

## Prospects And Challenges Of Agricultural Mechanization In

Genetically engineered (GE) crops were first introduced commercially in the 1990s. After two decades of production, some groups and individuals remain critical of the technology based on their concerns about possible adverse effects on human health, the environment, and ethical considerations. At the same time, others are concerned that the technology is not reaching its potential to improve human health and the environment because of stringent regulations and reduced public funding to develop products offering more benefits to society. While the debate about these and other questions related to the genetic engineering techniques of the first 20 years goes on, emerging genetic-engineering technologies are adding new complexities to the conversation. Genetically Engineered Crops builds on previous related Academies reports published between 1987 and 2010 by undertaking a retrospective examination of the purported positive and adverse effects of GE crops and to anticipate what emerging genetic-engineering technologies hold for the future. This report indicates where there are uncertainties about the economic, agronomic, health, safety, or other impacts of GE crops and food, and makes recommendations to fill gaps in safety assessments, increase regulatory clarity, and improve innovations in and access to GE technology.

The purpose of this study was to find out the problem of teaching and learning of agricultural science in tertiary institution like National Open University of Nigeria. A total sample size of fifty respondents were interviewed and administered questionnaires, the findings were analyzed and discussed. The result of the study revealed that insufficient land, inadequate simple farm tools, insufficient of improved instructional materials and lack of agricultural laboratory equipment are some of the factors affecting teaching and learning of agricultural science in area of study. It was recommended that, the government should as a matter of fact supply the relevant and much needed in teaching and learning to these tertiary institutions since science can best be learnt through experimentation. There should be provision of teachers with practical agricultural science qualification to handle the subject in schools. The objectives of the study were to: find out the current status in teaching and learning of agriculture, uncover the institutional-based challenges and determine the non-institutional challenges in the teaching and learning of agriculture in secondary schools. Descriptive Survey research design was used for the study. Questionnaire and observation checklist were used as the instrument for data collection.

Forage crops are an essential component of livestock's diet. Production and availability of sufficiently good quality forage under diverse ecological dynamics are fundamental to develop an efficient and productive livestock industry. Growers worldwide, especially in developing and underdeveloped countries, face significant challenges in producing sufficient winter fodder. The livestock population is increasing at high rates, and its feed requirement is increasing accordingly. Fodder crops are the leading and cheapest source of feed for livestock; however, the shortage of fodder production is the primary limiting factor for livestock production. This book features an extensive overview of literature providing information on winter fodders used in livestock management. Key features Discusses breeding strategies of winter fodders through conventional approaches and biotechnology. Highlights production, agronomy, and bioecology of winter fodder crops. Provides comprehensive information on the ecological dynamics of winter fodders. Describes the use of precision agriculture for mitigating the effect of climate change on winter fodders. Relays challenges of winter fodder crops on account of microbes, toxins, pests, and diseases. This book is written for researchers and practitioners in agronomy, biotechnology, bioecology and is a comprehensive guide for improving winter fodder production. Over the ten-year Outlook period, agricultural markets are projected to remain weak, with growth in China weakening and biofuel policies having less impact on markets than in the past.

