

Coastal Areas Planning

**LANDSCAPE QUALITY
IN PLANNING OF
COASTAL AREAS,
EXAMPLE OF DÜZCE
EFTENI LAKE**

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Keywords: *Coastal landscapes, landscape quality, landscape planning, Düzce Uğursuyu and Aksu basins*

Abstract

Whilst the coastal line is described as the line which is formed by joining of the points where the water contacts the land - except for cases of flood - in seas, natural and artificial lakes and streams; "Coastal Edge Line" is described as the natural border of the areas consisting of sand, gravels, rocks, stones, reed, bog etc. beyond the coastal line where the water movement takes place towards the land. The area between the coastal line and coastal edge line is described as the "Coast". Ecologically, in terms of streams, entire underground and aboveground catchment area of a particular stream constitutes the natural borders of it. Likewise, in terms of the sea coasts, all streams coming from the land and the catchment borders are in interaction with the coast. Coastal regions experienced changes because of the human settlements over the years and due to the unplanned and uncontrolled nature of these changes, coastal problems were caused in terms of ecological, settlement, trade, industry, transportation and recreation aspects. Evaluation of natural borders is required in all sectoral plans of tourism, agriculture, industry, settlement, etc. in order to sustain the natural resources.

Efteni Lake Wetland is located in the juncture of Küçük Melen, Asarsuyu, Aksu and Uğursuyu streams which is called Büyük Melen. These are the most important streams of the Büyük Melen basin situated within the West Black Sea basin numbered 13 that covers a substantial part of the Düzce province. The region which contains a “Wildlife Reserve” with an area of nearly 700 hectares serves the ecological system as an ecological vital point for the basin due to its location. All underground water flow direction is towards Efteni lake.

In this study, Uğursuyu and Aksu basins which contain Efteni Lake and the region North of the lake was evaluated as a whole and determination of Strict Nature Reserve, Wetland Zone, Ecological Effect Zone and Buffer Zone concerning the wetland as per parameters related to landscape quality and adoption of management decisions. In conclusion, it was set forth that water, habitat, biodiversity and stream corridor properties of the landscape, which constitute the landscape quality, and the cultural landscape functions may be used in planning and management of coastal landscapes.

**CLIMATE CHANGE AND
THE PORTUGUESE
LANDSCAPE
MANAGEMENT:
A MATTER OF
PERCEPTION.**

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Keywords: *Landscape, Climate Change, Coastal áreas, Urban development, Landscape planning, Landscape management, Landscape Architecture, Awareness*

Abstract

Climate Change is an inescapable fact. Whether it originates in Man's behaviors, or it is a mere consequence of dynamic climate cycles, it poses a number of challenges to which contemporary landscape management instruments must provide a satisfactory answer. Therefore, it is urgent to rapidly and coherently adapt our landscape management models. In order to do so, several factors must be considered. From climate itself, in a dynamic perspective, and its influences over every other ecological factors, to the way in which society perceives, grasps and deals with this new reality, a new paradigm is necessary. Landscape Architecture, as the scientific art of combining Man's needs and expectations with Nature's terms, stands as a privileged discipline for serving this purpose. The Portuguese planning and management instruments have evolved to become more of a bureaucratic checklist than dynamic landscape

models with the ability to predict future scenarios and adapt to them, answering to both society's expectations and ecological equilibrium. Is it then possible to provide them with the flexibility and proximity needed to face the contemporary challenges and expectations of a more demanding society?

ARCHITECTURE WITH THE SEA

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Keywords: *landscape along the coast, coastal and island port-city, architecture and public space of the coast.*

Abstract

The text presents the relationship between the sea and the coast and how architecture varies along the littoral. The meeting between the sea and coastline creates a particular situation. The sea defines a precise boundary, although in constant mutation and transformation, is perhaps the only limit that subtracts the contemporary territory and introduced, with respect to the land dimension, the scale of the horizon and the immensity of the vacuum.

It will be the theme of the harbour in the city, which represents a special case by the architectural and urban study, and that deserves attention because of its importance, especially with regard to the issue of the urban littoral edge. The space and technological needs of the port have changed, have sought new sites and structures, determining the obsolescence of the old areas and producing areas of large scale in the heart of the city, which have resulted in the degradation of such urban areas. On the other hand we examine the link between the sea and the coastline in terms of uses, which is being presented today with two very different realities: a public space for recreational activities and on the other hand, large industrial and transportation infrastructure of the port.

The coastline of Santa Cruz de Tenerife, where the port is not only an area characterized by economic activity that receives, but also as an area of strategic character of great relevance to the model of urban planning of the city, will be analysed as case study.

INTERVENTION PROJECT AND REHABILITATION OF THE BARRIER ISLANDS AND ISLETS

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Keywords: *Ria Formosa, barrier island, Renaturalization, Restructuring*

Abstract

The Ria Formosa is a marsh located in the province of Algarve in Portugal, covering an area of about 18,400 acres along 60 kilometers.

The system of barrier islands of Ria Formosa is housed in a protected area - Natural Park of Ria Formosa - since 1978, however this has not prevented the growth of several buildings, mostly illegal, since it is in the public maritime domain.

The Intervention Project and Rehabilitation of the Barrier Islands and islets, falls within the POLIS Program Coastal Ria Formosa and aim to Renaturation and the Restructuring of the areas between the Peninsula of Ancão and the island of Fuseta. The renaturation actions are intended to restore the natural conditions of the intervention areas through the demolition of existing buildings, encouraging natural regeneration of the ecosystem. They are provided for selective demolition and treatment of all waste arising from same.

Restructuring actions focus on three main villages built, whose existing buildings will be retained, since they are licensed to the authorities. The intervention will focus on the redevelopment of public space and its reorganization, through the redefinition of the organizational logistics, leisure and accommodation.

The barrier islands have a key role in protecting and safeguarding the entire coast. For this reason, all the interventions appear to be essential for the future of preserving it, removing the anthropogenic pressure, restoring the natural landscape and its organization, aiming at their economic, social and sustainable tourism.

**CENCHRUS INCERTUS
M.A. CURTIS, A
NON-NATIVE INVASIVE
PLANT ON THE SANDY
BEACHES OF THE
ROMANIAN BLACK SEA
SHORE**

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Keywords: *Cenchrus incertus, non-native plant, sandy beaches, Romanian Black Sea shore*

Abstract

Large local populations of *Cenchrus incertus* (coast sandbur, field sandbur or spiny bur grass) have been observed during the last two years in the area of Mamaia resort (famous resort near Constanta town) and in some locations of the sandy beach between Mamaia and Năvodari. Isolated specimens have been also recorded on the beach of Vama Veche village not very far from the Romanian-Bulgarian border. Although widespread in the world, *Cenchrus incertus* is considered rare in Romania, recorded only in some localities from Dobrudja region and south-east of Moldavia. This invasive alien species recorded for the first time in Romania in 1991 grow in Mamaia in large surfaces on the sands of the beach but also along roadsides and green spaces from beach vicinity. *Cenchrus incertus* is an anthropophilic weed connected to the presence of humans and animals, whom it uses to disseminate its burrs that stick to clothing or to animal fur and skin. Coast sandbur was probably accidentally introduced in Mamaia resort by the tourists or by the merchant transport to the resort. The spectacular increase of the sandy areas infected by this species over the past two years, especially in the Mamaia resort, demonstrates the high capacity for reproduction and dissemination of the plant in favorable conditions. Among the

neighbors of Romania, *Cenchrus incertus* has not yet been signaled in Bulgaria and Serbia. However, the risk of species dissemination in Bulgaria, along the Black Sea coastal area, is high, all the more so since the species has been identified near the Bulgarian border.

The presence of the species raises issues especially in the areas destined for beach, due to the spiny involucre that joins the flowers and fruits. This species can become a true element of discomfort for the tourists that walk barefoot on the beach and for their pets.

**RECONSTITUTION OF
MORPHOLOGICAL
EVOLUTION OF
RAZELM - SINOE
LAGOON SHORE
THROUGH GIS SPATIAL
AND 3D TECHNIQUES**

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Keywords: *GIS, shore evolution, spatial analyze, lagoon, maps, erosion, geomorphology*

Abstract

The shoreline represents the temporary separation limit between the lithosphere, hydrosphere and atmosphere, whose specific dynamic processes are reflected in its geomorphological development. The Black Sea lagoon shore is a relative new feature, formed in the last stages of the Danube Delta evolution; its age in the current form is approximately 3,000-4,000 years. In order to represent the historical evolution, the archeological and geological data were correlated with historical maps, the result being a synthesis of research starting with Grigore Antipa (1910, 1914) until Panin N. (1974, 1983, 1989) and Giosan L. et colab. (2006).

For representing the shoreline changes in the last 50 years, a 3-Dimensional model was built using topographic and hydrographic maps from 1960-1975. In order to highlight the evolution of the lagoon shore, the 3D model built was compared with Digital Terrain Model from 2004.

The small scale changes (beach morphology, shoreline) were analyzed using topographic profile measurements (1980-present), GPS shoreline measurements, orthophotoplans, aerial photos and satellite images.

The graphical representations were realized in an application of the ArcGIS 9.2 with data assimilation system and 3D and spatial analysis extensions. The ArcGIS spatial analysis techniques were developed on representations of spatial data (GPS data/ data obtained by digitization) in a plane model/referenced configuration, the results being represented/overlaid.

**COASTAL ZONE MANAGEMENT
OF THERMAIKOS GULF
(THESSALONIKI / GREECE):
APPLICATIONS TO PROTECTED
NATURA 2000 SITES**

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Keywords: *Integrated Coastal Zone Management, visitor management, Thermaikos Gulf, Natura 2000*

Abstract

Current management strategies on coastal areas are moving towards an integrated approach. In the Mediterranean, according to the Protocol of Barcelona, all hydrological, geomorphological, climatic, ecological, socioeconomic and cultural systems should be considered in Integrated Coastal Zone Management (ICZM). In this context, visitor management in coastal areas is also becoming popular in order to maintain the essential ecological processes, while respecting the socio-economic values of local communities. The present study concerns the preparation of an ICZM plan for an area located in the Western Coastal Zone of Thermaikos Gulf and a visitor management plan of the Eastern Coastal Zone of Thermaikos Gulf (Northwest Aegean Sea/Greece).

The ICZM plan involves the description of the area, in terms of the current legislative, management, administrative and research framework as well as the recording and assessment of pressures and their impacts. The action plan includes the descrip-

tion and analysis of measures, projects, legal regulations and interventions for the protection and management of the Western Coastal Zone of Thermaikos Gulf, the competent bodies for the implementation of the programme, the indices for monitoring the effectiveness of the proposed measures and the procedures of updating the proposed ICZM plan. Finally, a strategic environmental impact assessment of the plan is conducted.

The visitor management plan suggests an example of wide applicability in planning visitor management of protected areas in the Mediterranean; the recommendations, which involved proposing infrastructure and interventions, constitute the prerequisites for keeping existing tourist and cultural activities within an acceptable carrying capacity, while developing ecotourism.

COULD ALTERATIONS IN LAND USE PRACTICES EFFECT THE ECOLOGICAL STOICHIOMETRY IN AQUATIC ECOSYSTEMS?

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Keywords: *ecological stoichiometry, land use, nutrients, aquatic ecosystems*

Abstract

Ecological stoichiometry is a relatively new branch of ecology emphasizes on the role of mass balance of elements especially C, N, and P in ecological interactions such as resource-consumer dynamics. In aquatic ecosystems the ratio between N and P supplies has fundamental importance in the taxonomic composition of phytoplankton and the magnitude of primary production which in turn influence the food-web structure and the cycling of the elements thus biogeochemistry of the ecosystems. Land use characteristics in the catchments of surface aquatic ecosystems greatly affect the input rates of N and P into them. There are several studies showing that alternations in the elemental stoichiometry of the several components of biota living in various water bodies linked to land use characteristics in their catchments. In this study a brief assessment of the relation between catchment land use characteristics and ecological stoichiometry of various aquatic ecosystems has been presented.

**PCR-BASED PRELIMINARY DATA ON
THE POSSIBLE PRESENCE OF THE
HARMFUL ALGA AUREOCOCCUS
ANOPHAGEFFERENS IN MARINE
COASTAL WATERS OF
DURRES BAY, ALBANIA**

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Keywords: *Trophic state, Biological parameters, Physical parameters, specific 18S rRNA gene fragment*

Abstract

Aureococcus anophagefferens is a pelagophyte that causes harmful brown tide blooms. It grows in shallow, anthropogenically modified estuaries when levels of light and inorganic nutrients are low and organic carbon and nitrogen concentrations are elevated. The aim of the study was the application of a PCR-based methodology for the identification of the presence of harmful alga Aureococcus anophagefferens in the waters of Bay of Durres, where sampling stations represent hot spots of different origins of pollution, like urban waste waters, portual residues, fuels, etc. Aureococcus is reported to be present in different coastal areas in the world, but not yet in Albania. PCR detection was based on the intended amplification of the family specific 18S rRNA gene fragment. The total Chlorophyll a (Chl a), phosphate content and total phytoplankton DNA (biotic factors) were used to classify the trophic state of the sta-

tions, and abiotic factors (temperature, pH,) were used to explain and discuss the results of the PCR. In conclusion, despite the high level of trophy and pollution in the monitored area, the specific amplification of the gene fragment from *Aureococcus anophagefferens* was unsuccessful, which indicates the absence of this algae at the Bay of Durrës.

**MANAGEMENT SOLUTIONS
FOR FISH RESOURCES IN
GREECE BASED ON
ANALYSIS OF
MULTIDIMENSIONAL
DATABASE**

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Keywords: *Greek fish resources, multidimensional database, spatial and temporal analysis, decision making*

Abstract

Hierarchical multidimensional time series database on fishery in Greece is built using entity-relation-attribute model. This data concerns biological, economical and technical aspects of Greek fishery sector. Spatial and temporal analysis of “missing”, “low decreasing” and “big decreasing” fish species catches are carried out. Valuable information is obtained pertinent to the relation between natural fish resources of Greece and the corresponding economical activities. This information is of main importance for fish resources exploitation and protection. Aggregated data on fish catches by fishing tools and by category are analyzed as well. The presented systematic information approach to problems concerning exploitation of fish resources gives opportunity for taking decisions on different management levels – national and regional.

LANDSCAPE MAPPING ALONG THE THRACIAN COAST OF TURKEY

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Keywords: *Landscape mapping, costal zone management, Thrace, CORINE*

Abstract

Landscape mapping along the Thracian coast of Turkey Abstract Turkish coastline along the Thracian peninsula covers 786 km. Thrace region plays an important role for the landscape potential since it represents both the Black Sea and the Mediterranean coastal areas. Iğneada, located at the westernmost end of the Black Sea coast of Turkey, has a particular importance due to its ecological features. Within the area, swamp forests, wetlands and coastal dunes together create a complex of ecosystems. Swamp forest, which was mentioned as an endangered habitat type in the Bern Convention, is very rare at the national scale. It is regarded as one of the few remaining intact examples in Europe. As far the southern coast of Thrace, it is still maintains its natural potentials. Dunes along the northern coast of Saros Bay have different aspects in comparison with the other costal dunes of Turkey in terms of phytosociology, and flora which contains endemic and rare species. At present conservation of biodiversity is one of the most important concerns for the national authorities and, certain areas in the region have been designated for protection. However many conservation dependent coastal ecosystems are still threatened. A holistic spatial planning approach covering coastal environs of settlements along the

Turkish coast, and establishing green-space networks has become crucial due to the impact of mass domestic migration, and associated urbanization. Nevertheless, beyond the conservation policies through isolated areas, contribution of landscape planning, based on ecological data, can be provided neither in urban development plans nor in larger scale strategic plans in the country. During the last three decades there has been recognition that a landscape scale approach is fundamental to the understanding of ecological processes. The landscape scale is considered to be the appropriate spatial framework for the analysis of sustainability. As a result landscape approaches have been adopted by international and national organizations of EU to summarize pressures and threats and develop policies for sustainability. It is stated that landscape mapping is an essential tool for planning and management of landscapes therefore spatial planning should be based on ecological characterization of landscapes. CORINE biotope manual provides a finer scale classification for landscape units. This paper focuses on landscape mapping, which is based on the vegetation indicator. In this context, habitat characteristics and plant species composition were considered. Fifteen distinct habitat types were determined according to CORINE biotope classification along the northern coast of Saros Bay, while 21 habitat types were described within the protected area of İğneada .

IMPACT OF RIVER DISCHARGE ON COASTAL AREA WATER QUALITY

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Keywords: *Kamchia river discharge, Black Sea, coastal zone, Water quality, nutrients*

Abstract

Aiming sustainable water management, EU Water Framework Directive raises the importance of the understanding and estimation of the anthropogenic impact on the Water Quality (WQ) of coastal area. The goal of the study is the preliminary WQ estimation of coastal area affected by the biggest Bulgarian Black Sea river –Kamchia. The study was carried out in the area in front of the Kamchia River mouth in the central Bulgarian Black sea shelf. The spatial distribution peculiarities of basic physico-chemical parameters (temperature, salinity, transparency, pH, dissolved oxygen, BOD5, SM and nutrients) are analysed. The obtained results reveal that Kamchia River impacts the coastal zone in an area located less 1 mile eastward and southward from the river mouth. Most significant influence is found in the upper surface layer which is characterized with higher nutrients and particulate material content and lower transparency and salinity. The size of impacted area was defined by specific meteorological and hydrological conditions during the study. As a consequence of river discharge a mixing zone with brackish waters was formed in the close coastal area. It is characterized with about 7 times higher nitrogen, silica and phosphorus content than in marine waters.

REVEALING STRATEGIES FOR THE URBAN STREAMS – CASE OF ISTANBUL

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Keywords: *urban streams, sustainable landscape planning, urban stream enhancement, Istanbul*

Abstract

Throughout the history, capturing more than one hundred streams, the stream network of Istanbul has provided the city with its unique ecological, socio-cultural and economic features. However, within the last fifty years, rapid urbanization and industrialization have brought about devastating impacts on the urban streams, and thus suppressed their noteworthy landscape potentials.

Considering these suppressed potentials, this study aims to reveal landscape management strategies for the urban streams of Istanbul. Regarding their notable places in the urban memory and the diverse land cover types they have got, this study focuses on five major streams which are Kagithane, Cirpici, Kurbagalidere, Baltalimani and Goksu streams.

In order to gain a multi-layered understanding of these streams and the pertinent landscapes, GIS technology and multi-criteria analysis are utilized within this study. Ecological, socio-cultural and economic potentials of the selected streams are evaluated according to six major parameters as size of buffer area, accessibility, land

cover, scenic potential, necessity for intervention and proximity to the features of urban memory.

