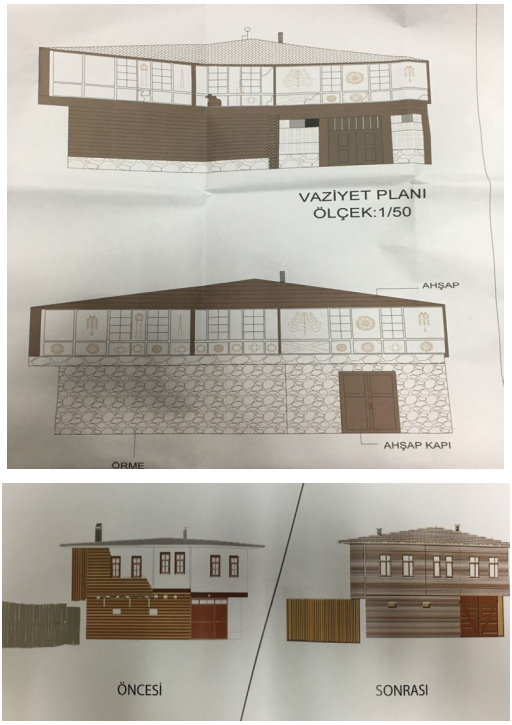

Figure 10: Traditional wood windows and walls by BurakDalak.

Figure 11: Restoration face of house in windows of traditional buildings by CanselCakir.

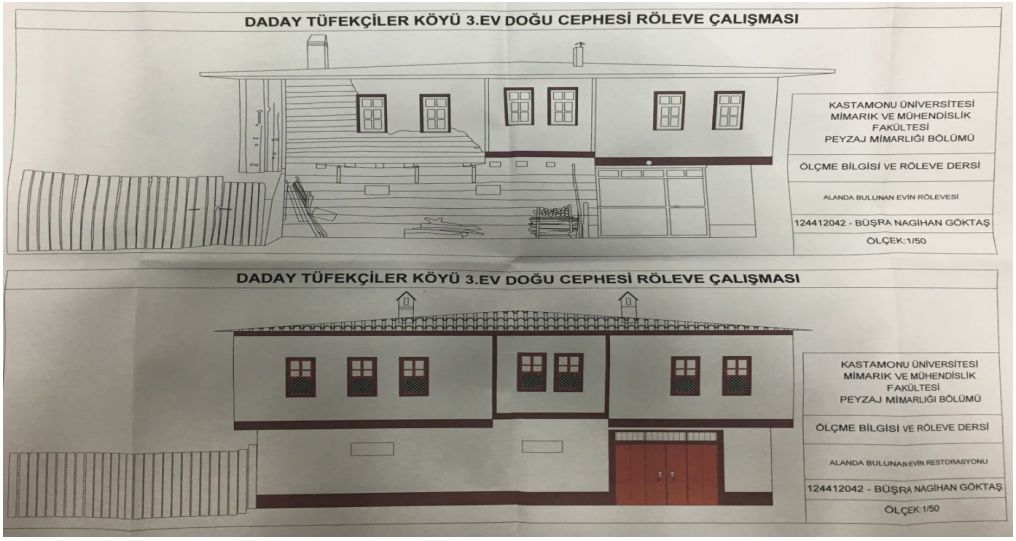

Figure 12: Restoration of Traditional buildings in the cultural center of TufekcilerVillage by BusraNagihanGoktas.

Gardens and courtyardsconsist of very important elements in traditional buildings, and the environment improves the microclimatic conditions of these buildings. In particular, plant coverage reduces direct sunlight and ensures the reduction of overheating in the courtyard area around the building by reflecting solar radiation.Domestic water wells and water reservoirs are elements in traditional courtyards, and the presence of this cooling medium is particularly useful in providing cooling through evaporation.Deciduous plants climb structures, and the creation of a green surface provides both light and shade around a traditional courtyard.

Results

The protection of traditional and authentic values is important to tourism and restoration principles. It is necessary to ensure the accurate identification of the privileges that make it different from the others, and the proposed study consists of different scenarios that could benefit physical regeneration projects through accurate planning. Although these projects were being except for carryout, they were given different alternative functions on the street and in the buildings for facades. Several examples of student projects inselected areas were provided for different perspectives, and the village's social actors related to house owners, and that can be obtained and considered. Thus, the study has been published addressing approach interior design projects, and all settings will be applied in such an example.

Conclusions

The right interior renovation is an important component for a historical project that can be converted to attract alternative tourism. In this way, its reputation could both increase the scope of development of the national culture and tourism by opening corridors of international tourism. Other studies involving landscape architecture aim to create positive architecture. Students' cooperation and coordinated manner in the area of economic reality by living and providing are more likely to provide lasting solutions to the social and environmental conditions.

Diversification of the tourism and cultural tourism popularizing building recoveries involves functions like renewing local additions to house facades, and that takes up

leisuretime and provides reuseof the buildings to the local people for the establishment of the new vision for attractive housing in the village. The average duration of stay and the number of house owners increases in a region by building a village infrastructure,and creating unique additions on house façades fuels revitalization and creates small and medium house ownerfacilities. The region's natural and historical relevance increases awareness of the cultural and semantic value.

Traditional building maintenance and restoration of an environmentally-friendly approach toward bioclimatic design strategies are directly related to the protection of ecological principles to characterize them. The immediate strategies for improving the microclimatic basic principles of bioclimatic design involve implementation strategies related to both heating and cooling of the building shell to provide enough comfort in traditional buildings that are closed. It also provides beneficial effects in terms of thermal performance of the building envelopeusing locally available materials and construction techniques and, thus, optimizes thermal conditions for passengers. Aimed at identifying an environmentally-friendly restoration of traditional buildings and complexes by investigating the environmental characteristics of the traditional architecture, it has enabled the preparation of proposals. The recommendation of a building environment that leads to sustainable development sees the inclusion of traditional structures for conservation and restoration as well as environmental criteria for the construction of modern buildings or traditional residential units in new building additions.

In conclusion, the implementation of the recommendations in Tufekcilerinvolve the historic fabric by starting from completing gardens, streets, and squares with open green areas preserved and renovated. The socio-cultural dimension of the proposal and the size of the administrative and economic structures can be achieved. Our country is focused on the protection of cultural heritage in this area, and it is important to carry out the universal dimension of cultural values if possible. Tufekciler will only take place in the local government and will also contribute to public protection. Thus, sustainability will be ensured, and Tufekciler, Turkey, will have taken place between the city and protected in the world.

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Assessment of the Sustainable Tourism Potential of a Natural Park for Landscape Planning: A Case Study of the Yesilyuva Nature Park

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Abstract

Currently, the surface site of Yesilyuva Nature Park encompasses the region's natural, social, economic and cultural characteristics and has become a marker of natural and cultural heritage. This site should be passed on to future generations. To support the preservation of this site, promotional activities should be planned to use it in the best ways. In this study, because of tourism and related opinions of local residents and visitors alike in terms of their natural determination is an important cultural and historical feature aimed at evaluating the tourism potential of Yesilyuva Nature Park. This framework is designed to establish prospective tourism sustainability. As a result, Yesilyuva Nature Park in terms of natural and cultural properties has been identified as suitable for sustainable tourism activities that are determined using GIS (Geographic Information Systems). This protection in the field, balancing sustainability and landscape design, will provide for the development of tourism activities. In the SWOT (Strengths, Weakness, Opportunities, Threats) analysis and survey, local residents and visitors reported that the most important feature of the Yesilyuva Nature Park is its natural beauty. Visitors often come to observe the traditional and natural life and to engage in tourism activities. All data with showing maps derived from GIS represent landscape planning for sustainable tourism areas in Yesilyuva Nature Park.

Keywords: Landscape Planning; Nature Park; Natural and Cultural Resources; Protected Area; Sustainability

Introduction

In Turkey, environmental problems associated with cities are rapidly increasing. Population flow from rural to urban areas has created slums and increased demand for large, multi-storey buildings, and cities are undergoing significant changes along with industrial organizations. In cities that have ignored ecological relationships, the reduction of natural areas results in changing climates and soil conditions, as well as an artificial living environment infused with harmful substances emanating from industrial and vehicle

pollution. There is a complete harmony between people living in the artificial city who are looking for a niche within the ecosystem and those longing for a cleaner environment that cannot be achieved because of overpopulation, air pollution, noise and fatigue, which has caused people to develop psycho-physiological imbalances. In this way, the environment changes people's desire to live in cities and pushes them out [1-7].

The increase in demand for relaxation, fun and mental rebooting among city populations calls for the identification of and planning for suitable areas in the forest for recreational use [5,8-11].The Forestry and Water Affairs 10th Regional Directorate of the Kastamonu Province branch office is located within Kastamonu Province, is near the Abana district, in the Hacıveli position. The Kastamonu Yeşilyuva Nature Park is located on Çatalzeytin Road, 101km from the Centre of Kastamonu, 3 km from the town of Abana, 20km from the district of Çatalzeytin and 126km away from Sinop (National Parks, 2016)[12].

In 1966, Yeşilyuva Nature Park was registered as a "Type B Recreational Area". Of course, it carried the field, cultural values and recreational potential due to 2873 a statute on national parks in accordance with Article 3 of the law considered as appropriate to be declared a natural park by the Ministry of the office. On 7 November 2011, numbered 903, "Yeşilyuva Nature Park" was declared. The size of the area is 5 ha. The access control module area door Access, Buffet, Tent Place and General Land Clearing Works management ended in December 2014, and the bidding process for the operation of the field continues (National Parks, 2016)[12].

Yeşilyuva Nature Park consists of deciduous species of trees, such as Oriental beech (Fagusorientalis), hornbeam (Carpinusbetulus), chestnut (Castanea sativa) and oak species (*Quercus spp.*), and conifers, such as Scots pine (Pinussylvestris) and red pine (Pinusbrutia), that largely constitute the green space and the sea area of Kastamonu Province, which has the potential to meet the requirements for recreational use of the environment by the local people of the province (National Parks, 2016)[12].

Yeşilyuva Nature Park will provide an important take place the great landscape on the transport axis and the sloping terrain of constitutes a significant response to the need for public recreation because it is suitable for picnics and prevents environmental pollution due to irregular use resulting from unauthorized picnic structures in the woods.

Materials and Methods

Yeşilyuva Nature Park is located in Kastamonu Province at an altitude of 22m on the boundary of the Abana district. The Black Sea region is an area in bounded by the western Black Sea; Kastamonu is located in the border districts of the provinces of Abana which is 5ha area. The size of 1:25,000 scale topographic map in Kastamonu, it is located in 36 parcels.The urban center nearest Yeşilyuva Nature Park on the Kastamonu Province scale is Sinop, while the nearest residential centre at the district scale of Abana and Çatalzeytin is İnebolu County. Its Surrounding Geographical Location is shown Figure 1.

Kastamonu is located in the western Black Sea region and is observed to partially share properties of the Black Sea climate. Kastamonu, features continental climate of the coast you enter contains outweigh. The Abana district is also located in the western Black Sea climate. The Black Sea coastline and the northern forests are maintenance and show all the characteristics of the marine climate. The effect is a quite humid and mild climate.Although occurring during all seasons, rains influenced by the Black Sea climate are also evident in the drought period coinciding with July and August. In Kastamonu, the Black Sea climate produces considerably less rain than on the coast. July and August are the driest months. According to the monthly observation records of the Kastamonu İnebolu Meteorological Observation Station during the year, depending on the period measured, the seasonal average low temperatures in January and February are 3.2˚C and 2.6°C, respectively, while

the highest average temperatures in July and August are 27.3°C and 27.6°C, respectively. The average annual temperature in the planning area is 13.4°C, and the average temperature in June, when the area is generally the most heavily used, the average temperature is for June and September the same. Yeşilyuva Nature Park does not have any water sources within its boundaries [12-15].

Figure 1: Yesilyuva Natural Park Districts and Surrounding Geographical Location.

In general, the western Black Sea region is composed of brown forest soils around Kastamonu with colluvial soils in a small river valley. Some parts of Kastamonu have gray-brown podzolic soils. In the Abana district, of 3,322ha, 1,743 are used for dry farming [52.5%], 2 for irrigated land, 199 for gardens and 58 for olive groves. In addition, of 1,092ha [32.9%] of forest heather, 74ha are used as residential areas. Approximately 16.1% of the area under dry farming slopes moderately, while 83.9% has a steep slope; 1.8% of the soils are medium-deep, and the remaining soils are shallow or very shallow.Slope analysis is shown Figure 2. In the Abana district III more, although there are lands classes IV, V and VI, classes are also found on land III. Class general characteristics of the land; grassland and forest land as can be also used as agricultural culture plants. The region of the Yeşilyuva Nature Park consists of limestone bedrock, mica schists and gneisses, with amphibolite's occurring. The soil, which is sandy loam in character, varies from place to place with different proportions of sand and gravel.

