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Global Webinar Series

Environment and Emergencies in the face of COVID-19

Environment and Emergencies Issues and Lessons



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UNEP and Environmental Emergencies

Environment and Emergencies: Issues and Lessons

Anil Kumar Gupta, Professor 26th July 2020, New Delhi

Environment and Emergencies

Environmental emergencies as disasters

• Recent experiences and additions

Environmental – disaster linkages

- 1. Environment as disaster-risk driver
 - a) Environmental degradation exacerbates disasters
 - b) Environment as source of natural hazards
- 2. Disasters damage environment
- 3. Environmental concerns in Relief and Recovery
- 4. Integrated Environment and DRR



Some recent major disasters: Impact on environment

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SUPER-CYCLONE AMPHAN

About 28% of the Sunderbans has been damaged; around 1,200 sq km of the 4,263 sq km forests had been "destroyed"- CMO

• Almost 5000 trees, several of which are over 50 years old, have been uprooted (Kolkata Municipal Cooperation). Environmentalists, however, have put the number at 10,000.



ASSAM GAS AND OIL PLANT EXPLOSION

The Eco-Sensitive Zone of the park, there are reports that the condensate is falling into Dibru-Saikhowa National Park and Maguri-Motapung wetland too.

• Reported deaths of Gangetic dolphins, and a variety of fish. The number of birds have also decreased because they have flown away.



VIZAG GAS LEAK

- All the trees in the vicinity where the gas leak occurred, were either fully or partially dry
- Possibility of long term impact on future health, livestock and on elements of the biota like air, water, soil, flora and fauna.
- Gas leak is reported to have polluted other water bodies and drinking water supply systems (Megahdrigedda and other reservoirs)

Amphan in West Bengal and Odisha











Impact of Cyclone Amphan on Agro-ecosystems

- Paddy and green gram crops that had been harvested and stocked by farmers were completel damaged in the heavy rains. Besides, around 1500 betel vines in Dhinkia, Nuagaon and Gadakujang panchayats were battered by the strong winds.
- Mango orchard owners in Murshidabad and flower growers in Hooghly have their crops completely wiped out too.





Locust Attack

- Locust a collection of certain species of short-horned grasshoppers in the family Acrididae that have a swarming phase. Small swarm of desert locust eats on an average as much food in one day as about 10 elephants, 25 camels, or 2,500 people.
- Locusts devour leaves, flowers, fruits, seeds, bark and growing points, and also destroy plants by their sheer weight as they descend on them in massive numbers.
- 2020 locust is reported to be worst attack in 27 years and farmers are now hit by unexpected and deadly locust attack facing huge crop loss.
- The locusts have already destroyed nearly 50,000 hectares (125,000 acres) of cropland.
- In Rajasthan's Bikaner district, locust swarm destroyed cotton crops spread over 700 hectares of farmland estimated to be 100 million.
- Ecosystem changes and climate-change connections



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Locust Attack and Farm Land ecosystems

Extent of Spread:

Provisioning Services:

Control

Rajasthan, MP, UP, Delhi-NCR, Haryana, Bihar.

2. Reduces Water Temperature

Impacts & Damage:

- Paddy, maize, fodder grass and vegetables.

Protected Area and Key Biodiversity areas under threat. Source: IBAT, IUCN



Regulating Services:

bio-chemicals

- 1. Carbon Storage
- Impaired Micro-Climate Regulation 2.
- 3. Lost Pest and Disease Regulation

Disasters Timeline – Impacting the Water Bodies



Assam Gas and Oil Leak





Assam Floods

High Flood Alert Area



Key Biodiversity Area (Bird Conservation Site)



Ecosystem services impacted

Cultural Services:

- 1. Reduced Aesthetic pleasure
- 2. Tourism opportunity hampered

Supporting Services:

- 1. Hydrological regimes
- 2. Primary Production
- 3. Nutrient Cycling

Regulatory Services:

- 1. Climate Regulation
- 2. Disease Control & Prevention
- 3. Nutrient Cycling
- 4. Drainage & Flow
- 5. Erosion & Sedimentation

Provisional Services:

- 1. Water for Drinking and Industrial use
- 2. Resources

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Wildfires



 As a result of the rising temperatures, forest fires have destroyed nearly over 71 hectares of forest covers and caused tremendous loss of flora and fauna.

Key Lessons: Dealing Emergencies Differently

- Holistic Proactive, Crisis Cycle, Sustainability inclusive
- Business continuity resilience and sustainability issues
- Integrated (Environment and Disaster Crisis Management)
- Eco-DRR / NBS: Infrastructure, Cities, Livelihoods, Health. Food, Economy
- Greening and Carbon Neutrality in Relief and Recovery
- Improving Planning and Assessments: PDNA, Risk Analysis, EIAs/SEAs, LCA, etc.
- Long-term Resilience and Adaptability
- Translating Risks to Opportunities.







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