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Climate Change and Agricultural Water Management in Developing Countries

EDITED BY CHU THAI HOANH, ROBYN JOHNSTON AND VLADIMIR SMAKHTIN

IWMI International Water Management Institute

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security CCAFS

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Preface

Water used for agriculture is the largest water consumer globally, about 70% of all freshwater withdrawals. Climate change impacts on water resources – through changes in precipitation, snowfall, soil moisture, river flow and groundwater recharge – translate into impacts on agricultural production. With current trends in population growth, rising incomes and changing diets, the demand for food will double over the next 50–80 years. Significant improvements are necessary in agricultural water management now to reduce the vulnerability of poor people in developing countries to climate-induced changes in precipitation and water availability.

The objective of this book is to provide experiences from studies on agricultural water management under climate change as references for agriculture and irrigation planners, decision makers, researchers and students. Chapters in this book present an overview on global assessment of climate change impacts and water requirement for future agriculture, detailed crop water requirements in case studies in developing countries, irrigation management under sea-level rise in deltas, and agricultural adaptation options to climate change such as water-saving techniques and groundwater exploitation, and related policy settings. Findings and conclusions from the studies presented in this book may help in identifying subjects for further research and actions in management to filling the information and knowledge gaps in agricultural water management.

This book was edited by a team of scientists based at the International Water Management Institute (IWMI). It is produced as part of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), which is a strategic partnership of CGIAR and Future Earth. The views expressed in this book cannot be taken to reflect the official opinions of CGIAR or Future Earth.

The Editors