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GLOBAL CLIMATE CHANGE WHICH IMPACT ON AGRICULTURAL CROP PRODUCTIVITY

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The most Important cause of weather parameters years to years variability in Agricultural crop productivity mainly because of the high yield and high technology environments .In recent years about the possibility of global climate change caused by the human activities. With the acceptance of the Kyoto protocol to the United Nations frame work Convention on Climate Change (UNFCC) In December 1997, Possible Climate change anthropogenic pollution of the atmosphere in the 21st Century became a higher profile global the industrial revolution, Earths population has increased dramatically with accompanying large scale burning of fissile fuels. Intensive cultivation, Automobile industries, Manufacture of Cement and other Chemical industries .Intensive cultivation of lands not previously used for crops or livestock production any observed or predicated change in the global climate are of fundamental concern to human beings. The alteration in our global climate change of earth surface is so complex system of atmosphere and oceanic processes and confusion regarding necessary adjustments in environmental and economic policy in aerosols have intensified. In the contract of crop production ,relevant atmospheric processes consists of losses in beneficial stratospheric, Ozone concentration (O_2) and increasing concentration of the surface layer trace gases, including atmospheric Carbon dioxide(CO_2).Methane (CH_4), Nitrous oxide (N_2O) and Sulphur Dioxide(SO_2). Surface level (O_3), (SO_2) and (CO_2) have direct Impact on Field Horticultural crops. As a Biophysical system dependent on global climate change resources, agriculture can be affected through change in crop yield and production. The positive fertilization affected on some crops particularly C_3 wheat, barley, potatoes and sugar beet etc. While CO_2, CH_4 and N_2O are critical in altering air temperature, product of atmospheric process also result in increases in surface ultraviolet radiation and Changes in Temperature, Relative humidity ,wind velocity and Rainfall patterns .The application of technology eg. New Cultivars, varieties, Fertilizers, Pesticides, Herbicides and Irrigation etc. In such a important factors in agriculture there is much discussion and debate about how successfully can be adopted to global climate changes may occur. The Current average temperature of the Earth and determining historical temperature is an even more daunting task.

India's achievement as atiger economy is reflected in the booming fortunes of about 150 millions citizens the harsher existence of the remaining 80% - 90% of the population would by contrast find closer parallel in the countries of sub Saharan Africa About half of the India's Poverty is Concentrated in just 7 of the 28 states ,Bihar , Orissa, UP ,MP, Rajasthan, Chhatisgarh and Jharkhand, These poorest states have to contend with the largest and fastest growing population .The 1990 baseline poverty rate of Millennium Development goal (MDGS) was 37.5% and the Indian government is confident of achieving target of halving the figure by 2015.Current Official statistics assert that the rate has fallen to 28.3% based on a National Sample Survey Conducted as long ago 2004/05 this poverty rate and figures extrapolated from it increasingly lacks credibility.

Global recession, instability of food production and availability has been a consistent threat food price inflation of 10% - 20 % during most of 2009 and 2010 is known to be causing hardship, food security In 2005, 46% of Children's in India aged under 3 years were under weight, any Improvement in this indicator since 1990 has been for too slow to suggest that MDG target of 26.8 % by 2015 can be achieved.

Current issues in agriculture:

– Over production in short term yet food insecurity for a large population.

– Stagnation /Decline in yields.

– Diversification

– Natural resources management soil organic matter Decline input use efficiencies, narrow genetic base.

– Quality and quantity of water resources.

– Profitability increasing cast and deceleration growth.

Global climate change:

– Global mean temperature have increased by 0.74 ^{O}C during last 100 years.

– Green house gases (CO_2, Methane, Nitrous oxide) increases caused fossil fuel use and land use changes.

– Temperature increases by 1.8- 6.4 by 2100 AD.

– Greater increases in Rabi

– Precipitation likely to increase in *Kharif*.

– Snow cover is projected to Contract more frequent hot extremes, Heavy precipitation.

– Sea level to Rise to be 0.18- 6.4 by 200 AD.

