

Download File Azolla Biofertilizer For Sustainable Rice Production 1st Edition Pdf File Free

Final evaluation of the project “Partnership for sustainable rice systems development in sub-Saharan Africa” **Challenges and Opportunities for Sustainable Rice-based Production Systems** *Consumer Preferences for Sustainable Rice Practices in Nigeria* **Sustainable Rice Straw Management** **Soil Management for Sustainable Rice Production in the Tropics** **Nitrogen Fixing Green Manures for Sustainable Rice Production** **Achieving Sustainable Cultivation of Rice Volume 2** **Integrated Nutrient Management for Sustainable Rice Production** **Azolla Biofertilizer for Sustainable Rice Production** **Sustainability of Rice Production in Thailand** *Climate Change and Future Rice Production in India* **Sustainable Rice Farming in Thailand** **Physio-genetic Study on Yield Determination and Ecological Adaptability for Sustainable Rice Culture** **Rice Production Technology** *Integrated Soil, Water and Nutrient Management for Sustainable Rice-wheat Cropping Systems in Asia* **Integrated Nutrient Management (INM) in a Sustainable Rice-Wheat Cropping System** **An Evaluation of the Economic, Social and Environmental Impacts of the Co-operative Research Centre for Sustainable Rice Production: Commissioned Report** **Rice is Life** *Azolla Biofertilizer for Sustainable Rice Production* **Investigation of a Low-external-input Sustainable Rice Production System to Identify Ecosystem Services Towards Adoption Costs and Benefits** **Sustainable Rice Production Modelling and Policy Integration of Sustainable Rice Farming Systems in Bangladesh** **Nutrient Management for Sustainable Rice-wheat Cropping System** *Nutrient Management for Sustainable Rice-wheat Cropping Systems* *Rice value chain in Ghana – Prospective analysis and strategies for sustainable and pro-poor growth* *Sustainable Rice Production for Self-sufficiency in Sri Lanka* **Agroecological-based Sustainable Rice Straw Management** **Integrated Soil, Water and Nutrient Management for Sustainable Rice-wheat Cropping Systems in Asia** *Sustainability of Rice in the Global Food System* *Physio-genetic Study on Yield Determination And Ecological Adaptability for Sustainable Rice Culture*. *JIRCAS Working Report* *Sustainable Rice Straw Management* *The Rice Economies* **Genetic Diversity for Sustainable Rice Blast Management in China** *Nutrient and Water Management for Sustainable Rice-wheat Croppingsystems in Bangladesh and Australia* **Rice Water Use Efficiency Workshop Proceedings** *Rice Genomics, Genetics and Breeding* **Irrigation Systems and Practices in Challenging Environments** *Physio-genetic Study on Yield Determination and Ecological Adaptability for Sustainable Rice Culture* *Cycle of Rice, Cycle of Life*

