



**GOVERNMENT OF SIKKIM
FOREST, ENVIRONMENT & WILDLIFE MANAGEMENT
DEPARTMENT**



**ANNUAL ADMINISTRATIVE REPORT
FOR THE YEAR 2010-2011.**



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FORWARD

It is a great pleasure to present the 16th Annual Administrative Report 2010 – 2011 of Forest, Environment and Wildlife Management Department.

The critical role played by forest in our lives is now increasingly well understood. Forest provides a range of essential ecosystem services. The very system of human society depends on sustenance of forest eco-system and conservation of bio-diversity. However, with the ever increasing demand on the forest resources for goods and services, the forest are under tremendous biotic pressure.

Keeping this in view, the planning commission of India has set the target for achieving the national goal of 33% of forest and tree cover of the total geographical area of the country by 11th Five Year Plan period i.e, 2012 as approved by the National Development Council to check environmental hazards. The Forest, Environment and Wildlife Management Department, I am proud to say has already achieved this target as the forest cover accounts for over 47.59% of the total geographical area of the state.

The year 2010 declared as the “International Year of Biodiversity” and Sikkim being identified as the biodiversity hot spot has thrown light to the varied biodiversity in the state.

Sikkim is the first state in the country to launch the Green School Programme (GSP) at the state level in 2009. GSP is now being implemented by 139 schools (Government & Private) at secondary and senior secondary level in Sikkim.

In this era of Global Climate change, we are all looking forward to find innovative ways to reduce detrimental effects on the environment and seek measures to strike a balance with nature in restoring our depleting natural resources.

The Government is concerned with development of the state but at the same time we cannot ignore our environment and the Government has always been guided by this spirit.

I hope that this report will serve as a useful source of information for policy makers, planners, academicians, civil society groups and all those who are interested in forest management and conservation.

Bhim Pd. Dhungel



Manjit Singh, IFS

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PREFACE

The Forests, Environment & Wildlife Management Department has been publishing Annual Administrative Report every year, highlighting various aspects of forest working. The report for the year 2010-2011 brought out by the Planning & Statistical Cell of the Department to present statistical reports of the various schemes under the Forests, Environment & Wildlife Management Department.

The publication contains updated statistics of the forest area, its management, silviculture, forest produce, physical and financial achievements of forestry development works. The data provided herein should prove interesting and useful for all those who are connected with forestry at various levels within and outside the State. Suggestions for improving the format and contents are welcomed.

Manjit Singh, IFS,
Principal C.C.F-cum-Addl. Chief Secretary.

Forest, Environment and Wildlife Management Department, Sikkim.

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INTRODUCTION

Chapter -1

Sikkim shelved in the womb of the mighty Mt. Khangchendzonga and her ranges, falls in one of the globally identified biodiversity hotspots. Rich in biodiversity with highly endangered flora and fauna, taxonomist often refers to the state as “botanist paradise”. The state over the years has made substantial progress in forestry and environment detriments. The indicators of forest cover- very dense forest, moderate dense forest, open forest, etc and environmental protection index have shown consistent improvement over the decade. These achievements are the cumulative result of mass public mobilization and efficient conservation measures together with several interlinked interventions introduced by Government of Sikkim supported by Government of India. The State Government’s green policies such as grazing ban in forest areas, introducing innovative programmes like the State Green Mission and the 10 minutes to earth, strengthening of frontline staff, increasing the wildlife protected area network, etc has played a pivotal role in protection and conservation of the State’s pristine environment. The State of Forest Report of the Forest Survey of India, Ministry of Environment and Forests, Government of India has reported an increase in the forest cover of the State which is reflected as follows;

Indicators	2003		As per 2009 SFR			
	National	State	2005 (Revised)		2007	
	National	State	National	State	National	State
Very Dense Forest	1.56	6.454	1.66	7.05	2.54	7.05
Moderately Dense Forest	10.32	26.832	10.12	30.45	9.71	30.45
Open Forest	8.76	12.683	8.82	9.81	8.77	9.81
Total Forest Cover	20.64	45.97	20.60	47.31	21.02	47.31
% of total Forest & Tree Cover of Geographic Area	23.68	46.28	23.81	47.59	23.84	47.59
Recorded forest area in % of geographic area	23.57	82.31	23.41	82.31	23.41	82.31

(As per State of Forest Report (SFR) published by Forest Survey of India, Government of India)

As per the Institute for Financial Management and Research (IFMR), Centre for Development Finance (CDF) Sikkim was accorded following ranking;

- In 2008 1st among the states in Conservation of Natural Resources and Performance in Land Use with overall 2nd rank in the overall Environmental Sustainability Index (ESI) ranking
- In 2009 1st among the states in *Reducing Pressure on Environment* and in *State’s Responses to maintain their Environment*.

Despite improvements the state aspires to actively involve the community and inculcate green consciousness in every citizen. It is with this aim that the State Green Mission, a unique one of its kind program was launched on 27th February 2006. The special feature of this programme is to motivate and involve all sections of the society voluntarily every year for greening activities at no cost. This innovative programme started with avenue plantation for beautification now aims to cover all vacant lands.

The ten minutes to earth programme conceived with the idea to plant trees equivalent to the population of the state in ten minutes; one tree for one person was launched by the state on 15th July 2009. This initiative also supports the United Nations Environment Program (UNEP) worldwide tree planting campaign “*Plant for the Planet: Billion Tree Campaign*”.

The initiative to ignite green passion in young minds with aim to prepare green citizens of the future received a major boost from the Government with the introduction of the Chief Minister’s Green Rolling Trophy and Leaf trophies to the five best green schools. The enhanced cash awards along with the trophies have further encouraged the school students and authorities to initiate and undertake green projects.

1. Major initiatives and achievements during the last five years

1.1. Forest, Wildlife and Biodiversity Sector

- Forest Decentralization with the addition of JFMC/EDC
- Initiated zonation of protected areas into conservation and ecotourism zones
- Initiated Sikkim Biodiversity Conservation and Forest Management Project (SBFP) funded by Japan International Cooperation Agency(JICA) giving thrust to eco-tourism and biodiversity conservation
- Working Plan for East and South Sikkim completed.
- Division of RF into compartments with distinct boundaries and one or more compartments entrusted to Forest Guard for management and protection.
- State Green Mission is being implemented from 2006-07
- Started 10 minutes to Earth Programme in the year 2009-10
- Wildlife Management Plan for wildlife protected areas completed.
- Master Plan of the Himalayan Zoological Park initiated.

1.2. Environment Sector

- National Green Crops constituted in 182 Schools.
- Cash awards and green leaf trophies to five best green schools initiated. Chief Minister’s Green Rolling trophy along with cash award started.

2. Thrust areas for the 12th year plan

2.1. Forest, Wildlife and Biodiversity Sector

- Rationalization and re-constitution of JFMC and Eco-Development Committees to strengthen participatory approaches and empowerment of villagers for better management of natural resources at grass root level.
- A Training Institute on Bio resources and Integrated Mountain Development is needed to provide training in the fields of forestry, mountain livelihoods and ecotourism.
- Protection and Conservation of Natural Forests will involve using GIS and GPS demarcation of the boundary by erecting boundary pillars. Creation of grassroots infrastructure for Range and Block office cluster complex.
- Biodiversity conservation programmes need to focus on zonation of sensitive habitats for pure wildlife conservation and multiple use zones for community benefit.
- Community development should focus on livelihood support and not on giving freebies. The ecotourism, horticulture, animal husbandry and rural energy.
- Species recover programmes are the need of the day so that the people and wildlife friendly species like oaks, chestnuts, rhododendrons and canes which also act as the water reservoirs of the state and can be regenerated with peoples participation using hi-tech tools.
- Decentralization of powers to the ACFs posted in Block Administrative Centre
- Deployment of forest frontline staff in the Block Administrative Centres to assist the ACF
- Special measures to be initiated for protection and propagation of Oaks and Quercus spp.
- In-Situ conservation of rare and threatened species of flora and fauna.
- Wildlife population estimation for key flag faunal species needs to be initiated using modern techniques and equipments like camera traps, etc
- Development of high tech nurseries
- Organic certification of forest based medicinal plants and products.
- Eco-tourism project to started at Golitar in Fambonglho Wildlife Sanctuary to be started.

2.2. Environment Sector

- *Eco-Certification:* We need to work towards making the private sector mainly tourism, travel, trekking and the hospitality sector in the state eco-friendly. For this an incentive based eco-certification scheme is needed for the tour and travel agents, hotels and taxi drivers to make their operations eco-friendly.
- Research on Wetlands and Glacier.
- *Rivers:* Treatment of sewerage entering the rivers in coordination with various engineering departments specially in the river side townships of Jorethang, Singtam, Melli and Rangpo.
- *Eco-city Mission:* Proper solid waste management, sanitation and green areas for towns like Gangtok, Gyalshing, Mangan, Namchi, Jorethang, Singtam, Ranipool and Rangpo.
- Environmental Education and Awareness: For schools, NGOs and CBOs.

Chapter -2

Key Biodiversity Statistics of Sikkim.

KEY STATISTICS OF SIKKIM

Geographical Area	7096 sq.km.
Capital	Gangtok
No. of Districts	4
No. of Sub-Divisions	9
Climate	Tropical, Temperate and Alpine
State Flower	Nobile Orchid- Dendrobium nobile
State Tree	Rhododendron niveum
State Animal	Red Panda – Ailurus fulgens
State Bird	Blood Pheasant – Ithaginis cruentus
Protected Area Network	2183.10 sq.km (30.77%)
No. of important Mountains & Peaks	28
No. of Glaciers	84
No. of Lakes (Wetlands)	227
No. of Hot Springs	9
No. of Rivers & Streams	104
Major Rivers of the State	Teesta and Rangit

No. of Species:

Flowering Plants – 500	Mammals – 144
Rhododendron – 36	Birds – 552
Orchids – 550	Reptiles – 33
Conifers – 16	Amphibians – 16
Ferns & allies – 362	Fishes – 48
Tree Ferns – 9	Butterflies – 650
Bamboos – 28	
Oaks – 11	
Medicinal Plants – 424	
Recorded Forest Area	5841.39 sq.km. (82.32%)
	Reserve Forests – 5452.39 sq.km.
	Protected Forests (Khasmal)-285 sq.km.
	Protected Forests (Goucharan)-104 sq.km.
Forest Land with Tree Cover-	3377 sq.km. (47.59%)
	Forest Cover – 3357 sq.km. (47.31%)
	Tree Cover -20 sq.km. (0.28%)
Forest Cover -	Very Dense Forest – 500 sq.km.
	Moderately Dense Forest – 2161 sq.km.
	Open Forest - 696 sq.km.
	Scrub - 356 sq.km.

Chapter – 3**AREA STATISTICS FOR SIKKIM- TOTAL STATE (IN SQ. KMS.)**

SL. No	CLASS	RESERVE FOREST	REVENUE BLOCK	TOTAL	%OF TOTAL
1.	CROP LAND (TERRACED./SEMI TERRACED)	0.00	604.85	604.85	8.52
2.	FALLOW/ SCRUB IN REVENUE BLOCKS	0.00	155.69	155.69	2.19
3.	SAL DENSE FOREST	5.30	0.77	6.07	0.09
4.	SAL OPEN FOREST	15.93	1.54	70.47	0.25
5.	SAL DEGRADED FOREST	3.32	0.71	4.03	0.06
6.	MIXED DENSE FOREST	464.46	138.88	603.34	8.50
7.	MIXED OPEN FOREST	433.37	333.38	766.75	10.81
8.	MIXED DEGRADED FOREST	194.56	235.06	429.62	6.05
9.	DENSE CONIFER FOREST	351.94	16.14	368.08	5.19
10.	OPEN CONIFER FOREST	340.63	21.55	362.18	5.10
11.	DEGRADED CONIFER FOREST	156.89	16.30	173.19	2.44
12.	OAK-RHODODENDRON FOREST	100.34	26.24	126.58	1.78
13.	SCRUBS IN RESERVE FOREST	101.87	0.00	101.87	1.44
14.	FOREST BLANKS	90.56	0.00	90.56	1.28
15.	ALPINE SCRUB	611.44	27.72	639.16	9.01
16.	ALPINE PASTURES	431.32	0.00	431.32	6.08
17.	ALPINE BARREN	815.80	2.35	818.15	11.53
18.	SNOW	1018.23	5.41	1023.64	14.43
19.	GLACIERS	208.23	0.00	208.23	2.93
20.	LAKES	32.30	0.70	33.00	0.47
21.	RIVERS/MAJOR STREAMS	31.81	32.50	64.31	0.91
22.	DRY RIVER BEDS	31.49	9.10	40.59	0.57
23.	BUILT –UP AREA	0.30	3.24	3.54	0.05
24.	LAND SLIDE AREAS	5.37	5.16	10.53	0.15
25.	MISCELLANEOUS	6.93	6.30	13.23	0.19
	Total	5452.39	1643.59	7095.98	100.00

Chapter - 4**MANPOWER:**

SL.NO.	DESIGNATION	IN POSITION	
I	IFS CADRE		
	01	Advisor	01
	02	PCCF-cum-Secretary	01
	03	Addl. P.C.C.F.-cum-CWLW	01
	04	Addl. P.C.C.F	01
	05	Chief Conservator of Forest	02
	06	Conservator of Forest	05
	07	Deputy Conservator of Forest	05
	08	IFS Probationers	01
	09	On Higher Study	01
	10	On Central Deputation	00
	11	On State Deputation	09
A. TOTAL IFS		27	
II	SFS CADRE		
	01	Director	02
	02	Addl. Director of Forests	02
	03	Joint Directors	04
	04	Deputy Conservators	29
	05	Assistant Conservator of Forests	79
	A. Gazetted		116
	06	Range Officer	75
	07	Block Officer	132
	08	Head Forest Guard	107
	09	Forest Guard	231
	B. Non-Gazetted		545
	Total	(A+B)	661
III	SERICULTURE		
	01	Director	01
	02	Joint Director	01
	03	Assistant Director	01
	A. Gazetted		03
	04	Sericulture Range Officer	02
	05	Sericulture Block Officer	01
	B. Non-Gazetted		03
	Total	Sericulture (A+B)	06
IV	STATISTICAL SERVICE		
	01	Joint Director	02
	02	Deputy Director	01
	03	Assistant Director	01
	A. Gazetted		04
	04	Statistical Inspector	02
	05	Statistical Investigator	01
	B. Non-Gazetted		03
	Total	(A+B)	07

V	FINANCE AND ACCOUNTS SERVICE		
	01	Additional Director of Accounts	01
	02	Chief Accounts Officer	01
	03	Sr. Accounts Officer	02
	A. Gazetted		04
	04	Senior Accountant	06
	05	Accountant	10
	06	Junior Accountant	14
	07	Accounts Clerk	09
	B. Non-Gazetted		39
Total (A+B)		43	
VI	STATE CIVIL SERVICE		
	01	Special Secretary	01
	02	Joint Secretary	01
	03	Deputy Secretary	01
	04	Under Secretary	01
	A. Gazetted		04
	04	Office Superintendent	05
	05	Head Assistant	13
	06	Upper Division Clerk	27
	07	Lower Division Clerk	53
B. Non-Gazetted		98	
Total (A+B)		102	
VII	OTHERS		
	01	Principal Scientist	02
	02	Principal/Chief Research Officer	01
	03	Scientist 'B	01
	04	Assistant Scientific Officer	01
	05	O.S.D.	01
	06	Assistant Engineer (Civil)	01
	07	Assistant Engineer (Environment)	01
	A. Gazetted		08
	08	Senior Technical Assistant	02
	09	Cartographer	01
	10	Surveyor	01
	11	Assistant surveyor	01
	12	Draftsmen	02
	13	Junior Engineer (Civil)	02
	14	Tally Clerk	01
	15	Wireless Attendant	01
	16	Supervisor	02+4(W/C)
17	Lab Attendant	01	
18	Bearer	01	
19	Chowkidar	22+3(W/C)	
20	Cook	01	
21	Peon	67	
22	Mali	21	
23	Driver	56	
24	Pipe Fitter	01	
B. Non-Gazetted		183+7(W/C)	
Total (Other A+B)		191+7(W/C)	

VIII	STENOGRAPHER SERVICE		
	01	Principal Private Secretary	01
	02	Senior Private Secretary	01
	03	Private Secretary	04
	A.	Gazetted	06
	04	Stenographer	03
	B.	Non-Gazetted	03
	Total -	(A+B)	09

ABSTRACT:

SL.NO	PARTICULARS	IN POSITION
1	TOTAL GAZETTED OFFICERS	172
2	TOATL NON-GAZETTED EMPLOYEES	874
3	WORK-CHARGED EMPLOYEES	07
4	GRAND TOTAL -	1053

Source:-
 Administrative Section,
 Forest Env. & WL Mgmt. Deptt.

Chapter -5

Statement of revenues realised during last ten years.

Table – 5.1

Sl.No.	Financial Year	Estimated (in lakhs)	Realised (in lakhs)	Percentage	Remarks
1	2001-2002	200.00	664.77	332.39	Excess 232.39 %
2	2002-2003	438.00	7129.72	164.32	Excess 64.32 %
3	2003-2004	550.00	723.4	131.53	Excess 31.53 %
4	2004-2005	550.00	787.45	143.17	Excess 43.17 %
5	2005-2006	700.00	817.66	11.81	Excess 16.81 %
6	2006-2007	800.00	802.00	100.25	Excess .25%
7	2007-2008	700.50	800.26	114.24	Excess 14.24%
8	2008-2009	800.00	848.09	106.01	Excess 6.01%
9	2009-2010	1000.00	879.00	87.90	Shortfall 12.1%
10	2010-2011	1100.00	1115.17	101.37	Excess 1.37%

STATEMENT OF EXPENDITURE

Table -5.2

SECTORS	ACTUAL EXPENDITURE		
	PLAN	C.S.S	N-PLAN
Soil and water conservation			
2005-06	88.07	NIL	139.22
2006-07	84.05	NIL	148.37
2007-08	97.07	NIL	149.04
2008-09	90.04	358.14	173.37
2009-10	101.35	NIL	289.05
2010-11		9841	286.7
Forestry & Wildlife			
2005-06	662.54	329.96	1195.85
2006-07	946.72	484.61	1189.17
2007-08	1256.45	342.61	1273.47
2008-09	1251.20	284.50	1442.81
2009-10	1771.84	282.29	2539.46
2010-11	2851.08	297.82	2477.91
Ecology & Environment			
2003-04	29.29	2.26	-
2004-05	28.43	1.56	-
2005-06	30.03	2.26	-
2006-07	36.76	18.10	-
2007-08	52.28	34.35	-
2008-09	52.53	46.98	24.23
2009-10	54.44	80.66	235.20
2010-11	20.27	24.51	14.62

Chapter – 6

EXTRACTION AND SALE OF FOREST PRODUCE:

The Utilization Circle is the commercial wing of the department. Extraction of Wind-fallen trees, trees from project sites where forest land is diverted to the user agencies, extraction of poles from thinning of old plantations and conversion into timber, firewood and charcoal and sale of these forest produce is done by this Circle.

