

People's Participation and Success of Soil Conservation at Sukauri Khola Sub Watershed

Lower Pipaltar, Trisuli

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Introduction

Sukauri Khola Sub-watershed is located at Lower Pipaltar of Bidur municipality Ward No. 7, Trisuli in Nuwakot District. It is situated on the right bank side of Tadi river. Sub tropical hard wood Sal mixed young forest was covered the area in the past period of 30 to 40 years ago. The upper layer of soil profile is composed of red (laterite soil) which usually found out under the Sal forest. Geologically the sub-watershed area is became more fragile after the declination of forest resources at an alarming rate and surrounding terrain has also low relief which has more possibility of river bank erosion. Excessive human disturbances such as unscientific cultivation, distruction of vegetation together with natural factors such as Geologically weak zone, steep slops and intensive monsoon rains was increased erosion rate.

The people of surrounding sub watershed area faced great problems to get shelters.

There were many reasons behind it in the sub watershed area. The main one is the wide spread problem of Gullies and landslide erosion increasing towards the agricultural land from the Tadi river. Ethnic group Kumal cast were settling in the surrounding area and traditionally who made mud pot and bricks for their own purpose to use. They work hard always even the weather condition is adversed. These people were suffering from many factors such as the disastrous occurrences of flood, gullies, and landslides draught and other associated with low fertility of soil and thus in the reduction of crops production. The scarcity of fuel wood, fodder and timbers for household construction work is also one of the major prevalent environmental problems faced by the people of lower Pipaltar every year. The spreading erosion destroyed paddy lands in many parts of lower terrain of Tadi river. Finally in each year erosion and disaster problems threatened the every existence of the local people in the Sukauri khola sub-watershed.

Methodology

In 1994 , the Kumal people gathered and sit down together in one place. They discussed about erosion problems and how to come over from the problems. They decided to go and meet the Chief Officer of DSCO, Nuwakot. Several discussion were take placed between people and office staffs. The DSCO'S staffs convensed about Government's efforts, Limited budgets , strategy and implementing policy. Finally both the Government and local people agreed to combat the erosion in the following points.

- Necessary initiation of conservation programs will be implemented through the joint venture of the DSCO and the local people.
- The local people will share all the labours for conservation works and DSCO office will provide all the necessary construction materials.
- Government's efforts could not be sufficient to mitigate the hazards and erosion problem. Thus organizing and formation of user's group equally sharing the responsibility of conservation work and maintenance of area all will necessary to be carried out.

Sukaure khola soil conservation committee was organized under the Chair man of Mr. Chakra Bahadur Kumal with the help of DSCO staff. The conservation activities and programmes were implemented on the problems area afterwards the several group discussion and decision were made. See table A1-7.

The scattered Sal forest was protected by user's group efforts. Based on many discussion and decision the local people prepared local norms to protect the all natural resources. The villager who does illegal work against the local norms and destruction of natural resources, he/she will be charged cash depending upon the fault & quantity of illegal work done. In this way a real and active involvement of peoples participation in a group basis was developed for fulfilling the proposes of minimizing disaster like flood, landslide, gullies and draught. The following below are the programmes were carried out by the joint venture of Government and local people in each Fiscal Year. (See table No. 1.)

Benefit sharing and sustainable

Various benefit were found by people of Sukaure Khola sub-watershed, with in 4 years of implementation of conservation programmes through user group. Following are direct and indirect benefits obtained afterward the conservation measures were implemented.

- Grass planted along with trees provided directly fodder to feed for the livestock.
- Grass seeds like Stylo, Dinnanath, Napier and Mollases are flowering every years and become main source of income generation.
- Napier sets, local other grasses all are sold by the community to the demander have contributed to the saving fund of Rs. 74542.00 rupees.
- Paddy lands gradually changed in productive because of less siltation from gullies.
- The Horticulture trees planted on private and community land will served as cash income and land protection.
- The collected community fund are using for medical treatment when they need money in emergency cases. They can take loan for goat farming (see table No.3).
- The maintenance of the water tank's and pipes are now well maintained by themselves. (e.s. water taxes, pipes & tap).
- Groups are now even raising monitory benefits from the selling of grasses & seeds grown in the gully area (see the table-1).

Objectives of the study

- To report the evidence of people's participation succeed in lower Pipaltar.
- To know the factors contributing to the success of soil conservation program.
- To provide document & guidance for people participation process for the future.

1. Results

a) Production of indigenous varieties of grass.

The growth of local varieties of grasses (mainly Khar) are obtained. The local community protected the 4.5 hectares of community forest and about 6.5 hectares conservation plantation in the sub-watershed and the local grasses sold to the users for a total amount of Rs. 5800.00. (see table No. 1).

b) Conservation plantation in farmer's land.

