Introductory comments by UNESCO IHP

Erosion and sedimentation processes and management in catchments, river systems and reservoirs have reached global importance. The socio-economic and environmental impacts of erosion and sedimentation processes in river basin management are significant. Regrettably, it is estimated that over 50% of the world’s reservoir storage capacity could be lost due to sedimentation within the next few decades. The situation is particularly severe in most of the developing countries. Accordingly, sediment management practices should be improved; even though various sediment transport models are at our disposal today, the inadequacy of knowledge about sediment production processes hinders practical progress in addressing problem-solving. The issue calls for integrated solutions where land-use management and water management are not decoupled.

The International Sediment Initiative (ISI) has been launched by UNESCO as a major activity of the International Hydrological Programme (IHP), with the aim to support the solving of sediment-related problems. IHP created ISI as a vehicle to foster international cooperation in handling regional sediment problems and in identifying local solutions. ISI also intends to promote international information exchange and to provide direct access to policy makers in Member States while encouraging scientific and professional communities in all regions and countries concerned. Focus was initially brought into the realization of a first Global Evaluation of Sediment Transport (GEST), the setting up of a global erosion and sediment information system and the review of erosion and sediment-related research worldwide. The initiative now aims to implement case studies for river basins as demonstration projects and, of course, educational and capacity-building efforts for sustainable sediment management.

ISI is open to collaboration with all interested institutions, international, regional or national associations and networks. As far as Europe is concerned, SedNet is certainly one of the first and most enthusiastic partners to have joined in and developed with us a fruitful cooperation. One of the results is the creation of a Danube Working Group. It involves the International Commission for the Protection of the Danube River (ICPDR), SedNet and IHP partners in the region that committed to draft and support a roadmap towards advice on the implementation of sediment management in the Danube WFD River Basin Management Plan. The annual SedNet conference hosted by the UNESCO Office in Venice in November 2006 laid the ground for a series of catchment-oriented roundtable discussions – one of which was devoted to the Danube with
concrete proposals to be further developed in 2007–2008. One proposal supported by the UNESCO Office in Venice will lead to the establishment of a first sediment balance of the Danube River by the end of 2008.

UNESCO IHP very warmly welcomes the publication, within the SedNet series of books, of the present work dedicated to “Sediment Management at the River Basin Scale”, including a contribution from ICPDR and ISI on the Danube River, the most complex and challenging river basin in Europe. There is no doubt that this publication will be essential reading to all those concerned with sediment-related issues within the larger framework of Integrated River Basin Management in Europe.

I would like, therefore, to express my warmest thanks to SedNet, all authors and all those who have provided the necessary support to guarantee the success of this publication. UNESCO IHP, for its part, shall do its best to facilitate and promote its dissemination among the widest audience possible.

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Preface

This book represents one of four in a series by the European Sediment Network (SedNet), published by Elsevier, entitled Sustainable Management of Sediment Resources. The titles and editors of the books in this series are:

- **Sediment Quality and Impact Assessment of Pollutants**, edited by Damia Barceló and Mira Petrovic;
- **Sediment and Dredged Material Treatment**, edited by Giuseppe Bortone and Leonardo Palumbo;
- **Sediment Risk Management and Communication**, edited by Susanne Heise; and
- **Sediment Management at the River Basin Scale**, edited by Phil Owens.

The history behind these books is interesting and helps to explain their content and focus. The European Sediment Research Network (SedNet) was a European Commission (EC)-funded Thematic Network project (contract number EVK1-CT2001-20002) within the 5th European Framework Programme (FP5), within the Key Action theme “Sustainable Management and Quality of Water” of the Environment Programme, topic 1.4.1 “Abatement of Water Pollution from Contaminated Land, Landfills and Sediments”. The SedNet project arose from a call by numerous scientists and stakeholders for a network aimed at bringing people together to discuss and review sediment issues within European river systems. It also recognized that there was a need for a state-of-the-art review of sediment management issues and how they related to EU policy, such as the Water Framework Directive (WFD), so that appropriate sediment management guidance could both assist with the implementation of such policy and could help to shape future policy development. The SedNet project was thus born and was funded for three years (2002–2004) by the EC. Given its original mandate and role within topic 1.4.1, attention mainly focused on sediment within European river basins (as defined by the WFD), and thus largely neglected estuarine and marine sediment, and focused on contaminated sediment or processes relevant for the management and abatement of contaminated sediment. The themes and contents of the four SedNet books reflect this focus, although efforts have been made to provide a wider context.