A new economic opportunity for sub-Saharan Africa is looming large: biofuel production. Rapidly rising energy prices are expected to remain high for an extended period of time because of the increasing demand in prospering and populous countries such as China and India, the depletion of easily accessible supplies of crude oil, and concern over global climate change. As a result, there is renewed interest in biofuels as an alternative to fossil fuels. Africa is uniquely positioned to produce these new cash crops for both domestic use and export. The region has abundant land resources and preferential access to protected markets with higher-than-world-market prices. The rapid growth in the demand for transport fuels in Africa and high fuel prices create domestic markets for biofuels. The European Union and the United States have approved legislation that requires large increases in the consumption of biofuels over at least the next decade. Imports are expected to be needed to meet these mandates, thus opening the door to African and other developing countries that can produce biofuels or feedstocks for biofuels competitively. Expanding the production of crops for biofuels will affect the entire rural sector in Africa as resources are shifted away from traditional crops and the prices of all agricultural commodities rise. Even smallholders can participate in producing biofuel crops. To promote the sustainability and significant contribution of this enterprise, Biofuels in Africa provides guidance in formulating suitable policy regimes, which are based on protecting the rights of current land users, developing revenue-sharing schemes with local communities, safeguarding the environment and biodiversity, expanding institutional capacity, formulating new regulations and procedures, and emulating best practices from experienced countries. This volume will be of value to anyone interested in biofuels, including policy makers, development practitioners, private investors, researchers, and the general public. Now that African countries are trying to significantly increase their energy supply systems, biofuels are an attractive option using both dedicated crops and agricultural waste. This book provides guidance for them to develop a suitable policy regime for a significant contribution by biofuels. Professor Ogunlade R. Davidson, Minister of Energy and Water Resources, Sierra Leone Biofuels in Africa is a sorely needed resource for our understanding of the problems of expanding biofuels production in Africa. A high point of the book is a description of the projects that were started in several countries. A very useful book! Professor Jos Goldemberg, University of S o Paulo, Brazil As Africa most likely will play the same role for global biofuels as the Middle East does for oil, this comprehensive book on African biofuels should be compulsory reading for anyone interested in either African development or biofuels. The book captures the essence of long-term drivers and opportunities as well the complex challenges for investors and society of this huge emerging industry. Per Carstedt, Executive Chairman, EcoEnergy Africa

... Provides a medium term assessment of future trends and prospects in the major agricultural commodity markets of the OECD countries. It highlights current and emerging policy issues of particular importance for markets and trade--Foreword.

Agricultural Biotechnology: Challenges and Prospects provides the latest research in biotechnology in three major areas: benefits, analytical methodologies, and safety assessment.

Many African countries have experienced unprecedented rates of economic growth in recent years, yet their economic

transformations display features that could constrain their future growth prospects. Patterns of urbanization without industrialization, rapid growth of low productivity jobs in the informal economy, and a neglected agricultural sector with increased need for important foods are all areas for concern as Africa continues to develop. Using Ghana as a case study, Ghana's Economic and Agricultural Transformation: Past Performance and Future Prospects integrates economic and political analysis to explore the challenges and opportunities of Africa's transformation. It examines Ghana's overall economic performance since it went through a major Structural Adjustment Program in the early 1980s, and provides an in-depth empirical analysis of the broader economy and the agricultural sector over the last four decades. It explains why Ghana has not transformed its economy more substantially, why its agriculture sector has not played a greater role beyond cocoa production, and what must be done in the future to achieve a successful transformation. In addressing these puzzles Ghana's Economic and Agricultural Transformation considers what the rest of the world can learn from Ghana's experience.

"This book is a comprehensive collection of research on the emerging trends and advances in the global application of information and communication technology use in agriculture and rural development"--Provided by publisher.

Challenges and Prospects of Agricultural Production and Productivity

The Agricultural Outlook 2019-2028 is a collaborative effort of the Organisation for Economic Co-operation and Development (OECD) and the Food and Agriculture Organization (FAO) of the United Nations. It brings together the commodity, policy and country expertise of both organisations as well ...

As the remaining agriculture-related NAFTA clauses became fully implemented on January 1st, 2008, there is much evidence of the Agreement's benefits to all three members in the forms of the agricultural trade expansion within the region and the growth of foreign direct investments in members' agri-food value chains. Better coordination would help the three governments to successfully address ongoing challenges such as trade disputes, security measures and animal health diseases. It would also help their economies and the agricultural sectors to continue capitalizing on opportunities that freer trade offers.

Edible insects have always been a part of human diets, but in some societies there remains a degree of disdain and disgust for their consumption. Insects offer a significant opportunity to merge traditional knowledge and modern science to improve human food security worldwide. This publication describes the contribution of insects to food security and examines future prospects for raising insects at a commercial scale to improve food and feed production, diversify diets, and support livelihoods in both developing and developed countries. Edible insects are a promising alternative to the conventional production of meat, either for direct human consumption or for indirect use as feedstock. This publication will boost awareness of the many valuable roles that insects play in sustaining nature and human life, and it will stimulate debate on the expansion of the use of insects as food and feed.

