

## Land Based Sand Mining – Is It Environmentally Friendlier than River Sand Mining?

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Extensive sand mining has already deteriorated the river beds as the mining rate exceeds the deposition rate. Within last five years with the restrictions on river sand mining, land based sand mining has catered to the dire demand of construction sand need in the country. The amount of sand from land based sand mining has exceeded 40% from the total quantity of mined sand recently. Walawe river flood plain is the first flood plain exploited by the miners and later the process was legalized stating that the land could be rehabilitated by filling the excavated pits by soils. The rehabilitation process also should be evaluated to measure the impact on groundwater movement due to the alterations to the subsurface. The mining process is carried out under the approval of the Forest Department, Central Environmental Authority, Department of Agrarian Development, Urban Development Authority and relevant Divisional Secretariats. According to the following table, the inland sand mining has gradually increased from 13.96% in 2014 to 44.62% of the total sand mined.

*Source: License Data – Geological Survey and Mines Bureau (Unit million cubes)*

	2014	%	2015	%	2016	%	2017	%	2018	%
River Sand	1.15	86.04	1.31	81.46	1.13	61.87	1.92	60.14	1.12	55.38
Inland Sand	0.19	13.96	0.30	18.54	0.70	38.13	1.28	39.86	0.90	44.62
Total	1.34		1.60		1.83		3.20		2.02	
Assumed amount of soil and organic content (if the sand content is assumed as 80%)	0.038		0.06		0.14		0.26		0.18	

The sand extraction from land based sand is carried out by washing out the silt and organic material from the soil. The sand content exceeds 80% in these flood plain soils and the amount of nutrients is high according to the early usage and the soil maps. Land based sand mining locations are concentrated around Walawe River, Kirindi Oya, Madu Ganga Ma Oya and recently in Yan Oya Reservoir.

The soil loss in the country has been identified as a serious environmental issue and it directly affects the second Sustainable Development Goal of zero hunger. Fighting

hunger directly related with soil fertility. The fertile soils of the flood plains should be protected for the achievement of zero hunger. The amount of lost soil along with the nutrients should be calculated.

The impact of groundwater movement and loss of soil nutrients due land based sand mining may exceed the environmental impacts of controlled river sand mining.

*Key words : Land based sand mining, flood plain, Groundwater movement, Soil fertility*