The Utilization Circle consists of one Conservator of Forest, one Divisional Forest Officer, One Assistant Conservator of Forest and a Block Officer and has to cover the whole of Sikkim.

The Division has one saw mill situated at Chuba in Government land, where the Division converts timber, firewood out of those trees/poles from above mentioned areas.

The division is also doing the Import of timber, charcoal, quartz stones from outside the State through Sale Agents, who are operating timber business after obtaining license and paying import fee as per schedule of Government rate. By doing so the Forest Environment & Wildlife Management Department is saving the forest of the State and earning revenue in a legalized manner.

The financial achievements of this division are given below for the year of 2010-11
Detail of extraction and sale of forest produce and import fee during 2010-11.

Table – 6.1

Year	Forest Produce	Quantity extracted & sold (in cft. / piles /No)	Revenue realized (Rs.in lakhs)
2010-2011	Timber	5966 cft	13.02
	Firewood	248.50 piles	1.55
	Disposed of tree	249 no	6.71
	Disposed of ballies	370 nos	7.17
	Sawing Charge	2532 cft	0.62
	Saw dust	---	0.01
	TOTAL		29.10
	IMPORT FEE		
	Timber	124020 cft	27.55
	Quartz Stone	----	----
	Charcoal	----	----
	Bamboo	2585 nos	0.13
	Saw dust	2400 bags	0.03
TOTAL		28.26	
GRAND TOTAL		57.36	

Details of Extraction and Sale of Forest Produce for the last fourteen years.

Table – 6.2

Year	Timber		Firewood		Charcoal		Total
	Quantity extracted and sold (Cubic feet)	Revenue realized (Rupees)	Quantity extracted and sold (Piles))	Revenue realized (Rupees)	Quantity extracted and sold (Bags)	Revenue realized (Rupees)	Revenue realized (Rupees)
1997-1998	2153.50	2.75	36	0.50	986	0.57	3.82
1998-1999	1004.75	1.41	58	0.22	180	0.18	1.81
1999-2000	1535.52 1872 Nos (Ballies)	2.23	157	0.84	620	0.45	3.52
2000-2001	1741.75 1393 Nos (Ballies)	2.93	168	0.83	245	0.18	3.94
2001-2002	11869.54 1225 Nos (Ballies)	22.31	95	0.18	77	0.37	22.86
2002-2003	13421.31 cft.	20.13	379.72	1.90	213	0.28	22.31
2003-2004	4863.50cft.	10.28	151.82	0.76	176	0.26	11.30
2004-2005	3852.62 cft.	8.23	169.15	0.85	13	0.21	9.29
2005-2006	3367.52cft	8.14	111.80	0.77	13	0.19	9.1
2006-2007	1876.43cft	2.81	224	1.21	-	-	4.08
2007-2008	1007.53 cft	1.91	90.80	0.56	-	-	2.47
2008-2009	2659.95 cft 354 no of trees 1493 no of ballies	11.01	149.65	0.81	-	-	11.82
2009-2010	1627.98 cft 183 nos trees	8.77	150.5	0.82	-	-	9.59
2010-2011	5966 cft + 619 nos trees	26.90	248.50	1.55	-	-	28.45

Chapter - 7

Planning, Statistics, & RTI Cell

This cell functions and reports to the PCCF-cum Secretary. The cell is trifurcated into three wings each headed by Joint Director level officer from the State Statistical and Forest Services. The break-up of this component is as follows;

Planning Cell:

This cell assists the PCCF-cum-Secretary in all matters related to policy matters, planning and coordinating the various activities undertaken by the department. Besides the cell also vets and prepares schedule of rates of forestry activities, interacts with the other agencies within and outside the Government. Replies to Parliament Questions, State Assembly questions, preparation of five years plans, etc are prepared by this cell.

Statistical Cell:

The cell interacts with DESME and is entrusted with the task of collecting and compiling monthly progress report of various schemes being implemented by different circle/divisions of the department. Recently census of the employees is being undertaken.

Right to Information Cell:

An RTI Cell headed by SPIO & ASPIO (HQ) established in the Forest Secretariat implements the provision of RTI Act, 2005. This cell receives RTI applications from the members of the public & as well as from other Departments, NGOs & others. The RTI applications are scrutinised & accepted in order to disseminate it to concerned PIO of the department. This cell carries out the above activities using the services of a small skeleton staff.

Chapter – 8

PLANTATION CARRIED OUT UNDER FOREST DEVELOPMENT AGENCIES, CIRCLE DURING LAST 4 YEARS.

SL NO	NAME OF SCHEME / PROJECT	Nature of the Scheme	2007-08		2008-2009		2009-2010		2010-11		TOTAL	
			PHY (Ha)	FIN (Lakhs)	PHY (Ha)	FIN (Lakhs)	PHY (Ha)	FIN (Lakhs)	PHY (Ha)	FIN (Lakhs)	PHY (Ha)	FIN (Lakhs)
	National Afforestation Programme											
a	North & East WL-FDA	100% CSS	445	151	680	167.26	300	176.97	North & East WL FDA separated from 2010-11		1425	495.23
b	South & west WL-FDA	100% CSS	560	102.04	500	144.87	650	156.91	South & West WL FDA separated from 2010-11		1710	403.82
c	North WL-FDA	100% CSS	0	0	0	0	0	0	55	32.01	55	32.01
d	East WL-FDA	100% CSS	0	0	0	0	0	0	175	152.64	175	152.64
e	South WL-FDA	100% CSS	0	0	0	0	0	0	200	89.08	200	89.08
f	West WL-FDA	100% CSS	0	0	0	0	0	0	450	144.58	450	144.58
g	KNP-FDA	100% CSS	600	160.71	300	112	650	135	202	129.92	1752	537.63
h	East FDA (T)	100% CSS	290	84.22	500	142.43	300	114.01	300	154.85	1390	495.51
i	North FDA (T)	100% CSS	300	88.45	435	88.71	280	102.52	450	115.57	1465	395.25
j	South FDA (T)	100% CSS	590	84.99	370	72.76	400	140.31	350	68.95	1710	367.10
k	West FDA (T)	100% CSS	315	83.19	510	104.22	350	81.45	175	61.85	1350	330.71

ii) **Afforestation under 20 Point programme:**

The 20 point programme (TPP) was launched by the Government of India in the year 1975 and was first revised in 1982, 1986 and recently in 2006-07 with a view to setting up effective monitoring system and thus strengthening the planning & implementation machinery. The restructured TPP -2006 consists of 20 Point & 66 monitorable items where under point No.15 pertains to Environment Protection & Afforestation and covers all the plantation works carried out under different programmes & schemes. Though the primary responsibility of monitoring the individual programme/scheme lies with the Central Ministry / State Government, the Ministry of Statistics & Programme Implementation, will monitor the programme in totality.

15 a – Area covered under plantation (Government Land)					15 b- Seedling planted (in lakhs)		
Sl.No	Year	Target	Achievement	% Ach.	Target	Achievement	% Ach.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
01	1971-80		7463.00			6.59	
02	1980-85		3332.65			3.38	
03	1985-86		1666.25			2.79	
04	1986-87		1470.00			2.45	
05	1987-88		1511.25			2.52	
06	1988-89		1616.25			2.69	
07	1989-90		1852.50			3.09	
08	1990-91		3416.25			5.69	
09	1991-92		4622.47			7.90	
10	1992-93		5484.00			9.14	
11	1993-94		5786.70			9.64	
12	1994-95		6900.00			11.50	
13	1995-96		7189.50			11.99	
14	1996-97		7500.00			12.50	
15	1997-98		6356.56			13.05	
16	1998-90		7537.00			2.50	
17	1999-00		6923.00			20.91	
18	2000-01		8048.00			15.15	
19	2001-02	12000	6217.00	51.81	22	12.42	56.45
20	2002-03	7500	3696.00	49.28	22	14.73	66.95
21	2003-04	7500	6125.19	81.67	22	8.66	39.36
22	2004-05	8000	6191.00	77.39	22	10.32	46.91
23	2005-06	12000	8012.87	66.77	15	6.13	40.86
24	2006-07	15000	3550.26	23.66	15	9.75	65.00
25	2007-08	12000	3456.73	28.80	78	30.84	39.54
26	2008-09	12000	3862.37	32.2	78	23.04	29.55
27	2009-10	25000	8006.85	32.02	162.50	48.61	29.54
28	2010-11	5000	2734.07	54.68	32.50	55.68	105.60

Chapter – 9

Projects:

i) Externally Aided Projects.

SIKKIM BIODIVERSITY CONSERVATION AND FOREST MANAGEMENT PROJECT (SBFP)

Government of Japan through Japan International Cooperation Agency (JICA) is providing financial assistance for Sikkim Biodiversity Conservation and Forest Management Project (SBFP) that is being implemented by the Forest Environment and Wildlife Management Department, Government of Sikkim from the financial year 2010-11.

The SBFP programme assisted by JICA has been prepared keeping in consideration the requirements of the State of Sikkim. It is a project aimed to further strengthen, improve and create the existing policies, programmes and infrastructure development of the Department of Forest, Environment & Wildlife. The programs listed below are a brief point wise reference of the activities that will be covered under the SBFP Project.

A.Forest and Bio-diversity Conservation:

a.Rapid Biodiversity Survey

- * 1,000 sample plots throughout Sikkim
- * 300 sample plots on hotspots

b.Other Study & Survey

- * Climate Change on Himalayan Ecosystem
- * Grazing in Himalayan Ecosystem
- * Flagship Species Habitats
- * Preservation Plot Survey (60 plots)
- * World Heritage Nomination File Preparation Khangchendzonga National Park
- * Biodiversity Research & Extension

c. Rationalization of Protected Area Boundaries

- * 1 Khangchendzonga National Park
- * 7 Wildlife Sanctuaries

d. Establishment of New Protected Areas

- * Nimphu Wildlife Sanctuary (200 km²)
- * Fairreanum Conservation Reserve (0.6km²)

e. Ex-situ Conservation

- * Upgradation of Himalayan Zoological Park
- * Establishment of a Biodiversity Conservation Centre
- * Establishment of Butterfly Park

f. Creation of Propagation Nursery

- * Propagation Nurseries
- * Floricultural Nursery

B- ECO-TOURISM

a. Ecotourism Policy & Strategy

- Formulation of Ecotourism Policy through Consultative Committee & Public Consultation
- Ecotourism Public Campaign
- Formulation of five-year Ecotourism Marketing Strategy

b. Ecotourism Marketing

- Establishment of Ecotourism Marketing Cell
- Overseas PR Tour with Private Operator
- National PR Tour with Private Operator
- Establishment of Funding Mechanism for Sustainable Ecotourism Marketing
- Creating Links Between Tour Operator and Local Communities

c. Development of Eco-friendly Infrastructure

- Trekking Route (260km)
- Wildlife-Watching Areas (20 locations)
- Interpretation Centres
- Forest Rest Houses

d. Solid Waste Management

- Comprehensive Study for Solid Waste Management in selected villages
- Facility for Solid Waste Management

C- JOINT FOREST MANAGEMENT COMMITTEE

a. JFM/EDC/PSS Activity

- 180 target villages with cluster approach
- Creation of 540 SHGs
- 3,600 ha afforestation or Regeneration (additional 700 ha afforestation or regeneration will be conducted by religious institutions)
- Entry Point Activities
- Action Research on Suitable Use of Forest Resources
- Trainings for Capacity Development.

D- SUPPORTING ACTIVITIES

- Preparation Works
- Institutional Strengthening of PMU/DFU/RSU
- Establishment of New Training Facility
- Training of Forest Department Officers
- Monitoring and Evaluation
- Phase –Out Works

ii) Centrally Sponsored Schemes:

a) Integrated Forest Management Scheme:

The CSS: Intensification of Forest Management Scheme is aimed at integrated development and protection of Forests. Ministry of Environment and Forests, Government of India has conveyed the sanction of work programme for the financial year 2010-11, under the CSS: Intensification of Forest Management Scheme, at a total cost of Rs. 288.14 (Rupees Two hundred eighty eight lakhs fourteen thousand only) on 90%: 10% cost sharing basis vide the sanction order no. 3-7/2007-FPD dated 14.07.2010 from Forest Protection Division, The sanction order no. 3-7/2007-FPD dated 19.03.2010 has conveyed the sanction of work programme (PartII) for the financial year 2009-10, under the CSS: Intensification of Forest Management Scheme, at a total cost of Rs. 25.00 (Rupees Twenty five lakhs only) (with central share of Rs. 22.50 lakhs) on 90%: 10% cost sharing basis. However this programme could not be implemented due to late receipt of funds. Similarly an amount of Rs. 1.77 lakhs from the other components of AWP of 2009-10 (PartI) remained unspent. This central share of Rs 22.50+ Rs.1.77= Rs.24.27 Lakhs has been revalidated for expenditure in the current year 2010-11 vide letter no. 3-7/2007-FPD dated 24.05.2010. The detailed work programme for both these sanction letters is as below.

Rs.in lakhs

(A) Annual Work Programme 2010-11 IFMS(90:10) - Sikkim						
Sl.no	Type of		Description of items	Unit	Quantity	Total (in Lakhs)
	Infrastructure			Cost (in Lakhs)		
1	2		3		5	6
I	Component: Forest Fire control & Management					
	Fire line	a	Fire line maintenance (km)	0.017	70	1.19
		b	Engagement of Firewatchers @Rs.130/dy for 4 months	0.156	60	9.36
		c	Control Burning (Ha)	0.018	100	1.80
2	Fire fighting Equipments	a	Procurement of fire fighting equipment per set (No)	0.035	20	0.70
		b	Procurement of power sprayers	0.250	5	1.25
		c	Procurement of soda fire exting wisher	0.060	4	0.24
		d	Procurement of fire resistant coats, Boots,Fire beaters,water bottles,torch lights, rope, Firstaid kit etc	0.060	20	1.20
		e	Procurement of search lights	0.120	8	0.96
		f	Procurement of power chain saws	0.600	1	0.60
3	Training, Publicity & awareness	a	Training & capacity building of field staff No)	0.005	100	0.50
		b	Publicity in electronic media (FM)@Rs.15000/ insertation per month	0.150	4	0.60
		c	Printing & distribution of pamphlets @Rs.2000/1000 nos	0.020	10	0.20
		d	Weekly Awareness programme on local TV Channel	0.150	5	0.75
		e	Awareness camps at Block administrative center level @Rs.5,000/camp	0.050	25	1.25
		f	Hand held loud speaker devices	0.100	2	0.20
4	Road & path	a	Const. of foot/inspection path (km)	4.400	3	13.20

5	Procurement of wireless communication accessories, batteries, antenna, Stabilisers etc and upgradation of wireless control room		1.000	5	5.00	
6	Fire mapping/Fire Management Plan at block level (No)		0.100	10	1.00	
Component Total (A)				40.00		
I Component: Working Plan/Survey & Demarcation						
1	Survey/ demarcation of Reserve Forest boundaries	a	Clearance & survey of Forest boundary line (Low Altitude) (km)	0.135	55	7.43
		b	Clearance & survey of forest boundary line (High Altitude) (km)	0.203	3	0.61
		c	Erection of Forest boundary pillars (Low Altitude) (No)	0.047	550	25.85
		d	Erection of Forest boundary pillars (High Altitude) (No)	0.067	30	2.01
		e	On demand survey of protected forests of Khasmal and Gorucharan (km)	0.135	10	1.35
		f	Procurement of GPS	0.25	1	0.25
		g	Purchase of equipments/items for surveying in the field	1.0	1	1.00
		h	Procurement of Palmlop integrated PDA GPS (No.)	0.8	1	0.80
2	Working plan preparation	a	Field inventory on sampling basis (Low Altitude)in protected forests (No)	0.072	50	3.60
		b	Laying and Fencing of Permanent Preservation/Experimental plot (Low Altitude) (No)	1.500	10	15.00
		c	Field inventory on sampling basis (High Altitude)in protected forests (No)	0.085	20	1.70
		d	Laying and Fencing of Permanent Preservation/Experimental plot (High Altitude) (No)	1.900	3	5.70
		e	Up gradation of Remote Sensing and GIS laboratory.	4.000	1	4.00
		f	Strengthening of Sustainable Forest Management Cell	2.000	1	2.00
		g	Purchase of GPS	0.250	2	0.50
		h	Preparation of climate data set of Sikkim	3.000	1	3.00
		i	Other expenses involved in Working Plan exercises	1.000	3	3.00
Component Total (B)				77.80		
I Component: Strengthening of infrastructure for Forest Protection						
		b	Range Officer's Office-cum-Quarter (Plinth Area:1500 sqft)	22.500	2	45.00
		c	Block Officers Office-cum-Quarter (Plinth Area:1200 sqft)	18.000	2	36.00
		d	Forest Guards Quarters (Plinth Area: 600 sqft)	9.000	2	18.00
		e	Forest check-post cum Forest Guard quarter (1000 sqft) two storied	15.000	2	30.00
Component Total (C)				129.00		
Total (A+B+C):				246.80		
Contingency 5% of the total (for up gradation of quarters double cabin utility vehicles, fencing of water tanks & approach path to preservation plots)				12.34		
Grand Total (1)				259.14		

