Mains Practice Question

Q. Discuss the role of e-technology in transforming the agricultural sector in India. Elaborate on the various e-initiatives taken by the government to empower farmers in this regard. **(250 words)**

08 May, 2024 GS Paper 3 Economy

Approach

- Introduce the significance of agriculture sector and need for harnessing e-technology
- Delve into the role of e-technology in transforming the agriculture sector.
- Highlight government's e-initiatives to empower farmers
- Conclude positively.

Introduction

In a nation where the agrarian sector employs over half the workforce and contributes **around 15-17% to the GDP,** harnessing **e-technology** has become imperative to unlock the sector's true potential.

- By leveraging digital technologies (ICTs), the government is driving several e-initiatives aimed at enhancing **agricultural productivity,** improving **market access**, and enriching **farmer livelihoods.**

Body

Role of e-Technology in Transforming the Agricultural Sector:

- **Precision Farming**: E-technology enables precision farming techniques, such as **remote sensing, GPS-based soil mapping,** and **variable rate technology**, which optimize resource utilization, reduce waste, and increase yields.
    - Reports suggest using Agriculture-IoT (Ag-IoT) can reduce water usage by 30% with precision farming.
- **Real-time Weather and Climate Information**: Farmers can access real-time weather forecasts, climate data, and **early warning systems** through digital platforms, enabling better planning and decision-making.
    - Apps like **AccuWeather, MAUSAM (developed by IMD)** provide seamless and user-friendly access to weather. Users can access observed weather, forecasts, radar images and be proactively warned of impending weather events.
- **Market intelligence**: E-platforms provide farmers with **up-to-date information** on market prices, demand trends, and supply chains, empowering them to make informed decisions and fetch better prices for their produce.
- **Access to Agricultural Expertise:** E-technology facilitates the dissemination of agricultural knowledge and best practices through **online forums, video tutorials, and virtual advisory services**, bridging the gap between farmers and experts.
    - Portals/apps such as **mKisan, Kisan Suvidha,** etc. provide information on topics such as fertilizers, subsidies, weather, and market prices. They can also help farmers manage farm operations in their local language.
- **Supply Chain Management:** Digital solutions streamline the agricultural supply chain, enabling

efficient **tracking, traceability, and logistics management**, reducing waste and ensuring timely delivery of produce.
    - **IIT Ropar** has developed an **IoT device called Ambitag**, which records real-time ambient temperature during the transportation of perishable products, body organs, and blood, vaccines, etc.
        - The AmbiTag temperature data log advises the user whether the transported item is usable or the cold chain has been compromised during the transportation.
- **Financial Inclusion:** E-technologies like **mobile banking and digital payment systems** have facilitated financial inclusion for farmers, providing them with easier access to credit, insurance, and government subsidies.
    - A few NBFCs like Clix Capital offer customised loan products through their private or quasi-cooperative digital platform, onboarding farmers and ag-tech start-ups.

Government E-Initiatives to Empower Farmers:

- **Digital India Land Records Modernization Programme (DILRMP)**: It aims to digitize and modernize land records, ensuring transparent and efficient land management for farmers.
- **Soil Health Card Scheme:** It provides farmers with soil health cards containing soil **nutrient status** and recommended fertilizer doses, enabling better soil management and productivity.
- **e-National Agriculture Market (e-NAM)**: An online trading platform that connects farmers with buyers across the country, enabling better price discovery and reducing intermediaries.
- **Kisan Suvidha mobile app**: It provides farmers with information on weather, market prices, plant protection, and government schemes, among others.
- **Agri-Udaan**: An initiative to nurture startup growth in the agricultural sector by connecting promising innovators with institutional investors.
- **National e-Governance Plan in Agriculture (NeGP-A):** To provide end-to-end digitized services to farmers, including **information dissemination, input management, and market linkages.**

While the government has undertaken various e-initiatives to empower farmers, there is still a need for continued efforts in bridging the **digital divide, improving digital literacy, and ensuring last-mile connectivity** to maximize the benefits of e-technology in the agricultural sector. **Public-private partnerships** and collaboration with **agri-tech startups** can further accelerate the adoption of e-technology and drive the transformation of Indian agriculture.