Research Report

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Forum: *United Nations Environment Programme*
Issue: *The environmental impact of sand mining*

Position: *President*

Introduction

Per definition, sand mining is the application in which sand is extracted through an open pit, other practices could include the extraction of sand from ocean or river beds. This practice is used to extract sand that is predominantly utilized in manufacturing. Different types of sand extracted are usually operated in different manufacturing / sectors. For example, silica sand is the principal, paramount, component of glass, and abrasives, whereas dune sand on the other hand is chiefly used in foundries. Moreover, for millenniums, the construction of roads and buildings has been dependent on both sand and gravel. Alternatively, with the massive increase in demand of sand for the previously mentioned uses, the practice of sand mining has been increasing as well.

The main concern is how, unfortunately, sand mining is posing various disadvantages on the environment. The primary goal of the following research report is to highlight the different impacts that sand mining has on the environment.

General Overview

The United Nations Environment Program deeply believes that the large quantities of materials that are used has a significant effect and impact on biodiversity, water pollution, water table levels, climate, as well as socio- economic, political, and cultural impacts. One extreme previous case is how the mining has changed international boundaries. Therefore, it is very vital to address this topic, and work globally on it.

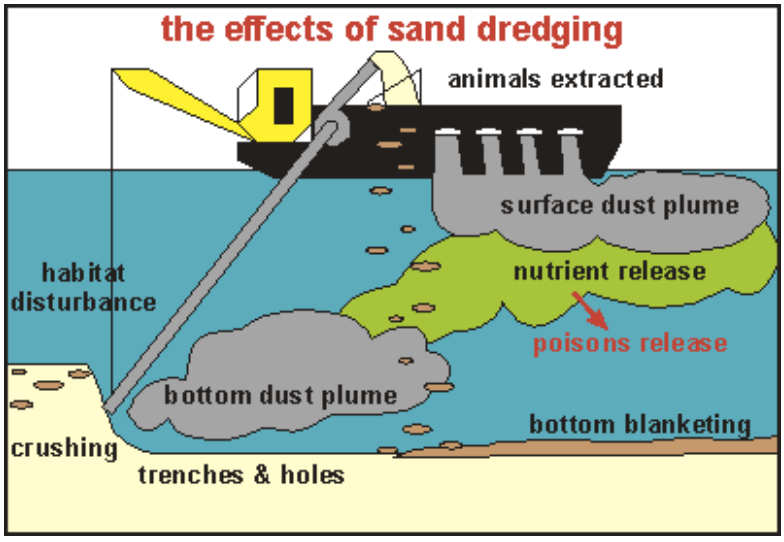
Impacts on	Description
Biodiversity	Impacts on related ecosystems (for example fisheries)
Land losses	Both inland and coastal through erosion
Hydrological function	Change in water flows, flood regulation and marine currents
Water supply	Through lowering of the water table and pollution
Infrastructures	Damage to bridges, river embankments and coastal infrastructures
Climate	Directly through transport emissions, indirectly through cement production
Landscape	Coastal erosion, changes in deltaic structures, quarries, pollution of rivers
Extreme events	Decline of protection against extreme events (flood, drought, storm surge)

One of the first negative significances of sand mining on the environment is its great influence on rivers. Sand is considered to be very critical for the maintenance and nourishment of rivers, and if the sand was either moved or removed by sand mining, it will:

1. Destroy homes by completely disrupting the channel forms, habitats, food chains and
webs, and therefore disrupt the river's ecosystem.
2. Erode river banks by increasing the velocity of flow in river.
3. Cause the riverbed to dry out because of the subjection and exposure to solar radiation, which will therefore decrease the surface.
4. Remove the vegetation, and destroy habitats above and below the ground.
5. Cause salt- water intrusion.
6. Cause land loses, both inland and coastal, due to erosions.
7. Pollute the rivers.

The marine life is also greatly impacted by social mining, due to the following reasons:

1. Turbidity and annoyance in water has a great chance of increasing at the mining site because of possible oil spills, leakage from machines and vehicles, sedimentation, and will therefore effect the marine life present in that area.



The effects of sand mining on societies will be elaborated here:

1. The remnant of radioactive materials (ex: monazite and zircon) will negatively impact near biota.

2. The fracking procedure might cause cancer.

3. The respiratory disorders that are caused by the large amounts of dust entering into the atmosphere during sand mining.

4. The noises pollute the environment and disturb the citizens living in close areas

Major Parties Involved

India
Sand mining is becoming a very serious environmental issue, and common pursuit in India. Previous attempts of public awareness raising from environmentalists have been done on the illegal sand mining in different states of India.

Sierra Leone
A recent protest has been done against sand mining on Sierra Leone's Western Area Peninsular by local villagers.

New Zealand
Sand mining occurs in the Kaipara Harbour of New Zealand.

United States
Currently, the size of the sand mining demand in the United States is around a billion dollars every year.

China
A very large amount of sand is currently being extracted from the bottom of rivers in China, such as the Red River.

Conclusion

It's important for Member States to regulate such phenomenon and provide long and short term solutions in order to save the environment, and its biodiversity. This could be done through adopting the necessary measures to control and combat the practice of sand mining. Such measures could include the involvement of the government, or the involvement of organisations and agencies.

Appendix/Appendices

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