This book identifies the main challenges Chinese agriculture is confronting and considers how these challenges might be met. The performance of China's agricultural production is comprehensively assessed while the factors that affect agricultural productivity are examined through detailed econometric analysis and up to date nationally representative data.

The Pressure Of Population Growth On The Cultivated Land Has Been So Great That Land Has Come To Refuse Any Further Yield. Drylands Are The Only Hope Of The People Now. The Present Study Involves All The Relevant Aspects And Problems Of Dryland Farming, Including The Amelioration, Delimitation And Localisation Of Dryland Areas On The One Hand, And Tracing Breeding Grounds For Dryland Crops, With Silvi-Pastoral, Agro-Forestry And Agro-Pastoral Systems On The Other. Thus, Appropriate Farming Systems Are Desired For Utilising The Marginal And Submarginal Lands In Arid And Semi-Arid Regions. The Study Deals With The Wide Range Of Application Of The New Methods And Techniques And Implication Of The Changing Scenario Of The Agricultural Complexities In The Changed Perspective. Thus, It Will Prove To Be A Pioneering Work Of Its Kind Done So Far. Contents Chapter 1: Introduction; Chapter 2: Resource Background; Chapter 3: Problem And Methods Of Dryland Farming; Chapter 4: Drainage Systems And Watershed Areas; Chapter 5: The Limits Of Dryland Farming; Chapter 6: Type Of Farming And Systems; Chapter 7: Potential Areas Of Dryland Farming; Chapter 8: Some Case Studies; Chapter 9: Some Issues And Challenges Of Dryland Farming; Chapter 10: Conclusion: Prospects And Problems.

Seminar paper from the year 2013 in the subject Agrarian Studies, grade: A, Wollega University (Haro Sabu Agricultural Research Center), language: English, abstract: Agricultural production in Ethiopia is characterized by subsistence orientation, low productivity, low level of technology and inputs, lack of infrastructures and market institutions, and extremely vulnerable to rainfall variability. Productivity performance in the agriculture sector is critical to improvement in overall economic well-being in Ethiopia. Low availability of improved or hybrid seed, lack of seed multiplication capacity, low profitability and efficiency of fertilizer, lack of irrigation development, lack of transport infrastructure, inaccessibility of market and prevalence of land degradation, unfertile soil, overgrazing, deforestation and desertification are among the constraints to agricultural productivity during last period. However, in 2011 the sector grew by 9% driven by cereal production which reached a record high of 19.10 million tons in Ethiopia.

Modern agriculture and food systems, including organic agriculture, are undergoing a technological and structural modernisation and are faced with a growing globalisation. Organic agriculture (OA) can be seen as pioneering efforts to create sustainable development based on other principles than mainstream agriculture. There are however large differences between the challenges connected to, on one hand, modern farming and consumption in high-income countries and, on the other, smallholder farmers and resource poor consumers in low-income countries. The point of departure is the increasing globalisation and the production and trade of food and fodder and how this influences the role of OA. This book provides an overview of the potential role and challenges of organic agriculture in this global perspective, as seen from different perspectives such as sustainability, food security and fair trade.

The OECD-FAO Agricultural Outlook 2016-2025 provides an assessment of prospects for the coming decade of the agricultural commodity markets across 41 countries and 12 regions, including OECD countries and key agricultural producers, such as India, China, Brazil, the Russian Federation and Argentina.

The "development credibility" of the current trade regime in general, and the WTO in particular, is at stake. The Doha Round aims to reverse the brewing scepticism by providing a reliable engine of trade-led growth and development. The

