Launch of the Marine Sand Watch:
MONITORING MARINE SAND EXTRACTION
6 SEPTEMBER 2023 | 14:00 - 15:30 CEST | CICG & ONLINE

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Launched of the Marine Sand Watch:
MONITORING MARINE SAND EXTRACTION

SPEAKERS
By order of intervention.

Elisa TONDA
Chief, Resources and Markets Branch, UN Environment Programme

Pascal PEDUZZI
Director, UNEP/GRID-Geneva

Laura PLATCHKOV
National Focal Point (UNA5/12), Federal Office for the Environment, Switzerland

Vera VAN LANCKER
Marine Geologist, Royal Belgian Institute of Natural Sciences

Arnaud VANDER VELPEN
Sand Industry & Data Analytics Officer, UNEP/GRID-Geneva

Stephanie CHUAH
Programme Officer, UNEP/GRID-Geneva | Moderator

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AGENDA
Moderated by Stephanie CHUAH | Programme Officer, UNEP/GRID-Geneva

Opening
- Elisa TONDA | Chief, Resources and Markets Branch, UN Environment Programme

Presentation of the Marine Sand Watch
- Pascal PEDUZZI | Director, UNEP/GRID-Geneva

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Q&A

Closing
Technical Information

- Throughout the event, you may raise your questions in the Q&A box
- Automatically translated subtitles in many languages are available through the captions button on the bottom left of your screen
- The recording, summary and documents will be made available on the event's website

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ENGLISH CAPTIONS CAN BE ACTIVATED BY CLICKING ON THE BOTTOM ON THE LEFT-SIDE OF THE BOTTOM BAR ON THE SCREEN

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PRESENTATION OF THE MARINE SAND WATCH

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MARINE SAND WATCH
Making the invisible visible

the world’s first public data platform that tracks and monitors sand dredging activities in the marine environment world-wide.
In 2020, the weight of man-made building material exceeded global living biomass.

Global human-made mass exceeds all living biomass
https://www.nature.com/articles/s41586-020-3010-5#-09

The vast majority is made of sand and gravels
Roads
Buildings for houses, offices, schools, hospitals
Infrastructures: dams, bridges, tunnels, dikes, airports, harbours, wind turbines, solar panels
Glass for windows, bottles,...
Memory chips
Land reclamation
Sand is a necessary for the environment
Environment
1. Marine
2. Deltas
3. Beach
4. River
5. Subsurface

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Infrastructures
6. Land use
7. Coastal use
8. Urban infrastructures
9. Industrial use
10. Energy

Graphism: Peduzzi, UNEP/GRID-Geneva, 2022
Humans are extracting 50 billion tons of sand and gravels per year...
... amongst them, 4-8 billion tons of sediments are extracted or moved in the marine environment
Mineral resource governance

The United Nations Environment Assembly,

Recalling the principles and purposes of the Charter of the United Nations,

Recalling also the Stockholm Declaration on the Human Environment 1972, its Action Plan and recommendations 96 on mining and mineral resources,

Recognizing General Assembly resolution A/RES/57/55 of 28 October 1982, entitled “World Charter for Nature” but noting that “two essential resources (…) shall be exploited with restraint, taking into account their abiotic, rational potentialities of converting them for consumption, and the compatibility of their exploitation”,

Recalling the Berlin Guidelines 2002 and their fundamental Principles for the Mining Sector, which states that governments, mining companies and minerals industries should recognize environmental management as a high priority, establish environmental accountability, and minimize the participation of interested parties,

Recognizing the Johannesburg Plan of Implementation of the World Summit on Sustainable Development, adopted on 26 September 2002, which recognized that minerals are essential for modern living and sustainable development,

Recognizing also the outcome document of the United Nations Conference on Sustainable Development, entitled “The future We Want”, General Assembly resolution A/RES/66/289 adopted on 23 July 2012, which stresses the major contribution of minerals and metals to industrial societies and which calls upon governments and businesses to promote the consistent improvement of accountability and transparency,

Recognizing United Nations General Assembly resolution A/RES/70/1 of 23 September 2015, entitled “Transforming our world: the 2030 Agenda for Sustainable Development”, in particular Sustainable Development Goal 12 “Responsible consumption and production” and reminding the importance of contribution towards their achievement,

