

Example only:
May vary in other departments.

7 YEAR STRATEGY AND 3 YEAR ACTION PLAN **SOIL CONSERVATION DEPARTMENT UNDER KARBI ANGLONG DISTRICT**

The Karbi Anglong district is located on south central part of Assam and predominantly represents a hilly terrain inhabited by tribal population. The district covers an area of 10,434 Sq.Km, and forms an isolated hill in the core of the district, separating from the Brahmaputra alluvial. As per record the district has total forest area of 3136.60 sq.km, and net area sown is 1262 sq.km. The total cropped area is 1943.16 sq.km, while the cultivable area is 1262.06 sq.km.

The normal rainfall of the district is 1097 mm and the normal monsoon rainfall is 686 mm. Monsoon rainfall comprises 63% of the annual rainfall. During 2008 annual rainfall was 1209 mm, out of that monsoon rainfall was 874 mm. The temperature and humidity values are similar with other parts of the State.

A. Vision & Mission of the Department:

Vision: “*Conservation of soil and water to sustain ecosystem services and livelihood practices*”

Mission:

1. To restore and improvisation of land resources to sustain ecosystem services and livelihood practices.
2. To manage the dynamics of green and blue water to sustain ecosystem services and livelihood practices.
3. To conserve and manage the natural water bodies to sustain the watershed regime and improvisation and promotion of indigenous water harvesting practices.
4. To develop the manpower equipped with use of ‘smart monitoring and decision making and proficient to planning, executing and monitoring in the context of Climate smart natural resource management.
5. To sensitize and create awareness among the stakeholders about land and water conservation and strengthening stakeholders participation.

B. Major issues relating to the department:

The Major issue related to Soil & Water conservation in Karbi Anglong District can be summarized as follows:

(i) **Shifting Cultivation:**

Shifting cultivation, locally known as Jhumming is a style of forest based land use practice of the District. Study carried out by the Assam Remote Sensing Application Centre shows

that the areas under current jhum have been increased from 13587 ha in 1986-87 to 69125 ha in 1993-94. The current area under Jhum cultivation in the district is about 140652 ha. Large areas along the hilly slope have undergone denudation due to Jhum cultivation which causes downstream siltation and loss of top fertile soil. The Land use classes of the district have been furnished at **Annexure-1**.

(ii) **Soil Erosion Hazards:**

In Krabi Anglong district experiences Sheet, reel and gully erosion which contribute soil loss every year and thereby causes huge soil degradation in the district. The study conducted by NBSS, LUP reveals that about 4, 89,299 hectares i.e. 47% of the total geographical areas of the district fall under very severe (more than 40 Ton soil loss per hectare land in each year) soil loss zone. The details of land use classification on the basis of Soil Loss (Ton/ha/year) has been furnished at **Annexure-2 and Map-1**.

Similarly, because of hilly terrain, slopes play a very important role towards soil erosion. Near flat terrains having very gentle slope constitute the first domain of sheet erosion, the moderate to steep slopy land influences gully erosion and very steep slope are prone to mass movement, severe rain splash and sheet erosion. The district covers about 3, 96,367 hectares i.e. 38% of the area under moderate to very steep slope. The slope classification of the district is summarized at **Annexure-3 and Map-2**

(iii) **Surface Water Management:**

The annual rainfall in Karbi Anglong District in 2014 is 1155.8 mm while 1046.8 mm rainfall occurred during the May to September and from October to April the total rainfall is only 109 mm. during this period the district face water shortage therefore water harvesting refers to the deliberate collection of rainwater from a surface catchments and its storage to provide a supply of water. Analysis on water budgeting of the district shows that the total runoff of the district is 626830 ham and the potentiality of Rain Water Harvesting (RWH) is 156707 ham.

C. Planning for resource requirements:

(i) **Financial resources:** The department has average Rs. 2.11 Crores annual budget provision in Soil & Water conservation head. The estimated annual budget up to 2030 for the department is 108.33 Crores. At present there is no specific fund allotted in state budget other than state plan fund. Thus, the financial gap may be bridged out from the Centrally Sponsored Scheme like RIDF, NEC, NLCPR, MOS, NAFCC including some other Externally Aided programme like BRICS, World Bank Aided projects etc. Similarly, some other sources of funds like Community Participation, PPP, NGOs, and Private Sector Enterprises etc also can be explored. The planning of resources has been furnished at Table-1: (7 Years resources allocation Plan and Gap analysis), Table-2: (3 Years Action Plan; 2017-18 to 2020-24) and Table-3: (7 YEARS STRATEGIC PLAN; 2017-18 to 2020-24)

