

Enhanced Applications of Science-based Technologies for Climate-smart Crop Production System

Felino P. Lansigan

Professor, University of the Philippines Los Baños, Laguna, the Philippines
E-mails: fplansigan@uplb.edu.ph; fplansigan@yahoo.com

Climate change is a reality that is posing a very real threat to agricultural production and food security. Appropriate adaptation strategies and measures using science-based technologies and innovative practices are imperative to counter the adverse effects of changing climate. In this regard, adaptation measures need to be location-specific and conform to prevailing cultural practices in the area. Recent advances in the development of regional climate trends and scenarios, crop improvement, geographic information system, statistics and database management, process-based crop simulation and models, etc. provide opportunities for developing cost-effective and science-based climate adaptation measures. Climate risk management strategies may include user-friendly decision support system at different levels such as knowledge-based crop forecasting system, nutrient manager or optimizer, etc. that can help different stakeholders in decision-making in farming such as determining optimal planting dates, scheduling farm operations, estimating input needs and other related activities. Applications of these measures and tools are already being employed in crop production systems in certain regions of the Philippines and proven effective to reduce agricultural crop damages and losses.

While effective and efficient climate change adaptation measures are to meet specific needs and applications, capacity building of stakeholders at different levels is also important. This can be achieved by increasing awareness through information, education, and communication activities, training workshops, seminars, etc. that are facilitated by effective networking and collaboration among different agencies. It has been proven in some projects that capacity building can be hastened through pilot demonstrations of adaptation options in selected sites. Actual field demonstrations with local cooperating farmers facilitate easy adoption by other neighboring farmers as well as possible up-scaling or out-scaling of climate adaptation measures in other areas. Enhanced capacity of stakeholders must eventually lead to the mainstreaming of climate change adaptation at the farm, community, and municipal levels to minimize the adverse effects of climate risks in crop production systems.

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