



Hararghie Soil Bund ()

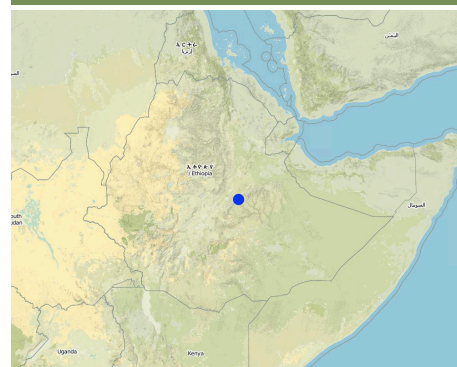
Daga Biyye (Oromigna)

an embankment of soil constructed along the contour to reduce runoff and maintain soil moisture.

Soil bund is an earth embankment constructed along the contour in order to avoid runoff down slope and shorten the slope length. Ditch/basin is dug at the upper side of the bund.

Purpose of the Technology: To obtain the maximum sustainable level of production from a given area of land by reducing soil loss below a threshold level and maintaining soil moisture.

Establishment / maintenance activities and inputs: During establishment and maintenance the materials needed are graduated poles, pegs, plastic string and water level and other materials related to the work.



: Habro, West Harege/Oromia,

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• 40.5, 8.8333

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50

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(> 50)



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, haricot bean, teff, chickpea
:
, Catha edulis

/

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: 1

- free grazing, stall feeding

✓

✓

✓

/

- Wt:

, Wg:

- Ha:

SLM

SLM

Oromia

Technical knowledge required for field staff / advisors: high

Technical knowledge required for land users: high

Main technical functions: control of dispersed runoff: retain / trap

Secondary technical functions: reduction of slope angle, reduction of slope length, increase / maintain water stored in soil

Relay cropping

Material/ species: maize, teff and chick pea

Mixed cropping / intercropping

Material/ species: haricot bean and maize

Bund/ bank: level

Vertical interval between structures (m): 1m

Spacing between structures (m): 10m

Depth of ditches/pits/dams (m): 0.5m

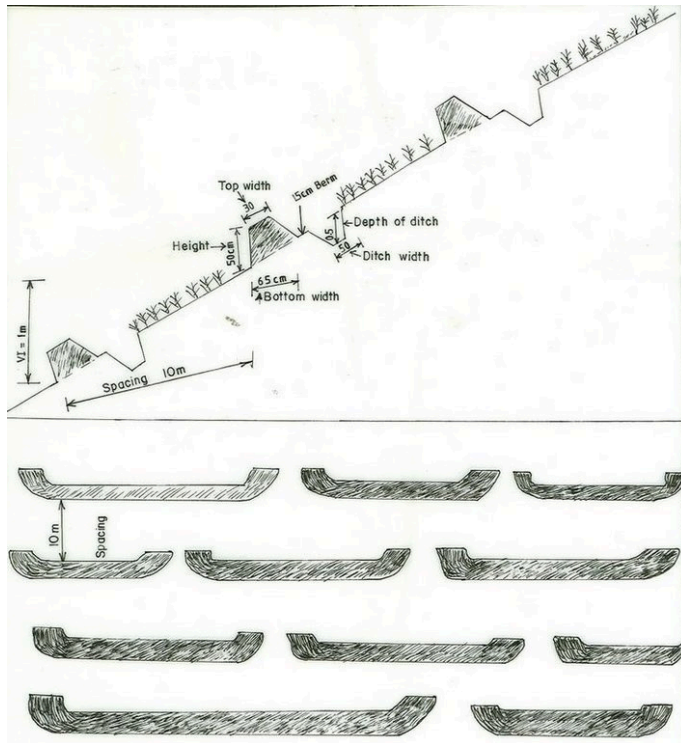
Width of ditches/pits/dams (m): 0.5m

Height of bunds/banks/others (m): 0.5m

Width of bunds/banks/others (m): 0.5m

Slope (which determines the spacing indicated above): 12%

Lateral gradient along the structure: 0%



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Birr

(

0.94

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1 USD = 8.5 Birr

excavation work requires more labour and it affects the cost of construction and maintenance

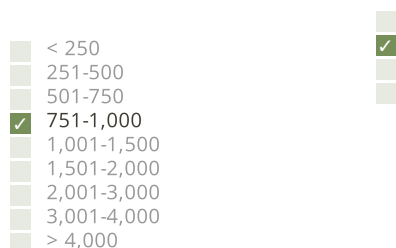
1. surveying and layout (/ : dry season)
2. excavation work (/ : onset of rain)

			(Birr)	(Birr)	%
Labour	ha	1,0	89,0	89,0	100,0

Animal traction	ha	1,0	67,0	67,0	
Tools	ha	1,0	23,5	23,5	100,0
Seeds	ha	1,0	18,8	18,8	
Fertilizer	Ha	1,0	35,3	35,3	
cultivation cost	ha	1,0	36,5	36,5	
				270.1	
				31.78	

1. ploughing along the contour (/ : dry season / 4 times)
2. Sowing (/ : onset of rain / each cropping season)
3. Digging the ditch/basin (/ : dry season/two times)
4. maintain the height of the bund (/ : dry season/two times)

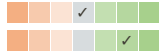
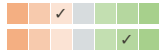
			(Birr)	(Birr)	%
Labour	ha	1,0	11,75	11,75	100,0
Animal traction	ha	1,0	56,0	56,0	100,0
Tools	ha	1,0	2,3	2,3	100,0
cultivation cost	ha	1,0	109,4	109,4	
				179.45	
				21.11	



[illegible]

Figure 1 displays the effect of different combinations of soil fertility and waterlogging on soil moisture. The figure is organized into three rows, each representing a different soil moisture level (increased, decreased, decreased). Each row contains a 5x5 grid of colored squares (orange, grey, green) with checkmarks indicating specific moisture levels. To the right of each row, SLM values are provided: 20, 10, 42, and 20.

Soil fertility	Waterlogging	Soil moisture	SLM
increased	increased	increased	20
decreased	increased	decreased	10
increased	decreased	decreased	42
decreased	decreased	decreased	20



1-10%
11-50%
> 50%

0-10%
11-50%
51-90%
91-100%

1-10%
11-50%
> 50%

- reduce soil erosion
- How can they be sustained / enhanced? frequent maintenance of the structure
- maintain soil moisture
- How can they be sustained / enhanced? upgrading of ditches and embankment
- increase production
- How can they be sustained / enhanced? increasing the productivity of land per unit area
- erosion control
- How can they be sustained / enhanced? frequent maintenance of the structure
- moisture maintenance
- How can they be sustained / enhanced? frequent maintenance of the ditches
- reduction of slope length
- increasing of infiltration rate



Editors			
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Tshome Nigusie - SLM

https://qcat.wocat.net/km/wocat/technologies/view/technologies_1045/

SLM

- Natural Resources Development (MNRD) -
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