

## **Role of conservation agriculture for enhancing productivity, sustainability of rice-wheat systems in climate change scenario of North West India**

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**ABSTRACT** : Global warming, an important aspect of climate change is primarily a consequence of accumulation of greenhouse gases in the atmosphere. Global mean temperature has increased by 0.74°C between 1906 and 2005. Global sea level has risen at the average rate of 1.8mm/yr during 1961-2003, the rate has been faster during 1993-2003 (@3.1 mm/yr). Several agencies (e.g. IPCC) already recognised that the agriculture sector (globally) has developed several documented and tested strategies with strong potential to impact on global climate change (CC) through reduced GHG emissions (mitigation), and achieve readiness of the agricultural sector for CC (adaptation), with concurrent benefits (co-benefits) of attaining more sustainable land management practices, generally, and food and water security, and rural poverty mitigation, specifically.

The most successful and sustainable climate change adaptation strategies will be those that can simultaneously reduce vulnerability toward a variety of stressors including present climate variability and future climate change, globalisation, urbanisation, environment degradation, disease outbreaks, and market uncertainties. It has been repeatedly stated that water is intrinsically interlinked with the well-being and resilience of ecosystems and human societies. Several of the *Millennium Development Goals* have a direct or indirect relation to water. Many options for adaptation of water management to climate change can therefore be designed to achieve urgent environmental and social objectives related to present climate conditions. Current paper deals as an adaptation strategies should aim to meet the larger goals of reducing poverty, diversifying livelihoods, protecting common property resources and ecosystem services, and strengthening of collective action. The adaptation options that increase the resilience of people and ecosystems by improving access to water and ecosystem services in order to establish and maintain sustainable environments and livelihoods.

**Key Words:** Conservation agriculture, global warming, productivity, sustainability, crop residue.