Climate Smart Agriculture

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In News

Climate smart agriculture (CSA) is an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate. CSA aims to tackle three main objectives:

. sustainably increasing agricultural productivity and incomes

. adapting and building resilience to climate change

. reducing and removing greenhouse gas emissions, where possible.

Importance of Climate Smart Agriculture

- Climate-Smart Agriculture (CSA) takes into consideration the **diversity of social, economic and environmental contexts, including agro-ecological zones.**
- Implementation requires identification of climate-resilient technologies and practices for **management of water, energy, land, crops, livestock.**
- The **Intergovernmental Panel on Climate Change** (IPCC) has highlighted that future agricultural growth will be impacted by climate change. This phenomenon leads to an **increase in frequency and intensity of extreme events** such as drought, heavy rainfall, flooding and high maximum temperatures. Water scarcity and dry regions are likely to increase significantly by the end of the century.
- Besides, **greenhouse gas emissions from agriculture, including due to burning of crop fields and residues, are a principal contributor to climate change.** Hence, there is a dire need to initiate a paradigm shift in

agricultural development approaches and practices to mitigate the effects of climate change and make agriculture sustainable.

Elements of Climate Smart Agriculture

- The management of land, crops, livestock, aquaculture and capture fisheries to **balance near-term food security and livelihoods needs with priorities for adaptation and mitigation**
- **Ecosystem and landscape management** to conserve ecosystem services that are important for food security, agricultural development, adaptation and mitigation
- **Services for farmers and land managers** that can enable them to better manage the risks and impacts of climate change and undertake mitigation actions
- **Changes in the wider food system including demand-side measures** and value chain interventions that enhance the benefits of climate-smart agriculture.

Initiatives for CSA in India

- The Government of India is implementing the **National Mission of Sustainable Agriculture (NMSA), one of the eight missions under the National Action Plan on Climate Change (NAPCC).**
- Parallelly, the **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)** envisages “Per Drop More Crop”, that is, promoting micro/drip irrigation to conserve water.
- There is also a push to cluster-based organic farming through the **Paramparagat Krishi Vikas Yojana (PKVY).**
- The mission of these programmes is to extensively leverage adaptation of climate-smart practices and technologies in conjunction with the **Indian Council of Agricultural Research (ICAR)** and state governments.
- Currently, the Kisan Call Centre Services, Kisan Suvidha mobile application and Common Service Centres are supplementing the efforts towards farmer extension

services initiated by the **Agriculture Technology Management Agency (ATMA), a flagship farmer-oriented programme** to Improvise various skills not only in agriculture but also in other allied departments like Animal Husbandry , Horticulture, Fisheries and Sericulture.