

Innovations and technology : An economic analysis of their contribution in managing natural resources for sustainable development

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Received : 26.07.2013; Accepted : 27.09.2013

ABSTRACT

The rapid growth has helped Indian agriculture mark its presence at global level. India stands among top three in terms of production of various agricultural commodities like paddy, wheat, pulses, groundnut, rapeseeds, fruits, vegetables, sugarcane, tea, jute, cotton, tobacco leaves, etc (GOI, 2008-09). But with the change in phases, the improvements in agricultural technologies and practice means has resulted in more consumption of food per head available than 40 years ago. In addition to this increasing crop yields in many parts of the world, advances in agricultural technologies have also contributed to a safer food supply, and in some cases, improved environmental quality. Over the next 30 years, agriculture will have to sustain an additional 2 billion people from an increasingly fragile resource base. Ever-growing demands and increasing pressures on land and water resources mean that agriculture has to become even more productive, efficient and environmentally sound and to foster this will require the application of new technologies, scientific knowledge improved resource management and continued public and private research investment in emerging technologies. With the beginning of the new century, the world has to face enormous challenges to meet the food, feed and fibre needs of a growing population with rising incomes. It has been estimated that by 2025 the global population will be approximately 7.9 billion, up from 6 billion currently. Global cereal and meat demands will increase by 46% and 56%, respectively. To put an end to and to conserve the natural resource "sustainability" is commonly seen as a property of an ecosystem. But sustainability can be seen from other perspectives, which are more relevant for extension. Environmental issues emerge from the human use of natural resources. Sustainability can, therefore, be defined in terms of human reasons, activities, and agreements. Sustainability emerges out of shared human experiences, objectives, knowledge, decisions, technology, and organization. Agriculture becomes sustainable only when people have reason to make it so. Other than the introduction of sustainability innovation is also playing an important role and it should also be incorporated in natural regenerative processes, such as nitrogen fixation, nutrient recycling, maintenance of soil structure and fertility, and protection of natural enemies of insect pests, weeds and diseases, into agricultural practices. These approaches can make better use of the indigenous knowledge of farmers and, where it can be appropriately, combine with new science-based technologies for optimum results.

KEY WORDS : Sustainable development, Technology, Innovation, Food security, Productivity

How to cite this paper : Sharma, Parvani, Nanda, Rakesh, Parihar, Poonam and Singh, S.P. (2013). Innovations and technology : An economic analysis of their contribution in managing natural resources for sustainable development. *Internat. J. Com. & Bus. Manage.*, 6(2) : 374-383.

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