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Introduction

Planning landscape visions and its implementation

The stimulus for putting together this special issue on “Planning landscape visions and its implementation” came from a series of presentations at the 7th World Conference of the International Association for Landscape Ecology (IALE) held in Wageningen, The Netherlands, from July 8–12, 2007. The theme of the symposium “Landscape Planning: Building the evidence base and creating a vision” was: (1) to focus on metadisciplinary approaches to landscape planning; (2) to link the socio-cultural, environmental and economic dimensions of sustainability; and, (3) to integrate scientific principles with policy and practice. The construction of scenarios describing the desired futures by stakeholders and societies is often cited as one means of achieving this integrated view. However, there are a number of theoretical and practical issues that hamper the development of such holistic landscape scenarios. One major challenge to be faced is how to overcome the difficulties of dealing simultaneously with the three dimensions of the sustainability triangle.

Haines-Young et al. [1] have recently demonstrated the importance of defining sustainability limits or thresholds of a landscape; they argue that nothing will fundamentally change unless society discusses such limits through a transdisciplinary discourse. Communication on the base of the trade-offs between multifunctional landscape targets and quality objectives as set by stakeholders and decision makers is suggested as one way forward [2]. The contributions to this special issue [3–8] take this idea further, and attempt to structuring the fragmented knowledge on this topic. Thus, the aim of this special issue is to bring together existing information on the ways landscape visions might be formulated, to explore environmental/sustainability limits and to discuss ways of adapting and implementing these approaches in countries such as Austria, Australia, Estonia, Great Britain, and Portugal. This special issue therefore addresses one of the fundamental problems in environmental studies, namely the extent to which knowledge can be generalised and expressed in formalized in computer models, and what information has to be collected for each individual country and case study.

In the introductory paper, Potschin et al. [3] give an example of how to overcome the problems described above by introducing a theoretical framework that links the socio-economic and the environmental dimensions of sustainability at the scale of landscapes. They focus on the key components of the Leitbild concept which has been widely discussed as a means of developing planning visions or mission statements in the German speaking literature. In recent years the concept has been picked up in the English literature but is not yet well embedded with other concepts. Hence, this publication provides an important summary of the Leitbild developments since the beginning in the 1980s, reviews the characteristics that a good Leitbild should have, and reflects wider debates upon this paradigmatic approach among both the research and praxis community. The Leitbild approach has been compared with other decision support tools such as Environmental Impact Assessment (EIA), Ecological Impact Assessment (EclA), Social Impact Assessment (SIA-social), Strategic Impact Assessment (SEA), Sustainability Impact Assessment (SIA-sust.), and the Quality of Life Capital approach (QoLC).

Developing the idea of ‘meta-disciplinary’ landscape planning, that integrates material-physical reality and immaterial existential values within a participatory context, is a challenging task, since methods, concepts and necessary data for the valuation of multifunctional landscapes are still in their infancy. The problems encountered by a heterogeneous group of collaborating stakeholders and scientists are addressed by Klug [4] who applied the Leitbild concept, as described in the introductory paper [3], and unifies it with a spatially explicit planning procedure for describing and classifying landscape visions. The general assessment system, with its landscape processes and political strategies, has been adapted to the natural, cultural, political and economic conditions of the pre-alpine Lake District case study area in the Federal States of “Salzburg” and “Upper Austria” in Austria. The paper is interesting from a technical point of view because it illustrates how GIS can be used to analyse and represent environmental and economic risks at landscape level. It also points out problems, values and influences from decision makers on landscapes and farmers. It is scientifically relevant because it demonstrates how an understanding of landscape resources and risks can help to establish an action plan on through an ‘eight steps’ methodology that leads to ‘purposeful landscape development’.

The need for sustainable landscape development has been widely debated since the Rio Conference in 1992 [2,9] and amongst many responses has been the European Landscape Convention. The latter was adopted on October 20, 2000 in Florence (Italy) and came into force on 1 March 2004 [10]. Loupa Ramos [5] defines landscape quality objectives on the base of the European Landscape Convention and investigates them using exploratory landscape scenarios as a starting point for open discussion about the future. Loupa Ramos [5] argues that exploratory scenarios are useful tools for achieving plausible futures rather than optimal ones, and can help identify alternative drivers of change. This research from an area in southern Portugal showed that organizing perceptions about the future through a process of “disciplined imagination” was a fruitful way of developing scenarios.

