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The role of environmental Strategic evaluation, as instruments for promoting sustainable planning and development in Albania / The cases of Shkodra Municipalities

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Abstract

This paper aims to analyze and draw conclusions from several ongoing reforms in Albania during the last decade, from a political, administrative and professional point of view, focused on issues such as spatial planning and development policies.

The authors are researchers and practitioners of sustainable planning in Albania, and they have tried to summarize their own experience by analyzing: i) the contextual developments in Albania in the last 3 decades, reflecting on the transition from centrally planned towards market economy; ii) the bottom-up (and vice-versa) processes of territorial planning and environmental protection in Albania; iii) the political reforms on territorial and administrative reorganization in Albania; iv) illustrate their real function on the ground based on two concrete case studies on territorial planning and environmental assessments in the respective processes in the Municipality of Shkodra (north) Albania.

Finally, conclusions are drawn from the case of drafting of GLP and SEA in the Shkodra Municipality and the progress of such reforms and their impact on people, communities, local and central authorities in Albania, leaving also room for recommendations and improvements. The article is also a good reference for academic and research purposes. It draws lessons from complex planning processes working from ground to government, including a lot of creative and innovative ideas on sustainable planning for Albania and Western Balkans.

Introduction

Until 1990, economic development and territorial administration in Albania was governed by the principles of state ownership of land and other assets, state-centralized planning (top-down). The basic forms of economic organization were state-owned enterprises and agricultural cooperatives (group property), where the land had been declared state owned by constitution. With the change of the system (1991) and the privatization of the economy, there was a shift from centralized planning to the principles of market economy. Until 2014, the entire territory was divided into 386 local units (61 municipalities and 325 communes). Due to the fragmentation of local units, problems of mismanagement of territory and informality, chaotic urbanization of potential agricultural lands and disruption of rural-urban balances arised.

Precisely for this, the Government implemented the reform of the new territorial administrative division (2014-2015). The entire country was divided only into 61 municipalities and 4 main regions. The division created some advantages over territorial control, but also some difficulties in meeting the needs of communities with services. By 2014, the planning focuses on the regulatory plan of cities and residential centers, and after the reform the territorial planning at the municipal level began. The General Local Plan is a strategic instrument for the development of economic sectors, balanced development of sectors, balanced use of natural resources, environmental protection, social improvements, service provision



*Fig1 / Shkodra view from the castle
source / Eranda Janku*

and quality of life of communities.

In the case of Shkodra Municipality, the period after the administrative territorial reform, compared to the previous organization, the municipality includes 11 administrative units, the population 140 thousand out of 80 thousand inhabitants, has increased 25 times in space (760 km² from 31 km²), saw the creation of new urban-rural relationships, orientation of development under new conditions, extension of planning as an instrument that encompasses the entire territory of the municipality aimed at creating sustainable balances of conservation of natural resources, protection of potential agricultural lands and protection of the environment in a wider extent from the problems identified.

After 1991, Shkodra has changed a lot. From rural areas, the population has migrated considerably abroad as well as in the city of Shkodra and in the suburbs. The city of Shkodra experienced a pressure on urban territory, land use, converting large public urban or agricultural areas to the construction site to the outskirts of the city. The free movement of the population, especially concentrated in peripheral areas of the city, has put pressure on ecosystems (natural, agricultural, aquatic systems) and on the existing infrastructure and services.

Some of the previous regulatory plans of the Shkodra municipality or of individual communes partially limited the informal urban developments, but did not stop the public spaces being occupied from urbanization, the urban dispersal to agricultural land, the green areas, the

environmental damage and the emergency situations.

By 2013, the legal control instruments on environment and the impacts of the local plan interventions have been fragmented. Law 91/2013 "On Strategic Environmental Assessment" is the key instrument for integrating environmental issues and sustainable development principles into the strategic planning as "a systematic process that foresees and assesses the potential environmental impacts when designing a plan or program, in order to prevent negative impacts. Riki. Th. emphasizes that in many countries it will be one of the areas of assessment required for strategic compliance actions with other regulations, the effect on capital health in various business groups or environmental sustainability (Strategic Environmental Assessment in Action, 2004 page 66). The main objective of the SEA is, in all phases of drafting the General Local Plan of the Municipality, to consider the impacts of the proposals of the Local General Plan on the environment and to seek the orientation of the Plan (GLP) in order to minimize any potential negative impact which may result from its implementation. Based on the need for orientation of the expanded Shkodra development, the Municipality developed a General Local Plan of the territory.

