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Discussion and conclusions

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In his introductory talk Phil Lewis mentioned that planning in the USA is mainly controlling urban sprawl and protecting vulnerable systems such as water and nature. There are arteries of growth along which the mega-cities of the world have developed. They exist in the northeastern part of the USA, but are also developing elsewhere in the world, e.g., in Europe. Planning land use is not saving the land, but organizing its use and structure. By doing it in a thoughtful manner, urban and rural development can maintain a certain balance. This means that determinants are the critical resource patterns, such as important watersheds, environmental corridors and areas with important diversity. Next to the use of sustainable technologies Lewis pointed out the importance of regional education frameworks for continuous awareness of sustainable options for the future.

In the discussions these words were repeated in various ways. The discussion focused mainly on what the role of science can be in this planning development and educational framework.

Questions that arose frequently during the discussions were:

– What is meant by agricultural landscapes, when is a landscape agricultural and when is it urban or suburban?
– Can cross-country comparisons be made and who is interested in them?
– How can trends in landscapes be detected and interpreted?
– Can information on landscape supply, e.g. farm management, land management and costs, be improved?
– How can we improve the valuation of landscapes?
– Does it make sense to make landscape projections; to make designs for the future?

Marc Antrop stated that in the first place the implementation of the Bologna declaration on academic education will have implications for the research in the field of landscape science. The Bologna declaration has the objective of enhancing mobility of students and researchers by developing comparable higher-education systems in all (29) participating countries. This means that landscape research as part of that education system should also develop common grounds, exchange concepts and working methods. If that does not happen and landscape research remains oriented on unique regional issues, then it will disappear out of the academic arena and lack scientific backing. The concepts used in landscape science should be clear and shared with others.

In this plea for common approaches in Europe, which was supported by several other participants, also quite a few doubts have been expressed. Teresa Pinto Correia stated that different parts of Europe are so different that they require their own

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indicators. Several participants replied that the basic (research) questions are comparable. Landscapes are in danger of being destroyed, there is need for connectivity, leisure activities are concentrated in the countryside; so what driving forces are important and how do they work out?

The general understanding and general statement was that the sustainability of the landscape is the overarching principle and that all other concepts and principles have to fit in. Still, according to some participants, the concept of sustainability is too wide for regional approaches; they argued for more regional approaches for the various regions of Europe. Jørgen Primdahl made clear that this conflict between common concepts and approaches and regional differences is also a difference between research and operationalization. The concepts can be comparable or the same in all Europe, but their operationalization has to take place through regional organizations, regional legislation and regional instruments. This is also the permanent conflict between those who think regional and those who think in general concepts. This was specified by Richard Hobbs in a statement on the limits of generalization. One cannot generalize too far, because the link with reality must be kept, especially where stakeholders are involved. In that case we are, indeed, stepping out of the world of science and into the world of demonstration and implementation.

The discussion moved towards the research that is necessary. Interdisciplinary work is generally considered an obligatory aspect of landscape research. The major question as posed by Phil Lewis is: what experts are needed to form interdisciplinary teams for designing landscapes? Modelling must fit the real-world situation and must go beyond the common pathways. Models of landscapes have to be discussed with the stakeholders, but science must be able to think ahead and develop a 'basic' model of the landscape that can be adapted, upscaled and downscaled when needed. Upscaling and downscaling methods are very important to let general policies, such as the European Union's Common Agricultural Policy (CAP), and the farmers' decisions on the local scale co-operate in order to conserve the landscape-character aspects.

Monitoring landscape character and making clear what its significance is to the policymaker and the land manager is important for, among other things, the tourism sector that depends on the distinctive character of landscapes. Trend data are therefore not sufficient; they should be translated into management options and perspectives. However, who is responsible for the landscape management and its development is still vague: it is an interaction between the land owner, the public interest and the users of the land. How they balance their interests differs per region. The design of new landscapes can only be made if the approach is holistic, bringing together landscape ecology, landscape design, economy, policy and stakeholders. The plans for the future must be partly based on society, partly on science. Concepts that include knowledge as well as cultural issues are needed for all landscapes. Landscape scientists must not be afraid to look for this knowledge elsewhere as their field of work is interdisciplinary and wide.

In general, knowledge must be based on baseline data, because that is the most convincing argument with which to convince policymakers. Trends based on data are the strongest argument for convincing politicians to take action. That means that it must be clear what is changing in the landscape, what this means for cultural, economic and ecological aspects, and how this is valued by society. Is the trend positive or negative or can design improve the quality or mitigate negative effects? If stakeholders or a group are affected, is it possible to identify them and analyse their role in the management or design? One of the conclusions from the discussions was that, compared to what we are dealing with, the budget and the research programmes

are underdeveloped. Without a proper European research programme, however, the budget will not increase. Within such a research programme the socio-economic and cultural aspects are key issues. We must show the importance of landscape research before it is recognized: we must be good and tell it.

Landscapes are urbanizing and politicians need answers for their management. In the USA the citizens are educated with the idea that the urban world is beautiful, because it is a consumers' world. This is one of the possibilities for the future of our landscapes. Values on cultural history and nature are difficult to pass on in an urbanized world. They have to be analysed, presented and included in study programmes at schools and universities. The natural process of passing the history of the landscape on to the next generation does not exist any more. Therefore, as was concluded, we should react in a proper way to the fact that the world is developing into an urban environment; the solutions for the continuity of the traditional landscapes are found in the communication network between society, landscape design and landscape ecology.