There were no horticulture and conservation plantation before the successful demonstration of conservation and fruit tree plantation by the DSCO and DPTC/JICA motivated the local farmers to carry out such activities in about 10 hectares of their won land by the end of F/Y 1996/97.

c) Fodder and improved grasses in community land.

There were no exogenous varieties of improved grasses and fodder trees in the sub-watershed before some improved varieties were introduced at upper and lower Pipaltar model site for testing and demonstration purpose. The local farmer were taken the initiative to exogenous varieties of improved grasses in about 4.5 hec. of their private and community land. The Sukaure Khola sub-watershed have planted fodder improved grasses and napier sets. The protection of Stylo, Mollases and Dinnanath resulted in the production of a lot of improved seeds. A total of about 30 kg. of the seeds of varieties were produced and 11000 napier sets were sold in F/Y 1997/98.

d) Green vegetation

About 20 hectares of degraded land is now covered with conservation vegetation. This was the result of community decision and their interest to control grazing, protection of forest, conservation plantation (tree, fodder, grasses, horticultures, fuel wood and timber) and plantation of exogenous varieties of grass species.

e) Stall feeding

Total 48 households in Sukaure Khola sub-watershed began practicing stall feeding of farm animals due to increased availability of improved and local grasses. Stall feeding also partially helpful to protect the forest and conservation of degradation land.

f) Protection of degraded land & forest.

The Kumal community are protecting their degraded land and forest by themselves with their won watchers who is paid Rs 300/month by the user's themselves. The deteriorated area all are protected by without any kinds of fencing due to an increased in awareness of the users about the benefits of protecting deteriorated land, forest and plantations for their own benefit.

g) Vegetable production

The area under vegetable production in Kumal village is starting to increase due to 2 nos. of water tanks constructed near by the community settled area.

2. Benefits

The present economic benefits of quantifiable and non quantifiable is receiving to the users from the rehabilitation of degraded land and forest carried out by DSCO, DPTC/JICA and local people's participation in the Sukauri khola sub-watershed.

a) The quantifiable economic benefits are described as bellow :

The conservation activities in Sukauri Khola sub-watershed are started to produce improved & local grass, seeds and napier sets starting F/Y 1996/97. The farmers started seedling seeds and napier sets in F/Y 1997/98. The income to community from the sale of napier sets and local grasses are equal to Rs. 5800.00 (Table 2). These are also expected to increased further in the future. The users are directly benefited from collected fund for their own problems to reduce are as described in the table No. 3.

b) Non-quantifiable benefits

The non-quantifiable benefits due to not relevant data are described as below :

- Benefits from timber & fuel wood production will be available in the future.
- Benefits from improved soil fertility are developed from the constructed check dams & PNC blocks at various places in the degraded land. Similarly leaf, litter on the community forest and plantation area improved the soil fertility. They are benefited from this improvement in soil fertility.
- The increase in grasses production made it more possible to stall feed from animals and the users have collected more cow-dung and saved time from collecting forage and fodder.
- The improved grasses seeds were distributed free to Kumal household and other projects and offices outside or within the district in Sukauri Khola sub-watershed.

c) "Before" and "after" condition comparison

Many variables can be compared before and after condition of Sukaure Khola sub-watershed. They will expect to receive more benefits in the future from the many line agencies

Table 3.

Benefits "Before" and "After" comparison

S. No.	Benefits	Before	After
1	Sale of napier sets Rs.	-	2750.00
2	Value of Khar, local grass	-	5800.00
3	Conservation awareness training received by farmers. (1 day = 40 Rs.)	-	64984.00

d) Factors contributing to success

The following factors are contributed to the success of the soil conservation programmes in Sukaure Khola sub-watershed

- Soil conservation activities and economic benefits
- Early awareness and recognizable success
- Believed by seeing.
- Local leadership played a catalytic role.
- Listening to farmers.
- Learning by doing.
- Need based conservation training.
- Small scale programmes and activities implemented.
- Contribution of benefits and equal distribution.

2) Women Involvement. 82% + 3.

Conclusion

The rehabilitation of degraded land was started in F/Y 1994/95 in Sukaure Khola sub-watershed. The Nuwakot DSCO and DPTC/JICA implemented soil conservation programmes effectively and successfully through mobilization of people participation by linking soil conservation activities directly with the economic benefits for farmers.

- The protection of degraded land & forest by community is the positive impact of sustainable use of natural resources and production.
- The degraded and deteriorated land can be rehabilitated through securing people's participation and cooperation.
- The joint venture and the effort with active community involvement can alleviate the poverty and became more possible to raise the socio-economic condition.