Objectives

Reviewing the role of SEA in evaluating and improving the environmental situation in Shkodra Municipality and preventing the negative impacts of PPPs and proposed

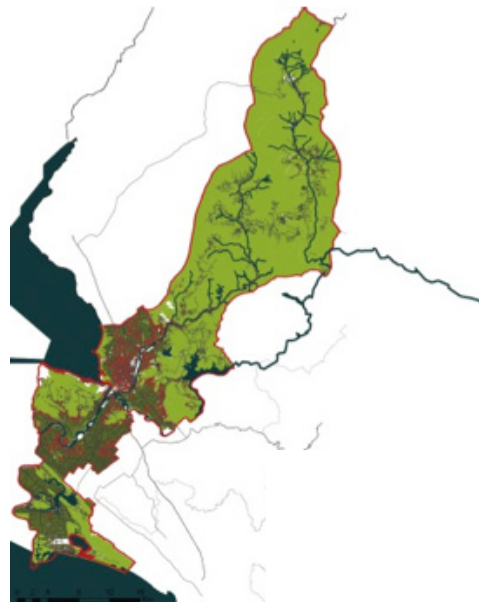
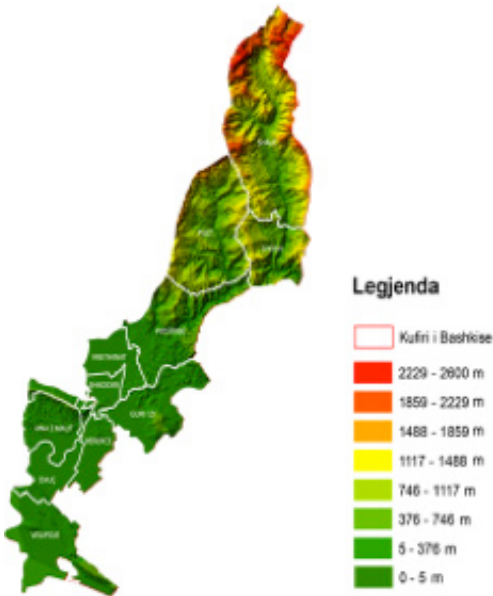


Fig2 (left) / Reliefs - source / the authors

Fig3 (right) / Territorial systems - source / the authors

projects on the environment as well as the orientation of the Plan for minimizing any potential negative impact that may result from its implementation.

Main theories

The theory is based on the principles of SEA. The case relates to the drafting of the General Local Plan for the Shkodra Municipality and the Strategic Environmental Assessment (SEA) as a basic instrument subject to local urban and rural planning plans and projects foreseen in the local plan.

The main objective of the SEA in the General Local Plan of the Municipality focuses on the analysis of the situation of the environment at all phases of the drafting of the local PPP of the Municipality, to consider the impacts of plan proposals and projects on the environment and to seek orientation of the Plan for minimizing any potential negative impact that may result from its implementation.

Study methodology

The methodology focuses on environmental situation analysis, with the participation of the public and stakeholders, the assessment of plan impact and environmental projects with (i) knowledge of the conditions of relief, geology, hydrology, climate, territorial systems, biodiversity and protected areas, landscape, infrastructure (ii) Comparison of scenarios on environmental impacts with the scenario without plan (iv) Environmental Assessment of indicators of Air, Water and Land Pollution, Urban Waste, "Hotspot", Natural Pressures (forest

fires and deforestation, floodings, seismic conditions of the region, climatic changes, degradation of agricultural land), urban dispersion (iv) Project Impact Analysis foreseen in the Plan and compliance with Sustainable Development.

General analysis of the territory

Relief

Shkodra municipality has a variety of reliefs from the coast of Velipoja to the altitude of 2694 m in the Alps of Albania, valleys, forests, pastures, fields, mountains, streams and rivers (Fig.2). Agricultural lands in the coastal area lie at a height of 0-16 m, while in hilly and mountainous areas natural systems dominate.

Territory systems

Natural resources in the territory dominate in 64% of the total area, the agricultural system in 20.2%, water, urban and infrastructural systems. Agricultural lands occupy an area of 16054 ha distributed in all administrative units, out of which 90.5% in the plain area with a slope of 0-5% and 9.5% in the hilly-mountainous area (Fig.3).