Table-1: 7 Years resources allocation Plan and Gap analysis

Year	Target (Rs. In Crore)	Avg Budget (Rs. In Crore)	Gap (Rs. In Crore)
17-18	13.416	5.83	7.59
18-19	20.124	6.11	14.01
19-20	23.478	6.42	17.06
20-21	30.186	6.76	23.42
21-22	36.894	7.14	29.75
22-23	43.602	7.55	36.05
23-24	50.31	8.01	42.30

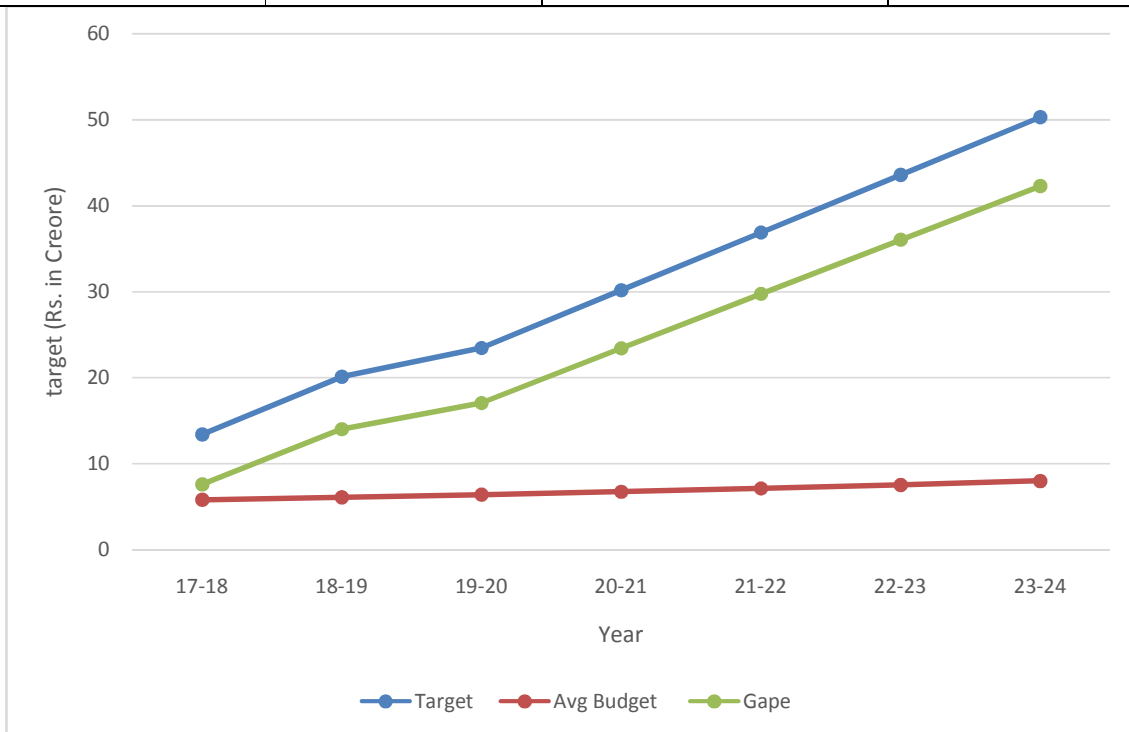


Table-2: 3 YEARS ACTION PLAN ;2017-18 TO 2019-20

SDGs	Activity	Sub- Activity	Base Line 2016-17		2017-18		2018-19		2019-20		
			Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	
SDG-2:End hunger, achieve food security, improve nutrition and promote sustainable Agriculture	a. Slope stabilization	I) Bamboo Palasiding	0.00	0.00	14	0.15	21	0.23	24.50	0.26	
		II) Boulder Pitching/Revetment	0.00	0.00	4	0.73	6	1.10	7.00	1.28	
		III) Vegetative Barrier	0.00	0.00	1200	1.98	1800	2.97	2100.00	3.47	
		IV) Turfing	0.00	0.00	200	0.31	300	0.47	350.00	0.54	
	a. Water Harvesting	I) Nalla Bund	24.00	0.78	40	0.21	60	0.31	70.00	0.37	
		II) Earthen Bund	0.00	0.00	200	0.07	300	0.11	350.00	0.12	
		III) Boulder Check Dam	0.00	0.00	4	0.05	6	0.07	7.00	0.08	
		IV) Gabion RCC Check Dam	0.00	0.00	10	0.24	15	0.36	17.50	0.41	
		V) RCC Check Dam	0.00	0.00	8	1.14	12	1.71	14.00	1.99	
		VI) Farm Pond	0.00	0.00	4	0.70	6	1.05	7.00	1.23	
	SDG-13:Take urgent action to combat climate change and its impact	a. Wasteland Development	I) Broomstick Plantation	36.78	0.26	200	1.20	300	1.80	350.00	2.10
			II) Bamboo Plantation	63.31	0.38	200	1.19	300	1.79	350.00	2.08
III) Tea Plantation			16.00	0.22	20	0.28	30	0.42	35.00	0.49	
IV) Rubber Plantation			61.69	0.60	100	0.97	150	1.46	175.00	1.71	
V) Coffee Plantation			0.00	0.00	30	0.26	45	0.39	52.50	0.46	
VII) Afforestation			0.00	0.00	100	0.92	150	1.39	175.00	1.62	
IX) Protection of Sacred Forest			0.00	0.00	10	0.05	15	0.08	17.50	0.09	
b. Restoration of Degraded Wetland		I) Decongestion of Drainage Channel	0.00	0.00	20	0.08	30	0.12	35.00	0.14	
		II) Marshy Land Development	24.50	0.28	8	0.10	12	0.14	14.00	0.17	
		III) Periphery Bund	0.00	0.00	40	0.07	60	0.11	70.00	0.12	
		IV) Diversion Drain	0.00	0.00	100	0.14	150	0.21	175.00	0.25	

SDGs	Activity	Sub- Activity	Base Line 2016-17		2017-19		2018-19		2019-20	
			Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)
SDG-15: Protect. Restore and promote sustainable use of territorial ecosystem, sustainably manage forest, combat desertification and halt and reverse land degradation and halt biodiversity loss	a. Erosion control	I) Graded Bund	0.00	0.00	40	0.35	60	0.52	70.00	0.61