Between 2002 and 2004, the main activities of SedNet were 17 workshops and three conferences, a regular newsletter, a website (www.sednet.org), and reports and documents on sediment management in European river basins: see the SedNet website for details of these. SedNet activities were originally...
organized around a series of working groups (WGs) which were guided by the SedNet coordinator, Jos Brils, and a stakeholder panel made up of representatives of interested organizations such as Hamburg Port Authority, Hamburg-Harburg Technical University, TNO, Port of Rotterdam, UNESCO and Venice Port Authority. Each of the WGs had a “leader” and a core group. In the case of WG4, the core group comprised:

- Sabine Apitz (UK);
- Ramon Batalla (Spain);
- Alison Collins (UK);
- Marc Eisma (The Netherlands);
- Heinz Glindemann (Germany);
- Sjoerd Hoornstra (The Netherlands);
- Harald Köthe (Germany);
- Phil Owens (Leader, UK);
- John Quinton (UK);
- Kevin Taylor (UK);
- Bernhard Westrich (Germany);
- Sue White (UK); and
- Helen Wilkinson (UK).

WG4 organized a series of workshops:

- Existing guidelines and the EU Framework Directives, Silsoe, UK, 28–29 October 2002;
- Sources and transfers of sediment and contaminants in river basins, Hamburg, Germany, 26–28 May 2003;
- Modelling and other decision support tools for sediment management, Lleida, Spain, 10–11 November 2003; and
- Societal cost benefit analysis and sediments, Warsaw, Poland, 18–19 March 2004.

It also produced reports and statements based on these workshops (see the SedNet website). In addition, some of the information was directly or indirectly published in journal and book papers (e.g. [1–5]) and contributed to more general SedNet publications [6].

During the mid-term review of SedNet in Brussels in 2003, a series of recommendations were put forward, which shaped the form and activities of SedNet for the second half of the three-year EC-funded phase. One of these
recommendations was that the pre-existing working groups were to be restructured into five work packages (WP):

1. Coordination, synthesis, dissemination and stakeholders panel;
2. Sediment management at the river basin scale;
3. Sediment quality and impact assessment;
4. Sediment and dredged material treatment; and
5. Sediment risk management and communication.

Thus WG4 became WP2 (here on referred to as WP2), with a revised theme.

A second important recommendation was that each of the four main WPs (WP2–WP5) produce a book, as part of a series, that reviewed much of the activities of the workshops and also reviewed other relevant material, and tried to offer appropriate suggestions for the sustainable management of sediment that were relevant to the WP theme. This book represents one of those, and is the effort of SedNet WP2. Given the time between the initiation of the idea of the book series (2003) and their final publication in 2007, inevitably there has been much change in the group working on this particular book. Some members of the WP2 core group have changed jobs or roles and consequently have had to withdraw from becoming actively involved with the production of manuscripts, although all have been involved with ideas and material that have been incorporated within the chapters. In some cases, other representatives have been found to lead and co-author the chapters. Thus the chapters in the book represent the work of not only the authors and co-authors, but also the other members of the WP2 core group, and the organizers and participants of the four WP2 workshops. In addition, ideas have also developed from interaction with the other WPs and also the SedNet stakeholders panel.

SedNet is now in a new phase. Funding from the EC finished at the end of 2004 and since this time SedNet has developed into a stand-alone network (renamed the European Sediment Network, SedNet) and is self-financed through contributions from the organizations which represent the steering group. Most of its initial objectives still remain, but it is also a much wider-ranging network and addresses all sediment issues and environments, including estuarine and marine environments. It continues to organize workshops and conferences, and produce documents and publications (e.g. [7]), many of which are described or published in the Journal of Soils and Sediments.

There are many people to whom thanks are due. A special thanks goes to all those involved with WP2 and/or this book over the last 6 years, many of whom are listed above and/or are authors of chapters in this book, and to the SedNet “family”. It has been a privilege to interact with such an outstanding group of scientists and stakeholders, who have been dedicated to furthering the
appreciation and recognition of sediment in Europe. I am also extremely grateful to Alison Collins for her help with the first phase of SedNet, and to Alison Foskett for her help with the production of this book. The book was produced as camera-ready-copy, using a template supplied by the publishers, and this required considerable effort and dedication from all those involved – it is hoped that readers are sympathetic towards any errors or problems of chapter layout. Thanks are extended to Piet den Besten, Ulrich Förstner and Wim Salomons who acted as internal SedNet referees of the chapters in this book, to David Kenyon who produced the index, to Joan Anuels and Andrew Gent of Elsevier for their patience and understanding, and to Jürgen Busing who, as the EC scientific officer responsible for the first phase of SedNet, encouraged us all the way. Perhaps the greatest thank you goes to Jos Brils for his incredible motivation and enthusiasm for all things to do with sediment.

These four books represent an important contribution to the literature on sediment dynamics and management in European river basins. While a huge amount of effort and time has been put into them, they only represent a start. Although the focus necessarily has been largely restricted to Europe, many of the sediment processes and issues are of relevance to other parts of the world. It is hoped, therefore, that this book, and the others in the SedNet series, encourage further activities to advance our understanding, appreciation and management of sediment in European countries and throughout the world.

References


Phil Owens
Prince George, Canada, May 2007