

1. Record Nr.	UNINA9910743256303321
Titolo	Climate change adaptations in dryland agriculture in semi-arid areas / / Xavier Poshiwa, G. Ravindra Chary, editors
Pubbl/distr/stampa	Singapore : , : Springer, , [2022] ©2022
ISBN	981-16-7861-8 981-16-7860-X
Descrizione fisica	1 online resource (359 pages)
Disciplina	630.9154
Soggetti	Arid regions agriculture Crops and climate
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Foreword -- Preface -- Introduction -- Contents -- Climate Change Adaptations in Dryland Agriculture -- Climate Resilient Rainfed Agriculture: Experiences from India -- Introduction -- Materials and Methods -- Results and Discussion -- Conclusions -- References -- Examining the Potential Impacts of Agro-Meteorology Initiatives for Climate Change Adaptation and Food Security in Bhutan -- Introduction -- Materials and Methods -- Results and Discussion -- Climate of Bhutan -- Climate Scenario, Trends and Projections -- Climate Risk and Vulnerabilities of the Agriculture Sector -- Climate Change Adaptation Initiatives -- Agrometeorology Program -- National Climate Outlook Fora -- Early Warning Information -- Automatic Weather Stations (AWS) -- Capacity Development -- Institutional Arrangement -- National Center for Hydrology and Meteorology -- Department of Agriculture -- Conclusions -- References -- Climate Change Mitigation: In Situ Management Methods of Indigenous Fruit Trees in Chivi Communal Area, Masvingo Province, Zimbabwe -- Introduction -- Materials and Methods -- Results -- Discussion -- Conclusion and Recommendations -- References -- The Effect of Temperature and Rainfall Changes on Biophysical and Socio-Economic Status of People in Northern Jordan Valley Drylands, Palestine -- Introduction -- Materials and Methods -- Study Area -- Results

and Discussion -- Socio-Economic Characteristics -- Biophysical Characteristics -- Principle Component Analysis (PCA) -- Correlation -- Variation Between the Sites -- Vulnerability to Climate Change -- Conclusions -- References -- An Assessment of Meteorological Drought Variability in Representative Areas of Rajasthan -- Introduction -- Materials and Methods -- Study Area -- Data Collection -- Data Analysis -- Results and Discussion -- Inter Seasonal Variability and Trends.

Inter Annual Variability and Trends -- Drought Analysis Using SPI -- Impact of Drought on Crop Yield -- Conclusions -- Recommendations for Future Research -- References -- Building Resilience to Climate Change: A Case Study of Female Headed Households in Arid Region of Buhera District, Zimbabwe -- Introduction -- Materials and Methods -- Study Area -- Study Approach and Design -- Ethical Considerations -- Results and Discussion -- Adoption of New Farming Practices -- Reliance on External Support -- Conclusion -- References --

Halophytes of Semi-Arid Areas: Resources for Mitigation of Climate Change -- Introduction -- Effect of Soil Salinity on Plants --

Mechanisms of Salt Tolerance in Halophytes -- Halophytes of Gujarat Coastal Area -- Halophyte for Amelioration of Saline Soil -- Plant Growth-Promoting Rhizobacteria from Halophytes -- Stress Tolerant Genes from Halophytes -- Conclusions -- References -- Selection of Resilient Crop Species for Cultivation Under Projected Climate Change -- Introduction -- Materials and Methods -- Site and Species Selection -- Germination Experiment and Statistical Analysis --

Mechanistic Model and Climatic Parameters -- Results -- Discussion -- Species Vulnerability -- Spatial Vulnerability -- Conclusion -- Appendix 1: Scientific Name, Common Name, Seed Variety and Source of the Selected Species -- Appendix 2: Station Number, Site Name and Past Years of Climate Data (Tmax, Tmin, Rmean and Solar Radiation) Accessed for Three Sites -- References -- Livestock Based Production Systems for Climate Adaptation in Dryland Areas --

Introduction -- Impact of Climate Change on Livestock Production Systems -- Adaptation Strategies for Optimum Production from Livestock-Based Systems -- Scope and Prospects of the Livestock Based Production Systems -- Types of Livestock Based Production Systems and Domain Areas.

Crop-Livestock Integrated Farming System -- Crop-Livestock-Poultry Integrated Farming System -- Crop-Livestock-Poultry-Fishery Integrated Farming System -- Silvo-pastoral Systems -- Horti-pastoral Systems -- Management Alterations Needed to Combat Climate Change Impacts on Livestock Production Systems in Drylands -- Pre-requisites or Support Systems for Livestock-Based Production Systems in Drylands -- Probable Scenario in the Next 15-20 Years with the Livestock Based Production Systems -- Conclusions -- References -- Research

and Development in Dryland Agriculture -- Aqueous Leaf Extracts of Sunflower (*Helianthus annuus*) for Weed Management --

Introduction -- Materials and Methods -- Preparations of Leaf Extracts -- Experimental Design -- Weed Germination and Seedling Growth --