These analyses compare the streams according to their potentials and underline their strong landscape features for the identification of landscape management strategies. This study proves that urban streams of Istanbul have a power to improve not only the environmental quality but also the quality of life in Istanbul.

Today, there is an urgent need to revisit urban streams in Istanbul. This study is an attempt to highlight the importance of landscape planning for urban streams and for the benefit of Istanbul megacity.

NATURE BASED ZONNING FOR THE COASTAL AREA OF BURSA

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Keywords: *the balance of protection and use, land use management, environmental management, coastal zones of interaction*

Abstract

The first capital city of the Ottoman Empire and 4th largest metropolitan area of Turkey, Bursa, today, is adversely affected from erroneous use of land and resources as a consequence of the ongoing uncontrolled urban growth. Therefore, multi-functional land-uses are on the agenda in order to meet the social, economical and recreational demands of not only the growing population of the metropolitan area itself, but also the visiting population with touristic, commercial or scientific purposes. Within such context, the projection of the potential new uses, the estimation of the growth and development trends of the existing uses and the direction of the socio-economic demand in terms of resource constraints, gains importance in order to inhibit possible irreversible effects on the nature. Thus, the coastal areas and the zones of influence become primary areas of concern. Under such perspective, the Marmara Sea Coastal Zone, remaining within the boundaries of Bursa metropolitan area, appears as a priority area with its genuine features of topography, vegetation, wetlands and characteristic product fields such as olive grounds. The protection of these genuine

features of the area, and the land-use planning collinear with this goal, requires urgency in intervention. In line with this reasoning, this study aims to state the zones and sub-zones of influences and interaction precisely, as well as defining the main principles for land-use, protection and enhancement of this specific area. For this purpose, the data and the information concerning the basic components of natural structure, the environment and the environmental issues are initially organized, then analyzed through the use of Geographic Information Systems (GIS) and lastly interpreted. The pressure on life-support systems and the possible risks of high seismicity constitutes the basis for the interpretation; while special emphasis is put on the land use planning and environmental management with regards to the coastal zone uses of agriculture, industry, services, transportation and logistics. The study concludes by delineating the land-use measures and protection guidelines for the coastal zone and the areas of influence by reference to the characteristic zoning and sub-zoning.

DETERMINING THE CHANGE ABOUT THE USAGES OF COASTAL AREAS IN EASTERN BLACK SEA OF ISTANBUL

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Keywords: *coastal area, coastal planning, change detection*

Abstract

Due to the fact that the coasts are one of the most preferred residential areas in the world interms of both economical and cultural reasons and that they have an important role for the development of countries by providing economical and social development opportunities for societies, and because they are the units subject to fastest changes, the activities and demands on these areas are increasing day by day. The coasts are not only the places where water and land meets, but also a life zone and the source of "a culture" in city life. This is why it is necessary to adopt an approach of planning which saves natural building and authentic identity behind the coasts that are the symbols of culture and landscape integrating with coast and water. Determining the changes on coastal areas, protecting the area around coasts, effective management of history in coastal areas and efficient use of natural resources are very important interms of sustainable coast planning and development. This study was carried out in order to specify the changes in coastal areas of İstanbul's Eastern Black Sea region including coastal villages not excepting Anadolu Feneri and Ağva between 1975-1990;1990-2005. Determination of temporal change, is possible only through comparing the data in the past and the current one. High resolution satellite pictures and aerial photographs are the most important data source in determining the temporal changes occurring es-

pecially in wide coastal areas. Landsat satellite images were used in the research in order to specify the changes of land cover and the use of coastal areas. The images of field of study were classified according to Maximum Likelihood Algorithm. By using Comparison technique after classification, it was aimed to shed light on new planning decisions by addressing the changes of land cover and area use.

REMAPPING THE RELATION OF ISTANBUL WITH BOSPORUS

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Keywords: *Istanbul sea shore, Bosporus, water-city relations, water front, urban history, urban landscape, waterfront revitalization*

Abstract

Throughout the history, public spaces of Istanbul were developed near the sea-shores. By the end of the 20th century Istanbul's relation with the sea was severed by new transformations. Especially the Coastal Line Project, which was partly designed within the framework of Prost's plan and extended from Dolmabahçe to Karaköy along the shoreline of the Marmara Sea when the Democrat Party was in power, has blocked the relation between the land and the sea. Furthermore, during the period of Mayor Bedrettin Dalan, 1984-1989, the coastal road was extended along the coastal districts/villages of the Bosporus, limiting the city's relation with water. Parts of the Coastal Road Project required extending the land into the sea (the road was built on land-fill) and other parts required placing steel piles into the sea to support concrete base of the road, all of which led to physical discontinuity. In this study the coastline of Bosporus between the two bridges will be examined by analyzing different sections at different districts. The recognition of the importance of water and accessibility to it from the perspective of a pedestrian will be analyzed along with the characteristics of the built environment along the coastline. Especially cul-de-sacs (blind alleys), landfill

areas and highways ending up at or opening to the Bosphorus, will be documented. In this article, it is aimed to create a new map of the Bosphorus exploring the new linkages between sea and land.

Recent shifts on these waterfront areas, such as the establishment of new buildings or the destruction of the old fabric that changed how the land was used, will also be examined. The study will generate useful design proposals on urban fabric and coastal land uses by focusing on the vital locations in terms of accessibility to water. In this context different sections which lie between the coastline and the sea will be analyzed to document the variety of the existing character. As a result, new interventions to link the sea with the land will be proposed, in order to reconfigure the relationship between the city and water.

SUSTAINABLE DEVELOPMENT IN MARINE STRATEGY IMPLEMENTATION AND COASTAL INTEGRATED MANAGEMENT: THE CASE OF PERSEUS PROJECT

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Keywords: *Marine Strategy; PERSEUS EU Project; Mediterranean and Black Sea*

Abstract

The scientific objectives of PERSEUS, an EU-FP7 project, are to identify the interacting patterns of natural and human-derived pressures on the Mediterranean and Black Seas, assess their impact on marine ecosystems and design an effective and innovative research governance framework based on sound scientific knowledge. Well-coordinated scientific research and socio-economic analysis will be applied at a wide-ranging scale, from basin to coastal. The new knowledge will advance the selection and application of the appropriate descriptors and indicators of the MSFD. New tools will be developed in order to evaluate the current environmental status, by way of combining monitoring and modelling capabilities, while existing observational systems will be upgraded and extended. In view of reaching Good Environmental Status (GES), a scenario-based framework of adaptive policies and management schemes will be developed. Scenarios of a suitable time frame and spatial scope will be used to explore interactions between projected anthropogenic and natural pressures. A feasible and realistic adaptation policy framework will be defined and ranked in relation to vulnerable marine sectors/groups/regions, in order to design management schemes for marine governance. Moreover, PERSEUS will develop the concept of an innovative, small research vessel, aiming to serve as a scientific survey tool, in very

shallow areas, where the currently available research vessels are inadequate. Finally, the project will promote the principles and objectives outlined in the MSFD across the SES. Fifty-four partners, Institutes, Universities and SMEs, join forces, in order to address common environmental pressures and take action in achieving the GES.

Urban Landscape and Rural Planning

**RECREATIONAL PLANNING
& LANDSCAPE DESIGN OF
RIVERSIDE OUTDOOR
RECREATION FOR
ECOTOURISM DEVELOP-
MENT A CASE STUDY: GYAN
IN NAHAVAND, (IRAN)**

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Keywords: *Riverside outdoor recreation, Recreational planning, landscape design, Ecotourism development*

Abstract

The formation of permanent rivers by springs on the morphologic valley-river bed in suburban and ecological characteristics of this settlement have caused riverside outdoor recreation by which plenty of visitors could be attracted. Ecotourism in natural outdoor recreations can play a remarkable role in the sustainability of ecological values in the natural environment and thus increase the participation of local communities.

In this research, one of the natural outdoor recreations in the vicinity of Nahavand City called 'Gyan' has been studied. It belongs to Zagros surviving vegetation with the ancient civilization of Gyan which had been formed beside Gyan spring and river, now being a natural – historical – recreational attraction.

The main objective of this research is providing a methodology for planning and designing this type of outdoor recreation and providing a functional and physical development plan. In the recreational planning process, firstly the recreational resources were investigated by collecting relevant documents and analyzing the information

and also carrying out field survey. Subsequently, an assessment of recreational capability with overlaying natural setting layers was conducted; the landscape visual evaluation was done using the GIS (Geographic Information Systems); visual and landscape baseline analysis and visitor's preferences were estimated using questionnaires. Eventually, the recreational demands were recognized and recreational land use locations as well as the relationship between them were determined.

The final findings, was to design Gyan Riverside Outdoor Recreation with consideration of recreation planning and sustainable design principles with a purpose of providing a development plan and enhancing the quality of the environment.

**ASSESSMENT OF THE
ACCESSIBILITY OF URBAN
GREEN SPACES
IN ANTALYA KONYAALTI
DISTRICT, TURKEY**

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Keywords: *green space, green infrastructure, urban planning, accessibility, Antalya,
Turkey*

Abstract

Green spaces positively affect the quality of environment and urban life. Public demand for green space is becoming stronger in order to get aesthetic enjoyment, recreation, and access to clean air or quiet environment. One of the concepts regarding the use of green spaces by people is the access or accessibility. This concept is also closely related with the concept of green space service radius. Konyaalti is one of the five districts of Antalya city of Turkey. With its rich natural and cultural elements and tourism potential, it is the district where the development and change of Antalya city is significantly reflected on the space. In the research, an accessibility assessment was done for all public green spaces in the district by taking 200 meters into consideration as the service radius. Results have shown that some parts of the district remain out of the service radius of the existing green spaces. This indicates that the existing green spaces are not evenly distributed in the urban fabric and the residents of some quarters have accessibility problem to these spaces. The research indicated the need for a better consideration of accessibility issue in urban landscape planning education and practice.

IMPORTANCE OF LANDSCAPE DESIGN IN KINDERGARTEN'S COURTYARDS - A CASE STUDY OF NOVI SAD, SERBIA

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Keywords: *landscape design, children, kindergartens, courtyards, playgrounds*

Abstract

Play is considered as a basic type of children activity, as it reflects their biological and physical needs. While playing games, children develop their psycho-physical characteristics of personality and exercise socialisation. Continuous and various movements in open spaces, richness in physical and emotional reactions are influences of great importance in children development. As plays are special creative activities which result in a communication between children and their surroundings, it is important to appropriately design open spaces in kindergartens and provide children with high-quality ambiances.

Playgrounds within kindergarten's courtyards have a significant role for children's stay in these institutions. Since children's proper mental and physical development is, among other factors, conditioned by appropriate open-air activities, this paper discusses the quality of landscape design of courtyards intended for their play. These spaces are examined and critically analysed through a case-study of kindergarten's courtyards in Novi Sad, Serbia.

The aim of the paper is to investigate various landscape design of courtyards and playgrounds in kindergartens, as well as to critically analyse them, detect good design practise and suggest architectural and landscape approaches to redesigning them in a way to become more appropriate to children's needs. Designing adequate spaces for children's play in different kindergarten's courtyards is a special challenge for architects and landscape designers in order to achieve quality ambiances.

ROLE OF VALUE SYSTEMS IN MICRO-REGIONAL DEVELOPMENT – THE BASE OF SUSTAINABLE, COMPETITIVE REGIONS

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Keywords: *value systems, value conciliation, public participation, value based development, sustainability, competitiveness*

Abstract

My study deals with a hardly researched topic, with the new aspect of micro-regional landscape development: with value systems and their roles in micro-regional development and planning. The value systems determine people's space use, direction of spatial processes, etc. In a micro-region there are many interests and value systems, which try to get on. By the personal, public values there are also formal norm systems, like laws and developing documents. It's a big problem that the regional, spatial plans and developing documents reflect, transmit different values, so they don't permit of reaching of common goals. Differences of value systems of actors and documents led to conflicts. These problems are impediment to sustainable development and competitiveness.

My study draws attention to this research area and its aim to substantiate the new way of regional planning and development and to work out a methodological basis. The result of my study is a method of creating of a framework system, which is based on value system. This system permits of consensus-based value harmonization and value approach of micro-region's actors, which are the condition of sustainable, competitive regions' birth. This scheme provides the working out of regional value

system, the coherence of developing documents and plans, and reaching a common micro-regional vision.

IMPORTANCE OF PUBLIC SPACES IN TERMS OF SOCIAL INTERACTION: NEW YORK AND ISTANBUL CASES

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Keywords: *Public Space, Social Interaction, Globalization*

Abstract

Rapid population growth have emerged with security problems in urban areas and so people has tended to be alone. This condition has led to the weakening of social ties. Protecting for spirit of community and enhancing social interaction are needed to public spaces. Public spaces are social spaces that are open and accessible to all people, regardless of gender, race, ethnicity, age or socio-economic level. They are commonly shared and created for open usage throughout the community. The most important function of public space is promoting human contact and social activities. If they have unique or special character, they would reflect own local culture and history. This character is changed according to space's situation such as urbanization, climatic conditions, geography and globalization. Globalization tendency changes urban identity and this situation reflects on urban design and public space utilization. As a result of this tendency, citys and their inhabitants start to look like each other, especially in terms of life styles, recreatinol behavior and open space usega. In this study, New york global city's public spaces are examined and compared with İstanbul citys'. Thus, similarities and differences in the usage of public space that allow social interaction have been determined. So, some solutions have been introduced for İstanbul's future.

LANDSCAPING FOR EARTH SHELTERED HOUSING

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Keywords: *Earth Sheltered Housing, Landscaping, Soil, Drainage, Planting*

Abstract

In an earth-sheltered design, landscaping should not be thought of as a separate decorative feature to be added after the house is built. It is a critical element of the overall design, which must be coordinated with all of the other elements of the house, particularly structural and waterproofing systems as well as soils and drainage systems. This paper presents the major landscape concerns, which are unique to this type of housing and is concerned with plant materials as they relate to more detailed technical landscape considerations as well as to the total landscape design.

**DETERMINATION OF
RECREATIONAL URBAN
FOREST PATCHES BASED ON
SPATIAL
CHARACTERISTICS, CASE
STUDY: BARTIN (TURKEY)
CITY CENTER AND VICINITY**

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Keywords: *urban forest patches, recreation potential, Geographical Information System (GIS), spatial characteristics, Bartın city center and vicinity.*

Abstract

Urban forest patches are relatively isolated green patterns of the city and vicinity texture. Although they are ecologically vulnerable, they have the capability of serving and supporting the recreational needs of the urban society. Bartın city center and vicinity are surrounded with the hills and mountains covered by the forested vegetation. Forested vegetation penetrates through the settlements forming patches here and there. Based on solely their spatial characteristics, forest patches which carry recreation potential were indicated. Six forest patches situated close to the Bartın city center and the vicinity were chosen for the determination of their recreation potential. Spatial identification comprising the point location, boundary definition, altitude, slope, aspect, distance and accessibility analyses were conducted both during the field trips and by the assistance of Geographical Information System (GIS) tools. Proposed forest patches are able to provide about 31 m² more recreational area

per person in the city. The most restrictive factor for the usage of them is their slope which is ranging between 20-40%. However, these are the preliminary indicators for the determination of the recreation potential of these forest patches. Comprehensive research consisting soil, water and vegetation analyses will assist ecological landscape planning and decision making processes for those forest patches.

PARAMETRIC URBAN LANDSCAPES

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Keywords: *Landscape urbanism, machine landscape, field operations, landscape infrastructure, parametricism, deep relations, rule-based design, shape grammar, evolutionary genotype, digital morphogenesis, space syntax, generative algorithmic model, parametric urbanism, relational urbanism, urban ecology, urban landscape character*

Abstract

Landscape urbanism that has brought up an explanation to the changing and transforming urbanism understanding was initiated in mid-1990's by Charles Waldheim as a definition of the existing and ongoing status. This concept has attempted to fill the gap between urban planning and landscape architecture, planning and design so as to create the new hybrid interdisciplinary area. It defends a position of compatible and mobile process-based planning and design rather than a stationary design approach.

This study concentrates on the interaction of landscape urbanism, handled as a new paradigm and a new discipline, with parametricism, the new style that defines the time period we are going through. Integration of landscape urbanism, parametricism and landscape ecology will reveal the unseen design and process relations of landscape. In many universities pioneering in the fields of landscape architecture, urban

planning and architecture, landscape urbanism has been included in the post-graduation education programs. Academic studies on parametric urban landscapes are in the verge of a development that will fundamentally change today's understanding of space planning and design. The traces of this development that will mark a new epoch drastically altering the next century's perception of urban space are pursued with this study.

**RESILIENT CITIES AND
ADAPTATION
CASE STUDY: CHICAGO
METROPOLITAN AREA**

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Keywords: *Resilient cities, Adaptation, Chicago*

Abstract

Since cities formed, they have been destroyed through out history, either by man or nature. But they were always rebuilt and rebounded. After about 1800, such resilience became a nearly universal fact of urban settlement around world.

Urban disaster takes many forms and can be categorized in many ways like scale of destruction, human troll, natural disasters and etc. because of these kinds of disasters our cities need to be resilient and need to adapt upcoming conditions.

Although there are many different form of disasters this study is more concerned about the ones that are caused by humans and that can be prevented or at least with the ones which we still can do something about. In other words this study is about importance of resilient cities and adapting our cities to the future.

While studying resilience and adaptation, Chicago Metropolitan Area will be the case study. Because, Chicago's main struggle begins with the Great Fire in 1871, continues with Great Depression in 1930 and World War II effects and still continues with

problems that are caused by people's modern lifestyle like heat islands or greenhouse gas emissions.

This thesis researches about energy efficient buildings, clean and renewable energy resources, improved transportation options, reduced waste and industrial pollution and adapting to new conditions so that cities can be sustainable and their residents can continue their urban life without extreme shocks and stresses.

For more than fifteen years Chicago has been promoting the transformation into an environmentally friendly city. From green roofs to recycling, Chicago continues to take steps toward resiliency against climate change. Currently, not only the local government but also the business community and residents at large have engaged in a multitude of key partnerships and efforts to support the city's goal.

Scientists, businesses and governments around the world are in agreement: climate change is one of the most serious issues facing the Earth today. Greenhouse gas emissions come from both natural and human sources. In the last 50 years, levels of carbon dioxide in the atmosphere have risen 25 percent; levels of methane, an even more potent greenhouse gas, have more than doubled. Because of these increases in heat-trapping gases, under a high-emissions scenario, recent predictions show that by the end of the century, annual average temperature could increase up to four degrees Celsius.