The water system

The water system is complex, including Shkodra Lake, Drin River, Buna River, Kiri River, Shala River, streams, Vilum Lagoon, Domn's Swamp, Irrigation and Drainage Infrastructure. Shkodra Lake is the largest on the Balkan Peninsula with 5500 km² (1030 km² in the Albanian territory). The lake and its surroundings are proclaimed as "Managed Natural Reserve as well as Ramsar area". The Buna River is the only river channel in the hydrographic network



Fig4 / Water system source / the authors

of Albania with a length of 44 km and an annual average flow of 320 m³ water / sec. It stems from Shkodra Lake along the fields of Buna Coast. It joins the Drin River 1.5 km away from the Lake. The Drin River is the largest river of Albania with a length of 285 km and consists of two branches, where the waters of the rivers Valbona, Nikaj, Shala, Gjadër and Kiri flow. There are 3 Hydropower plants constructed in Drini River, which provide over 85% of electricity. The Kir River is 43 km long, but flows tempestuously into the Drin River. Kiri causes strong erosion of river banks, damage to protective structures, rock transport and swamps on agricultural lands near the shores. The Shala River is part of the Albanian Alps hydrographic network. The surface of the watershed is 260 km² and the length is 39.3 km (Fig.4).

Natural systems occupy the main surface of the territory. With the implementation of the territorial administrative reform, Shkodra Municipality has transferred 43806 ha of forests and pastures, of which forests 30992 ha and pastures 5377 ha, in productive surfaces 5556 ha and so on.

Findings from environmental situations analysis

Assessment of plan scenarios in environmental issues

Through SEA, we compared the plan's alternatives and trends that may emerge in the future on environmental issues in 3 scenarios. Scenario 1 (Scattered Shkodra) means urban development and informality, where environmental issues would become worse. In scenario

2 (Monocentric Shkodra), the occupation of agricultural land from construction is limited, but the rural area remains undeveloped. In scenario 3 (polycentric development) environmental aspects become more controlled: agricultural lands and natural resources are preserved as a result of avoiding informality and urban dispersion, as well as landscape protection and reduction of agricultural land loss. It is the most acceptable scenario.

Environmental situation analysis

During the assessment of the situation in the environment, in the territory of the Municipality there is an evidence of the presence of environmental pollution, ozone pollution in the city center, damage to biodiversity, forests and landscape, mismanagement of urban waste and polluted waters, loss of agricultural land, erosion, flooding, partial functioning of the drainage system, erosion of river banks, natural pressures.

On agricultural land we distinguish urban dispersion, informal buildings, repeated floods of about 12 thousand ha with a duration of 25-30 days, erosion and landslides and degradation of land. Every year there is about 20-25% of the uncultivated agricultural land area, a significant change in the land production potential, due to the high fragmentation of agricultural land distributed in 3-5 places. About 14% of agricultural land) rejected by the owners during privatization because of the low production capacity continues to be degraded.

Agricultural land planning helps to reduce

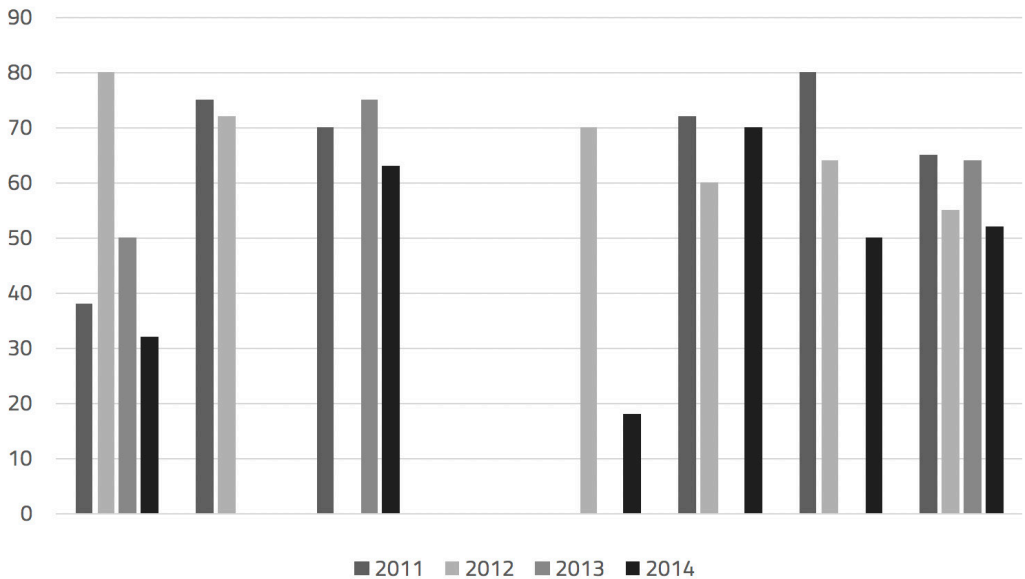


Fig4 / Air Pollution by Ozoni Shkodër, 2015
source / Report on the environmental situation, 2015

environmental impacts from agricultural practices and rural-urban ties (Beaty T, Petersen G & Sindale I, 1986, Planning and the use of land management, page 251). The land is polluted from waste water during floods. The analysis confirms that after the floods, the biological activity of the soil has decreased by 5 to 10 times, physical and chemical qualities deteriorate, productivity drops and salt content increases in the coastal zone. In the Lowland area of Shkodra, the average soil loss only from erosion caused by floods is about 5 tons / ha (source: author group, 2011_ Action Plan for Natural Disaster Prevention).

