

Terms of reference for policy-supporting research

Sustainable sand mining

Promoting sustainable sand mining in developing countries, taking into account transparency, governance and due diligence.

1. Context

According to the UNEP, the issues in sand and gravel extraction make it one of the major sustainability challenges of the 21st century. Sand and gravel are among the largest resources extracted and traded by volume, yet barely regulated and most likely subject of profitable illegal trade and with very low general awareness on the social, environmental and economic impacts. Policies to support sustainable and responsible extraction and consumption need special attention.

Sand, gravels and other construction aggregates are the second most-exploited natural resources in the world after water. The use of these resources has tripled over the last two decades reaching between 40-50 billion metric tons/year. This trend is expected to continue as demand in these aggregates is growing due to population growth, urbanization and infrastructure development. Extraction locations are shifting away from urban and industrial centers to more fragile environments such as rivers, coastlines, and oceans - which coupled with the increased demand - is severely impacting existing ecosystems, causing environmental and social sustainability issues on both a local and global scale. (<https://unepgrid.ch/en/activity/sand>).

The absence of global data on sand and gravel mining makes environmental assessment very difficult and explains the lack of awareness about this issue.

Rivers, river deltas and coastlines are eroding, "sand mafias" are thriving as demand in aggregates continues to grow.

Relevant existing policies

Activity-based regulations and land and marine protection are the two policy frameworks that govern extraction of aggregates. Land and marine protected areas set restrictions on extraction of aggregates within their limits. However, extractions near these protected areas can indirectly affect these sites, such as in the case of sand extraction near Poyang Lake in China (a Ramsar site), which affected the lake water level and turbidity. No international conventions regulate the extraction, use and trade of land-based sand (sand quarry, riverine and lake aggregate). Due to operational costs, most marine aggregate extractions are carried out at short distances from landing ports and at water depths of less than 50 meters.

These activities occur close to the shore or in the Exclusive Economic Zones or Continental Shelf, where coastal states exercise sovereign rights to explore and exploit natural resources, hence the need to have appropriate national policies.

Several important international conventions exist. The United Nation Convention on the Law of the Sea, 1982 (UNCLOS) provides for the delimitation of maritime zones and regulates rights and obligations in respect of usage, development and preservation for these zones, including resource mining. A number of regional conventions have been ratified with the aim of minimizing the impact

of human activities, including directly or indirectly references to aggregate exploitation. To name a few: Convention for the Protection of the Marine Environment of the North East Atlantic, 1992 (OSPAR Convention), the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), the Convention for the Protection of the Mediterranean Sea against Pollution, 1976, and Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, 1995 (Barcelona Convention). However, there are no specific guidelines for the management of marine aggregates extraction under the Barcelona Convention. Others include the Convention for the International Council for the Exploration of the Sea (ICES), 1964, the Convention on Environmental Impact Assessment in a transboundary context, 1991 (ESPOO Convention), the Protocol on Strategic Environmental Assessment, 2003 (SEA Protocol), and the Protocol on land-based sources of pollution from the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartagena Convention). The governance is not coherent and includes several layers of regulations between national and international conventions. There are no global standards.

With regard to the EU, existing regulation on due diligence in supply chains (i.e. the 3TG Regulation 2017/821 of 17 May 2017) does not include the sand value chain. However, future business standards of the EU for supply chains may harness responsible and sustainable governance, taking into account human rights, Sustainable Development Goals and the goals of the Paris Agreement.

Geographical impact

While the most impacted continent seems to be Asia, not one single area in the world is spared, affecting nature and urban infrastructure alike. As Belgium focusses on Africa, this can be illustrated as follows:

In Morocco, an important Belgian partner country for development cooperation, half of the sand – 10 million cubic meters a year – stems from illegal coastal sand mining. Sand is often removed from beaches to build hotels, roads and other tourism-related infrastructure. In some locations, continued construction is likely to lead to an unsustainable situation and destruction of the main natural attraction for visitors – namely the beaches. Sand smugglers have already transformed a large beach into a rocky landscape between Safi and Essouira.

“In Ghana, sand miners have dug up so much ground that they have exposed the foundations of hillside buildings, putting them at risk of collapse.”

<https://www.theguardian.com/cities/2017/feb/27/sand-mining-global-environmental-crisis-never-heard>

Potential for institutional response

Aspects of sustainable development of extractives are being dealt with in a wide array of **United Nations entities** and international organizations.

On a global level, **Agenda 2030 and the SDGs** offer a general framework, more in particular SDG 16 which tackles good governance and strong institutions, and some aspects of the Paris Agreement might be applicable.