Even though this thesis case study Chicago Metropolitan Area, every single part of the Earth will be affected with climate change. Developed countries started to take action against climate change and they are developing strategies that can be applied by even developing countries. Turkey is a young and developing country, and those strategies can be used as a road map to strength our cities against incoming climate change.

**THE INFLUENCES OF URBAN
DESIGN AND
CONSOLIDATION ON PLACE
ATTACHMENT AT THE OLD
CITIES : THE CASE OF
HAMAMÖNÜ**

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Keywords: *Place Attachment, Urban Consodilation, Urban Design, Hamamönü*

Abstract

The urban design and consolidation studies aim to provide both maintaining original identity of the areas which have the historic urban fabric and participating them to contemporary life. Those studies change and transform the relationship between people and place. This study aims to determine the influences of the renewal works done via urban design and consolidation on place attachment and Hamamönü at Altındağ District of the capital Ankara is discussed. The surveys are conducted with 200 participants selected randomly between the people using the area before and after renewal works. The concepts of place identity and place dependence are tested and the effects of renewal on place attachment are determined by the surveys, observations and interviews. The results demonstrate that the urban design and consolidation studies at the old cities, which have historical and traditional properties, have several effects on place attachment and reflects on social, cultural, economical and recreational activities of users.

VĂCĂREȘTI: URBAN WETLAND IN BUCHAREST

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Keywords: *urban wetland, urban ecosystem, wildlife, sustainability, Bucharest, Văcărești*

Abstract

The paper presents a case-study regarding Văcărești area, located in the southern part of Bucharest (Romania). It contains one of the largest urban wetlands in Europe, which has been developed mostly naturally within an unfinished manmade lake bed, built in the late 80's, during the last years of the communist era.

Until 1985, Văcărești was an old suburb neighborhood, dating from 19th century. Within the urban systematization process, initiated by the dictatorial authorities, the houses were razed to build an artificial lake. Its roles were to control the water level of Dâmbovița River and to create naval accessibility between the Danube River and the capital city. In 1990, after the falling of the totalitarian regime, the project was abandoned, even if it was almost ready. Nowadays, after more than two decades, a valuable marsh ecosystem has been developed between the dams of the unfinished lake, on about 150 ha (375 acres). It includes a rich fauna, with many species of migratory birds, amphibians, fishes, insects and green areas covered by spontaneous vegetation, both aquatic and terrestrial plants. Even if the area should be a very important component of the urban green system, it is neglected by the inhabitants

and the Romanian authorities. The wetland's future is actually uncertain, because of the unclear legal statute of the area, which generated many disputes at spatial planning level.

**OUR CULTURAL
HERITAGE THAT LEFT
A MARK IN HISTORY:
DOLMABAĞÇE
PALACE AND ITS
GARDEN (İSTANBUL)**

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Keywords: *Historical gardens, Ottoman Palaces, the palace gardens in İstanbul, conservation and restoration, Dolmabahçe Palace and its garden.*

Abstract

Ottoman Palace Gardens are cultural heritage which have existing samples at the present and have an important function in the development of Turkish garden art. To ensure the sustainability of Ottoman Palace Gardens, regarding the balance between their preservation and usage, their gardens should be restored as well as their architectural structures.

In this paper, exterior features of Dolmabahçe Palace, which is one of the privileged samples of the Ottoman Palaces and has maintained its importance increasingly in the Republican Period, will be examined within the framework of conservation and sustainability. With this purpose, at first, location, transportation position and historical perspective of the research area will be displayed. Afterward, the architectural and exterior design concept of Dolmabahçe Palace will be studied and the historical process of conservation and restoration works will be determined as well.

Finally, to be transmitted to future generations, due to its great importance in our country's history and the art of garden design, some proposals regarding outdoor conservation and restoration for the exterior features of Dolmabahçe Palace will be developed.

**SOCIAL JUSTICE FOR
CHILDREN IN URBAN
LANDSCAPE PLANNING:
URBAN OPEN SPACES
WITH WATER FEATURES
IN SHEFFIELD.**

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Keywords: *Social Justice, Distributional Justice, Water Features, Inclusion, Urban Open Spaces, Environmental Service Distribution, Sustainable Urban Landscape*

Abstract

Sustainability of urban landscapes has been discussed by researchers for many years. In the article in The Royal Town Planning Institute (RTPI) in the UK sustainability is described as “economic development, social justice and inclusion, environmental integrity, and integrated transport” (Smith, 2011). For sustainable urban landscapes to exist, social inequalities and inclusion of every member of the public should be considered.

Sheffield “The Steel City” is the third largest metropolitan area in England (Census, 2001). Sheffield has been an important production city for the UK after industrial revolution with its steel making factories. Although steel making changed into other sectors, productivity of the city resulted large amount of immigration, particularly from Pakistani origin. Percentage of immigrants was 14.91percent and 9.9 percent of the population from ethnic minorities according to the 2001 census.

This study examines the socio-economic backgrounds of Sheffield citizens and the relationship between and the distribution of urban open spaces with water features. This reveals that there is an inequality in the distribution of the urban open spaces with water features in Sheffield. GIS based socio-economic analyses are used to examine the relationship between the socio-economic structure and distribution of urban open spaces.

Social justice is important for creating sustainable landscape for every child in terms of equality and inclusion. This research attempts to fill the gap in knowledge by identifying social inequalities in urban open spaces and providing implications for city council, landscape planners in Sheffield to create more equal landscapes.

INTERFACE BETWEEN URBAN AND RURAL; GÖKTÜRK FOREST NURSERY

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Keywords: *Urban identity, rural landscape, sustainable planning, Göktürk Forest Nursery, İstanbul*

Abstract

Istanbul is in rapid change and development for past decades, for this reason it is important to re-use the reserve areas, which are left in the urban boundaries, as public open space to improve the life quality. Since cities are not static objects, they grow fast; pressing the rural, pushing the borders day by day and putting urban landscape in transitional situation. Due to the increased population growth and the spread of settlements into the interior of forests in the north of İstanbul, the border lands become an important opportunity to establish the relationship between rural/urban and to meet the needs of people in terms of recreational requirements. Göktürk Forest Nursery is a green area absorbed by new urbanization form due to the expansion of the settlement to the Northern Forest of İstanbul. In 1969, it is founded to meet the needs of forest trees and ornamental plants, nevertheless, today Göktürk Forest Nursery is in a transitional phase of urban development, changing into interact with urban forms and rural landscape. In this respect, Göktürk Forest Nursery should be approached in sustainable landscape planning / design processes by taking consider its physical, ecological, social and economic potentials. The relations with the city must be recontextualized. Thus, the organized landscape became cultural product,

effecting the urban identity. A change in this landscape means a change in urban identity. Therefore, this both natural and cultural landscape will identify the future values of urban form and relation with rural lands in the north of Istanbul.

THE EFFECTS OF NEW URBAN LANDSCAPE CONTEXTS ON CHANGING PUBLIC OPEN SPACES

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Keywords: *public open spaces, contemporary city, urban landscape, new landscape contexts*

Abstract

Public spaces have become subject to broad concern in last thirty years under the influence of globalization, technological developments, urban regeneration projects and privatization policies. Also, by the changing of the nature of cities, the expectations and the life styles of citizens and the usage of open spaces have been changing. Additionally, shifting the theoretical debate of 'landscape' from a mere green area or just a background to architecture towards 'an active surface' emerged a new type of public space characteristics. This new viewpoint to landscape highlights the concepts of 'flexibility, spontaneity, events, ambiguity, and temporariness' particularly at the end of the twentieth century.

This paper draws attention to these changes in public spaces and urban landscape context. Reviewing the literature of the public space and landscape theory in last three decades, it first defines the reasons behind the changing of public space notion, second explains the changing meaning of landscape and its new contexts, and third describes new types of public spaces in the urban landscapes. In the conclusion, the paper summaries the key issues mentioned in the study and try to give clues for urban and landscape design practices.

LANDSCAPE CHARACTER ASSESSMENT IN THE DEFINITION AND PROTECTION OF URBAN AND RURAL LANDSCAPES

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Keywords: *Landscape, Urban Landscape, Rural Landscape, Landscape Character Assessment (LCA), European Landscape Convention (ELC)*

Abstract

Landscape is the totality of cultural and natural aspects and elements in an area. It is either created or modified by human intervention on nature which eventually has become natural and cultural landscapes. Urban and rural landscapes are two main cultural landscape types that are distinguished by the pattern and density of land use. Urban landscapes cover mass buildings and other human features where rural landscapes are open country areas with low population and main activities of agriculture and farming.

Landscape character is defined as a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another and Landscape Character Assessment (LCA) is a process that has been widely used in many European countries that have already signed, ratified and implemented the European Landscape Convention (ELC) that first international agreement focusing on natural, rural, urban and peri-urban areas.

The aim of this study is to discuss practicability of a LCA methodology in the characterisation of urban and rural landscapes with some examples from Side Region in Antalya, Turkey. Based on land cover elements, visual landscape aspects, perceived aspects and structural patterns, landscape characteristic is compared between urban and rural landscapes with the consideration that LCA would a useful tool in the definition as well as management and protection of different cultural landscapes.

RESEARCH OF PUBLIC PREFERENCES FOR RECREATIONAL URBAN OPEN SPACES IN THE CASE STUDY OF THE KONYAALTI ANTALYA

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Keywords: *Recreation, Urban open spaces, User attitudes*

Abstract

Leisure activities have special role in the modern age when the working time has an important part in the routine life of the city person. The need of the recreation is the most important thing of the city dwellers and open spaces are the most basic space to satisfy this demand. Because of them creative designers and planners seek new ways to make city areas more satisfying places to live.

In this study, it is determined that the expectations of urban people about recreational activities relating to urban open spaces which are one of the significant resources for cities. For this reason, the urban open space types which are presented for recreational use of the urban landscapes is studied and in the specialized area of Antalya, Konyaalti region, providing ways of users' requirements are examined by protect the urban ecology.

For that purpose the studies, from the world and Turkey, relating to urban open spaces which are used for recreational uses that could serve as a model to the area are revised, information relating to the Konyaalti region have been investigated and in a questionnaire has been examined to collect users' opinion and to determine stake-

holders attitudes and perceptions about the recreational open spaces on the study area. The results of the questionnaire put to the Chi-square analysis and the results are examined with the MANOVA method. Following the study for the Konyaaltı region users have expectations relating to the design of open space and features of this area should comprise medium density use.

SEARCHING FOR USER'S PROFILE IN URBAN PARKS: THE CASE STUDY OF TRABZON CITY

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Keywords: *User profile, Urban park, Open green space, Trabzon city*

Abstract

Rapid, dense and unorganized urbanization is one of the most important factors avoiding people from being in natural life. When increasing rhythm of urban life and stress are combined with urban open spaces which don't adequately meet the recreational needs of urban citizen, this situation seriously threatens the physical and the mental wellbeing of users living in urban environments. In this study it is aimed to determine urban parks in Trabzon city center by analyzing physical and characteristic features and user profile of the selected urban parks and to make further suggestions for future planning, Because of its intense and unorganized urbanization, linear growth and inadequate park areas. Open green spaces in Trabzon were analyzed and then three parks having the suitable criteria of urban parks. For the next step selected urban parks were defined according to their characteristic features. In the research, 100 persons/people from the total number of 300 persons/people, were interviewed face to face for each park and questionnaire survey was analyzed to take the reasons of users for visiting park. Data was statistically analyzed. When research results were evaluated, for each park according to the questionnaire results male

users visit the parks in greater numbers than female ones. The parks, located in city center, are used by general groups. The older age groups and the young age groups prefer the parks, located in center, the middle age groups and the older groups prefer the parks that are in close neighborhood to their residences.

EFFECT OF A TYPICAL EXTENSIVE GREEN ROOF ON STORMWATER RUNOFF IN BAHCEKOY-ISTANBUL

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Keywords: *Green roofs, stormwater runoff, Istanbul, hydrological performance*

Abstract

Impervious surfaces in the urban areas are increasing as a result of urbanization and development. Roof surfaces constitute a large portion of impervious cover in cities. Within the scope of the sustainability principle and the urban policies in the world, water retention benefits of the green roofs to the urban environment have been assessed with various academic studies. In recent years, green roof systems are being used to reduce the storm water runoff in urban areas.

In this research, main aim is to determine the rainfall–runoff relationship of a typical extensive green roof with 50 mm-thick substrate and perform comparisons with an unvegetated roof with the help of field measurements. Hydrological performance of green roofs such as water retention and runoff delay will be investigated in local climate of Bahçeköy, Istanbul.

Through comparative field measurements in Istanbul University Faculty of Forestry Landscape Architecture Dept. Green Roof Research Station (IUGRRS), stormwater

retention performance of green roofs will be investigated in terms of sustainability. From the derived data, humidity changes in the substrate, outdoor environment interactions and the runoff characteristics of the green roofs will be evaluated.

LANDSCAPE IDENTITY AS AN AGENT FOR SUSTAINABLE RURAL DEVELOPMENT

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Keywords: *Rural Landscape, Landscape Identity, Sustainable Rural Development*

Abstract

Rural landscapes have gained attention for last decades with growing interest in re-evaluating rural spaces with their real potentials. Reevaluation of rural space requires a new way of understanding landscape as a source for sustainable development. Until recent times, rural areas were in the agenda with undeveloped physical and social structure. This view led governments to develop their rural development strategies mainly focused on infrastructure, social welfare, education, health services and so on. As in many countries, Turkey's rural development strategy also pay more attention to improve life conditions in rural areas. But this view has just started to be changed with respect to the EU's policies on rural landscape in which landscape character has become a strategy for sustainable development. Therefore, definition, assessment and interpretation of the identity play crucial roles in generating novel strategies.

With this respect this paper emphasizes that landscape identity may derive from natural, built and socio-cultural characteristics of a landscape. Regarding to this

statement, this paper focuses two villages; Şirince (İzmir) and Yazır (Antalya) as it's case studies. Cases are going to be analyzed through natural, built and socio-cultural characteristics, which would be pursued by landscape strategies in terms of improving the recent characteristics of the sites.

Moreover, in the context of the research, Turkey's rural development strategy and it's evolving body is going to be discussed, to find plausible ways of integrating identity based concepts into sustainable development plans. In relation to these, literature review, maps, and data collecting from site visits are utilized to frame the method of the research.

**DETERMINING THE
INTERACTION BETWEEN
LAND USE/COVER CHANGE
AND POPULATION: CASE
STUDY OF BÜYÜK
MENDERES BASIN**

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Keywords: *Ecological Risk Modelling, GIS, Big Meander Basin*

Abstract

Determination of interaction between human activities and landscape is one of the key issue for landscape planning studies. Change of land use/cover and human population can be used as indicators in understanding the interactions between human activities and the landscape. With recent Remote Sensing (RS) and Geographic Information Systems (GIS) technologies it is possible to detect spatio-temporal change of land use/cover and population. Hence Big Meander Basin (BMB) which is one of the largest water catchment of Anatolia was selected as a case study to determine land use/cover-population interactions using RS and GIS. BMB has a significant importance in country's economy, and contains 2.2 million of country population. This population has a trend of increase in last decades hence causing pressure on land-

scapes due to unsustainable land use/cover change. In this work; (i) the land use/cover change is detected using LANDSAT images belonging to years 1986/1987-2002/2003, (ii) population change is calculated in terms of population density using Turkish Statistical Institute data sets of census 1985 and 2000, and (iii) the interaction between BMB land use/cover change and population change is tested spatio-statistically. The results show that grasslands have experienced the highest rate of change followed by maquis in the study area. Meanwhile, the highest population density change has occurred in Didim, Aydın, and decline of population density has occurred especially at Bekirli and Çal (Aydın) and also at The Kızılören City (Afyon) and its neighborhood. The results also showed that the population density change and land use/cover change have a positive but not too significant relation in the study area.

**FUNCTIONING
EVALUATION OF URBAN
GREEN: THE VIEWS OF
CITIZENS IN THE CITY OF
IOANNINA, GREECE**

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Keywords: *Urban green, functioning of trees and shrubs, residents' perceptions, reliability analysis, factor analysis*

Abstract

Trees and shrubs and other vegetation which compose the urban green areas, form the sole representation of nature in this artificial structured environment. The existence of green, is more and more related to the inhabitants' life quality which recognizes its utilities and achieved functions. Aim of the present paper is to investigate the residents' attitudes towards the urban green areas of their city, Ioannina, Greece. The residents were asked to their perceptions in the sufficiency of the size and the organization of parks in green areas. Also the residents evaluate all the functions of trees and shrubs substitute in their city. The improvement of the urban area scene, upgrades the quality of the air, the relaxing impact of the green color to the human organism and the creation of thermally comfortable areas (especially during the sum-

mer months) and forms few of the most important functions. Of minor importance are evaluated, always according to the opinion of the citizens of Ioannina, its function to the children as a discovering place of nature, the shelter function for wild animals and birds, the increase of land value as well as the reduction of noise and the rendered goods such as wood, fruits, etc.

BEHAVIOR ANALYSIS IN URBAN SPACES

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Keywords: *Urban Space, Square, Urban Design, Environmental Psychology, Visitors' Spatial Behavior, Observation Method*

Abstract

Urban spaces have an effect on urban identity and urban quality. In these spaces, the life styles and cultures of the people living in the city can be observed in the best way and social communication and integration are established. In recent years, there has been significant research on habitability in cities and on the increase of living quality in urban spaces. In this sense, squares as focus points in urban centers are the areas that provide the most data on people.

Beyazıt Square is one of the most significant urban spaces of İstanbul with its historical, cultural, commercial, religious, educational, architectural and recreational identity. Beyazıt Square is recognized as a cultural heritage and has an effective role in the creation and recognition of the urban identity of İstanbul. However, it is seen that wrong planning decisions and actions so far have caused the loss of many historical and cultural values in the square. In order to find a solution to these problems, the square has to be reconsidered by taking the visitors' preferences into account. Therefore, a study has been conducted using the observation method in order to

reveal the extent to which the space affects visitors' behavior and preferences. The observation method is a frequently selected method in obtaining the data related to space use. The survey revealed the diversity and variation of utilization of the space, enabling us to analyze the space from social and physical aspects. Research of the Beyazıt Square illustrates that the planning and design problems of urban spaces can be solved through approaches based on visitors' requirements and expectations.