A number of environmental and natural resource management problems are identified such as: the lack of forest management plans, illegal logging, incineration in Taraboshi Mountain, damage to forestry on river banks of Drin, Buna and Kir, cutting / growing ratio, erosion on the banks of rivers without plant furnishings, contamination of forest land from urban waste. Limited work on pastures stretching in the valleys of Kiri, Shala, Sheldi, Majë e Pejës, Shosh. It requires some additional work, in order to guarantee the maximum capacity of the pastures.

Severe georisks caused by fires, rock crashes, earthquakes, slips, floods, geological erosion. The area of Shkodra is pronounced with seismic and historically repeated earthquakes, with an intensity across the territory of a magnitude of 7.5 to 8.5 (8 to 8.5 at 72 percent of

the territory). Climate changes with a temperature of + 5 degrees from 1912 also lead to the loss of soil capacity. The impacts of land degradation on global food security and the quality of the environment are important. It is concerning when only about 11% of the world's land surface can be considered as the main good land (Sivakumar M, Ndiang'ui N, 2007 Climate and Land degradation) (Fig.5).

Floodings / The flood phenomenon in the municipality of Shkodra is a complex and repeated issue. The whole hydrographic network on the hydraulic point of view is represented as a single water surface, HPP over the Drin River, inefficient drainage system and damage to river protection structures. All river waters accumulate in the Buna River. In the Shkodra area, the floods have been repeated since the biggest flood of December 1860, continuing with 10 major floods by 2010.

The Buna River sees the waters of the lake and the rivers flowing into the sea. The flowing capacity of Buna is 1500-2000 m³ / sec. In 2010, from the Vau i Dejes hydropower plant, 2800-3000 m³ / sec have been discharged or 1.5-2 times more than Buna's flooding power, flooding the Shkodra suburbs, the city and the surroundings. The existence of three HPPs, in the absence of their good management, expands the flood problem, as it did in 2010-2011, when over 12,500 ha of land were flooded for more than 25 days. The discharges became obligatory because they were above the carrying capacity of Shkodra Lake, but also two



Fig5 / Georisks map
source / SEA Shkodër

times above the carrying capacity of the Buna River.

Shkodra floods have affected the use of inertes over the 25 years (1991-2014) of the Drin, Buna, Kir river beds, 55-60% damage to protective structures, massive erosion of river banks, damage to the forest coverage, protective embankments, the need to set up at 80 km and the construction of new embankments. Cleaning of drainage channels that includes 200 km of main channels, 250 km of second channels, 1200 km of third channels and cleaned only at 25-30% of the volume. In the Drini River basin the forest cover is no more than 50% of the surface, the new Buna bridge has created water barriers. Returning to a natural lakefront bypass itinerary built in 2011 is an additional element of city flood risk and environmental pollution from urban waste and damage to biodiversity.

Wastewater and urban waste management

Wastewater management remains an unresolved problem. There is no sewerage system in the peripheral suburbs of the city at 30% of the territory, the city's sewage is poured raw in the Buna and Drin River, causing pollution and eutrophication of waters, damage to aquatic life and biodiversity and concentration of heavy metals with toxic effects, in water and soil.

Mismanagement of urban waste in the municipality of Shkodra is another problem. There is no organized service in the mountainous administrative unit. For 2015-2016 38,786 tons of urban waste

have been produced, of which 45.4% are organic. In most mountainous areas, they are deposited on local landfills, they are found scattered or disposed of by incineration. Organic waste separation, recycling and composting is lacking. Composting has a great potential to develop in the future. Two old urban waste landfills constructed without technical & sanitary hygiene conditions, cause soil and water pollution.

There is a need for drafting the waste management plan at municipal level, the requalification of the waste disposal site of Shkodra and Velipoja, separation at source, especially in Shkodra and Velipoja with the highest waste stream.