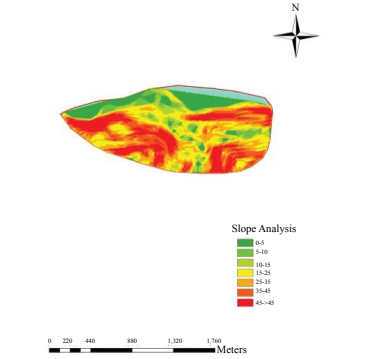

Figure 2: Slope Analysis of YesilYuva Natural Park Districts.

To serve visitors, Yeşilyuva Nature Park has one wooden entrance door to the west of the planning area and an entrance-control unit, which continues into the south-eastern edge of the driveway entrance gate, is available. From the gate to the car park is 50m further to the

left of this point, where a children's playground, buffet and cafeteria facilities are situated. Fifty meters from the cafeteria area is a tent camping area, in addition to sanitary facilities and a paintball area next to plant when you go up 50m further up next to the forest. The non-operational nature park entrance gate is 9m from the site of the future septic tank on the left side and 40m from the unused inputs and input-control unit that regulates the water tank, which is located 10m away. There is trailer parking on the left side, 70m down the road from the unused entry-control point. There are also existing collective power lines in Yeşilyuva Nature Park.

The nature park is located at the boundary of the Abana district, with a wealth of plants and animals and activities such as summer camping, hiking and a day-long picnic event. To maintain the unspoiled natural structure of the forest landscape of the Yeşilyuva Nature Park, it is located at an easily accessible point in the Abana district; accommodating the flora and fauna is one of the area's most significant recreational potentialities.

Nature parks are used for recreation by local people, especially in the summer.Electricity and sewage infrastructure are available in the area.In the plan area and nearby water, air and soil, pollution has been observed.

Results and Discussion

The most important resource value of the Yeşilyuva Nature Park is that it borders anatural forest and the sea. Today's planning area is strengthened by its forest ecology, landscape aesthetic and functional values, adding green space for the rest of the people and entertainment and sports facilities associated with daily and overnight stays (e.g. tent, trailer) that meet the regional requirements for nature-oriented recreational activities and attractions that are close enough to the Abana district to allow for ease of transportation. Five hectares of the nature park region, described as a small, protected area, are evaluated in terms of their location in the country and internationally. Yeşilyuva and other leafy nature parks have moved to the forefront of mixed forests in in areas containing Scots pine and red pine, mainly due to ecosystems teeming with flora and fauna. Offering a nice view of the nature park and taking the necessary measures to ensure the protection of the rich bottom flora in the forests is of great importance. Any structure in the area for visitors, despite being in an area of has been registered for a long time, and there has been no editing facility, which has led to the preservation of the natural structure of the area to this point.

Tourism in the district is much more advanced than in other sectors. It has failed to show improvement due to the lack of development in the industry and the lack of raw materials and market or town transportation. One of the sources of income in the district is fishing, but this amateurish industry is sustainable and can achieve small gains. It is possible for a family to continue fishing and make a living. There is not much progress in agriculture as there is almost no farmland. Commercial firms are unlikely to discuss agriculture. However, in recent years, kiwi cultivation has been carried out and has achieved efficiency and been successful in this regard.

There are several options for accommodations 98 km away in Abana, Kastamonu. In addition to camping at Yeşilyuva Nature Park, caravan parks in town center locations can also be utilized, along with existing accommodations, such as resorts, rental homes, hostels and affordably priced hotel-type facilities. Numerous trails in the area offer opportunities for trekking and mountain hiking, which have been favorite sports in recent years.Kastamonu's Yeşilyuva Nature Park is an area of natural forests, allowing recreational and tourism activities because it is near the sea. This position and the value of its resources, with activities such as a picnic, scenic cruising, walking and jogging, paintball, flora and fauna monitoring, and so on, can be controlled within the nature park in an appropriate way. SWOT analysis of study areas is shown Table 1. Sustainable tourism suitability map is for YesilYuva Natural Park Districts shown Figure 3.

Topic	Threats–Weaknesses	Opportunities–Strengths
Accessibility and Location in the Region	• Intensive pressure in forest areas with the decline of rapid population growth	• The lack of any agricultural or residential land in the area • Field of Kastamonu Çatalzeytin because that side of the highway lends itself toease of transportation • The sea view • District is reachable and in proximity to the center
Soil Structure	• Visitors contribute to the deterioration of the soil structure and the potential for jams in the area	• Uneven and sloping land that in some parts of the slope is exposed to human pressure • Having the forest intact raises ecosystem values • Area in settlement to be replaced
Natural, Cultural and Recreational Resources Values	• Nature parks with areas of insufficiencies or misrepresentations do not have enough accurate information about the value of the resources of the area	• Higher potential for daily recreational activity areas • Having the unspoiled natural resource values • Joining the resources owned by the society to the values of protected areas with increasing environmental awareness and protection
Biology and Ecology Building	• Lack of scientific studies on All supplier • Insufficient; no effective maintenance work in the field	• Intact and has not been exposed to human intervention in natural forest ecosystem structure and to have cultural values • Has a rich diversityflora and fauna • Areas absent of a dominant economic activity originating from agriculture and livestock • No settlement in area
Technical and Social Infrastructure	• To provide field service structure; lack of facilities and equipment • Lack of parking will give the service area • Lack of sewerage system	• To provide field service warning publicity, the existence of o orientation and equipment information
Legal Framework		• The nature park has been declared to be a protected area • Lack of ownership issues

Table 1: SWOT analysis of Yesilyuva Nature Park.

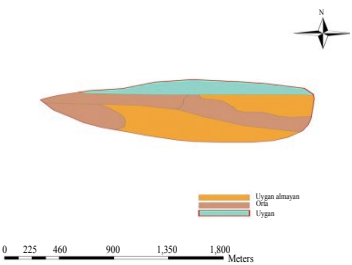

Figure 3: Sustainable Tourism Suitability Map for YesilYuva Natural Park Districts.

Conclusions

A 1:10,000 scale objective of the development plan remains within the Abana, Kastamonu, District boundaries. A 5-ha Natural Park of the size of Yeşilyuva has biodiversity, geology and protection of natural and cultural landscape resource values to be developed and passed on to future generations in the long term. It takes the establishment of an organic link between the urban and natural areas owned by the planning area of natural, recreational opportunities and providing various recreational activities combined with visual resource

values. Raising awareness of nature by the visitors and the sustainability of the mandatory regulatory protections and using the balance to meet basic needs demonstrate the decisions that need to be made.

The aim of Yeşilyuva Nature Park ecological development plans is the improvement of biological and environmental quality within the planning area by providing climatic benefits (linking the CO_2 and oxygen production, removing solid contaminants from the air via filtration, etc., to reduce the effects of poison gas), preserving soil and protecting water, improving water quality and preserving plant communities and wildlife to ensure the continuity of suitable habitat.

The recreational purposes of Yeşilyuva Nature Park development plans are to encourage different types of visitors to come to forest areas with natural charm so they can actively spend their leisure time having fun, as well as being able to spend a day relaxing or engaging in recreational sporting activities in addition to being introduced to natural habitats.

To assuage the effects of industrialization and urbanization in the artificial environment of society by allowing individuals opportunities for physical and mental regeneration while serving emerging outdoor recreation needs, Yeşilyuva Nature Park provides access to unspoiled segments of nature, and the area has preserved its natural qualities, as preferred. This situation allows visitors to the nature park to engage in a variety of mental and physical activities in a specific forest ecosystem.

Yeşilyuva Nature Park's capacity building related to recreational facilities should be determined according to usage and demand intensity, and spatial solutions must comply with the standards.Yeşilyuva Nature Park properties to be determined include an appropriate visitor management model and public relations support to ensure that the work carried out in the public space is given to the appropriate workers. In this context, individual characteristics of visitors to the area using relationships, factors that impact on the relationships and their use are given to augment protection when visitors have an uncomfortable sense about people who should necessarily be investigated during certain periods.

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Coastal Biocomfort Mapping for DoganyurtPlanning: A Case Study of the Yesilyuva Nature Park

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Abstract

People experience nominal temperature, precipitation, and humidity, and in certain ranges of environmental conditions, such as wind, they feel healthy and dynamic. In the appropriate range for the people of these values, it is called biocomfort. When biocomfort will be in the range of fair value, people in the area would become bothered and want to get away from the area. Hence, biocomfort areas used for tourism are important.

In this study, biocomfort is examined by mapping the Doganyurt coastline, and thus, this study aims to build pad similar studies in coastal areas with similar structures. To this end, the climatic data of Doganyurtare obtained; based on the equivalent temperature from the physiological index, biocomfort maps are prepared. To determine the structure of the biocomfort field, climatic data are collected from meteorological stations. The obtained data are evaluated using the RayMan 1.2 program, and geographic information system is used to produce a thermal perception map with the help of a software.. As a result, the most appropriate time and area for outdoor recreation activities are identified by thermal perception maps.

Keywords: Biocomfort; Coastline; Doganyurt

Introduction

Urban development in developing countries in recent years has mostly been rapid and unplanned. As a result, the city is made the center of the crowd, and a dreary point has occurred. People who live in these areas that provide them opportunities transform themselves to become comfortable with their conditions. The air temperature and moisture content in this area significantly affect human health and productivity. People experience nominal temperature, precipitation, and humidity, and in certain ranges of environmental conditions, such as wind, they feel healthy and dynamic. In the appropriate range for the people of these values, it is called biocomfort. When biocomfort will exceeds in the range of

fair value, people in the area would become bothered and want to get away from the area. Therefore, people live in areas in which biocomfort is very important. The per unit area in residential areas where biocomfort is more felt by people is of great importance [1-4].

Air and surface temperatures are higher in urban areas than in rural areas. Many cities are situated in natural land, and air temperature can be warmer than 13 °C. The main reason for this is that the current space in the crowd is the temperature that is linked to human activity. Increased temperature causes people to feel uncomfortable. Temperature and humidity are two of the environmental factors that affect people's comfort [2,5-9].

Biocomfort has been on the agenda in recent years and is an issue of growing importance. People have started to consider the values of biocomfort in landscape planning and design. When the value of biocomfort is appropriate, people are healthy, and when the dynamic range is not in the range of biocomfort, people refrain from staying in that area. Based on the urban areas nowadays, the biocomfort value range has not helped much in terms of landscape planning and design. However, the most important factors that shape the climate biocomfort are the most important factors in determining the lifestyle of people. Air and the climate of the person's behavior and physiological state have significant effects. Human performance can be distinguished based on the climate change. Comfortable climatic conditions make these positive responses. Climatic conditions or conditions that are healthy for human thermal comfort of mood and dynamic weather conditions refer to the human sense of satisfaction with the thermal environment [2,7-10].

In the middle latitudes where our country is located, the perceived temperature value that is considered to be suitable for bioclimatic comfort, depending on humidity and wind, ranges from 17°C to 24.9 °C. According to Altunkasa [5] (1990), 21-27 °C temperature if all other conditions are normal and showed that together create a comfortable environment with relative humidity of 30-65%. Below or in value on these conditions, to achieve the bioclimatic comfort temperature or radiation or energy or shadow report that they are needed in specific wind and humidity. However, considering these negatives in the planning is crucial in fulfilling the purpose of landscaping [2,7-9]. This study evaluated whether the Doganyurt detailed analysis of meteorological and climate data for landscape planning was transferred into a database. This database is intended for climate balanced planning and design purposes. Planning and design and other criteria, such as climate balanced planning and design, are used to show the creation of a bioclimatic assessment.

Materials and Method

The study material is Doganyurt and the surrounding area. The Doganyurt district, located in the Black Sea coast, the Western Black Sea Region, is in the province of Kastamonu. It is 121 km from the center of Kastamonu Province, with coordinates of 42° 01' north latitude and 33° 27' east longitude. Doganyurt is located in the north district of Kastamonu Province. The surface area of the town of Doganyurt is 211 km^2, and its natural, cultural, and recreational resources have a high value. In the region, the majority of the year is dominated by the Black Sea rainy climate. The average annual temperature is 19.4 °C. The highest temperature is 22.2 °C to 23.2 °C, which usually occurs in July and August. January is the coldest month at −5.2 °C. The northern slopes of the area get more rain [11,12].

In this study, the climatic data of Doganyurtwere identified; the equivalent temperatures based on the physiological index in biocomfort maps were prepared. To determine the structure of the field of biocomfort, climatic data were collected from meteorological stations. The obtained data were evaluated using the RayMan 1.2 program, and Geographic Information System (GIS) was used to produce a thermal perception map with the help of a software. The results showed that the best biocomfort fields using ArcView software has been tried to be determined.

