

GULLY PLUG

Gullies are a symptom of functional disorder of the land, improper land use and are the most visible result of severe soil erosion. They are small drainage channels, which cannot be easily crossed by agricultural equipment. The gully plugging measures include



vegetative plantings and brushwood check dams, boulder checks, earthen bunds or a combination of both and sand bag plugs etc.

Gully plugs can be defined as stones placed across gullies or valleys, so as to capture nutrients, silt and moisture. Stones are often embedded into the upper surface of spillway aprons and wells to provide support for the next layer. The principle is to capture runoff from a broad catchment area, thus

transferring low rainfall into utilizable soil moisture, and to prevent soil erosion. Slowing of the flow of water helps in settling down organically rich soil. A well maintained gully plug creates a flat, fertile and moist field, where high value crops and trees can be grown. Gully Plug is creating obstruction by placing used bags filled with sand. Gully Plug is the effective method to slow down the speed of flowing water of the stream in any area. It is a kind of stop made of empty cement bags filled with sand, clay and such other material and placed in the course of stream. Usually, there is erosion due to flow of water in hilly terrain but gully plugs can check it effectively. The empty cement bags are filled with sand, clay and small pebbles. Such bags are then stacked one over the other in the channel of the stream which are not more than 15 meter in width. This method is effective where the depth of the stream is not more than one and a half meter and the sides of the stream are of clay. On the upstream side of masonry check dam at two to three places if these kinds of gully plugs are constructed then they prevent land erosion. Moreover they check sediments from entering into the dams and increase the lifespan of downstream structures



DETAILED ESTIMATE OF GULLY CONTROLLED CHECKDAM

1	Earth work excavation in ordinary soil with initial lead and lift including all cost of labour charges.		
	Foundation of Check dam	1.00 x 1.00 x 0.40	0.40 m ³
	Say @0.40 m³ @Rs. 817/100m³		32.68
2	Dry rubble masonry for the foundation and side wall of the check dam including all cost conveyance and charges etc. complete.		

	Foundation of Check dam Side wall of the check dam Total Say @ 0.82 m³ @Rs. 1261/m³	1.00 x 1.00 x 0.40 1.00 x (0.625x 0.90)/2 x 0.55	0.40 m ³ 0.42 0.82 m³ 1034.02
3	Cement concrete 1:2:4 using 20 mm size hard broken stone for the top of the check dam and abutment including all cost of labour charges conveyance and material etc. complete		
	Top of check dam First step Say @ 0.031 m³ @Rs. 54.87/10 m³	1.00 x (0.625 + 0.60)/ 2x 0.05	0.031 m³ 170.10
	Total		1236.80
	Add Tax 7.04 %		87.07
	Unforeseen item if any		6.13
	Grant total		1330