		II) Contour Bund	0.00	0.00	40	0.33	60	0.50	70.00	0.58
		III) Terracing	4.51	0.05	60	1.15	90	1.72	105.00	2.01
		IV) Gully Control	0.00	0.00	40	0.19	60	0.28	70.00	0.33
	b. Riverbank Erosion Control	II) Rievetment	0.00	0.00	40	0.21	60	0.31	70.00	0.36
		III) Spur	0.00	0.00	20	0.15	30	0.23	35.00	0.27
		IV) Sluice Gate	0.00	0.00	100	0.20	150	0.30	175.00	0.35
	Total	230.79	2.57	2852	13.42	4278	20.12	4991	23.48	

Table-3: 7 YEARS STRATEGIC PLAN; 2017-18 to 2020-24

SDGs	Activity	Sub- Activity	Base Line 2016-17		2017-18		2018-19		2019-20		2020-2024	
			Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)
SDG-2:End hunger,achieve food security,improve nutrition and promote sustainable Agriculture	a. Slope stabilization	I) Bamboo Palasiding	0.00	0.00	14	0.15	21	0.23	24.50	0.26	168.00	1.80
		II) Boulder Pitching/Revetment	0.00	0.00	4	0.73	6	1.10	7.00	1.28	48.00	8.79
		III) Vegetative Barrier	0.00	0.00	1200	1.98	1800	2.97	2100.00	3.47	14400.00	23.76
		IV) Turfing	0.00	0.00	200	0.31	300	0.47	350.00	0.54	2400.00	3.72
	a. Water Harvesting	I) Nalla Bund	24.00	0.78	40	0.21	60	0.31	70.00	0.37	480.00	2.50
		II) Earthen Bund	0.00	0.00	200	0.07	300	0.11	350.00	0.12	2400.00	0.85
		III) Boulder Check Dam	0.00	0.00	4	0.05	6	0.07	7.00	0.08	48.00	0.56
		IV) Gabion RCC Check Dam	0.00	0.00	10	0.24	15	0.36	17.50	0.41	120.00	2.84
		V) RCC Check Dam	0.00	0.00	8	1.14	12	1.71	14.00	1.99	96.00	13.65
		VI) Farm Pond	0.00	0.00	4	0.70	6	1.05	7.00	1.23	48.00	8.40
SDG-13:Take urgent action to combat climate change and its impact	a. Wasteland Development	I) Broomstick Plantation	36.78	0.26	200	1.20	300	1.80	350.00	2.10	2400.00	14.40
		II) Bamboo Plantation	63.31	0.38	200	1.19	300	1.79	350.00	2.08	2400.00	14.29
		III) Tea Plantation	16.00	0.22	20	0.28	30	0.42	35.00	0.49	240.00	3.36
		IV) Rubber Plantation	61.69	0.60	100	0.97	150	1.46	175.00	1.71	1200.00	11.69
		V) Coffee Plantation	0.00	0.00	30	0.26	45	0.39	52.50	0.46	360.00	3.15
		VII) Afforestation	0.00	0.00	100	0.92	150	1.39	175.00	1.62	1200.00	11.09
		IX) Protection of Sacred Forest	0.00	0.00	10	0.05	15	0.08	17.50	0.09	120.00	0.60
	b. Restoration of Degraded Wetland	I) Decongestion of Drainage Channel	0.00	0.00	20	0.08	30	0.12	35.00	0.14	240.00	0.94
		II) Marshy Land Development	24.50	0.28	8	0.10	12	0.14	14.00	0.17	96.00	1.14
		III) Periphery Bund	0.00	0.00	40	0.07	60	0.11	70.00	0.12	480.00	0.85
		IV) Diversion Drain	0.00	0.00	100	0.14	150	0.21	175.00	0.25	1200.00	1.68