New Components								
Component: Control & Eradication of Forests Invasive Species								
1	a	Under the component of Control and Eradication of Forest Invasive Species for the purpose of detailed survey and documentation of various forests invasive species and fresh spread in the State and for creation of management plan for dealing with these invasive species				10.00		
		Total				10.00		
Component: Conservation and Restoration of the Unique Vegetation and Eco- Systems								
2	a	Under the Component Conservation and Restoration of the Unique Vegetation and Eco-Systems for inventory and preparation of management plan for the entire State				10.00		
	b	Construction of Forest Guards quarter (Plinth Area: 600 sqft) @ 9.00 lakhs x 1)				9.00		
		Total				19.00		
		Grand Total (2)				29.00		
		Grand Total (1+2)				288.14		
For Annual Work Programme 2010-11								
Central Share (90%) - Rs. 259.326 lakhs								
State Share(10%) - Rs 28.814 lakhs								
(B) Revalidation of Annual Work Programme 2009-10 for New Components								
Sl no.	Items	Unit	Division	Location (Name and Range)	Unit Cost	No. of units	Amount	
1	Inventory sacred groves	Sq mt			0.00050	20000	10.00	
			East	Rumtek, Ranipool				
				Tikabong- Ratey Khola				
			West	Rabdentse, Gyaalshing				
				Dubdi, Yuksam				
			North	Chuba under Lachung				
			South	Jidda dong and kalep				
				Rolu Mandir RF melli				
2	Preparation of Management Plan/Works Plan	LS		Above locations	0.50000	6	3.00	
3	Improvement works	LS						
	1. Labelling of important species and signage	LS		Above locations	0.002	1000	2.00	
				Total			15.00	
Component: Control and Eradication of Forest Invasive Species								
1	Preparation of FIS Management Plan	LS		Gangtok, Mangan, Namch, Geyzing Ranges	0.50	4	2.00	
2	Research	L.S		Gangtok, Mangan, Namch, Geyzing Ranges	0.50000	4	2.00	
3	Extension/community involvement			Gangtok, Mangan, Namch, Geyzing Ranges	0.25000	4	1.00	
				Total			5.00	

	Component: Conservation and Restoration of Unique Vegetation and Eco Systems	
1	Under the component conservation and Restoration of Unique Vegetation and Eco-systems for inventory and preparation of management plan for the entire State	5.00
	Total	5.00
	Grand Total	25.00
	Central Share (90%) - Rs. 22.50 lakhs	
	State Share (10%) - Rs. 2.50 lakhs	
	Total - Rs. 25.00 lakhs	
	(C) Unspent central share balance of Annual Work Programme 2009-10 (Part I) = Rs 1.77 lakh	
	Grand Total for (A) AWP 2010-2011 Revalidated AWP 2009-2010 ((B) and (C))	
	Central share 259.326+ 22.50 + 1.77 = Rs. 283.596 lakh	
	State share -	Rs. 31.511 lakh
	Total -	Rs. 315.107 lakh

b) NATIONAL BAMBOO MISSION:

Bamboo is known as poor man's timber. It is an important Non Timber Forest Produce. This important plant species of the gramineae family provides ecological, economic and livelihood security to the people. The bamboo has played an important substitute for timber with its short period of rotation. It has been widely used though out the world either in the form of timber, making decorative items, furniture, mats, fencing of compounds etc.

Under the National Bamboo Mission Programme, the State of Sikkim started its plantation in both the forest and private lands. The Department of Forest, Environment & Wildlife Management is executing the plantation of bamboo and raising bamboo seedlings in the nurseries through Joint Forest Management Committee from 2007. The plantation in private land is being executed by the Horticulture and Cash Crop Development Department, Government of Sikkim.

Work carried out under Bamboo Mission during 2010-11

Sl.No.	Division	2009-10	2010-11
1.	East	85	50
2.	West	55	70
3.	South	70	85
4.	North	40	45
Total		250	250

b) 13th. Finance Commission:

Work Programme for 13th Finance Commission for year 2010-2011						
Type of Activity		Description of items	Unit Cost	Quantity	Total	
2		3	4	5	6	
(A)Component: Forest Fire control & Management						
	a	Fire fighting and fire control	5.000	6	30.00	Territorial Divisions : East 1, West 1, South 1, North 1, Wildlife Circle 2
Fire line	b	Fire line maintenance (km)	0.215	18	3.87	Territorial Divisions : East 5, West 5, South 5, North 3
	c	Engagement of Firewatchers @Rs.130/dy for 4 months	0.156	40	6.24	Territorial Divisions : East 11, West 11, South 11, North 7
	d	Temporary fire watch camps	0.500	16	8.00	Territorial Divisions : East 5, West 4, South 5, North 2
	e	Water storage tanks	1.500	15	22.50	Territorial Divisions : West 4, South 11,
	f	Control Burning (Ha)	0.023	100	2.34	Territorial Divisions : East 30, West 25, South 30, North 15
	g	Procurement of fire fighting equipment per set (No)	0.037	20	0.74	Territorial Circle
		Sub total A			73.69	
(B)Component: Survey & Demarcation of Forest Boundaries for Forest Protection, prevention of encroachment , biodiversity conservation						
Survey/ demarcation of Reserve Forest boundaries	a	Clearance & survey of Forest boundary line (Low Altitude) (km)	0.135	50	6.75	Survey and Demarcation Division
	b	Clearance & survey of forest boundary line (High Altitude) (km)	0.203	3	0.61	
	c	Clearance & survey of forest compartment boundary (LA) (km)	0.078	5	0.39	
	d	Erection of Forest boundary pillars (Low Altitude) (No)	0.047	500	23.50	
	e	Erection of Forest boundary pillars (High Altitude) (No)	0.067	30	2.01	
	f	Erection of Forest compartment boundary pillars (Low Altitude) (No)	0.045	50	2.25	
	g	Walled angle iron fencing along the forest boundary in very highly encroachment prone areas GtK(KM)	44.000	0.8	33.00	
	h	On demand survey of user agencies and protected forests of Khasmal and Gorucharan (km)	0.135	55	7.43	

Equipments	i	Procurement of GPS (nos.)	0.250	5	1.25	
	j	Purchase of equipments/items for surveying in the field (LS)	1.000	5	5.00	
		Sub total B			82.18	
(C) Component: Preparation of Working Plan						
Working plan preparation, SFM Cell and Climate Change Cell	a	Field inventory on sampling basis (Low Altitude)in protected forests (No)	0.072	10	0.72	Working Plan Division
	b	Laying /Fencing/Upgradation and approach paths of Permanent Preservation/Experimental plot (Low Altitude) (No)	5.500	6	33.00	
	c	Laying and Fencing of Permanent Preservation/Experimental plot (High Altitude) (No)	8.200	4	28.70	
	d	Upgradation of climate change Cell	5.000	1	5.00	
	e	Strengthening of Sustainable Forest Management Cell	5.000	1	5.00	
	f	Purchase of High precision handheld PDA GPS and accessories (LS)	2.000	1	2.00	
	g	Preparation of database of wild fruit plants of Sikkim	2.000	1	2.00	
		Sub total C			76.42	
(D) Component: Strengthening of infrastructure for Forest Protection						
Up gradation of CPs and fencing	a	Upgradation of Quarters (nos.)	2.000	4	8.00	Territorial Divisions : Sombaria, Mangan, Melli, Chungthang
	b	Upgradation of Forest check-posts	3.000	5	15.00	Territorial Divisions : Bojogari, Rongli, Jorethang, Dzongu, Dickhu
	c	Construction of inspection path (km)	4.400	2	8.80	Territorial Division West Sikkim 1 km: Working Plan Division 1 km
	d	Fencing of encroachment prone properties like FRHs at Dzongu/ Lachung through CRSM walls (cum)	0.041	500	20.57	Territorial Divisions : Dzongu FRH 120 m, Chungthang FRH 380m
	f	Upgradation of district control rooms	4.000	1	4.00	Territorial Divisions : Mangan
	g	Strengthening of other control rooms	1.000	4	4.00	Territorial Divisions : East 1, West 1, South 1, North 1
	h	Maintenance/upgradation of wireless communication system	5.000	1	5.00	Territorial Circle
			Sub total D			65.37

(E) Component: Publicity and Awareness						
Training, Publicity & awareness	a	Training & capacity building of field staff No)	0.005	194	0.97	Territorial Circle
	b	Publicity in Print/electronic media (FM)	0.150	50	7.50	Head Office: 25, EPC Division: 25
	c	Printing & distribution of pamphlets @Rs.4000/1000 nos	0.040	50	2.00	Head Office: 25, EPC Division: 25
	d	Awareness programme on TV Channel	0.150	25	3.75	Head Office: 15, EPC Division: 10
	e	Awareness camps at Block administrative center level @Rs.5,000/camp	0.050	30	1.50	Head Office: 25, EPC Division: 30
	f	Placing of Flex/ sheet hoardings at Strategic places	0.080	50	4.00	Head Office: 9, EPC Division: 25
		Sub total E			19.72	
(F) Component: Enhancement and Conservation of Biodiversity						
	a	Production of seedlings for plantation/Upgradation/strengthening of nurseries/procurement of seeds (Ha)	4.160	9	37.44	Head Office
	b	Creation of plantation and maintenance in urban and sub-urban areas	0.650	10.00	6.50	Parks and Garden Division
	c	Regeneration of other degraded forest areas	0.350	20.00	7.00	Social Forestry Circle
	d	Assisting natural regeneration	0.126	20.00	2.52	Social Forestry Circle: 10 ha, South Territorial Division: 10 ha
	e	Dibbling wild fruit bearing species	0.284	20.00	5.69	Social Forestry Circle: 10 ha, South Territorial Division: 10 ha
	f	Dibbling Katus seeds in open degraded areas	0.157	40.00	6.28	Social Forestry Circle: 20 ha, South Territorial Division: 20 ha
	g	Stone wall fencing around regeneration/plantation areas along forest boundary line (km)/regeneration studies	5.100	5.00	25.50	Social Forestry Circle: 2km, East Territorial Div. 1 km, Silviculture Division: 2 km
	h	Fencing of plantation in urban and suburban areas	15.000	0.50	7.50	Parks and Garden Division
	i	Upgradation of JN Botanical Garden	15.000	1.00	15.00	Environment and Pollution Control Division
	j	Upgradation of Millenium City Garden	5.000	1.00	5.00	Parks and Garden Division
	k	Creation of garden at Kabi Loop	18.200	1.00	18.20	North Territorial Division

	1	Landscaping & beautification work at Melli, S.Sikkim	10.00	1.00	10.00	South Territorial Division
		Sub total F			146.63	
(G) Component: Eco-Restoration of Hill Slopes						
Soil and Water Conservation	a	Soil and water conservation through vegetative measures (ha)	0.39551	10.00	3.96	East 2 ha, West 2 ha, South 2, North 4 ha
	b	Vegetative fencing	0.45033	4.00	1.80	West 1 km, South 1km, North 2km
	c	Construction of CRSM wall in 1:4:8 CCM (cum)	0.04113	612.00	25.17	East 125 cum, West 200, South 137, North 150
	d	Plantation of fast growing species like <i>Ulnus nepalensis</i> , <i>populus</i> sp.	0.30579	15.00	4.59	East 1 ha, South 3, North 11 ha
		Sub total G			35.51	
Sub Total (A+B+C+D+E+F+G):					499.52	
		Contingencies (1%)			5.00	Head Office
		Monitoring and Evaluation (~0.5%)			2.49	Head Office
		Grand Total			507.00	

Chapter – 10

WORKING PLAN DIVISION:

Working Plan Division under the Working Plan Circle has the mandate for preparation of Working Plans for four districts of the State.

The Office of APCCF (Central), North Eastern Regional Office, MoEF,GOI, Shillong has accorded the approval for Working Plans of West Sikkim Forest Division and East Sikkim Forest Division. The division has conducted the meeting and discussion on 2nd Preliminary Working Plan Report of North Sikkim Forest Division meeting with the committee in presence of APCCF (Central), Shillong.

During 2010-11 under Intensification of Forest Management Scheme and Thirteenth Finance Commission Scheme completed the establishment of Permanent preservation plots at different forest types to collect the scientific data, Survey and Management Plans for Sacred Groves of Sikkim, Forest invasive species, Unique Vegetation of Sikkim State and strengthened the SFM cell and Climate change cell.

Establishment of permanent Preservation / Experimental Plots: These are laid in different forest types at Low altitude and high altitude and fenced with dry stone wall. The trees, shrubs and herbs growing in the plots are noted, trees named with name plate and sign boards were established. Inspection path to permanent preservation plots constructed.

Control & Eradication of Forest Invasive species: To find out the extent of damage caused to plant in Sikkim; a survey was carried out in Sikkim covering all districts for identification, enumeration and ascertaining the extent of infestation of the various alien invasive plant species to develop Management Plan for Invasive species.

Random sample plot method was followed in the field. The observations recorded for various invasive species, type of forest, soil type, drainage, topography, occurrence of forest fire, etc. In specific invasive species, the detailed observations were made in respect to density of plants, height, canopy of the forest and ground cover of plant. The dominance of a particular invasive species in an area was determined by looking at the frequency (i.e. number of plants occurring in a sample plot) with which it was occurring in that area.

The survey revealed the presence of five species. These plants are *Ageratina adenophora* (Eupatorium) Kalo Banmara (Kalijhar), *Chromolaena odorata* (Seto Banmara), *Hypoestes sanguinolenta* (Tik tikey jhar), *Lantana camara* (Kadey phul), *Mikania micrantha* (Pani lahara).

Inventory of Sacred Groves of Sikkim: Sacred groves considered as sacred by the local communities living around these groves and has rich biodiversity and cultural value. The following SG's were surveyed – Chuba Manilakhang (Lachung), Temi Tarku Kalika Mandhir (Tarku, South Sikkim), Yuksom Coronation throne, Dubdi Monastery, Khechoperlri, Padam Gadi, Rumtek Monastery (old), Rolep Bouda, Rolu Mandir, Nup Dechenphuk, Larinymphu, Labrang Gumpa, Enchey Gumpa, Nor Gumpa Rongay, Phurchachu Hot spring, Ranidhunga, Triveni Kirateshwar, Kabi Lunchok, Phensang Monastery.

Conservation and Restoration of Unique Vegetation and Ecosystem in Sikkim: Under this location of species growing identified, Geo-Coordinates, aspect, Altitude, Slope, Forest type recorded. Associated herb, shrub and tree species are identified and management plan prepared for the conservation of following species: *Magnolia campbelli* (Gogey champ), *Rhododendron thomsonii*, *Rhododendron cilliatum*, *Rhododendron falconeri*, *Rhododendron barbatum*, *Rhododendron arboretum*, *Rhododendron griffithianum*, *Rhododendron dalhousii*, *Rhododendron campanulatum*, *Rhododendron fulgens*, *Rhododendron linatum*, *Rhododendron aeniginosum*, *Juniperous recurva*, *Rhododendron leptocarpum*, *Rhododendron grande*.

Chapter -11.

FOREST (CONSERVATION) ACT 1980 CELL

Forest (Conservation) Act, 1980 is a unique piece of legislation, and a regulatory mechanism that reflects the collective will of the nation to protect its rich biodiversity and natural heritage and that permits only unavoidable use of forest land for various developmental purposes. It embodies the firm commitment of the Government of India and the State Government to balance the conservation of forests with the sustainable development need of the country contributing to better environment, health and economy. The remarkable feature of this Act is that it is regulatory and not prohibitory.

Since 1980, Rules and Guidelines have been framed for diversion of forest land for non-forestry purposes. Since its inception, the Act has facilitated developmental activities like construction of power projects, irrigation projects, roads, railways, schools, hospitals, rural electrification, telecommunication, drinking water facilities, mining etc. on forest lands and checked the indiscriminate diversion of pristine forest areas. Between 1950 and 1980, forest lands have been diverted at the rate of 1.50 lakh hectare per annum by the various State Government / UT Administrations. This diversion has however, come down to as low as 0.38 lakh hectare per annum after 1980.

This circle mainly, deals with obtaining forest clearance for projects related to developmental activities under the Forest (Conservation) Act, 1980. Realization of amount for Crop Compensation, Compensatory Afforestation and Net Present Value (NPV) of forest land being diverted for non-forestry purposes is done by this circle. The statement of diversion of forest land for non forestry purposes and progress of Compensatory Afforestation till 31st March 2011 are given below:

Sl.No	Item	DISTRICT -WISE				Total
		North	East	South	West	
1	Number of cases approved for diversion	59	108	84	40	291
2	Total forest land diverted (in ha)	748.906	964.970	395.62	114.289	2223.78
3	Compensatory Afforestation Stipulated (in ha):	1950.33	1513.53	608.63	399.46	4471.95
	a) In forest land					
	b) In non-forest land	64.568	0.00	2.50	15.78	82.85
	TOTAL (a+b)	2014.898	1513.53	611.13	415.24	4554.80
4	Compensatory Afforestation Completed (in ha):	938.790	647.82	521.90	285.87	2394.38
	a) In forest land					
	b) In non-forest land	69.262	0.00	2.50	13.014	84.78
	TOTAL (a+b)	1008.41	647.82	524.40	298.884	2479.16

Out of the 4554.80 Ha of Compensatory Afforestation, stipulated against the diversion of forest land under the Act, only 2479.16 Ha have been achieved as on today, and the balance of 2075.64 Ha are still pending to be achieved by the Department. This has been proposed to be achieved as and when the fund is received back from the Ad-hoc CAMPA, Ministry of Environment & Forests, Government of India, as per their recent directives.

Chapter – 12

Compensatory Afforestation Fund Management & Planning Agency (CAMPA):

Utilization of State Compensatory Afforestation Fund Management & Planning Authority Fund (CAMPA) during the 2010-11.

State CAMPA (Compensatory Afforestation Fund Management & Planning Authority) was constituted by the State Government vide Notification No.107/Home/2009 dated 12/08/2009 in compliance with the directives of the Central Government. Since then, the State CAMPA has become functional and implemented various activities as per the guidelines prescribed under the said Notification. Following are the achievement for the year 2010-11 under the State CAMPA: -

Sl.No.	Name of Schemes	Amount	Total
1	Compensatory Afforestation Schemes	150.16	150.16
2	Net Present Value (NPV) Schemes	192.12	192.12
3	Catchment Area Treatment Plan (CAT)	992.53	992.53
4	Wildlife Conservation & Protection Plan	Nil	Nil
5	Any other Schemes	-	-
	Total: -	1334.81	1334.81

Chapter - 13

FOREST PROTECTION:

i) SURVEY & DEMARCATION:

1. **Boundary Pillars:** Since the year 2003-04, the Survey & Demarcation Division is digitizing all RFs boundary of Sikkim with the help of G.P.S. and RF boundary pillars are erected. All the co-ordinates of each RF boundary pillars are recorded. Similarly RFs are divided into compartments, hence compartment pillars are also erected.