Natural Resource Management

QUALITATIVE COMPOSITION OF ICTHIOPANKTON FROM THE ROMANIAN BLACK SEA NATURA 2000 SITES

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Keywords: *ichtioplankton, roe, larvae, pelagic, benthic, anchovy, sprat, Natura 2000 sites*

Abstract

The dynamics of the structure and abundance of ichtioplankton in the Romanian Black Sea Natura 2000 sites is analyzed for highlighting the current status of protected areas and finding optimal management methods suitable for the sites. In the past ten years, there have been slight fluctuations in the numerical composition of larvae and fish eggs of ichtioplankton samples, predominantly at anchovy, which, ten years ago, declined and in recent years seems to be recovering. The qualitative and quantitative composition of ichtioplankton was determined by analyzing samples collected in the last ten years with Bongo net in five Natura 2000 sites. The abundance of species belonging systematically to the following families: Engraulidae, Clupeidae, Mullidae, Gadidae and Gobiidae has decreased progressively in the past years. The

analysis of samples taken from Natura 2000 sites showed high abundance of anchovy larvae and eggs. In the samples from ROSCI0237 Sf. Gheorghe site, anchovy eggs represent about 86% and, in those from ROSCI0269 Vama Veche - 2 Mai site, anchovy eggs represent over 90% of the roe found. Anchovy was also the dominant species in samples from ROSCI0273 Tuzla site. Analyzing samples from ROSCI0094 Mangalia site, anchovy eggs and sprat larvae were found almost equally. The species composition of the pelagic group dominated numerically compared with the benthic group. Currently, NIMRD is working on elaborating a management plan for the protected sites, which includes appropriate methods for the protection and improvement of the current state of the Romanian Black Sea Natura 2000 sites.

**A RECENT DATA BASE
FOR WATER QUALITY
INDICATORS OF
BAHLUI RIVER
IN THE IASI
MUNICIPALITY AREA**

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Keywords: *Water quality monitoring, Water resources management, Water quality classification, Bahlui River*

Abstract

The Bahlui River basin is located in the north-east part of Romania, in Moldova Plateau, between the Siret and Prut rivers, integrating from hydrological point of view in the hydrographic system of the Middle Prut. The basin area is 2007 km², with a total length of 119 km and an annual average flow of 2.8 m³/s. The springs are at an altitude of 500 meters in the village Tudora (Botosani County). The river passes from the NW-SE direction, through the lower Jijia plain, crossing through the Iasi city. This area is heavily polluted due to industrial activities within the municipality and agricultural activities upstream and downstream. Water quality monitoring was conducted monthly in five control sections that have framed our town, between September 2009- April 2012, mainly aiming at the evolution of some physico-chemical pa-

rameters (pH, conductivity, chlorides, the oxygen and nutrient regime). The obtained data have been statistical processed to establish correlations between parameters and factors responsible for changes recorded as well as to obtain an evolution trend for the last two decade. The obtained results pointed out the variation range of water quality parameters in the monitoring period, due to both natural and anthropogenic factors. Based on these results a water quality classification of the water from Bahlui River can be performed in order to establish a better water resources management in the important municipality area.

CHANGES IN ABUNDANCE REGISTERED BY NOCTILUCA SCINTILLANS AT THE ROMANIAN BLACK SEA WATERS IN THE PAST YEARS

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Keywords: *Noctiluca scintillans, population abundance, decrease trend*

Abstract

Noctiluca scintillans (Macartney) Kof. et Swezy is a common species of Black Sea zooplankton community. Even this heterotrophic dinoflagellate have a negligible trophic value for highest level of pelagic ecosystem, can consume a large range of prey (diatoms, other dinoflagellates, cyanobacteria, ciliates, metazoan egg or even juvenile) influencing in this way their population. The abundance of this dinoflagellate population registered large fluctuations starting 60s till now. On the basis of 586 samples, collected between March and September from 2004 to 2010, along all Romanian Black Sea coast, the authors present the specific change in density and biomass of *Noctiluca*'s population. The greatest mean monthly value of biomass (12167.7 mg.m⁻³) was recorded in July 2010, under certain of few days with high temperature and low oxygen. A general decrease trend of abundance was registered in last three years.

CULTIVATION OF WILLOW LIKE ECO-ENERGY PLANT AND THE VALORISATION OF IT'S WASTES

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Keywords: *management, resources, natural, energy, willow, dietary supplements*

Abstract

Currently, in Romania, different energy plants can be grown for production of biomass in the form of chips (pellet) and the wood work (for the production of OSB plates). For this purpose, can be cultivated: willow (*Salix alba*), artichoke (*Cynara cardunculus*), elephant grass (*Miscanthus*), Chinese reed (*Giganteus*), hybrid energy poplar, canary grass (*Phalaris canariensis*), giant reed, oil tree (*Jatropha*, the processing, gives an oil used to produce biodiesel).

Quality of products can be found also through an adequate management of the cultivated soil. To obtain ecological products is aimed at an appropriate conversion. The dynamic study watching a comparison between the ground quality from the area greenhouses- field of a Hofigal Bucharest reported at a ground type humus originating in a natural reserve from Republic of Moldavia.

According to the results, energy willow “Express” develop a thicker stem and branches, which can be achieved since with small percentage of shell hash, criteria increasingly demanded by pelleting or briquette factories. Bark, which detaches easily, can be valorization by producing methanol, as a source of cellulose, for the manufacture of dietary supplements such as natural salicyl, gemoderived from willow bark, with real effects on health.

**DIET COMPOSITION
AND INDEX OF
STOMACH FULLNESS
OF SPRAT (SPRATTUS
SPRATTUS L.) FROM
SCIENTIFIC SURVEYS
(WESTERN BLACK SEA)**

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Keywords: *Sprat, zooplankton, feeding, ISF, Black Sea*

Abstract

In this research in 2007-2009 as a result of the scientific surveys (DCR EU 199/2008), investigation on the feeding relations between fodder zooplankton, some environmental factors and population parameters of sprat were presented and analyzed. For the period of the research length-weight relationship resulted as follows: $\text{Log}W \text{ (g)} = 3.40 \cdot \log L \text{ (cm)} - 2.6317$; ($r^2=0.95$, $p<0.05$); $\text{Log}W \text{ (g)} = -2.08 \cdot \log L \text{ (cm)} + 2.82977$; ($r^2=0.92$, $p<0.001$); $\log W \text{ (g)} = 3.07 \cdot \log L \text{ (cm)} - 2.31$; ($r^2=0.98$, $p<0.001$). The most abundant species in the sprat diet were Copepods: *Calanus euxinus*, *Pseudocalanus elongatus*, *Oithona similis*, *Acartia clausi* etc; Meroplankton: *Lamellibranchia veliger*, *Decapoda larvae*, *Gastropoda veliger* etc; Cladocera: *Podon polyphemoides* и *Evadne* spp; Chaetognatha: *Sagitta settoza*. In most of the observed cases low sprat abundance corresponded with low mezozooplankton biomass in the ambient. In 2007, statistically significant ($r^2=0.19$, $p<0.01$) correlation between index of stomach fullness (ISF) was revealed. Length and weight of the sprat increased toward 2009. In this year, the average value of the ISF reached 0.60 % from the weight of the sprat. ISF₂₀₀₉ mark off slight decrease toward 2008, like as form 81% from the

previous year. Simultaneously, ISF_{2009} increased about eight times compared to the value estimated in June, 2007.

**CLOUD GIS:
A CONTEMPORARY
TECHNOLOGY TO PROTECT AND
PRESERVE NATURAL RESOURCES**

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Keywords: *GIS Cloud, GIS, Natural Resources Management, Cloud Computing, Soil Erosion, RUSLE*

Abstract

Natural resources management and protection within the context of sustainable landscape planning is a trans-disciplinary task involving as partners scientists, experts and the public alike. The multitude of data that need to be exchanged between partners poses a serious problem regarding data homogenization and sharing, thus maximizing efforts needed and time consumed. A Web-GIS provides a platform where data contributed by each partner can be readily available to all but at a cost regarding hardware and software needed and more than that, regarding continuous support and maintenance by qualified personnel. A new emerging technology that promises to be an effective and economic alternative to WebGIS is Cloud Computing; where hardware, software and data are accessed through the internet. In this paper an evaluation of the aforementioned technology is presented where soil erosion assessment results combined with geological and land use data including polluting activities are used to assess environmental hazards on a regional scale. Cloud GIS was used

to develop the processing platform, to input, store and process spatial data and to provide various thematic maps. As resulted, Cloud GIS technology provides an effective and economic way to bridge the gap between various scientific fields where data and spatial maps are readily available to everyone in real time. Additionally, all partners can constantly access and evaluate scientific results as they become available thus bridging the gap between different disciplines and minimizing distance.

INFLUENCE OF GLOBAL CHANGE ON BIOLOGICAL ASSEMBLAGES IN THE DANUBE DELTA

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Keywords: *Danube Delta, water quality, biological assemblages, climate change, disturbed environment*

The effects of global changes on the water quality of the Danube Delta (St.Gheorghe Branch) were investigated using the causal framework DPSIR, model used for describing the interactions between society and the environment adopted by the European Environment Agency (EEA): Driving forces, Pressures, States, Impacts and Responses. It is known that interactions between climate change and other drivers of change including hydro morphological modification, nutrient loading, acid deposition and contamination by hazardous substances represents sources of environmental pressures for biological assemblages. This study was done by surveying the ecological status described in EU Water Framework Directive (EU-WFD) using the biological quality elements: composition and abundance, diversity, sensitive/tolerant species, biomass (phytoplankton, macro invertebrates) in one of the most productive socio-ecological system.

The assessment of biological assemblages was based on laboratory data, results of field experiments over three-year period (2009-2011) and aspects of hydro physical, hydro chemical and ecological change, those being early indicators of climate change in aquatic ecosystems [5].

Under reduced flow, combined with increasing temperature and global radiation, phytoplankton biomass increased, in contrast the flood pulses have caused dilution effects on nutrients, and therefore significantly lower phytoplankton biomass. The floods and changes in flow regimes have also, an impact on the bed and bank structures, so the benthic macro invertebrates diversity was reduced, was observed the loss of sensitive taxa and changes in community composition.

A strong reduction in nonpoint inputs of pollutants would be necessary to be counterbalancing the possible climate-induced effects on biological assemblages.

MANAGEMENT OF ANTHROPIC WASTE. PART 1 SUSTAINABLE ENVIRONMENTAL RESTORATION

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Keywords: *fly ash waste, Avena sativa, compost, ecological restoration*

Abstract

Studies are made in order to determine a method of formation of a vegetable layer of *Avena sativa* L on lignite fly ash waste and the state level bioaccumulation of metals in the aerial tissue of plants. The fly ash waste fertilized with municipal sludge compost contain the needed nutrients for the seed germination and for the development of a healthy crop. Adding a quantity of 150 t/ha composted municipal sludge reduced the accumulation of heavy metals in aerial part of young plants with 11-13% Ni and Cu, 25-28% Cr and Fe, and 33-39% Zn and Pb. Addition of volcanic indigenous tuff mixed with compost caused further reduction for lead to 60%. The addition of compost did not cause significant changes in bioaccumulation of metals in straws vs. young plants grown on similar experimental variants, but application of compost mixed with volcanic tuff limit the bioaccumulation of toxic metals, fact that allow the using of straws as compost adds or as bedding for animals. The quantity of metals accumulated in grains is smaller than the one accumulated in straws. The addition of compost in high quantity determine the access limitation for Cr in grains, and the mixture of the compost with tuff determine the limitation of the access for Cr, Cu, Ni and Pb in grains, so their consumption by animals do not require special restrictions. The implementation of a strategy to cover the fly ash wastewith a vegetable coating of oat crops can be easily accomplished and efficient.

MANAGEMENT OF ANTHROPIC WASTE. PART 2. REABILITATION OF AGRICULTURAL LAND

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Keywords: *agricultural land, fly ash amendment, metal bioaccumulation removal, healthy crop*

Abstract

The depleted agricultural lands treated with lignite fly ash as an amendment (FA) and fertilized with organic fertilizer, manure, contain the needed micro- and macro-nutrients for the good seed germination and for the development of a crop. The fly ash resulted from burning coal in power plants. In all the experimental variants studied, the *Avena sativa* L specie, variety Mures, accumulate smaller quantities of heavy metals in grains than in straws. When fly ash amendment was applied, the in-situ bioavailability of some metals was reduced. The highest efficiency of the fly ash amendment application was reached for Cr, Cu, Fe, Ni and Pb, i.e., above 80 % straws of the studied plant specie, and the lowest efficiency was recorded for Zn, i.e., above 15 %. More in the grain toxic metals as Cr, Cu, Ni and Pb can did detect. The small quantities of manure adds (25to/ha) on the lignite fly ash (40to/ha)

treated lands led to the obtaining of increasing crops vs. the crop resulted from land amended (FA) and unfertilized. The treatment of depleted agricultural land with fertilizer organic mixed with lignite fly ash contributes to the obtaining of a large and healthy crop of straw and grains.

REMOTE SENSING AND GEOMATICS TECHNOLOGIES TO SUPPORT GROUNDWATER SUSTAINABILITY

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Keywords: *groundwater, management, vulnerability, remote sensing, WebGIS, DRASTIC, Lineaments*

Abstract

Groundwater management and protection is widely considered as a key factor in sustainable development as it plays a dominant role in both economic and demographic growth. As groundwater quantity and quality are strongly related to land use, sustainable land use planning should take into account all parameters related to groundwater sustainability. In broad terms, groundwater sustainability can be considered as a three-fold issue comprising exploration, management and protection. All three aforementioned issues can be addressed both in local and regional scales with the assistance of contemporary technologies such as Remote Sensing and Geographic Information Systems (GIS) including Web-GIS platforms.

An evaluation of the role Remote Sensing and Geo-informatics technologies can play in all phases of groundwater resources development -exploitation, management and protection- is presented. Within this context, remote sensing and water chemical analyses data are used to trace groundwater flow through impermeable formations

and to delineate recharge zones which should be protected. In addition, groundwater vulnerability in an intensely cultivated area is assessed and compared to nitrate concentrations showing the credibility of the method as well as the already imposed cultivation impact on groundwater. Maps created, provide valuable information about the land use interaction with groundwater and subsequently assist in specifying basic guidelines both for land use planning and cultivation practices applied. Finally, a Groundwater Information System developed to address management and protection issues and aiming to support decisions regarding a land use planning regulatory framework towards groundwater sustainability, is presented.

**SUSTAINABLE DEVELOPMENT
THROUGH AGRICULTURE
ENTREPRENEURSHIP OPPORTUNITIES:
INTRODUCING CONSULTING S
ERVICES, INTERNET, BUSINESS
BEHAVIOUR AND MANAGEMENT**

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Keywords: *sustainable development, internet, agricultural entrepreneurship, funding, private consulting services*

Abstract

Sustainable development has increasingly become a major overall goal of national governments and private sector globally, especially in the context of the economic recession. New goods and services are demanded in business models as well as in technology in rural areas aiming to green development challenge, as a means to confront the economic crisis. In the 21st century, agriculture remains fundamental to economic development; poverty lessening and environmental sustainability while entrepreneurship and innovation are fundamental for success. Thus, innovation through internet applications should be encouraged, as a major tool while implementing effective projects and initiatives in rural areas. Under these circumstances, in agriculture, it is compulsory to have both expansion and innovation of the agricultural sector via the introduction of “business attempting” and other innovative actions in Greek agricultural entrepreneurships. Today, during the 4th community support framework, there are many programmes concerning funding of the agricultural

sector and especially the innovative Greek agricultural entrepreneurship. Towards this direction there have been several bureaus offering consulting services to the Greek farmers and breeders. However, the question still arises: to what extent are the Greek agricultural entrepreneurs ready to accept innovation and funding via European programmes, or issues of vital importance for them, such as the reliable informing, the introduction of technology, as well as the use of the internet? It is also studied how willing they are, and up to what rate, to cooperate with expertise of the private sector of consulting services in order to support innovative farm exploitation and entrepreneurship.

QUANTITATIVE AND QUALITATIVE COMPOSITION OF THE ICHTHYOFAUNA IN THE NATURA 2000 ROMANIAN MARINE SITES

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Keywords: *research survey, scientific fishing, catches, SCI, Natura 2000*

Abstract

In order to achieve a complete inventory of fish species found in the Natura 2000 marine sites under study, research surveys at sea and along the coast in the SCIs were organized and conducted, to perform fishing and biological evidence, measurements and collection of fish samples. Fish samples were taken during the research surveys with the vessel "Steaua de Mare" from May to June 2011, making a mid-water and demersal trawl fishing survey and a motor boat survey for shad, turbot and goby fishing nets, from March to May 2011, in all five studied sites. Scientific fishing made with gillnets in the marine sites resulted as follows: in the area ROSCI0197, 8 fish species were caught, 4 of them were dominant and valuable (turbot, Pontic shad, sturgeons), representing 56% of the catch, in the area ROSCI0273, 5 species were present, predominantly shad, in the area ROSCI0237 the caught species were represented entirely by shad and, with demersal trawl, the catch was represented by five species, sprat being dominant, in the area ROSCI0269 the predominant fish species was juvenile shad and for the area ROSCI0094 mullet and juvenile gray mullet. The research comprises the quantitative and qualitative structure of catches made by active and stationary fishing.

**CONSIDERATIONS ON
PARASITE INFLUENCE ON
FISH CONSERVATION STATUS
IN THE ROMANIAN MARINE
NATURA 2000 SITES**

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Keywords: *parasites, conservation status, fish, Natura 2000, Romanian coastline*

Abstract

The increase and reduction of parasitic populations influences the various types of demographic processes of fish populations. The attention is specifically focused on the role of parasites in inducing the mortality of hosts. It has been shown that, for certain types of host-parasite associations, the convex curves of the average abundance of parasites in relation to fish age, while lowering the extent of dispersion on higher age classes of hosts, demonstrate that host mortality may be induced by parasitic infection. The paper herein is an outline of the parasites identified during 2011 at fish collected from the Natura 200 sites ROSCI0269 - Vama Veche - 2 Mai, ROSCI0094 - Mangalia Submerged Sulphur Seeps, ROSCI0197 - Eforie North - Eforie South Submerged Beach, ROSCI0273 - Marine Area from Cape Tuzla and ROSCI0237 - Methanogenic Carbonate Structures from Sfantu Gheorghe, including as well their description, the extent of parasitic infestation, expressed in number of affected fish and number of parasites/host and observations on parasitic influence of fish health population state in these particular sites.