⊗ Study on soil erosion status for central Nepal
 2. Few case study we should visit
 status of vegetation / erosion / people participation

Table No. 1

The conservation works carried out by different line-agency taking people participation or without people participation are as follows

S. No.	Fiscal Year	Programmes	Cost bearing by office		User group labour contribution	Total amount	Line-agency
			Kind	Cash			
1	2050/51, 1993/94	Conservation plantation (1 ha.)	2500 Seedling	2925.00 (10000)	1710.00	4635.00	DSCO
2	2050/51, 1993/94	Gully control	Gabion boxes	2947.02	2455.50	31984.72	DSCO
			26582.19				
3	2050/51, 1993/94	Dry stone check dam construction work	-	6768.00	6768.00	13536.00	DSCO
4	2050/51, 1993/94	Grass seed	950.00	-	-	950.00	DSCO
				12640.02	10934.00	51105.72	
1	2051/52, 1994/95	Conservation plantation (2.5 hec.)	7000 seedling	13757.93	5950.70	19708.58	DSCO
2	2051/52, 1994/95	Gully control work by using P.N.C. block	180 nos.	17168.76	4294.70	21473.46	DPTC 25%
3	2051/52, 1994/95	Fruits tree plantation work	150 nos	7009.42	4673.00	11682.37	DSCO
4	2051/52, 1994/95	Slope trimming work	-	12033.84	3204.20	15237.99	DSCO
5	2051/52, 1994/95	Improved grass plantation work	-	14305.54	9537.30	23842.84	DSCO
6	2051/52, 1994/95	Conservation awarness training (40 nos.)	-	64984.00	-	64984.00	DSCO
7	2051/52, 1994/95	Goat farming loan (25 farmers)	-	30000.00	-	30000.00	America n Peace Crops Nepal
				159269.50	27660.00	186929.24	
1	2052/53, 1995/96	Gully control 3 No.	9200	15993.00	16795.00	41988.00	DPTC/ DSCO
2	2052/53, 1995/96	(i). (Model work) Diversion control work				301446.00	DPTC/ DSCO
3	2052/53, 1995/96	(ii). retaining wall					
4	2052/53, 1995/96	Fruit tree planting work 7.26 hec.	Mango 975, Litche 143, Banana 1500,	25537.00	16795.00	42332.00	DPTC/ DSCO

S. No.	Fiscal Year	Programmes	Cost bearing by office		User group labour contribution	Total amount	Line-agency
			Kind	Cash			
5	2052/53, 1995/96	Conservation plantation (4.5 hec.)	2500 Seedling	2925.00	1710.00	4635.00	DSCO/ DFC
				50730.00	18490.00	395765.00	
1	2053/54, 1996/97	Conservation plantation (3 hec.)	7500 seedling	5345.20	2290.80	7636.00	DSCO
2	2053/54, 1996/97	Gully control & maintenance work	5 nos.	-	-	69667.80	DPTC/ DSCO
3	2053/54, 1996/97	Improved grass sowing work (1hec.)	6 kg seeds	-	4200.00	4200.00	DPTC/ DSCO
4	2053/54, 1996/97	Drinking water tank construction (2 nos.)	-	72250.00	9150.00	81400.00	DPTC/ 12.6% DSCO
				77595.20	15640.80	160803.80	

Resource : DOSC Nuwakot.

Table No.-2

Grass sold by community

S. No.	Fiscal years	Local Grasses	Improved Grasses	Remarks
1	2051/51, 1994/95	1,000.00	-	
2	2052/53, 1995/96	600.00	-	
3	2053/54, 1996/97	1,500.00	-	
4	2054/55, 1997/98	2,700.00	Rs. 2,750.00	Napier sets
	Total	5,800.00		

Table No.-3

Community progress of activities by year for loan distribution

S. No.	Fiscal years	Propose of Loan	Distributed Amount (Rs.)	Interest taken (5%)	Benefited farmers No.
1	2052/53, 1995/96	Agriculture and cattle farming	10,500.00	3,347.00	6.00
2	2053/54, 1996/97	Goat farming	5,433.00	-	9.00
3	2054/55, 1997/98	Medicine & Emergency loan	2,500.00	-	4.00
4	2054/55, 1997/98	Agriculture & goat farming	6,100.00	-	5.00
		- Bank balanced amount Rs. - 46662.00 (till Dec. 1997)			
		- Loan provided amount Rs. - 24533.00			
		- Income as Interest Rs. - 3347.00			
		Total Rs. 74542.00			

Table No.-4

Community income and expenditure by activities & year

S. No.	Fiscal years	Income (Rs.)				Expenditure (Rs.)				
		Local grasses	Improved grassed	Penalty	Saving P.P.	Forest Watcher	Stationary /lea	Fertilizer	Water taxes	Other
1	2051/52, 1994/95	1,000.00	-	40.00	30,000.00	-	1,000.00	-	-	-
2	2052/53, 1995/96	600.00	-	25.00	-	-	500.00	1,209.00	-	1244 (Traniportation charge)
3	2053/54, 1996/97	1,500.00	-	60.00	-	-	2,200.00	-	-	-
4	2054/55, 1997/98	2,700.00	2,750.00	-	-	600.00	1,900.00	-	200 for tow taps registration	-