essays in this volume identify the key challenges in this regard, make an assessment of the current situation in agriculture and manufacturing market access and evaluate alternative policy options that will make the goal attainable. Free trade promotes economic growth through international competition and the efficient allocation of resources while also helping to stabilize food supplies between countries that have an overabundance of product and countries that have a shortage. However, sudden price surges can threaten the social cohesion of developing countries and may lead to malnutrition and stunted growth. Balancing trade liberalization and protectionism is imperative for the provision of food security for all. The Handbook of Research on Globalized Agricultural Trade and New Challenges for Food Security is an essential publication that seeks to improve food security, food independence, and food sovereignty in the conditions of globalized agricultural trade and addresses the contemporary issues of agricultural trade including major commodities and food products traded between major countries, directions of trade, and trends. The book also examines the effects of tariff escalations, administrative restrictions, other forms of trade protectionism on food security, and the emerging trade tensions between major actors such as the US, China, the EU, and Russia. Featuring research on topics including plant fertility, dietary diversity, and protectionism, this book is ideally designed for government officials, policymakers, agribusiness managers, stakeholders, international tradesmen, researchers, industry professionals, academicians, and students.

Thesis (M.A.) from the year 2015 in the subject Business economics - Supply, Production, Logistics, Bahir Dar University, course: Marketing management, language: English, abstract: In Ethiopia poultry industry plays decisive role to improve income of peoples, especially who lives with low income. Different research on genetics, health, production, and marketing were conducted, though none have done in Bahir Dar City. Less attention has been given to identify challenges and prospects of poultry industry rather than taking one component and react on that, though poultry industry is diminishing through time without clear and research based identified problems. The purpose of this study was to identify the challenges and prospects of poultry industry in Bahir Dar city. What are the major constraints and prospects of poultry industry, what would help strengthen poultry industry, and how do poultry productions profitability look like? These were questions which the study attempts to answer with focus on Bahir Dar city poultry industry. The study was descriptive type of research and the data for the study were collected through sets of questionnaires administered to respondents, as well as interviews, with some selected producers and experts. Census sampling technique was used to select respondents and data collected was analyzed by the use of SPSS and Microsoft Excel. The study revealed that stakeholders involved in the poultry business of Bahir Dar poultry farm industry believe the industry is actually declining and they assign causes such as shortage of guaranteed land, absence of sufficient electric power, absence of genuine breed supply of chicken, lack of knowledge on poultry production, shortage of professionals in the area, government's lack to amend land lease time policy based on the nature of poultry industry, absence of clear control mechanism of genuine breed poultry and absence of feed processor either private or/and government organization subsidies on agric inputs like feed, drugs, equipment and several other factors. On the other hand, major prospects of poultry industry in Bahir Dar city like presence of good government policy, presence of better market demand and conducive environment for poultry production were identified. It can be concluded that, if the government and producers are unable to overcome those major identified constraints and challenges of poultry industry, the existing loss of poultry industry will be aggravated and most probably poultry industry will be totally eliminated from Bahir Dar city. Finally I recommended the government to revise its land lease policy, to create access genuine breed poultry ...

Sustainability of agricultural production system is becoming a major concern to agricultural research and policy makers in both developed and developing countries as it represents the last step in a long evolution of the protection of natural resources and the maintenance of environmental quality. Hence, sustainable agriculture is based on approaches that address farmers' marginal interests of reduced stress and comfort, reduced soil degradation, conservation of natural resources, and provision of adequate and dependable farm income in order to reduce poverty and associated problems. To this end, a more sustainable solution is imperative to solving these problems. This 6-part book furnish scientists and students with fundamental views on scientific developments, research outcome on sustainable solutions and also offers guidance on dissemination of sustainable agricultural techniques and feasible applications to Nigeria situation as a way of wriggling out of the ever expensive, soil and environmentally degrading conventional agricultural machines and inorganic production practices.

Collaboratively written by top international experts and established scientists in various fields of agricultural research, this book focuses on the state of food production and sustainability; the problems with degradation of valuable sources of land, water, and air and their effects on food crops; the increasing demand of food resources; and the challenges of food security worldwide. The book provides cutting edge scientific tools and methods of research as well as solid background information that is accessible for those who have a strong interest in agricultural research and development and want to learn more on the challenges facing the global agricultural production systems. Provides cutting edge scientific tools and available technologies for research Addresses the effects of climate change and the population explosion on food supply and offers solutions to combat them Written by a range of experts covering a broad range of agriculture-related disciplines

