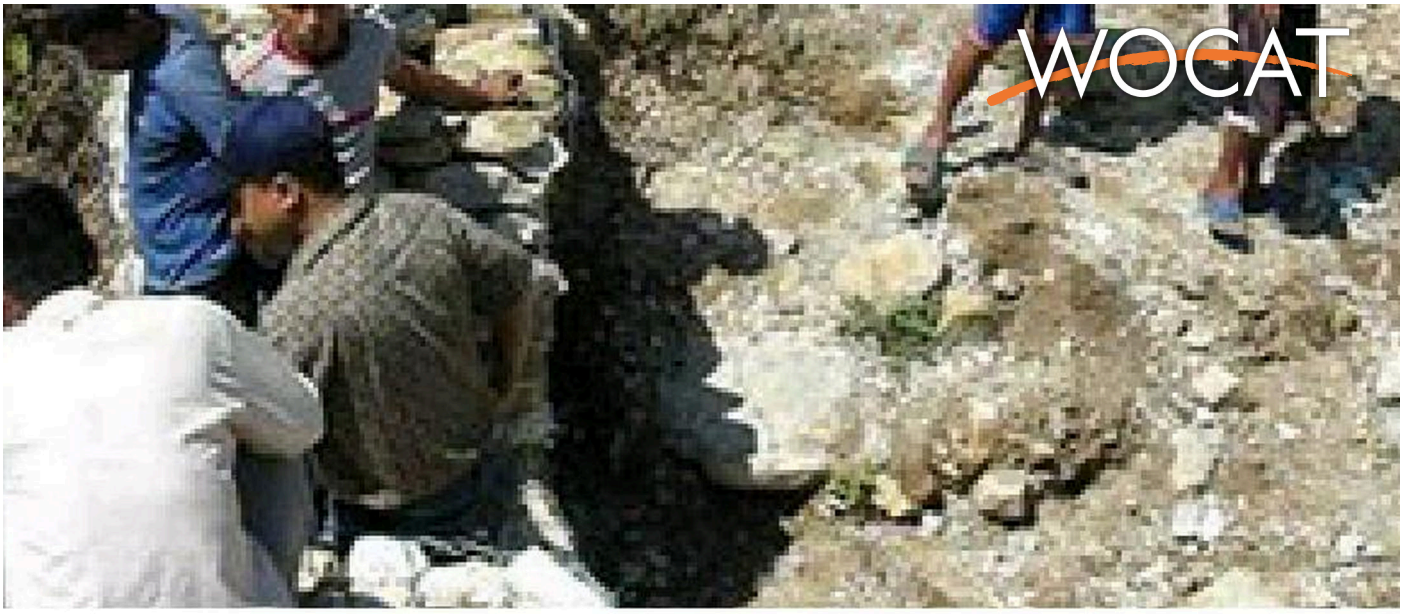


This photo shows the structural technology used to control downstream flooding.

Unexpected flood risk control in village ( )

Bhelbadi Niyantran

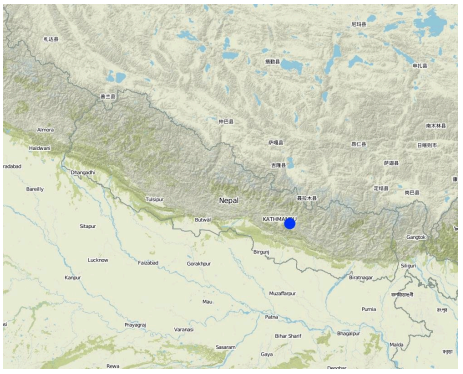
It is a technology used to control and reduce the effects of downstream flood by physical interventions like construction of spillway, ditch and stone dam on the wall of ditch.

Hilly areas are prone to flash flood that occur with little warning. During rainy season, level of water rises in the stream due to which land mass field of around area was degraded. This technology is used to control the land mass and water flowing from upper region to the lower region of the hill. The natural stream was modified to deep and more sloppy. And surrounding walls were made by piling up stones dams and tighten them by metal wires. These dams decrease the slope gradient and reduce the velocity of water flow and promote the deposition of eroded materials.

Purpose of the Technology: There was no problem of landslide and downstream flood before. But after the road construction, soil became loose resulting in the occurrence of downstream flood. It caused massive destruction of agricultural fields and disturbed settlement areas. Also, stone and gravel during landslide and stream flood used to be deposited and block the flow of the water. So land user invented by this technology to control and reduce the effects of downstream flood.

