

Drought Food And Agriculture Organization

The report assesses the occurrence and impacts of drought, the current policies underlying drought management as well as the mitigation measures and responses adopted in the Near East and North Africa region, with a focus on the Agriculture Sector. It is the third of a series of similar studies carried out in different regions and countries of the world, with the objective of shedding light on drought effects, sensitizing policy-makers for the much needed paradigm shift to pro-active drought management planning and providing guidance for the development of such policies. The studies are carried out by FAO, in collaboration with the Water for Food Institute, University of Nebraska-Lincoln, USA, as a direct contribution to FAO's Strategic Objective "increasing the resilience of livelihoods to disasters" and Strategic Objective "make agriculture, forestry and fisheries more productive and sustainable".

This report presents the proceedings of the Regional Collaborate Platform workshop of the Water Scarcity Initiative. It provides a summary of discussions by thematic area covering the 3 key topics of water consumption, crop water productivity, and drought management. One of the main objectives of the workshop was to develop an Operational Work Plan based on the main recommendations made by each country following the discussions addressing the 3 key topics. In this report, the recommendations are made for each country based on their priorities and needs, and constitute the basis for consultations between the relevant institutions on the country level towards the elaboration of a comprehensive national work plan to be implemented into specific actions.

The eastern Africa sub-region has experienced recurrent drought and other climate-related impacts, with damaging effects on agriculture, food security and development. This report discusses institutional improvements for addressing disaster risks and presents options to strengthen the climate resilience of the agriculture and food sectors.

By 2050, we will have ten billion mouths to feed in a world profoundly altered by environmental change. How will we meet this challenge? In *How to Feed the World*, a diverse group of experts from Purdue University break down this crucial question by tackling big issues one-by-one. Covering population, water, land, climate change, technology, food systems, trade, food waste and loss, health, social buy-in, communication, and equal access to food, the book reveals a complex web of challenges. Contributors unite from different perspectives and disciplines, ranging from agronomy and hydrology to economics. The resulting collection is an accessible but wide-ranging look at the modern food system.

The impact of drought in agriculture is one of the most complex natural hazards to predict and mitigate. It carries a constant risk for most smallholder farmers around the world. According to studies conducted by the Food and Agriculture Organization of the United Nations (FAO), 83 percent of all damages and losses caused globally by drought between 2006 and 2016 have been absorbed by agriculture, putting a good part of the world population at risk of food insecurity. The guide aims to guide governments and other relevant actors in the development of early warning - early actions on agricultural drought plans that must be implemented before a drought event has significant impacts and causes damages and losses that could eventually become a disaster. The manual complements other instruments used at global and local levels to develop EWEA on agricultural and response plans related to drought.

The State of Food and Agriculture 2000 reports on current developments and issues of importance for world agriculture, analysing global agricultural

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trends as well as the broader economic environments surrounding the agricultural sector in a comprehensive world review ... An important feature of this year's issue is the special chapter, World food and agriculture: lessons from the past 50 years, which gives an overview of developments that have taken place in world agriculture and food security over the past half-century ... -- from Back Cover.

The State of the World's Land and Water Resources for Food and Agriculture is FAO's first flagship publication on the global status of land and water resources. It is an 'advocacy' report, to be published every three to five years, and targeted at senior level decision makers in agriculture as well as in other sectors. SOLAW is aimed at sensitizing its target audience on the status of land resources at global and regional levels and FAO's viewpoint on appropriate recommendations for policy formulation. SOLAW focuses on these key dimensions of analysis: (i) quantity, quality of land and water resources, (ii) the rate of use and sustainable management of these resources in the context of relevant socio-economic driving factors and concerns, including food security and poverty, and climate change. This is the first time that a global, baseline status report on land and water resources has been made. It is based on several global spatial databases (e.g. land suitability for agriculture, land use and management, land and water degradation and depletion) for which FAO is the world-recognized data source. Topical and emerging issues on land and water are dealt with in an integrated rather than sectoral manner. The implications of the status and trends are used to advocate remedial interventions which are tailored to major farming systems within different geographic regions.

