Q1. Fly Ash remains a stubborn environmental problem. Critically analyze the various issues involved in effective fly ash management.

Fly Ash is a fine powder which is a bye product of Thermal Power Plants caused by burning of coal. It is mainly composed of carbon, oxides of silica, aluminium and traces of heavy metals such as Arsenic, Cadmium, Nickel, Lead, etc.

Environmental problem

1. Air pollution: It contributes to PM2.5 and PM10. Inhaling it causes respiratory ailments.

2. Water pollution: Improper management of fly ash leads to dumping them in water bodies → chokes marine life.

3. Reduces Albedo: Fly ash deposited on ice surfaces absorbs solar heat and decreases its

reflecting capacity, causing melting of ice.

Challenges in effective fly ash management

1. Transportation: Since these are lightweight particles, they tend to fly causing air pollution. Hence makes transportation difficult.

2. Health problems: People who handle fly ash can develop serious respiratory problems due to prolonged inhalation.

3. Technology: Lack of appropriate technology to collect fly ash particles and use it effectively.

4. Information sharing: Lack of co-ordination between supply and demand sources.

5. Disposal: Dumping in water bodies damages aquatic life and causes silt ation problems.

6. Prices: High prices makes it competitively disadvantaged with respect to cement.

Solutions

- Can be used for brick manufacturing, thus reducing the need to use top soil.
- Road / embankment construction and low lying area development.
- As soil conditioner to improve porosity, water holding capacity, etc.

At present, only 63% of fly ash is being utilized in India compared to the target of 100%. Steps have been taken like reducing GST rates to 5%, ASHTRACK app for effective utilization. A Fly Ash Utilization Policy is required to convert waste to wealth.