The whole territory of Shkodra Municipality is rich in flora and fauna and in protected areas (Shkodra Lake, National Park (PK) Theth, Protected Landscape Buna-Velipoja), a variety of trees, plants and animals. There are 60 species of fish in the Shkodra Lake, 54 molluscs species, 87 species of crab, 30 species of fish in Buna river, 50 species of waterbirds. In Theth Park, there are 1500 plant species, of which 70 are endangered. There are a lot of problems in biodiversity of flora and fauna and in the protected areas.

Impact evaluation of projects in the environment

In GLP Shkodra Municipality, 109 projects are defined, related to the improvement of Access and Regional Relations, Territorial Integration and Equality in Services and Access, Competitiveness and Economic



Fig6 / Floodings in Shkodra in 2010
source / Jutta Benzenberg for GIZ

Development, Quality of Life and Urban Development, Environmental Protection and Natural Hazards. Not all projects anticipate interference. This section involves evaluating projects regarding the compliance of each project with environmental objectives and their impact on the environment. Based on the evaluation, 40% of projects require strong mitigation measures, 15% have no environmental impact, 31% have positive impacts on the environment, and 14% of projects require mitigation measures at the work stage.

Projects requiring mitigation measures include mainly infrastructure construction, terminals, road axes, bypasses, regional markets, requalification of industrial and informal areas, etc. In SEA mitigation measures includes natural systems as a strengthening of the forest and environmental management structures in the municipality, inventorying and establishing a forest cadastre, drafting a municipal management plan, forestation of burned areas, unplanned in the municipality of Shkodra in 4200 ha, in Tarabosh Mountain, Velipoja, Guri i Zie, Postriba, spaces within the embankments from Dajci to Guri Zi, improvement of pastures in Sheldi, valley of Kiri and Rrjoll, protection of biodiversity for endangered species.

Conclusions

The Strategic environmental assessment remains the key instrument for integrating environmental issues and sustainable development principles in the PPP, which

foresees and assesses the potential environmental effects of designing the proposed plan and projects, as well as minimizing any potential negative impact that can result from its implementation.

By comparing plan scenarios and future trends in environmental issues, it turns out that in polycentric development environmental aspects are more controlled in preserving natural resources and agricultural land from informality and urban dispersal etc.

In assessing the situation of the environment in the territory of the Municipality, there is an evidence of the presence of environmental pollution (air, soil and water), damage to biodiversity, forests and landscaping, mismanagement of urban waste and wastewater, loss of agricultural land, erosion, floods, natural pressures (fires, seismicity, rock crashes, all forms of erosion)

The most critical issues in the environment are related to:

- Urban waste management in mountain administrative units not included in the collection system, waste separation and recycling are inexistent, two dumpsites open as a source of contamination. Composting organic waste is recommended to be developed.
- Management of untreated wastewater that continues to flow between Shkodra Lake (between the Lake and Buna).
- Floods as a repeated phenomenon and in spaces of 10-12 thousand ha. There is a need to improve Drini's



Fig7 / (left) Network of protected areas and natural monuments; (right) Biodiversity and fauna source / JSEA Shkoder

HPPs management by the Ministry of Infrastructure and Energy through the implementation of the discharge quota manual, to transport up to 2000 m³ / sec in Buna. Establishment of embankments in 60 km and the construction of new segments, re-qualification of the lake and impacts of the Buna bridge.

- Strengthening forest and environmental management capacities in the municipality, Inventory and establishment of the forest cadastre, increase of investments for forestation and forest improvement in mountainous settlements, drafting of the management plan at the municipal level.
- Rehabilitation through the forestation of burned areas, untreated by 2020 in Shkodra municipality in 4000-4200 ha, on Mount Tarabosh, Velipoja, Guri Zi, Postriba, spaces within the embankments from Dajci to Guri Zi for the protection of river banks.

Of the 109 projects proposed by the GLP of Shkodra Municipality, according to the environmental impact assessment on the basis of the compliance of each project with the environmental objectives, it results that for 40% of the projects (mainly infrastructure construction) massive mitigation measures were foreseen because they directly affect in the environment.

For a better quality environmental assessment, there is the need of an increasing capacity and knowledge of experts and regional environmental directorates, strategic environmental assessment (SEAs) and in-depth environmental impact assessment

(EIEs) developed with experts from all fields. Communities should have more information, as often when the work for landfills or HPPs construction begin, the conflicts start also.

The whole procedure of environmental permits should be revised, as the agencies find themselves unsuccessful in preventing out-of-rules exploitation, permits are granted in river basin segments with canyons for the construction of HPPs, quarries near residential centers and protected areas.