Based on past experience of partnership on support to National Rice Development Strategies (NRDS) within Coalition for African Rice Development (CARD), AfricaRice and FAO decided to conduct a series of rice policy reviews for Ghana, Ivory Coast and Mali in 2019. The following study uses the Ex-ante Carbon-balance Value Chain tool (EX-ACT VC), developed in 2016 by FAO, to assess the Ghanaian rice value chain’s environmental (in terms of climate mitigation and climate resilience) and socio-economic impact for a business as usual scenario in 2020 compared to a growth scenario for 2030. Promotion of good agricultural practices (GAP), the reduction of crop losses, and an increase in the use of inputs and mechanization are the different strategies considered in this study that would help in realizing the aim of self-sufficiency. Through the implementation of these practices, along with the expansion of rice growing areas, the income per day of work per farmer would increase by more than USD 4, reaching approx. USD 9/day of work in the value chain. The gross production value of the rice value chain would reach USD 856 million, which is an additional USD 511 million in gross production value by 2030. An upgraded rice value chain would also result in an increase in the value added by USD 378 million by 2030 with an overall positive carbon balance that would emit 284 852 tCO₂-e of greenhouse gas emissions. This book explains in depth the issues and challenges faced by rice farmers in India in relation to production and productivity, and the possible adaptation strategies to climate change. Based on five years of groundbreaking research on emerging trends in cultivation in major rice growing regions in India, it begins by describing production and yield trends across different rice growing regions. It then offers a comprehensive review of relevant literature and the quantification methodologies and approaches used to analyze the impact of climate change. The book also analyzes climate change impacts on rice productivity and production, applying field-tested quantification methods, such as the Just-Pope production function where time series and cross-section data are simultaneously used for all regions. The results are presented for five geographical regions of India – northern, eastern, western, central and southern – for better comparison and readability. The analyses cover scenarios for both mid-century (2021–2050) and end-century (2071–2100), and in the context of climate change, they also incorporate both medium and high carbon emission scenarios. Thus the future rice production and productivity trends are clearly projected for making necessary interventions. Lastly, the book outlines the essentials of an enabling environment policy and discusses the institutional and policy options necessary to ensure sustainable rice production in India. It also makes the case for introducing appropriate and affordable adaptation strategies to support farmers in different rice-growing regions. The cost–benefit analysis of strategies presented in this book provides an invaluable tool for officials at agriculture departments planning up-scaling of agricultural productivity. The projections are also useful for policy makers and planners developing future investment plans to support rice production in their country. Overall, this book is of interest to a wide audience, including professionals and business enterprises dealing with rice, as well as to academic researchers and students. A photographic exploration of the cycles of traditional Balinese rice farming, a dynamic model of earth-friendly agriculture that connects a unique culture with the natural world. Volume 2 reviews ways of improving cultivation of rice, from planting to soil management, nutrition and irrigation as well as techniques such as integrated crop management. It also discusses key pests and diseases and methods for their control in making cultivation more productive and sustainable. This book entitled Azolla Biofertilizer for Sustainable Rice Production contains the valuable informations from the vast experiences of the authors Professor Dr S Kannaiyan and Dr K Kumar in the field of Azolla-Anabaena symbiosis for the past 25 years. It is written with the objective of providing basic knowledge and practical technologies on the effective utilization of Azolla as an ecofriendly and economically viable biofertilizer for sustainable rice production. It gives an access to the latest informations on the biology of Azolla, growth, sporulation, N₂ fixation, ammonia assimilation and mineralization process in rice ecosystem. It offers a good deal of practical technologies for maximum exploitation of the potential status of Azolla biofertilizer viz., mass production techniques of fresh biomass, sporocarp inoculum, carrier based immobilized cyanobacterial inoculant, field application and methods for enhancing N use efficiency of this technology. It also covers the utility of Azolla as supplemental animal feed and the economics of usage of Azolla as biofertilizer for rice. Illustrative colour photographs have been included in various chapters for easy understanding of the subject by readers. This book will be very useful for the scientists, researchers, postgraduate students, extension workers and

voluntary organizations involved in the crop management technology for sustainable rice production. Contents Chapter 1: Azolla Biofertilizer: Potentials and Prospects; Chapter 2: Biological Fertilizers for Sustainable Crop Production in Rice Based System; Chapter 3: Origin of Azolla Cultivation; Chapter 4: Taxonomy and Morphological Characters of Azolla; Chapter 5: Biodiversity of Azolla and its Algal Symbiont Anabaena azollae as Revealed by Molecular and Immunological Studies; Chapter 6: Growth Rate and Doubling Time of Azolla; Chapter 7: Molecular Biology and Ultrastructures of Azolla Anabaena Symbiosis; Chapter 8: Algal Symbionts of Azolla; Chapter 9: Nutrition of Azolla; Chapter 10: Factors Influencing the Growth of Azolla; Chapter 11: Nitrogen Fixation by Azolla; Chapter 12: Assimilation of Carbon and Nitrogen in the Symbiotic Association of Azolla Anabaena System; Chapter 13: Sporulation Process in Azolla and Sporocarp Technology for Rice; Chapter 14: Azolla as Biofertilizer for Rice; Chapter 15: Immobilization of Cyanobacteria in Solid Matrix; Chapter 16: Ammonia Production by the Immobilized Cyanobacteria for Rice Crop; Chapter 17: Production and Application of Azolla Fresh Biomass and Sporocarp Inoculum for Rice; Chapter 18: Nitrification Inhibitors with Azolla on Nitrogen Use Efficiency in Rice Crop; Chapter 19: Pests of Azolla; Chapter 20: Black Rot Disease Interactions and Nitrogen Fixation in Azolla; Chapter 21: Azolla as Animal Feed; Chapter 22: Economic Analysis of Azolla Use.

