OPTIMIZING SYSTEM OF RICE INTENSIFICATION PARAMETERS USING AQUACROP MODEL FOR INCREASING WATER PRODUCTIVITY AND WATER USE EFFICIENCY IN RICE PRODUCTION

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Abstract

Producing more rice while using less water is among the calls in water scarce regions so as to feed the growing population and cope with the changing climate. Among the suitable techniques towards this achievement is the use of system of rice intensification (SRI), which has been reported as an approach that uses less water and has high water productivity and water use efficiency. Despite its promising results, the use of SRI practice in Tanzania is limited due to less knowledge with regard to the transplanting age, plant spacing, and minimum soil moisture to be allowed for irrigation, and alternate wetting and drying interval for various geographical locations. The AquaCrop crop water productivity model, which is capable of simulating crop water requirements and yield for a given parameter set, was used to identify suitable SRI parameters for Mkindo area in Morogoro region, Tanzania. Using no stress in soil fertility, plant spacings ranging from 5 cm to 50 cm were evaluated. Results suggest that the yield and biomass produced per ha increase with decreasing spacing from 50 cm to 20 cm. Preliminary field results suggest that the optimum spacing is round 25 cm. However, the model structure does not take into consideration number of tillers produced. As such, the study calls for incorporation of the tillering processes into AquaCrop model.
Keywords: SRI, rice cultivars, plant spacing, transplanting age, tillering.

GREEN INVESTMENT: A STRATEGY FOR SUSTAINABLE ECONOMIC GROWTH AND INVESTMENT

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Abstract

Sustainable economic development has become an important area of concern due to climatic change with its long term effects. Climatic change has posed several challenges for economic sustainability of economies. Now major development projects have to comply with international environmental norms. Failure to do so may result in the delay of a project, fines including penalties for environmental damage or charges for remedial action, that affect the viability of a project or the value of any security taken. This paper investigates with help of secondary date using descriptive statistical technique opportunities and challenges of green investment. Here it is developed into suitable model for developing economies for successfully adopting green investment without much cost to their economies. The paper concludes that green investment involving direct investment and portfolio investment in firms adopting and following environmental protection norms will lead to sustainable growth and investment for economy.
Keywords: Green Investment, Sustainable investment.

SUSTAINABLE MANAGEMENT OF CAMEROON FORESTS RESOURCES: PROVIDING TIMBER WASTE TO THE POOR POPULATIONS AS ALTERNATIVE SOURCE OF ENERGY

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