



BOFAXE

International Law and Sand (Part 1)

Sand?! Yes, sand. Sand – or rather a lack thereof – is quickly becoming an increasingly pressing global issue. As the scarcity of this inconspicuous, yet crucial all-rounder of a resource and humanity's ensuing struggle to obtain the grain receives more and more attention, this post revisits what international law has to do with it. We argue that the immediate environmental concerns of sand mining are reasonably addressed by international law, but the problem of sand overexploitation is not. Moreover, we explore how human rights might help balance resource sovereignty with the concept of sustainability and what it takes to overcome the world's resource problems.

Today's Economy – Built on Sand

What do you think the screen you are looking at is made of? What about all the concrete and bricks in the city around you? Although processed and often concealed in a myriad of other materials, sand – which is defined as “a textural class of soil that contains more than 85% sand-sized particles by mass” – is literally everywhere. Looking at the world's cities and roads alone, the fact that sand is the most consumed natural resource besides water with annual global extraction rates of around 40-50 billion tons should not come as a surprise.

Although seemingly available in abundance, sand suitable for these purposes is a finite resource. Sand can be either wind- or water-shaped. As water is less abrasive on individual grains of sand, only water-shaped sand is suitable for construction, including the restoration of receding coastlines, due to its higher ability to stick together. In other words: one cannot simply build with desert sand. Thus, the amount of useful sand available at reasonable costs and efforts is limited, and the global race for marine and river sand has created extraction practices with disastrous consequences such as destroyed reefs, polluted rivers, coastal erosion, collapse of roads, bridges and houses. As if this was not enough, various ruthless sand-mafias claim their share of profit from unlicensed sand mining.

Environmental Impact and International Law

The immediate environmental consequences are reasonably addressed by international law. Since *marine* pollution is the most immediate environmental consequence of off-shore sand mining, UNCLOS appears as a good starting point for an analysis of the “international law on sand”. Among the many rules devoted to the preservation of the marine environment, the general provisions in Part XII are most relevant here. While none of them refer to sand mining specifically, they have been applied to sand mining (also referred to as dredging) by the PCA in the South China Sea Arbitration (pp. 388-397). In particular, the tribunal held that the burying of coral reefs with sediment created by China's sand mining efforts contravened Art. 192, 194(1) and 194(5) UNCLOS (paras. 983, 993).

Apart from UNCLOS some specialized treaties need to be mentioned. The 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and its Annex 1 include “dredged materials” as matter that can be “dumped”, i.e. deliberately disposed of at sea and thereby subject sand mining to the convention. The Convention of Biological Diversity requires its member states to conduct EIAs for all “projects that are likely to have significant adverse effects on biological diversity” (Art. 14) and to “ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction” (Art. 3).

On a regional and national level, sand mining is coupled to environmental concerns, too. The Noumea Convention and the OSPAR Convention are noteworthy. The former imposes a duty to prevent, reduce and control environmental damage resulting from sand extraction and dredging (Art. 13). The latter was amended by an agreement on sand and gravel extraction, which requires member states to take certain guidelines into account when engaging in sand mining. Individual state practice affirms that resource exploitation and environmental protection are usually thought together. Some countries require environmental permissions for sand mining enterprises involving certain standards and supervision (see here) or even reportedly decided to outlaw certain types of sand mining as well as exports to large regional buyers (at 5.2.4.).

This multi-level regulatory framework offers plenty of normative anchors to keep the environmental impacts of sand mining in check. At the same time regulation could profit from more explicit references to sand mining in these provisions to improve legal certainty.



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Sovereignty vs. Sustainability?

While environmental concerns are represented in national and international agendas, overexploitation has not been addressed effectively. International law is ambiguous on the rates at which resources may be exploited, and generally, one must conclude that sovereign states are free to exploit them at their liking. Yet, in recent years, resource sovereignty is increasingly linked to the concept of sustainability. Sustainability signifies “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (at para. 27). Its interplay with resource sovereignty raises a lot of questions on the weighing of present and future needs whenever a resource can only meet one. The difficulty of answering these questions results from the fact that – while the concepts are frequently invoked – their implications are far from clear.