Working primarily in Kastamonu, data were obtained from the meteorological station of the research area. The annual temperature was determined using data obtained from the annual average value and converted using the RayMan 1.2 program [13,14]. To view the map associated with it, humidity and wind speed maps were created. The theoretical basis of the study of climatic factors related to climate comfort was evaluated in terms of the Doganyurt coast. This study provides the most accurate map of the climatic data obtained in the field. ArcView GIS mapping with linear interpolation Kriging interpolation option ESRI software was used. As a result, the climatic factors in Doganyurt and bioclimatically suitable areas were identified and evaluated in terms of comfort level.

Results

The temperature and relative humidity values of the Doganyurt coast between 1968 and 2015 at 2.00 p.m. were obtained from the general directorate of the State Meteorological Service [12]. The average annual temperature values were evaluated and processed using GIS maps, and the map obtained is shown in Figure 1.

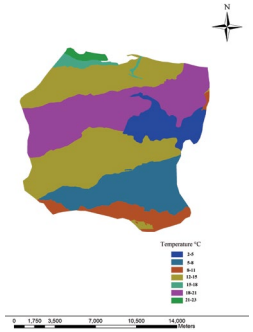

Figure 1: Average annual temperatures.

The resulting ArcView 10 software maps, climate with the Kriging interpolation method was used to form an appropriate space. To evaluate the data, the universal linear extension system was used because it provided the most accurate climate data distribution in the area. The annual average temperature of the study area was evaluated. The biocomfort value of the town of Doganyurt ranged from 15 °C to 21 °C, and the temperature with the value of the study area was determined to focus on the northern and southern regions. The average annual relative humidity of the study area is shown in Figure 2.

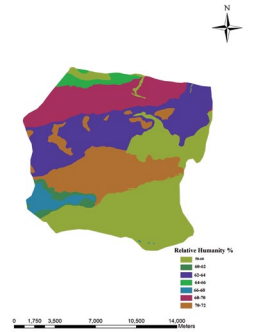

Figure 2: Annual average relative humidity values.

The optimal relative humidity range of the Doganyurt district in terms biocomfort was determined to be 51%–56%. Figure 2 shows that the annual average relative humidity values

in the northern part of the study area examined are increasing. This condition is linked to the presence of the sea and reduces the comfort value of the northern part of this work area. The annual average wind speed values of the workspace are presented in Figure 3. The optimal values in terms of the annual average wind speed biocomfort were 1.7 and 2.1 m/s. The average annual wind speed value in the study area in the northern and central regions was 2.02 m/s, and therefore, the annual average wind speed in terms of biocomfort value of the parts was the highest. The study area was determined to be the north and midlands.

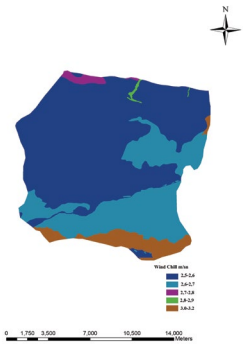

Figure 3: Average annual wind speed values.

Comfort area produced maps for the study area was classified for each month. The average value for each field on the resulting bioclimatic comfort conditions, considering the 12-month map, allowed us to obtain the map that coincided with the annual value of the sensed temperature. The classified 12 month program was assessed using the ArcGIS raster data function. As a result, average values were calculated for each 12-month scan. The annual sensed temperature ranges divided in the map were subjected to grading. The obtained data were evaluated and shown all over the map based on biocomfort suitable or unsuitable areas and areas designated as a suitable comfort zone. Consequently, a bioclimatic map of the Doganyurt district was analyzed. Temperature, relative humidity, and areas for optimum wind speed are shown in Figure 4.

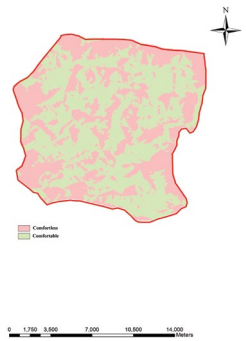

Figure 4: Fields suitable for biocomfort for the Doganyurt coastline.

Conclusions and Discussion

The values obtained in this study affect the comfort bioclimatic conditions of the residential area being studied and reduce biocomfort. The bioclimatic comfort temperature range of Doganyurt is from 15 °C to 21 °C. However, the humidity is changing the sensed temperature value. The study results, is the temperature, when the relative humidity and evaluated in terms of wind speed, the Doganyurt district of the remaining coastal strip

outside the city residential area, in the northwestern area shows the western and the southern part is suitable areas for bioclimatic comfort.

Based on the results obtained in evaluating the map, the total surface area of the available space for bioclimatic comfort is approximately 211 km^2. The town of Doganyurt appears to cover the portion of approximately 183 km^2. The total area of the town of Doganyurt. Approximately 80% of this area is considered suitable for biocomfort section. The total area of 28 km^2 is eligible for bioclimatic comfort. The ideal value of the relative humidity in the region bioclimatic comfort can be interpreted as a consequence of being present.

Not very convenient in terms biocomfort, namely, negative values with bioclimatic comfort areas, mostly located in the northeast part of the county were determined. The absolute comfort of bioclimatic conditions of the area should be considered during landscaping. Improper conditions in the planning and design of bioclimatic comfort can create extremely unfavorable conditions because the natural vegetation is under stress and prevents the formation of hot or cold areas suitable for intensive bioclimatic comfort in areas.

In this study, the bioclimatic comfort zone for the Doganyurt coastline was identified. The resulting maps and data can be useful for future town planning. Bioclimatic comfort, so the removal of the regional planning structures Doganyurt. The highest level of comfortable climatic conditions will help in determining the limits of comfortable housing population. The study results related to new residential and recreation areas can help in planning the locations of public buildings.

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Potential of Ecotourism: A Case Study of Doganyurt

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Abstract

Doganyurt has an important historical value and great potential because of its outstanding natural and cultural heritage. An area can make an important contribution to the entire region. But in order to do so, making long-term plans for the area and its surroundings, creating the necessary infrastructure, and promoting it locally and internationally are required. This study deals with the ecotourism resources of Doganyurt that include its historical, cultural, and natural landscape to determine its potential classification in terms of values that can be a source of tourism activity and are intended to be mapped. For this purpose, the value of the tourism resources that constitute Doganyurt's values such as maps, photos, and surveys were evaluated in light of data collected as a result of work done in the area and of existing and potential ecotourism activities. Then the appropriate fields for the specified activities creating a digital base were determined. During the evaluation and processing of data, they were used to map the ArcGIS program. In conclusion, Doganyurt's ecotourism resources including its historical, cultural, and ecological values were identified and mapped.

Keywords: ArcGIS; Doganyurt; Ecotourism

Introduction

Natural resources are vital to human life. However, especially in the last century, the irresponsible use of natural resources has become one of the most alarming problems threatening nature and the environment. Therefore, global warming, climate change, air pollution, the irresponsible use of water resources, and the sustainable use of natural resources in all areas have been brought to the agenda [1-4]. For centuries, people have been inspired by nature, and tourism activities have been carried out to see different natural landscapes. In particular, coastal tourism is the hippest form of tourism in recent years. Visiting coastal areas, swimming, water sports, and hiking have been quite attractive for

people, and millions of people have started to carry out tourism activities in this manner to forget, albeit for a while, problems in the city and to participate in natural and cultural activities, desiring to make it even more valuable. Natural, cultural, and historic sites are seen with great interest. However, the intensive use and increasing interest in the area also brings the risk of damage, so establishing the right balance between the protection and the use of these areas is of paramount importance [5-7].

Removing the environment and wildlife conservation from the forefront and the importance of ecotourism from tourism, this process has increased and continues to increase. Ecotourism focuses on unusual properties, promoting natural and cultural areas, and providing a positive contribution in many areas. Areas where ecotourism is applied become the center of attraction. Ecotourism activities are carried out with a general awareness in the use of the natural environment. Besides holding activities for the protection of natural and cultural values for economic use, to adjust the balance between protection and use is the sine qua non of sustainable tourism, and it can be achieved through the natural and cultural aspects of sustainability in the field of the foreground and environmentally sensitive ecotourism, as well as aesthetic, recreational, or cultural activities that protect delicate ecosystems. Education can be brought in the forefront as awareness [6-10].

Ensuring cooperation among the local population is one of the most important requirements for planning in the tourism sector. In the long term, natural resources, tourism, alternative tourism, ecotourism, and nature tourism are becoming an important choice based on sustainable use. In this study, the natural and cultural aspects of coastal areas are intended to reveal the potential of ecotourism in Doganyurt districts.

Materials and Method

The study material includes Doganyurt districts. The geographic location of Doganyurt districts with rich natural and cultural areas are found between the coordinates 42°01' north latitude and 33°27' east longitude. The position of Doganyurt district is shown in Figure 1.

Figure 1: Doganyurt's geographical location.

Located in coastal areas in the West Black Sea Region, Doganyurt town is a mountainous and rugged terrain. The average altitude is around five meters in the central district. It is 121 km from the city center through the district [11,12].

Temperatures in winter fall as much as 5 degrees and in summer around 30 degrees. The beach continues to increase toward the interior upgrade. With a mild climate, during winter season on the beach, the altitude of the large amount of snow in the inner part is over 1000 meters. Winter rain is experienced in coastal areas, while inland, snow is seen. The summers are hot and arid.

While old houses are made of wood, because of the concrete forest district, new homes are now made of wood and brick. In indigenous places, slate stones are used in the roof. Due the forested and mountainous region made up of many streams are merged through the Black Sea from the MesetaTeatown Center. The county surface area is of 211 square kilometers.

Meseta and traces of the castle by the sea can be seen in the fishing ports in the district center. Glade is the oldest inhabited settlement. In Ilyasbey, there is nothing more than ruins. Our district is full of natural beauty for tourism due to take place on the beach. It has unique landscapes that combine the sea and the forest, the green and blue intertwining.

In the study, geological, hydrological, topographical, and soil maps were obtained. Then the climate of the region and flora and fauna information were collected. The obtained data can be fed into computers belonging to the area with the help of ArcGIS maps, and the data is processed on the maps.

During the fieldwork in the study area, surveys, opportunities, and constraints were determined by considering various pieces of information regarding the local population. SWOT was used in analyzing the obtained data, and these data were evaluated using maps. All the data and created maps of areas suitable for ecotourism were evaluated to develop an alternative to the current use of the area's strengths and weaknesses in terms of ecotourism, and threats and opportunities were identified.

Results

The coastal areas, forest areas, forest openings, potential areas for accommodation, and recreational facilities in the Doganyurt districts are rather limited.Landscape, coastal areas, nature and culture, vegetation and wildlife, geological and hydrological conditions, and soil have values in Doganyurt. Given the topographical features of the Doganyurt districts, the slope of the high woodlands and narrow coastal strip limit the number of suitable areas for construction. The geological, geomorphological, and geological structures of the soil groups in the region have interesting features, such as coastal and mountain formations. The height and slope analysis of Doganyurtare shown in Figure 2, and the soil groups are shown in Figure 3. Different geomorphological character movements in the valley are characterized by ridges and peaks. This geomorphological structure creates an extraordinary natural landscape with lush forests.

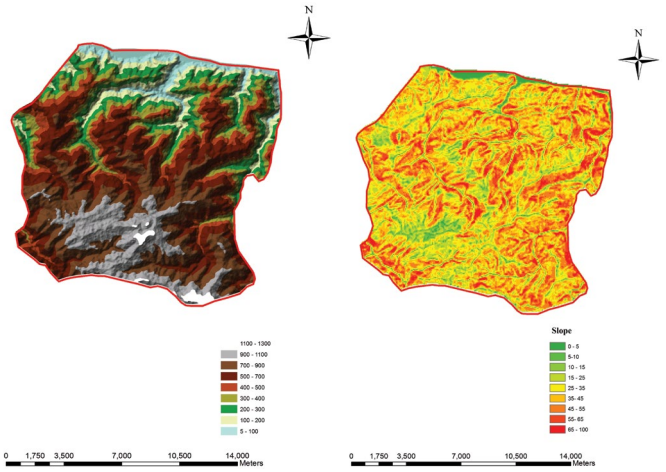

Figure 2: Doganyurt height and slope analysis.