SDGs	Activity	Sub- Activity	Base Line 2016-17		2017-18		2018-19		2019-20		2020-2024	
			Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)	Phy (Ha)	Fin (Rs. In Crore)
SDG-15:Protect. Restore and promote sustainable use of territorial ecosystem,sustain anably manage forest, combat desertification and halt and reserve land degradation and halt biodiversity loss	a. Erosion control	I) Graded Bund	0.00	0.00	40	0.35	60	0.52	70.00	0.61	480.00	4.17
		II) Contour Bund	0.00	0.00	40	0.33	60	0.50	70.00	0.58	480.00	3.99
		III) Terracing	4.51	0.05	60	1.15	90	1.72	105.00	2.01	720.00	13.77
		IV) Gully Control	0.00	0.00	40	0.19	60	0.28	70.00	0.33	480.00	2.28
	b. River Bank Erosion Control	II) Revetment	0.00	0.00	40	0.21	60	0.31	70.00	0.36	480.00	2.50
		III) Spur	0.00	0.00	20	0.15	30	0.23	35.00	0.27	240.00	1.82
		IV) Sluice Gate	0.00	0.00	100	0.20	150	0.30	175.00	0.35	1200.00	2.40
Total		230.79	2.57	2852	13.42	4278	20.12	4991	23.48	34224	160.99	

ACTIVITY WISE TOTAL TARGET UPTO 2030

SDGs	Activity	Sub- Activity	Phy	Financial		
			Area (Ha)	(Rs. Crore)		
SDG-2:End hunger,achieve food security,improve nutrition and promote sustainable Agriculture	a. Slope stabilization	I) Bamboo Palasiding	700	7.50		
		II) Boulder Pitching/Revetment	200	36.64		
		III) Vegetative Barrier	60000	99.00		
		IV) Turfing	10000	15.50		
	a. Water Harvesting	I) Nalla Bund	2000	10.43		
		II) Earthen Bund	10000	3.53		
		III) Boulder Check Dam	200	2.34		
		IV) Gabion RCC Check Dam	500	11.85		
		V) RCC Check Dam	400	56.88		
		VI) Farm Pond	200	35.00		
SDG-13:Take urgent action to combat climate change and its impact	a. Wasteland Development	I) Broomstick Plantation	10000	60.00		
		II) Bamboo Plantation	10000	59.53		
		III) Tea Plantation	1000	14.00		
		IV) Rubber Plantation	5000	48.73		
		V) Coffee Plantation	1500	13.13		
		VII) Afforestation	5000	46.23		
		IX) Protection of Sacred Forest	500	2.50		
	b. Restoration of Degraded Wetland	I) Decongestion of Drainage Channel	1000	3.90		
		II) Marshy Land Development	400	4.76		
		III) Periphery Bund	2000	3.53		
		IV) Diversion Drain	5000	7.00		
		SDG-15: Protect. Restore and promote sustainable use of territorial ecosystem,sustainably manage forest, combat desertification and halt and reserve land degradation and halt biodiversity loss	a. Erosion control	I) Graded Bund	2000	17.36
				II) Contour Bund	2000	16.62
				III) Terracing	3000	57.36
IV) Gully Control	2000			9.48		
b. River Bank Erosion Control	II) Revetment		2000	10.40		
	III) Spur		1000	7.60		
	IV) Sluice Gate		5000	10.00		
Total			142600	670.80		

