Contents

1 Adapting Agriculture to Climate Change by Developing Promising Strategies Using Analogue Locations in Eastern and Southern Africa: A Systematic Approach to Develop Practical Solutions ................................... 1
J. De Trincheria, P. Craufurd, D. Harris, F. Mannke, J. Nyamangara, K.P.C. Rao and W. Leal Filho

2 Improving Livelihoods in Semi-arid Regions of Africa Through Reduced Vulnerability to Climate Variability and Promotion of Climate Resilience ...................... 25
Stephen K. Kimani, Anthony O. Esilaba, Peterson N.M. Njeru, Joseph M. Miriti, John K. Lekasi and Saidou Koala


4 Situation Analysis of Climate Change Aspects in Kenya ........ 43

5 Seasonal Rainfall Variability and Drought Characterization: Case of Eastern Arid Region, Kenya ................. 53
M. Oscar Kisaka, M. Mucheru-Muna, F. Ngetich, J. Mugwe, D. Mugendi and F. Mairura
6 Addressing the Potential Impacts of Climate Change and Variability on Agricultural Crops and Water Resources in Pennar River Basin of Andhra Pradesh

Sridhar Gummadi and K.P.C. Rao

7 Grain Yield Responses of Selected Crop Varieties at Two Pairs of Temperature Analogue Sites in Sub-humid and Semi-arid Areas of Zimbabwe

Justice Nyamangara, Esther N. Masvaya, Ronald D. Tirivavi and Adelaide Munodawafa

8 Adapting Agriculture to Climate Change: An Evaluation of Yield Potential of Maize, Sorghum, Common Bean and Pigeon Pea Varieties in a Very Cool-Wet Region of Nyandarua County, Central Kenya

Joseph M. Miriti, Anthony O. Esilaba, Karuturi P.C. Rao, Joab W. Onyango, Stephen K. Kimani, Peterson M. Njeru and John K. Lekasi

9 An Assessment of Gender Sensitive Adaptation Options to Climate Change in Smallholder Areas of Zimbabwe, Using Climate Analogue Analysis

Kumbirai Musiyiwa, Walter Leal Filho, Justice Nyamangara and David Harris

10 Impact of Climate Change and Adaptation Measures Initiated by Farmers

M. Shivamurthy, M.H. Shankara, Rama Radhakrishna and M.G. Chandrakanth

11 In Situ Soil Moisture Conservation: Utilization and Management of Rainwater for Crop Production

P. Kathuli and J.K. Itabari

12 Enhancing Food Production in Semi-arid Coastal Lowlands Kenya Through Water Harvesting Technologies

Musyimi B. Muli and Ruth N. Musila

13 Opportunities for Coping with Climate Change and Variability Through Adoption of Soil and Water Conservation Technologies in Semi-arid Eastern Kenya

L.W. Ngugi, K.P.C. Rao, A. Oyoo and K. Kwena
14 Adoption of Water Resource Conservation Under Fluctuating Rainfall Regimes in Ngaciuma/Kinyaritha Watershed, Meru County, Kenya ........................ 159
Evans Mutuma, Ishmail Mahiri, Shadrack Murimi and Peterson Njeru

15 Effects of Integration of Irrigation Water and Mineral Nutrient Management in Seed Potato (Solanum Tuberosum L.) Production on Water, Nitrogen and Phosphorus Use Efficiencies .......................... 171
Geoffrey K. Gathungu, Joseph N. Aguyoh and Dorcas K. Isutsa

16 Integrating Farmers and Scientific Methods for Evaluating Climate Change Adaptation Options in Embu County ............. 185

17 On-Station Evaluation of Maize Genotypes for Nutrient and Water Use Efficiency in the Semi Arid Lands of Coastal Kenya ........................................... 199

18 Tomato (Lycopersicon Esculentum Mill.) Yield Performance under Elevated Dry Season Temperatures as an Adaptation to Climate Change in Tabora, Tanzania .............. 207
Fabian M. Bagarama

Cyrus M. Githunguri and Ruth L. Amata

20 Cassava Farming Transforming Livelihoods Among Smallholder Farmers in Mutomo a Semi-arid District in Kenya ......................................................... 225
Cyrus M. Githunguri, Esther G. Lung'ahi, Joan Kabugu and Rhoda Musili
Adapting African Agriculture to Climate Change
Transforming Rural Livelihoods
Leal Filho, W.; Esilaba, A.O.; Rao, K.P.C.; Sridhar, G.
(Eds.)
2015, XI, 233 p. 55 illus., Hardcover
ISBN: 978-3-319-12999-0