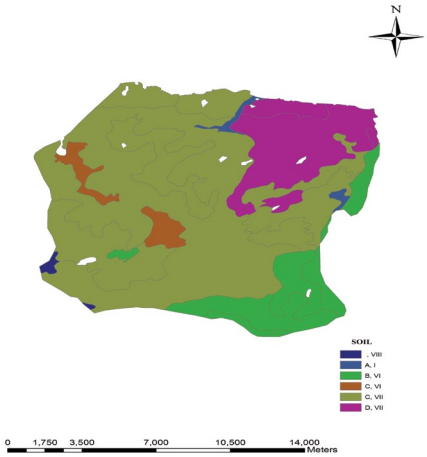

Figure 3: Doganyurt soil groups.

The Black Sea climate prevails in the region. Summers are hot, and winters are usually mild. Adequate rainfall is experienced in all seasons. The number of visitors per day during the tourist season ranges from 15,000 to 20,000. During this period, the following activities can be done: hiking, camping, photo safari, trekking, cycling, and amateur fishing. Many recreational activities, such as botanical tourism and air sports, are also offered. The Doganyurt survey was conducted to determine the protection of the coastal area in the protection-use balance and to determine the level of awareness. The SWOT analysis was conducted, and the opportunities that may be encountered in the future, as well as the current strengths and weaknesses and threats identified in the area, are shown in Table 1.

Strengths:	**Weaknesses:**
Protection of the natural character of the coastal areas Protection of the natural character of the forest areas Historical and cultural values Applicability of different ecotourism activities in all seasons Climate and geomorphology Unique coastal areas in terms of beauty and cultural landscapes Coastal tourism, swimming, water sports, cave tourism, hiking, mountain sports, photo safaris, bird and butterfly watching, nature walks, and many other activities such as study tours	People unconsciously using natural resources Lack of social awareness about the coastal areas Shortage of qualified personnel Lack of imagination and target recognition Apparent lack of eligibility criteria for ecotourism activities in different environmental, economic, and social problems Uncontrolled access and lack of an institutional structure to control ecotourism activities Defensive awareness being an underdeveloped tourism Lack of control Lack of infrastructure and superstructure Lack of adequate studies on flora and fauna Lack of accommodation
Opportunities:	Threats:
Kastamonu's growing demand for ecotourism Preservation of natural and cultural landscape values Different geographical structures Local awareness of nature conservation, national and global awareness of development opportunities A wide range of leisure and tourism activities Transport facilities and consequently long-distance travel opportunities Rich flora and fauna and natural structure Landscape beauty Ecotourism being considered an alternative type of tourism Growing interest in ecotourism issues worldwide Increase in the quality and quantity of natural areas protected by law	Increase in pressure and threat of extinction of biodiversity in ecotourism Destruction of flora and fauna in protected areas Extinction of endemic species and rise of their economic value as a result of the illegal smuggling trade Unplanned expansion Use exceeding carrying capacity Solid waste pollution Air and water pollution Natural and cultural texture corruption Uncontrolled and unconscious ecotours that cause loss of life Monotony in ecotourism activities, implementation of similar activities everywhere Natural areas of investment that cause excessive use

Table 1: SWOT analysis for determining the ecotourism potential of the Doganyurt District

SWOT analysis for determining the ecotourism potential of the Doganyurt District.

Areas under ecotourism activities in the study area, coastal tourism, historical sites, bird observation areas, natural monuments, springs, rivers, canyons, bike tours, hiking, photo-jeep safari, camping, rock climbing, cave, winter tourism hunting-fishing, paragliding, wind, water, surf, cultural, and thermally processed tourism maps are shown in Figure 4.

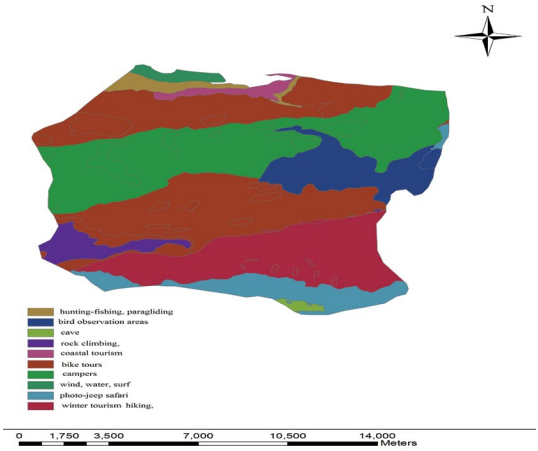

Figure 4: Potential Doganyurt ecotourism map.

Conclusions and Discussion

Once it is known enough to become one of the most important tourist areas in the town of Kastamonu, even the Black Sea will take its rightful place in tourism. Enough accommodation is needed so there is no reason to eliminate openness to tourists. There are those rare places where natural beauty remains intact in their natural state. On weekends, families can come and go easily, although there are tea gardens and recreational areas where they can have a picnic in Kastamonu and the surrounding counties that are not known. Although it has the same features as our other coastal districts, because it has not been introduced that much, Doganyurt is not known.

For the development and economic growth of countries, the importance of sustainable tourism activities with an ecological approach is great. Sustainable ecotourism can be achieved only with a proper approach to the ecological characteristics of tourism development and management plan. To set up an ecotourism strategy in the area of tourism and recreational activities, there is a need to organize and have a good planning. The study area has quite a high tourism potential in terms of tourism and recreation. Doganyurt's scarce resources and assets allow different tourism activities in different seasons.

The Doganyurt District's beach, historical sites, photography, bird watching, adventure and sports tourism, historical and cultural tourism, wildlife tours, caves, camping, picnic activities, horse riding, cycling, and rich ecotourism activities such as fishing have a potential.

Doganyurt'sregulations on the coastal town for ecotourism has a significant potential. However, the routes for many activities and lack of contacts and facilities are a major problem. The solution to these problems and the use of the potential of the region, as well as the process involved, can provide important economic contributions to the region.

Doganyurt is rich in vegetation, and the mountain tourism potential is high in the region. In the area of botanical gardens, arboretum structures that promote the region's biodiversity can make an important contribution to increase the public's awareness and

so on. In addition, the area contains interesting examples of different geological and geomorphological structures. In terms of biodiversity, this area may be of interest to enthusiasts and researchers in particular.

Ecotourism in the region has a high potential. Uncontrolled development, overuse, and destruction in value depending on their source cause excessive pollution. In the planning, this issue should be taken into consideration.

Areas suitable for various activities are shown in Figure 4. This map of ecotourism infrastructure, site selection, planning, design, transportation, management of solid waste pollution, and sewage systems can be used in accommodation facilities and the natural environment and can also be utilized for taking measures to protect wetlands.

In addition, historical and cultural tourism resources have been identified and are again shown in Figure 4. A natural park, an ideal area for the observation of wild animals, offers substantial opportunities for wildlife tours. Ideal plateau areas for wildlife tours are also shown in Figure 4. The use of these fields also needs to be done with trained guides and an orientation on plants.

There are problems in the area of transport, especially in regional transport, which as to be available and seamless. In addition, the area is very safe, and people are very hospitable. Promotion should be done in this regard. Also, at the entrance to the coastal town of Doganyurt, information about important areas in the region must be available, and promotion should be done by putting up maps. Also, the introduction of the place should be done at the national and international levels.

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Using Of Remote Sensing/GIS Technology on Special Environmental Protection Areas in Turkey and Sustainable Land Management

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Abstract

Land management is the process to manage the use of land resources and to develope them. Land resources may be used for agriculture, forest, water resource management and eco-tourism. However sustainable land management aims to integrate the management of land, water, biodiversity and other environmental resources to meet human needs while sustaining ecosystem services and livelihoods. Sustainable land management may be used in regional planning, soil and environmental protection or property (real estate) management. Protected areas are the locations which receive protection because of their natural, ecological and/or cultural values. This study is on protected regions of environmental value in Turkey and the relation with land tenure (property rights, responsibilities and restrictions) in the respect of the public interest on the legal platform. Belek Special Environmental Protection Area in Antalya is essential for biodiversity conservation. To stop many threatened or endangered species from becoming extinct this region is declared as “special environmental protection area”. With the support of technologies of Global Positioning System (GPS) and Remote Sensing (RS), Geographic Information System (GIS) is applied to create the core protection zones with the help of biotope map by using ESRI products in the study.

Keywords: Biotope Map; Core Zone; Environment; Sustainable Land Management; Land Tenure; Protection

Introduction

As advancing technology, rapid urbanization, increasing population and demands continue to mount pressure on the environment, environmental conservation and sustainable management have become ever more important. Recently environmental problems have been a strong impact on the world. Especially, commonly used natural resources such as lakes, oceans, rivers and atmosphere are negatively affected by the population growth [1-12].

Despite the well-known environmental problems, inadequate measures are taken so far. Because of the users' behaviors there have been an overuse and degradation in natural resources. Eventually the people need to find new definitions, terms, laws and technologies to use the environment. At this point one of the issues is the relation between land tenure and the environment.

To preserve the nature the environmental protected areas are defined and determined. The protected area is an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources. According to the International Union for Conservation of Nature (IUCN) new definition is that "a protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" [13]. Protected areas are cornerstones of biodiversity conservation and they encompass almost 13% of global land surface [14,15]. In the world the protected areas are managed mainly for six categories: strict protection (strict nature reserve and wilderness area), ecosystem conservation and protection, conservation of natural features, conservation through active management, landscape/seascape conservation and recreation, sustainable use of natural resources.

For many years the needs for services of eco-environment and natural resources have rapidly increased. One of the methods to determine/monitor/analyze/preserve the environmental protection areas is GIS and RS technologies. So GIS-based decision support systems have been developed for them [16-23].

This study attempts to determine the protection zones and biotope map of Antalya-Belek Special Environmental Protection Areas (SEPA) in Turkey. Also it is aim to evaluate the relationship among "environment", "protection", "land tenure", "ownership" and "land administration".

Property Rights, Land Tenure and Environment

The right that a person has in an object such as land may be considered as property. Property rights are normally concerned with ownership and tenure whereas restrictions usually control use and activities on land. Land tenure has been defined as "the rights, responsibilities, and restrictions people have with respect to the use and benefit of land" [24]. It is the relationship among people (as individuals or groups) in connection with land legally or customarily. The rules of land tenure define how property rights on land are to be allocated within societies, how access is granted to rights to use, control and transfer the land, as well as associated responsibilities and restraints. "In simple terms, land tenure systems determine who can use what resources for how long, and under what conditions". Land tenure is often categorized as private, communal, open access and state. In many cases, responses to concerns of environmental sustainability, social conflicts and food security of the vulnerable are affected by land tenure and have an impact on land tenure [25].

In formal land tenure rights, responsibilities and restrictions in land are administrated according to a legal system. In Turkey property rights are recorded in terms of cadastre and land registry system [24]. Land registration is 'a process of official recording of rights in land through deeds or title (on properties)' [26]. Cadastral work is divided into two parts: technical process and the determination of the owner. The most important part of the cadastral work is "possession" since parcel owner/owners are defined and registered on title deeds. In the cadastral context, the lands are classified as privately owned lands, state-owned lands and land that is left out of registration in terms of being subject to registration [27]. Ownership is an interest in land that a person can possess, however it may be restricted to a limited-extent by legislation and planning regulations.

In Turkey the main law that regulates ownership right and environment right is The

1982 Turkish Constitution [28]. Article 35 in the 1982 Turkish Constitution stipulates that everyone has the right to own property; this right may be limited by law in the view of public interest and exercising the right to own property shall not be in contravention of public interest. This arranges the relationship between individual and public rights. Article 56 says that "everyone has the right to live in a healthy and stable environment; to develop the environment, to protect the environment health and to prevent the environmental pollution are the duties of the citizens and State…". Against the increasing population and housing demand, Article 56 declares that State takes measures to meet the housing needs respecting the characteristics of the cities and environmental conditions in the planning framework. Under "Public Benefit" title Article 43 is on coasts, Article 44 is on land ownership and Article 46 is on expropriation. According to Article 43 the coasts are at the disposal of State; firstly public interest is considered to benefit from sea, the shores of lakes and rivers, surroundings of coastlines of sea and lakes; the conditions for utilization of these places are regulated by laws. In Article 44 State is responsible for the protection of the efficient maintenance, development and prevention the erosion loss of the lands. With the Article 46 government and public corporate are authorized to expropriate and to establish administrative easements on the lands having the private ownership, where the public interest requires for it and the cash payment is done over the actual land values. Also researching, managing and protecting of the natural assets and natural resources are considered in Article 168, and the protection and development of the forests take a place in Article 169. Addition to the articles related to environment and ownership in The 1982 Turkish Constitution the laws and regulations are published such as Environment Law, 1983; Law on Land Protection and Land-use, 2005; Law on the Preservation of Cultural and Natural Assets, 1983; Expropriation Law, 1983; Zoning Law, 1985; Coastal Law; 1990; Bosphorus Law, 1983; Municipality Law, 2005; Metropolitan Municipality Law, 2004…etc.