To name a few international organizations that deal with issues of extractive industries:

The **Organization for Economic Co-operation and Development (OECD)**, with the Council on the OECD Due Diligence Guidance for Responsible Business Conduct, notably recommends that:

- The enterprises from the adherent states operating in or from their territories should: (i) embed responsible business conduct into their policies and management systems; (ii) identify and assess actual and potential adverse impacts associated with their operations, products or services; (iii) cease, prevent and mitigate adverse impacts; (iv) track implementation and results; (v) communicate how impacts are addressed; and (vi) provide for or cooperate in remediation when appropriate.

These recommendations include various items on extractives, though it is not clear if sand could be included in this framework.

The **Extractive Industries Transparency Initiative (EITI)** is a partnership between countries, companies and non-governmental organizations that seeks good governance, transparency and accountability in the exploitation of natural resources in dialogue with political authorities, with a view of mobilizing more domestic revenues in a sustainable manner, for the benefit of the entire population.

The basic idea of the EITI is that natural resources can be an engine for sustainable, inclusive economic growth and poverty reduction if they are well managed. Given the substantial part in export and hence potential contribution to GDP of natural resources in many developing countries, sustainable value chains of natural resources can generate the much needed domestic revenues while taking into account social and environmental criteria. However, sustainable and inclusive management of natural resources is intrinsically linked to governance, both in its technical aspects (institutions, capacity) and on the political level.

At the **European** level, there are mechanism to discuss raw materials, more in particular critical raw materials, and the issue of promoting due diligence and sustainable value chains for commodities is on the agenda of the EU Commission.

2. Defining the problem

Extraction of sand and gravel is a merely fragmented and informal sector, with a complex value chain based on artisanal and small-scale operations. Globally, there are some significant commercial supply chains into which the majority of crushed rock, sand and aggregates flow. The top five companies for marine sand extraction are: Chinese Harbour & Construction Ltd; Boskalis (Dutch); Van Oord (Dutch); Deme (Belgium); Jan de Nul (Belgium – Luxembourg).

Crushed rock, sand and gravels are extracted and traded illegally in large quantities in some regions of the world, at times by organized crime or so called “sand mafias”.

Transparency and information sharing by, and between, companies and governments is extremely limited along the sand value chain, let alone the availability of relevant data or mandates for relevant data collection.

Currently, there is no international body with a mandate to mediate differing interests on sand resources to reach a broad consensus on what is in the best interest of all stakeholders, and where

possible, on the standards and best practices, recommended policies and effective procedures to help realize collective interest.

There is a need for multi-stakeholder interfaces that include governments, local communities, civil society and the private sector with a view of sustainable and inclusive governance.

Belgium traditionally takes a strong stance in promoting transparency and good governance in the extractive industries, including the fight against corruption, i.e. in the OECD networks and EITI. Belgium supports EITI, also through the World Bank "Extractives Global Programmatic Support Multi Donor Trust Fund", more in particular the facilities on EITI and on Artisanal and Small Mining. Through the mandate of D5.2, Belgium is active in OECD networks and supportive of EITI activities that strengthens and supports general principles of good governance, transparency, accountability and recently also standards on sustainable development. In this regard, EITI offers a good spearhead for putting *the sand extraction issues on the international agenda*.

Finally, the Belgian private sector through companies like *Deme* or *Jan De Nul* is engaged in the sand extractive operations and their contribution could be of valuable interest to building a better governance in the sand sector.

Amongst the most fragile countries in Africa regarding sand extraction and its consequences are Morocco and Tanzania, two partner countries of the bilateral Belgian development cooperation.

3. Identifying fields of activity

As mentioned in the 2019 UNEP report "Sand and Sustainability: Finding new solutions for environmental governance of global sand resources": "Preventing or reducing damage to river, beach and marine ecosystems and social risks to workers and communities in sand extraction sites can be achieved through some already existing solutions:

- (...)
- **Reducing impacts through implementing existing standards and best practices. Society can implement existing legal and voluntary standards and best practices in the extractives, environmental and other related sectors while analyzing sourced aggregates through use of substitutes to natural sand so that extraction is reduced to responsible levels."**

This PSR will focus on **strengthening standards and best practices to curb irresponsible and illegal extraction activities**, which is more in accordance with D5.2's mandate on good governance and transparency issues, notably in partnership with the EITI, and could prove useful with regard to future EU due diligence measures.

3.1. Guidelines for governing, planning and managing sand extraction at the regional and international legal scale are needed.

Customize existing standards and best practices. Provide support to countries for customizing these guidelines in national policy, law and regulation where these do not currently exist.

3.2. Sand production and consumption measurement, monitoring and planning.

There is a lack of adequate information on sand extraction. International community organizations with mandates and access to relevant data need to collaborate on a rapid information synthesis, design a long-term monitoring program and produce a rapid assessment tool in the context of existing processes in Environmental Impact Assessment, Responsible Mining and water governance.

3.3. Establish dialogue between key players and stakeholders in the sand value chain based on transparency and accountability.

