Impact of Climate Change on Agriculture: Mitigation and Adaptation Strategies for Developing Nations

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Agriculture is totally dependent on weather and climate. Most agriculture scientists believe that high temperatures and droughts caused by climate change will depress crop yields in many developing countries in coming decades. Global climate changes are caused by increasing atmospheric concentration of carbon dioxide and other trace gases. Climate change affects agriculture and food production in complex ways. It affects food production directly through changed agro-ecological conditions and indirectly by affecting growth and distribution of incomes, and thus demand for agricultural produce especially in the developing world. Developing countries are more vulnerable to climate change because most of the peoples depend on agriculture for their livelihood. Thus, for farmers struggling under the burden of cultivating land under the ever-present threat of drought, floods, and mid-season dry spells. Land degradation, water scarcity such problems associated with climate change will have to be answered more frequently. Climate change will directly affect the agriculture in tropical countries and the mean temperature is around 40 degree Celsius. These high temperatures could completely destroy crops if they coincide with flowering period. Climate related disaster have brought widespread misery and huge economic losses to many countries, it adversely affecting the food security, agriculture, water resources, public health and biodiversity. Agriculture of any kind is strongly influenced by the availability of water. Climate change will modify rainfall, evaporation, and runoff and soil moisture storage.

Effective utilization of natural resources with due care and adopting integrated crop production technologies can increase productivity of agricultural crops. To mitigate the effects, the following crop management strategies are recommend to overcome the impact of climate change i.e. alternate cropping, planting date adjustment, irrigation and fertilizer optimization ,cover crop, zero tillage, mulching practices and use of slow release fertilizers . Diversity farming is the single most important modern technology to achieve food security in a changing climate .There is abundant scientific evidence that crop biodiversity has an important role to play in the adaptation to our changing environment. These technologies are more concern for improvement in nutrition, food security, food safety, and local environment with the economics of the local communities.

Biography:

Dr. R. Raman is currently serving as Professor in the Department of Agronomy, Annamalai University. His research interest focus on: Organic farming, post harvest technology and climate change studies. He has presented many of his research papers in international and national conferences as a keynote speaker/ plenary speaker, invited speaker and also served as Chairman/ convener of scientific session. He is recipient of many He is operating many research projects in his capacity as Principal Investigator. He has published many of his research papers in the reputed scientific journals. He has visited 14 countries for the research and academic purposes.