It is known that agricultural practices influence the quality and integrity of the natural resource base, especially soil and water quality and availability, which in turn impacts the sustainability of the production system and food quality. Over the last several decades, a general trend in the degradation of soil resource base has been observed. This degradation has been most severe in the developing nations, where the need for increased nutritious food is also the greatest. Lack of required investment in maintaining the quality of the soil resource base coupled with improper management of natural resources, has indeed led to large-scale soil degradation, which is further jeopardizing environmental quality and food

security especially for smallholder, resource-poor farmers in the developing world. However, it is not necessary that agricultural activities should lead to degradation of the natural resource base. In fact, agricultural practices that are focused on soil health and are in harmony with the ecosystem are sustainable in maintaining productivity at an enhanced level. Among the several practices used in diverse intensified production systems, especially in tropical agriculture, soil tillage and the lack of adequate organic matter input to the soil have a heavy toll in maintaining the integrity of the soil. Nothing short of a new agricultural production paradigm is needed to sustainably enhance the soil resource base and productivity and simultaneously rehabilitate degraded soils.

The book covers the spread of conservation agriculture (CA) to regions including Brazil, Argentina, Canada, Australia, Europe and emerging CA destinations in Asia and Africa. Topics covered include the various components of CA, and how their individual and combined implementation influence productivity, soil health and environmental quality under diverse edaphic and climatic conditions. The book will be useful to teachers, researchers, extensionists, farmers, and students interested in environmental quality.

The fourteenth joint edition of the OECD-FAO Agricultural Outlook provides market projections for major agricultural commodities, biofuels and fish, as well as a special feature on the prospects and challenges of agriculture and fisheries in the Middle East and North Africa. This book addresses some key strategic questions related to agriculture in the context of major contemporary developments and emerging challenges in Nepal such as the changing role of agriculture with economic growth, structural transformation in reducing poverty, improving nutritional outcomes, and addressing the challenges of climate change. The book also suggests policy measures to improve the delivery of critical inputs and services and ensure the participation of marginal and smallholders in high-value chains. Further, it discusses how the new federal system and governance structure will affect the delivery of agricultural technology and services. The book is divided into five parts. Part I discusses macro-issues in the agriculture sector, while Part II focuses on agricultural productivity growth and its main drivers. The third part explores diversification in the agricultural and non-agricultural sectors by farmers and other rural people for livelihood improvement, while the fourth part deals with agricultural trade and marketing issues, highlighting policy implications and recommendations in the areas of immediate focus and further research. Lastly, Part V addresses institutions and governance issues, which are vital for agricultural development. In the final chapter, the editors summarize and synthesize the book's main findings and develop a policy agenda for addressing the many challenges faced by the agriculture sector in Nepal, so as to make it more productive, competitive, sustainable, and inclusive. The book offers a rich source of analytical information on various aspects of agricultural development in Nepal and will be of immense value to policymakers, development partners, civil society, students, and those interested in the economic and agricultural development of not only Nepal, but also other developing countries.

Genetic transformation is a key technology, in which genes are transferred from one organism to another in order to improve agronomic traits and ultimately help humans. However, there is concern in some quarters that genetically modified crops may disturb the ecosystem. A number of non-governmental organizations continue to protest against GM crops and foods, despite the fact that many organisms are genetically modified naturally in the course of evolution. In this context, there is a need to educate the public about the importance of GM crops in terms of food and nutritional security. This book provides an overview of various crop plants where genetic transformation has been successfully implemented to improve their agronomically useful traits. It includes information on the gene(s) transferred, the method of gene transfer and the beneficial effects of these gene transfers and the agronomic improvements compared to the wild plants. Further, it discusses the commercial prospects of these GM crops as well as the associated challenges. Given its scope, this book is a valuable resource for agricultural and horticultural scientists/experts wanting to explain to the public, politicians and non-governmental organizations the details of GM crops and how they can improve crops and the lives of farmers. It also appeals to researchers and postgraduate students. This volume focuses on the transgenics of mungbean, cowpea, chickpea, cotton, mulberry, Jatropha, finger millet, papaya, citrus plants and cassava. It also discusses CRISPR edited lines. .

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