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**Aggregate sand and heavy mineral resources at offshore south west, Sri Lanka**

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Offshore sand is an important alternative for construction purposes because of the increasing demand and spiraling cost of river sand. However, very limited research has been carried out to identify sea sand reserves. This research focuses on exploring offshore sand as a viable alternative to river sand along the offshore of the south western part of Sri Lanka with the main focus in the Galle region. Surface bottom sediment samples of the study area were obtained using Nansen type grab sampler from a 500 m × 500 m grid and the type of the bottom material was identified. Further, these samples were tested for aggregate properties which are crucial to evaluate the suitability for construction by sand gradation testing according to the BS EN 933-1:2012 specifications. Geological distribution maps of the offshore sediments were prepared.

In addition, the heavy mineral potential was also investigated using grain size parameters, mineralogical variations and petrographic studies in the collected samples. A geological map for the offshore heavy mineral potential was also prepared.

The results show the existence of significant offshore sand resources with suitable grain sizes, textures and gradation falling within the limits specified in BS EN 12620:2013 for construction sand. The mean grain size of the sands fall in the range of 0.5 mm – 2.0 mm, are moderately well sorted, and are thus best suited for construction purposes. These resources were ideally located in water depths of 18 m to a maximum of 30 m and about 2 km away from the coastal line and are therefore ideally suited for mining without adversely affecting the nearby beaches. In addition, the petrographic analysis reveals, low abundance of heavy minerals with an average of 2.0 %. However, one location showed 16.86 % of heavy minerals indicating a prospective area. A higher percentage of ilmenite and zircon with traces of garnet, monazite and rutile were identified in the region.