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How can the country be atmanirbhar in food even in the face of adverse climate change? Explain (200 words)

Agriculture sector contributes ~~to~~ about 20.19% of India's ^{GDP} ~~populal~~ and provides employment to 54.6% of its working population. It is an extremely valuable sector that provides food and economic security to the majority. However, due to climate change and its consequent impacts, these are the problems that India is facing:

Challenges:

1. Changes in weather patterns

- Indian agriculture is dependent on monsoon & rainfall. Delays / unprecedented calamities cause loss of harvest and resources.
- Heatwaves especially in the summer months affects not just crop production but also reduced milk and egg yields by 15% and 10% respectively according to ICAR's report on 2022's Heat Wave.

2. Socio Economic Impact

- Economic survey 2018 reported that 1°C rise in temperature could reduce income by 6.2% and 6% in kharif and rabi season respectively.
- Increasing food demand due to increasing population, according to ICAR, food demand in 2030 is set to increase by 30% from 2011 levels (esp, vegetables, milk, sugar & edible oil).
- Economic losses of \$9-10 billion dollars has been estimated by economic survey.

Despite these challenges, India still has ^{cause for} hope. These are current schemes in place to tackle effects of climate change.

Current schemes

1. National Innovations in Climate Resilient Agriculture (NICRA) was undertaken by the government to - evolve crop varieties and management practices for adaptation & mitigation.

→ to assess impacts on crops and livestock and identify suitable strategies.

Way forward

1. Increased spending on promoting agriculture research & development. Currently budget allocation for Sustainable Agriculture mission is only 0.8%.

→ incentivizing innovators through Atal Innovation Mission etc to develop farm implements.

→ state livelihood missions - self made inputs - vermicompost, organic fertilizer

2. Support knowledge exchange & capacity building

→ linking various farm communities → spread existing knowledge on successful methods.

e.g. Seminars & workshops with farmer resource persons. e.g. from 100% organic state - Sikkim

3. Broaden national policy food from food to nutrition security as well.

4. Infrastructure investment and value addition practices support may be provided.

Conclusion: Agriculture is India's backbone.

Evolving and adapting sustainable methods will make us ~~self~~ self-reliant in this sector.