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Intercropping sequences: An effective tool for sustainable food production

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Food and nutritional security is a great concern of policy planners. Food insecurity and poverty, accounting for two-third of the world; hungry and poor, exacerbated by the soaring food and fuel prices, global economic downturn, volatile market and climate change induced vulnerability, have surfaced as major development concerns across the world. The problem has further been intensified with sharp rise in the cost of food and energy depleting water resources, diversion of human capital from agriculture, shrinking farm sizes, soil degradation, indiscriminate and imbalanced use of chemical inputs and overarching effects of changing climate. As the world population increasing day by day and approaches 10 billion, global food security is increasingly threatened. Food production is not keeping up with this demand. The threat of high demand and low production of food crops is further intensified by global warming. Global warming is expected to intensify extreme precipitation. The situation will be far more serious in the tropical regions of the world. Therefore, with this backdrop there is a need for developing ecofriendly, quantitative as well as qualitative food production systems that will sustain the future global food security both in terms of quantity and nutrition. Further, the proper exploitation of the production systems needs to be addressed for global food security. Mustard-maize both being relatively widely spaced crops provide ample opportunities for raising pulses as intercrops to enhance resource utilization efficiency as well as to reduce the risk of crop failure under rainfed conditions. Intercropping is traditionally a low input agricultural system which matches the total resources available to the farmers in maintaining adequate and relatively steady production. Moreover, the space, light and water requirements of the main and intercrops may also vary owing to inclusion of crops of dissimilar nature.

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How to ensure environmental sustainability and food security through the use of payments for environmental services in developing countries

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My research paper demonstrates how payments for environmental services (PES) can be an effective mechanism to combat food insecurity and be a sustainable mechanism to reduce environmental degradation in developing countries, where the majority of their population depend on the use of the land to survive. The paper begins by discussing how environmental services affect each one of the pillars of food security: availability, access, utilization of food and stressing the problem related to agriculture. However, due to numerous global environmental challenges, a new pillar of food security based on environmental sustainability is proposed and discussed. An argument is made that PES (Payments for Environmental Services) can usefully combat food insecurity, bringing sustainable agricultural practices to the local community. PES can provide extra income to those who take on environmental services and help them to have better access to food. In order to be successful in addressing food insecurity, PES schemes should target the poor and re address issues that can prevent their effectiveness. Finally, the research paper presents a case study that discusses how several developing countries addressed problems and successfully developed PES programs focused on the poor.

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