



## Mains Practice Question

**Q.** What are the steps that need to be taken to promote sustainable agriculture and food security in the wake of climate change? (150 words)

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### Approach:

- Give an idea of climate change and how will it impact agriculture.
- Suggest ways to ensure food security and sustainable agriculture with relevant examples.

### Introduction

- Intergovernmental Panel on Climate change (IPCC) has recently released a report stating that the world is set to breach the global warming limit of 1.5°C between 2030 and 2052.
- The agriculture will also be affected due to extreme weather events like drought, erratic rainfall, delayed onset of monsoon flood, cyclone, hail storm, heat wave etc.
- Climate change can affect crop yields (both positively and negatively), as well as the types of crops that can be grown in certain areas, by impacting agricultural inputs such as water for irrigation, amounts of solar radiation that affect plant growth, as well as the prevalence of pests.

### Body

#### Steps that can be taken

- **Resilient Intercropping System:** To deal with delayed monsoon alternate crops of short duration varieties like black gram, groundnut can be grown etc. That will help in maintaining a source of income if the monsoon is delayed.
- **Zero tillage Adoption** of Zero Tillage will reduce the loss and increase the production. Zero-till (ZT) sowing minimizes losses due to the lodging of wheat (bending of the stem).
- **Efficient water use:** Efficient water and nutrient management should be done to enhance efficiency. Methods like drip-irrigation must be used in place of flood irrigation to save water.
- **Climate tolerant crops:** The government should incentivize farmers to use climate-tolerant crop varieties. It will help farmers to deal with crop failures due to climate change. E.g. Pokkali Rice in Kerala which is a saline tolerant rice variety.
- **Crop Diversification:** Crop diversification refers to the addition of new crops or cropping systems to agricultural production on a particular farm. Crop Diversification helps in agriculture sustainable and helps in maintaining ecological balance.

### Way Forward

- Making agriculture sustainable will help in achieving the Sustainable Development Goal 2 and 13 of Zero Hunger and take action to combat climate change and its impacts respectively. The government of India has launched the National Mission for Sustainable Agriculture (NMSA) to promote sustainable agriculture and to ensure food security.

