

TRADE AND INVASIVE ALIEN SPECIES: ENVIRONMENT/ECONOMY

NEWS: Trade tariffs close borders but may open doors to invasive alien species

WHAT'S IN THE NEWS?

India has lost over \$127 billion due to Invasive Alien Species (IAS), driven by weak border biosecurity, rising global trade, and climate change. The need for a unified 'One Biosecurity' framework and strict regulation is urgent to protect biodiversity, economy, and public health.

Context and Relevance

- Recently, a renewed focus has emerged on the link between rising global trade and the growing spread of Invasive Alien Species (IAS).
- India is reported to have incurred a massive economic loss of \$127.3 billion due to IAS, which is the second-highest globally.
- This issue is relevant for GS Paper 3 under the topics of environment, biodiversity, trade, and ecological sustainability.

What are Invasive Alien Species (IAS)?

- Defined under the Wildlife Protection Act (WPA), 1972 (Amended 2022): IAS are species (plant or animal) that are non-native to India and whose introduction or spread may threaten or adversely affect the wildlife or its habitat.
- Characteristics of IAS as per the Convention on Biological Diversity (CBD):
 - **Arrive:** Introduced by human activity or natural dispersion.
 - **Survive:** Adapt to the new habitat by using local resources.
 - **Thrive:** Multiply rapidly, often displacing native species.

Ecological and Economic Impact

- Cause ecological imbalance by outcompeting native species for resources.
- Can alter soil chemistry, hydrology, and food chains.
- Have massive economic impacts, including loss of agricultural productivity, biodiversity damage, and increased public health risks.
- Estimated cost to India: \$127.3 billion.

Challenges in Managing IAS in India

- **Lack of Border Quarantine:** Weak screening and control at entry points such as ports and airports allow accidental introductions.
- **Post-Trade Monitoring:** Absence of environmental impact assessments after imports.

- **Data Deficiency:** Economic impacts have been quantified for only 3% of IAS.
- **Fragmented Governance:** Overlap and lack of coordination between ministries such as Environment, Agriculture, Fisheries, and Commerce.
- **Climate and Trade Factors:** Warming temperatures, faster trade routes (air and sea), and increasing volume of trade heighten risk.

Public Health and Ecological Risks

- IAS such as *Aedes aegypti* (mosquito responsible for dengue and yellow fever) create significant public health challenges.
- Disruption of natural habitats affects livelihoods and ecological services.

Major Examples of IAS in India

Species	Impact
Giant African Snail	Destroys crops, spreads parasitic infections
Lantana camara	Displaces native plants, reduces biodiversity (e.g., in tiger reserves)
African Catfish	Predates on migratory birds in Bharatpur Wetlands
Parthenium grass	Toxic; entered India through wheat imports under PL-480
Tilapia	Introduced for aquaculture; now outcompetes native freshwater fish
Prosopis juliflora	Over-extracts groundwater, making regions arid

Policy and Regulatory Framework in India

- **Plant Quarantine (Regulation of Import into India) Order, 2003:** Mandates inspections and pest risk assessment for imported plants/seeds.
- **Wildlife (Protection) Amendment Bill, 2021:** Provides a legislative base to regulate IAS.
- **Biological Diversity Act, 2002 & National Biodiversity Authority:** Framework for biodiversity conservation, including IAS threat mitigation.
- **National Action Plan on Invasive Alien Species (NAPINVAS):** Focuses on prevention, early detection, and ecosystem recovery.
- **National Invasive Species Information Center (NISIC):** Database and knowledge hub on IAS.

Global Frameworks for Managing IAS

- **UN Convention on Biological Diversity (1992):** Urges countries to prevent, control, or eradicate IAS.

- **Kunming-Montreal Global Biodiversity Framework (2022):** Sets a global target to reduce the rate of IAS introduction by at least 50% by 2030.
- **Convention on Conservation of Migratory Species (1979):** Focuses on habitat and species conservation, including IAS control.
- **Global Invasive Species Programme (GISP):** Supports research and capacity-building worldwide.
- **Invasive Species Specialist Group (ISSG):** A global scientific network under the IUCN SSC to address IAS threats.

Policy Recommendations for India

1. **Adopt ‘One Biosecurity’ Approach:** Integrate ecological, health, and economic risk assessment into a cohesive national biosecurity framework.
2. **Strengthen Border Infrastructure:** Install modern surveillance and inspection technologies at all major ports of entry.
3. **Establish Central IAS Authority:** For inter-ministerial coordination and enforcement.
4. **Mandatory Risk Assessments:** Enforce pre-import screening and post-import quarantine.
5. **Develop National IAS Database:** For real-time tracking, ecosystem surveillance, and policy response.
6. **Promote Awareness & Research:** Fund academic research, community-level outreach, and training programmes.
7. **Use Technology:** AI tools for detection, satellite monitoring, and early-warning systems in vulnerable ecosystems.

Source: <https://www.thehindu.com/sci-tech/energy-and-environment/trade-tariffs-close-borders-but-may-open-doors-to-invasive-alien-species/article69708421.ece>