Different underlying conceptions of sovereignty exist. They differ in the degree to which sovereignty is determined by law and, therefore, in how far a concept like sustainability can limit (resource) sovereignty. In the context of sand-mining, things become even more complicated as sand is frequently – albeit not exclusively – extracted from beaches (see here and here). This leads to receding coastlines and the shrinking of the territory. In this sense, states exercise their resource sovereignty in a way that blurs the lines between extracting a resource *from* their territory and disposing of their territory as a resource. States do not only dispose over sand as a tangible commodity from their territory. Instead, they alter the physical size of their territory. This has implications for territory as a legal concept which, as an element of statehood, is conceptually very close to the foundations of state sovereignty. Unfortunately, this circumstance raises more questions than answers on how much sovereignty should weigh in certain prominent sand mining scenarios.

To make things worse, the other concept – “sustainability” – is currently rather blurry, too. From questions about its legal status to its application outside the context of developing countries and implications for exploiting finite resources, much remains to be resolved. Until then, calling for sustainable extraction rates will sound timely and responsible, but cause awkwardness whenever someone tries to apply it to tricky cases like sand mining.

Sustainable Sand Mining and Human Rights

Regardless of the uncertainties regarding the principle’s legal status, content and implications, the principle of sustainability seeks to reconcile the needs of present with future generations. Therefore, it makes sense to look at human rights for inspiration on how to concretize sustainability. Informing the concept with human rights also appears promising for the present context as they serve a state’s population as another statehood element. This may charge sustainability with the same argumentative weight as territory confers on resource sovereignty and therefore justify restrictions of the latter more convincingly.

Particularly in climate change litigation, balancing human rights of different generations has recently been the task of courts all over the world. Judgments in cases such as Urgenda, the German Federal Climate Protection Act and most recently Sharma v. Minister for the Environment made it clear that the needs of future generations deserve greater attention. While none of them were concerned with resources *per se*, the reasoning of the German judgment is easily transferable, since the Court referred to the idea of a CO₂ “budget” to make its point. The more of the budget is used up today, the fewer options future generations will have to adapt their lives in order to avert even more catastrophic consequences of climate change. Similarly, the exploitation and utilization of crucial resources like sand to a point where future generations’ freedoms are severely limited by resource scarcity can – from a human rights perspective – hardly be considered sustainable.

What has not been decided yet is what to do when a resource can in fact only meet the needs of one or no generation in a meaningful way. Thinking of the right to adequate housing alone, providing the roughly 1 billion people living in inadequate housing and camps with stable and durable shelter as of today will require sand as a major building block. The same goes for the restoration and preservation of coastlines and islands in the fight against rising sea levels.

Ultimately, sand is a vivid example of, but a mere placeholder for an issue that looms over most problems with resource overexploitation. In a world with a constantly growing population and many economies striving for growth, the problem of depleting and overexploiting resources intensifies. Logically speaking, constant growth without infinite resources must eventually hit a point of unsustainability and reduce the concept of sustainability to an unrealistic ideal. If population growth is addressed, but not economic growth, resources will likely continue to get overexploited to fulfil peoples *wants*. If economies adapt, but the world population keeps growing, peoples’ more basic *needs* will be the reason for exhausting resources, creating a strong link between population growth and the needs-based concept of sustainability. Thus, both unrestricted economic and population growth must be addressed together. The later this is realized, the more severe and intrusive measures will have to be endured by future generations to halt the total exhaustion of resources. Economic reforms built on ideas of circular economies, recycling and the development of alternative construction materials are necessary, but factors stabilizing population sizes, such as reproductive rights and socio-economic factors like education must be considered as well. Only then can sustainability be sustainable.