[Drought characteristics and management in North Africa and the Near East](#)

[Near East and North Africa: Regional Overview of Food Insecurity 2016](#)

[Drought in the Sahel](#)

[FAO in ...](#)

[Project code: GCP/ETH/089/EC](#)

[Climate-change vulnerability in rural Zambia: the impact of an El Ni ñ o-induced shock on income and productivity](#)

[A History since 1945](#)

[The Historians' History of the World](#)

[Sustainable Agriculture Water Management is Key to Ending Hunger and to Climate Change Adaptation](#)

[FAO Agricultural Development Economics Working Paper 19-02](#)

[Agriculture Sector Support Analysis](#)

[State of Food and Agriculture](#)

[Nature-Based Solutions for agricultural water management and food security](#)

Global climate studies show that not only temperatures are increasing and precipitation levels are becoming more varied, all projections indicate these trends will continue. It is therefore imperative that we understand changes in climate over agricultural areas and their impacts on agriculture production and food security. This study presents new analysis on the impact of changing climate on agriculture and food security, by examining the evidence on recent climate variability and extremes over agricultural areas and the impact of these on agriculture and food security. It shows that

more countries are exposed to increasing climate variability and extremes and the frequency (the number of years exposed in a five-year period) and intensity (the number of types of climate extremes in a five-year period) of exposure over agricultural areas have increased. The findings of this study are compelling and bring urgency to the fact that climate variability and extremes are proliferating and intensifying and are contributing to a rise in global hunger. The world's 2.5 billion small-scale farmers, herders, fishers, and forest-dependent people, who derive their food and income from renewable natural resources, are most at risk and affected. Actions to strengthen the resilience of livelihoods and food systems to climate variability and extremes urgently need to be scaled up and accelerated.

ctives of the study are: (i) to review current knowledge on vulnerability, past trends in climate, and impacts of climate variability and change on agriculture sector, and (ii) to explore technical and policy alternatives in order to cope with and adapt to impacts of climate variability and change more effectively. The study identified what the potential impacts are, considered what interventions are appropriate, and if and where they should occur. The scope of the study focused on broader policy directions and investment priorities in relation to climate change adaptation. The first two chapters of this book present overall background on the agriculture sector and vulnerability context. Chapter 2 specifically presents vulnerability of agro-ecosystems and food production systems in both temporal and special dimensions. Chapter 3 elaborates on the nature of climate variability and expected future changes in climate. The past trends in climate were described based on observation, analysi

Unless action is taken now to make agriculture more sustainable, productive and resilient, climate change impacts will seriously compromise food production in countries and regions that are already highly food-insecure. The Paris Agreement, adopted in December 2015, represents a new beginning in the global effort to stabilize the climate before it is too late. It recognizes the importance of food security in the international response to climate change, as reflected by many countries prominent focus on the agriculture sector in their planned contributions to adaptation and mitigation. To help put those plans into action, this report identifies strategies, financing opportunities, and data and information needs. It also describes transformative policies and institutions that can overcome barriers to implementation. The State of Food and Agriculture is produced annually. Each edition contains an overview of the current global agricultural situation, as well as more in-depth coverage of a topical theme."

The In Brief version of the FAO flagship publication, In Brief to The State of Food and Agriculture 2020, contains the key messages and main points from the publication and is aimed at the media, policy makers and a more general public. Genetic resources for food and agriculture play a crucial role in food security, nutrition and livelihoods and in the provision of environmental services. They are key components of sustainability, resilience and adaptability in production systems. They underpin the ability of crops, livestock, aquatic organisms and forest trees to withstand a range of harsh conditions. Climate change poses new challenges to the management of the world's genetic resources for food and

