Social Costs of Vulture Decline

Why in news?

Recent study reveals that there is a strong link between Vulture decline in India and its impact on human health crisis.

What is the status and role of vultures in India?

- **Distribution** – It is *now extinct in South East Asia* with current populations existing ***mostly in central and peninsular India***, south of the Gangetic plains.
- It is also found in southwest Pakistan, Bangladesh and Nepal.
- **Types** – There are ***nine species*** of vultures, *five belong to the genus Gyps* and the rest *four are monotypic*.
    - Oriental White-backed Vulture - G.bengalensis
    - The Long-billed Vulture - G.indicus
    - Slender-billed Vulture - G.tenuirostris
    - The Himalayan Vulture – G.himalayensis
    - The Eurasian Griffon – G.fulvus
    - Egyptian Vulture - Neophron percnopterus
    - Red-headed Vulture - Sarcogyps calvus
    - Cinereous Vulture - Aegypius monachus
    - Bearded Vulture (Lammergeier) - Gypaetus barbatus
- **Role in Ecosystem** – They feed on carrion, the remains of dead animals, and act as the 'rubbish collectors' of the natural world.
- It help eliminating potentially harmful bacteria from the environment, potentially limiting the spread of diseases such as anthrax and rabies.
- **Role in culture** – The Dakhma or 'Towers of Silence' is a unique and environmentally conscientious method of laying the dead to rest practised by the Parsi community.
- The *vultures* performs the pivotal role of stripping away the flesh from the bones through their scavenging process.

Why vulture population is declining in India?

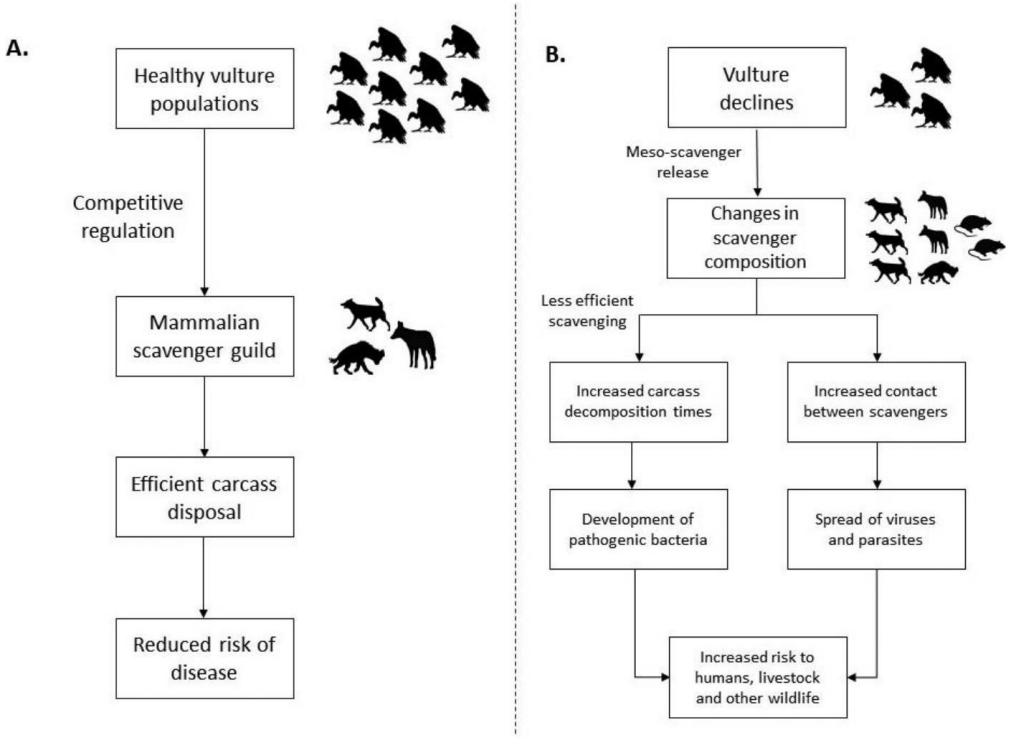
- **Decline** – In the mid-1990s, India's vulture population reached near extinction
    - White-rumped Vulture, Indian Vulture, and Red-headed Vulture declined by 98%, 95%, and 91% respectively.
- India's remaining vulture populations are largely confined to protected areas and feed primarily on wildlife.
- **Veterinary drugs** – It is primarily due to the widespread use of diclofenac in livestocks.
- Vultures consuming the carcasses of treated livestock suffered fatal kidney failure.

Diclofenac, a non-steroidal anti-inflammatory drug (NSAID) used to treat sick cattle.

- Alternatives to diclofenac such as aceclofenac, ketoprofen, and nimesulide also affected vultures.
- **Usage of NSAIDs** - Nonsteroidal anti-inflammatory drugs are the most prescribed medications for treating conditions such as arthritis.
- Diclofenac and aceclofenac, continue to be produced for human use.
- **Loss of Habitat** – It is due to *urbanization, quarrying and mining*.
- **Dwindling availability of food** - Carcasses increasingly being *buried and burned* and also due to *competition from feral dogs* continue to pose risks.
- **Poisoning** - Deliberate *poisoning of carcasses*, intended to kill dogs and other carnivores, also kills vultures.

What are social and economic impacts of decline in vulture population?

- Dramatic decline over vulture population over the past two decades has had unforeseen consequences for both wildlife and human health.
- **Sanitation crisis** - Rotting carcasses left unattended, potentially contaminates and pollutes soil, air and water sources.
- It allows for increased feeding and breeding of stray dogs.
- **Proliferation of harmful microbes** – The absence of vultures allowed bacteria and pathogens to proliferate.
- **Disease in humans** – Growth of harmful microbes led to a surge in human diseases and deaths.
    - Diseases such as *rabies got exacerbated* by the rise in stray dog populations.
- Treatment *increases the health expenditure* of individuals and the government.
- **Deaths in humans** - 4% increase in death rates in areas where vultures once thrived and now absent.
    - It caused approximately *100,000 additional human deaths* annually between 2000 and 2005.
- **Economic Loss** - The economic impact of these additional deaths is estimated at *over $69 billion per year in mortality damages*.



- **Impact on tanning industry** - India's tanning industry once relied on quick removal of carrion by vultures.
- In their absence, shifting to burying or burning cattle *reduced the supply of cattle skin* for leather manufacturing.
- **Cultural Impact** – It *affects the tradition of Dhakma of the Parsi* whereby the burial rituals require vultures to consume the body.

Conservation measures by India
• Asia's first *vulture re-introduction program* in 2016 by Jatayu Conservation Breeding Centre, Pinjore. • *Vulture Action Plan 2020-25* by Union Ministry of Environment, Forest and Climate change. • SAVE (*Saving Asia's Vultures from Extinction*) program by Consortium of regional and international organizations. • Diclofenac is banned in veterinary medicine since 2008 while Aceclofenac and ketoprofen were banned for animal us in 2023.

What lies ahead?

- Creating awareness among people about the importance of vulture.
- *Adopting One Health approach* for holistic coverage of human, animal and environmental health.
- Preventing misuse of veterinary & NSAIDs by ensuring their sale only on prescription.
- Scientific manner of disposal of livestock carcasses animals that died during treatment.
- Finding nontoxic alternatives for animal steroids.
- In- Situ conservation of vulture for the captive breeding.
- Continued action is necessary to ensure the survival and recovery of these vital scavengers.

References

1. Indian Express | Vulture decline, a human health crisis
2. India Today | Declining vulture population
3. BFI.UChicago.EDU| Social Costs of Keystone Species Collapse

