

Sand crisis

In later years the problem of availability of good concrete aggregates has gained focus. The building industry consumes between 30 to 40 billion tonnes of aggregates each year. Half of the aggregates is sand. As a natural material, sand is second most used after water. Most people don't realize that this is a problem. There is sand everywhere, especially are the deserts around the world filled with sand. Unfortunately, it is the wrong kind of sand.

In construction purposes we want angular sand that bind well to the concrete. In the desert we have too small and too round grains due to the actions of the wind. The sands that are suited for building purposes is mainly riverbed sand, but also marine sand is more and more used even though it is more expensive because of the cleaning process. There are several difficulties regarding this method of harvesting sand. First of all, the rivers and seabeds are often a place for complex ecosystems. Second, not every country has access to this resource.

The local shortage of natural sand resources has contributed to a global trade market. Also, the need of cheap building material forces governments and companies to excavate sand from rivers, seabeds and even beaches to nourish the enormous demand.

A cubic of sand can be worth up to 70 euro in areas with high demand. This makes it a lucrative business for criminals. This criminality is mostly happening in remote areas, so it is difficult to detect. These groups can arrive at a beach in the night with excavation equipment and armed guards, and the next day the beach will be gone.

We need a solution. The amount of sand we use in one year is replaced only after several thousands of years. Maybe optimize the concrete design or even replace sand with plastic in concrete. Both is possible, but we need to act quick.

Source:

<https://www.theguardian.com/global/2018/jul/01/riddle-of-the-sands-the-truth-behind-stolen-beaches-and-dredged-islands>