agriculture, but it also underlines their importance. At the request of the Commission on Genetic Resources for Food and Agriculture, FAO prepared thematic studies on the interactions between climate change and plant, animal, forest, aquatic, invertebrate and micro-organism genetic resources. This publication summarizes the results of these studies. During the 2015–2016 agricultural season, Southern Africa experienced intense drought due to one of the strongest El Niño events in 50 years. With 70 percent of the population reliant on agriculture, El Niño had a direct impact on food security and caused loss of income across crop and livestock value chains. FAO activated a corporate surge support and launched its Southern Africa El Niño Response Plan, appealing for USD 109 million to support government efforts to rebuild and fortify agricultural livelihoods, restoring agricultural production, incomes and assets and increasing household access to nutritious food. FAO country teams translated the regional plan into tailored intervention packages on the ground. But while agro-meteorological and early-warning alerts were timely, they did not trigger early action. The evaluation calls on FAO to initiate a systematic approach to adaptive programming, to conduct an in-depth analysis of the factors that slowed delivery in Southern Africa, to expand on the targeting of different groups, so as to meet the needs of farmers with varying degrees of vulnerability, and to bolster learning, information-sharing and advocacy efforts across countries.

These guidelines have been prepared to assist forest managers to better assess and respond to climate change challenges and opportunities at the forest management unit level. The actions they propose are relevant to all kinds of forest managers - such as individual forest owners, private forest enterprises, public-sector agencies, indigenous groups and community forest organisations. They are applicable in all forests types and regions and for all management objectives. This document complements a set of guidelines prepared by FAO in 2010 to support policy-makers in integrating climate change concerns into new or existing forest policies and national forests programmes.

[*Understanding the Drought Impact of El Nino on the Global Agricultural Areas*](#)

[*A Comprehensive Narrative of the Rise and Development of Nations from the Earliest Times*](#)

[*Drought characteristics and management in Central Asia and Turkey*](#)

[*International Relief Operations, 1973-1975 : a Report*](#)

[*Mainstreaming climate-related disaster risk reduction in eastern Africa's agriculture and food sectors 2016*](#)

[*2017 Regional Overview of Food Security and Nutrition in Africa*](#)

[*Drought-resistant Soils*](#)

[*Building climate resilience for food security and nutrition*](#)

[*Proceedings of the Regional Stakeholders Workshop 27-29 October 2015*](#)

[*Operationalizing the Regional Collaborative Platform of the Water Scarcity Initiative to address water consumption, water*](#)

[productivity and drought management in Agriculture](#)
[Climate Change Guidelines for Forest Managers](#)
[The State of Food and Agriculture 2019](#)

This publication demonstrates the benefits of neglected and underutilized species, including amaranth, sorghum and cowpea, and their potential contribution to achieving Zero Hunger in South and Southeast Asia.

"Climate-smart agriculture, forestry and fisheries (CSA), contributes to the achievement of sustainable development goals. It integrates the three dimensions of sustainable development (economic, social and environmental) by jointly addressing food security and climate challenges. It is composed of three main pillars: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; reducing and/or removing greenhouse gases emissions, where possible. The purpose of the sourcebook is to further elaborate the concept of CSA and demonstrate its potential, as well as limitations. It aims to help decision makers at a number of levels (including political administrators and natural resource managers) to understand the different options that are available for planning, policies and investments and the practices that are suitable for making different agricultural sectors, landscapes and food systems more climate-smart. This sourcebook is a reference tool for planners, practitioners and policy makers working in agriculture, forestry and fisheries at national and subnational levels." -- Back cover.

The impacts of increasing climatic variability and change are global concerns but in Bangladesh, where large numbers of people are chronically exposed and vulnerable to a range of natural hazards, they are particularly critical. This resource book, Climate variability and change: adaptation to drought in Bangladesh, has been tested and prepared as a reference and guide for further training and capacity building of agricultural extension workers and development professionals to deal with climate change impacts and adaptation, using the example of drought-prone areas of Bangladesh. It also presents suggestions for a three-day training course that would be readily adaptable for any areas of Bangladesh affected by climate-related risks. The information presented on climate change adaptation would enable participants to prepare, demonstrate and implement location-specific adaptation practices and, thus, to improve the adaptive capacity of rural livelihoods to climate change in agriculture and allied sectors.