The obtaining global or even regional temperature is difficult, because both diurnal and seasonal temperature vary considerably from place to place for this reason, the possibility of global climate change somewhat controversial in the public view climate change comes from studies using climatic models .Climate model are complex mathematical representation of many of the processes known to be responsible for the climate.

The interactions between atmosphere and land surface to attain topographical effects, Ocean currents and sea .The model simulate global distribution of variables such as temperature, wind, cloudiness and rain fall.

Agriculture provides a sizable contribution to the radioactive gases that appear to be driving forces in climatic change. The primary sources of these gases are the fossils fuel used in Agricultural activities. Soil carbon (C) loss because of tillage operations associated with crop culture, burning crop and forest residues, raising livestock consequent manure- handling operations. Manufacture and utilization of N fertilizers and growing of flooded rice. Rice production in flooded paddies and lagoon storage of Barnyard manure causes the relative large quantities of CH_4, while various aspects of fertilization result in the release of N_2O.Methane and N_2O cause considerably more raditive forcing [21 and 310 times respectively per unit mass of gas than does atmospheric(CO_2)].

Contribution of different sectors in world to climate change

Contribution of different sectors	Percentage (%)
Waste and waste water	2.8
Forestry	17.4
Energy supply	25.9
Agriculture	13.5
Industry	19.4
Transport	13.1
Residual and Commercial Buildings	7.9

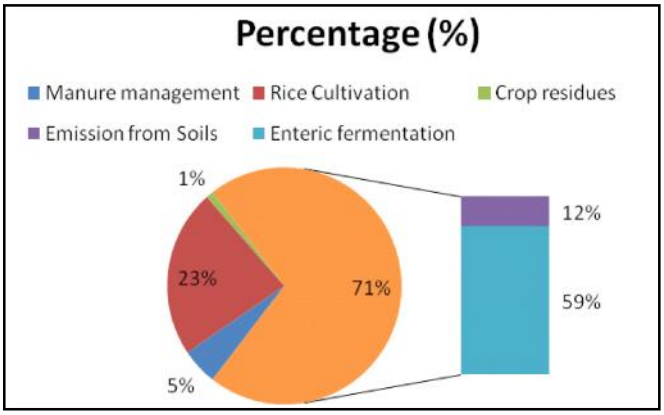
A Large amount of c is stored in the soil and is relatively labile. It is subject to management as agricultural practices may result in the grain or loss of 'C' accumulation and the resulting desirable attributes associated with soil conservation and sustainable crop production. The Herbicide technology make less tillage more economically feasible because the primary reason for tillage in crop production that utilizes improved herbicides allows reduced cultivation and also results in the use of less fossil fuel than do soil tillage operations the require high energy ,In addition ,less tillage usually results in secondary benefits such as better water infiltration greater soil aggregates and cause them to resist the breakdown but repeated tillage induces their degradation.

What is the contribution of different sectors in India to climate change (Source of green house gas Emission in India)

Contribution of different sectors	Percentage (%)
Energy	61
Land use change	1
Wastes	2
Industrial process	8
Agriculture	28

Methane production is flooded rice is correlated with biomass production during vegetative growth, but areas where two crops per year are grown some management practices can be used to reduce CH_4 Production and emission without yield loss methane emission is highly sensitive to water management, however N_2O emission may result from practices that minimize CH_4 production additional information needed to find ways to minimize both CH_4 and N_2O emissions during flooded rice production.

What sectors of agriculture in India contributes to climate change:



The plant biomass are responsible for must CO_2 absorption and emission .The Important materials process are the release of CO_2 from oceans, aerobic decay of plant materials and plant and animal respiration .Green plants, through photosynthesis, sequester a great deal of 'C' and the same time return about 50% of that sequester a great deal of 'C' where organic matter decomposition takes place.

Most of the crops of major economic consequence are considered and the impacts of environmental change are reviewed. Crops that are important for human food (Rice, Wheat, Maize, Bajara, Sorghum, Ragi, Pulses, Vegetables crops and Root and tuberous Crops) plants with C_4 and C_3 type photosynthesis and plant with Crassulacean acid metabolism (CAM) are compared for their sensitivities to likely environmental changes.

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