2. **On Demand Survey:** Survey of public/private holding, Khasmal, Goucharan/Gorucharan, RFs boundary demanded by individuals were carried out in the year 2010-11 (A) 10 km under 90:10% CSS IFMS and (B) 55 km under 13th Finance Commission.

3. **Brick Wall Fencing:** Brick wall fencing with angle iron and barbed wire were constructed around Forest Colony (Baluwakhani, Gangtok). The forest colony consists of many quarters of different classes, Transit hostel and office of the Range Officer (T) Gangtok. This area being highly encroachment prone, the Department decided to construct brick walled fencing along with angle iron and barbed wire toppings. Therefore, 750 mts. long wall was constructed along the boundary of Forest Colony, Baluwakhani (Gangtok).

UNDER 90:10% CSS IFMS (2010-11)

Sl.No.	Name of RF	Survey Work in km	Erection of pillars
1	Martam RF, Sudunglaks RF & Amba RF under East(T) Division(LA)	19	190 nos.
2	Tashiding RF, Soreng RF under West (T) Division (LA)	18	180 nos.
3	Kamrang RF, Mangro RF, Chumlok RF, Padam RF, Rong RF & Sumbuk RF under South (T) Division (LA)	18	180 nos.
4	Mangan Sub-division under North (T) Division (HA)	3	30 nos.
5	On demand survey	10	-

ii) FIRE PROTECTION

Calendar Year	Number of fire incidents in forest area			Forest area affected by fire			Estimated Loss				Casualties		
							Loss of Timber		Damage to Plantation Areas	Damage in PAS Area	Human Life	Cattle	Wildlife
	Within Protected Area(PA)	Outside Protected Area(PA)	Total	Within Protected Area(PA)	Outside Protected Area(PA)	Total	Volume in cu.mt.	Value in lakhs					
2002	4	28	32	16	154	170	2.00	1.00	15.00	1.00	Nil	Nil	Nil
2003	5	18	23	12	110	122	2.00	1.00	9.77	1.00	..	..	..
2004	5	16	21	18	100	118	2.00	1.00	12.16	1.00	..	..	..
2005	6	36	42	30	332	362	3.00	1.50	38.14	1.80	..	..	2
2006	8	50	58	100	308	408	3.00	1.50	37.46	10.00	..	..	2
2007	2	29	31	25	75	100	1.00	0.50	9.50	2.00	..	..	Nil
2008	3	39	42	8	320	328	2.00	1.00	31.00	2.00	..	..	..
2009	11	120	300	131	1003	1303	20.00	3.50				4	4
2010	-	-	34	-	-	133	25 no of Chewri bushes	1600 Rhizomos	-	-	-	-	-

Source: - www.sikenvis.nic.in (ENVIS).

Chapter – 14

RESEARCH:

i) SILVICULTURE

ACTIVITIES CARRIED OUT BY THE SILVICULTURE DIVISION DURING 2009-2010 AND 2010-2011

Sl.No.	Name of Works	Scheme	Phy.Target	Fin.Target
1	Creation of Sample Plot	CESS	03 ha.	07.00
2	Creation of Green Strip Plantation	CESS	10 ha.	03.50
3	Supplementary regeneration Trial(Observation)	CESS	03 ha.	00.50
4	Floral Survey & Silviculture	CESS	03 ha.	01.50
5	Introduction trial of Hybrid Lapsi	CESS	01 ha.	00.25
6	Purchase of Computer & other Accessories	CESS		00.70
7	Seed Production Area	CESS	05 ha.	03.00
8	Bharikhola Nursery	CESS	1.20 ha.	05.00
9	Lesser Known Trees	CESS		04.00
10	GPS, Computer, Office stationeries	CESS		01.00
11	Assessment of insect pest problem	CESS		01.00
12	Maintenance of different types of plantation	CESS		02.84
13	Creation of Dry stone wall at Andhira	13 th .Finance Commission	300 RMT	03.82
14	Creation of Dry stone wall at Bharikhola Nursery	13 th Finance Commission	522 RMT	06.38
15	Experimental development of recharge zone	13 th .Finance Commission		06.00

ii) BIODIVERSITY RESEARCH FOR THE YEAR 2010-2011

Biodiversity Research Cell under Directorate of Research, Education and Extension is located in Forest Secretariat Annexe Building on the 2nd Floor in Room No. 905. It also looks after the State Forest Herbarium (SFH) located in Room No. 907 on the same floor.

The BD Cell processes cases from individuals, scientific organizations and scientists for permission for research on wildlife/biodiversity in Sikkim, following newly notified Guidelines under Single Window System, through relevant Wildlife Circle, KNP/KBR, Territorial, etc. so each is aware of ongoing activities in their jurisdiction. List is appended below (Sl. No. 5. Facilitation of 37 Research Projects in 2010-11). Research permits for flora are processed through the Silviculture Wing of the Research Directorate.

Due to severe fund constraint of the FEWMD, it was not possible to undertake extensive field works and work is limited to compiling field information wherever possible. In addition, extensive awareness programmes on Biodiversity through invited talks are undertaken throughout the state (14 nos.). Principal Research Officer is also called upon to attend various biodiversity related meetings, workshops, conferences and seminars, a list of which is appended below (19 nos.). This sector of the department also facilitates researchers and school, college students e.g. Dr. Shweta Bhagwat, IFMR-CDF, Chennai and team regarding Grazing Ban Impact Assessment Study for Barsey Rhododendron Sanctuary; CEPT Univ. School of Planning, Faculty of Planning and Public Policy, Ahmedabad students for Env Plg Lab Exercise case study from Sikkim between 20 Aug -8 Sep. 2010.

1. MEETING/SEMINAR/WORKSHOP/SYMPOSIUM

Date	Meeting/ Seminar/ Workshop	Name of Programme	Organized by	Venue
4-5 Apr 10	National Evaluation Workshop	ENVIS Centres -2010	Dept. of Science & Technology, GoS	Teesta Hall, Mayfair Resort, Ranipool
27 Apr 10	Workshop by Jadhavpur Univ	Relevance of Forest Certification in Conservation of Forest	Regional Centre, National Afforestation & Eco-Dev Board, JU. Kolkata.	Forest Conference Hall (FCH)
1-2 May 10	Symposium	Frontiers in Biology	NCBS Bangalore, DST, Gangtok, SGC.	SGC, Tadong
3 May 10	Interactive meeting with ATREE Pres. Dr. Kamal Bawa & Dir. Dr. G. Joseph and NCBS (Project PIs Dr. Mahesh Sankaran & Dr. Suhel Quader)	NCBS-ATREE Sikkim-DBT Project: Programme support for technological innovations and ecological research and sustainable use of bioresources in Sikkim Himalayas	ATREE & NCBS	FCH
5 May 10	Talk to students of NCBS & ATREE	Orientation programme on Biodiversity of Sikkim	NCBS/ATREE.	Development Area
13 May 10	Presentation during workshop	Biodiversity and Climate Change	DST, Sikkim, SBB, TMI-India & GTZ	FCH
15 May 10	Coordination meeting	Coordination meeting & State Wildlife Advisory Board meeting	FEWMD	FCH
22 May 10	National Seminar on International Biodiversity Day 2010	Guest Lecture on 'Biodiversity and Bio-piracy issues	UPSBB	Picus Bhawan, Uttar Pradesh SBB, Lucknow
28 May 10	1st meeting of the Core Group	Development of Natural Fibers in Sikkim	DHH	Tashiling Secretariat
19 Jul 10	Organised a meeting for all senior officers of Dept.	with Dr. John Corder, Pheasant Breeder of WPA and Dr. Satpal Dhiman, Nodal Officer, Pheasant breeding HP	Biodiversity Research Cell	Conference Facility in PCCF/Secy's office, Gangtok

7 Aug 10	3rd Foundation National Seminar	Mountain Regions and Climate Change: Impact, Adaptations and Policies	Sikkim University	Chintan Bhawan, Gangtok
11 Aug 10	Advisory Committee Meeting	Management and Conservation of Wetlands	Landuse Cell of FEWMD	FCH
21 Aug 10	1st Advisory body meeting	Collaborative Project of Dept. and WII (Developing Spatial Database on mammal distribution and monitoring programme for large carnivore prey population and their habitats in KBR)	FEWMD	FCH
9 Sep 10	Meeting	Review of the draft Eco-tourism Policy regarding	SBFP-JICA, FEWMD.	FCH
13 Oct 10	First Meeting and Workshop	formulation of Ecotourism policy of Sikkim State	SBFP-JICA, FEWMD.	FCH
26 Oct 10	Interdisciplinary Meeting	SARAH (Sikkim Anti Rabies and Animal Health) Division	AHLF & VS Dept.	Krishi Bhawan
20-21 Nov 10	Workshop	Forest Canopies as indicators for Global Change: Scoping for South Asian Programa	ATREE.	Royal Orchid Hotel Yelhanka, Bangalore
23 Feb 11	Awareness workshop	Intellectual Property Rights (IPR) with special reference to Geographical Indication (GI) and Patent Information Centre (PIC)	SSCS &T	SSCS &T at Dev Institute of Micro, Small & Méd Ent. (MSME) Tadong
16 Mar 11	Voices from High Altitudes	Mainstreaming in State Action Plan on Climate Change (SAPCC)	WWF-India, Sikkim Centre in collaboration with FEWMD.	Chumbi Residency
11 Mar 2011	National Meeting	Project Snow Leopard	MoEF	MoEF Delhi

2. EXTENSION & EDUCATION THROUGH BIODIVERSITY RESEARCH CELL

(14 programmes):

Date	Lecture/Talk/ Paper/ Presentation	Name of Programme	Organized by	Venue
5 May 10	Orientation programme	Biodiversity of Sikkim to the students of NCBS & ATREE	NCBS/ATREE.	Development Area
13 May 10	Biodiversity and Climate Change	Biodiversity and Climate Change	DST, Sikkim, SSBDB & TMI-India in collaboration with GTZ.	FCH
8 Sep 10	Flora and Fauna of Sikkim	Tour Guide Training	Pelling Tourism Development Association	Hotel Retreat Pelling
23 Sep 10	In-situ Conservation of Red Panda in Sikkim	Red Panda Workshop in Darjeeling	Padmaja Naidu Himalayan Zoological Park	Darjeeling
17 Nov 10	Biodiversity in Sikkim & Avian Population Estimation	FG Training	FEWMD	Yangyang
23-24 Nov 10	Biodiversity in Sikkim & Avian Population Estimation	FG Training	FEWMD	Pangthang
24 Nov 10	Workshop-cum-exhibition on Living Craft Tradition & Women's Creativity in Sikkim	Contribution of Sikkimese women associated with cottage/small scale industries in all round dev of the State vis-a-vis the problems in these areas and its solution- A study	Sikkim Akademi in association with Indira Gandhi National Centre for Arts, New Delhi	Roof Top of Car Park Building, Opposite Sadar Thana, Gangtok
29 Nov 10	Guru Gyan-An Educational Talk Show	Working Parents and Parenting	Nayuma Television	Tibet Road
06 Dec10 16 Feb11	Border Security and Bio-diversity of Sikkim	Basic Mountaineering Course (02 nos.)	SGMI HQ	Baluwakhani
10 Mar 11	Biodiversity	Training Programme on Skill Development for Stakeholders of Tourism sectors	V. V. Giri National Labour Institute, Noida	Hotel Sikkim Retreat, Gangtok

14 Mar 11	Unique Forest Bioresources of Sikkim	Science Academies Lecture Workshop on Biodiversity Conservation & Utilization-North East	RCIBSD, Dept. of Biotechnology, GoI.	Hotel Royal Plaza, Gangtok
14 May10 20 Dec10	Radio talks (02 nos)	Biodiversity –Our Valuable Heritage for IYB-2010; Talk in English on “Biodiversity of Food among Lachungpas of North Sikkim	AIR, Gangtok	AIR

3. INTERNATIONAL YEAR OF BIODIVERSITY (IYB) 2010:

1. One-Species-Per-Day awareness from January to December 2010 (>365 species showcased over 50 themes of wild & domesticated, plant, animal, invertebrate, microbe diversity of Sikkim through local media: Sikkim Express, Sikkim Now!, Sikkim Encounter, Himalayan Mirror, Sikkim Mail, Samay Dainik, etc; AIR-Gangtok; Nayuma Cable TV). This was a unique and only attempt in the country.

[50 themes: Pheasants, mammals, People & BD, Floral Diversity, Pollinators, Domesticated BD, Desmids, Dragons & Damsels, Insects, Reptiles, Birds, Ferns, Mushrooms, Butterflies, Rhododendrons, Fish, Moths, Naturalized exotics, Wild fruits, Biodiversity of Yuksom (KBR), Lichens, Ants, Trees, Biodiversity of Lingee-Payong, Amphibians, Conservation Concerns, Wild Rescues, Flora of Raj Bhavan, Raj Bhavan Invertebrates, Cold Desert Flora, Cold Desert Birds, Cold Desert Animals, Liverworts, Bumblebees, Jewel Orchids, Spiders, Camouflage, Slipper Orchids, Birds, Wonder Weeds, Bacteria, Biodiversity of Pangolakha, Raptors, Invasive Alien Plants, Land Snails, Day-flying Moths, Himalayan Zoological Park Flora, Biological Control, Fascinating Flora, Nature’s Magic Show (Butterfly Life-cycles).]

2. Talk on IYB-2010 on AIR-Gangtok, Biodiversity & Conservation Issues of Sikkim

3. Books published and released:

- a. **Ferns & Fern-Allies of Sikkim** by Dr. B. S. Kholia through State Biodiversity Board
- b. **Biodiversity of Raj Bhavan** published by office of Raj Bhavan (authored)

4. Posters published on International Biodiversity Day 22 May 2010 and released on World Environment Day 5 June 2010:

- a. **Composite Poster on State Symbols** of Sikkim (Red Panda, Blood Pheasant, Snow-leaved Rhododendron, Nobile Orchid)
- b. **Mushrooms & Ferns of Sikkim** (16 mushrooms: 11 edible, 5 poisonous; 05 edible ferns, 05 useful ferns & fern-allies)

5. Presentation at National Seminar on International Biodiversity Day May 22, 2010 at Lucknow organized by UP State Biodiversity Board

6. Biodiversity Awareness during various training programmes (Tour Guides, Mountaineers, and Students)

7. Threatened Species of Sikkim lists compiled.

4. SOME OTHER ACHIEVEMENTS OF 2010-2011:

- Certificate of MERIT for being Author of English Radio Documentary/Feature: “Birding Without Binocs” awarded by AIR, New Delhi.
- Nominated member of working group constituted for the Preparation of State Level Action Plan on Climate Change vide No. 417/ADM/FEWMD, 3/7/2010, PCCF/Secretary.
- Edited PANDA Newsletter; Popular articles in newspapers
- Conducted Launch of book ‘Biodiversity of Raj Bhawan’ authored by U. Lachungpa, S. Z. Lucksom & Dechen Lachungpa, at Raj Bhawan organized by HE the Governor, Mr. Balmiki P. Singh.
- 24-25 Jul 2010: Inputs at CONFLUENCE – Indigenous Storytellers’ Fest at Forest Conference Hall, Deorali, organised by Culture Dept. Tourism Dept. and other agencies like Rachna Book, ECOSS, Endeavours.
- 1 Dec 2010: Evaluated / judged Orientation Workshop of teachers on ‘Land Resources: Use for prosperity, save for Posterity’ held on 22.10.2010, at Sikkim Science Centre, Marchak, Ranipool, organised by Sikkim State Council of Science & Technology.
- * 22 Mar 2011: On occasion of World Water Day, judged Debate Competition “Urban Water Management: A Myth or reality” by students from seven colleges in and around Gangtok organized by Dept of Soil and Water Engineering, CAEPHT, CAU, Ranipool.

