

# SUSTAINABLE LANDSCAPE MANAGEMENT - THE EXAMPLE OF REGIONAL PARK MURAUEN

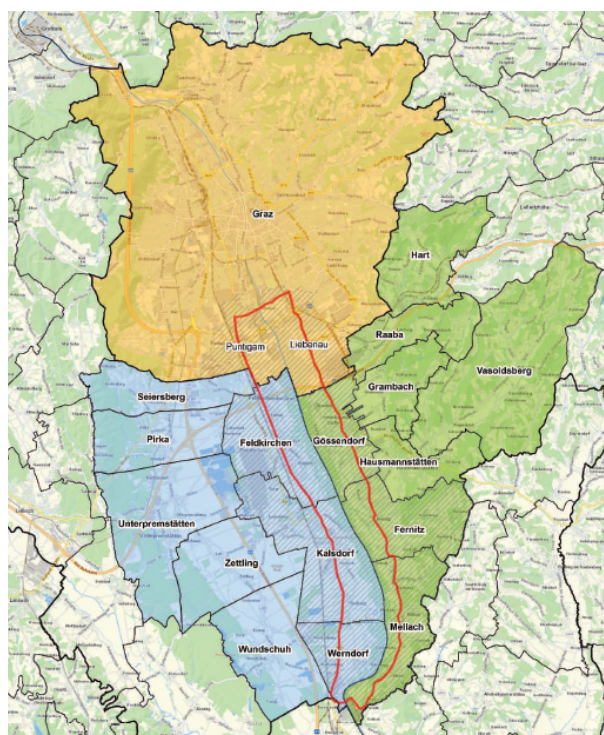
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## INTRODUCTION

Austria is a rich country in natural heritage. Its natural landscapes are distinguished by an extraordinary biodiversity, hydrographic, geomorphologic and geologic objects, phenomenon's and processes, so they are under special regime of planning, managing and protection (Protić et al., 2017). Preserved nature, natural resources and regional specifics are one of the most important factors for prosperity of Austrian province of Styria. High quality and authentic landscapes contribute not only to development of tourism and agriculture, but also to education about environment protection, energy production from renewable sources of energy, and regional development in total. The focus of this research is Regional park Murauen – the biggest recreational zone in the immediate vicinity of the City of Graz (Figure 1) and one of the most famous landscapes of the whole region. The biggest hydrographic object and dominative element of the landscape is river Murauen with its coastal area rich in quality forest complexes, rare species (the most important are reptiles and bats), and their habitats (Regional park Murauen – Projektbericht, 2015).

The area is recognized as a good example of sustainable landscape management, that managed to improve its ecological status and become “blue and green corridor of Graz” – new green, recreational center of the region, thanks to carefully chosen planning measures, clearly defined goals and priorities of spatial development. Zoning in accordance with real potentials and capacities, both on local and regional level, provided development of different activities within the Regional park (Figure 2).

The global trend of immigration, ie intense settlement of urban areas and their spatial spreading is also present in the region of Graz, which are the main reasons of growing pressure on the environment and natural ecosystems. As number of “users” of this limited space grows, meeting their needs becomes bigger challenge. Regional park



*Figure 1. Regional park Murauen  
(Source: Regionalpark Murauen – Projektbericht, 2015)*

Murauen is an attractive tourist and recreational area for local population, but also for visitors from other parts of Austria and foreign tourists. The area is located in the central part of the state of Styria and because of its optimal transportation position, position relative to the capital of the province and areas of intense demographic and economic growth, it is continually under dynamic transformation (Figure 3). As the area of the regional park is rich in high quality natural elements, it is attractive to all those who are involved in nature protection and preservation of the environment, education, culture and science. On the other hand, this area is also suitable for usage of renewable energy sources, so in the past years hydropower plants that supply local consumers with the necessary energy have been built. Considering that the construction of hydropower plants to a certain extent influences the change in the natural characteristics of the local environment,