Establishment / maintenance activities and inputs: Land users and other villagers took the initiative to carry out the technology. Stones were abundantly found in the stream that were utilized to make the dams on lining the stream. Dozer was used to deepen the stream and increase the slope of stream. Stones were piled up and tied by iron wires on the bank of stream by local farmers themselves with their own investment.

Natural / human environment: The area where this technology has been used is a hilly area. Soil fertility in that area is low or medium which differs according to the place. Due to landslide and downstream flood, sand and gravel get deposited in the cropland, so its fertility is very low. No crops can be grown in there. This technology helps to control further degradation of land but could't help to restore natural quality of land.
This area is semi arid area. Due to the proper supply of water the area is prevented from drying. People living in that area are mainly farmers and depend on agriculture for livelihood. Also the area is developing more after the road construction. People are now being more aware about health, education and development.



: Kavre, Nepal,

:

- 85.56283, 27.61623

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: 10 ( )

☑

(> 50)

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ditch

- ( ): Waterway,

/

/

- Wg:
, Wo:

SLM

- ( )

SLM

- S3:
, S6: , ,

The most determinate factor affecting the cost is land structure. Land contains loamy soil which made it difficult for construction of ditch.

( ) 1 USD =

1. Land user increased the width and slope of existing ditch for easy flow of water. (/ : dry seasonm)
2. Land user embanked the bank with stones on either side. (/ : dry season)
3. Stones are bind together by wires in some places. (/ : dry season)

			( )	( )	%
Increase the width and slope of ditch	ha	1,0	941,17	941,17	100,0
				941.17	
				941.17	

n.a.

< 250
251-500
501-750
751-1,000
1,001-1,500
1,501-2,000
2,001-3,000
3,001-4,000
> 4,000

monsoon rain, dry winter
Thermal climate class: subtropics

(0-2%)
(3-5%)
(6-10%)
(11-15%)
(16-30%)
(31-60%)
(>60%)

0-100
101-500
501-1,000
1,001-1,500
1,501-2,000
2,001-2,500
2,501-3,000
3,001-4,000
> 4,000

(0-20)
(21-50)
(51-80)
(81-120)
(> 120)

(
)
/ ( )
(,)
/ ( )

(> 20
)
/ ( )
(,)
/ ( )

(>3%)
(1-3%)
(<1%)

< 5
5-50
> 50

/

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(
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/

SLM

( )
(/
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/

10%
10-50%
50%

/

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(,
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)

< 0.5
0.5-1
1-2
2-5
5-15
15-50
50-100
100-500
500-1,000
1,000-10,000
> 10,000

(
)
( )

(
)
( )

SLM: n/a
SLM: n/a
protected the cropland from flood

SLM /

SLM: n/a
SLM: n/a

active participating people on land conservation.

water travel in fixed path

improved water way for passage of excess water

soil loss due to flooding is reduced

( )

the main benefits of this technology

This technology is not a investment purpose. People used their own money to construct it.

( )

( )

/

1-10%
11-50%
> 50%

?

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

/

14 households in an area of 10 - 100 sq km (50 - 100 persons per sq km)

?

/

?

/

( )

:

- Risk of downstream flood and landslide is reduced.

  How can they be sustained / enhanced? If they had been more donation from government or any other projects, they would construct concrete or more flood resistance dams. As some parts are still unconstructed they would complete them with some more external support.
- Agriculture land get protected so they can plant the crop without being at risk.

:

/ / :

- N/A

/ / :

- N/A N/A

- Proper water drainage system and water can get collected in the river following the fix path.

  How can they be sustained / enhanced? Fodder plant could be grown on the stream banks which is now left and unused. This could be used to feed the animals and would also help to control flood and landslide.
- It reduced the risk of further land degradation by downstream flood.

  How can they be sustained / enhanced? Dams can be made more strong by making concrete walls

Editors

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David Streiff
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: 14 2014 : 3 2019

Sabita Aryal - SLM
Pratiksha Koirala - None
Bibhu Gautam - None
Anjuli Mulmi - None

https://qcat.wocat.net/km/wocat/technologies/view/technologies_1590/

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- Kathmandu University (KU) -
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