Data Collection -- Data Analysis -- Results -- Effect of Sunflower Crude Aqueous Leaf Extracts on Mean % Germination on 7 DAS --

Effect of Sunflower Crude Leaf Extract on Mean Plumule Length of Black Jack Seedlings 7 DAS -- Effect of Sunflower Crude Leaf Aqueous Extracts on Mean Radicle Length of Black Jack Seedlings on 7 DAS -- Discussion -- Conclusion -- References -- Food Systems in Dryland Communities: Challenges and Opportunities in Gutu District, Masvingo Province, Zimbabwe -- Introduction -- The Study Site -- Materials and Methods -- Data Collection -- Sampling Design -- Data Analysis

-- Results -- Crop Food Systems -- Livestock Food Systems -- Cross Cutting Issues Influencing Crop and Livestock Food Systems in Gutu -- Gutu Food Security Situation -- Discussion -- Conclusions -- References -- Potential of In-Field Rainwater Harvesting to Improve Resilience of Dryland Cropping in Smallholder Farms of Zimbabwe: A Review -- Introduction -- Materials and Methods -- Results and Discussion -- Rainwater Harvesting Strategies Promoted in Sub Saharan Africa (SSA) -- Tied Ridges.

Tumbuzika -- Zai Pits -- Benefits of In-Field Rainwater Harvesting -- Farmer Adoption and Knowledge of Rainwater Harvesting Strategies -- Conclusions -- References -- Developing Pathways for Sustainable Agricultural Development in Zimbabwe by 2030 -- Introduction -- Methodology -- Drylands in Zimbabwe: Impacts of Climate and Climate Change Adaptation -- Current Farming Systems -- Sensitivity to Climate Change Impacts -- Benefits to Adaptation -- Agricultural Development Pathways -- Discussion and Conclusions -- Development Pathways and Trade-Offs to Support Climate Change Initiatives and Action -- Lessons from Using Development Pathways for Informing Adaptation Decisions -- Priorities for Policy Support -- Upscaling Using Agro-Similarity Approaches -- References -- Role of Soil Survey and Soil Testing for Agricultural Development in Zimbabwe -- Introduction -- Materials and Methods -- Results -- Need for More Soil Surveys -- Cases of Soil Fertility and Other Soils Related Problems Identified in Different Areas -- Discussion -- Way Forward -- Conclusion -- References -- Potential Blue Zone Status of the Dryland Area of Buhera District in Zimbabwe: Development of a Hypothesis -- Introduction -- Literature Review -- Climate Change Adaptability -- Traditional Grains and Legume Cultivation -- The Use of Green Leafy Vegetables -- Water Conservation Systems -- Bioprocessing -- The Use of Traditional Fruits -- Potential Blue Zone Status -- Methodology -- The Hypothesis -- Discussion -- References -- Optimizing Productivity in Semi-Arid Dryland Agriculture for Developing Countries: Insights from Zimbabwe -- Introduction -- Objectives -- Methods -- The Zimbabwean Context -- Key Technological Issues in Dryland Agriculture -- Focus on Screening Early Maturing Crops -- Technologies to Reduce Evaporation Loss -- Techniques to Reduce Transpiration Losses.

Livestock Management Challenges in Drylands -- Water Productivity -- Ways to Improve Water Productivity in Dryland Regions -- Processes for Promoting Innovations -- References -- Land Use Systems and Soil Quality Indicators in a Fersiallitic (5e) Soil at Matopos Research Farm in Zimbabwe -- Introduction -- Materials and Methods -- Study Area -- Experimental Description -- Procedure for Soil Preparation -- Results -- Soil Physical Properties -- Soil Chemical and Exchangeable Properties -- Discussion -- Land Use Systems Influence Soil Characteristics -- Land Use Systems and Soil Quality Indicators -- Conclusions and Recommendations -- References -- The Effect of Ridging and Phosphorus Application on Neorautanenia Brachypus (Harms) Vegetative Growth and Tuber Development -- Introduction -- Materials and Methods -- Description of the Site -- Land Preparation and Planting -- Data Collection -- Statistical Analysis -- Results -- Tuber Establishment and Development -- The Effect of Ridging and Phosphorus Application on Tuber Initiation Distance -- The Effect of Ridging and Phosphorus Application on Tuber Weight -- Discussion -- Benefits of Ridging and P Application During the Establishment of Neorautanenia Brachypus -- Tuber Development Attributes of Neorautanenia Brachypus -- Conclusions -- References -- Effects of Different Seed Pre-treatments on Enhancing Germination of Selected

Indigenous Plant Species in Chivi District, Masvingo, Zimbabwe --  
Introduction -- Materials and Methods -- Study Area -- Seed Collection  
and Viability Test -- Experimental Design -- Data Collection  
and Analysis -- Results -- Viability Test -- Comparison of Germination  
Characteristics of *V. payos* and *A. garckeana* -- Effects of Pre-  
treatments on Germination Characteristics -- Discussion --  
Conclusions -- References.  
Impact of Mobile Night Kraals on Soil PH in Crop Fields-A Pilot Study.

---