PUSA Decomposer

What is the issue?

- PUSA Decomposer is being used to tackle stubble burning.
- If it is successful in tackling it, we may see a revolution in farming.

What is stubble burning?

- Stubble burning refers to the practice of farmers setting fire to plant debris that remain in farms after harvest.
- It is practised predominantly by farmers in north India.

How did stubble burning originate?

- Before the 1980s, farmers used to till the remaining debris back into the soil after harvesting the crops manually.
- The origin of stubble burning can be traced to the advent of the **Green Revolution** and **mechanised harvesting**.
- The Green Revolution increased greatly rice and wheat production.
- This simultaneously increased stubble post harvest.
- However, the popular combined harvesting technique was not efficacious, as machines left behind one-foot-tall stalks.
- This prompted stubble burning as a low-cost and speedy solution available to farmers due to the limited time period between harvesting one crop and sowing another.

What is the environmental impact?

- Stubble burning releases harmful gases including nitrogen oxide and carbon monoxide into the atmosphere.
- In recent years, this practice has created vast smoke blankets across the Indo-Gangetic Plain and numerous neighbouring States, including Delhi.
- This directly exposes millions of people to air pollution.
- As per TERI report, in 2019 air pollution in New Delhi and other parts of north India was 20 times higher than the safe threshold level prescribed by the World Health Organization.
- [TERI - The Energy and Resources Institute]
- Stubble burning also has a deleterious impact on soil fertility, destroys organic fertilizers and reduces ground water levels.

- Stubble burning during a pandemic could worsen the situation by making lungs weaker and people more susceptible to disease.
- It could also impact those recovering from infection.

What were the previous actions?

- In 2013, stubble burning was banned by the Punjab government.
- In 2015, the National Green Tribunal imposed a ban on stubble burning in Rajasthan, Uttar Pradesh, Haryana and Punjab.
- It also directed government to assist farmers by obtaining equipment like happy seeders and rotavator.
- Stubble burning is an offence under Section 188 of the Indian Penal Code and the Air (Prevention and Control of Pollution) Act of 1981.

What did the SC say?

- In Aditya Dubey v. Union of India, the Supreme Court appointed retired apex court judge Justice Madan B. Lokur as a one-man committee.
- This committee was appointed to monitor and provide steps to prevent stubble burning activities in Punjab, Haryana and U.P.
- Haryana submitted that many steps are taken to curb stubble burning in Punjab and Haryana.
- Now the Union government has brought out an ordinance to set up a permanent commission for air quality management.
- This will replace the Justice Madan B. Lokur Commission.

What is needed?

- A revolution in timely stubble removal is the need of the hour.
- The action plan of Punjab and Haryana appears to focus more on setting up **Custom Hiring Centres**.
- These Centres will facilitate farmers removing stubble by providing them with machinery such as the happy seeder, paddy straw chopper, etc. on rent along with the supply of more balers.
- As per a study, the application of happy seeders and super SMS machines can improve agricultural productivity by 10% to 15%
- It will also reduce labour costs and allow the soil to become more fertile.

What is PUSA Decomposer?

- In 2020, the Union government is testing an innovative method, the PUSA Decomposer.
- It was developed at the Indian Agricultural Research Institute, Pusa.
- The PUSA Decomposer is a set of four tablets made by extracting fungi

strains that help the paddy straw to decompose at a faster rate.

- This gives the farmers the option to shred the straw, spray a solution containing the fungal strains, and mix it with the soil for decomposition.
- If methods such as this become successful, it will be a new revolution in farming.
- This has the potential to both reduce air pollution and increase soil fertility.

Source: The Hindu

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