Most countries in the Near East and North Africa saw a steady improvement in food security and nutrition up to the beginning of the decade. Food production was rising and undernourishment and poverty were receding. However, the situation has deteriorated since 2012, largely driven by increasing conflicts and protracted crises as well as water scarcity and climate change.

The rural poor, who are the most vulnerable, are likely to be disproportionately affected.

Soil organic matter - the product of on-site biological decomposition - affects the chemical and physical properties of the soil and its overall health. Its composition and breakdown rate affect: the soil structure and porosity; the water infiltration rate and moisture holding capacity of soils; the diversity and biological activity of soil organisms; and plant nutrient availability. This document concentrates on the organic matter dynamics of cropping soils and discusses the circumstances that deplete organic matter and their negative outcomes. It then moves on to more proactive solutions. It reviews a "basket" of practices in order to show how they can increase organic matter content and discusses the land and cropping benefits that then accrue.--Publisher's description. This year's edition of the Africa Regional Overview of Food Security and Nutrition reports that after a prolonged decline hunger appears to be on the rise. In sub-Saharan Africa there were about 224 million undernourished people in sub-Saharan Africa in 2016, up from 200 million in 2015. In many countries, the worsening situation in 2015 and 2016 can be attributed to adverse climatic conditions, often linked to the El Niño phenomenon, resulting in poor harvests and the loss of livestock. Conflict, sometimes in combination with drought or floods, also contributed to severe food insecurity in several countries. Lower commodity prices and a difficult global economic environment have furthermore contributed to the worsening food security situation. The worrying trend in undernourishment is not yet reflected in the series of indicators referring to nutritional outcomes in the region, with the prevalence of stunting and wasting for children under the age of five continuing to decline gradually. However, progress towards the World Health Assembly global nutrition targets has been generally poor. While a relatively large proportion of countries are on track to meeting the target for overweight in children, the rates for adult obesity are soaring in all regions and are especially high in Southern Africa. The report also finds that across the board, countries have developed and are developing policy frameworks and investment plans that are aligned, or efforts are being made to align them, with the goals of the Malabo Declaration and SDG 2. Through CAADP, policy processes are coherent, and this initiative has raised the profile of agriculture and heavily influenced agricultural policy at regional and national levels. However, the worrying trends in undernourishment underline the need for even greater efforts to achieve the SDG 2 by 2030. The thematic part of the report focuses on the food security and nutrition-conflict nexus. Conflict is not only an increasingly important cause of food insecurity and malnutrition but food insecurity and malnutrition can also become conflict multipliers. Addressing the causes of conflicts and supporting food security and livelihoods can help build resilience to conflict and contribute to sustaining peace.

[FUTURE SMART FOOD](#)

[Smallholder adaptive responses to seasonal weather forecasts](#)

[Analytical report](#)

[The impact of climate variability and extremes on agriculture and food security - An analysis of the evidence and case studies](#)

[The State of the World's Land and Water Resources for Food and Agriculture](#)

[Climate Change and Food Security](#)

[Overcoming water challenges in agriculture](#)

[Coping with Climate Change](#)

[A case study of the 2015/16 El Niño Southern Oscillation in Zambia](#)

[Climate Variability and Change](#)

[Final evaluation of "Strengthening institutionalized subnational coordination structures and harmonization mechanisms" in Ethiopia](#)

[Adaptation to Drought in Bangladesh : a Resource Book and Training Guide](#)

[The State of Food and Agriculture 2000](#)

The need to reduce food loss and waste is firmly embedded in the 2030 Agenda for Sustainable Development. Food loss and waste reduction is considered important for improving food security and nutrition, promoting environmental sustainability and lowering production costs.

However, efforts to reduce food loss and waste will only be effective if informed by a solid understanding of the problem. This report provides new estimates of the percentage of the world's food lost from production up to the retail level. The report also finds a vast diversity in existing estimates of losses, even for the same commodities and for the same stages in the supply chain. Clearly identifying and understanding critical loss points in specific supply chains – where considerable potential exists for reducing food losses – is crucial to deciding on appropriate measures. The report provides some guiding principles for interventions based on the objectives being pursued through food loss and waste reductions, be they in improved economic efficiency, food security and nutrition, or environmental sustainability.