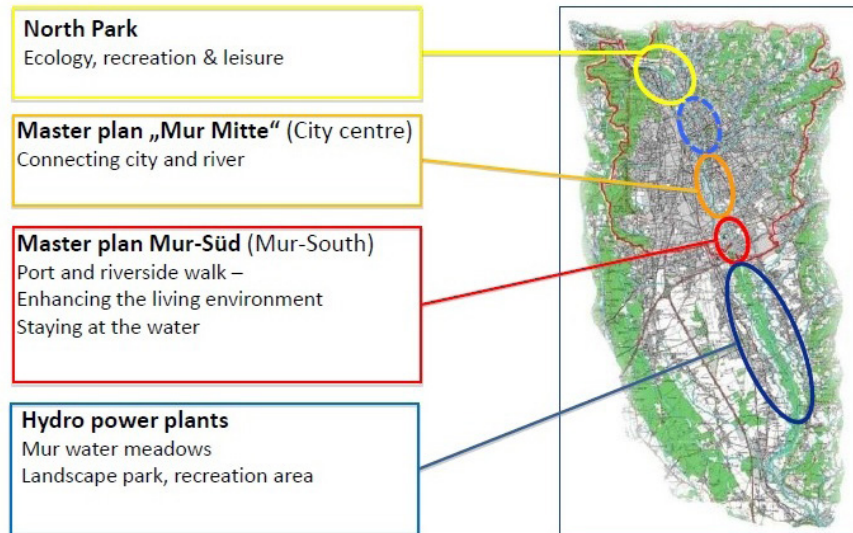


Figure 2: River Mur – green corridor in Graz (Source: Zoning plan for City of Graz)

numerous ecological measures have been taken in order to mitigate or eliminate the possible negative consequences of the construction of such facilities. Also, there is a great impact of intense residential construction on the area of Regional park, because of limited space determined for construction of residential, infrastructural objects and other facilities in the area of Graz (Dorau et al., 2018).

**THE CONCEPT OF THE REGIONAL PARK AND ITS MOST IMPORTANT GOALS**

The concept of the Regional Park in Austria represents one of the instruments of regional planning which role is especially important in domain of conserving and improving of landscapes in urban areas. Priority activities and basic functions of areas promoted by this concept are: tourism, sport, recreation, agriculture, usage of renewable energy sources and

environment protection (Regionalpark Murauen – Projektberich, 2015).

To provide adequate and sustainable planning, management and using of the landscapes of the Regional Park, during the period of 2013-2015 the “Regionalpark Muauen” project started in order to recognize potentials and possibilities for further sustainable development of this area, identify ecological problems and eventual conflicts of different stakeholders and space users and conserve local and regional identity. A few pilot-projects started within the main project that contribute to multifunctional development of the urban region (Dorau et al., 2018). Integral development approach will enable improving of the present state, stop further degradation of the landscapes and limit spreading of urban and built space at the expense of natural environment.

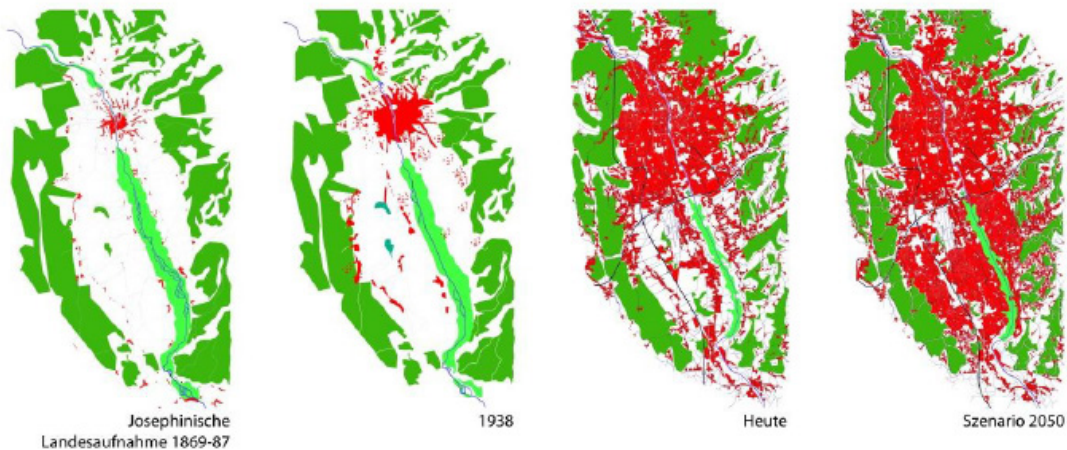


Figure 3. Expansion of urban areas of Graz, with pojections up to the year 2050 (Source: Dorau et al., 2018)

## Legal and planning framework of landscape management in Styria

The Murauen Regional Park was established in 1981 by the Ordinance of the Styrian Provincial Government of the Declaration of areas of the Mur meadows Graz-Werndorf to the landscape protection area (Verordnung der Steiermärkischen Landesregierung vom 29. Juni 1981 über die Erklärung von Gebieten der Murauen Graz-Werndorf zum Landschaftsschutzgebiet). This regulation designated it as the "landscape protection area" in order to preserve the special landscape beauties and peculiarities, rare natural features, as well as the improvement of aesthetic and recreational values of the area. This landscape protection area encompasses the Mur bottomland and the costal area of the river, forest land, the agricultural land between Graz and Werndorf, as well as the core (central zone) of the regional park (Regionalpark Murauen – Projektberich, 2015).