To bridge landscape analysis and landscape evaluation and achieve enhanced communication between stakeholders and politicians, sound methods to facilitate the transfer of information need to be established. In order to achieve this a variety of visualization techniques have been developed to improve visual communication capabilities of landscape scenarios. Based on drawings, walk-through or fly-through animations, and digital simulation using GIS and 3D tools and photorealistic representations, these techniques enable the user to choose different ways of interaction with the landscape. Loupa Ramos [5] uses photorealistic simulation techniques with local pictures. Using such scenarios as the basis of discussion with local and non-local experts and stakeholders reveals key differences in visions and aspirations. These differences were not due to different visualisation techniques but were the result of personal and group behaviour. Such a finding needs to be considered more generally when implementing landscape planning projects.

Lange and Hehl-Lange [6] develop this visualisation idea forward by translating a vision into tangible geographically referenced information, which can be further used for interactive exploration of futures with a high degree of realism. Hence, using the example of sustainable forest management, this paper demonstrates how advanced visualisation techniques can be used to assist the process of finding, communicating and formulating an immersive interactive vision of a changing landscape in the future.

Palang and Peil [7] base their future visions of urban fringe developments upon an historical perspective. They report on spontaneous and chaotic driven processes of urban sprawl that are highly visible in the landscape outside the city of Tallinn. In the former Soviet Union poorly built and aesthetically poor housings was constructed. During these times there were considerable social problems for the inhabitants, but now people are much better placed to be able to shape developments and plan the future. The authors argue with Loupa Ramos [5] for the importance of understanding people’s capacity for creating future visions, pointing out that both personal experiences and a sense of place have a significant role in shaping the future urban development. Historical maps proved helpful in understanding ongoing and future changes that result from single choices or preferences. Their study shows how people adapt to changing structures and everyday practices in the landscape.

While the papers mentioned so far report on methodologies applied to case study areas in Europe, Pearson and Gorman [8] provide an example for the Northern Territory in Australia, highlighting that planning should “involve integrating a variety of perspectives and values, stressing that long term planning needs joint stewardship through the creation of multi-stakeholder groups, integrated knowledge systems and bioregional approaches to the planning process”.

All of the articles in this volume consider different social problems (human health, unemployment, security), economic issues (decreasing subsidy payments in agriculture) and environmental imbalances (climate change with droughts, floods and fires, nutrient surplus in surface waters, settlement and urban development pressures, rural and agricultural development, sustainable forest management, pressure on biodiversity and landscape integrity) for a range of countries (Australia, Austria, Estonia, Portugal, United Kingdom). They show how these problems can be addressed using scenario approaches for each area that capture the shared vision of stakeholders for the future. The important contribution that the authors make is in showing that such visions can be made spatially explicit through a, the GIS approach [4,8], and/or special visualisation techniques [4–6].

The visions created span a wide range from broad to narrow objectives and from local to national scale. This demonstrates that the Leitbild concept can be applied successfully to: (1) problems such as nutrient reduction to surface waters at large scale [4]; (2) to open strategic territorial planning comprising many inputs; and (3) power relations at small scale [8]. All authors have built strategies to make the visions reality within a transdisciplinary and participatory planning approach and using advanced visualisation and scenario techniques.

However, in most of the examples presented in this special issue the resulting shared visions are most of the times not easy to reach. Difficulties result for example, from different opinions, attitudes and power relations [3,8]. Similar difficulties arise out of the differences in perception of results from the various local and non-local experts and stakeholder groups [5]. As Klug [4], Pearson and Gorman [8], and Loupa Ramos [5] clearly demonstrate, a major problem for sustainable planning is the lack of a shared vision and the underdeveloped skills of some stakeholders to deal with multiple relationships and different economic, social, cultural and environmental viewpoints. It seems that no successful planning process can be implemented without considering, recognising and accommodating different values of local people. All the papers presented here illustrate the utility of planning a vision by using a cohesive approach while connecting people with their surrounding land. A shift from a ‘top-down’ to a ‘bottom up’ approach can assist more participatory approaches to governance planning. A sound planning process requires the identification of quality objectives or targets for future landscapes, an understanding of how the societal demands, economic development, and social viability can be accommodated alongside ecosystem integrity. Decision makers must acknowledge the values demonstrated by different people and therefore shape planning interventions in appropriate ways.

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