ENVIRONMENTAL IMPACT DUE TO ATMOSPHERIC POLLUTION FROM VEHICLES IN URBAN AREA OF THESSALONIKI IN COMPARISON WITH OTHER CITIES IN GREECE

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Keywords: *air pollution, car emissions, sensory observations*

Abstract

Although economic recession in the early 1990s was a driver in the decrease of air pollution by industry, the sharp growth in the use of private cars has made transport an increasingly important contributor in air quality and noise pollution problems, especially in major cities. In this paper the measurements of vehicle emissions in three cities, the city of Thessaloniki, the city of Leptokaria and the city of Katerini will be presented. The city of Thessaloniki is the second largest in population in Greece with about a million inhabitants, while the city of Katerini and the city of Leptokaria are smaller cities with about 65000 inhabitants each. The city of Katerini lies on an important crossroads on the way to Athens from the city of Thessaloniki, while the city of Leptokaria is a modern Greek city in Pieria prefecture, which lies on the coast of Aegean Sea, under the Mount Olympos. The atmospheric pollution in an urban environment poses a serious problem, since the joint consequences of vehicle emissions and traffic noise affect dramatically the physical and mental health of the citizens, the quality of life and services. Exhaust gas data from vehicles were taken separately for each season of one year, in particular: carbon monoxide (CO), carbon dioxide (CO₂),

oxygen (O₂), and hydrocarbons (HC) at idle and at 2000 RPM. A set of sensory measurements has also been acquired, based on aural, nasal and visual observations on vehicles under test. In the present paper, a novel emission policy is proposed for the detection of gross polluting vehicles in the city, based on sensory observations.

**INFLUENCE OF NATURAL
FERMENTATION ON
CHANGES OF CHEMICAL
INDICATORS OF
VARIETIES OF ORIENTAL
TOBACCO "BASMA" IN
BULGARIA**

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Keywords: *oriental tobacco, natural fermentation, chemical indicators, public health*

Abstract

The study of chemical and taste characteristics of oriental tobacco varieties is determined by health, ecological and economical reasons. Tobacco fermentation is a process under which forming and stabilizing of qualitative indicators is done. The current article presents a study about the influence of natural fermentation on chemical indicators: nicotine, soluble sugars, total nitrogen, ashes and proteins of seven varieties of Bulgarian oriental tobacco from variety group "Basma", first and second class. The obtained results are presented numerically and graphically. A comparative analysis shows higher degree of balance changes of natural fermentation than chamber fermentation. Hence, the natural fermentation of the studied oriental tobaccos is recommended because the balance between chemical indicators can be interpreted as a positive compromise between consumers' demands and their health.

**LANDSCAPE MANAGEMENT
PRACTICES ON PROTECTED AREAS:
COLLABORATION OF LOCAL
PEOPLE, NGOS AND PUBLIC
ADMINISTRATION**

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Keywords: *landscape management, national parks, NGO, Public Administration*

Abstract

Capacity building with the collaboration of Public Administration & NGOs on managing natural reserves with an understanding of common production & management is an important issue on landscape planning.

Kure Mountains National Park (KMNP) is one of all 41 national parks of Turkey located at Western-Black Sea region. As the conservation efforts are continuing on inside the borders of KMNP and along the buffer zone, on the other side potential conflicts occur and threaten the area over mining and water reserves. At this point either sustainability of the natural resources or enhancing the collaboration with the NP administration and stakeholders, a model for minimizing the conflicts should be described. Redefining the evaluation of suitability for possible demands coming from different sectors to landscapes of the protected areas, will reduce the conflicts and carry the protected areas for human use for next generations.

Strategically landscape management causes the protection and the sustainability of resources while it describes changing human relations with the landscape. While Management of landscapes stating strategies of different stakeholders, success can only be reached if common understanding of production and planning is considered.

STRATEGIC PLAN FOR THE PRESERVATION AND REHABILITATION OF THE SKOPJE AQUEDUCT AND ITS ENVIRONMENT

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Keywords: *Preservation, Rehabilitation, Aqueduct*

Abstract

Recent urban developments, planning initiatives and new infrastructure constructed nearby the Skopje Aqueduct, indicates the importance of strategic planning. Funded

under the cooperation program between the Flemish region (Belgium) and states in Central and Eastern Europe and led by the University of Leuven and several partners from Macedonia the Project "Strategic plan for preservation and rehabilitation of the Aqueduct in Skopje and its environment" was developed. The report of the Strategic Plan proposes strategic planning method, and emphasizes the importance of analysis, spatial structures and relations and the need of an integrated and participatory approach. The approach indicates some ideas for future projects and is flexible within a long term perspective. The report focuses on three main aspects (1) to assess needs and identify opportunities to protect the monument; (2) to develop a vision on the desired rehabilitation of the Aqueduct and its environment; (3) to identify ways which might facilitate the implementation of the vision. In this article principles and visions for desired rehabilitation, objectives for the desired development, proposed actions, logical framework and policy recommendations for the rehabilitation of the Aqueduct in Skopje and its environment will be presented.

**FISHERY PRODUCTION
AND "GILL NETS" SELECTIVITY
FOR ROACH (RUTILUS RUTILUS) IN VOLVI LAKE
(CENTRAL MAKEDONIA, GREECE)
REGARDING TO ITS RATIONAL
FISHERY MANAGEMENT**

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Keywords: *fishery management, fishery selectivity, Rutilus rutilus, Volvi Lake, gill
nets*

Abstract

The roach *Rutilus rutilus* (Linnaeus, 1758) is one of the most commercially important fish species of inland waters, and the main abundant species in Volvi Lake (Northern Greece). In the present study, the fishery production of roach *Rutilus rutilus* (Linnaeus, 1758) (Common roach, Tsironi) during the last decades, and the size selectivity of gill nets in two different sampling stations in Volvi L. was estimated. The fish samples collected with 6 different pieces of 'gill nets' of 50m long each one, having 'mesh sizes' 16, 20, 24, 28, 34 and 40 mm. For the first sampling station (A), the length of roaches ranged from 11.0 to 28.3 cm (TL) and varied depending on the mesh size. The calculated selectivity coefficient using 'Holt's method', was 7.297. The mean

selectivity lengths ranged from 11.67 to 24.81 cm. For the second sampling station (B), the lengths of roaches ranged from 1.8 to 24.7 cm. The calculated selectivity coefficient was 7.601. The mean selectivity lengths ranged from 12.16 to 21.28 cm. The evaluation of the fishery production and the gill nets selectivity for target fishery species are very important factors for the achievement of correct fishery management of each species. The impact of size selectivity on length distribution and on the biology of fish population, are also significant parameters and were presented and discussed. Findings of the study have made evident the contribution of the gill nets selectivity estimation in the maintenance of the lake ecosystem equilibrium and the protection of fish population wealth.

THE USE OF SWOT AND AHP INTEGRATION TO INCORPORATE STAKEHOLDER PREFERENCES INTO WATERSHED MANAGEMENT

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Keywords: *Watershed Management, Stakeholder Analysis, Analytic Hierarchy Process (AHP), SWOT and AHP Integration, Beyşehir Lake Basin, Turkey*

Abstract

Watershed management decisions are often characterized by complexity and uncertainty related to the multiple-use nature of watershed goods and services, and the involvement of several stakeholders with conflicting views. The most critical issue in watershed management is the active involvement of a range of stakeholder groups in the process to provide support for the implementation of watershed management strategies. A clear understanding of the relevant stakeholders' views provides decision-makers to reach effective decisions. Under these circumstances, SWOT analysis and Analytical Hierarchy Process (AHP) integration facilitates the more holistic understanding of watershed systems, consideration of multiple stakeholder values, objectives and behaviors, and improves abilities to predict and plan for future impacts as a multi-criteria decision making and conflict resolution model.

The objective of this paper is to examine the feasibility of the SWOT and AHP integration to incorporate stakeholder preferences into watershed management. Furthermore, in the case of Beyşehir Lake Basin (BLB) (Turkey) the study aims to explore

whether significant differences exist among two of different stakeholder groups (local communities and local authorities) regarding their perceptions and approaches to describe the optimal watershed management strategies. The data for the analysis comes from a case survey performed in 44 basin settlements. This study provides a framework that can formalize stakeholder participation in decision making and increase the transparency and the credibility of the process, therefore leads to more sustainable watershed planning and management decisions. The results of the study explicitly show that local people's SWOT and strategy prioritizations definitely differ from local authorities in Beyşehir Lake Basin.

**TOTAL FISHERY PRODUCTION
AND 'GILL NETS' SELECTIVITY OF
THE MAIN FISH SPECIES IN VOLVI
LAKE (CENTRAL MACEDONIA,
GREECE) AIMING TO ITS
SUSTAINABLE FISHERY
IMPROVEMENT**

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Keywords: *Fisheries, fishery management, gill net selectivity, Volvi Lake.*

Abstract

The degradation of the fishery production of Volvi Lake (Northern Greece), is mainly related with the over fishing, the general reduction of its biological resources, and also from the recent environmental changes.

In the present study the total fishery production of Volvi Lake during the lasts decades and the size selectivity of gill nets for the species *Rutilus rutilus*, *Alosa macedonica*, *Abramis brama*, *Chalcalburnus chalcoides*, *Vimba melanops* and *Carassius auratus* was estimated. Samples collected with 'gill nets' of 50m long and with 'mesh sizes' of 16, 20, 24, 28, 34, 40, 50, 60 and 70 mm each one, in a sampling station (A) in the lake. The length of *R. rutilus* in the collected material ranged from 1.8 to 24.7 cm (TL), of *A. macedonica* from 11.2 to 30.0, of *A. brama* from 14.2 to 39.8 of *C. chalcoides*

from 10.4 to 22.6, of *V. melanops* from 12.3 to 30.0 and of *C. auratus* from 9.0 to 30.5 and varied depending on the mesh size. The calculated selectivity coefficient using 'Holt's method' was 7.964, 8.445, 7.957, 8.887 and 5.790 for the species *R. rutilus*, *A. macedonica*, *A. brama*, *C. chalcoides* and *C. auratus*, respectively. The mean selective lengths of *R. rutilus* ranged from 12.742 to 19.113 cm, of *A. macedonica* from 13.512 to 16.890, of *A. brama* from 22.279 to 27.053, of *C. chalcoides* from 14.200 to 17.800 and of *C. auratus* from 13.896 to 16.212 cm.

The impact of intensive fisheries and the size of the 'gill nets' selectivity on the length distribution of the fish population are very important factors for the preservation of fish population affluence and the protection of the lake ecosystem stability. The results of this paper can support the local fishery managers to apply a sustainable and environmental friendly fishery managing plan.

THE EVALUATION OF ROMANIAN SALINES' COLLAPSE RISK

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Keywords: *Subsidence, brine, salt rock, cavern, sinkhole*

Abstract

The Romanian halites are exploited both on dry and wet ways- through dissolution boreholes, with different shapes and specific conditions, different from one to another, according to their genesis.

The current paper presents the collapse situation appeared on December 2010, in Romania, in the case of salt exploitation, using dissolution boreholes in Ocna Mures saline.

As a consequence of this situation the Ministry of Economics, Commerce and Business and the Ministry of Environment and Forests asked a specialists team to investigate the situation and to obtain preventing solutions in the area, in order to eliminate the losses risk of the human lives.

The specialists within the National Institute for Research and Development in Environmental Protection carried out electric tomography investigations and analysed the informational volume. Through the DKRControl method they managed to identify the causes that determined the collapse and the risk areas, proposing some preventive measures.

This paper presents the case study regarding the event from 22 December 2010, that has been determined by creating a caving cone and by the appearance of a lake with brine at Ocna Mures saline.

**STUDY REGARDING THE USE
OF BIO-FUELS AND OTHER
TYPES OF RENEWABLE
FUELS FOR THE PURPOSE OF
REDUCING ENVIRONMENTAL
POLLUTION IN ROMANIA**

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Keywords: *bio-fuels, renewable fuels, environmental pollution*

Abstract

The use of bio-fuels and other types of renewable fuels is promoted for transport with a view to partly replace gas and gas-oil and facilitate the achievement of certain objectives such as: meeting the obligations regarding the reduction of greenhouse gas emissions, – ensuring the safety of fuel provisioning in a friendly environmentally manner as well as – increasing the degree of energetic independence, promoting the use of renewable energetic sources. – The use of bio-fuels could also generate new opportunities for sustainable rural development that shall allow the opening of new markets for agricultural products. In conformity with the Energetic Policy of Europe, the Commission proposed the consolidation of the legislative framework which stipulates the attaining of 20% bio-fuels share on the market until 2020, by present-

ing policies to stimulate the production and the use of bio- fuels at European level. In Romania, suppliers of fuels are obliged to introduced on the market only gas and gas- oil containing bio-fuels through the decision no. 935 from 21 September 2011 regarding the promotion of the use of bio-fuels and bio-liquids. This paper tries to draw attention to the stage of bio-fuels use at national, European and international level from the legislative as well as from the technical and economic points of views related to the environmental impacts for the purpose of increasing public awareness on bio-fuels use.

**STUDY REGARDING ZONES
OF SANITARY PROTECTION
FOR GROUND WATER
SUPPLYING SOURCES**

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Keywords: *sanitary protection, quality of water sources, drinking water*

Abstract

In Romania, zones of sanitary protection and areas of hydrological protection are set up to prevent alteration of the quality of water sources in accordance with the governmental decision (H.G.) – DECISION no. 930 from 11 August 2005 regarding the approval of the special Norms for the nature and size of the zones of sanitary and hydrological protection around works of water catching, constructions and installations destined for drinking water supplying, in conformity with article 5, paragraph (1) of Waters LAW no. 107/1996, with subsequent changes and amendments. This paper deals with the analysis of some real cases related to zones of sanitary protection and areas of hydrological protection with a view to prevent alteration of the quality of water sources for drillings of water supplying within a company specialized

in intensive poultry breeding. The National Research-Development Institute for Environmental Protection elaborated studies establishing zones of sanitary protection for three farms belonging SC AVICOLA SLOBOZIA.

**ORGANIZATIONAL SET UP
FOR AN EFFECTIVE
ORGANIC WASTE
MANAGEMENT SYSTEM FOR
ENERGY PROFIT**

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Keywords: *Biogas production; Energy efficiency; Pre-treatment; process design and development; eco-design; eco-efficient processes; public-private partnership*

Abstract

Our research group is focused on identifying ways for improving the exploitation of renewable energy sources, including animal friendly housing systems, manure

management, the reduction of greenhouse gas emissions, e.g. through agricultural biogas production.

Laboratory experiments are being carried out to stabilize the methane production of substrates and mixtures based on agro-forestral residues. The feedstock for biogas production will improve due to the basis of pre treatment of lignocellulose's containing residues of the wood and food industry. Cost benefit analyses will demonstrate the environmental efficiency through utilization of lignocelluloses containing biomass for biogas production based on agro-forestral residues.

As stated in our program outline we will look into the scientific, technical, and institutional aspects and propose the appropriate scientific, technical, and institutional set up. However, municipalities and private sector institutions will have important role and responsibility in the establishment of a "National Centre for Biomass Studies".

We intend to reach as outline following issues:

- o Propose organizational set up for an effective organic waste management system;
- o Human resources development;
- o Produce and report regular time series data on Biomass contingents in Albania;

Public Health Impact

HUMAN THERMAL COMFORT (HTC) FOR SUSTAINABLE LANDSCAPE PLANNING

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Keywords: *Human Thermal Comfort, Sustainable Landscape Planning, Sustainable Landscape Design, Climatic Condition, Urban Heat Island, Ecology*

Abstract

Thermal comfort is one of the important components of being usable of landscape. Climatic conditions in which people feel him comfortable are described as comfortable places. In these places, the energy balance is provided to people due to excessive heat or cold stress does not fall over. Microclimatic structure should be surveyed well and participated effectively in the planning process for the regulation of comfortable places. Ensure the balance of energy is one of the basic elements of a sustainable landscape design. The heating and cooling costs to ensure the balance of energy will be less. Thus, significant gains in economic terms are provided. In addition, due to a reduction in the size of Urban Heat Islands (UHI) provide important contributions to the protection of the ecological structure. In this study, it will explain importance of providing thermal comfort and its benefits the ecological and economic aspect in sustainable landscape planning and design study which aims is create ideal spaces for human.

HUMAN DISCOMFORT DUE TO ENVIRONMENTAL CONDITIONS: STUDY CASE: "THESSALONIKI, GREECE"

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Keywords: *climate change, air pollution, air-quality indices, heat waves*

Abstract

Since air pollution levels are strongly dependent on atmospheric conditions, it is important to take both into consideration when examining the effects of weather on human health. In this study, the discomfort conditions were estimated by using several air-quality stress indices based on air-pollutant concentrations in the center of

Thessaloniki. Also, the temporal fluctuations in heat waves, were analysed by using several thermal stress indices, like the number of hot days during the summer period, for the years 1970-2005, with maximum temperatures greater than a threshold temperature. It was found that air quality conditions in the urban area of Thessaloniki can be characterized as acute for the last years, with respect mainly to photochemical pollutants and suspended particulates (PM10 and PM2.5). The consequence is that discomfort to humans in the center of Thessaloniki due to environmental conditions is caused by temporary thermal stress during the heat waves and permanent air quality stress.

ROMANIAN AQUATIC TOXICITY TESTING STRATEGY UNDER REACH

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Keywords: *chemicals, toxicity, risk assessment, REACH*

Abstract

REACH regulation became applicable for Romania in June 2008. In period of 2008 – 2011 was made great efforts to comply the requirements of this program, by chemicals producers and also by ecotoxicology assessment laboratories. This paper presents our contribution, as laboratory testing, to evaluate the aquatic toxicity of hazard substances and to provide informations about environmental risks.

Concerning REACH challenges, our laboratory has developed in order to assure the ecotoxicological testing needs and also to comply some aspects on the reduction of fish number used in tests, improvement of testing methodology and performant chemicals detection methods. We develop a number of acute, sub acute and chronic tests using bacteria, green algae, crustacean and native fish, to assure an integrated strategy for aquatic toxicity based on standardized in vitro and in vivo tests performing, food chain covering, complementary effects assessment and informations collection from different scientific sources.

As other countries and Romania have chemical pollution problems and in this context we have performed various ecotoxicological studies for different substances (pesticides, detergents, pharmaceuticals, anilines, metals, oils, etc.) using an integrated toxicity strategy which combines chemistry, biology and biochemistry. We tried to simplify the acute biotests, reducing the number of fish and the costs of tests, through replacing of LC50 fish tests with algae and crustacean EC50 tests. The fish were intoxicated with fewer concentrations, the smallest between the EC50 obtained with algae and crustacean. If the fish were more sensitive than algae and crustacean, the test will continue at lower concentrations. Our results led to predict the maximum allowable surface water concentrations, predicted non effect concentrations and also to estimate the environmental risk coefficients. Our vision and assessment strategy are in continue development in order to respond to future demands concerning toxicity on long term, toxicity pathways, bioaccumulation, recalcitrant metabolites toxicity and inter species effects extrapolations.

