

## **Survey on Supplying the Sri Lankan Demand for Sand in Construction Industry Aided with a Sustainable Approach**

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Demand for sand is ever increasing, as enormous construction projects are initiated in the country's suburbs. Mining sand and all other construction raw materials have to be increased to extreme levels to match the demand. But, the raw materials for constructions, mainly sand, are natural resources that cannot be renewed and regeneration of those natural resources need millions of years. Hence, the sustainability in mining sand and related raw materials are in a critical stage, if extraction happens in an ill-monitored manner; natural hazards will occur. Therefore, the governing body, Geological Survey, and Mines Bureau (GSMB) took initiatives to introduce mining licenses, so the authorities (the Police) can identify the illegal miners of raw materials. Starting from 2017, a sudden drop can be observed in the sand extracted from sources tracked at GSMB. When the analysis was carried out to determine the theoretical sand consumption in Sri Lanka using sand to cement ratio, the consumption during the 2017 and after are 69% more than the supply permitted from GSMB. This means that the only possible way of supplying the demand is to use illegal means in sand mining and transporting, which is thereby untraceable to GSMB. Furthermore, when identifying the factors which trigger this cause, it was determined that the current licensing process is cumbersome. The sudden shutdown at mining sites due to legal cases and civil unrest also increased illegal sand mining. The miners had a demotivation on pricing the sand market value above reasons, political intervention in the industry, and rise of the royalty charges and thereby used illegal means to extract and mine sand. As per this study, it could be concluded to have a scheme of interrelated concepts that aided using ICT so that GSMB can regain the total control of mining and transportation and eliminate illegal sand mining, thereby meeting the supply to the national demand without compromising the nature.

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