

Phoebe Koundouri  
Nikos A. Papandreou *Editors*

# Water Resources Management Sustaining Socio- Economic Welfare

The Implementation of the European  
Water Framework Directive in Asopos  
River Basin in Greece

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Framework Directive in Asopos River Basin  
in Greece



Springer

*Editors*

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# Water Resources Management Sustaining Socio-Economic Welfare

# GLOBAL ISSUES IN WATER POLICY

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*As always, this book is dedicated to Nikitas,  
my resilience, and Chrysilia and Billie,  
my happiness. Billie was born while  
I was working on the “Asopos” Project  
and this book.*

Prof. Dr. Phoebe Koundouri

# Preface

The overreaching aim of the book is to offer a river-basin management plan which is directly implementable and consistent with the European Union Water Framework Directive (EU WFD). This management plan consists of explicit technical and investment solutions, socio-economic and legal instruments, as well as institutional restructuring recommendations. Given the well-recognized challenge (both academically and empirically) of managing natural resources in a way that maximizes and sustains social welfare, this book is an invaluable point of reference to applied researchers and policy makers in the field of water resources management.

The first chapter is an introductory chapter that describes the water situation in Greece and assesses the potential of the timely implementation of the EU WFD. Special emphasis is given to the cost-recovery principle, and results of a quick appraisal are presented.

Chapter 2 introduces the case study area putting the emphasis on the particular pressures and impacts as well as the environmental functions and values of Asopos River and Oropos Lagoon. The next chapter (Chap. 3) presents the main water uses and pricing for water supply as far as industry and agriculture are concerned, while Chap. 4 completes the baseline information presenting the residential water use. Chapters 2, 3, and 4 offer the background information to be used in the following chapters.

Next, the emphasis is on the agricultural sector. Chapter 5 aims to estimate the farmers' valuation of the groundwater's shadow price for the region of Asopos. The objective of the microeconomic analysis is to uncover the patterns of groundwater use and farm efficiency. The chapter offers policy recommendations based on the principle of socio-economic sustainability and presents an estimation of groundwater for irrigation shadow price and how this can be used in the design of pumping taxes to reduce pollution and to increase farm efficiency.

Chapter 6 presents the results of an environmental valuation study (Choice Experiment) aimed to value environmental improvements in the Asopos water catchment to be used for policy purposes. The same holds for Chap. 7 which employs another method, that of Benefits Transfer, in order to estimate the

environmental cost of damage due to the industrial activity. Results of both chapters are compared with interventions for improving the current situation.

The net cost suffered by the local farmers due to the environmental degradation is presented in Chap. 8 where policy recommendations are also offered. Finally, Chap. 9 presents an integrated water resources management plan in the Asopos river basin, while Chap. 10 offers recommendations regarding institutional changes and presents lessons learned for the rest of the Greek river basins.

Athens, Greece

Phoebe Koundouri



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The assistant editor of this book is Dr. Mavra Stithou. Without her excellent editorial work and dedication, this book would not have been completed.

Phoebe Koundouri

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