THE IMPACT IN PUBLIC HEALTH OF MICROBIAL POLLUTION OF COASTAL AREA OF DURRËS

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Keywords: *Coastal area of Durrës, Microbial pollution, Public Health*

Abstract

The indicators of microbiological pollution and physical chemical parameters are the main indicators of surface water quality. Monitoring of these indicators was used to determine the water quality, the impact of this water on the environment and on the public health. One of the environmental challenges facing Albania in the recent years is the quality of waters and mainly of surface seaside waters. Even along the coast of Durrës, during the last three years of our study sea pollution problems have been significant and not without consequences. The object of this study are Microbiological examination of 48 water samples collected from four different stations in Durrës coast in four seasons (spring, summer, autumn, winter) during three years, 2009-2011. This is made by monitoring of physical-chemical factors (temperature, suspended matter, salinity, pH, O₂, nitrogen) and the bacterial pollution (Fecal coliforms and fecal streptococci) of the sea water from Durrës coastal zone by untreated urban discharges and other factors. Fecal coliforms and fecal streptococci have been analyzed with Most Probable Numbers (MPN) technique or Multiple-Tube Fermentation Technique.

The analysis shows that contamination from fecal coliforms and fecal streptococcus (CF/SF) is several times higher than standards for microbiological quality of recreational (bathing) waters and national rules allow, until 2.3×10^6 MPN/100ml. The nature and extent of water quality problems in the sea of Durrës should be assessed and immediate corrective measures should be taken as a program with impact in the public health, the biodiversity and the tourism should be implemented.

HEALTH BENEFITS FROM CYCLING - USING THE HEALTH ECONOMIC ASSESSMENT TOOL FOR CYCLING IN MACEDONIA

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Keywords: *health benefits, health economic assessment tool, cycling*

Abstract

The Institute of Public Health of the Republic of Macedonia conducted the initial assessment of the economic savings as a consequence of cycling among persons who regularly cycle in the capital city of Skopje in 2011. The sample of cyclists was very small and not representative (n=24), but still sufficient to promote the HEAT (Health Economic Assessment Tool) for cycling as valuable tool in the hands of public health professionals. The average age of the cyclists was 38.3 years with predominantly male participants. Since data on most of the cycling indicators in Macedonia is lacking, we only entered the minimum needed data on the number of trips per day and the average length of the trips. The default values given in the HEAT were employed for all the other parameters. The average trips per day were 3. The mean annual benefit resulting from reduced mortality, for the examined population, resulted in EUR 45,000. For rather small number of participants and having in mind the figures about the Macedonian economy, this value should not be under estimated and should be seen as valuable initial indicator and strong encouragement for further research. That research should comprise larger sample of regular cyclists, particularly targeting the "cycle commuting population".

EFFECTS OF CLIMATE CHANGE ON WATER SYSTEMS AND HEALTH –EXPERIENCE OF THE REPUBLIC OF MACEDONIA

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Keywords: *Climate change, water system vulnerability, adaptation, Republic of Macedonia*

Abstract

The climate is changing; and the Europe and Balkan region is vulnerable to the consequences. The Republic of Macedonia (MKD), despite suffering a significant economic downturn in the 1990s, has one of the highest levels of GHG emissions per unit of GDP in Central and Eastern Europe. The paper assesses the impacts of climate change on water resources in the country and the needs for adaptation of the local population. Some critical water management issues, such as water supply for agriculture and domestic use, are investigated. A conceptual water balance model was calibrated using monthly historical hydrometeorological data, by using the transient scenario. Increases of the risks associated with the annual quantities of water supply have been observed. The results show that the mean annual runoff, mean winter and summer runoff values, annual maximum and minimum values, as well as monthly ones, would be reduced. Clearly, more sustainable practices will be needed over the next decade before climate change's impacts become more severe.

EVIDENCE OF BIOACCUMULATION IN SOME SURFACE WATERS OF SOUTH EAST SERBIA

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Keywords: *bioaccumulation, heavy metals, pesticides, waters, sludge, algae*

Abstract

„ There is a need to determine reliable indicators of the functioning of aquatic ecosystems, including those that will show changes in the future, and responses to environmental stress. „ (Research Committee of the American Academy of Science, 1992.)

„ It was found that concentrations of certain toxic substances in water can be extremely low, even below the detection limit, and at the same time, in the tissues of living creatures could be found in concentrations which are several thousands times larger (the biological factors of concentration). It is the result of a process that is marked as „bioaccumulation„ (EPA)

THE CONTRIBUTION OF SHIPPING TO AIR POLLUTION IN THE ROMANIAN PART OF THE BLACK SEA

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Keywords: *air pollutant emissions, shipping, Black Sea.*

Abstract

Ships are fast becoming one of the biggest sources of air pollution and emissions from shipping contribute significantly to the concentrations and fallout of harmful air pollutants. Territorial waters, inland seas and ports are the Regions most affected by ship emissions. Since the Romanian part of the Black Sea is medium urbanized, emissions from ships affect human health and the overall environment. In this paper exhaust gas emissions from ships in the Romanian part of the Black Sea are calculated by utilizing the data acquired in 2004-2010 period. Main engine types, fuel types, operations types, navigation times and speeds of vessels are taken into consideration in the study. Total emissions from ships (CO₂, CO, NO_x, SO₂, VOC, PM) in the study area were estimated.

TERRITORIAL IMPACT ASSESSMENT FROM THE VIEWPOINT OF GIS FOR HEALTHIER POLICIES

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Keywords: *TIA, EIS, SEA, GIS, Impact Assessment, greener policies, decision-making*

Abstract

Impact Assessments are the way how we can have influence on plans, investments and policies to optimize the utilization of our landscapes. One of the brand new is the Territorial Impact Assessment. This tool can help synchronizing the intents between policies, and may cause a deeper understanding in the impact process, focused on each part of it separately. To get comprehend this complex process previously we used academic models and scenarios, but as the complexity grows it's increasingly important to have a tool to simulate impacts by the help of the GIS. The GIS can exactly define the hot points where the conflict are cumulating, and also shows us the regions that are not concerned. Healthier policies depending on the amount of information we got, so it is a necessity to know the effect better. As a result of applying GIS in Impact Assessments, and with special attention in Territorial Impact Assessment we got the chance to have greener policies and healthier places to live.

This research was supported by TÁMOP-4.2.1/B-09/01/KMR/2010-0005 and TÁMOP-4.2.2/B-10/1-2010-0023 Social Renewal Operational Programme in Hungary.

THE ENZYMATIC CONTENT OF CERTAIN HERBS FROM ROMANIA AND ALBANIA

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Keywords: *enzymes, hydrolase, oxido-reductase*

Abstract

This paper presents the study of the class of oxido-reducing enzymes (SOD, peroxidase, and catalase) and hydrolases (amylase, protease and lipase) in three species of medicinal plants, selected for this purpose, collected from untreated soils.

Plant material used for the study is collected from year 2011 and refers to: St. John's wort (*Hypericum perforatum*), thyme (*Thymus vulgaris* and *Thymus longicaulis*) and sage (*Salvia officinalis*), collected from the culture in Romania - and from spontaneous flora – of the mountains -Albania.

The main reason that these plants who were chosen for study is that the most are used in phytotherapy, and are well studied in terms of chemical composition, but much less in terms of enzymatic equipment. Considering the large number of natural preparations with St. John's Wort, sage and thyme, for example, St. John's Wort

for mainly improving depression and certain digestive disorders, we chose the main enzyme for the study, a group of oxido-reductive enzymes of class and another group of hydrolases class mentioned above. That we watched while comparing data obtained in different climatic conditions and different species to assess the importance of pedo-climatic environment of the enzyme content of the plant material.

From literature data, the favorable health effects of these plants, describe by phyto-therapeutic practice summarized, are:

Sage has gained a reputation over time, due to its multiple curative. It is recommended as a natural remedy in inflammation, physical and mental fatigue, nervousness, fever, stress, bronchitis, abscess, cellulitis, etc..

In our study, Sage coming from Albania from two different locations - Mount Dajti and mount Picarit and Sage from Romania that is collected from the ecological soils at Hofigal company.

St. John's wort is a plant known as psycho-balanced properties, considered without equivalent in medicinal flora. In leaves, stems and flowers of this plant in hiding true, miracles “, it is one of the most important and effective regulatory activity of nerve and mental, and at digestion. Refer to its antiseptic effect, soothing local vasodilator, relaxing, antispasmodic and liver tonic that justify the importance in the fields mentioned and which motivates and numerous other internal and external treatments.

Thyme stands out among the family Lamiaceae herbs, such as Thymus by many species and varieties cultivated and wild, with remarkable antiseptic, antispasmodic and antimicrobial. effects. From existing species we used to study Thymus longicaulis - Albania and Thymus vulgaris - Romania.

Data obtained over the content of oxidoreductase enzymes and hydrolytic digestive enzymes, complete the therapeutic value of these plants, well known and widely used in phytotherapy, but less studied in terms of enzyme.

**COMPARATIVE STUDY OF
THE CHEMICAL COMPOSITION
OF SOME MEDICAL AND
AROMATIC PLANTS
FROM ALBANIA AND
ROMANIA**

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Keywords: *medical plant, aromatic plant, sage, St. John's Wort, thyme.*

Abstract

The study aims to determine and compare the chemical contents of interest mainly for phytotherapy, from the following herbs: sage (*Salvia officinalis*), St. John's Wort (*Hypericum perforatum*), thyme (*Thymus vulgaris* and *Thymus longicaulis*) from Romania (R) and Albania (A).

For each plant samples from both countries that are collected during 2011, the following analyses were done: loss on drying, residue on ignition and metals analysis by atomic absorption spectroscopy (AAS), total protein, fatty substances, essential oils, directly reducing and total sugars, total flavones, polyphenolcarboxylic acids, total tannins, ascorbic acid, total carotenoids, hypericin from *Hypericum* and antioxidant activity.

The results present interest, allowing comparison of the content of active substances from medicinal plants grown on different soils, in different climatic conditions with different humidities and temperatures and without chemicals used as growth promoters.

Comparative research has been conducted in the Research and Development department of Hofigal S.A. and were made on indigenous plants as well as native plants collected in Albania.

The analysis shows that the differences are between sage from Albania and sage from Romania, where total protein, essential oil content, total sugars and residue on ignition have higher values for the plant from Albania than the Romanian one, while the overall values involved in antioxidant activity (flavones, tannins, ascorbic acid, carotenes) have higher values for the sample from Romania.

Regarding St. John's wort and sage, there are significant differences only for hypericin and essential oils.

**THE LIFE OF TURKMEN'S AND
NOMAD'S ENDEMIC CULTURES
IDENTIFY WITH KAZDAĞI:
A CASE STUDY FOR
USAGE-CONSERVATION
BALANCE CONSIDERING PLAN**

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Keywords: *Usage-conservation balance, Turkmens, Nomads, Kazdağı National Park, Sacred places*

Abstract

Kazdagi National Park has an importance on biological diversity since containing rare and endemic plant species, but also there are endemic cultures of Kazdagi; Turkmens and Nomads should be emphasized according to their extinction risk. There is an interesting life form of two different communities which have different beliefs. They come together by traditional life style of hillsides of Kazdağı and They own the same local sacred places and Saint Sarıkız who lived at the summit of Kazdagi .

Hundreds of years they have lived in peace with nature. These rare and endemic species survived hundreds of years with traditional purposes in these sacred places. They have to benefit from nature. This paper obtains to reach the target of survive these endemic cultures by producing a land use plan considering usage-conservation balance in Kazdağı National Park.

PREDICTIVE ANALYTICS AND PATTERN VISUALIZATION FOR HUMAN HEALTH RISK ASSESSMENT

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Keywords: *risk assessment, public health indicators, bioassays, behavioural risk factors, self-organizing feature maps, infant mortality*

Abstract

Multiple interacting stressors in the environment present increasingly complex risks to human health. Too often however, the data required for traditional risk assessment are either lacking or unavailable at the necessary spatial or temporal scale. In addition, assessment practices and management policies need to move away from single factors approaches in order to accommodate the reality of complex chemical mixtures and environmental stressors. Recent literature suggests that a paradigm shift is under way and points to the need for the development of new techniques both for rapid data collection and flexible risk assessment strategies that can adapt to make use readily available data. This paper presents a novel method for population-level risk assessment that uses self-organizing feature maps (SOM) to generate multivariate clusters cause-of-death and birth outcome metrics, in combination with the use of and supervised learning risk-propagation modelling to identify risk factors. We apply this method to identify exposure-outcome linkages at the county level for Wisconsin,

USA and civil divisions in Dobrogea Romania, demonstrating its effectiveness in visualizing public health risk relationships with behavioural risk factors (e.g. smoking, heavy drinking) and environmental factors (e.g. land cover, nitrates and faecal coliform in drinking water). These risk relationships do not demonstrate cause-effect, but provide guidance for targeted investigations and for risk-management prioritization.

Environmental Education and Public Awareness

**AWARENESS CAMPAIGNS
AS TOOLS FOR MPA
MANAGEMENT, CASE
STUDY: VAMA
VECHE - 2MAI
MARINE RESERVE**

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Keywords: *marine reserve, custody, sustainable management, awareness campaign*

Abstract

The Vama Veche - 2 Mai marine protected area (MPA) is the only underwater reserve on the Romanian coastline, sheltering a unique flora and fauna. The reserve is currently under the custody of NIMRD "Grigore Antipa". The custodians of the protected area have as main task the implementation of the management plan, thus ensuring the integrity of the reserve against any type of threat. As Vama Veche and 2 Mai are well known tourist areas, the environment obviously undergoes strong pressures caused by wild tourism. Yet, tourism and traditional activities (fisheries) in the area are significant issues when dealing with the sustainable management of a protected area. Consequently, a balance between nature preservation and human activities must be sought. Under these circumstances, one of the aims of the custodian team is to develop an awareness raising campaign, meant to induce positive changes in the behavior of tourists and stakeholders in the Vama Veche - 2 Mai area. The paper herein is an outline of such an awareness campaign, elaborated in accordance with international public relations principles (identifying target audiences, setting op-

UNDERSTANDING THE ROOTS OF LOCAL UNIQUENESS IN GOKCEADA (IMBROS)

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Keywords: *urban conservation, ecology, vernacular, participation, workshop, zeytinlikoy, gokceada, public awareness*

Abstract

Imbros, officially referred as Gokceada, is the largest island of Turkey between Greece and Turkey. Gokceada is located at the westernmost point of Turkey at the entrance of Saros Bay in the northern Aegean Sea. It has the 4th largest fresh water reserves in the world. The Island's strong north wind and constant fires create vegetation unique with olives, pines and maquis. Gokceada is a volcanic island, which has mine reserves such as granite, lava stones, pumices, and iron.

The 5000 year-old island hosts 8,875 people from distinct cultures, which are unified with the island atmosphere. Today, the island is welcoming a project, which is called St. Theodori Ecological Park, which is funded by Greek Orthodox Community of Churches and Schools Foundation Beyoglu.

Gokceada is facing rapidly developing tourism sector due to its unique values. To protect the island, local people need to be aware of their richness. Therefore, this project aims public education on sustainability and local values of Gokceada. Sus-

tainable initiatives are woven into the design of the entire park. Rainwater harvesting can be experienced in the park. Visitors can interact with endemic plant collections and local mine exposition. At the harvest-gathering circle, visitors can participate in olive harvest. Environmental workshops for different ages and learning gardens about sustainable design encourage visitors to apply sustainable practices in their living spaces.

The purpose of this study is to explain how to design a sustainable public space and attract attention for local ecological values and ultimately community participation.

INFORM¹ – BASIC PRICIPLES OF CHILDREN'S PARTICIPATION IN ENVIRONMENTAL DESIGN

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Keywords: *Constructivist learning, environmental education, social planning, children's participation, cooperative learning, environmental knowledge, sustainable planning*

Abstract

The following paper demonstrates and analyses a current complex educational project's first steps in a Hungarian elementary school. This project is based on a constructivist model: the first part is about landscape perception and the goal (cognition of environment and landscape, drafting conceptions), the second step is the process of alteration (the phase of planning and design) and the last part is the reflecting phase (constructing and working). The main aim of this study is to review the first part's results, demonstrate experiences of the engagements, which uses cooperative structures.

The theoretical background used is the participatory planning theory, Kagan cooperative learning and constructivist learning theory. The research enriches these fields and creates basic principles for a complex methodology to apply environmental design in education. The InForm project pays special attention to familiarizing Hungarian people with the new paradigm of landscape architecture.

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This research was supported by TÁMOP-4.2.2/B-10/1-2010-0023 Social Renewal Operational Programme in Hungary.

ETHNIC LANDSCAPING ACTIVITY - COMPARING NATIONALITIES BY THE VIEWPOINT OF THE UNIQUE LANDSCAPE FEATURES IN HUNGARY

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Keywords: *sustainable development, social planning, environmental education, unique landscape feature, landscape conservation*

Abstract

In the last few years in Hungary there was a big effort in surveying, organizing and classifications of unique landscape features as cultural and natural heritage of the country. As a result of the two years long TÉKA project financed by EEA and Norway Grants in Hungary today data and inventories are able to reach for one third of the settlements, but they was not analyzed independently from the point of view of value in use. Our research is focused on developing the current inventories by site surveys and concentrated on landscaping specificity of different ethnics, who could have typical features belonging only to the nationalities. We are also interested in the ways of methodology of conservation and the real values of them in the life of these societies. We think that value only can be the thing that is valued. Socialization of surveying and evaluating was not to be done in Hungary, so that's why people don't know so much about unique landscape features. We hope that mutual information changing

can help to get know each other better as surveyor, planer or concerned person, so we help the studies by on-site questionnaires.

This research was supported by TÁMOP-4.2.1/B-09/01/KMR/2010-0005 and TÁMOP-4.2.2/B-10/1-2010-0023 Social Renewal Operational Programme in Hungary.

RE-STRUCTURING BANGKOK'S PERIPHERY: LANDSCAPE VISION NONG CHOK

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Keywords: *Bangkok's suburbia, Landscape vision, Nong Chok*

Abstract

It is now indisputable that such environmental catastrophic and devastating events are no longer merely natural calamities; they are undoubtedly man-made disasters. The recent flood event in Thailand confirmed the past Bangkok's development in the fragile ecology of Chao Phraya Great Plain has made the city and its region more vulnerable to the elements, giving rise to complex issues combining both environmental and socio-cultural aspects.

Over the past decades, Bangkok's rapid urbanization has developed extensive metropolitan area sprouting from its original centre into the suburbs and neighbouring provinces. As part of the eastern development corridor, Nong Chok has been at the forefront of this phenomenon.

In addressing the above situation, this paper presents result of landscape visioning exercise that could be used to guide the future developments of Nong Chok. These strategic ideas were developed in a context of the Sustainable Landscape Design Studio, SLDS, at Faculty of Architecture and Planning, Thammasat University.

