



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

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