The Murauen Regional Park *does not belong to the category of protected areas* (such as a nature park or a national park), but it is defined as *a significant area* that is determined on the basis of the natural and cultural values of the area intended for the sustainable development of tourism and recreational activities, the protection and preservation of landscapes and the environment, education, sustainable development of transport, forestry, agriculture, energy production from renewable sources etc. Planning and management of natural landscapes such as the Murauen Regional Park are regulated by a complex system of laws and regulations. The most important legal acts are: the Law on Environmental Protection (Steiermärkisches Umweltschutzgesetz), the Law on Nature Protection (Steiermärkisches Naturschutzgesetz), the Law on Strategic Environmental Impact Assessment (Strategische umwelprüfung gesetz), the Law on Spatial Planning (Steiermärkisches Raumordnungsgesetz), the Law on Tourism (Steiermärkisches Tourismusgesetz), as well as numerous other laws, ordinance, statutes and regulations that determine the protection of plant and animal species, venison and hunting, the protection of water, air and soil, waste management, energy production etc.

Although the mentioned area does not belong to the protected category, however, the basic principles and tenets defined by these laws must be respected and applied in order to ensure continuous improvement of the educational, scientific, cultural, biological and recreational value of landscapes, adaptation

of economic and social development to natural processes with respect to regional peculiarities and potentials of space. It should also be noted that the laws determine the way of landscaping, land use, the construction of buildings and its prohibition in high quality and valuable areas. In the area of conservation and improvement of landscape and nature protection, laws require that natural resources should be protected, and their use should be planned and sustainable, in order to maintain sufficient quality for future generations. In particular, attention should be paid to: protection of land, flora and fauna, natural and cultural heritage, urban and rural landscapes.

Spatial planning in Austria and later landscape planning, is characterized by a complex planning system at the federal states (regional), cities and municipalities (local) level. Federal states are responsible for Regional plans, both for their drawing and implementation. These regional plans are very significant because they are crucial for setting principles of systemic and sustainable organization of space, with the aim of rational land use, preservation of specific and very important natural areas and environmental protection. Cities and municipalities are competent for land use planning, nature protection and landscape management on local level, by implementing local regulations and plans. So, land use planning is of great importance for nature protection and landscape preservation in Austria, being an interactive process consisted of dialogs between all the interested actors in order to define a sustainable form of land use (Gesetz über die Raumordnung in der Steiermark, 2010; Protić et al. 2017).

The State development plan of Styria (Landesentwicklungsplan Aps Steiermark LGBl No. 75/2009) states that natural landscapes and large green areas zones (grünzonen) are areas that serve to protect the natural and cultural values of the region, and their roles and functions are diverse. First of all, the ecological function is emphasised, then the tourist-recreational function, and besides, it is necessary to mention the role in improving the quality of life and the health status of the population of neighbouring settlements and cities, the role in protecting the source of drinking water and sustainable management of water resources etc.

## Water management and the using of the hydro potentials of Mur River within the Regional Park

In the period 1995-2015, in the river valleys of the Enns and Mur in Styria, several major projects and

extensive hydrotechnical works were carried out in order to build hydropower plant and to make greater use of the hydro potentials that these rivers possess. The projects are financed by the EU funds: LIFE, Interegg and ETZ SI-AT. After 2015, the justification of the above mentioned projects has been questioned. On the one hand, the promotion of renewable energy production is one of the priorities in the field of energy and sustainable development of Austria, which is in line with the policies of the European Union. On the other hand, the construction and later operation of mini hydropower plants can cause some negative environmental effects: changes in natural characteristics of the local environment, water regime, degradation or reduction of the aesthetic value of landscapes, endangering natural ecosystems and communities that inhabit the given area etc. (Raderbauer et al., 2015). In order to overcome the conflict between the using of hydropower and environmental protection in the valley of the Mur River and in order to ensure all conditions for the sustainable development of the area, a new planning instrument “The river basin management plan” (Raderbauer et al., 2015) has been established. These plans are compliant with all legal regulations, planning and strategic documents adopted at the provincial level, as well as with more important European Directives in this area

(EU Water Framework Directive, the EU Floods Directive and the Renewable Energy Directive), and represent an important part of spatial planning and management system. The basic goal of adopting these plans is to define the river basin management system or its part and to define zones that are intended for specific functions. Thus, for example, these parts of the river valleys are distinguished (as is the case with the Murauen Regional Park), which are more environmentally sensitive and which are most often intended for “green activities” that do not endanger the area, and also those areas in which the use of hydropower and performing of other hydrotechnical works without significant ecological consequences are defined.