5. FACILITATION OF 37 RESEARCH PROJECTS IN 2010-11

Date of application	Name of Researcher	Name of PI, Organization & Address for correspondence	Title of Project / Permission for	Date of Permit	Duration of study for which permit issued	Remarks
7.1.2010, 21.1.2010	Muzamil Ahmed, Vikram Singh Rathor	Jagbir Singh, Dept of Zoology, Punjabi University, Patiala-147 002. prjagbir2005@gmail.com	UGC-DRS-SAP-1, Government of India: Insect Taxonomy: Insect study in Sikkim	13.5.10	13.5-5.6.2010	Interim report submitted
12.11.08, 28.1.10	Dr. Basundhara Chettri, Upper Payong, Lingee, South Sikkim	Independent Research; CEPF Project funded by ATREE & Independent Research for the year 2010; Sikkim Government College, Tadong, basundharac@gmail.com	Study on distribution pattern and conservation of amphibians in Sikkim, Research in Teesta Valley and Maenam WLS	24.12.08, 20.4.10	1.1.09-31.12.09, April-Sep,10	six publications submitted to Department
19.2.2010	Kiran Rai, Vikram Pradhan, Dipen Gurung, Ms. Chewang Phempunadi	Dr. A. K. Vidyarthi, Guide, P.G. College of Agri. Sci.& Tech.& Edu., Doon (PG) College of Agri. Science and Technology, Camp Road, Selakui, Dehradun-248 007	Field survey on KBR for M.Sc dissertation	9.3.10	Mar-May 2010	Report received & circulated
26.2.2010	Kevingulie N. Angami, Laishram Bhoni	Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehra Dun Dolphin (P.G) Inst of Bio-Medical & Natural Sciences. Manduwala, Near Suddhowala, Chakrata Road, Dehradun-248 007	Study on <i>Cordyceps sinensis</i> in Lachen & Lachung for M.Sc dissertation	24.5.10	25 May 25 Jun 2010	Survey not complete-d due to bad weather
15.6.2009, 16.3.2010	Sarbani Ghosh	S. C. Santra, Dept of Env. Science, Kalyani University, Nadia; Dept. of Environmental Science, University of Kalyani, Kalyani-741235, Nadia, WB. scsantra@yahoo.com	Small Grant Program for Ph.D Research on Herpetofauna of Sikkim	8.7.09, 5.4.10	Jul-Oct 09, Apr 2010 - Mar 2011	Interim report April-Jun 2010 received on 3.1.2011

18.11.2009 , 2.3.2010, 24.6.2010	Devendra Singh & Shuvadeep Mazumdar	D. K. Singh Addl. Director, Scientist, BSI KolkataCGO Complex, 3rd MSO Building. Block F (5th Floor) DF Block. Sector1, Salt Lake City, Kolkata-700 064.singh_drck@rediff mail.com	Study on Hepaticae and Anthocerotae in Sikkim	19.11.09 6.3.2010	20 Nov-12 Dec 2009; 7- 14 Mar 2010	Interim report for (2009) 1st visit submitted
2.3.2010	Dr. Partha Ghosh,	Dr. Partha Ghosh, Sr. Proj Officer, WWF- India Sikkim Programme Office, Deorali, Gangtok, Deorali 737102, in collab with WL Div (West)	Long Term Survival of Red Panda in Sikkim at Barsey RS and its adjoining localities.	9.3.2010 by US, Wildlife Circle	Apr-Sep 2010	Interim report received
12.3.2010	Sunil Kayrong, Coordinator & his team	NVK Ashraf, Director, Sunil Kayrong, Coordinator WTI, B-13, 2nd Floor, Sector 6, Noida-201 301, UP. Email:info@wti.org.in	CEPF Project: Survey on Takin (Burdorcas taxicolor)	6.4.10	6-15 Apr 2010	Report yet to be received
15.3.2010	Rahul Joshi, Avinav Saxena, Harkanwal Singh	Dr. Jagbir Singh, Dept. Of Zoology, Punjabi University Department of Zoology, Punjabi University, patiala-147 002. prjagbir2005@gmail. com	Taxonomic Revision of Indian Arctiidae (Lepidoptera) Part-II	12.4.10	April 9- 30 2010	
5.4.2010	Dr. Kanad Das	Kanad Das, BSI Sikkim Himalayan Circle, Gangtok bsigangtok@hotmail. com, bsigangtok@india.com.	Macrofungal Survey tour to West, North Sikkim.	14.5.10	May- Sep 2010	
5.4.2010	Dr. B. S. Kholia	Dr. B. S. Kholia, BSI Sikkim Himalayan Circle, Gangtok- 737103, bsigangtok@hotmail. Com, bsigangtok@india.com.	Taxonomy of Pteridophytes from East,North, All NPs, BRs & WLSs in Sikkim	19.5.10	May- Dec 2010	Book published through SBB
5.4.2010	Dr. M. Gangopadhyay	Kanad Das, BSI Sikkim Himalayan Circle, Gangtok-737103	Exploration tour to North Sikkim,Tsolhamo & Lhonak Valley & Lachung valley upto Katao Yumesamdong,	19.5.10	Jul-Sep 2010	

4.5.2010	Shri Shiva Kr. Sharma, Research Associate	R. Geeta & M. K. Pandit, University of Delhi School of Environmental Studies, University of Delhi, pseudoginsengshiva@gmail.com	Phylogeny in Rhododendron species	14.5.10	May-Aug 2010	
17.3.2008, 6.5.2008, 26.6.2009, 28.5.2010	Ms. Yasmeen Tel Wala, JRF UGC	M. K. Pandit, Professor & Director CISMHE, University of Delhi, 3rd Floor, Academic Research Centre, Patel Marg, University of Delhi-110 007, www.cismhe.du.ac.in	Research work in Higher Altitudes of North, West and East Sikkim on impact of climate change on the endemic plant species of Sikkim Himalaya	15.5.08 15.7.09, 1.6.10	May 2008-May 2009, 15.7-15.9.2009, 7 Jun-31 Jul 2010	Interim report submitted
1.6.2010	Barkha Subba, PhD student, ATREE, N. B. Singh Road, Dewan Building, Darjeeling	Dr. Aravind Madhyastha,, G. Ravikant, Coordinator Jukkur post, Bangalore-560064, Karnataka, (M), Email: aravind@atree.org, amadhyastha@gmail.com	Ecology, Diversity, Distribution and Conservation of High Altitude Amphibians in KNP & Singalila Range	4.6.2010	Jun-Aug 2010	
17.6.2010	Manas Ranjan Debta, Vikas Kumar	Dr. Kanad Das, BSI Sikkim Himalayan Circle, Gangtok-737103, bsigangtok@hotmail.com, bsigangtok@india.com.	AICOPTAX - Orchid Project, for sample collection from adjoining areas of Gangtok			Permissi-on not issued by CWLW
23.7.2010	Praveen Kumar Verma & team	Praveen Kumar Verma, RFRI RFRI, Indian Council of Forestry Research & Education, Post Box No. 136, Jorhat-Assam-785001, Emaildir_rfri@icfre.org	Exploration of diversity and utilization potential of <i>Sphagnum</i> species of forestry importance in North-East India			Permissi-on not issued, no further correspondence
...7.2010	Dr. Partha Ghosh,	Dr. Partha Ghosh, Sr. Proj Officer, WWF-India Sikkim WWF-India Sikkim Programme Office, Deorali, 737102, in collaboration with WL Div (W)	Long Term Survival of Red Panda Survey using Camera traps at Barsey RS and its adjoining localities.	26.7.10	Jul-Dec 2010	Interim report received

26.7.2010	Dr. R. Kannan, Senior Research Scientist, The Himalayan Drug Company, Bangalore and D. R. Dewan, Dy. GM, SIMFED	Scientist Himalayan Drug Company, Bangalore Dr. Kotwal Building, Tibet Road, Opposite Hotel Sonam Delek, Gangtok-737101, drkannan@gmail.com	Study, survey and photography of Medicinal Plant samples from Chouri, Yambong, Yuksam & Uttarey	29.7.10	Jul-Aug 2010	Collaboration between HDC Bangalore & SIMFED
16.8.2010	Avishek Bhattacharjee 94331-71449, Email: avibsi@rediffmail.com.	Swati Sen-Mandi, Senior Professor Bose Institute & P. Lakshminarasimhan, scientist CNH BSI; Bose Inst: 93/1 APC Road, Kolkata-700 009 swatism@bosemain.boseinst.ac.in, swati@gmail.com. BSI, Kolkata, Office of the Addl. Dir, CNH, Howrah	ICMR' Indian Council of Medical Research: collaborative Project: DNA Finger Printing and Diagnostics of Medicinal Potential in Plants from E & NE India	3.9.2010	31.8-6.9.2010	Interim report received
19.8.2010	R. C. Srivastava	BSI CGO Complex, 3rd MSO Building, Block, Sector F, 5th & 6th Floor, DF Block, Sector-1, Salt Lake, Kolkata	Photography of Gymnosperms of Sikkim	1.11.10	1-30 Nov 2010 & Apr-May 2011	
10.8.2010	A. B. D. Selvam	Pharmacognosy Section BSI, Howrah PO. Botanic Garden, Howrah-711103	collection from Kyongnosla Nursery of plant samples of Aconites	12.8.10	12-20 Aug 2010	
2.11.2010	Santosh K. Shah, Scientist, Mayank Shekhar, JRF	Santosh K. Shah, BSIP, Lucknow santoshk.shah@gmail.com , director@bsip.res.in	Collection of Tree-Ring Samples and Sediments from Lakes around Zemu Glacier (KNP/KBR)	1 year; 4.11.10	Nov 2010-Oct 2011	Permit copy in file - Res in KBR 80/ADM/WL part-II; No report,
26.11.2010	Shweta Bhagwat, Manasi Pathak, Sreyamsa Bairiganjan, Vivek V & soil Scientist	Shweta Bhagwat ,IFMR-Centre for Development Finance, Chennai, A1, 10th Floor, IITM Research Park, Kanagam Road, Taramani, Chennai 600 013	Grazing Ban Impact Assessment study for Barsey Rhododendron Sanctuary	29.11.2010	29 Nov-30 Dec 2010	

16.11.2010	Dr. G. N. Hariharan	G. N. Hariharan, PI Biotechnolog, Lichen Diversity & Bioprospecting Laboratory M. S. Swaminathan Research Foundation, Third Cross Street, Taramani Institutional Area, Chennai-600 113	Lichen Diversity and distribution pattern from selected major forest types of Sikkim: correlation with habitat conditions as prelude for assessing habitat quality, biodiversity and climate change	3 years	2011-2014	
....4.2010, 23.9.2010, 30.11.2010	Tanushree Srivastava, Nishma Dahal, Sunita Khatiwara, Srijana Chettri, Suju Subba, Dharmendra Lamsal, Nagen Tamang, Priyadarshini Gurung, Manish Kumar, Shweta Basnett, Manjila Sharma, Arpana Chettri and Yangchenla Bhutia	NCBS-ATREE, Collaborative DBT project (5 years) Ashoka Trust for research in Ecology and the Environment, Royal Enclave, Srirampura, Jakkur Post, Bangalore-560064, info@atree.org. NCBS: GKVK, Bellary Road, Bangalore-560 065,	Programme support for technological innovations and ecological research and sustainable use of bioresources in Sikkim Himalayas	Provisional Permission on 20.4.10 by CWLW; 25.9.10; 29.12.10	Oct-Dec. 2010; Jan-March 2011	Overall Provisional permission for 5 years DBT Project
.....	Manpreet Singh, Sajad Hussain Parey, Muzamil Ahmed, Vikram Singh Rathor	Punjabi University, Patiala Dept. of Zoology, Punjabi University. Patiala-147 002,	Survey and Collection of insects Hymenoptera	one month	May-Jun 2011 23.2.011	Issued by A. K. Mohanty CCF (WL) from WLCircle
1.12.2010	Dr. Abhay Bhaskar, IFS, DFO EPC	Pradeep Kumar, IFS, CF/Working Plan Circle SPCB, FEWMD	Studies on Invasive Species (Insects) in Sikkim	1 year	31.3.201 1Apr 11-Jan 2012	
3.1.2011	Jeje Lhamu Bhutia	Awadhesh Kumar, Project Coordinator North Eastern Regional Institute of Sc & Tech, Deemed University,	B.Sc. Dissertation on Red panda Habitat in Barsey RS	Jan-May 2011	30.3.201 1 Jan-May 2011	

		Nirjuli-791 109 Itanagar, Arunachal Pradesh reshi113in@yahoo.co.in				
24.1.2011	Dr. Kanad Das, BSI	Dr. Kanad Das, BSI Sikkim Himalayan Circle, Gangtok-737103, bsiangtok@hotmail.com, bsiangtok@india.com.	Survey of Wild Himalayan Mushrooms	Mar-Dec 2011	31.3.2011 1 Mar-Dec 2011	
24.1.2011	Dr. Mohan Gangopadhya Scientist C, BSI Gangtok	Dr. Kanad Das, BSI Sikkim Himalayan Circle, Gangtok-737103, bsiangtok@hotmail.com, bsiangtok@india.com.	Survey of Plants species	Mar-Dec 2011	31.3.2011 1 Mar-Dec 2011	
24.1.2011	Dr. B. S. Kholia, Scientist C, BSI Gangtok	Dr. Kanad Das, BSI Sikkim Himalayan Circle, Gangtok-737103, bsiangtok@hotmail.com, bsiangtok@india.com.	Survey of Ferns	Mar-Dec 2011	31.3.2011 1 Mar-Dec 2011	
07.01.2011	Willy Loseries	Karl Franzens University of Graz, Austria-8010, Graz, Heinrichstraze, 36. friedrich.zimmermann@uni-graz.at	Research on tourism impact on environment in mountain areas	Mar-Apr 2011	13.1.11	by Chief Wildlife Warden
21.2.2011	Sarbani Ghose (Nag)	S. C. Santra, Dept of Env. Science, Kalyani University, Kalyani-741235, Nadia, WB. scsantra@yahoo.com	Survey of Herpetofauna of Fambong Lho WLS & adjoining areas, Forest Colony and HZP	four months	Apr-Jul 2011	
23.08.2010 15.1.2011	Dr. Krushnamegh Kunte, Deepa Kunte and 15 students from Sikkim Govt. College	Dr. Krushnamegh Kunte Indian Foundation for Butterflies, 608, B Wing, Shukratar Apartment, , Sinhagad Road, Pune; krushnamegh@ifoundbutterflies.org	Identification of Satyrine butterflies of peninsular India through DN A barcodes: Survey of butterflies of Sikkim	2011-2013	2011-2013 23.1.11	by Dir Research

List of Staff under Biodiversity Research Cell:

Mrs. Usha Lachungpa Principal Research Officer (Biodiversity)

Ms. Smita Shilal ACF (Sikkim Biodiversity Board)

Mr. Ongden Lepcha Range Officer (Biodiversity Research)

Mrs. Yashoda Khanal, Head Assistant (Research)

Ms. Shanti Rai LDC State Forest Herbarium

Ms. Paki Lepcha, Peon

Ms. Bishnu Kumari Sharma Peon cum Computer Assistant

iii) HARC ANNUAL ACTIVITIES REPORT CARD

This Research and Development Centre is established, in 2009, to provide conservation of natural resources, sustainable use of their components and equitable sharing of the benefits arising out of the use of natural resources, knowledge and for matters connected therewith or incidental thereto.

ACHIEVEMENTS OF HARC:

Sl No	Item	Unit	Achievement	Remarks
0	1	2	3	4
I. High Altitude Research Centre -HARC				
1	Establishment of HARC	No	1	Upgradation of laboratory
2	Ecological Niche Study of Cordyceps and High Altitude Medicinal Plants	No	1	For habitat study
3	Sharing of technical knowledge to the stakeholders	No	22	For the skill development of stakeholders of sikkim
4	Training to the Frontline staffs/ Officers	No	2	For the managerial skill and coordination
5	Scientific evaluation of the database management	No	4	Qualitative and quantitative study
6	Field Survey and Community Meeting	No	28	For agri-forestry –ecotourism inputs
7	Capacity building Training to the Stakeholders of Medicinal Plants		6	Performed at Rungdung Rhenock for Gloriosa; Aho Ranipool for Aloe; Sadam Suntaley for Gloriosa; Yuksum and Lamathang for Picorhhiza kurroa, Nardostachys jatamansi, Swertia, Panax; Yangyang and Soreng for Gloriosa
8	Field Surveys at Pakyong range(East); Dzongu and Lachen Ranges in North	No	3	For the sample study of the different eco-regions

9	Networking with the Sikkim University, North Bengal University, NABARD, NYK, CPWD, SHAHPCI and other	No	9	For the scientific activities and action researches
10	Involvement as the Resource person in the convergence activities of State and Central agencies programmes Catch Programme of State Government implemented through Department of Health, GOS National Youth Programme of Ministry of Youth and Sports Workers Education Programme of the Central Board for Workers Education, Ministry of Labour and Employment, Government of India 4. Accounts and Accounting Training to the Farmers Clubs funded by NABARD	No	4	As Exchange programmes
11	Prepared DPR of State Medicinal Plants Board, Forests, Environment and Wildlife Management Department	No	1	Planning for the SMPB of FEWMD
12	Prepared DPR of the Integrated Watershed Management Programme	No	1	Planning for the watershed development
13	Publication of High Altitude Research Centre Rules 2010	No	1	Rules and Regulations of R & D activities
14	Baseline Survey of IWMP	No	1	Watershed area of Dzongu
15	Exposure visit for Taxus, Swertia and other medicinal Plants	No	1	Quality production of medicinal plants
16	Guidelines for Single Window System for Research and Development Activities -2011	No	1	Regulation for the Research and Development activities
17	Presented Action Plan of SMPB before Steering Committee of SMPB	No	1	Financial outlay of 48.10 Crores
18	Presented DPR of IWMP – I(003), North Sikkim to the State Level Nodal Agency and Gram Sabha	No	2	Financial outlay of 9.75 Crores
19	Presentation of Report of Exposure Visit	No	1	To Head of Department, Senior officers and officers of JICA

20	WDT of IWMP –I(003)	No	1	Ref letter no 03/IWMP/(N) /FEWMD dated 27/01/11
21	Crafted video on Cultivation of Swertia chirayita Buch Ham ex Wall	No	1	For medicinal Plants growers
22	Crafted video on Cordyceps	No	1	For scientific evaluation
II. Publications of HARC				
Sl no	Publication/ Activities	Unit	Achievement	Remarks
1	“Isolation and Identification of Diosgenin from Fagopyrum dibotrys (D.Don) Hara and its conversion to 16 Dehydropregnenolone Acetate “ in the Journal of Hill Research	No	1	Journal of Hill Research 23(1&2):26:27, 2010
2	“New Methodology for the Quantitative estimation of rutin” in the Panda , a bi-lingual envis newsletter on Forests, Environment and Wildlife Management, GOS	No	1	On the new methodology of rutin estimation
3	Baseline Report of IWMP-I(003) , Dzongu, North Sikkim	No	1	Watershed area of Dzongu
4	Database of IWMP-I(003) , Dzongu, North Sikkim	No	1	Watershed area of Dzongu
5	Report of Maipokari, Ilam, Nepal on Medicinal Plant Cultivation	No	1	On cultivation and sustainable techniques
6	Phyllanthus emblica – a natural source of Vitamin C	No	1	To support the project of SMPB on Amla campaign
7	Five new strains of Cordyceps in Sikkim :- Cordyceps sinensis var dzonguensis var nov 2. Cordyceps sinensis var deythangensis var nov 3 Cordyceps sinensis var dhungraii var nov 4. Cordyceps sinensis var signalensis var nov.5. Cordyceps sinensis var pawanii var nov.	No	1	Identification of five strains of Cordyceps
8	Distribution Atlas of Cordyceps in Sikkim	No	1	Habitat analysis
9	New reports of Lakes in North Sikkim	No	1	Habitat analysis

Chapter – 15

III. Soil & Water Conservation and Land Use.

i) Catchment Area Treatment (CAT) Plan

One of the hydroelectric projects Teesta Stage Five-510 MW was initiated by NHPC during the year 1999-2000, since then simultaneously CAT plan was drawn up and implemented right from 2000-2001 and still some of the maintenance works is being implemented. The four major sectors of the department are involved for executing the CAT Plan i.e. territorial, Land Use & Environment, Social Forestry and wildlife carried out the treatment works.