This book is the first comprehensive account of the numerous attempts made since the Second World War to provide food security for all. It provides a reference source for all those involved and interested in food security issues.

This emergency response plan represents cumulative steps taken since September 2018 to protect and restore agricultural production, incomes and assets, while enhancing nutritious and diversified diets of the most vulnerable farming and agropastoral households affected by the drought conditions and other compounding shocks in the countries at highest risk. Aligned to the FAO 2018–2021 Resilience Strategy for Southern Africa, and informed by the relevant recommendations from the SADC Regional Vulnerability Assessment and Analysis Programme Meetings, the overarching aim of the plan is to contribute to resilient agriculture-based livelihoods that enhance food security and nutrition in the face of more frequent and intense weather extremes.

"During El Niño episodes the normal patterns of tropical precipitation and atmospheric circulation become disrupted triggering extreme climate events around the globe: droughts, floods and affecting the intensity and frequency of hurricanes. Disasters create poverty traps that increase the prevalence of food insecurity and malnutrition. Agriculture is one of the main sectors of the economy that could be severely

affected by El Niño event. FAO monitors the El Niño-Southern Oscillation (ENSO) phenomenon, among other weather related hazards, with a special focus on the potential impacts on the agricultural sector. The objective of this study is to enhance our understanding the El Niño phenomenon using FAO's Agricultural Stress Index System (ASIS). This study is carried out under the auspices of the new FAO Strategic Framework, for the Strategic Objective 5 "Increase the resilience of livelihoods to threats and crises." The study outcomes are expected to enhance further discussions on our understanding of the El Niño Phenomenon and add to the growing literature. This would in turn improve effective early warning capabilities of FAO and partners to issue and trigger timely disaster risk reduction measures."--Resource description page (viewed March 9, 2015).

The conference was organised to identify, describe, discuss and promote actions that will assist farmers to improve water-use efficiency in rainfed agriculture and drought-proof their systems. The publication contains an analytical summary of the conference discussions, abstracts of papers submitted during the conference and discussion papers prepared to introduce the different topics. The full document is included on the accompanying CD-ROM.

The report assesses the occurrence and impacts of drought, the current policies underlying drought management as well as the mitigation measures and responses adopted in Central Asia and Turkey, with a focus on Agriculture Sector. It is part of a series of similar studies carried out in different regions and countries of the world, with the objective of shedding light on drought effects, sensitizing policy-makers for the much needed paradigm shift to pro-active drought management planning and providing guidance for the development of such policies. The studies are carried out by FAO, in collaboration with the Water for Food Institute, University of Nebraska-Lincoln, USA, as a direct contribution to FAO's Strategic Objective "Increasing the resilience of livelihoods to threats and crises".

Accessibility to clean and sufficient water resources for agriculture is key in feeding the steadily increasing world population in a sustainable manner. Nature-Based Solutions (NBS) offer a promising contribution to enhance availability and quality of water for productive purposes and human consumption, while simultaneously striving to preserve the integrity and intrinsic value of the ecosystems. Implementing successful NBS for water management, however, is not an easy task, since many ecosystems are already severely degraded and exploited beyond their regenerative capacity. Furthermore, ecosystems are large and complex and the many stakeholders involved may have conflicting interests. Hence, implementation of NBS requires a structured and comprehensive approach that starts with the valuation of the services provided by the ecosystem. The whole set of use and non-use values, in monetary terms, provides a factual basis to guide the implementation of NBS, which is ideally based on transdisciplinary principles, i.e. complemented with scientific and case-specific knowledge of the ecosystem in an adaptive decision-making process that involves the relevant stakeholders. This discussion paper evaluated twenty-one NBS case studies using a non-representative sample, to learn from successful and failed experiences and to identify possible causalities among factors that characterize the implementation of NBS. The case studies give a minor role to valuation of ecosystem services, an area for which the literature is still developing guidance. Less successful water management projects tend to suffer from inadequate factual and scientific basis and uncoordinated or insufficient stakeholder involvement and lack of long term planning. Successful case studies point to satisfactory understanding of the functioning of ecosystems and importance of multi-stakeholder platforms, well-identified funding schemes, realistic monitoring and evaluation

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systems and endurance of its promoters.

