

Need For Climate Smart Agriculture

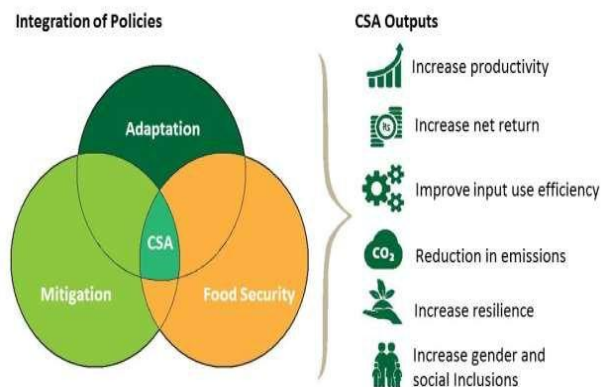
Syllabus: Major crops and cropping patterns in various parts of the country

In News

- The pervasiveness of climatic aberrations and the associated socio-economic vulnerability are now widely recognised and experienced across the globe.
- The **Sixth Assessment Report** by the Intergovernmental Panel on Climate Change (IPCC) on Global Warming at **1.5°C** distinctly propagates the need to strengthen and enhance existing coping capacity and to remain committed to the objectives of the **Paris Agreement**.

Impact Of Climate Change On Agriculture

- **Increased vulnerability:** With increasing global warming and consequent changes in climate has made indigenous populations and local communities dependent on agricultural or coastal livelihoods very vulnerable to the climate impacts.
- **India particularly vulnerable:** India, with its diverse agro-climatic settings, is one of the most vulnerable countries. Its agriculture ecosystem, distinguished by high monsoon dependence and with **85% small and marginal landholdings** is highly sensitive to weather abnormalities.
- **Direct impact on agriculture:** Research is also confirming an escalation in heat waves, in turn affecting crops, aquatic systems and livestock.
- **Impact on income:** The **Economic Survey 2017-18** has estimated farm **income losses between 15% and 18%** on average, which could rise to **20%-25% for unirrigated areas** without any policy interventions. These projections underline the need for strategic change in dealing with climate change in agriculture.



Solution/Steps Needed

- **Introduction:** There is a need to foster the process of climate adaptation in agriculture, which involves reshaping responses across both the micro and macro level decision making culture.
- **At micro level:** The traditional wisdom, religious epics and various age-old notions about weather variations still guide farmers' responses, which could be less effective. Corroborating these with climate assessments and effective extension and promoting climate resilient technologies will enhance their pragmatism.
- **Management practices:** Climate exposure can be reduced through **agronomic management practices** such as inter and multiple cropping and crop-rotation; shift to non-farm activities; insurance covers; up-scaling techniques such as solar pumps, drip irrigation and sprinklers. Several studies indicate increasing perceptions of the magnitude of climate change and the need for farmers to adapt.
- **Increasing awarness:** The **NSS 70th round** indicates that a very small segment of agricultural households utilised crop insurance due to a lack of sufficient awareness and knowledge. Hence there is an urgent need to educate farmers, reorient **Krishi Vigyan Kendras** and other grass root organisations with specific and more funds about climate change and risk coping measures.

- **At macro level:** The climate adaptations are to be mainstreamed in the current developmental framework (which is still at a nascent stage, as acknowledged in the Economic Survey 2017-18). Though programmes of the government document the likely consequences of climate change, they lack systematic adaptation planning and resource conservation practices. Mainstreaming adaptation into the policy apparatus has the potential to improve the resilience of several development outcomes.
- **Other key interventions:** Expansion of extension facilities, improving irrigation efficiency, promotion of satellite-enabled agriculture risk management, creating micro-level agro-advisories, providing customised real time data and capacity building of stakeholders are some initiatives towards building greater resilience in agriculture.

Steps Taken By Government

- **Indirect steps:** Interventions such as the **Pradhan Mantri Krishi Sinchayee Yojana, Pradhan Mantri Fasal Bima Yojana, Soil Health Card, Paramparagat Krishi Vikas Yojana, National Agriculture Market** and other rural development programmes are positive interventions that can address the vulnerability of farmers and rural households.
- **Direct steps:** There are also exclusive climate and adaptation schemes being operationalised such as the **National Innovations on Climate Resilient Agriculture (NICRA), the National Mission for Sustainable Agriculture (NMSA), the National Adaptation Fund and the State Action Plan on Climate Change (SAPCC).**

Way Forward

- It is desirable to have a cultural change wherein some of the components under existing schemes can be converged with major rural developmental programmes, which will further enhance their effectiveness at the grass-root level. A study by the Centre for Science and Environment provides insights into the development of SAPCCs across selected States.
- The SAPCC is an important platform for adaptation planning but it needs to evolve further in terms of climate-oriented regional analysis to capture micro-level sensitivity and constraints. Moreover, convergence of climate actions with ongoing efforts and several Central schemes with similar mandates is a must. Greater expertise and consultations are required for a systematic prioritisation of actions and fiscal prudence for building climate resilient agriculture.

KALIA Scheme

In News

- Chief Minister of Odisha has launched the **Krushak Assistance for Livelihood and Income Augmentation (KALIA) scheme** amounting to over 10,000 crore to provide financial assistance to farmers of the State. It is expected to benefit 30 lakh farmers. The assistance is for five cropping seasons spanning three years from 2018-19 to 2021-22.
- This is a progressive and inclusive scheme that will cover both the landholders and the landless, those who have taken loans and those who have not.
- The scheme envisages the well-being of farmers through **five kinds of government intervention**— financial support to small and marginal farmers for cultivation, livelihood support for landless households, monetary help for vulnerable agriculture households and landless labourers, life insurance cover, and interest-free crop loan.
- Around 30 lakh small and marginal farmers will each be given Rs 5,000 as financial support for the rabi and kharif seasons to buy seeds, fertilisers, pesticides and labour. The total annual expense for this will be Rs 3,016 crore.

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- As many as 10 lakh landless households will get Rs 12,500 as assistance per year for alternate livelihood activities such as goat rearing, fisheries, duck rearing, mushroom cultivation and bee-keeping.
- Landless agriculture labourers, who have been deprived of livelihood options due to old-age, disability or disease, will get Rs 10,000 per family per year for sustenance. Deserving candidates will be identified by the gram panchayats
- The scheme also promises life insurance cover of Rs 2 lakh and additional personal accident cover of Rs 2 lakh to around 57 lakh cultivators and landless agricultural labourers. Moreover, crop loans of up to Rs 50,000 will henceforth be free of interest.