The period for implementation started from 2001-01 to 2010-11. The details are listed below:-

(In Lakh)

Sl.no	2000- 01	2001- 02	2002- 03	2003- 04	2004- 05	2005- 06	2006- 07	2007- 08	2008- 09	2009- 10	2010- 11	Total
Fin	67.12	296.07	475.16	399.48	644.16	726.15	332.66	722.39	186.97	15.48	7.74	3680.4

ii) Management & Conservation of Wetland Complex- 2010-11

Location	Item of works	Unit	Phy	Fin (Rs. in Lakh)
1. Tsongmo Wetland Complex, East Sikkim	a) Construction of Erosion Control structure	Cum	500.25	9.91
	b) Soil & moisture conservation work.	Ha	02	0.79
	c) Maintenance of old plantation	Ha	5	0.25
	d) Livelihood programme	No	1	1
	e) Survey of soil & hydrology	-	1	2
	TOTAL			
2. Phedong Wetland	a) Construction of Erosion Control structure	Cum	300	-
	b) stone wall fencing	Km	1	6.48
	c) Beating of Lake	-	1 job	0.57
	TOTAL			7.05
3. Gurudongmar North Sikkim	a) DRSM (Gully Plugging)	Km	300	
	b) DRSM stone wall fencing	Km	1	Spill over
	c) Maintenance of Nursery	Ha	0.5.	2011-12
	d) Plantation	Ha	15	
	e) Fuel wood alternative	No	50	
4. Khecheopalri Wetland West Sikkim	a) Double unit toilet	No	1	7
	TOTAL			7

iii) Status of Integrated Watershed development Programme (Hariyali Projects) as on 31.03.2011

2010-11

Sl. No.	Name of the Project	Name	Year of Sanction	Total area	Total Cost	C/S	S/S	INTT.	TOTAL	EXP.	Balance	PHY.
1	East V	D.C Nepal	2001	6000	360	321.735	27	8.50916	357.2438	357.2438	0	6000
2	East VI	B.P Pradhan	2001	6177	370.6	300.18	23.03	11	334.21	314.69	0	
3	East VII	P.K Yanzon DFO Zilla	2003	6000	360	49.50	4.50	1.84176	55.84176	47.16437	0	
4	East VIII	D.C Nepal	2004	6000	360				0		0	
5	East IX	C.P Sharma	2004	5469	328.1	130.046	12.5	8.40814	150.9544	110.5795	40.3749	
6	East X	K.B Gurung (DFO)L/U	2004	3349	200.9	79.26	7.53	4.16157	90.95157	30.19072	60.7609	470.74
7	East XI	N.T Bhutia(DFO)	2005	4075	244.5	97.6238	6.12	3.67801	107.4218	67.99979	39.422	
8	East XII	N.T Bhutia(DFO)	2005	4075	244.5				0		0	
9	West II	K.D Subba(ACF (W/L)	1999	9060	362.4				0		0	
10	West III	S. Tshering(ACF)	2003	6000	360				0		0	
11	West IV	Vishal Rai(DIR SIRD)	2004	1572	94.33	64.85	5.9464		70.7964	63.512	7.2844	
12	West V	K.D Subba(ACF (W/L)	2005	2160	129.6	53.23	3.24	5.23017	61.70017	59.72233	1.97784	
13	West VI	K.D Subba(ACF (W/L)	2005	2000	120	49.25	3	5.10548	57.35548	55.33998	2.0155	
14	West VII	Tshering Pinsto Bhutia	2005	787	47.22	6.49	0.59	0.01577	7.09577	6.95663	0.13914	
15	West VIII	G.T Bhutia	2006	6000	360	147.94	13.5	0.25	161.69	104.19	57.50	
16	North III		2003	6000	360	319.067	25.5014	1.51	346.0779	343.59		
17	North IV		2005	5320	319.2	262.607	15.44	1.05	279.0966	276.74	2.35662	
18	North V		2006	4500	270	185.119	11.885	1.5	198.5036	197.21	1.29356	
19	South V	M.K. Koirala	1999	11200	4480				0		0	
20	South VII		2000	10500	630				0		1	
21	South VIII	D.S Chettri DFO	2006	5600	336	46.2	2.49		48.69		48.69	
					10337	2113.1	162.273	52.2601	2327.629	2035.129	262.81	5

iv) Status of Integrated Watershed Management Plan (IWMP)

2010-11

PROJECT	AREA (in ha)	TOTAL COST OF PROJECT		RECEIVED	
		CENTRAL SHARE	STATE SHARE	CENTRAL SHARE	STATE SHARE
North	6500	8,77,50,000.00	97,50,000.00	1,75,50,000.00	5,85,000.00
East-I	4000	5,40,00,000.00	60,00,000.00	1,08,00,000.00	3,60,000.00
East-II	4000	5,40,00,000.00	60,00,000.00	1,08,00,000.00	3,60,000.00
West	4450	6,00,75,000.00	66,75,000.00	36,04,500.00	-
South-I	4599	6,20,86,500.00	68,98,500.00	37,25,190.00	-
South-II	4990	6,73,65,000.00	74,85,000.00	40,41,900.00	-
Total	28539	38,52,76,500.00	42808500.00	5,05,21,590.00	13,05,000.00

Chapter - 16

B. Wildlife Sector:

i) Back ground:

Wildlife Conservation has become worldwide significance now-a-days, National Parks and Sanctuaries which act as *sanctum sanctorum* have been commissioned all over the world for better protection and conservation of wildlife. India with the total forest cover of 77.47 million hectares which is 23.57 % of the total land mass of 328.7 million hectares is treasure trove of natural wealth and is one of the 12 mega bio-diversity countries of the world. There are 606 Protected Areas comprising 96 National Parks and 510 Wildlife Sanctuaries with overlapping of 28 Tiger Reserves and 25 Elephant Reserves covering an area of 15.59 million hectares which make up about 4.58% of the total geographic area and 22.12% of total forest cover of the country. In addition to this, there are 150 recognized Zoological Parks having around 40,000 wild animals in captivity in the country. The Wildlife (Protection) Act, 1972 is the umbrella legislation for wildlife conservation in the country.

Sikkim, the 22nd State of India in the north-eastern region lying in the Eastern Himalayas which is one of the 18 biodiversity provinces in the world is a bio-diversity “hotspot”. In the landmass of just 7096 Sq.kms, the State has varied eco-systems from humid tropical valleys to temperate montane habitat, alpine meadows and trans-Himalayan cold desert. It is a veritable house of rich bio-diversity and it includes:

Floral wealth:

Flowering plants	: 4458 species of the total 15000 species found in the country.
Orchids	: 527 of the total 1229 species
Rhododendrons	: 38 of the total 90 species
Ferns	: 480 of the total 1200 species
Lichens	: 505 of the total 2302 species
Primulas	: 58 of the total 102 species
Medicinal Plants	: 424 species
Conifers	: 9 species
Oaks	: 11 species
Tree ferns	: 8 species

Faunal wealth:

Mammals	: 144 of the total 350 species
Birds	: 552 of the total 1224 species
Butterflies	: 689 species
Moths	: 2000 species
Fishes	: 48 of 2546 species
Amphibians	
(Frogs & Toads)	: 33 of the total 197 species
Reptiles	: 35 of the total 408 species

165 plant species have been named after the State as they were first collected from here. The Tso Lhamu cold desert in North Sikkim supports India's only population of Northern Kiang or Tibetan Wild Ass *Equus Kiang* and also significant population of Tibetan Gazelle *Procapra picticaudata*, the Nayan or Great Tibetan Sheep *Ovis ammon hodgsonii*, besides Bharal or Blue Sheep *Pseudois nayuar* and Snow Leopard *Panthera uncia*.

In the field of wildlife conservation, the State of Sikkim has made significant progress with the establishment of one National Park, one Biosphere Reserve with the National Park as the Core Zone, seven Wildlife Sanctuaries and one Wildlife Conservation Reserve for the purpose of protection and conservation of wildlife.

ii) Details of Wildlife Protected Areas (WPA) are as under:

Sl. No.	Name of WPA	Location	Are (Sq.km)	Date of Notification.
1.	Khangchendzonga National Park	North-West	1784	August, 1977, May, 1997 (expansion)
2.	Shingba Rhododendron Sanctuary	North	43	25-01-1999
3.	Fambonglho Wildlife Sanctuary	East	51.76	02-04-1984
4.	Kyongnosla Alpine Sanctuary	East	31	05-12-1992
5.	Pangolakha Wildlife Sanctuary	East	128	25-01-1999
6.	Kitam Bird Sanctuary	South	06	17-06-2006
7.	Maenam Wildlife Sanctuary	South	35.34	25-01-1999
8.	Sling Dong Fairreanum Orchid Conservation Reserve	South	0.06	05-11-2008
9.	Barsey Rhododendron Sanctuary	West	104	08-07-1996
		Total area	2183.16	

The Wildlife Protected Area covers as much as 30.76 % in terms of geographic area (7096 sq.kms) and 37.37% in terms of total recorded forest area (5841.39 sq.kms) of the State. It is the highest and best covered State in PA network in the country today.

Another heartening aspect of endeavors of the State Government towards protection of mute plants and animals is the declaration of the wildlife heritages.

- (a) The fine and rare Rhododendron species, *Rhododendron niveum* as the State Tree.
- (b) One of the finest decorative Orchid, *Dendrobium nobile* as the State Flower.
- (c) The cute Cat-Bear, the Red Panda *Ailurus fulgens* found in the temperate bamboo forest as the State Animal and
- (d) The gaudy Blood Pheasant, *Ithaginis cruentus* found in alpine land as the State Bird of Sikkim

State Government is committed to protect and conserve bio-diversity including wildlife resources and it has prioritized this in its agenda for protection, preservation and propagation in in-situ as well as ex-situ habitats.

Physical & financial targets and achievements of schemes implemented by the Wildlife Sector during the year 2010-11 are as under:

Development of Wildlife Sanctuaries:
Under North Wildlife Division:

(a) Integrated Development of Wildlife Habitats at Shingba Rhododendron Sanctuary, North Sikkim (100% CSS). Activities carried out during the year 2010-11

Sl. No.	Activities	Targets		Achievements	
		Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Purchase of Field Kit for field staff	5 sets	2.5	5 sets	2.5
2.	Construction of log bridge over gorges (committed expenditure)	14 nos.	9.8	14 nos.	9.8
3.	Construction of trekking trail network for patrolling	5 km	5	5 km	5
4.	Renovation of old forest guard hut (Surveillance purpose) at Chumodu	1 nos.	1.5	1 nos.	1.5
5.	Awareness and capacity building around the forest fringe villages	3 nos.	0.6	3 nos.	0.6
6.	Signage & interpretation facilities	3 nos.	0.3	3 nos.	0.3
7.	Engagement of Fire watchers	3 nos. for 3 months	0.27	3 nos. for 3 months	0.27
8.	Documentation/ brochures	L.S.	0.5	L.S.	0.5
9.	Unspent balance of 2009-10		2		2
	Total		20.47		20.47

Under East Wildlife Division

(b) Integrated Development of Wildlife Habitats at Kyongnosla Alpine Wildlife Sanctuary, East Sikkim (100% CSS) - Activities carried out during the year 2010-11.

Sl. No.	Activities	Targets		Achievements	
		Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Erection of boundary pillar along the Eastern & southern boundary	100 nos.	5.00	95 nos.	5.00
2.	Creation of water holes for providing water to animals at Nagchok & namthang	2 nos.	1.00	2 nos.	1.00
3.	Survey of sanctuary compartment western parts to ensure better monitoring	13 km	1.17	6 km	1.17
4.	Construction of ticket counter at entry gate	1 nos.	1.70	1 nos.	1.70
5.	Construction of CMC wall for safeguarding the log hut complex developed at KAS	56.35 cum	2.25	56.35 cum	2.25
6.	Habitat improvement in critical wildlife habitat areas- Bamboo plantation at Chaksang areas & Eak gothey	8 ha	2.07	6.5 ha	2.07
7.	Soil & Moisture Conservation works at Nang Nang & Tamzey area	8 ha	3.20	6.42 ha	3.20
8.	Procurement and installation of camera traps	4 nos.	0.80	4 nos.	0.80
9.	Anti poaching and trap demolition activities	3 nos.	1.50	3 nos.	1.50
10.	Strengthening of protection measures & combing operation (No) Goral Rock, Eak Gothey, Nam Nang	LS	1.00	LS	1.00
11.	Clearance of Wildlife Trail (Tseten Tashi cave to Panch Gothey	2 km	2.10	2 km	2.10
12.	Awareness Programme	1	0.50	2 camps	0.50
13.	Engagement of fire watchers, 3 months 5 persons	5 persons for 3 months	0.45	5 persons for 3 months	0.45
14.	Additional Food provision within the Sanctuary to check displacement of wild animal specially Bear from its habitats	3 nos.	0.60	3 nos.	0.60
15.	Capacity building- training to field staff	LS	1.00	LS	1.00
16.	De-siltation of lakes & ponds at Hanspokhari, Andajhil, Nakchok, Rajadunga	2 nos.	2.00	2 nos.	2.00
17.	Conservation of 6 perennial water sources Chaksang, Panchgothey top	1 no.	1.00	1 no.	1.00
18.	Clearance of fire lines	10	0.10	10	0.10
19.	Erection of sinages at strategic places	6 nos.	0.60	3 nos.	0.56
	Total		28.04		28.00

(c) Integrated Development of Wildlife Habitats at Fambonglho Wildlife Sanctuary, East Sikkim (100% CSS). Activities carried out during the year 2010-11.

Sl. No.	Activities	Targets		Achievements	
		Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Habitat Development for Hervibores at Pangthang, samdong, Tumin, Sang and ranka	12 no.	2.16	12 no.	2.15
2.	Suevey of compartment boundary	21 km	1.26	21 km	1.26
3.	Erection of compartmental pillars	100 no.	4.30	100 no.	4.30
4.	Survey & conservation of traditional water sources	4 no.	1.00	4 no.	1.00
5.	Capacity building of frontline staff	LS	1.00	LS	1.00
6.	Stone wall fencing at strategic cattle entry and exit points	0.5 km	2.23	0.5 km	2.21
7.	Plantation of edible fruiting plants & rhizome root plants for omnivorous animals around the sanctuary	10 ha	2.00	10 ha	1.99
8.	Creation of vegetable barriers in the fringe of sanctuary	7 ha	2.45	7 ha	2.44
9.	Procurement and installation of camera traps	5 no.	1.00	5 no.	1.00
10.	Compensation for crop damages to wild animals	LS	2.00	LS	2.00
11.	Clearance of wildlife trails (location as per APO)	5 km	3.45	5 km	3.45
12.	Anti- poaching and trap demolition activities operation	6 no.	3.00	6 no.	3.00
13.	Maintenance of existing water holes at Deorali, Phakshuk, Kauley, Chuli, Burphok, Dhanbari, Ray, Ranka	8 no.	1.20	8 no.	1.20
14.	Clearing of firelines	10 km	0.10	10 km	0.10
15.	Awareness program at rumtek and Khesey	2 no.	0.50	2 no.	0.50
16.	Clearing and maintenance of existing transect Golitar to Nunthaley, Tham to Deorali lines	5 km	1.00	5 km	1.00
17.	Control burning	5 km	0.50	5 km	0.50
18.	Engagement of fire watchers	10 no. for 3 months	0.90	10 no. for 3 months	0.88
19.	Strengthening of field staffs(supply of field kits)	LS	1.00	LS	1.00
	Total		31.05		30.98

(d) Integrated Development of Wildlife Habitats at Pangolakha Wildlife Sanctuary, East Sikkim (100% CSS). Activities carried out during the year 2010-11

Sl. No.	Activities	Targets		Achievements	
		Physical	Financial (Rs.in lakh)	Physical	Financial (Rs.in lakh)
1.	Habitat development for herbivores	4 no.	2.12	4 no.	2.12
2.	Construction of bridle path	1 km	4.46	1 km	4.46
3.	Procurement and installation of camera traps	5 no.	1.00	5 no.	1.00
4.	Plantation of edible fruiting plants & rhizome root plants for omnivorous animals to manage the shortage of natural food availability during the lean season	10 ha	2.30	10 ha	2.30
5.	Development of water holes to provide water to wild animals (location as per APO)	6 no.	2.86	6 no.	2.86
6.	Soil & moisture conservation works	7 ha	2.28	7 ha	2.28
7.	Clearance of wildlife trails (location as per APO)	6 km	4.86	6 km	4.86
8.	Anti- poaching and trap demolition	4 no.	2.00	4 no.	2.00
9.	Strengthening of protection measures and combing to check illegal intrusion in the Sanctuary	LS	1.50	LS	1.50
10.	Awareness program	LS	1.00	LS	1.00
11.	Establishment of feeding stations for providing food supplements to the wild animals specially Bear during the lean season to reduce man-animal conflict	5 no.	0.75	5 no.	0.73
12.	Engagement of fire watchers	10 no. for 3 months	0.90	10 no. for 3 months	0.90
13.	Strengthening of field staffs(supply of field kits)	LS	1.00	LS	1.00
	Total		27.03		27.01

South Wildlife Division

(e) Integrated Development of Wildlife Habitats at Kitam Bird Sanctuary, South Sikkim (100% CSS). Activities carried out during the year 2010-11

Sl. No.	Activities	Targets		Achievements	
		Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Construction of trekking trails within sanctuary	1 km	1.00	1 km	1.00
2.	Water harvesting infrastructure development within the sanctuary	1 no.	2.00	1 no.	2.00
3.	SMC work at gully areas at Manpur and Goam Khola	4 ha	1.64	4 ha	1.64
4.	Fire protection in the sanctuary	1 no.	3.00	1 no.	3.00
5.	Removal of Phoenix in the dry zone area of Kitam Bird sanctuary	10 ha	2.00	10 ha	2.00
6.	Awareness and monitoring programme	2 camp	0.20	2 camp	0.15
7.	Training of frontline staff	1 no.	1.00	1 no.	1.00
8.	Crop compensation	LS	2.00	LS	2.00
	Total		12.84		12.79

(f) Integrated Development of Wildlife Habitats at Maenam Wildlife Sanctuary, South Sikkim (100% CSS). Activities carried out during the year 2010-11.

