The aim of the book is to give an up-to-date review on dam-break problems, along with the main theoretical background and the practical aspects involved in dam failures, design of flood defense structures, prevention measures and the environmental social, economic and forensic aspects related to the topic. Moreover, an exhaustive range of laboratory tests and modeling techniques is explored to deal effectively with shock waves and other disasters caused by dam failures. Disaster management refers to programs and strategies designed to prevent, mitigate, prepare for, respond to and recover from the effects of these phenomena.

To manage and minimize these risks, it is necessary to identify hazards and vulnerability by means of a deep knowledge of the causes which drive to dam failures, and to understand the flow propagation process. Knowledge and advanced scientific tools play a role of paramount importance of coping with flooding and other dam-break problems along with capacity building in the context of political and administrative frameworks. All these aspects are featured in the book, which is a comprehensive treaty that covers the most theoretical and advanced aspects of structural and hydraulic engineering, together with the hazard assessment and mitigation measures and the social economic and forensic aspects related to subject.