To explain all these laws is a subject in itself however Environment Law and The Law on Preservation of Cultural and Natural Assets are two basic laws in this study's concept. Environment Law numbered 2872 came into force in 1983 [29]. It has objective sustainability of the environment, which is a common asset of all living things. This law emphasizes the importance of ensuring a healthy environment for present and future generation and the importance of finding that delicate balance. It is the foundation of various regulations relating to such as land, noise, water, forest…etc. Law on the Preservation of Cultural and Natural Assets came into force in 1983 [30]. Its aim is to define immoveable cultural and natural property to be protected, regulate proceedings and activities, describe the establishment and duties of the organization that shall set principles and take implementation decisions in this field. For the protection of the natural assets extra legal arrangements (regulations) are made. In this law "natural assets" are defined as valuables from geological or prehistoric and historic era, on surface, under the ground or under water, of which the preservation is essential due to their unique features and beauty". All assets covered by this law will be considered as state property, expropriation is provided for the immoveable assets and their conservation zones. Regardless of the ownership or administration of the natural assets Ministry of Culture and Tourism is responsible to preserve them and take measurements. However Special Environmental Protection Areas (SEPAs) are under the responsibility of Ministry of Environment and Urbanism with the Decree numbered 644 and dated 04.07.2011 on "Organization and Missions of Ministry of Environment and Urbanism".

Special Environmental Protection Areas (Sepas) In Turkey

In Turkey the important nature areas on land surface are protected under different protection statues such as national parks, natural forests, protected areas, special environmental protection areas and nature monuments. Also these areas are managed by two different ministries: Ministry of Forest and Water Affairs, and Ministry of Environment and Urbanism. In this respect the projects and the studies to determine boundaries of the protected areas and to collect spatial information have been executed by General Directorate of Forestry and General Directorate of Nature Conservation and National Parks

(under Ministry of Forest and Water Affairs), and General Directorate of Natural Assets Protection (under Ministry of Environment and Urbanism) [31,32]. Special Environmental Protection Areas (SEPAs) are under responsibility of General Directorate of Natural Assets Protection (GDNAP). SEPAs are the areas which are taken under the special protection concept by Decision of Council of Ministers with the responsibility of Barcelona Convention[1] because they have the ecological importance in Turkey and worldwide, however they are at risk of deterioration or extinction due to the pressures such as industry, tourism and constructions [33,34]. Council of Ministers is authorized to identify and declare SEPAs and to determine the protection and usage principles, plans and projects to be applied in these areas. There have been 16 SEPAs on land surface in Turkey as seen in Figure 1 and Table 1: Belek, Foça, Datça-Bozburun, Fethiye-Göcek, Gökova, Göksu Deltası, Gölbaşı, Ihlara, Kaş-Kekova, Köyceğiz-Dalyan, Pamukkale, Patara, Tuzgölü, Uzungöl, Saros Körfezi, Finike.

Sequence number	Regional name	Province	Area (Hectare)	Declaration Date	Coordinates		Z (mean) m	Site name
					Enlem Latitude	Boylam Longitue	Alttitude (mean) m	
	Turkey		**2460041**					
1	**Gökova**	Muğla	109280	1988	36,968	28,162	150	Gökova
2	**Köyceğiz Dalyan**	Muğla	46146	1988	36,926	28,693	530	Köyceğiz Dalyan
3	**Patara**	Muğla-Antalya	19711	1990	36,299	29,295	80	Patara
4	**Fethiye Göcek**	Muğla	80537	1988	36,663	28,997	120	Fethiye Göcek
5	**Datça Bozburun**	Muğla	144390	1990	36,712	27,552	200	Datça Bozburun
6	**Kaş Kekova**	Antalya	25784	1990	36,175	29,819	80	Kaş Kekova
7	**Belek**	Antalya	11179	1990	36,845	31,214	10	Belek
8	**Ihlara**	Aksaray	5464	1990	38,276	34,282	1200	Ihlara
9	**Gölbaşı**	Ankara	27394	1990	39,744	32,792	1100	Gölbaşı
10	**Pamukkale**	Denizli	6656	1990	37,925	29,112	350	Pamukkale
11	**Göksu Deltası**	Mersin	22850	1990	36,332	34,000	10	Göksu Deltası
12	**Foça**	İzmir	7144	1990	38,700	26,712	10	Foça
13	**Tuz Gölü**	Aksaray-Konya-Ankara	741400	2000	38,607	33,341	900	Tuz Gölü
14	**Uzungöl**	Trabzon	14912	2004	40,573	40,361	1900	Uzungöl
15	**Saros Körfezi**	Çanakkale-Edirne	73021	2010	40,580	26,700	10	Saros Körfezi
16	**Finike**	Antalya	1124173	2013	35,513	29,986	0	Finike Denizaltı Dağları

Table 1: Special Environmental Protection Areas (SEPA) in Turkey [35].

[1] Barcelona Convention: Convention for the Protection of The Mediterranean Sea Against Pollution

Figure 1: Special Environmental Protection Areas [31].

To sustain the biodiversity in SEPAs is important for the future of the country. To determine the natural values and to ensure effective management with the biodiversity projects aims to protect the biodiversity, to provide the sustainable development of the biological resources and to share the benefits of the genetic resources fairly as Belek Special Environmental Protection Area (Belek SEPA).

Case Study: Belek Special Environmental Protection Area (Belek Sepa)

"Belek and its surrounding area" in Antalya City in Turkey is one of the regions which have the most intense of the floristic richness. Main purpose of this case study is to produce biotope map of Belek SEPA, to present the floristic richness and to determine protection zones. This region is declared as SEPA with Decision of Council of Ministers dated on 22.10.1990 and numbered 90/1117. It covers nearly 112 km2 [33].

Study Area

Belek SEPA consists of 5 towns (Karadayı, Boğazkent, Gündoğdu, Çolaklı and Evrenseki) and 5 villages in Serik and Manavgat Districts of Antalya City. It extends from Yansıyusuflar Hill on the north-west of Karadayı Village to Köprüçayı Village in Serik and it extends from Köprüçayı Village to Evrenköy Village in Manavgat (Figure 2). The coast-line boundary reaches from Acısu Creek to Kumköy Village.

Figure 2: Study area.

Data and Methodology

This study applies Geographic Information Systems (GIS) and two steps to achieve the aim: First one is field work, and the second one is establishing flora database and graphic data in the digital environment, and creating "core zones" and "buffer zones".

Field Work

The field works were done in two different terms in April and May in 2005 by using the aerial photos scaled 1/16000, Ikonos panchromatic (1m resolution) and multispectral (4m resolution) satellite images and topographic maps scaled 1/25000 because the spring season is the most intense period of flowering plants. This step was an interdisciplinary phase with biologists, geodesy and photogrammetry engineers, landscape architects, agricultural engineers, geology engineers, environmental engineers, chemical engineers, forest engineers and city planners.

Working teams determined the biotope boundaries by comparing the current situation on the field with the physical situation on the aerial photos. Three geometric types of the biotope areas are identified: "Point" is for smaller than 1 ha area, "line" is for longer than 5 m. length, "area" is for bigger than 1 ha area. Also spatial information that belong to endemic species were collected by using Global Positioning System (GPS), the photos of all plants were taken and samples were archived by pressing.

Three-person working teams visited the area step by step, determined the biotopes and sub-biotopes, also with their Latin names and transferred them to their data forms. The attribute values are: geometric identification (point-line-area), name of the working group and form number (for example A001, ..., A112), explanations, topographic and geologic structure, vegetation data (woodland, scrub, percentage of the area covered, approximately height of the vegetation...), plant types with Latin names, animal types with Latin names, environmental effects (settlement, pollution, grazing, drying, eutrophication, fire, erosion, excavation...), land-use (agriculture, pasture, fishing, military field, forest, golf, tourism...), main biotope and its percentage, habitat type and English definition and European Nature Information System (EUNIS)[1] code. In Belek SEPA 792 data forms for biotope data are filled.

Establishing flora database and graphic data, creating core zones and buffer zones:

ArcGIS 9.0 was used for GIS integration. A biotope database was created in GIS environment and the biotope attribute data of 792 forms were transferred into this database. The spatial (geometric) data were obtained as point, line and area by digitizing the areas on the aerial photos. The vector data were registered in "personal geodatabase" in ArcGIS 9.0. Then the attribute data were related tothe geometric data. The satellite images were used to analyze the current situation and to control. Then the attribute values were queried and analyzed in the geometric environment, the habitat groups were generated according to the biotopes that represent the habitat, and the importance degrees of the areas were classified. Finally core zones and buffer zones were created by utilizing the maps which show the most important areas.

Results

In the studies the habitat types and their dominant species are determined. The habitat types in Belek SEPA are as flows: Forest (Pinus buritia, Laurus nobilis, Daphne sericea, Quercus cerris var. cerris, Olea europaea var. Sylvestris), rocky area-maquis (Quercus cocsifera, styrax officinalis, Myrtus communis, Cistus creticus, Cistus salviifolius), stable sand area-maquis (Erica manipuliflora, Sacropoterium spinosum, Echium angustifolium), partially stabilized sand hills (Echium angustifolium, Sacropoterium spinosum, Polygonum maritmum, Echinops viscosus), mobil sand dune (Thymelea hirsuta, Echium angustiolium, Euphorbia paralias, Pancratium maritimum), seasonal wetland (Salicorna europa, Limonium

gmelinii, Juncus littoralis, Juncus rigidus, Cressa cretica), permanent wetland (Juncus acutus, Thypa latifolia, Cypeus longus), agricultural areas (Pyrus serikensis, Crataegus monogyna, Anemone indica). Boğazkent and the wetland in the south-east of Karadayı are The Important Bird Areas, especially in the cold winter conditions after the lakes are frozen and the lands are covered by snow in Anatolia [33]. The thematic map that contains the biotope areas in Belek SEPA is created by using 83 EUNIS codes and 113 symbologies (Figure 3). The areas are classified in three groups after queries and spatial analysis. Plant species, endemic species, geologic structure, topographic structure, environmental effects and dangers and land use were taken into account for this classification. Thus the most important areas were determined (Figure 4). The percentage distribution of the important areas are: 22% for the most important areas, 65% for less important areas, 13% for unimportant areas. Finally core zones were created by using the important areas' distribution map (Figure 5(a)). The core zones are classified in four groups according

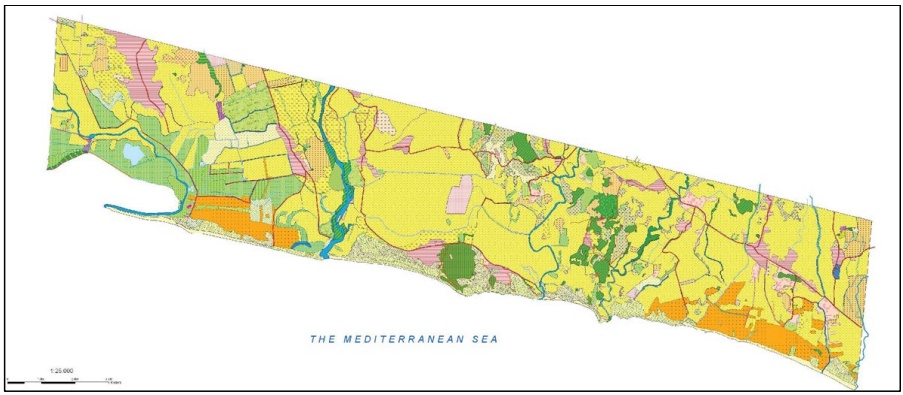

Figure 3: The thematic map contains the biotope areas.

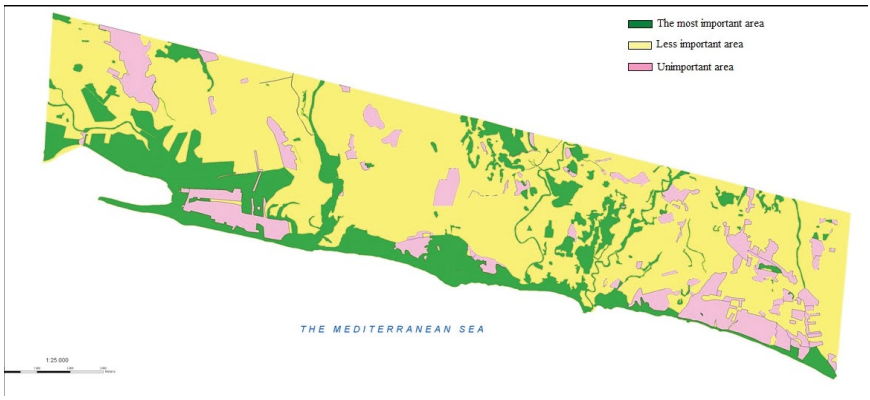

Figure 4: Distribution map of the important areas.

to the features: outside of the absolute protection area (64%), due to the river bed (21%), due to the sand dune (7%), due to the forest density (8%). In Belek SEPA there are four big river beds (Acısu River, Köprüçay River, Sarısu River, Karagöz River). The buffer zones were created at 250 m and 500 m around the rivers. Finally Synthesis Map[2] for SEPA was generated (Figure 5(b)).