Sl. No.	Activities	Targets		Achievements	
		Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Construction of dry stone wall fencing	1 km	2.00	1 km	2.00
2.	Habitat improvement	10 ha	1.50	10 ha	1.50
3.	Water harvesting structure for providing drinking water to wild animals	2 no.	1.40	2 no.	1.40
4.	Construction of water holes within Maenam wildlife Sanctuary	4 no.	1.20	4 no.	1.20
5.	Artificial regeneration within sanctuary	15 ha	4.65	15 ha	4.65
6.	SMC work at gully areas within Maenam Sanctuary	15 ha	3.60	15 ha	3.60
7.	Maintenance of habitat improvement	60 ha	1.20	60 ha	1.20
8.	Publicity and signage	1 no.	0.50	1 no.	0.50
9.	Capacity building & training programme	5 loc.	1.50	5 loc.	1.50
10.	Anti- poaching & trap demolition	5 places	1.50	5 places	1.50
11.	Fire protection work	4 places	2.00	4 places	2.00
	Total		21.05		21.05

Under West Wildlife Division.

(g) Integrated Development of Wildlife Habitats at Barsey Rhododendron Sanctuary, West Sikkim (100% CSS). Activities carried out during the year 2010-11

Sl. No.	Activities	Targets		Achievements	
		Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Rejuvenation of Kalpokhari Lakes	1 no.	100000.00	1 no.	100000.00
2.	Procurement of field kits for PA staffs to facilitate staff working in the high altitude in the sanctuary	3 no.	150000.00	3 no.	149925.00
3.	Purchase of search light	5 no.	125000.00	5 no.	124819.00
4.	Purchase of mega phone	2 no.	50000.00	2 no.	49980.00
5.	Construction of dry stone wall fencing	2.5 km	500000.00	2.5 km	500000.00
6.	Construction of entry gate	1 no.	200000.00	1 no.	199864.00
7.	Construction of shed	2 no.	200000.00	2 no.	199870.00
8.	Inventorization and data base of flora and fauna	LS	50000.00	LS	50000.00
9.	Anti- poaching activities	LS	100000.00	LS	100000.00
10.	Engagement of fire watches during the season	11 no. for 3 months	99000.00	11 no. for 3 months	98865.00
11.	Training of frontline staff	LS	100000.00	LS	100000.00
12.	Ex- gratia for the cattle lifting/ human injury/ crop damage by wild animals	LS	200000.00	LS	200000.00
	Total		1874000.00		1873323.00

iii) Wildlife Management

(a) Wildlife Offence: Incidences occurred during the year 2010-11.

Sl. No.	Date of occurrence	Nature of offence	Location of occurrence	Offenders with address	Inquiry Officer & outcome of prosecutions
1.	23-01-2011	u/s 9,17(a)17(d),17(f), 17(g),27,29,44,49,49 (b)51,52,&57 illegal possession of Pangolin hide clad scale, Harra, Barra & Amala, jungle moss Yachargombu & Antelope horn.	Kubenday R.F.	1. Bal Bdr. Subba, Dambudara, Namchi. 2. Ash Bdr. Rai, Dambudara, Namchi. 3. Kamal manger, Mamley, Namchi. 4. Sonam Ongyal Bhutia, Dentam , West Sikkim 5. Dawa Chopel Lepcha, Kewzing, South Sikkim	RO (Wildlife) Kitam BS, (Case under process).
2.	15-03-2011	Illicit felling within Barsey Rhododendron Sanctuary, West Sikkim	Lapehatar, Barsey Rhododendron Sanctuary, West Sikkim	1. Tashi Tsh. Sherpa, Upper Martam, West Sikkim. 2. Pempa Sherpa Upper Martam, West Sikkim.	RO (Wildlife) BRS, (Case under process)

(b) Human - animal conflict during the year 2010-11.

Sl. No.	Date/ Period	Victim & Damages	Address	Reported	Damaged caused by	Action Taken	Remarks
North Sikkim							
1.	Sept, 2010	Crop damage at Tumlong GPU, covering 36 families agricultural field.	Tumlong GPU, North Sikkim	By villagers	Wild Boar, Squirrel, Monkey & Black Bear	Paid crop compensation	
East Sikkim							
2.	Aug, 2010	Rapden Lepcha suffered loss of right eye with grievous injury in the face	Upper Sumick, East Sikkim	By villagers	Himalayan Black Bear <i>selenarctos tibetanus</i>	He was provided treatment at Siliguri.	
3.	2010-11	Around 38 Goats, 1 Cock, 1 Hen, 9 Chicken, killed at different fringes of FWLS, East Sikkim	Gachuthang (Nazitam, Patim Nazitam & Martam Lingtam, Lower Khamdong, Thanshing, Khesey, Tirkutam, Upper Khamdong East Sikkim	By villagers	Common Leopard	Provided relief measures as ex-gratia payment	
4.	2010-11	Crops like Ginger, Maize, Millet & vegetables were damaged at different fringes of FWLS, East Sikkim	Thanshing, Kambal, Khesey, Sumick, Sumick-Aritar, East Sikkim	By villagers	Bear, Monkey and Porcupines	Provided relief measures as ex-gratia payment	
South Sikkim							
5.	Sept. 2010	Maize damaged covering 31 families, Also 1 pig of Mr. Mohan Singh Kami was killed	Sumbuk, South Sikkim	By villagers	Wild Boar, Small Leopard	Paid compensation	

6.	Sept. 2010	Maize damaged covering 32 families, Also 2 goats of Mr. Tenzing Sherpa & Mr. Man Bdr. Sherpa was killed	Compound Mazitar	By villagers	Wild Boar, Small Leopard	Paid compensation	
7.	Sept. 2010	Maize & other vegetables like cabbage, potato, beans, tomatoes, etc. damaged covering 41 households	Turuk, Panchgharey	By villagers	Wild Boar & Barking Deer	Paid crop compensation	
8.	Aug-Sept. 2010	Maize damaged covering 10 households	Phalidara	By villagers	Monkeys	Paid crop compensation	
9.	Aug-Sept. 2010	Maize & other vegetables like beans, tomatoes, etc. damaged covering 11 households	Mallidara	By villagers	Wild Boar & Barking Deer	Paid crop compensation	
10.	Aug-Sept. 2010	18 goats killed of 18 different households and maize, tomatoes seedling damaged of 23 households	Sadam, Sukrabarey	By villagers	Leopard, monkey & Barking Deer	Paid compensation	
11.	Nov-Dec 2010	Paddy field, maize, Dals damaged covering 170 households	Kitam	By villagers	monkey & Barking Deer	Paid crop compensation	
12.							
West Sikkim							
13.	2010-11	18 goats killed, at different fringes of Thingshing, KNP, West	Thingshing, KNP, West	By villagers	Clouded Leopard	Provided relief measures as ex-gratia payment	
14.	2010-11	Maize, Millet and Vegetables damaged covering 116 families agricultural field.	Sawley Goan, Soreng EDC	By villagers	Wild Pigs, Peacocks & monkeys	Under Process	
15.	2010-11	Maize Damage, covering 81 families agricultural field.	Buriakhop, Soreng EDC	By villagers	Wild Boars	Provided relief measures as ex-gratia payment	
16.	2010-11	Corn damage, covering 80 families agricultural field. also 1 cow & 6 goats of different houses were killed	Sribadam EDC, West Sikkim	By villagers	Wild Boar & Clouded Leopard	Under Process	
17.	Nov. 2010	Bhupendra Sharma injured his hands and legs	Dentam, West Sikkim	By villagers	Wild Boar	Provided treatment by concerned EDCs	
18.	2010-11	Maize & Potato damaged, covering 98 families agricultural field.	Sombaria, EDC, West Sikkim	By villagers	Wild Boar	Under process	

19.	June-July 2011	Potato damaged, covering 179 families agricultural field.	Okhrey, Ribdi EDC, West Sikkim	By villagers	Wild Boar	Under process	
20.	2010-11	Maize damaged, covering 68 families agricultural field.	Hee-Patal EDC, West Sikkim	By villagers	Wild Pig	Under process	
21.	2010-11	Maize damaged, covering 36 families agricultural field.	Uttarey EDC, West Sikkim	By villagers	Wild Pig	Under process	
22.	2010-11	Maize damaged, covering 56 families agricultural field.	Dentam EDC, West Sikkim	By villagers	Wild Pig	Under process	

iv) Centrally sponsored schemes under Wildlife Sector:

a) National Afforestation Program under Wildlife Sector. Activities carried out under Wildlife FDA during the year 2010-11

Sl. No.	Activities	Under North Wildlife FDA		High Altitude	
		Phy.	Fin. (Rs. In lakh)	Phy.	Financial (Rs. In lakh)
1.	Added Natural Regeneration				
	a) Advance work	5	0.57	5	0.57
	a) Creation	5	0.38	5	0.38
	b) Maint. – I, II & III yrs	53	1.12	53	1.12
2.	Artificial Regeneration				
	a) Advance work	5	1.00	5	1.00
	b) Creation	5	0.67	5	0.67
	c) Maint. – I, II & III yrs	36	1.34	36	1.34
3.	Pasture Dev./Silvipasture				
	a) Advance work	5	0.65	5	0.65
	b) Creation	5	0.43	5	0.43
	c) Maint. – I, II & III yrs	26	0.62	26	0.62
4.	Bamboo plantation				
	a) Advance work	3	0.33	3	0.33
	b) Creation	5	0.36	5	0.36
	c) Maint. – I, II & III yrs	20	0.40	20	0.40
5.	AR (Sea buckthorn pltn.)				
	a) Advance work	0	0	0	0
	b) Creation	25	3.34	25	3.34
	c) Maint. – I, II & III yrs	50	1.85	50	1.85
6.	Mixed Pltn of Trees having MFP				
	a) Advance work	5	1.00	5	1.00
	b) Creation	5	0.67	5	0.67
	c) Maint. – I, II & III yrs	20	0.74	20	0.74
7.	Regeneration of Perennial Herbs & Shrubs				
	a) Advance work	5	1.19	5	1.19
	b) Creation	5	0.80	5	0.80
	c) Maint. – I, II & III yrs	26	1.15	26	1.15
8.	Awareness generation 1% of pln. Cost		0.19		0.19
9.	Micro planning 2% of pln. Cost		0.37		0.37
10.	Fencing 5% of pln. Cost		0.93		0.93
11.	SMC 15% of pln. Cost		2.79		2.79
12.	EPA (Rs 4000 per ha)		2.20		2.20
13.	Trng. & Capacity building		0.93		0.93
14.	Value Add & Mkt of FP		1.86		0.00
15.	M&E 2% of pln. cost		0.37		0.00
16.	Overheads 10% of pln. cost		1.58		1.61
17.	Improved Technology 25% of cost of advance work		1.90		1.90
	Total				
	Advance	28			
	Creation	55		55	
	Grand Total	55	31.73		29.50

Sl. No.	Activities	Under East Wildlife FDA		High Altitude	
		Targets		Achievements	
		Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Added Natural Regeneration				
	c) Advance work	15	1.71	15	1.71
	d) Creation	45	3.42	45	2.19
	e) Maint. – I, II & III yrs	97	2.05	97	1.50
2.	Artificial Regeneration				
	d) Advance work	10	2.00	10	1.20
	e) Creation	20	2.67	20	2.25
	f) Maint. – I, II & III yrs	64	2.38	64	2.20
3.	Pasture Dev./Silvipasture				
	d) Advance work	10	1.30	10	1.30
	e) Creation	20	1.73	20	1.70
	f) Maint. – I, II & III yrs	49	1.18	49	1.10
4.	Bamboo plantation				
	d) Advance work	7	0.76	7	0.76
	e) Creation	20	1.45	20	1.45
	f) Maint. – I, II & III yrs	45	0.90	45	0.90
5.	AR (Sea buckthorn pltn.)				
	d) Advance work	5	1.00	5	0.60
	e) Creation	0	0.00	0	0.00
	f) Maint. – I, II & III yrs	0	0.00	0	0.00
6.	Mixed Pltn of Trees having MFP				
	d) Advance work	0	0.00	0	0.00
	e) Creation	20	2.67	20	2.35
	f) Maint. – I, II & III yrs	45	1.67	45	1.60
7.	Regeneration of Perennial Herbs & Shrubs				
	a) Advance work	20	4.77	20	4.05
	b) Creation	20	3.18	20	2.84
	c) Maint. – I, II & III yrs	49	2.16	49	1.70
8.	Awareness generation 1% of pln. Cost		0.37		0.37
9.	Micro planning 2% of pln. Cost		0.74		0.74
10.	Fencing 5% of pln. Cost		1.85		1.85
11.	SMC 15% of pln. Cost		5.55		5.55
12.	EPA (Rs 4000 per ha)		5.80		5.80
13.	Trng. & Capacity building		1.85		1.85
14.	Value Add & Mkt of FP		3.70		0.00
15.	M&E 2% of pln. cost		0.74		0.74
16.	Overheads 10% of pln. cost		3.15		3.15
17.	Improved Technology 25% of cost of advance work		4.46		4.46
	Total	Advance	67		
		Creation	145	145	
	Grand Total		145	145	55.92

Under East Wildlife FDA

Low Altitude

Sl. No.	Activities	Targets		Achievements	
		Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Added Natural Regeneration				
	a) Advance work	25	1.90	25	1.55
	b) Creation	25	1.27	25	1.27
	c) Maint. – I, II & III yrs	300	4.23	300	4.01
2.	Artificial Regeneration				
	a) Advance work	20	2.67	20	2.40
	b) Creation	25	2.22	25	2.22
	c) Maint. – I, II & III yrs	165	4.09	165	3.41
3.	Pasture Dev./Silvipasture				
	a) Advance work	20	1.73	20	1.48
	b) Creation	25	1.44	25	1.31
	c) Maint. – I, II & III yrs	160	2.56	160	2.33
4.	Bamboo plantation				
	a) Advance work	30	2.18	30	2.03
	b) Creation	25	1.21	25	1.10
	c) Maint. – I, II & III yrs	175	2.35	175	1.88
5.	Cane Plantation				
	a) Advance work	20	1.73	20	1.44
	b) Creation	25	1.44	25	1.21
	c) Maint. – I, II & III yrs	75	1.20	75	1.10
6.	Mixed Pltn of Trees having MFP				
	a) Advance work	25	3.34	25	2.04
	b) Creation	25	2.22	25	1.84
	c) Maint. – I, II & III yrs	140	3.47	140	2.79
7.	Regeneration of Perennial Herbs & Shrubs				
	a) Advance work	25	3.98	25	3.00
	b) Creation	25	2.65	25	2.10
	c) Maint. – I, II & III yrs	130	3.84	130	3.26
8.	Awareness generation 1% of pln. Cost		0.52		0.52
9.	Micro planning 2% of pln. Cost		1.03		0.95
10.	Fencing 5% of pln. Cost		2.58		2.58
11.	SMC 15% of pln. Cost		7.75		7.74
12.	EPA (Rs 4000 per ha)		7.00		7.00
13.	Trng. & Capacity building		2.66		2.66
14.	Value Add & Mkt of FP		2.66		0.00
15.	M&E 2% of pln. cost		1.03		1.03
16.	Overheads 10% of pln. cost		4.39		4.31
17.	Improved Technology 25% of cost of advance work		4.77		4.77
	Total				
	Advance	165			
	Creation	175	51.72	175	
	Grand Total	175	86.11	175	75.33

Under South Wildlife FDA

Low altitude

Sl. No.	Activities	Targets		Achievements	
		Phy.	Fin. (Rs.In lakh)	Physical	Financial (Rs. In lakh)
1.	Added Natural Regeneration				
	a) Advance work	30	2.28	30	4.93
	b) Creation	50	2.54	50	2.54
	c) Maint. – I, II & III yrs	0	0.00	0	0.47
2.	Artificial Regeneration				
	a) Advance work	25	3.34	25	7.33
	b) Creation	25	2.22	25	2.22
	c) Maint. – I, II & III yrs	0	0	0	0
3.	Pasture Dev./Silvipasture				
	a) Advance work	5	0.43	5	1.93
	b) Creation	25	1.44	25	1.44
	c) Maint. – I, II & III yrs	0	0	0	0.02
4.	Bamboo plantation				
	a) Advance work	25	1.81	25	3.06
	b) Creation	25	1.21	25	1.24
	c) Maint. – I, II & III yrs	0	0	0	0
5.	Cane Plantation				
	a) Advance work	10	0.87	10	2.37
	b) Creation	25	1.44	25	1.44
	c) Maint. – I, II & III yrs	0	0	0	0.16
6.	Mixed Pltn of Trees having MFP				
	a) Advance work	25	3.34	25	5.57
	b) Creation	25	2.22	25	2.22
	c) Maint. – I, II & III yrs	0	0	0	0.08
7.	Regeneration of Perennial Herbs & Shrubs				
	a) Advance work	25	3.98	25	3.98
	b) Creation	25	2.65	25	2.65
	c) Maint. – I, II & III yrs	0	0	0	0.10
8.	Awareness generation 1% of pln. Cost		0.30		0.22
9.	Micro planning 2% of pln. Cost		0.60		0.00
10.	Fencing 5% of pln. Cost		1.49		1.49
11.	SMC 15% of pln. Cost		4.46		4.46
12.	EPA (Rs 4000 per ha)		6.20		6.20
13.	Trng. & Capacity building		2.95		0.00
14.	Value Add & Mkt of FP		2.95		0.00
15.	M&E 2% of pln. cost		0.60		1.60
16.	Overheads 10% of pln. cost		2.53		1.65
17.	Improved Technology 25% of cost of advance work		4.27		0.00
	Total Advance	145		145	
	Creation	200	29.78	200	
	Grand Total	200	88.65	200	59.36