D. Human Resources Planning:

Possible to collaborate with state, district and local NGO, possible to involve PG student and Research Scholars of AAU, GU, TU, DU, AU as intern and volunteer on task basis and Collaboration with other line department. For technical assistance it is possible to collaborate with AAU, Rain Forest Research Institute (RFRI), Jorhat, Assam Engineering College, NIT Silchar, ICAR, Borapani, Horticulture College, Central Agriculture University, Pasighat, Forestry Department, NEIST, Nirjuli, Civil Engineering Department and Centre for Environmental Science IIT, Guwahati, NESAC, Borapani, ARASAC, ASTEC, Guwahati, etc. for technical know-how and technology sharing.

Annexure-1: Land use Classes

SL No	Land use Class	Area (in Ha)
1	Current Fallow	3015
2	Deciduous Forest	564346
3	Degraded Land	140652
4	Double/Triple Crop	27855
5	Evergreen Forest	172405
6	Kharif Crop	51358
7	Plantation	78516
8	Scrub Land	135
9	Settlements	282
10	Waterbody/River	4508
Total		1043072

Source: NBSS & LUP

Annexure-2: Categories of land on the basis of Soil Loss

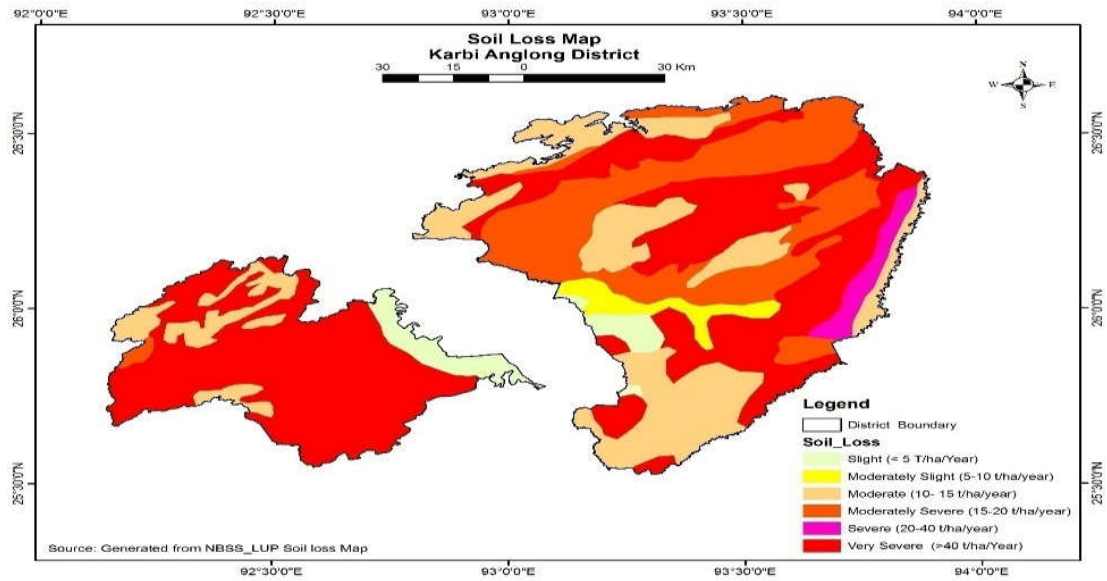
SL No	Soil loss	Area (in Ha)	(%) of total Area
1	Slight (< 5 T/ha/Year)	50985	5
2	Moderately Slight (5-10 T/Ha/Year)	69810	7
3	Moderate (10- 15 t/ha/year)	119226	11
4	Moderate Severe (15-20 t/ha/year)	243942	23
5	Severe (20-40 t/ha/year)	69810	7
6	Very Severe (>40 t/ha/Year)	489299	47
Total		1043072	

Source: Generated from the LISS III imagery

Annexure-3: Land classification on the basis of categories

SL No	Complex Slope	Slope Gradient Limit		Area (in Ha)	% of Total Geographical Area
		Lower Percentage	Upper Percentage		
1	Nearly Level	0	3	89973	8.63
2	Undulating	3	8	262835	25.20
3	Rolling	8	16	292294	28.02
4	Hilly	16	30	253056	24.26
5	Steep	30	45	107078	10.27
6	Very Steep	>45		37836	3.63
Total				1043072	100.00

Map-1: Soil Loss Map



Source: Generated from DEM

MAP-2