The proposed research objective of the study is threefold :

- 1) The first part of the research would focus on a **general mapping** of the issue, including relevant international organizations/mechanisms (ex. UNEP, UNCLOS, G20, OECD, EITI, EU,...) and the question on how the knowledge, experience and expertise of all Belgian actors active in related sand value chain activities can be used in a **shared analysis**, also focusing on means of gathering relevant information and data among relevant government administrations and institutions. The following questions may notably be raised:
 - a. The challenges the sand value chain currently faces in terms of political, economic and socio-economic stability, and fight against corruption.
 - b. What can be “Belgium’s added value” in the sand value chain issue? Which expertise and knowledge is most relevant? How can we develop concrete initiatives based on the shared expertise.
 - c. What could be the added value of our Klimos tool box and the work realized with Acropolis in this regard and what are the weaknesses and shortcomings? How to overcome them?
- 2) The second part of the research would focus on **Morocco and Tanzania, as two case-studies** where the issue is acute and where the Belgian diplomacy and the Belgian Development Cooperation is active.
- 3) The third part would focus on identifying possible **initiatives in international fora** based on the Belgian expertise. From a shared analysis among Belgian stakeholders, the sand issue would be brought on the broader agenda. It addresses the effective dissemination of the results with regard to a sustainable sand value chain and possible Belgian initiatives.

4. Expected results

A new frame for collaborative action is needed. This PSR will contribute to:

- Build consensus through improved coordination and **public awareness-raising** at the global, regional and national levels on the impact of sand extraction and supply chains on development and the challenges to sustainable development.
- Promote understanding from various perspectives, as well as a **vocabulary to define aggregates characteristics and the impact from extraction**. We do not yet know the appropriate language and definitions to use in discussing this topic across the stakeholder groups. These definitions are needed for transboundary, cross-sectoral and

cross-scale dialogues, institutionalizing new technical standards and best practices, and establishing regulation.

- Define **sustainable development for sand production and consumption**. This will involve identifying sand sources that might be harvested at a sustainable level and according to guidelines, and with the support of agreed standards, best practices and decision support tools, that are developed with inputs from all stakeholders.
- Reconcile globally-relevant policies and standards with the local realities of domestic sand resource availability, local development imperatives and standards and enforcement realities. The principles of good practice derived from practical experiences and hard lessons are already available and should be readily shared for customization to new contexts.

Concretely, the mission of the academic expert(s) ideally starts as soon as possible and no later than mid 2021 for a duration of maximum 60 working days spread over a period of six months. Consultations will take place by virtual means with webtools where appropriate. Possible presentations in side events of regular meetings of, or in relevant institutions may take place before the end of Q1 2022.

Deliverables will be:

- A document containing (i) a **general mapping** of the Global sand extractive issue; (ii) the identification of the most relevant international organizations/mechanisms/companies and recommendations on how to interact with them; (iii) the identification of ways and areas of partnerships, related potential Belgian institutions/organizations/companies, including public-private, where Belgian expertise could be valued.
- A document containing **case studies** on the issue in comparing Morocco and Tanzania and how the Belgian Diplomacy, Development cooperation, private sector and civil society could be involved at best.
- **1 Restitution meeting at Belgian level** making use of this work to gather various departments of our ministry, other ministries and Belgian public institutions with a view of promoting better governance in the sand sector.
- **3 restitution meetings possibly during side events of the most relevant international institutions**, notably EU, OECD, EITI and the World Bank, in order to raise awareness on the issues of the sand value chain and identify options to bring this topic on the international agenda.

Consulted Reference and Resources

- Sand and Sustainability: Finding new solutions for environmental governance of global sand resources 2019 – UNEP
- https://www.liberation.fr/futurs/2017/08/11/en-depit-des-apparences-le-sable-est-une-ressource-rare_1589263
- https://www.francetvinfo.fr/economie/transports/trafic/trafic-de-sable-quand-les-mafias-font-la-loi-en-inde_3499307.html
- <https://www.genevaenvironmentnetwork.org/events/sand-and-sustainability-finding-new-solutions-for-environmental-governance-of-global-sand-resources/>

- https://www.globalwitness.org/search/?search_query=sand&order=relevance&tab=pages&page=1&tab=pages
- <https://fr.le360.ma/politique/trafic-de-sable-marocain-vers-melilla-des-notables-et-hommes-politiques-pointes-du-doigt-210471>
- https://www.lemonde.fr/planete/article/2010/03/29/le-sable-marin-devient-un-objet-de-trafic_1325755_3244.html
- <https://www.theguardian.com/cities/2017/feb/27/sand-mining-global-environmental-crisis-never-heard>
- <https://www.theguardian.com/global/2018/jul/01/riddle-of-the-sands-the-truth-behind-stolen-beaches-and-dredged-islands>
- https://www.foeeurope.org/sites/default/files/corporate_accountability/2020/foee_human_rights_report_english.pdf
- <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0443>
- <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0821&from=EN>
- <https://fr.wikipedia.org/wiki/Sable>
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