Rice consumption in Africa has increased dramatically over recent decades, growing faster than consumption of any other major staple on the continent. However, apart from Egypt, no African country is currently self-sufficient in terms of rice consumption. FAO implemented the project from May 2014 to December 2019, with the ten ministries of agriculture from the beneficiary countries. The project goal was to develop sustainable and productive rice systems in Africa to increase food security and enhance sustainable development of the rice food chain among smallholder farmers. South-South Cooperation was demonstrated to be an excellent mechanism for pooling resources and efforts in innovation and development processes. Sharing knowledge with decision makers and political consultation at the highest level was useful to reaffirm and update policies strategies and intervention priorities, and to mobilize partners from a large number of countries. Several producers, producer groups and communities successfully moved from subsistence farming to commercial farming by increasing production, reducing post-harvest losses and improving quality of rice through the use of appropriate post-harvest management technologies and equipment. Outline of IRRI-Japan collaborative research project, Phase IV. Functional genomics. Genetic enhancement for yield, grain quality, and stress resistance. Managing resources under intensive rice-based systems. Genetic enhancement for improving productivity and human health in fragile environments. This is an applied reference book written by a soil scientist with practical experience, shows the importance of integrated nutrient management on rice production. It is a useful document of the field crops research findings on integrated nutrient management technologies developed by the author. Prescribing rational and balanced use of plant nutrients from both organic manure and inorganic fertilizers, Integrated Nutrient Management for rice production covers wide range of rice including Aush, Aman and Boro rice in alone or pattern basis considering environmental, social and economic imperatives. It also explains the present constrains of soil fertility indicating possible measures for the maintenance of soil health. This volume contains huge bibliographical citations, tables and graphs, which have made it an incomparable resource book for Soil Scientists, Agronomists, Horticulturists, Plant Breeder, Extension Personnel, Teachers and Post-Graduate Students. Sincere and careful use of these recommendations would be very helpful in achieving food security and maintaining soil fertility and productivity. Wide-ranging both historically and geographically, The Rice Economies brilliantly addresses a subject of abiding interest to anthropologists, economists, and historians as well as those concerned with development issues and Asian studies. It is the first work to formulate a logical, historical dynamic of development in Asia's rice economies up to the present day. The comparison of mechanized Western farming methods with the more labor intensive, less environmentally destructive Asian methods is of value to environmentalists and economists concerned with the need for sustainable development. In a new preface, the author reflects upon the increasing relevance of the concerns of the book to international environmental issues. Responding to the need to develop alternate crop establishment methods and improved cropping practices, this publication summarizes the results from a joint FAO/IAEA coordinated research project on optimizing productivity and sustainability of rice-wheat cropping systems. Agriculture is the main occupation in India and about 75% of its population depends directly or indirectly on agriculture for their livelihood. It is the dominant sector that contributes 18% of the gross domestic product. Thus, agriculture is the foundation of the Indian economy. The maximum share of Indian exports is also from the agriculture sector. As the population of the country is increasing trem- dously, approximately at the rate of 19 million every year over the existing popu- tion of more than 1 billion (approximately 1. 18 billion), the food grain production must necessarily be increased. This can be done by increasing crop production to match the population growth rate of 2. 2% per annum, which is expected to stabilize at 1. 53 billion around 2050. There is no doubt that the Green Revolution in India during the late 1960s brought self-sufficiency in food grain production, mainly through the increase in rice and wheat crop yields – the two main crops of the country which play an important role from food security point of view. However, the excessive use of fertilizers and pesticides, and the neglect of organic manures for these crops, has resulted in the deterioration of physical, chemical and biological health of the ri- and wheat-growing soils. Owing to the deterioration of the health of these soils, the productivity of the rice–wheat cropping system has now either got reduced or in some places has become constant for the last decade. The book Irrigation Systems and Practices in Challenging Environments is divided into two interesting sections, with the first section titled Agricultural Water Productivity in Stressed Environments, which consists of nine chapters technically crafted by experts in their own right in their fields of expertise. Topics range from effects of irrigation on the physiology of plants, deficit irrigation practices and the genetic manipulation, to creating drought tolerant variety and a host of interesting topics to cater for the those interested in the plant water soil atmosphere relationships and agronomic practices relevant in many challenging environments, more so with the onslaught of global warming, climate change and the accompanying agro-meteorological impacts. The second section, with eight chapters, deals with systems of irrigation practices around the world, covering different climate zones apart from showing casing practices for sustainable irrigation practices and more efficient ways of conveying irrigation waters - the life blood of agriculture, undoubtedly the most important sector in the world. Sustainability of Rice Production in Thailand This open access book on straw management aims to provide a wide array of options for rice straw management that are potentially more sustainable, environmental, and profitable compared to current practice. The book is authored by expert researchers, engineers and innovators working on a range of straw management options with case studies from Vietnam, the Philippines and Cambodia. The book is written for engineers and researchers in order to provide them information on current good practice and the gaps and constraints that require further research and innovation. The book is also aimed at extension workers and farmers to help them decide on the best alternative straw management options in their area by presenting both the technological options as well as the value chains and business models required to make them work. The book will also be useful for policy makers, required by public opinion to reduce greenhouse gas emissions and air pollution, looking for research-based evidence to guide the policies they develop and implement. "The rice-wheat system is the predominant cropping system in Asia, providing food, employment and income, ensuring the livelihoods of about one billion resource poor people. However, the productivity of the current rice-wheat systems is seriously threatened by increasing land degradation and scarcity of water and labour, inefficient cropping practices and other emerging socioeconomic and environmental drivers. Responding to the need to develop alternate crop establishment methods and improved cropping practices, this publication summarizes the results from a joint FAO/IAEA coordinated research project on optimizing productivity and sustainability of rice-