The structure of study is divided in three parts. The first part investigated landscape change dynamics using ecological framework, combining both biophysical and socio-cultural information. The second part was to establish planning goal to address those issues and develop a visionary solution from various perspectives and scales. In the final stage, each vision was visualized and presented to local community to preserve and utilise resources sustainably.

ENVIRONMENTAL IMPACT OF GMOs, CURRENT STATUS OF EDUCATION, RESEARCH AND LEGISLATION IN ALBANIA

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Keywords: *GMOs, LMOs, environmental impact of GMOs, legal international instruments*

Abstract

The history of considering of LMOs (Living Modified Organisms) and GMF (Genetically Modified Food) in Albania dates two decades ago, time when political changes opened the possibility for massive international trade relations. Here we represent the actual legislation in the country, which considers the LMOs and GMFs, and analyse the progress toward the preparation and approval of a specific law. The envi-

ronmental impact of GMOs, as part of the environmental education at university level, is the second subject of the presentation. Examples of the current programs and curricula at the University of Tirana are discussed, and a summary of the research institutions and their existing capacities for work on the evaluation of possible environmental impact, on detection, identification and quantitative determination of genetically modified organisms and food products is described.

THE UNIVERSITY ROLE IN PUBLIC AWARENESS FOR A CLEAN ENVIRONMENT

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Keywords: *Clean environment, Environmental education, Public awareness*

Abstract

Albania has a rich natural environment in the Balkan Peninsula, due to a varied diversity in the terms of climate, habitat and multiple water sources: marine, rivers and the lakes. Economic growth and socio-political changes during the past two decades have had a significant impact in the environment, pollution and degradation of natural resources. For these reasons, environmental education should play a vital role in sensitizing the population to provide people with necessary knowledge, skills, attitude and motivation to prevent pollution and improve the situation.

Universities should not only produce the technicians, therefore, it is required that students put the acquired knowledge in use for human purposes, taking part as informed citizens in a democratic society.

Environmental education has a key impact on the quality of life. It is imperative that students apply knowledge to a specific work to help the quality of the community life. Department of Biotechnology, FNS, University of Tirana, included in the National Project about the impact that quality of surface water of rivers has on the Adriatic and

Ionian seas, offer students not only theoretical preparation about these problems, but also the laboratory possibility to analyze water samples for evaluating their microbial contamination. The results obtained will help information and collaboration within the community.

ENVIRONMENTAL PROFESSIONS: 10 YEARS OF BENA TRAINING PROGRAM IN ROMANIA

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Keywords: *environmental professions, training center, environmental management, water pollution, fishery inspection, sustainable development in coastal area*

Abstract

Sustainable use of natural resources, environmental management, education and public awareness should become programs of the national priority in our region. The new economical and social conditions in Romania require a new approach to the development of "professional education". Therefore, 10 years ago the Balkan Environmental Association (B.EN.A.) and the National Institute for Marine Research and Development "Grigore Antipa" started a fruitful collaboration relating the establishment of the Training Center on Environmental Professions. The project was supported for two years by the Ministry of Foreign Affairs of Greece (Hellenic Aid). The program schedule was divided in two categories for the graduates and technicians in Water Pollution and the Environmental Management specialization, respectively.

Special courses have been organized for the Romanian Coast Guard staff in Fishery Inspection and Environmental Protection specialization (2 series), for the employees of the National Company of Oil – Petromar Branch (4 series), employees of the Maritime Ports Administration Constanta (3 series) and one series for the employees of the Natural Sciences Museum (Dolphinarium) Constanta. A postgraduate course was organized in the Faculty of Natural Sciences, “Ovidius” University of Constanta. Starting 2004 the analytical curricula of the courses are recognized by the Ministry of Labor and Ministry of Education of Romania. As result, a total of 862 trainees graduated the program training on modern environmental management. The main objective of the whole project is to offer training on new environmental professions, consecutively to update the trainees’ knowledge, to develop employment chances and to promote a decent quality of life, since it is known that the new professions require updating skills in order to face the job market demands.

PUBLIC AWARENESS OF IMPORTANS OF ACCESSIBILITY OF PUBLIC PARKS

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Keywords: *accessibility, mobility, barrier, park, survey*

Abstract

The study examined public awareness of the importance of accessibility of public parks. The survey was conducted in Novi Sad, Serbia, through a structured questionnaire. Questions were asked about the accessibility of the five parks in Novi Sad - Danube Park, Futoški Park, Železnički Park, Kamenički Park and Limanski park. Respondents evaluated the accessibility of parks (ranging from 1 to 5), as well as the presence of barriers. Of all respondents, 53% said that the parks of Novi Sad are not accessible for all users. Two thirds of respondents said that there are barriers which represent the danger and obscale for free movement. As the most common barriers for movement there were emphasized a poor maintenance of the paving, the difference in leveling of sidewalks, and poor maintenance of the plants along the main pedestrian communication. Respondents indicate Limanski park as the most accessible park (50% of respondents rated with the grade 5). The next most accessible is Danube Park (39% of respondents rated with the grade 5), then Kamenički park (12% of respondents rated with the grade 5), and the least accessible are Futoški and Železnički Park (3% and 4% of respondents rated with the grade 5). The folowing proposals are just some of many, of examined citizens, for improving the acces-

sibility of parks: signals commutation, adapting paths to be accessible to all users, pruning plants along pedestrian communication, arranging accessible parking. It can be concluded that there is awareness about the importance of accessibility, but unfortunately, the parks are not completely adapted to be free of barriers, and accessible for all people, regardless of their ability. In order to improve the quality of life, it is necessary to create the environmental conditions which are functional for all users.

PRIMARY ACTOR IN THE DESIGN AND TRANSFORMATION OF PRIMARY SCHOOLYARDS: STUDENT

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Keywords: *Schoolyards, student, primary schools, Bartın, child participation, participation strategies*

Abstract

School and the opportunities that schools provide are among the leading factors that shape child development first and social structure secondly. Within this framework, schoolyards emerge as a learning and experience environment, with a growing importance. Schoolyards, where students spend 28% of their daily school lives, should be used more efficiently and playtime activities in this environment should be assessed as an inseparable part of learning and development process.

In accordance with this perspective, serious studies are done in the issue, especially in countries where social and economic level of development is high; and these studies are put into practice as well. It is stated in best practices that expert opinions are not enough alone in the arrangement or transformation of schoolyards, which are important locations in learning process, and that it is essential to provide the participation of primary and secondary partners/actors in order to reach the objectives in practice and use. Students, who are one of the above mentioned partners, have a key role since they are the target audience of the study.

There are different phases during the participation of students, the key actors in the arrangement and transformations process of schoolyards, to the process. Among these phases, identifying the requirements and demands of students from schoolyards, is one of the important first steps. Thus, it is possible to define what kind of initiatives should be taken at different spatial units and hence, to identify what kind of design sense and materials are needed. However, in our country, it is seen that the necessary improvement and common attitude change cannot be ensured. In addition, it is seen that most of the schoolyards do not have playing, moving and recreational areas for students to feel relaxed, to have experience, to improve their communication and to have different movement experiences.

This study is done within the scope of providing student participation in determining the existing condition and designing transformation of schoolyards. Student opinions and expectations are identified through questionnaires made in 15 primary schools (13 public schools and 2 private schools) in Bartın Municipality and their contribution is provided to the arrangement/transformation process. The impact and significance of schoolyards as well as the findings and questionnaire results are covered in the paper.

URBAN AGRICULTURE AS A TOOL FOR ENVIRONMENTAL AWARENESS FOR FUTURE GENERATIONS

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Keywords: *Urban Agriculture, Self Sufficient Cities, Environmental Awareness, Environmental Education, Future Generations.*

Abstract

Agriculture in the urban context has been an indisputable part of sustainable development of cities. The benefits of the local agriculture practices have been recognized by academicians, professionals, urban designers, landscape architects as well as urbanities who are dealing with the challenges of city life. Due to the rising environmental problems and lack of awareness, urban agriculture emerged as a supportive implementation that links urban with nature while increasing the global food supply, reducing energy for transportation of food, improving family budget and sparing natural ecosystems from conversion to urban fabric. The future of cities will somewhat depend on urban agriculture if cities are to meet the demands of rising populations without compromising environmental integrity or public health. Public participation and environmental awareness is crucial for urban agriculture. Education of children is also important for the future of this endeavor.

This research is carried out to highlight the awareness of children towards urban agriculture. A questionnaire is conducted with pre-school children to evaluate their awareness of food resources. It is revealed that children who have no connection or visual link with nature are not well aware of the sources of their food supply or natural resources, whereas the children of more natural landscapes are more aware of their environments. Subsequently, experience in nature is central for building awareness, and providing productive landscapes in the city will be educational for children, hence creating environmentally responsible and sensible generations.

Investigation of Culture and Virtual Environment Design in Computer Games

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Keywords: *Landscape Design; Education; Game-Based Learning; Virtual Design Studios.*

Abstract

Using computer games and games in general for educational purposes offers a variety of knowledge presentations and creates opportunities to apply the knowledge within a virtual world, thus supporting and facilitating the learning process (Pivec, M., Dziabenko, O., Schinnerl, I., 2003). Nowadays, game is using as a educational way starting at elementary school to university in a variety disciplines. In this research, game-based learning approach is purposed as an innovative engagement factor in landscape design education. The connection of the effective use of virtual design studios at design education with game-based learning is discussed.

ENGINEERING CAPACITIES DEVELOPED BY PRACTICE DURING UNIVERSITY STUDIES

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Keywords: *teamwork, professional learning and development, development through practical work*

Abstract

The curricula of the Politehnica University of Timișoara requires, at all levels, starting the first year of study, a practice training for all students as engineers and must be compulsory carried out, even in not a sufficient amount.

The paper present the PRACTICOR project co-financed by the European Social Fund through the Human Resources Development Operational Programme 2007-2013 and aims the establishment of transnational networks regarding the educational guidance, counseling career and practice, coupled with the labor market in knowledge society. This project proposes an innovative model of practice is going to students from technical universities to increase their performance and quality training (bachelor and master students). Reviving the notion of practice applied directly related to economic units will complement the information that the student become a graduate, completes his studies.

ENVIRONMENTAL EFFECTS OF OZONE LAYER DEPLETION ON SKIN CANCER

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Keywords: *skin cancer, solar radiation, exposure, ozone layer*

Abstract

The production and emission of chlorofluorocarbons (CFCs), is by far the leading cause of ozone layer depletion, which results in more UVB reaching the Earth. Due to their profession farmers are occupationally exposed to solar radiation. Now days it is widely accused the role of solar ultraviolet radiation in increasing the risk for skin cancers, both non-melanoma and malignant melanoma. 76 farmers and 75 age matched controls from the Western – Central Albania region were interviewed a standardized questionnaire and examined for pigmentation factors and skin lesions. The gathered datas were analyzed and Statistical Package for Social Sciences (SPSS for windows, version 17.0) was used for all the analyses. In the farmer group we studied, we found that for every year of sun exposure, the risk of SCC was raised

twice. Those working from more than 10 years had a 2.9 higher risk of developing BCC than the farmers working from 0 – 10 years.

Sustainable Development

SUSTAINABLE ENERGY OPTIONS IN THE ROMANIAN DANUBE DELTA COAST

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Keywords: *sustainable options, distribution system, wind potential, coastal area, sustainable development*

Abstract

Lasting energetics options characteristic of ocean space are related to wind energy, solar energy, wave energy and they represent a vast source of renewable energy. If these are successfully exploited can contribute in a significant proportion of the energy balance and to support sustainable economic development and job creation in coastal areas.

In this material will be an analysis related to wind energy recovery for a site located on the Romanian Danube Delta coast. Assessment of wind potential will be given the physical and geographical features of the site chosen. Depending on the values obtained will choose the type of low-powered turbine that provides power for a single family dwelling. The calculation presented can be an example of application for the

expansion of wind energy for power supply of housing in the coastal area. This distribution system provides local control and ownership of energy resources, promoting economic development at community level.

Note, that the environmental impact of such developments to be assessed on its planning, if the results are sustainable. Also, bear in mind that energy infrastructure is vulnerable to coastal level rises and storms.

THE STUDY OF PEDESTRIAN BEHAVIOR IN SHOPPING STREETS AND PEDESTRIAN ACTIVITIES

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Keywords: *Pedestrian behavior, street usage, behavior assesment, observation method, shopping streets*

Abstract

Pedestrian shopping streets have the feature of attraction points, which depends on variety of the functions like accessibility, perceptibility, mobility, liveliness, permeability and affordability of the needs. People perform various activities in accordance with their needs, life styles and social determinants. The aims of this study is to determine, for which purposes people use streets, which activities they can perform and their behavioral assessment in streets. It is chosen some streets in the different cities of the Blacksea region. For this purpose, it is used determining behavioral assessment through observation method and behavioral mapping technique. To the behavioral mapping technique, this study has been performed by the usage of five elements constituting graphic display of the area through observation, defining of human behaviors or their schematic drawing, duration of the activities, a systematic

study program and a method to be used in the coding solution. According to the result, there is necessity for lively usage areas on the ground floors has been put forward with this research in order to establish a lively and active street life. It has been determined where and which activities have intensified by recording all of the observations on the behavior maps. It is determined, the most repeated activity of these four streets is the shopping.

In conclusion, the idea that there is necessity for lively usage areas on the ground floors has been put forward with this research in order to establish a lively and active Street life. The most repeated activity in the streets where the observation has been carried out is the activity of shopping.

The aim of this study is to determine “what people do in pedestrian shopping streets or what functions would they like to see in these streets.” The study offers leading principles for pedestrian street designs and pedestrianization. This research has revealed guiding results for the planning of pedestrian shopping streets and this will be a good examples for the regions, where have blacksea culture.

BIODEGRADABILITY IMPROVEMENT OF PHARMACEUTICAL EFFLUENTS BY USING DSA ELECTRODES

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Keywords: *biodegradability, Dimensionally Stable Anodes, pharmaceutical effluents*

Abstract

In the last years many papers have reported about the occurrence of the pharmaceuticals in the surface waters and their undesirable effects upon the aquatic life [1-4]. Most of pharmaceuticals pass through the wastewater treatment plants unchanged because they are biorefractory compounds and thus they emerge into the water bodies. Therefore it is necessary to improve the biodegradability of pharmaceuticals effluents (PhEs) before their discharge into the sewage system. The purpose of this paper was the use of Dimensionally Stable Anodes (DSA) to improve the biodegradability of PhE having as pharmaceutically active compound diclofenac (DCF), a non-steroidal anti-inflammatory drug. The PhE had BOD5/COD ratio (R)

of 0.05. The DSA electrodes were prepared by thermal decomposition of the appropriate precursors and had the composition Ti/RuO₂-TiO₂. The electrochemical experiments were carried out at current density of 300 A/m² and electrolysis time of 120 minutes. Also, photoassisted electrochemical experiments were carried out. It is important to point out that the two methods were effective for the biodegradability improvement of the PhE. The best result for R was 0.41 and it was obtained for the photoassisted electrochemical method. These promising results regarding the biodegradability improvement of PhE obtained by applying the electrochemical and photoassisted electrochemical methods should constitute the base for other researches involving the DSA use for the sustainable development. Selected references [1] V. Christen, S. Hickmann, B. Rechenberg, K. Fent, Highly active human pharmaceuticals in aquatic systems: A concept for their identification based on their mode of action, *Aquatic Toxicology* 96 (2010), 167-181. [2] Z. Moldovan, Occurrence of pharmaceutical and personal care products as micropollutants in rivers from Romania, *Chemosphere*, 64 (2006), 1808-1817. [3] V. L. Cunningham, S. P. Binks, M. J. Olson, Human health risk assessment from the presence of human pharmaceuticals in the aquatic environment, *Regulatory Toxicology and Pharmacology* 53 (2009), 39-45. [4] L.H.M.L.M. Santos, A.N. Araujo, A. Fachini, A. Pena, C. Delerue-Matos, M.C.B.S.M. Montenegro, Ecotoxicological aspects related to the presence of pharmaceuticals in the aquatic environment, *Journal of Hazardous Materials* 175 (2010), 45-95.

**AN EMPIRICAL STUDY ON
RELATIONSHIP BETWEEN
FOREIGN DIRECT
INVESTMENT AND
ENVIRONMENTAL TAXES:
EUROPEAN UNION AND
TURKEY**

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Keywords: *FDI, Environmental Taxes, EU, Turkey*

Abstract

Global efforts towards environmental protection have been on the political agenda especially since the early 1970s and have increased since the 1990s. In this process, the notion of sustainable development which has three basic dimensions as economic, social and environmental, has come to the fore and has spread as a global political goal. Especially with the globalization process beginning from the 1980s, sustainable development has become a more pronounced concept because of the internationalization of economic activities maintained by growing investments, particularly foreign direct investment (FDI) and raising environmental concerns. In this context, it is necessary to achieve environmental protection and economic growth and to make their integration mutually supportive as an aspect of sustainable development. Environmental taxes are integral for sustainable development as an economic instrument because they have an essential role to affect environmentally undesirable ac-

tivities through the price mechanism. However, taxes are the one of the determinants that affect FDI which is crucial for economic growth and therefore for sustainable development as well. This study aims to seek the effect of environmental taxes on FDI decisions by analyzing the empirical relationship between inward FDI stocks and environmental taxes for the 27 European Union (EU) countries and Turkey over the period 1995-2008, with the Arellano-Bond Dynamic Panel Data Estimation method by using GMM forecast technique. Under the empirical findings, the study concluded that there is no statistically significant relationship between inward FDI stocks and environmental taxes.

INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) AND ENVIRONMENT SUSTAINABLE DEVELOPMENT - AN INTEGRATED APPROACH

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Keywords: *ICTs, green ICTs, ICTs and environment, environment, ICTs and sustainable development*

Abstract

Information and Communication Technologies (ICTs) is the combination of hardware, software and services for capture, process, transmit and for displaying data and information electronically. Sustainable development is the development that fulfils the current needs without setting in danger the next generations' needs fulfilment. At a first glance, ICTs and environment sustainable development seems to be two sectors that look extrinsic but the impact of ICTs in the environment is widely accepted by the scientific community and frequently is taken for granted. In the scientific community there is a strong belief that these two sectors are correlated but still there are many uncertainties on where the border lines between these two scientific sectors lay. Clear quantified evidence has not been found yet despite the extensive research based on the link of ICTs and successful environment sustainable development.

