



UNEP Report on Sand Mining

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The United Nations Environment Programme (UNEP) has released a report, **Sand and Sustainability: Finding new solutions for environmental governance of global sand resources**, that highlights a problem that the **sand has been extracted at rates exceeding natural replenishment rates**.

- **Sand and gravel** are mined the world over, accounting for the **largest volume of solid material** extracted globally.
- **Without them, there is no concrete**, no asphalt, no glass to **build** the necessary schools, hospitals and other **necessary infrastructure** under current construction and industrial production systems and methods.
- The statistics show that the **quantity of cement produced has tripled in two decades**. The use of sand and gravels is highly correlated with the cement production.
- **India and China lead in global infrastructure construction**. China overseas investment in infrastructure development through the **Belt and Road Initiative** will drive **demand for aggregates** (a term for crushed rock, sand and gravel used in construction materials) in approximately 70 countries.
- Furthermore, **domestic demand in India** is expected to drive strong future growth in Asia.
- **Accountability and transparency are the major challenges** in managing the sand mining.

Ecological Damage

- While 85% to 90% of global sand demand is met from quarries, and sand and gravel pits, 10% to 15% extracted from rivers and seashores is a severe concern due the environmental and social impacts.
 - Their extraction often results in **river and coastal erosion** and **threats** to freshwater and marine fisheries and **aquatic ecosystems**, instability of river banks leading to increased flooding, and lowering of groundwater levels.
 - The report notes that **China and India head the list of critical hotspots** for

sand extraction impacts in rivers, lakes and coastlines.

- As per the report, most large **rivers** of the world **have lost between half and 95% of their natural sand and gravel delivery to ocean.**
 - The damming of rivers for hydro-electricity production or irrigation is **reducing the amount of sediment flowing downstream.**
 - This broken replenishment system **exacerbates pressures on beaches** already threatened by sea level rise and intensity of storm-waves induced by climate change, as well as coastal developments.

Solutions

- **Reducing unnecessary construction** including speculative projects or those being done mainly for prestige thereby making more efficient use of aggregates.
- **Investing in infrastructure maintenance** and retrofitting rather than demolish and rebuild cycle.
- Embracing alternative design and construction methods, even **avoiding the use of cement and concrete where possible.**
- It is critical to raise **awareness** that what is seen as cheap and freely available i.e sand, is in fact a limited resource.
- At the policy level, the way forward, the report suggests, is to strengthen standards and **best practices to curb irresponsible extraction** and to invest in sand production and consumption measurement, monitoring and planning; and establish **dialogue based on transparency and accountability.**