Will the Guidebook "Green and Blue Spatial Planning" be a Value Help for Styrian Cities to Become a "Smart City"

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1 ABSTRACT

The department of spatial planning in the provincial government of Styria in Austria was participating from 2008 till 2011 in the INTERREG IVC project GRaBS. GRaBS stands for Green and Blue Space Adaptation for Urban Areas and Eco Towns. The main ideas of the project were the exchange of experiences among the 14 partners from 8 european countries and to produce an adaptation action plan concerning climate change. Due to scientific researches there are existing a lot of evidences that the climate is changing. The atmospheric carbon dioxide concentrations are at their highest level for 3 million years and temperatures are increasing. Climate change is no longer simply something that will need to be addressed in the future, it is happening now and we will have to draw up climate change adaptation policies and strategies and implement them. Regional planning systems and urban spatial planning can help to reduce the vulnerability to the risks of flooding and heat island effects in cities. Green infrastructures including public and private parks, productive landscapes, green corridors and nets, green roofs and facades and also blue infrastructure such as water bodies, rivers, streams, sustainable drainage systems a.s.o. can mitigate the impacts of climate change. As a result of the GRaBS project and its outcome the Styrian Adaptation Action Plan, the department of spatial planning in Styria produced together with with an external office a guidebook of "Green and Blue spatial planning". This guidebook was introduced to the planners and the biggest cities in Styria in December 2012.

2 CONTENT AND AIMS OF THE GUIDEBOOK

2.1 Aims and tasksetting for the guidebook

The tasksetting for the guidebook was to show up that integrating green and blue infrastructure in the spatial planning instruments, can be easily done by the municipalities. Spatial planning is a good mean to deal with the risks of climate change in a strategic way. Usefull measures for adaptation can be done on the level of planning for towns and municipalities. The main aim according to climate change is to increase the resilience of the citystructure and the use of the area. The aims of spatial planning with regard to spatial planning are:

- Maintainance of microclimatic functions, temperature balance
- Protection of the use of the area against natural hazards
- Protection of groundwater, quality of streams a.s.o.
- Protection of soil and soilquality

These aims are the results of the given risks caused by climate change: hot islandeffects, aridity, heatstress, landslide, avalanches, forestfire, floddingdamages, the descent of groundwaterlevel, loss of soil through erosion a.s.o.

The matrix in table 1 shows up how green and blue infrastructure can be used to reach the aims, mentioned before:

2.2 Content

The guidebook itself delivers at the beginning a survey of the legal bases in the Styrian spatial planning and other law matters. In the Styrian spatial planning law from 2010 for example it is determined that the municipalities have to plan according to climate protection aims. Further on the guidebook describes the 3 spatial planning instruments, the local development concept, the landuse map and the masterplan. In the decription you will find the law background and the different paragraphes to find a sort of legal base for implementing the blue and green infrastructure and further on there are given advices how to integrate green and blue infrastructure in these instruments. The guidebook is not delivering all the possible measures in spatial planning but it shows up the possiblilities which are already existing in the spatial planning law. It might be a basis for the strategy of risk avoidance and could be the basis for the future planning.

ISBN: 978-3-9503110-6-8 (CD-ROM); ISBN: 978-3-9503110-7-5 (Print)
Editors: Manfred SCHRENK, Vasily V. POPOVICH, Peter ZEILE, Pietro ELISEI

The heart of the guidebook is the so called risk catatogue. It was created according to the climate check lists of the Styrian Adaptation Action Plan of the GRaBS project.

	Temperature raising	Minimizing the risks of natural hazards	Saving and protection of water resources and water quality	Soil and subsoil
Gardens, Parcs, green courtyards, streetgreen				
Greenareas and open spaces				
Flowing water and area along riverbanks				
Green roofs and green facades				
Ponds and lakes				
Retention areas				

Table 1: Green and Blue Infrastructure and their most important function for adapting to climate change

Climate check		Local Development Concept		Goal achievement Please fill in	Partial result
Green space	20%	Number of open and green areas - Increasing the proportion of open and green areas in the densely-populated area - Safeguarding a high proportion of open and green areas in new building areas	45%	Taken into account very well	
		Keeping strategically important green areas free of building development - Preventing the fragmentation of green space corridors / green belt - Spatial outline/Green space concept	45%	Taken into account poorly	
		Other measures - Own description....	10%	Not taken into account	
Fresh air	30%	Taking climate-relevant areas into account - Keeping fresh air corridors (green zones) free of building development - Taking climatological reserved areas into account - Keeping areas important for cold air production free of building development	90%	Taken into account in part	
		Other measures - Own description....	10%	Taken into account very well	
Waterbodies/ Floods	20%	Safeguarding flood protection - Keeping areas free for flood protection structures - Keeping areas free for retention measures (e.g. local priority zone for recreation) - Keeping HQ30 or yellow hazard zone free of building development (implementing measures) - Implementation of measures from technical programmes on flood hazards	45%	Taken into account poorly	
		Safeguarding the good ecological state of the waterbodies - Keeping areas free for renaturation measures - Initiation of freshwater-ecological improvements - Conserving contiguous open areas bordering waterbodies	45%	Taken into account very well	
		Other measures - Own description....	10%	Taken into account very well	
Resource-protection and settlement development	30%	Settlement development in accordance with climate-relevant criteria - Avoidance of unplanned settlement - Prioritised settlement development in local settlement focuses - Consolidate inwards before expanding outwards - Settlement development along axes with public transport (within 300m of public transport stopping point)	90%	Taken into account very well	
		Other measures - Own description....	10%	Not taken into account	
Overall result		Climate Check: Local Development Concept			

Table 2: Climate check list for local development concepts

2.2.1 Climate check lists and Risk catalogue

The climate check lists of the Styrian Adaptation Action Plan are giving a quick help, how the result of climate change can be faced by green and blue infrastructure. The municipalities have to check which risks they might have and how and with which spatial planning instrument they can solve or at least mitigate the problem. They also have to make a sort of self assessment of their own spatial planning.

In the guidebook itself these checklists were transformed in a userfriendly risk catalogue which shows up the possible risks of climate change, which measures can be taken and which effects it will have. Finally it shows up the possibilites to implement them in the different spatial planning instruments.

Some good practice examples and case studies of the city of Graz and some other municipalities in Styria are also included in the guidebook concerning implementing green and blue infrastructure.

2.2.2 Good practice examples:

There are listed a lot of already existing examples in the city of Graz. Graz is the second biggest town in Austria with around 270.000 inhabitants and is already a very green city. The Green net of Graz, the outcome of the european project – revitalizing of the innercourtyards of Graz and the open space standards for the masterplans are good examples of the implementation of green infrastructure.

Fig. 1: Revitalizing of the innercourtyards of Graz

3 CONCLUSION

The guidebook “Green and Blue spatial planning” is not a directive in the spatial planning system in the province of Styria. It is more or less a helpfull handbook for interested planners and municipalities who are already dealing with the follow ups of the climate change or who are interested to prevent a lot of risks. And having more greener cities means for the inhabitants more recreation areas and makes the cities itself more attractive and “smarter”. Nevertheless the guidebook is a first step for preparing a liveable area in the cities.

4 REFERENCES

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