

## Interdisciplinarity and transdisciplinarity in landscape studies – the Wageningen DELTA approach

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Interdisciplinarity and transdisciplinarity are increasing in importance for landscape research and management. National research councils, the European Commission, as well as other research funds and policy action plans, are setting up programs that give priority to inter- and transdisciplinary approaches (BMWV, 1999; Brewer, 1999; BMBF, 2000; European Commission, 2000, 2002; RMNO, 2001; Norges Forskningsråd, 2002). Interdisciplinary and transdisciplinary research is expected to create new knowledge by synthesizing knowledge production in different disciplines. Additionally, interdisciplinary and transdisciplinary research face clear societal demands and are expected to contribute to problem solving.

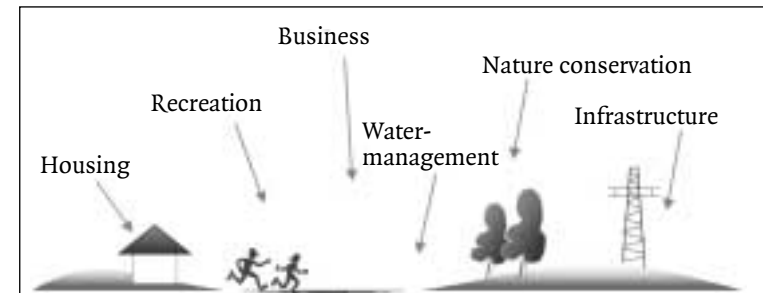
In Wageningen, the Netherlands, interdisciplinary and transdisciplinary efforts in landscape research and management are summarized as the DELTA approach. The approach bridges the humanities (known in the Netherlands as the “alpha-sciences”), natural sciences (“beta-sciences”), and social sciences (“gamma-sciences”). The idea of developing system innovations by crossing disciplinary borders, cooperating with stakeholders—where appropriate—and capitalising on the expertise of alpha, beta, and gamma sciences defines the DELTA approach and inspired the program’s name.

The DELTA program is a strategic research program of Alterra Green World Research and Wageningen University for interdisciplinary and transdisciplinary studies in landscape-related fields. More information on the program is available at [www.wur.nl/delta](http://www.wur.nl/delta).

### Why a DELTA approach in landscape studies?

Today’s landscapes are—as part of the urbanisation process of the countryside—increasingly being used for several functions and interests such as housing, recreation, business and production, water management, nature conservation, agriculture, and infrastructure (Antrop, 2000; Valk, 2002a; Tress & Tress, 2003). Areas are under increasing pressure because more and more demands are being placed on them (figure 1). All these interests compete with each other for influence on, and space in, the countryside. However, as areas cannot be continuously enlarged, more and more functions must be integrated simultaneously in a given landscape. This development challenges future landscape research, planning and management and calls for system innovations.

Figure 1: Different interests in and functions of landscapes



Why are single disciplines unable to solve the challenges caused by different interests in the landscape and its different functions? A traditional approach offers different solutions for different sectors that are elaborated on by different disciplines. The DELTA approach advocates an integrated solution that combines the scientific excellence of several disciplines and capitalises on non-academic knowledge of stakeholders to solve landscape problems.

### **Definitions of interdisciplinarity and transdisciplinarity**

The terms “interdisciplinary” and “transdisciplinary” are constantly used in scientific work, project descriptions, and research applications within academia (Tress & Tress, 2002). However, explanations and definitions are only offered in a few studies. The same lack of clear terminology persists within the academic community in Wageningen. But why is it necessary to come to a common understanding of these terms? A good reason is the need for exchange on experiences and knowledge on interdisciplinarity and transdisciplinarity, across knowledge communities, institutes, disciplines, and countries. If there is general uncertainty about the meanings of terms, confusion will result (Klein, 1990) and common discussion is impossible. Providing a definition is central to communication on interdisciplinary and transdisciplinary research. A common definition can of course be adapted to changing perceptions over time.

By *interdisciplinarity*, we mean projects that involve several unrelated academic disciplines in a way that forces them to cross subject boundaries to solve a common research goal. By *transdisciplinarity*, we mean projects that integrate both academic researchers from different unrelated disciplines and user-group participants to reach a common goal.

### **Landscapes – a boundary-crossing subject**

The nature of landscapes is such as to require interdisciplinary communication and cooperation on research and management issues.

