

1. Why it is Critical to Transforming Indian Agriculture

Context:

- The need to scale up agriculture is getting more acute with rising global population. **As per UN, by 2050**, the world will have 10 billion people, with **India accounting for 1.73 Billion**.

Challenges in Indian Agriculture:

- While the population is increasing, **arable land is decreasing**, and Farmers are Grappling with **Limited Natural Resources and Climate Change**.
- **Extreme Weather Conditions** such as Floods, Droughts and Poor Rainfall are lowering crop productivity and farmer incomes.
- To **ensure safe, affordable & enough Food** and overcome farmers' challenges around low productivity & income, it is critical to transform Indian agriculture.
- There is a need to **enable farmers to earn sustainable Farm Incomes** and be Globally Competitive.

Collaboration between Various Stakeholders:

- Creating a transformational agricultural policy roadmap requires a collaborative approach between the government, industry, farmers and the society.
- It also needs **enabling policies and time bound targets focused** on technological innovation, capacity building, and market access and risk mitigation.
- For instance, a new governance model could be considered **to create crop focused ministries** for cotton, horticulture, rice, corn, etc, with end-to-end visibility of crop competitiveness, both in India and globally.
- This will bring in policy clarity, consistency and help us shift towards a more targeted fiscal incentive regime.
- Additionally, **incentives should be targeted towards sustainable farm income and agriculture**. This could be in the form of farmer incentives for efficient use of water used for cultivation, cover cost of hedging against commodity price fluctuations, GHG reduction, etc.

Ways to Transform the Agricultural Sector:

- Small land holding farmers play a key role in ensuring India's food security. One of the key priorities of the government is Doubling Farmers' Incomes.

- Several industry players have introduced targeted programs to help farmers progress from **subsistence farming to commercial farming**. This in turn will make farming an attractive profession for future generations and bring more investment.
- **Digital tools in agriculture** can help Farmers produce with less resources and make data-driven decisions in real-time. New technologies like drones are revolutionising the world of smallholder farming.
- **Drones can help identify weeds, pests and diseases and localise application of Agrochemicals**. Farmers in China & South East Asia have already started using drones. Once drones are approved for use in Indian farms, it can provide farmers significant benefits.
- Along with new technological innovations to support sustainable agriculture, we also need a **greater thrust on Capacity Building to make existing technologies available to subsistence farming communities**.
- **One good example is hybrid seeds**. Hybrid seeds use lesser water for cultivation compared to traditional varieties can better withstand diseases, insect pests and increased levels of water salinity. They also offer increased yield potential, hence, higher farm incomes. But the rate of hybridisation in India is quite low compared to other large agricultural nations in Asia.
- **Public-private partnerships, collaborative business models** and CSR initiatives can greatly accelerate hybridisation in crops such as rice, corn, horticulture etc.

Conclusion:

- The industry and the government are already supporting the shift to sustainable agriculture by popularising the use of science-based **good agronomic practices (GAP) that are climate-smart and financially viable**.
- Enhanced collaboration will be a critical imperative to transform Indian agriculture. The government could identify specific areas along the Agri value chain where public-private partnership (PPP) will benefit farmers.
- This will encourage the private sector to come forward with higher Investments for Innovation.