Hara Bhara: Aerial Seeding Campaign

Why in News

Recently, **Hara Bhara, India's first aerial seeding campaign** in **Telangana** using the **Seedcopter drone** was launched.

- Earlier, in August 2015, **Andhra Pradesh government had launched the aerial seeding** programme using Indian Navy **helicopters.**

Key Points

- **Hara Bhara Campaign:**
  - The idea of the campaign is to **accelerate the mission** of **reforestation** by planting one billion trees using drones by **2030 in the country.**
  - The project **uses drones to disperse seed balls** over thin, barren, and empty forest lands to turn them into lush green abodes of trees.
  - The 'seedcopter' which is a **drone** developed by **Marut Drones** is an aerial seeding solution for **rapid and scalable reforestation.**
- **Aerial Seeding:**
  - It is a **plantation technique** wherein seed balls — seeds covered with a mixture of clay, compost, char and other components — are **sprayed using aerial devices,** including planes, helicopters or drones.
  - The **plant species which are native** to the area and hardy, with seeds that are of an appropriate size for preparing seedballs are usually used for aerial seeding, with a higher survival percentage.
  - Seeds balls/pellets are **dispersed in a targeted area** by low-flying drones, with the coating providing the required weight for seeds to airdrop on a predetermined location rather than getting deterred by the wind.
  - These pellets **sprout when there is enough rain**, with nutrients present within them helping in initial growth.
- **Advantages of Aerial Seeding**:
  - **Access to Inaccessible Areas:**
    - Areas that are **inaccessible**, having steep slopes or no forest routes, can be targeted using this method.
  - **No Extra Attention Requires:**
    - The **process of the seed's germination and growth is such that it requires no attention** after it is dispersed and thus seed pellets are known as the "fire and forget" way of planting.
  - **Eliminate Need of Ploughing:**
    - They **eliminate any need for ploughing and do not need to be planted** since they are already surrounded by soil, nutrients, and microorganisms.
    - The clay shell also protects them from birds, ants and rats.
  - **Prevents Soil Runoff:**
    - Aerial application **does not cause soil compaction**, hence prevents soil runoff.
      - This type of seeding technique will be most **useful for tropical forests because they absorb carbon much faster** than other forest types and also support much higher biodiversity.

- **Challenge:**
  - Drones may reduce costs, but one cannot rule out the **possibility of seeds falling on the wrong spot.**
  - Even when they reach the ground **many variables can hinder the emergence of seedlings**, such as soil composition, animal predation and weed competition.
- **Related Indian Initiatives:**
  - National Mission for a Green India
  - **National Afforestation Programme (NAP)**
  - **Compensatory Afforestation Fund Management and Planning Authority, (CAMPA Funds)**
  - National Action Programme to Combat Desertification

Source: TH