Noting that clean technologies, highly dependent on metals and minerals, are important to combat climate change issues,

RESOLUTION 12/8

4. Requests the Executive Director, through the Global Resource Information Database (GRID-Geneva), to strengthen scientific, technical and policy knowledge with regard to sand, and to support global policies and action regarding the environmentally sound extraction and use thereof;
Sand can be extracted from **static areas**, such as quarries...
... or by crunching rocks
It can be extracted from **dynamic areas** such as beaches.
Or from rivers
Increasingly from the marine environment
Direct and indirect impacts

1. Increased turbidity
2. Far field changes in tides and currents
3. ‘Passive’ sediment plume
4. Plume dispersal
5. Seabed sediment veneers
6. Deposition from sediment plumes
7. ‘Active overflow plume
8. Ship/Machinery noise
9. Seabed removal: bathymetric change
10. Draghead noise
11. ‘Active’ screening plume
12. Base of deposit

Sources: Peduzzi, 2014

Legend:
- Water column
- Resource - sand and gravel
- Bedrock
- Licence boundary
Large boats are emitting radio signals: Automated Identification System (AIS) allowing to monitor their movements.
Vessel Information
IMO: 1234567*
Name: XYZ 123*
Vessel Type: Dredger
Vessel type detailed: suction Dredger
Navigational Status: Active
Flag: Netherlands [NL]
Gros Tonnage: 4548 t.
Length: 97.26 x 18.4 m
Year Built: 2000
Home Port: Rotterdam
Current location: 49.47686°N / 0.1329817°E
Current Port: Le Havre
Received: 2 minutes ago
Navigational Status: Moored
Speed/Course: 0 kn / 344°
Society: ABC*
Owner: DEF*
Manager: GHI*

Nearby Vessels
We can train an A.I. to automatically detect different types of activities.
Vessel Type: Dredger
Vessel type detailed: suction Dredger
Flag: Netherlands [NL]
Gros Tonnage: 4548 t.
Number of journeys 2022: 10
Estimated sand extracted: 45480 t.
Within Sand concession: Yes
Concession area: 48.459 km²
Year: 2019
EEZ: Netherlands
Number of vessels: 96
Number of operators: 38
Volume dredged (estimated): 368.8 M t
Number of flags: 9
Humans are already moving or extracting about half of this amount: 6 billion tons per year (+/- 2 Bt/year).

Each year the rivers bring 10 to 16 billion tons of sediments to the oceans.
6 billion tons per year is equivalent to:

- a wall of about 10 m high x 10 m wide all around planet Earth every year
- 2 Kg per day for each of the 8 billion humans
- More than 1 million trucks (of 15 t.) per day
We are not yet monitoring all activities

West Africa: impacts from coastal degradation = 3.8 billion USD in 2017, i.e. 5.3% of the GDP.

In Vietnam, the Mekong river delta is overextracted, leading to land erosion.

Not all boats are equipped with AIS
Introducing Marine Sand Watch

Marine Sand Watch Story Map, take a tour to see what this platform can do. Click play and let you guide step by step.

- Dredging By Zone At 200 Nautical Miles From Shore
- Trailing Suction Hopper Dredgers (TSHD) Maintenance Dredging (Public Version)
- Sand Trading Ports/Hubs - Likely
- Land Reclamation - Likely (Public Version)

https://unepgrid.ch/marinesandwatch
MARINE SAND WATCH
Making the invisible visible

https://unepgrid.ch/marinesandwatch
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Laura PLATCHKOV

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THANK YOU!

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WHAT'S NEXT?

genevaenvironmentnetwork.org

**CONFERENCE**
Geneva Toxic Free Talks 2023
20 – 22 SEP 2023
EarthJustice, Special Procedures of the UN Human Rights Council, GEN

**CONFERENCE**
Advancing a Human Rights-based Approach to Accelerate the Sound Management of Chemicals and Waste for People and the Planet
ICCM5 Side Event
27 SEP 2023 13:15 – 14:45
Bonn and Online | Webex
OHCHR, GEN

**CONFERENCE**
Briefing on the 5th Meeting of the Conference of the Parties to the Minamata Convention on Mercury
05 OCT 2023 14:00 - 15:30
International Environment House I, Room 2 & Online | Webex
Minamata Convention on Mercury, GEN
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Photo Credit: Arnoud VAN DER VELDEN

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