

- Learning from best practices: Chhattisgarh and Jharkhand have developed apps that can track the population of elephants in the region which can be adopted by other states.
- Develop forest fringes; Prevent and control unnecessary human intervention in the wildlife area
 - Restore or rebuild the wildlife corridor to enable the wildlife animal's free movement.
 - Resettle the human habitation from the vicinity of the wildlife area.
 - Strengthen vigilance to prevent and control poaching thereby ensuring sufficient prey base within the wildlife area.
- Set up permanently manned rescue units at state level and create rescue centres for problematic animals.

8. ***Elaborate on the concept of rat-hole mining. In the context of North-Eastern India, highlight its ecological consequences. Also, explain why it still persists despite the ban imposed by National Green Tribunal (NGT)?***

Approach:

- Explain the concept of rat-hole mining, its types and ecological impacts.
- Highlight the NGT ban, its reasons and reasons for its persistence.

Answer:

Rat-hole mining is a primitive and hazardous method of mining for coal, where workers use tunnels that are only 3-4 feet in diameter (hence, rat-hole) to enter and extract coal. There are two types of rat-holes:

- when dug into the ground these are vertical shafts leading to the mines where horizontal tunnels are dug;
- the second type is where horizontal holes are dug directly in the hillsides to reach coal seams (bed of coal).

It is highly prevalent in the North-East Indian state of Meghalaya.

Ecological consequences

- **Water from streams** and rivers such as Kopili in the mining area has become acidic and unfit for drinking and irrigation, and is toxic to plants and animals.
- Entire roadsides in and around mining areas are used for **piling of coal** which is a major source of **air, water and soil pollution**.
- **Off road movement of trucks** and other vehicles in the area causes further damage to the ecology of the area.
- In Jaintia hills district of Meghalaya, **deforestation, soil erosion, surface run-off, caving in of the ground** are some other prominent environmental problems associated with coal mining.

In light of the above facts, NGT imposed ban on rat-hole mining in 2014 on grounds of it being unscientific and unsafe for workers, as evidenced by the 15 trapped workers in a flooded coal mine in Meghalaya, where all are feared dead. Still, **it persists due to the following reasons:**

- **Lack of other economically viable method** for coal extraction in these areas as the coal seam is extremely thin.
- Rat-hole mining is a locally developed technique with a long history of it being practiced by family members of the nearby tribals, thereby providing jobs to the locals. Also, there are **lack of other employment opportunities** in the region.
- Prevalence of **mining mafia** in the region in collusion with the political elites.