This study deals with the impact of ICTs on environment sustainable development and is based on the unique characteristics of ICTs and their concrete contribution to environmental sustainability. A general approach is taken by categorizing ICTs

in three main domains: a) ICTs advances and development; b) Green ICTs and c) ICTs for the environment and the positive and negative affects of each category are presented.

ADVANTAGES OF GREEN WALLS FOR BUILDING ENVIRONMENT

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Keywords: *Façade greening, Living cladding system, Climbers, Urban areas, Energy use, Heat island effect*

Abstract

Façade greening is essentially a living cladding system for buildings. Climbers are generally used to cover the surface of a building. Traditionally, self-clinging climbers have been used, as they require no supporting network of wires or trellis. Modern façade greening, however, favors the use of climbers supported by steel cables or trellis. This technique is new, but hopeful.

Industrial, commercial and residential buildings dominate many urban areas, often presenting dull, featureless facades to the world. Façade greening is a very useful technique to cover a variety of walls, to screen the unattractive large structures.

This paper aims to study the advantages of façade greening, by introducing the rational reasons for working with climbers on buildings. Hence, it will be discussed the potential effects of façade greening from the point of shading, heat island effect, energy use, insulation, trapping dust and etc.

DETERMINATION OF POTENTIAL ENDOCRINE DISRUPTORS IN FOOD USING MATRIX SOLIDPHASE DISPERSION

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Keywords: *Matrix solid-phase dispersion, EDCs*

Abstract

Matrix Solid-Phase Dispersion (MSPD) has been evaluated for the extraction of phenylurea herbicide residues; diuron and linuron suspected for endocrine disrupting activity as well as their main metabolites in food samples. MSPD was used for the simultaneous determination of various pollutants from semi-solid and solid samples. This procedure combines the use of mechanical forces generating from the grinding of samples with irregular shaped particles (silica or polymer based solid supports) with an adsorption capacity of a support-bound polymer (octadecylsilyl or others) to produce a sample/column material from which dispersed sample matrix components can be selectively isolated.

Food samples (0.5 g) were ground in a mortar with Florisil sorbent and the homogenized mixture was packed into a SPE cartridge and subsequently eluted from the MSPD cartridge using acetonitrile:water (50:50) and analyzed by HPLC-UV/DAD. Method was linear over a wide range of concentration, exhibited satisfactory repeatability, and reached limits of detection usually in the low ng/g range. Recoveries, at spiked concentrations below the maximum residue levels established by the European Union, were good in the range of 55% to 96% for all analytes.

PRECISION FARMING AS A TOOL FOR THE IMPLEMENTATION OF SUSTAINABLE LAND MANAGEMENT

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Keywords: *Precision Farming, Potential-oriented land-use, Sustainable Land management, Nature and resource conserving, Adaptation to climate change*

Abstract

The implementation of a sustainable land management which takes the increasing climate change into account is one of the biggest challenges of spatial and landscape planning for the future. To fulfil this task, strategies are required to enhance the natural capability of ecosystems to adapt to the changing climate. Various studies have shown that one main basis for this capability is a high diversity of habitat and land-use structures. Especially in very fertile and intensively used agricultural landscapes, a tool is needed that considers both economic and ecological concerns and allows the implementation of measures to raise diversity. The sub-area specific and potential-oriented land-use supported by using precision farming represents one possibility for the implementation of this principle. In addition to the reduction in the use of equipment and resources and the related preservation of the ecological functions, unprofitable parts of agricultural fields can be identified on the basis of sub-area and harvest mappings which then come into question for possible nature and resource conserving measures. Therefore, a target-oriented linking of agricultural and ecological related conditions is essential. Using the independently developed GIS

modules, the authors demonstrate how spatial data related to nature and resource conservation and agriculture can be aggregated and visualised to support decisions concerning a sustainable land management.

OPPORTUNITIES FOR RENEWABLE ENERGY PRODUCTION IN THE ROMANIAN-BULGARIAN BORDER

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Keywords: *renewable energy resources, Romanian-Bulgarian cross-border area*

Abstract

This article is a scientific study about the potential of the renewable energy sources of the Romanian-Bulgarian cross-border area. Romania and Bulgaria have similar economic and social parameters, which suppose taking common decisions to overcome the energy problems in both countries. The forecasts for using of the renewable energy resources for the future and the results obtained so far for getting thermal energy and electricity energy are presented, based on the commitments taken by the two countrys in accordance with the Kyoto protocol and with the goal of preserving the environment. The research clearly shows that we need a general analysis, based on a common methodology which the authorities that take management decisions could use for the technical solutions promote for sustainable development of this region.

**THE ANALYSIS AND
EVALUATION OF
SPATIO-TEMPORAL
CHANGES IN LANDSCAPE
PATTERNS BY USING
LANDSCAPE METRICS: A
CASE STUDY IN ISTANBUL,
SARIYER.**

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Keywords: *Landscape change, landscape pattern analysis, landscape metrics, habitat fragmentation, landscape ecology*

Abstract

Istanbul is in a rapidly spatial changing process, because of the urbanization pressure caused by population increase. This change has sometimes very difficult effects on current ecosystems without conversion. Sariyer is a district with heterogeneous structure, where suburbanization, corridor construction are seen as the main factors of change, and therefore was chosen as the sample area. In order to underline the ecological impact of changing and to bring suggestions for potential uses, spatio-temporal change was analysed with the help of adequate landscape metrics.

Image processing techniques including supervised classification and unsupervised classification were used to classify the study area in four land use/land cover (LU/LC) categories (agricultural areas, artificial surfaces, forests and semi-natural areas and wetlands) via Landsat TM and ETM satellite images (1997-2000-2005-2010). The spatio-temporal change of this four classes were revealed by using the change

detection method. The effect of spatial change on ecosystems was presented by the help of landscape metrics. Especially spatial configuration metrics were used.

It has been concluded from the interpretation of these metrics that, there is a firm reverse correlation between “Forest Lands and Semi-Natural Surfaces” class and “Artificial Surfaces” class, in terms of class area, that areal losses have occurred in time in the natural cover of the area, and that deteriorations and losses have occurred in the living environments. Patches recede from being in order. It has further been ascertained that, losses occur in the central areas rich in bio-diversity. The expected results of this study are to express analytically the effects of change on ecosystems and thereby to bring suggestions within conservation – utilization balance and the sustainable landscape planning framework.

CONSERVATION AND RESTORATION OF TRADITIONAL ARCHITECTURE AND GARDEN ARTS: A CASE STUDY IN IRAN (BAGH-E DOLAT ABAD)

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Keywords: *conservation and restoration, traditional architecture, Persian gardens, Bagh-e Dolat Abad*

Abstract

The environmental issues have led to review theoretical and traditional design schemes that have been attuned to conditions and sustained, throughout the history. Particularly the historical places have been formed as a result of the physical, social, cultural, economic and technological conditions of their creation periods. Actually, the destruction of historical monuments has the same meaning as the disappearance of identity of nations.

Conservation projects, aim to protect and develop the communities and values of societies. Care, restoration and management are used to locate these values as a part of social and spatial life. The motive and basic tools of protection are similar in each culture. But different approaches to applications and implementation decisions, shouldn't be ignored under the framework of each country's legal system.

Iran is one of the oldest civilizations that contain many traditional settlements within its boundaries. In order to religious beliefs of Iranians “Longings for paradise” has influenced the Iranian architecture, and arts. The most obvious examples is Persian gardens. Islamic architecture is an important factor of aesthetic pleasures and understanding of art and science. Yazd is one of the most important icons of Persian Islamic architecture, and hosts many historic places of World Heritage Sites of UNESCO. This situation increases the value of conservation cases there. The newest World Heritage Sites in Iran is Bagh-e Dolat Abad.

This study contains an overview of Yazd, the phases of conservation and restoration of Dolat Abad garden. After analyzing the monuments when give identity to this city, it will be tried to explain how the values of heritage can contribute to future generations.

THE BASIC PRINCIPLES IN PLANNING THE MARMARA SEA COASTAL AREA IN BURSA

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Keywords: *Protection-use, land use management, environmental management, coastal interaction area*

Abstract

The first capital of the Ottoman Empire and 4th largest metropolitan of Turkey, Bursa is badly affected from the misuse of land and resources caused by urban growth. Multidirectional usage is now discussed in order to provide social, economic and recreational needs of growing population and people who visit Bursa for its touristic, commercial or scientific characteristic. Predicting potential areas of usage and directing the demand considering resource constraints are very important for preventing irreversible acts. In this context, Marmara Sea Coastal Area and interaction zones of Bursa, which are under pressure of latest tendencies, are primarily important areas for their present use. Marmara Sea Coastal Area has an original characteristic with its topographical features; natural vegetation, wetlands and special products such as olive. However, protecting the original structure of the area and directing usage areas in this context represents urgency. In this study, it is aimed to protect the original structure of the shoreline, define the limits for the interaction zones and determine the basic principles that need to be considered within the limits. For this purpose, the

basic components of natural structure and information on environmental issues are analyzed on GIS basis. It is observed that the pressure on life-support systems and the possible risks of high seismicity are basic drivers. Land use planning and environmental management are evaluated considering agriculture, industry, services, transportation and logistics features of Bursa. As a result of the study, land use policies and protection equipments are defined based on the coastal and sub-regional interaction areas.

NANOMATERIALS NEXUS FOR ADDRESSING GRAND CHALLENGES FOR THE 21ST CENTURY

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Keywords: *Nanomaterials, sensors, detectors, water, safety security, sustainability*

Abstract

The objective of this report is to provide an overview of novel phenomena arising due to reduced dimensions of nanomaterials and device/system configurations in multilayer structures and specially formulated interfaces. The overall scope is focused towards some of the grand challenges for the 21st century, which include safety, security, and sustainability. From the security standpoint, the topics include point (proximity) and stand-off (remote) sensors/detectors for monitoring pollution, contamination, and interrogating hybrid threat-vectors, especially in war theaters; personal protection equipment; information and communication technologies; disease surveillance; water-borne threats and contamination remediation strategies; etc. Furthermore, sensors are increasingly used in augmenting human capabilities at the neural-digital interface, thus providing technological base for future sustainability. The report outlines nexus of game-changing capabilities and paradigmatic shift in harnessing the knowledge base using advanced sciences convergence.

EVALUATION OF THE RECENT PLANNING APPROACHES OF URBAN METROPOLITAN WATERFRONTS

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Keywords: *Ecological planning, Landscape urbanism, Strategic planning, Sustainability, Urban waterfronts*

Abstract

The aim of this paper is to examine and evaluate the planning approaches of the waterfronts of three major metropolises, New York, London and Toronto, within the last ten years. In order to understand the underlying causes of their spatial dynamics, their structuring systems and networks will be explained and further to this, a discussion based on the issues related to the Istanbul Metropolitan Waterfront will be addressed.

The examined metropolitan waterfronts' strategic planning methods are mainly based on the sustainable planning approaches that target ecological, economic and social goals. Currently, Istanbul's waterfront does not have such a strategic comprehensive plan. Since there is no holistic thinking involved for the development efforts of the waterfront, the current proposals are incoherent, unsustainable, and form non-egalitarian solutions.

Based on an ecological and sustainable perspective, the research aims to open up a discussion for a comprehensive thinking on the future planning of Istanbul's Waterfront. The argument is that the sustainable approach would create much potential to improve the living conditions of the city such as; a better integration with the existing ecologies, valleys providing room for urban agriculture, restored rivers as transportation routes from the inlands to the Bosphorus, improved water transportation networks, recreation in the existing natural environments along the waterfront with a restored biological diversity in the city and the reclaimed post-industrial sites.

SATELLITE - BASED MULTITEMPORAL CHANGE DETECTION IN İGNEADA FLOODED FORESTS

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Keywords: *Land Use, Land Cover, Change Detection, Remote Sensing, Image Pre-processing, İğneada*

Abstract

Land use and land cover change may occur as the result of ecological processes and anthropogenic activities. Land use and land cover change may cause damage to natural resources, lead to an increase in climate change, decrease biodiversity, and decrease quality of life for human populations. Monitoring the distributions of land use and land cover changes is very important for accurately determining such effects. Accurate and up to date information on the status of ecosystems is needed to develop strategies for sustainable development and environmental protection. To detect changes in land use and land cover, remote sensing and Geographic Information Systems (GIS) are very useful technologies. They provide an important source of data sets for land use and land cover mapping and environmental monitoring. Different satellite images and different algorithms may be utilized to determine various changes occurring in interrestrial environments. İğneada was selected as a study area. It is a small district of Demirköy in Kırklareli province in the northwest of Turkey on the Black Sea coast. İğneada is located approximately 20 km from the Bulgarian

border and is positioned at 41° 52' 34" N and 27° 59' 10" E. İğneada flooded (Longos) forest is one of the most ecologically important protected areas of Turkey. It is located at the foot of the Yıldız (Istranca) Mountains, and is comprised of a number of different ecosystems. There are low and high coastal areas, lagoons, flooded forests, wetlands and sand dunes, and a variety of important plant, animal and insect species. The project study area includes the İğneada protection area and flooded forest, adjacent developed urban area, a nearby summerhouse, the waterfront and the Limanköy residential area. The main objective of this analysis is the detection of temporal change in the urban and natural areas using remote sensing data since the protected status of the National Park is under variety of environmental threats. For this reason, establishing land cover - land use changes, and determining the environmental effects of these changes is important to ongoing conservation efforts. Land use changes were detected by using multi – temporal remote sensing images. Landsat 4,5 TM data were obtained, including four data sets acquired from 07 September 1984, 07 August 1990, 18 August 2000 and 15 September 2010. The process of the study: 1) Radiometric and geometric calibration 2) Conversion from digital number to at-satellite reflectance values in order to make corrections for changing illumination 3) Histogram matching 4) Pixel – based supervised classification with the Maksimum Likelihood Method. 5) Accuracy assessment with overall accuracy and Kappa statistics 6) Preparing the land cover / land use thematic maps 7) Comparing the classification of the resulting images 8) Statistics of land use – land cover change over a period of 26 years. 9) Analysis of changes and visualization with GIS 10) Thematic maps The study is being developed as a subtask of the enviroGRIDS@Black Sea Catchment European Union FP7 Project.

SEWAGE SLUDGE TO ENERGY. POSSIBLE STRATEGY FOR THE MUNICIPAL WASTEWATER IN TIMISOARA

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Keywords: *sludge, sewage sludge, energy recovery, combustion, anaerobic fermentation*

Abstract

Sewage sludge is the waste generated by all modern waste water treatment plants. Presently it is not any more possible to deposit this waste, even under ecological circumstances as it might be a loss, as the content of sludge, even different from case to case, is based on combustible elements, not mentioning the metals contained even in traces.

The state of art of thermodynamic cycles indicates some possibilities for using the energy content of sewage sludge, meaning to turn waste to energy technologies, under best efficiency. The article evaluates further the energy content of excess biological sludge derived from aerobic biological treatment of municipal wastewater in Timisoara. The study refers to the two different ways of exploiting the energy contained in sludge: the combustion of biogas resulting from anaerobic fermentation or the direct combustion of the sludge.

As main conclusion one will support the idea that it is necessary to make a preliminary assessment of thermodynamic energy content of the sludge in order to depict

and select the global vision of the process, assuring both the optimal energy development and environmental friendly treatment process (stabilization by fermentation) of the excess sludge, resulting from the biological stage.

STUDY REGARDING ZONES OF SANITARY PROTECTION FOR GROUND WATER SUPPLYING SOURCES

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Keywords: *sanitary protection, quality of water sources, drinking water*

Abstract

In Romania, zones of sanitary protection and areas of hydrological protection are set up to prevent alteration of the quality of water sources in accordance with the governmental decision (H.G.) – DECISION no. 930 from 11 August 2005 regarding the approval of the special Norms for the nature and size of the zones of sanitary and hydrological protection around works of water catching, constructions and installations destined for drinking water supplying, in conformity with article 5, paragraph (1) of Waters LAW no. 107/1996, with subsequent changes and amendments. [1, 2, 3].

This paper deals with the analysis of some real cases related to zones of sanitary protection and areas of hydrological protection with a view to prevent alteration of the quality of water sources for drillings of water supplying within a company specialized in intensive poultry breeding. The National Institute of Research-Development on Environmental Protection elaborated studies establishing zones of sanitary protection for three farms belonging to SC AVICOLA SLOBOZIA.

ENVIRONMENTAL AND ECONOMIC ANALYSIS OF IRRIGATION TECHNOLOGIES FOR IMPROVING WATER USAGE

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Keywords: *Irrigation technology, economic analysis, water-use efficiency, water availability*

Abstract

The focus of irrigation modernization should be on demand management, with conservation and increased water-use efficiency as the main policy objectives.

Some of Socio-economic and environmental directions are: a) Improvement of water productivity, and b) Analysis of the social and environmental impact of modern irrigation technologies. On the other hand the Institutional studies need to be addressed to:

1) Flexibility of services; 2) Improved design for water utilities, and 3) Investment in water-saving technologies, etc.

The development of modern irrigation systems in developing countries, as in our case of Albania, can be facilitated by the co-ordination of different actions provided by international organizations, our government, the private sector, academic institutions and local populations.

The objective of efficient and sustainable water management in an irrigated cropland is to ensure optimum linkage between water availability and water demand. This is best done by matching demand for water in terms of crop water requirements and available water supplies in time and in the required quantity.

**STUDY REGARDING THE USE
OF BIO-FUELS AND OTHER
TYPES OF RENEWABLE FUELS
FOR THE PURPOSE OF
REDUCING ENVIRONMENTAL
POLLUTION IN ROMANIA**

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Keywords: *bio-fuels, renewable fuels, environmental pollution*

Abstract

The use of bio-fuels and other types of renewable fuels is promoted for transport with a view to partly replace gas and gas-oil and facilitate the achievement of certain objectives such as:

- meeting the obligations regarding the reduction of greenhouse gas emissions,
- ensuring the safety of fuel provisioning in a friendly environmentally manner as well as increasing the degree of energetic independence,
- promoting the use of renewable energetic sources.

The use of bio-fuels could also generate new opportunities for sustainable rural development that shall allow the opening of new markets for agricultural products.

In conformity with the Energetic Policy of Europe, the Commission proposed the consolidation of the legislative framework which stipulates the attaining of 20% bio-fuels share on the market until 2020, by presenting policies to stimulate the production and the use of bio-fuels at European level.

In Romania, suppliers of fuels are obliged to introduced on the market only gas and gas-oil containing bio-fuels through the decision no. 935 from 21 September 2011 regarding the promotion of the use of bio-fuels and bio-liquids. [1]

This paper tries to draw attention to the stage of bio-fuels use at national, European and international level from the legislative as well as from the technical and economic points of views related to the environmental impacts for the purpose of increasing public awareness on bio-fuels use.