Discussion

Belek SEPA is a rich region with its flora and fauna so it has a characteristic to be a natural museum and laboratory, and to be an application center for an environmental education. It has a possibility for eco-tourism. Antalya City is a touristic place and Belek SEPA is in Antalya, and even very close to Antalya city center. For the native or foreign tourists in "holiday villages" the sight tours may be arranged. These facilities are also important for the protection. One of the important factors in environment protection is socio-economic developed local residents.

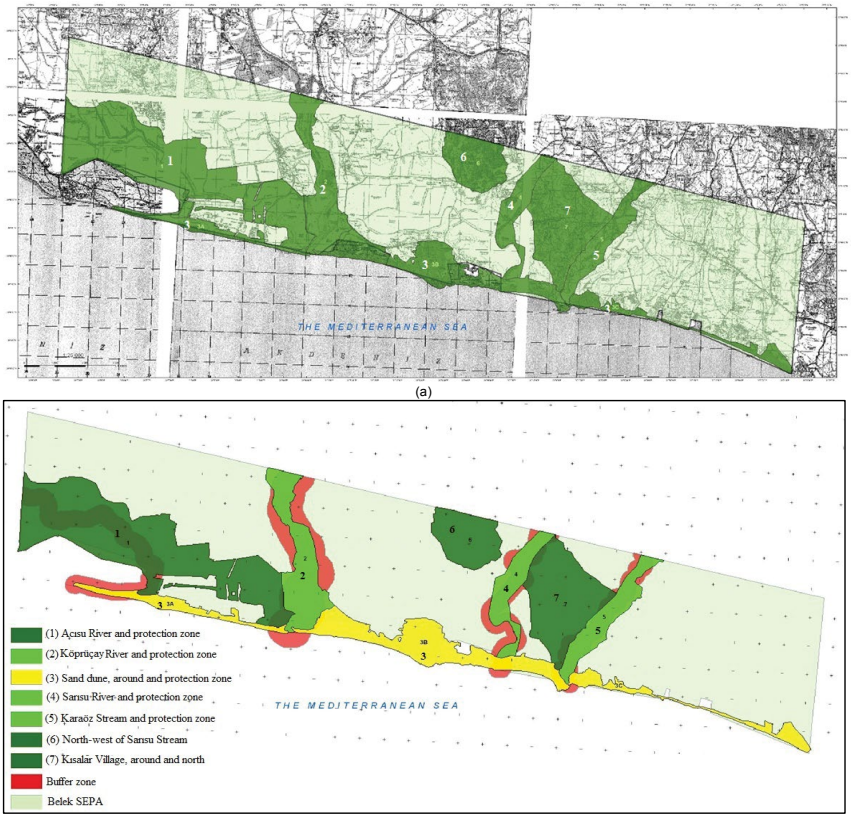

Figure 5: Produced maps a) Core zone map b) The protection synthesis map for SEPA.

The land use analyses show the trends as follows: Boğazkent to a "second homes" tourism, Çolaklı to the tourism, Evrenseki to tourism and agriculture, Karadayı to agriculture, Gündoğdu to agriculture and tourism. On the other way the facilities in the towns goes to tourism instead of the agricultural economy however the village settlements have the agricultural and greenhouse structure. The agricultural areas have covered a wide region and the greenhouses have increasingly widespread. The flora and fauna are at risk of the extinction because of the touristic, housing, agricultural and greenhouses facilities.

This case study uses GIS capabilities to analyze and evaluate the important areas in the mean of the plant species, and to produce core zones and buffer zones. Thus it is aimed to protect the important plant species which are at risk of extinction and to provide sustainability for the next generation. It is intended to maintain the natural resources in the region, to minimize the environmental effects, and to ensure that the natural values pass

to the future in a healthy way. Briefly this technical and scientific study represents that the biotope maps have an essential mission to understand the natural value of the protected area, to determine the important plant species and to perform the management plans. The Protection Synthesis Map that is produced by biotope map has been used in the studies of "Belek SEPA, Environmental Master Plan Revisions scaled 1/25000".

It is clear that: to preserve the protection areas and to realize such a work,

a) interdisciplinary, multidisciplinary expert people are needed under the responsible organization/institution;
b) standardization and determination of the main principles are required for data management (updating and monitoring) and data sharing;
c) Management Plans and Environmental Master Plans should be implemented in short time after the producing the biotope maps;
d) staff/workers should have GIS education to use this technology widely and actively;
e) the results of the analysis are the guidelines for decision makers in the region or in the country;

GIS is an effective tool for a land management to protect the natural resources and to minimize the environmental effects that threat the "Core Protection Areas". Geographic information technologies help to collect data, store, analyze and produce useful information. One of the data types in the land management is ownership data. Natural (environment) data are related to the ownership data, spatial analyses are realized and action plans are made. In this view cadastral data are "sine qua non" (indispensable and essential) data for land management decisions. Multi-purpose cadastre (MPC) will facilitate and accelerate the decision processes for land management. Multi-purpose cadastre is a "methodically arranged public inventory of data concerning all legal land objects in a certain country or district, based on a survey of their boundaries". It is made up of the cadastral map and the associated registers to meet the (continually evolving) demand of the land market, other land information databases containing information such as planning, controlling and land-value assessment. MPC is to benefit a range of potential users such as federal, state and local governments, private firms, individual, academia and regional bodies. For maintenance of biological diversity the data related to natural assets and environmental protection should/must be determined during the cadastral studies, and also filling the regularity gaps are required on this way. In case the ownership information in MPC are determined in the "biosphere reserve area" or "core protection area", the ownership or usage right may be restricted in the public interest to protect the environment/flora/fauna/natural assets, the protection facilities may be supported. The declaration of the core protection zones and land-use decisions in the land registration notebooks will provide to know the limitations and restrictions on the real properties and facilitate the implementations of the protection decisions. So the environment protection activities such as restrictions on the ownership on behalf of the public interest will not turn into a social problem. However cadastral system in Turkey only keeps and maintains the geometric shapes and legal structure of the real properties. The cadastre does not meet the needs for environmental protection, land administration and land management. All organization/institutions and local governments are in the process of setting up their GIS-based information systems with their data. An integrated Land Administration and Management System should be established. It is aimed to make it with National Spatial Data Infrastructure studies in Turkey under responsibility of General Directorate of Geographic Information Systems, Ministry of Environment and Urbanism.

Conclusion

Turkey has natural, historical and touristic assets and Turkish people have very rich culture which continues until today. Great efforts have been made to preserve the environmental protection areas and improve the ecological environment. A number of measures are taken at the running balance of the total area. Land management/

administration plays an important role on the way of the sustainable protection. It is clearly known that land tenure is managed by a Land Administration. The rules and regulations on protecting the special environmental protection areas should be updated and arranged on the objective view.

Also the GIS/RS technology provides a great support to the decision makers to determine and manage the natural resources such as special environmental protection areas. Spatial planning with the help of GIS/RS refers to the integrated arrangements for comprehensive development of natural resources nationwide or in a specific region.

This study, on the sample of Belek Special Environmental Protection Area, aims to present the importance of biotope maps, core zones and buffer zones for the sustainable development of biodiversity, and also attempts to evaluate the land tenure in environmental protection areas on behalf of the public interest. Briefly it emphasizes the importance of the realtionship among land management, land tenure and environment.

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Footnote

[1] European Environment Agency, http://eunis.eea.europa.eu/about.jsp, 19.11.2013.

[2] Synthesis Map: The thematic map which is produced by overlaying the different, appropriate scaled maps showing the current status.

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Treasury Properties in Turkey and Management System

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Abstract

One of the most valuable and the most important wealth sources of the countries is land. Land is always the strongest material and spiritual relationship which ties the people to their native countries' land with the ownership fact. Therefore the relationship between land and the people is closely connected with social, political and economic problems of the countries'. Land management is the process of managing the use and development (in both urban and rural settings) of land resources. Land resources are used for a variety of purposes which may include organic agriculture, reforestation, water resource management and eco-tourism projects. Sustainable land management combines technologies, policies, and activities aimed at integrating socioeconomic principles with environmental concerns. It can be defined as "the use of land resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions". This article presents a part of the land policy in Turkey. In this concept the role of General Directorate of National Property (GDNP) which has more than half of the country's territory under the sentence and administration of State and under the private ownership of Treasury is mentioned and National Property Automation Project-Geographic Information System (NPAP-GIS) is explained. Finally it is discussed whether the spatial data and geographic information management systems produced or used by NPAP-GIS can be alternative for the solution of urbanization problems in Turkey.

Keywords: General Directorate of National Property; Geographic Information System; Land; National Property; Sustainable Development; Treasury; Urbanization

Introduction

The migrations experienced in Turkey since the 1950s made the cities to enlarge unhealthily and caused many urbanization problems. Various policies have been implemented for the solution of such problems and recently sustainable urbanization policies which explain a city model whose life quality is increased in terms of economic, social and environmental aspects have been taken to agenda. The solutions planned for urbanization problems shouldn't be considered separately from the land policies since the

economic, social and environmental interactions come out in one place. One of the vital components for human life is land, with access to land and managing the land. Land includes all things upon it such as roads, buildings, animals, air, water and the minerals within its surface. It means the space for people's activities and the different forms of holding and managing its resources. It constitutes a basic and significant resource at social, economic and environmental effects. The land is seen as the most profitable and secured investment [1,2]. The relationship, whether legally or customarily, among people, as individuals or groups, with respect to land is termed as "land tenure" [3]. The most important types of land tenure or real property identified in most cadastral systems are ownership, leasing, easement, mortgage, communal or group rights and other rights based on the fact that the land is used by someone for a certain purpose [4,3] categorizes the land tenure as private, communal, open access and sate. Normally a cadaster is a parcel based, and up-to-date land information system containing a record of interests in land (e.g. rights, restrictions and responsibilities). It may be established for fiscal purposes (e.g. valuation and equitable taxation), legal purposes (conveyancing), management of land and land use, sustainable development and environmental protection [4,5]. Cadastre includes land parcels (e.g. location, boundaries, co-ordinates), land tenure (e.g. property rights, ownership, leases) and land value (e.g. quality, economic value, tax value, value of improvements) [4].

In Turkey cadastral studies and land registration at national level are under the responsibility of General Directorate of Land Registry and Cadastre (GDLRC) [6]. The cadastre includes all state and private lands and covers both rural and urban areas within a unified system. The information or documentation of the lands/real properties which have the private ownership can be accessed by the owner or his/her representative at the land registry and cadastre offices. Approximately 51% of the lands in Turkey belongs to the private ownership of Treasury and are under the sentence and administration of State [7]. General Directorate of National Property under Ministry of Finance is responsible for these lands to protect, manage and inspect.

In this study it is mentioned that the role of General Directorate of National Property which has more than half of the country's square measure under management and the role of treasury real estates in generating effective land policies and it is discussed whether the spatial information management systems produced by the General Directorate can be alternative for the solution of urbanization problems in our country.

Treasury Properties

"Treasury" is the name of legal entity of State in terms of the government agencies/ organizations/institutions within the scope of the general budget for the moveable and the immoveable properties, their rights, receivables and loans [8,9,10]."Treasure property" is the immoveable properties (such as lands and buildings) under the private ownership of Treasury, and under the sentence and administration of Government. Treasure properties are used for the public services directly or indirectly. They are categorized as public properties and private ownership of Treasury [7,8,10-12].

Private ownership of Treasury

The properties under the private ownership of Treasury are registered in the name of Treasury on the registration notebooks at Land Registration Offices. Treasury, in other words 48 government organizations, is listed in [13].

Public properties

The public properties are the immoveable properties which are open to public usage inherently or since time immemorial, or which have been allocated to the public utility, or that are the elements of a public service. They are 1-unclaimed properties which are under the sentence and administration of State, 2- common properties, 3-service properties.

