



Identifying for Food Security and Nutrition in Vulnerable Areas

Government of India

Ministry of Environment, Forest and Climate Change



- India- Diverse topography, climate & sociocultural groups
- Climate Change affects Food Security in complex way.
- Pathways-Impacts on Crops, livestock, forestry, fisheries and Aqua culture, social-economic consequences & social vulnerability.
- Reported - A 4x4 Assessment (Sectoral & Regional Analysis for 2030), 2010 and 2nd National Communication to UNFCCC.



Impacts on Agriculture

- Western Ghats- Reduction in Productivity of irrigated rice by 4%, yields of maize and sorghum up to 50%, productivity of live stock yields
- Coastal Region- Reduction in yields of irrigated rice by about 10% to 20%, yield of irrigated maize by 15- 30%, adverse impacts on their productivity of live stock



Impacts on Agriculture

- North Eastern- Reduction in Productivity of irrigated rice by 5-10%, yields of maize crops by up to 40%, productivity of live stock yields
- Himalayan Region- With increasing temperature, all-round decrease in apple production in the Himalayan region, and line of production shift to higher altitudes. Adverse impacts on their productivity of live stock



Impacts on Agriculture

- Growth and yield of Wheat may be reduced with increase temperature. Grain yield may be adversely affected; increasing min. temperature from normal.
- Any abrupt changes in weather parameters-increase in temperature from normal at any growth stage of crop may adversely affect growth and yield of wheat.



Water Security

- Climate change impacts may be severe in parts that depends on ground water (60 % of total area irrigated, 85% of rural drinking water supply)
- Variation in rainfall (low precipitation/dry spells) may increase water stress;
- Water Pollution: Ganges River supports over 450 million people and suffers from significant pollution. Worst in middle and lower reaches of rivers; Population growth and urbanization (Sewage, effluent and agricultural runoff) will contribute more to this pollution.
- Water Security may implications on food grain production and India's Food Security.



Strategies - Food and Water Security

- Link Forest Working Plan with likely impacts.
- Research on Adaptation- Conservation & Regeneration Practices
- Fire Protection & Management Practices
- Crop Management- dates of planting, spacing and input management (Soils Moisture Conservation, Drip Irrigation)
- Crop Diversification
- Genetic Adaptation- better capability to adapt to climate change, control soil borne diseases.



- Water Harvesting & Recycling
- Improve governance to stop ongoing mismanagement of resources and overexploitation of water resources, particularly groundwater
- Develop infrastructure including that is needed for to enhance water storage capacity (65 per cent of India's rainwater flows out to sea un-captured)



Key Interventions

- National Action Plan on Climate Change
 - Agriculture
 - Water
 - Himalayan Eco-system
 - Energy Efficiency
 - Solar
 - Knowledge Management
 - Sustainable Habitat
 - Green India Mission



National Adaptation Fund

- NAF is to assist State and UTs vulnerable to climate change in meeting adaptation Cost:
 - Priorities identified under SAPCC Water, Agriculture and Animal Husbandry, Forestry, Ecosystems and Biodiversity
- 26 Projects (650 cr.) – Grant @ about 315 cr.



State Action Plans

- MoEFCC has endorsed 32 SAPCCs
- SAPCCs cover:
 - Sources of GHG, Vulnerability, etc.: Energy, Industry, Transport, Agriculture, Forestry, Urban Development, Waste
 - Sectors: Agriculture, Water Resources, Forests, Biodiversity, Health, Urban Development, Energy & Energy Efficiency, Sea Level Rise & Coastal Infrastructure