wheat cropping systems. It provides relevant information on how to modify existing water and nutrient management systems and improve soil management in both traditional and emerging crop establishment methods for sustainable intensification of cereal production in Asia."--Publisher's description The first part of this book presents the International Year of Rice and hundreds of events that took place worldwide in 2004 to implement the year with the participation of people from rural and urban areas, developed and developing countries, and of governments and non-governmental organizations. The second part of the book offer an opportunity to expand the understanding of the importance of rice in our planet by describing the Facets of Rice is Life - rice production and hunger reduction; rice and human nutrition; rice as a symbol of cultural identity and global unity; rice and environment; rice and agricultural biodiversity; and labor, gender and livelihood in rice. The last part of the book focuses on the importance of rice and, indeed, of agriculture, in and beyond the new millennium.--Publisher's description. This study investigated a potentially sustainable rice production system in the Mississippi Alluvial Valley (MAV) that uses ecological principles to enhance environmental quality at the field scale. It was hypothesized annual flooding of rice fields to create waterbird habitat would benefit soil health, providing agronomic benefits to the farmer. Two sites were selected: a low-external-input-sustainable-agriculture (LEISA) system with flooded (LF) and non-flooded (LN) fields and a conventional site with flooded (CF) and nonflooded (CN) fields. Soil microbial diversity and nutrient content were quantified and compared. Camera traps were used to document bird activity for estimates of fecal matter input. Soil health variables linked LF high bird activity with soil health and pathogen detection. Evidence from the investigation provided a framework for other producers within the MAV to adopt similar management methods, ultimately improving the overall integrity of soil, water, and environmental quality. This open access book on straw management aims to provide a wide array of options for rice straw management that are potentially more sustainable, environmental, and profitable compared to current practice. The book is authored by expert researchers, engineers and innovators working on a range of straw management options with case studies from Vietnam, the Philippines and Cambodia. The book is written for engineers and researchers in order to provide them information on current good practice and the gaps and constraints that require further research and innovation. The book is also aimed at extension workers and farmers to help them decide on the best alternative straw management options in their area by presenting both the technological options as well as the value chains and business models required to make them work. The book will also be useful for policy makers, required by public opinion to reduce greenhouse gas emissions and air pollution, looking for research-based evidence to guide the policies they develop and implement. This work was published by Saint Philip Street Press pursuant to a Creative Commons license permitting commercial use. All rights not granted by the work's license are retained by the author or authors. This book presents the latest advances in rice genomics, genetics and breeding, with a special focus on their importance for rice biology and how they are breathing new life into traditional genetics. Rice is the main staple food for more than half of the world's population. Accordingly, sustainable rice production is a crucial issue, particularly in Asia and Africa, where the population continues to grow at an alarming rate. The book's respective chapters offer new and timely perspectives on the synergistic effects of genomics and genetics in novel rice breeding approaches, which can help address the urgent issue of providing enough food for a global population that is expected to reach 9 billion by 2050. This open access book on straw management aims to provide a wide array of options for rice straw management that are potentially more sustainable, environmental, and profitable compared to current practice. The book is authored by expert researchers, engineers and innovators working on a range of straw management options with case studies from Vietnam, the Philippines and Cambodia. 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The adoption of sustainable practices can generate positive externalities such as lower environmental pollution and improved working conditions for rice industry workers that could be capitalized via the design of consumer-based marketing strategies. The Sustainable Rice Platform (SRP) initiative aims at advancing the adoption of sustainable practices in rice production. We assess consumers' perceptions of the SRP sustainability indicators using the Best-Worst Scaling approach to rank SRP sustainability attributes according to their preference shares and examine the effects of demographic characteristics and rice purchasing habits on these shares. The results show that Nigerian consumers have a strong preference for sustainability indicators associated with food safety and health and safety, and that preferences are robust across households' demographic and consumption characteristics. Our results can help guide private and public sustainability policy development and investment in Nigeria's rice economy that are grounded in consumer preferences for such attributes.

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