Sl. No.		Activities	Under West Wildlife FDA		Low altitude	
			Targets		Achievements	
			Physical	Financial (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Added Natural Regeneration					
	a)	Advance work	20	1.52	20	1.52
	b)	Creation	50	2.54	50	2.54
	c)	Maint. – I, II & III yrs	360	5.08	360	5.08
2.	Artificial Regeneration					
	a)	Advance work	15	2.00	15	2.00
	b)	Creation	50	4.45	50	4.45
	c)	Maint. – I, II & III yrs	210	5.20	210	5.20
3.	Pasture Dev./Silvipasture					
	a)	Advance work	15	1.30	15	1.30
	b)	Creation	25	1.44	25	1.44
	c)	Maint. – I, II & III yrs	190	3.04	190	3.04
4.	Bamboo plantation					
	a)	Advance work	25	1.81	25	1.81
	b)	Creation	25	1.21	25	1.21
	c)	Maint. – I, II & III yrs	130	1.75	130	1.75
5.	Cane Plantation					
	a)	Advance work	10	0.87	10	0.87
	b)	Creation	25	1.44	25	1.44
	c)	Maint. – I, II & III yrs	180	2.88	180	2.88
6.	Mixed Pltn of Trees having MFP					
	a)	Advance work	15	2.00	15	2.00
	b)	Creation	25	2.22	25	2.22
	c)	Maint. – I, II & III yrs	210	5.20	210	5.20
7.	Regeneration of Perennial Herbs & Shrubs					
	a)	Advance work	15	2.39	15	2.39
	b)	Creation	25	2.65	25	2.65
	c)	Maint. – I, II & III yrs	100	2.96	100	2.96
8.	Awareness generation 1% of pln. Cost			0.54		0.54
9.	Micro planning 2% of pln. Cost			1.08		1.08
10.	Fencing 5% of pln. Cost			2.70		2.70
11.	SMC 15% of pln. Cost			8.09		8.09
12.	EPA (Rs 4000 per ha)			4.60		4.60
13.	Trng. & Capacity building			2.70		2.70
14.	Value Add & Mkt of FP			2.70		0.00
15.	M&E 2% of pln. cost			1.08		0.00
16.	Overheads 10% of pln. cost			4.58		4.58
17.	Improved Technology 25% of cost of advance work			2.97		2.97
	Total	Advance	115			
		Creation	225	53.90	225	
	Grand Total		225	84.94	225	81.16

Under West Wildlife FDA

High Altitude

Sl. No.	Activities	Targets		Achievements	
		Phy.	Fin. (Rs. In lakh)	Physical	Financial (Rs. In lakh)
1.	Added Natural Regeneration				
	a) Advance work	0	0.00	0	0.00
	b) Creation	50	3.80	50	3.80
	c) Maint. – I, II & III yrs	100	2.12	100	2.12
2.	Artificial Regeneration				
	a) Advance work	7	1.40	7	1.40
	b) Creation	50	6.67	50	6.67
	c) Maint. – I, II & III yrs	50	1.85	50	1.85
3.	Pasture Dev./Silvipasture				
	a) Advance work	0	0.00	0	0.00
	b) Creation	50	4.33	50	4.33
	c) Maint. – I, II & III yrs	0	0.00	0	0.00
4.	Bamboo plantation				
	a) Advance work	0	0.00	0	0.00
	b) Creation	25	1.81	25	1.81
	c) Maint. – I, II & III yrs	50	1.01	50	1.01
5.	Cane Plantation				
	a) Advance work	NA	NA	NA	NA
	b) Creation	NA	NA	NA	NA
	c) Maint. – I, II & III yrs	NA	NA	NA	NA
6.	Mixed Pltn of Trees having MFP				
	a) Advance work	0	0.00	0	0.00
	b) Creation	25	3.34	25	3.34
	c) Maint. – I, II & III yrs	25	0.93	25	0.93
7.	Regeneration of Perennial Herbs & Shrubs				
	a) Advance work	0	0.00	0	0.00
	b) Creation	25	3.98	25	3.98
	c) Maint. – I, II & III yrs	25	1.11	25	1.11
8.	Awareness generation 1% of pln. Cost		0.32		0.58
9.	Micro planning 2% of pln. Cost		0.65		1.17
10.	Fencing 5% of pln. Cost		1.62		5.03
11.	SMC 15% of pln. Cost		4.85		11.95
12.	EPA (Rs 4000 per ha)		9.00		11.50
13.	Trng. & Capacity building		1.62		1.62
14.	Value Add & Mkt of FP		3.23		0.00
15.	M&E 2% of pln. cost		0.65		0.52
16.	Overheads 10% of pln. cost		2.75		2.75
17.	Improved Technology 25% of cost of advance work		1.34		3.96
	Total	Advance	7		7
		Creation	225	32.33	225
	Grand Total		225	58.36	225
				71.42	

Note: NAP has sanctioned Rs. 89.08 lakhs under South FDA for 2010-11 which included committed liabilities of both South WLFDA Rs. 15.58 lakhs and West WLFDA Rs. 16.95 lakhs of the year 2009-10.

Number of household covered under EDCs of Wildlife FDAs during the year 2010-11.

Name of FDA	No of EDCs	No. of household in Project Village			No. of Household Directly Benefiting								
					Total From EPA Activities			From Silvicultural Works			From Wages		
		SC	ST	Total	SC	ST	Total	SC	ST	Total	SC	ST	Total
North WL FDA	1EDC under Shingba RS	-	66	66	-	20	20	-	21	21	-	25	25
East WL FDA	EDC under- 1.Fambonglho WLS 2.Kyongnosla WLS 3.Pangolakha WLS	405	2371	2776	80	180	260	280	1300	1580	250	850	1100
South WL FDA	EDC under – 1. Kitam WLS 2. Maenam WLS	192	1516	1708	7	372	379	280	1300	1580	250	850	1100
West WL FDA	EDC under Barsey RS	337	1771	2108	25	410	435	25	1520	1545	15	44	59
TOTAL		934	5724	6658	112	982	1094	585	4141	4726	515	1769	2284

b)Integrated Development of Wildlife Habitat

SL no	Work Components	Fin Achievement in Lakhs	Phy Achievements
1	Habit Management (Bamboo plantation to supplement the food stock in degraded areas for Red Panda & Himalayan black bear		
2	Construction of log bridge for smooth patrolling at Yellichu	2	20 Ha
3	Purchase of Video & digital cameras for collection of field datas for better management of park	2.1	1 Nos
4	Construction of water holes for providing water to wild animals during dry spell	2	LS
5	Sowing /Dibbing /broadcasting seeds of indigenous tree species in landslides and degraded areas	3	30 Nos
6	Wildlife enforcement-combining operation for trap demolition, detection & prevention of poaching activities	1.8	10 Ha
7	Renovation of Forest Guard quarters at Dzongu	2.1	6 Ha
8	Printing of poster, Brochures, pamphlets and signages	2	1 Nos
9	Up gradation of old trekking trails at Ugang-Reram, Tamrang-Kishong, Pahakhola-Sachen	1	LS
10	Demarcation of KNP boundary Lapdang-Pahakhola, Pangmeteng and Prangmeteng	3.4	3 Km
11	Ex-gratia payments and compensation for crop damage by Wild animals	2.1	3 Km
12	Control of Forest fire	2	LS
13	Training of frontline staff under KNP	1.26	18 Ha
14	Livestock immunization	1	LS
	Sub total(A)	1	LS
B	Sikkim Ecology Fund & Env Cess	32.61	
1	Control of Avalanche		
2	Support to school for wste management	3.6	182 Cum
	Sub total (B)	2	LS
	Grand Total A+B	5.6	
		38.21	

During 2010-11 Rs. 38.21 (Rupees thirty eight lakh and twenty one thousand) only was sanctioned for all above work of which Rs. 32.61 (Rupees thirty two lakhs and sixty one thousand) only was sanctioned under “**Integrated development of Wildlife Habitat**” a C.S.S. scheme, regular annual scheme funded by MoEF, Govt. of India. The remaining fund was from “**Sikkim Ecology Fund & Env. Cess**”.

All the work executed is as per the management plan of the KNP but the fund so release is not sufficient to meet all the aspect of the management.

Work carried out under KBR during 2010-11

Sl no	Item of Work	Fin Achievement (Rs in Lakh)	Phy target Achievement	Remarks
C	Infrastructure Development			
1	Construction of Trekking Trails	9.00	3 Km	
2	Development of Camping Sites	5.00	1 nos	
	Sub- Total	14.00		

B	Habitat Management			
1	Bamboo Plantation	7.5429	30 Ha	
2	Maintenance of 2 nd year Bamboo plantation	2.40	30 Ha	
3	Plantation of wild fruit & fodder plants	6.5649	30 Ha	
	Sub- Total	16.5078		

C	Forest Protection			
1	KBR boundary demarcation	9.00	9 km	
2	Soil and moisture conservation through Vegetation Method	3.2944	10 Ha	
3	Construction of Office cum quarters for Block Officer	12.00	1 nos	
	Sub- Total	24.2944		
	Total (A+B+C)	54.8022		

All above work executed are funded by MoEF under Management Action Plan for Biosphere Reserve.

Chapter - 17

IV. ECOLOGY & ENVIRONMENT:

i) STATE POLLUTION CONTROL BOARD:

The major achievements of State Pollution Control Board –Sikkim during the 2010-11 year are as follows: -

National Water Monitoring Programme:

Under the programme, the State Pollution Control Board –Sikkim enhanced the Water quality monitoring stations from 9 stations to 14. The 5 new stations have been established at river Rangeet. The 9 old stations were in river Teesta. The SPCB-Sikkim is regularly monitoring water quality at 14 stations.

National Air Monitoring Programme:

The State Pollution Control Board –Sikkim was earlier running with only two air quality monitoring stations for the capital town Gangtok. During the 2010-2011 plan seven new stations were sanctioned making it to a total of 9 stations.

Publicity and Mass Awareness Programme:

The State Pollution Control Board-Sikkim carried out display of hoardings, Ad films, jhora cleaning drive, street plays and appeals. During 2010-11 the SPCB-Sikkim supported many NGOs and the Schools for conducting awareness programmes.

Public Hearing:

The State Pollution Control Board-Sikkim conducted public hearings for Laythang and Ting Ting hydro electric projects during 2010-11.

Construction of Parivesh Bhawan:

Land measuring 110 X 50 ft. Within the Forest Secretariat complex, Deorali was allotted by the State Government for construction of Parivesh Bhawan, an administration and laboratory building of the State Pollution Control Board-Sikkim.

Training:

During the financial year 2010-11, the ASO, Scientist 'B' Scientific Assistant underwent training on different aspects of pollution control.

Regular monitoring of Industrial Units:

The State Pollution Control Board-Sikkim carried out regular monitoring of Industrial units operating in the State during 2010-11 and issued directions for strict compliance of the norms and conditions stipulated in the consent.

II) ENVIS Activity Highlights during 2010-11 (1st April, 2010 to 31st March, 2011)

Sl. No	Particulars	Month
1.	<ul style="list-style-type: none"> ➤ Web site redesign for optimization (URL: www.sikennis.nic.in) ➤ Collection/ Compilation of time series data, annual reports related to Environment, Forestry, Wildlife, Biodiversity, Land/ Water, Natural Resources, Pollution, Demography, Agriculture, Horticulture and so on from resource departments of the state. ➤ Event: International Conference on Rhododendron at Sikkim (29th April), ENVIS team assisted the host department. 	April '10
2.	<ul style="list-style-type: none"> ➤ Launching of National Environment Awareness Campaign 2010 on the theme –Climate Change. ➤ Workshop: ENVIS conducted and coordinated a state-level sensitization workshop on 21st May at the Forest Conference Hall, Gangtok on the theme 'Climate Change'. 	May '10
3.	<ul style="list-style-type: none"> ➤ Event: World Environment Day (5th June) observed at Damthang, South Sikkim on the theme 'Biodiversity-Connecting with Nature'. ENVIS Centre actively participated. Centre coordinated quiz and essay competition amongst the school children. ➤ ENVIS Sikkim published pamphlets and posters on state symbols, mushrooms and ferns. ➤ Event: ENVIS centre covered the launching of State Green Mission Phase V at Chintan Bhawan ,Gangtok Sikkim on 15th June. ➤ Event: (25th June) ENVIS centre covered the State's planting programme '10 Minutes to Earth'. ENVIS team actively coordinated the programme and distributed awareness materials to the mass. 	June '10
4.	<ul style="list-style-type: none"> ➤ Workshop: ENVIS conducted two days (27th-28th July) green school teacher's training programme at Sikkim Science Centre in coordination with officials from Centre for Science and Environment, New Delhi. ➤ ENVIS Centre launched the Gobar Times Green School Programme 2010 (GTGSP) in Sikkim at a state level, at its second successive year. ENVIS has been coordinating the programme amongst 161 government schools of the state since 2009. 	July '10
5.	<ul style="list-style-type: none"> ➤ State Forest CAMPA online database application developed. ➤ Workshop: ENVIS participated in the first ever week long National Green Corps Meet of Children and Youth at Hyderabad Centre. Sr Programme Officer represented the state along with five students. 	Aug '10
6.	<ul style="list-style-type: none"> ➤ Workshop: Database Management workshop at Guwahati, Assam (20th-22nd Sep). Programme Assistant-ENVIS participated. 	Sep '10
7.	<ul style="list-style-type: none"> ➤ Distributed awareness materials and green school manuals to the schools. ➤ Published Poster 'Charter of Responsibilities' and distributed to about 750 schools in the state. 	Oct '10
8.	<ul style="list-style-type: none"> ➤ Workshop: Participated in the North-East Regional Meeting to discuss the proposals for the national environment awareness campaign 2010-11. ➤ Assessment of the Green School Reports by the Centre for the year 2010. 	Nov '10
9.	<ul style="list-style-type: none"> ➤ Intranet web based database application developed for FCA Status Information system. 	Dec '10
10.	<ul style="list-style-type: none"> ➤ Online database developed for implementation Sikkim State CAMPA Funds. 	Jan '11
11.	<ul style="list-style-type: none"> ➤ Field Study: Programme Officer conducted a field study along with senior officials on the Impact of Development on the Himalayan Environment. ➤ Training: ENVIS conducted training of data and information usage for the staff of the host department. ➤ Database on Sikkim Forest Fire Statistics developed. ➤ Website Security Audit done by NIC, New Delhi 	Feb '11
12.	<ul style="list-style-type: none"> ➤ PANDA bilingual newsletter published. ENVIS is the only centre in Sikkim state of have published a newsletter in English & Nepali (local language) for the first time. ➤ ISBEID data collection, entry into a new format. 	Mar '11

Note: Besides the activities stated above, ENVIS Centre has been regularly collecting, compiling and updating in suitable formats for storage and dissemination of acquired information in the website www.sikennis.nic.in. Centre has also been providing an effective query services.

Chapter - 18

II. SERICULTURE SCHEME:

Historical Background:

Sericulture in Sikkim was introduced by the Department of Forest, Sometimes in the year 1978-79, with establishment of few Nurseries in the East and South district of Sikkim. For more than twenty years mulberry sericulture activities remained within the boundary of Govt. Farms and nurseries situated at Rorathang in the East and Mamring in the South. In the beginning of 9th Five Years Plan period i.e. from 1998-99 onwards only Sericulture has been extended to the few identified villages on trial basis. Then onwards sericulture extensional activities are being carried out by the Department through the centrally sponsored scheme call “Catalytic Development Programme” (CDP), funded by the Central Silk Board, Ministry of Textiles Government of India. Under the Catalytic Development Programme, provisions of 80 percent financial assistance to the farmers of Mulberry, Muga and Eri sectors are made under the various work components or schemes.

Introduction: The Catalytic Development Programme sponsored by the Central Silk Board, Ministry of Textiles Govt. Of India has been one of the main programme under which provision of subsidies are made available as an incentives to newly adopted sericulture beneficiaries under the different identified components. In this schemes there are some components under which financial assistance are also made available to the implementing agency i.e. Sericulture Directorate, Government of Sikkim. Thus, Catalytic Development Programme (CDP) facilities number of schemes/components essentially in support of sericulture farmers during the two financial years 2009-10 and 2010-11, with an specific physical and financial targets earmarked against the three different sectors viz. Mulberry, Eri and Muga-culture.

PHYSICAL AND FINANCIAL TARGETS OF SERICULTURE EXTENSIONAL ACTIVITIES UNDER THE CDP: 2010-11, IN SIKKIM STATE, FOR IMPLEMENTATION DURING THE YEAR 2011-12.

Sl. No.	Name of Scheme/Component;	Physical Target; acre/family				Financial Target: (Rs. in Lakh)		
		East	West	South	Total:			
						CSB:	State:	Benef:
A.	Mulberry Sector:							
01.	Plantation and Development of Mulberry:	20	25	25	70	3.08	0.39	0.39
02.	Construction of Mulb. RHs.	20	25	25	70	56.00	7.00	7.00
03.	Provision start up Tools:	20	25	25	70	16.80	2.10	2.10
04.	Asstt. for Drip Irrgn.	02	03	02	07	2.80	---	---
05.	Supply of Qty. disinfectns.	---	---	---	---	---	---	---
06.	Farmers Training Progrms.	20	25	25	70	---	---	---
	Total:	82	103	102	287	78.68	9.49	9.49

B.	Eri Sector:							
01.	Plantation of Eri Food plants:	10	15	15	40	---	0.40	---
02.	Construction of Eri RHs.	10	15	15	40	16.00	2.00	2.00
03.	Provision of Eri Rearing Tools:	10	15	15	40	3.20	---	0.24
04.	Eri Farmers Training Programmes:	10	15	15	40	---	---	---
	Total:	40	60	60	160	19.20	2.40	2.24
C.	Muga Sector:							
01.	Plantation and dev. of Muga food plants:	10	10	10	30	---	0.75	0.75
02.	Provision of Start up Tools:	10	10	10	30	3.984	---	----
03.	Muga Farmers Training Programme:	10	10	10	30	---	---	---
	Asstt. for Muga Graineurs:	---	01	01	02	1.76	---	---
	Total:	30	31	31	92	5.744	0.75	0.75
D.	Provision Master Reelers /Weavers/ Dyers Assistance:	---	---	---	02	---		
01.	Asstt. of Certified Handlooms:	---	---	---	15	.....	
02.	Extension & Publicity:	---	---	---	---	1.80		
03.	Asstt. for Hot Air Drier .	---	---	---	01	0.768		
04.	Qty. linked price support system;	---	---	---	---	18.00		
	Total:				18	20.568		
	Grand Total:	152	194	193	557	124.192	12.64	12.48

ANNUAL FUND REQUIREMENT FOR SERICULTURE SCHEME 2012-2017.

<u>SL.NO.</u>	<u>YEAR.</u>	<u>CSB</u>	<u>STATE SHARE</u>	<u>TOTAL</u>
1.	2012-13	1.87 Corer.	40 Lakhs.	2.23 Corer
2.	2013-14	1.90 Corer.	41 Lakhs.	2.31 Corer
3.	2014-15	1.95 Corer.	42 Lakhs.	2.37 Corer
4.	2015-16	2 Corer.	45 Lakhs.	2.45 Corer
5.	2016-17	2.10 Corer.	50 Lakhs.	2.60 Corer
		9 Corer 82 Lakhs.	2 Corer 18 Lakhs.	12 Corer