Unclaimed properties

These don't have the private ownership in terms of the private law. State is the ultimate owner of such properties. Unclaimed properties are open to direct common usage and benefit for everybody in their nature. Allocation of the immoveable properties for common usage is not needed [14]. According to Article 715 in [15] and Article 16 in [16] unless otherwise proven, non-arable areas such as publicly owned waters, rocks, hills, mountains, glaciers, and resources derived from them are not in anyone's ownership and cannot be subject to private ownership in any way. They are under the sentence and administration of State. However unclaimed properties are not limited those listed in this article. [17] states that coasts, forests, natural wealth and resources are also unclaimed properties. Article 18 of [16] explains the registration conditions as private ownership: the properties except ones in Article 16 and ones which have the benefit with the conversion to the agricultural lands, and the possibility to gain economic benefit. Consequently non-arable lands [15], coasts [17,18], forests [16,17,19], general waters [15,20] and natural wealth and resources [17] are unclaimed properties.

Common Properties

Common properties are ones which are allocated to the public benefit/usage by State or ones which are open to public usage since time memorial. They are under the sentence and administration of State. Their benefit belongs to the public. Common properties may be allocated not only to the usage for everybody but also to the usage for a specific community. For example the use of the roads and squares belongs to everybody however the use of grassland and pasture belongs to a particular community.

Until the publication of Grassland Law [21] there was no regulation for grasslands, pastures and winter pastures. The maintenance, reclamation and protection of these places were failed. As a result of this failure the reduction of grasslands' area had occurred. This law has an important role on scientific studies, Supreme Court jurisprudence and resolution of the grassland problems. The changes on Grassland Law bring some arrangements through the allocation purpose of the grasslands. Unless the allocation purpose is not changed the grasslands, pastures and winter pastures cannot be used for another purpose as shown in laws. However these legal changes allow arranging the utilization opportunities from the grasslands. The allocation purposes of the grasslands are changed with the cases of development, support of investors, disaster, urbanization and urban sprawl. After changing the allocation purposes and qualities, grasslands are disposed of.

Service properties

Public service properties are connected to the public service so as to form an item (element) of the service directly. According to Article 16 in [16] the official buildings and facilities which are established by using the funds, allocated from their budget or with aids and used for public benefit (the government, municipality, karakol buildings, village room, hospital and other health facilities, library, mosque, graveyard, fountains, wells, squares, bazaars, parks, space areas and so) are registered in the name of Treasury, public organization/institution, legal entity of the administrations of the province/municipality/village/neighborhood. These are main objective tools of public administration to fulfill the public service directly. The registration of the service properties in the registration notebooks at Land Registration Offices does not mean that they can be subject to the private ownership. The service properties have the qualification of public service with the allocation processes. Removal of the allocation provides this property to be the subject to the private ownership.

A part of common properties (because of their qualifications or they have been used by the public for a long time or they have been allocated for the public benefit) and all of unclaimed properties are considered public goods. However service properties have the

specification to be common goods with especially allocation or donation, legal processes and actual actions such as construction [14].

Characteristics of the Public Properties

Public properties have some legal qualifications apart from the private properties to allocate these to the benefit of the public permanently and to ensure the public services with smooth operation. Public properties are not subject to the private ownership. Service properties (as long as they keep the qualification of public good), common properties (unless there is no qualification change) and unclaimed properties (because they are not conductive to private ownership natural inherently) are never subject to the private ownership. The properties apart from these are the private ownership of Treasury [10].

Unclaimed and common properties are never registered into the registration notebooks. Even if recorded as an exception they don't get the status of private property. In fact the forests are not the private property of State although they are situated within the category of unclaimed property according to Turkish Legal System. If the registered property transforms to unregistered property it is canceled from the registration notebook. The service properties are registered [11] because they become the private property of Treasury when they lost the qualification being a service property [10]. Articles 712 and 713 in Turkish Civil Code regulate the acquisition of the properties by prescription. For the acquisition by prescription, the physical possession of a registered property should be undisputed and under normal conditions continuously for at least 10 years, under extraordinary conditions for at least 20 years. According to Article 16 in [16] common properties, service properties, forests, the properties which are under the sentence and administration of State however allocated to the public service, and also are registered in the name of State accordance with the laws cannot be acquired by prescription. Public properties cannot be confiscated [22]. This process leads some problems for public services and it harms to the society. They cannot be expropriated [23] because they are not subject to the private ownership. This type of properties can be passed in title with an allocation procedure as a result of the agreement of relevant administrations.

Management of Treasury properties and General Directorate of National property

In Turkey General Directorate of National Property Directorate (GDNP) is responsible for the properties which are under the sentence and administration of State and private ownership of Treasury to protect, manage, inspect. GDNP is in close contact with many legal fields such as agriculture, culture, industry, tourism, employment, urbanization, communication, transportation, coast, etc. GDNP receives the supplement information of these properties from General Directorate of Land Registry and Cadastre (GDLRC), attribute values related to the ownership from Land Registry Offices and graphic values from Cadastre Offices.

The processes on all properties that belong to Treasury are executed under central and provincial units (departments) of GDNP. The processes are categorized in three classes: Acquisition, management and liquidation. Acquisition means to obtain goods and services. Acquisition procedures are purchase, barter, expropriation, nationalization, construction for land/flat, transfer process of a purchased property at Land Registry Office, transfer of goods to the Treasury with various laws and agreements. The management procedures are allocation, leasing, easement rights and leasing for use permission. Also the management procedures of public housings are executed by Allocation Department in GDNP: management of the public housings that belong to the government organizations, determination of management policies, identification of rent and fuel cost, operation-maintenance-repair

principles, housing allocation procedures for the central staff (appropriate housing allocation by Central Housing Allocation Commission), etc. . The liquidation procedures are sales, transfers and abandonment. Addition to these, legal and regularity operations, international real estate transactions, treasury cases, investment and grants management, acquisition of goods of foreign, privatization operations (transactions), cases at European Court of Human Rights, document and archive processes, accruals and equipment procedures are other processes .

In 1995 GDNP started National Property Automation Project (NPAP) for full automation of the all processes at center and provincial units, establishing real estate information bank and office automation, and creating National Property Information System. In 2002 NPAP programs in all cities and districts are completed (Figure 1). This project contains the programs and sub-modules as in Figure 2. The line connections are provided with Dial up (D/U) line from the districts to the cities and Frame Relay (F/R) lines in the cities. To be followed all data entry and changes in real time, all data in districts and cities are transferred to Servers via Main Replication Structure in GDNP.

Figure 1: Main screen of National Property Automation Project.

National Property-Geographic Information System (NP-GIS)

To establish spatial characteristics of the Treasury properties NP-GIS steps are identified according to system environment and the system size, strategy, priorities and expectations.

System identification

NP-GIS project contains the following Information Systems: Decision Support Systems, Management Information Systems, Operating Information Systems, Real Estate Information Systems, Other Processes Information Systems, Support Services Information Systems, and Geographic Information System. GIS is designed as a sub-project of NPAP. This system requires that the collected non-graphic data must be consistent and reliable. NP-GIS is a whole with the collection, store, query, analysis and visualization of related graphic and non-graphic data, hardware, software and staff.

Analysis and feasibility

This step includes determination of the situation, requirements, expectations and feasibility before starting the GIS project.

Determination of the situation: GDNP does not have the authority to produce map and to plan. However it is the approval authority for the implementation of transactions involving

GDNP under the relevant laws and regulations. As this structure it has to give a decision about the fate of the property although there is no first-hand knowledge of spatially related properties. The sale processes, the pricing and transformation from land to plot affect the revenue directly because the annuity is lost in this process. During the valuation and the sale process of the properties plan data and notes, area, slope, urban infrastructure, soil type have a significant role. The topographic, cadastral and legal data are important for the accurate and effective decisions. The updated maps and plans involving these data should be used. Especially the technical staff should use these documentations. Lack of these documents and the capable staff causes prolongation of the decision process and unsound decisions. In relationship between reason and result the integrated system for graphic and non-graphic data of GDNP which hold approximately 50% of all properties must be and has been the first-priority task.

Procedures for Immoveable properties	**International real estate procedures**	**Sale procedures**	**Procedures for ownership rights**
1) Registered properties	1) Immoveable properties	1) Sale	1) Action for partition
2) Properties which are under the sentence	2) Rent	2) Valuation	2) Judicial cases
and administartion of State	3) Land grabbers	3) Agricultural land	3) Registration procedures
3) Properties related to Treasury	4) Action for partition	4) Request procedures	4) Treasure search
4) Administration forms on the properties	5) Expropriation	5) Properties which are out of agricultural land	5) Occupied properties
5) Procedures on the properties	6) Shareholder	6) Information-document	
6) Rights and responsibilities	7) Banks		**Transfer procedures**
7) Shareholder information	8) Currencies	**Legislation**	1) Free transfer
8) Annotations	9) Moveable properties	1) Laws	2) Title deeds
9) Statements (Declerations)		2) Legislative decrees	**Educational procedures**
Appreciation and distribution procedures	**Public housing procedures**	3) Regulations	1) Education
1) International agreements	1) Allocation request	4) Circular letters	2) Library
2) Application owners	2) Building information	5) General notifications	3) Publication requests
3) Commission decisions	3) Flat information		4) Publication distribution
4) Heirs	4) Rent information	**Personnel procedures**	5) Author information
5) Principle decisions	5) Resident information	1) Personnel information	**Accruals and equipment procedures**
6) Unit costs	6) Revenue information	2) Cadre	1) Fixtures
7) Payment information	7) Unit costs	3) Duties	2) Telefon
Lease procedures	**Administrative cases**	4) Relocations	3) Line following
1) Rent	1) Case	5) Annual vacations	4) Following and payment of the bill
2) Renter	2) Defence	6) Other permissions	5) Consumables
3) Collection	3) Interlocutory judgement	7) Temporary duty	6) Invoice
4) Valuation	4) Case result	8) Penalty	
5) Land grabbers	**Procedures for moveable properties**	9) Foreign language	**Budget and Appropriation Procedures**
6) Farmers in need	1) Vehicle information	10) Educational status	1) Budget information
7) Annual ratios	2) Vehicle sale information	11) Picture	2) Appropriation request
8) Fixing annual lease cost	3) Vehicle allocation information	12) Address and telefon	3) Releasing
9) Fixing of renewal of annual lease cost	4) Information for Other procedures		4) Sending
10) Information-document	5) Information for Other procedures sale	**Payroll procedures**	5) Blocking
Expropriation Procedures	**Maintenance procedures**	1) Staff information	6) Transfer
1) Procedures to buy	1) Repaire grants information	2) Tax refund	7) Payment
2) Expropriation Procedures	2) Construction investment projects	3) Fund	8) Diminishing
3) Flat-for-land procedures	3) Investments for other years	4) Coefficient	
4) Donating procedures	4) Present Government House Information	5) Earnings and deductions	**Document procedures**
5) Barter procedures	5) Information about planned Government House	6) Indication table	1) Incoming document
Allocation procedures	**Easement procedures**	7) Differences	2) Incoming fax
1) Allocation request	1) Easement requests procedures		3) Outgoing document
2) Allocation	2) Easement removal procedures	**Reconstruction procedures**	4) Approve
3) Allocation change	3) Annual costs	1) Leaving procedures	5) File
4) Allocation removal	4) Annual ratios	2) Subdivision procedures	6) Archive
5) Information-document	5) Information-document	3) Unification procedures	7) Document tracking

Figure 2: Distribution of registered properties according to their types.

Determination of requirements and expectations: In the requirement analysis the current situation is reviewed and it is compared with the desired target. In this case, what kinds of data are needed in what format is detected. Finally it is determined in which resources these data are collected. The different user groups in the organization such as project team, the personnel of Revenue Braches, related Branch Personnel in General Directorate, management personnel, citizens and technical personnel are identified, and their demands and needs are determined. Finally the data is updated systematically and stored, also presented to the organization users in intranet environment and then to the internet users.

Feasibility study: Feasibility is investigation of the realization possibilities of the system legally, technically and economically. In this concept the protocols are signed with related Municipality, Land Registry and Cadastre Offices to exchange data.

Design

Design in GIS is important to establish, operate and keep alive the system. The design step is categorized in four titles as system, data, process and physical.

System Design: In this step software and hardware is determined. However in the mean of personnel, time, reliability and finance well-planned strategy and implementation should be generated. It should not be dependent on a particular brand of software and should include standard desired features. The program must be quick to use, recognize the various data inputs, communicate with other information systems programs, able to manage the large masses of data, have geographic analysis with the merge and intersect features, able to provide the desired solutions. Graphic data are saved in layers and non-graphic data are recorded in a relational database.

Data design: For data design the required entities and attributes are determined. It is decided to store spatial and non-spatial data in the different tables. As initial steps it is aimed to implement the procurement of graphic data, production of NPAP data, presentation of the data to technical personnel on PC (personal computers) then to the managers, and general citizens on web. The tables consist of the fields of the entity (such as cadastral parcel, sale, leasing, allocation, building, street, hospital , road,... etc), geometric type, attribute and table name.