Several different disciplines focus research efforts on landscapes. They are successful in presenting new findings about landscapes within their specialisation, but collaboration – and thus transfer of knowledge across disciplinary boundaries – is seldom realised because a common approach that bridges the gaps between disciplines is missing. Different landscape concepts exist side by side. As landscape-related issues often touch on environmental, social, cultural, aesthetic and economic issues simultaneously, researchers must agree on their terms and work together to tackle complex challenges presented by landscapes (Nassauer, 1995; Naveh, 1995; Muir, 1999; Tress & Tress, 2001).

Landscapes have evolved as a result of complex interactions with and between people. The DELTA approach relies on a holistic landscape concept that includes landscapes’ multiple dimensions within a system. All landscapes are shaped by nature and culture; research, planning and management of landscapes, therefore, demand an interdisciplinary effort that spans these two realms.

### **The DELTA program in Wageningen**

Established in 1999, the DELTA program contributes to problem-solving in the field of planning/management of landscape, open space, metropolitan, urban and rural areas. It seeks to link people and knowledge by initiating, developing and promoting interdisciplinary and transdisciplinary landscape research, planning and management. The program develops theory and methods, conducts demonstration projects and offers training sessions on these topics. It is anticipated that the DELTA program will continue through 2005 (Valk, 2002b).

Interdisciplinary and transdisciplinary research connects directly to contemporary social issues and thus shifts the orientation of academic research. The DELTA program supplies information on best practices to researchers who can then apply this knowledge to concrete problem-solving on the regional level. This is not to suggest that the DELTA program relies solely on case studies, applied research and parallel studies of multidisciplinary teams acting without coordination among their disciplines. Rather, the program’s ambition is to support strategic research that bridges the field of fundamental research and applied research.

The DELTA program draws on several fields of expertise: spatial development, landscape planning, landscape management, cultural history, sociology, perception studies, design studies, recreational and agriculture research, research on metropolitan areas and urbanisation processes, urban-rural relationships, land use studies, water management, ecology, stakeholder participation, and policy support.

The DELTA program bridges different research communities in the Netherlands as well. It constitutes the scientific and methodological structure for a re-

cently established unit within academic research in Wageningen: the Landscape Centre. The Centre is a joint effort between researchers and activities based at Alterra Green World Research, a research centre for green open space, and those based at the Department of Environmental Sciences at Wageningen University. The cooperation of these two research communities enables an exchange of knowledge and experiences across institutional borders for the benefits of clients, researchers and students. Members of both institutes coordinate the program.

The DELTA program is conducted in four phases. In the first phase, experiences and examples of best practice are collected. In the second phase, elements for setting up a theoretical foundation for inter- and transdisciplinary landscape research and planning are identified. In phase three, best practices are reviewed and analysed. The last phase aims at developing a theory and presenting guidelines that make it possible to translate theory into practice.

**Currently, the DELTA program focuses on two main activities:**

- I. Developing strategic knowledge in the field of interdisciplinary and transdisciplinary landscape research and planning (STRATIS)
- II. Stimulating and facilitating knowledge exchange and dissemination in the field of interdisciplinarity and transdisciplinarity (SITEX).

Relevant activities within STRATIS are, for instance, investigations of the challenges presented by integration of interdisciplinary research and ways to improve interdisciplinary and transdisciplinary landscape studies in Europe. STRATIS develops tools and strategies for support of decision-making processes in planning and management. SITEX is responsible for national and international communication activities, such as dissemination of research results in publications, seminars, project support and training activities in-house and outside.

**The DELTA seminar 2002 and its outcomes**

In November 2002, the DELTA program together with the INTELS project ([www.intels.cc](http://www.intels.cc)), a project within the DELTA program, organised an international seminar on the expectations and practice of interdisciplinarity and transdisciplinarity in Europe. Representatives from research, education, policy and funding bodies were invited to discuss the potential growth and limitations of interdisciplinarity and transdisciplinarity in landscape studies. Thirty-five delegates from eleven countries participated in two-days of meetings in Wageningen and discussed expectations, obstacles, and achievements of integrated research.

**Five themes were identified as central to the discussion of interdisciplinary and transdisciplinary landscape studies**

- I. Expectations of policy-makers, funding bodies and end-users
- II. Expectations of scientists
- III. Successes and problems encountered
- IV. Training needs of professionals in research and policy
- v. Evaluation criteria

For each theme, one plenary lecture was delivered to give an overview on recent developments. Additionally, three delegates presented short statements on the same topic highlighting specific experiences or adding general remarks.

The book at hand presents the outcomes of the seminar and includes revised plenary lectures and the delegates' statements. Organized along these five themes the book includes a short introduction to each topic and raises issues from discussions in the sessions. We would like to thank all seminar delegates for their contributions to the seminar and this book.

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