[*Climate Smart Agriculture Sourcebook*](#)

[*Enhancing food security and nutrition in the face of increasing weather extremes*](#)

[*How to Feed the World*](#)

[*In Brief The State of Food and Agriculture 2020*](#)

[*Southern Africa Emergency Response Plan 2019–2020*](#)

[*Effects of the Drought on Food and Food Aid in Senegal*](#)

[*Climate Change, Water and Food Security*](#)

[*Optimization of Soil Moisture for Sustainable Plant Production : Proceedings of the Electronic Conference Organized by the FAO Land and Water Development Division*](#)

[*Agriculture, Food and Nutrition for Africa*](#)

[*Drought in the Sahel: International Relief Operations, 1973-1975*](#)

[*Practical guidelines for Early Warning – Early Action plans on agricultural drought*](#)

[*The Importance of Soil Organic Matter*](#)

[*Employment of Drought Animals in Agriculture*](#)

New evidence this year corroborates the rise in world hunger observed in this report last year, sending a warning that more action is needed if we aspire to end world hunger and malnutrition in all its forms by 2030. Updated estimates show the number of people who are hungry has been growing over the past three years, returning to prevailing levels from almost a decade ago. Although progress has been made in reducing child stunting, over 22 percent of children under five years of age are still affected. Other forms of malnutrition are also growing: adult obesity continues to increase in countries irrespective of their income levels, and many countries are coping with multiple forms of malnutrition at the same time – overweight and obesity, as well as anaemia in women, and child stunting and wasting. Last year's report showed that the failure to reduce world hunger is closely associated with the increase in conflict and violence in parts of the world. In some countries, initial evidence showed climate-related events were also undermining food security and nutrition. This year's report goes further to show that climate variability and extremes – even without conflict – are key drivers behind the increase in global hunger and one of the leading causes of severe food crises and their impact on people's nutrition and health. Climate change and exposure to more complex, frequent and intense climate extremes are threatening to erode and reverse gains in ending hunger and malnutrition. Furthermore, hunger is significantly worse in countries where agriculture systems are highly sensitive to rainfall, drought, and severe drought, and where the livelihood of a high proportion of the population depends on agriculture. The findings of the report reveal new challenges to ending hunger, food insecurity and all forms of malnutrition. There is an urgent need to accelerate actions that strengthen resilience and adaptive capacity of people and their livelihoods to climate variability and extremes. The findings are detailed in the 2018 edition of The State of Food Security and Nutrition in the World.

This paper examines the impacts of the El Niño during the 2015/2016 season on maize productivity and income in rural Zambia. The analysis aims at identifying whether and how sustainable land management (SLM) practices and livelihood diversification strategies contributed to moderate the impacts of such a weather shock. The analysis was conducted using a specifically designed survey, the Niño Impact Assessment Survey (ENIAS), which is combined with the 2015 wave of the Rural Agricultural Livelihoods Surveys (RALIS) as well as high resolution rainfall data from the Africa Rainfall Climatology version 2 (ARC2). This unique, integrated data set provides an opportunity to understand the impacts of shocks like El Niño that are expected to get more frequent and severe in Zambia, and to understand the agricultural practices and livelihood strategies that can buffer household production and welfare from the impacts of such shocks to drive policy recommendations. Results show that households affected by the drought experienced a decrease in maize yields around 20 percent, as well as a reduction in income up to 37 percent, all else equal. Practices that moderated the impact of the drought included livestock diversification, income diversification, and the adoption of agro-forestry. Interestingly, the use of minimum soil tillage was not effective in moderating the yield and income effects of the drought. Policies to support livestock sector growth, agroforestry adoption, and off-farm diversification should be prioritized as effective drought resiliency strategies in Zambia.

