Preface

Computers and environmental protection – two different worlds? Well, if we look at the situation in America, it seems to be so. Only a handful of scientists is working in the field of Environmental Information Systems (EnvIS) and they only play a minor part in the IS community. According to this background it looks rather ambitious to make a book on EnvIS.

However, the main objective of this book is to give an overview of worldwide research and development on EnvIS. Therefore, we sent the call for chapters to more than 4000 e-mail addresses. We received 64 abstracts from 19 countries spread over four continents. This sounds great, but a closer look at the distribution shows that 53 papers came from Europe with a share of 29 contributions from German speaking countries. The reasons for the German dominance in this field of research are the following:

- Since 1984 the working group of Environmental Informatics exists as a sub-organization of the German Computer Society. Annual conferences, workshops and several other activities formed a community with a core of 150 researchers working in the field of EnvIS over the whole time.
- The European and German legislative introduced several environmental bills, which became relevant for industry and public administration during the last years. Examples are the Environmental Management and Audit Scheme (EMAS) by the European Community (which was extensively adapted in ISO 14000) or the law of life cycle oriented waste management ("Kreislaufwirtschaftsgesetz"), which is a pioneering work of German legislative in this field.

The contributions were classified into eight application fields, as shown in table 1. Here, two phenomenons were conspicuous:

Table 1: Fields of research

Field No.	Name	# Contributions
I	Methodical foundations	13
II	Global and multinational EnvIS	6
III	Protection of air, water and soil	8
IV	Regional and urban developments	12
V	Waste management and logistics	6
VI	Management of environmental hazards	5
VII	Metadata and environmental reporting	7
VIII	Industrial EnvIS	7

Table 2: Methods and technologies

Theme	Data analysis	Visuali-zation	Remote Sensing	GIS	Env. DB	XML	Modell-ing and simula-tion	XP S	WWW and In-ternet	ERP sys-tems
I										
II										
III										
IV										
V										
VI										
VII										
VIII										

- Meta information systems for environmental protection, environmental reporting and industrial EnvIS are widely dominated by German researchers.
- The main field of research in the Mediterranean countries is the control and prevention of forest fires.

The results of an investigation regarding the applied methods and technologies for EnvIS is shown in table 2. The darker shade of gray depicts the appearance of a method in more than two papers. The main methods and technologies are data analysis, geographical information systems (GIS) and modelling and simulation.

In a two stage selection process with a double blind review of all full papers only the 25 best papers (of 64!) were selected for publication in this book. All themes are represented in papers from 13 countries.

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Claus Rautenstrauch and Susanne Patig
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