Process design: Main process design includes the design for transformation of graphic data to the geographic data, transformation of field data to the geographic data and data update.

Physical design: In physical design the real computer environment locations of data are determined. This may be the collection of the attributes of the different spatial data, data entering by the different people, storing these data in the different database files, and also in the different computers or storage devices to balance design inputs and maintenance operations or to reduce the effects of the system errors.

Realization

This step contains hardware and software selection, database establishment, selection of the pilot project region and system test. In 1995 NetCAD and MapInfo Professional and MapBasic was selected as software. As a database MSSQL Server 2000 for spatial data and Sybase were used. Cankaya District in Ankara city was selected as a pilot project region because Cankaya Land Registry and Cadastre Offices was also the pilot project region for General Directorate of Land Registry and Cadastre, the offices were very near to GDNP and there were the digital data to serve to GDNP.

Implementation

In the implementation updating the system and data is as important as establishing it. Application development processes are created in MapBasic for the technical personnel in the cities.

The spatial data are provided from related organizations because GDNP is not a map-

producer organization. For the pilot project the graphic data in NetCAD .ncz format are obtained from Cankaya Municipality, Ankara Metropolitan Municipality, Cankaya Land Registry and Cadastre Office. If they are not produced in CAD format, the transformation to the CAD format takes too much time. The graphics are made suitable for information system with point, line and polygon format because of the problems of the parcel boundaries in different layers, parcel numbers and the island numbers in the same layer, double lines. Information about hospital, communication, roads, streets, buildings, mosques, neighborhood boundary, metro stations and route are obtained from ASKİ (Ankara Metropolitan Municipality Water and Sewerage Administration) General Directorate.

MapInfo-MapBasic Application Development Environment helps to solve and facilitate the routine work to be done: transferring the measurements taken from the land to the system, printing the cadastre (graphic) data, finding the island and parcel, transferring the coordinates of the corner points to the measurement equipment, moving the screen to the point which has known coordinates. Printing the boundaries of the parcels, querying island-parcel, parcel division, parcel combination, addition the picture related to the properties, entering coordinates for points, lines and polygons, reading and printing coordinates.

Analysis and queries are realized in MapInfo environment. The graphic data can be queried from the attributes and vice versa. The generalization has been applied to increase visual detection level in different scales and resolutions at dynamic structure.

Integration of NP-GIS with Google Maps

Although NPAP is based on the attribute (verbal) database it has a structure that the graphic data can also be recorded especially with the impact of the developments in GIS technology. The first aim is that NP-GIS can query the Treasury properties and its surroundings by using island and parcel numbers. Additionally new projects are produced with Google Maps in last years. One of them is “TAKBIS (Information System for Land Registry and Cadastre) Integration Program” which matches the digital land registration attributes and digital cadastre graphic information in the concept of protocol between GDLRC and GDNP, and presents the result with the developed interfaces. The other one is “Coordinate Information System (CIS) Program” that keeps and presents the corner coordinates of the Treasury properties.

CIS is developed on C# programming language which is compatible to Sybase database. Later ASP.NET 2.0, GeoWeb 2.0, JavaScript Frameworks (YUI/DOJO) and Google Maps API are used instead of C# because the platform for the presentation of the property geometry is changed. The graphic and non-graphic data can be presented both on “Real Property Program” and “CIS Program”, and also the necessary and sufficient information for the Treasury properties to be sold are presented on website. Any internet user who resides in any part of Turkey can follow the tendered immovable in any city or district through on the corporate website of GDNP. The sub-menu of “Immoveable Sale Tenders” under menu of “Corporate Tenders” gives the list of these properties and detailed information with the Google Maps integration (Figure 3). As a result of this immoveable query the following information are declared: city/district, village/neighborhood, island no, parcel no, area, the portion for Treasury (m^2), area to be sold (m^2), type, reconstruction (zoning) date, reconstruction feature, legal basis for the sale, tender date, total estimated cost (TL), Temporary Guarantee (TL) and explanations.

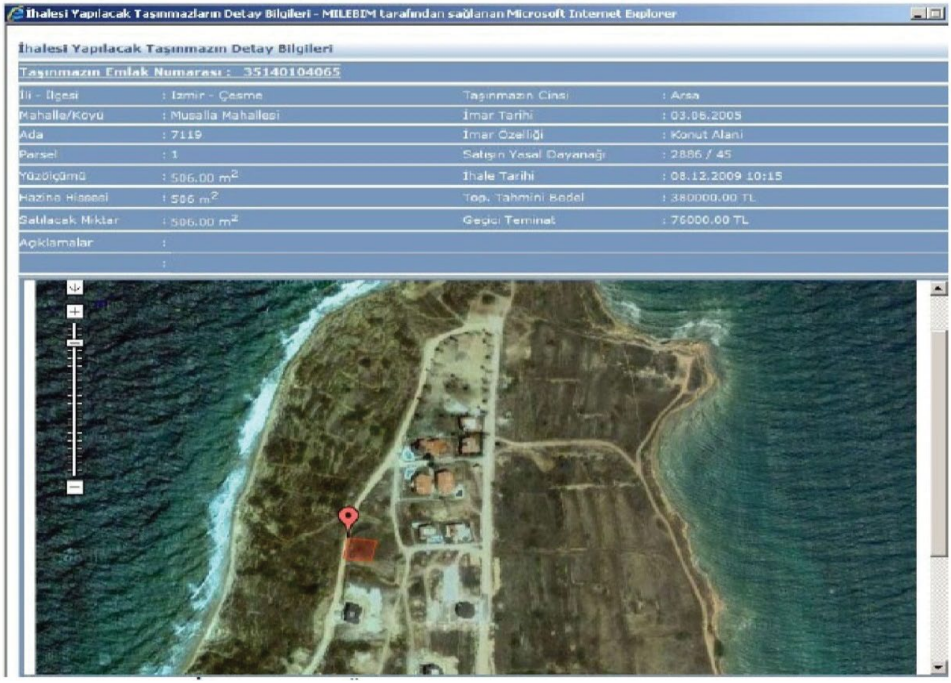

Figure 3: Searching an example property to be sold and its information [24].

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Results and Discussion

NPAP started in 1995 and completed in 2002. Additionally presentation of Treasury properties to be sold on web has been applying since last years of 2000's. The project is established on client/server structure by using relational database and object oriented application programs. There have been hundreds of modules, tables, colons, indexes, triggers, procedures, windows, reports, graphics and statistics.

According to the statistics obtained from NPAP there are approximately 3800000 properties are registered on behalf of Treasury, they are under the private ownership of Treasury and under the sentence and administration of State. As of 01 October 2013 Table 1 gives the exact numbers of Treasury properties and Table 2 shows the distribution of registered properties according to their types. As seen on the tables only registered properties cover more than ¼ of whole area of Turkey with 783562 km^2 area. Also when empty spaces such as mountainous areas are added to these it means that more than ½ of whole area of Turkey is under the administration and responsibility of GDNP.

Type of the property	Number	Share in the total number (%)	Total area (m2)	Share in the total area (m2)
Registered on behalf of Treasury	3.774.967	95,29	226.137.555.827	94,71
Under Sentence and Administration of State	86.615	2,19	6.838.457.775	2,86
Related to Treasury	100.008	2,52	5.795.544.937	2,43
TOTAL	3.961.590	100	238.771.558.539	100

Table 1: All properties which are under the administration of GDNP.

Type	Number	Percentage (%)	Area (m2)	Percentage (%)
Building	149.102	3,95	769.117.987	0,34
Plot	434.278	11,5	1.645.876.865	0,73
Land	898.057	23,79	30.752.122.139	13,63
Vineyard-garden	243.896	6,46	881.604.299	0,39
Field	1.449.709	38,4	17.457.695.915	7,74
Forest	422.749	11,2	169.038.188.661	74,92
Public properties	94.284	2,5	4.313.107.214	1,91
Areas of water and water products	77.150	2,04	552.366.071	0,24
Areas of mine and quarry	1.168	0,03	108.233.748	0,05
Coasts and filled area	612	0,02	5.634.964	0
Historical and cultural areas	3.962	0,1	86.007.780	0,04
TOTAL	3.774.967	100	225.609.955.643	100

Table 2: Distribution of registered properties according to their types.

In NPAP some of the most widely used programs are Property Program, Sale Program, Land Grabbers (Ecrimisil) Program, Reconstruction Program, Investment Incentives and Transfer Program, and Coordinate Information System (CIS) Program. Property Program allows to enter all information related to the property and to query them. It is the basic of all other programs. CIS Program helps to determine and find the position of the Treasury properties, and present them to be sold on internet. It means that CIS Program integrated to Sale Program.

Because all properties have the spatial reference GIS branch of NPAP is considered as an alternative solution for the management of Treasury properties. In this context GDNP gets in touch with the different organizations producing geographic data, the data provided are matched with NPAP data. It is an approach on “interoperability” among the organizations. TAKBIS Integration Project that is signed between GDLRC and GDNP within the scope of the protocol is an interoperability sample [25].

In Turkey rapid population-growth, movement from the rural areas to the urban industrial areas with the mechanization of agriculture, the inadequacy of health, nutrition, education and transportation facilities, land fragmentation, losses and inability of agricultural efficiency, the concentration of the factories established usually in large city centers are some important migration reasons to have a better life in city centers. These people need the housings although they don’t have enough financial opportunities to buy or rent in the centers, and they construct “slums” around urban surroundings. These slums are generally built on Treasury areas. Squattering (slum housings) is social, economic and also environmental problem. The slums are not in the concept of reconstruction (development/zoning) plans and laws, they are named as illegal (unlicensed) buildings. This attitude is a kind of extortion and theft action and “a social crime” against to the urban laws [26,27,28]. Land Grabbers Program registers the squatter and occupied Treasury lands, and answers some questions: Which are occupied Treasury lands? What is the total revenue of occupied Treasury lands? What is the total price that is charged from these occupied Treasury lands? Reconstruction Program registers the properties which are subject to the reconstruction applications [29]. Reconstruction policies should not open the way for unhealthy urbanization, be for the public benefit, and be realized in the frame work of the laws related to environment, tourism and coasts.

Another one of the most important programs is Investment Incentives and Transfer Program to follow the Treasury lands which are compatible for the investment and will contribute for the national development. It helps to query the investment applications in the cities, distribution of the suitable properties for investment according to the sectors, transfer request information according to the cities and sectors [29]. It is aimed that Treasury properties contribute to the national economy in middle and long term via rent, sale and

constitution of servitude. In this direction, income earned from the Treasury properties has been increasing continuously by applications such as utilization from inactive properties and transfer proper properties to the investors. For example 3 treasury properties are allocated for the educational purposes in Van city [12]. The other sample is Konya city. Konya is the largest province in Turkey with respect to its surface. There are many treasury lands that can be allocated to the usage of investors. The number of the treasury properties on which there is no process and which have larger surface area than 300 da is around 1500. 445 parcels which are amongst these properties are not forest land, not included within the borders of land consolidation area and available for use with respect to their transportation, qualification and land conditions. These 445 parcels take high industrial, service or agricultural investment potentials to be allocated to investors and Organized Industrial Zones in Konya and its districts [30].

Conclusion

In Turkey the increasing migration from rural areas to the urban areas since 1950s has brought enormous problems such as regional disparities, squatters, the destruction of the environment, problems on the infrastructure services, vulnerability to urban disasters, lack of the efficient land policy. To minimize these problems and strengthen the economic, social and environmental aspects of the cities sustainable urbanization approaches have come to the forefront in recent years. The objective to reach a sustainable urban model which has an enhanced quality of life cannot be isolated from the efficient land policies because many issues such as spatial planning, environmental policies, urban transformation and infrastructure policies depends on land-use plans and decisions. Also land policies which will be created as a solution for the urbanization problems cannot be isolated from Treasury lands covering more than half of the territory.

GDNP restructured its organizational objectives in the view of the sustainability. NPAP is established to carry out the tasks of both central and provincial units of General Directorate of National Property more effectively and more efficiently. GIS is an alternative solution for this aim because all properties have a spatial reference. Therefore it is followed that how many Treasury properties there are, what their characteristics are, which ones of these will be sold/rent, whether if there are slums on them, which ones are subject to the investments. Finally NPAP-GIS enables an important support for land administration and urbanization policies. NPAP-GIS contains substantial information such as land registry and cadastre, reconstruction (zoning), expropriation, investment, and allocation information for the solution of urbanization problems and presents them to the relevant people/organizations/institutions.

In conclusion NPAP makes great contribution to the sustainable land policies and urbanization policies, especially in the scope of interoperability with different organizations such as Municipalities and General Directorate of Land Registry and Cadastre.

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