Does receiving information on potential adverse weather conditions induce adaptive responses by smallholders? Do market information constraints limit the adoption of these practices? This report examines these questions using a unique panel dataset of Zambian smallholder households collected before and after 2015/16 El Niño Southern Oscillation event. The analysis finds that farmers receiving drought seasonal forecasts are more likely to integrate drought tolerant crops into their cropping systems and to acquire improved maize varieties. These farmers, on average, are found to apply double the quantity of improved maize seeds than farmers residing in drought-prone zones but not receiving weather information. Larger and more competitive private output markets function as enablers of smallholder adaptive responses to seasonal forecast information, as farmers with improved market access are more likely to shift toward drought resilient technologies than farmers with low output market access. Three policy recommendations emerge from the findings. First, if seasonal forecast information can induce adaptive responses by farmers, there is the need of improving access to this information, particularly for households in remote areas or limited asset ownership. Second, targeting voucher-based farmer input support based on seasonal forecast information can enable the crowding in of private investments in these regions and increase the adaptive responses of farmers, particularly resource constrained farmers. Finally, this analysis suggests that policies that incentivize private investment in agricultural markets should be considered within the broader framework of smallholder climate adaptation and resilience in Zambia. This includes strategies to improve agricultural trade predictability.

Recurrent droughts in Ethiopia have been contributing to chronic food insecurity, deterioration of livelihoods and weakening communities to withstand future shocks. Following the 2011 food crisis in the Horn of Africa, 'building resilience' became a priority agenda for the international community to move from the division of emergency and development programming to a more holistic and complementary approach for addressing the root cause of disaster risk and vulnerability factors of recurrent drought. The program implemented by FAO between 2015 and 2019, aimed to support and reinforce existing coordination mechanisms at the regional

zonal administration levels and enhance linkages between short-term humanitarian interventions and long term development in Ethiopia. The evaluation found that the project was highly relevant to the current context in Ethiopia, where preparedness and longer-term resilience have become priority areas of focus for all actors in humanitarian and development initiatives. Resilience coordination mechanisms have been strengthened at regional levels. However, the sustainability of these efforts will depend on the commitment of Government and partners to continue strengthening the existing coordination mechanisms and their ability to convene development partners. Roughly a billion people around the world continue to live in state of chronic hunger and food insecurity. Unfortunately, efforts to improve their livelihoods must now unfold in the context of a rapidly changing climate, in which warming temperatures and changing rainfall regimes could threaten the basic productivity of the agricultural systems on which most of the world's poor directly depend. While the extent to which climate change represents a minor impediment or an existential threat to development is an area of substantial controversy, various conclusions wrought from different methodologies and based on different data. This book aims to resolve some of the controversy by exploring and comparing the different methodologies and data that scientists use to understand climate's effects on food security. It explains the nature of the climate threat, the ways in which crops and farmers might respond, and the potential role for public investment to help agriculture adapt to a warmer world. This broader understanding should prove useful to both scientists charged with quantifying climate threats, and policy-makers responsible for crucial decisions about how to respond. The book is especially suitable as a companion to an interdisciplinary undergraduate or graduate level class.

[A Resource Book for Teachers of Agriculture](#)

[Rediscovering hidden treasures of neglected and underutilized species for Zero Hunger in Asia](#)

[Moving forward on food loss and waste reduction](#)

[Managing Systems at Risk](#)

[World Food Security](#)

[Adapting Agriculture to a Warmer World](#)

[The Roles of Genetic Resources for Food and Agriculture](#)

[Key to Drought-resistant Soil and Sustained Food Production](#)

[The State of Food Security and Nutrition in the World 2018](#)

[Evaluation of FAO's contribution to building resilience to El Niño-induced drought in Southern Africa 2016-2017](#)

[Climate Change and Agriculture in Jamaica](#)

[The Food Security and Nutrition-conflict Nexus: Building Resilience for Food Security, Nutrition and Peace](#)

[Background paper for The State of Food Security and Nutrition in the World 2018](#)