The mentioned documents should not be considered exclusively as a “nature protection, i.e. a river system protection plan”, but as a plan that offers guidelines and concrete solutions for the establishment of a balanced development of the subject area and all the activities that are represented, and above all, sustainable water resources management. The drafting and adoption of the Management plans has enabled this federal state of Austria to continue to realize its energy goals and expand its capacity to exploit the Mur river hydropotential, as well as other rivers while maintaining and



Figure 4. Hydropower plant on the Mur River (Regional park Murauen)  
(Source: authors)

improving the ecological status of the river and creating opportunities for improving the quality of river habitats. Also, plans significantly contribute to the achievement of the general interest of the community through encouraging interaction between all stakeholders. Today, within the Murauen Regional Park, there are several mini hydropower plants (Figure 4) that, thanks to the application of appropriate measures of protection and respect of natural environmental conditions, do not disturb river and riverside ecosystems.

### **SUSTAINABLE DEVELOPMENT OF TOURISM AND RECREATION WITHIN THE MURAUEN REGIONAL PARK**

Tourism strategy of Styria (Strategie 2015-2020 Steiermark Tourismus, 2014) states that almost two thirds of the total area of the province are occupied by natural landscapes. The preserved nature definitely represents the basis of the development of ecological tourism in this federal state. The Murauen Regional Park with its natural resources represents a significant area that can be successfully used for the promotion of the Styria region as an attractive ecotourist destination on the international level. Tourism based on ecologically responsible behavior, where the main motive is natural and cultural heritage in many European countries such as Austria, Germany, the Netherlands, France and the United Kingdom, is an effective instrument for protecting the natural environment, establishing sustainability and improving the health of the human population, as well as local and regional economic development (Heagney et al., 2018; Pickett et al., 2011; Tisca et al., 2016). This is confirmed by another important strategic document in this area: Wirtschafts und Tourismusstrategie Steiermark 2025 (Economic and Tourism Strategy Styria 2025). The Strategy emphasizes the importance of cooperation and networking of tourism activities with other sectors such as forestry, nature protection, energy production from RES and culture, to ensure the long-term and sustainable economic progress of the region, where also the example of the Murauen Park has proved to be one of the best.

Connecting different types of tourist offers and the introduction of new tourist facilities that basically rely on the natural and cultural elements of the area: sports and recreational tourism (hiking, cycling), camping, hunting and fishing, various water activities, excursion cultural and manifestation, educational tourism, etc, contribute to the improvement and

promotion of tourism. The area of the regional park offers rich facilities for athletes and recreationalists: arranged bicycle and hiking trails, promenades along the river, recreational and equipped spaces intended for shorter or longer stays in nature, sports facilities (e.g. kayaking club), etc. An interesting example of the new type of the tourist offer that can in the future be more intensively promoted in this area is "energy tourism" where tourism activities are related to renewable energy sources. This form of tourism in Austria is in the initial stage of development, it is prosperous, it provides numerous opportunities and can easily be combined with educational tourism and tourist trips whose main motives are science and technological achievements in the field of sustainable development. Given that the area of the Murauen Regional Park is known as an good example of hydropower use, this potential can be used as a basis for promoting the Park as a new tourist site in the field of energy tourism. So far, in Austria, the most famous example in this field is the European Centre for Renewable Energy - EEE Gussing (Burgenland federal state).

### **CONCLUSION**

The Murauen Regional Park represents the idea and vision of a common and balanced development of the natural environments and urban areas. An attractive, recreational area of regional significance offers a range of possibilities and space for differentiation tourist, energy and other activities that are currently represented. The Green Corridor of the City of Graz, as it is often called, also represents a model of sustainable using of natural resources and sustainable management of natural landscapes in the zones of European cities, where large pressures on the environment occur in the middle of anthropogenic activity. Experience in the world indicates that the controlled and sustainable development of tourism and recreation in combination with other complementary activities (agriculture, forestry, use of renewable energy, water management, nature protection) most contribute to the preservation of resources, natural values and the development of local communities. Positive experiences achieved by this model of natural landscape management can serve as an example for other, less developed and less environmentally conscious European countries, in order to establish in the future their own models and instruments for sustainable and efficient landscape planning and management.

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