



དཔལ་ལྷན་འབྲུག་ལྷན་ཁག་ སོ་ནམ་དང་ནགས་ཚལ་ལྷན་ཁག།
 རྒྱལ་ཚལ་དང་སྐྱིད་ཀ་ཞབས་ཏོག་ལས་ཁུངས་།
 Royal Government of Bhutan
 Ministry of Agriculture and Forests
 Department of Forests and Park Services
 Thimphu : Bhutan



Foreword

The Department of Forests and Park Services is pleased to publish the Annual Forestry Facts and Figures, 2015. This Forestry Facts and Figures year book is published every year to disseminate the information related to the services provided by the Department to the general public and also accounts for the programs implemented by the Department to achieve its goals and objectives in the 11 FYP. The book provides various data on the services delivered in terms of forest produces supplied and revenues generated by the Department in the 2015.



The data are mainly administrative data compiled by the field divisions (Territorial Division, Parks and Dzongkhag Forestry Sectors) and verified and put together by the Forest Information Management Section (FIMS) of the Department. This book contains useful information to be used by the researchers, academicians, conservationist, planners and many others.

I would like to extend my deep appreciation to all my field colleagues for their dedication and sacrifices made in order to achieve Departments goals and also, making this publication possible through proper and timely information sharing.

Chencho Norbu
Director General

INTRODUCTION

A critical dimension of Bhutan's vision 2020 and GNH development philosophy is to protect and conserve the country's fragile mountain ecosystem and its unique flora and fauna for future generations. The constitution of Bhutan, adopted in 2008, mandates the country to maintain a minimum forest cover of 60% for all time to come and strongly enshrines the responsibility of all citizens to preserve and sustainably manage the biodiversity resources for long-term sustainability.

This aspiration requires that the natural resources are utilized in a sustainable way and any trade-offs between economic utilization and conservation are effectively managed to avoid any deterioration of ecosystem and biodiversity health.

This Facts and Figures 2015 provides data on the services delivered in terms of forest produce supplied and other intangible services rendered by the Department of Forests and Park Services in 2015.

KEY FACTS 2015

Table 1: Key facts

Institutions	No	Forest Cover (LCMP)	
Functional Divisions (including UWICE & RDC-Yusipang)	8	Total Growing Stock (million m ³)	640.32
Territorial Divisions	12	Forest cover (%)	80.89
Protected Areas	10	Tree Cover (%)	70.46
Range Offices	64		
Beat Offices	83	Major Forest Type (LCMP, 2010)	
Forest Check Posts	41	Broadleaf (%)	43.99
Dzongkhag Forest Offices	20	Fir Forest (%)	4.77
		Mixed Conifer Forest (%)	15.99
Protected Areas		Blue Pine Forest (%)	2.08
Protected Area Network (Km ²)	19750.57	Chir Pine Forest (%)	2.8
Protected Area Network (%)	51.44	Broadleaf & Conifer Forest (%)	0.82
Protected Area (%)	42.7	Shrubs (%)	10.43
Biological Corridors (%)	8.6	Biodiversity	Recorded species
Royal Botanical Park (%)	0.1	Vascular Plants	< 5600
National Parks (Nos.)	5	Ferns and their Allies	< 411

Institutions	No	Forest Cover (LCMP)	
Wildlife Sanctuaries (Nos.)	4	Endemic plants	144
Strict Nature Reserve (Nos.)	1	Mammals	200
Biological Corridors (Nos.)	7	Globally threatened Mammals	27
		Bird species	701
Social Forestry		Globally threatened birds	18
Community Forest (Nos.)	645	Rhododendron	46
Households involved in CFM (Nos.)	27,215	Orchids (additional 54 new orchids recorded till date)	423
Community Forest Area (Ha)	71517.99	Plantation (2014-15)	17487.65
Plantation(in 2015, Ha)	632.44		

ORGANIZATIONAL STRUCTURE

The Department of Forests & Park Services, Ministry of Agriculture & Forests (MoAF) is headed by a Director General and supported by Functional Divisions at the headquarters, one research center, one conservation institute, twelve Territorial Divisions and 10 Protected Area offices. There are also Dzongkhag Forestry Offices in all the 20 Dzongkhags which mostly deals with extension activities of 205 Geogs.

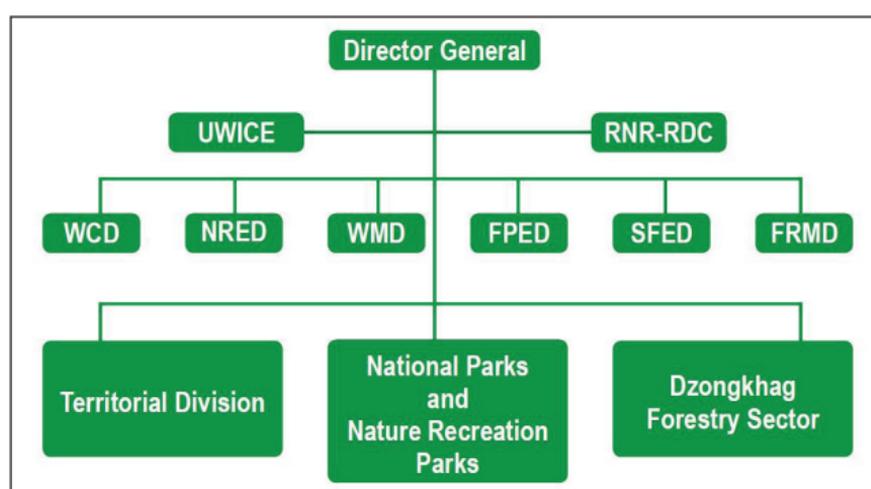


Figure 1: Organogram of the DoFPS

The Functional Divisions provide technical backstopping to the field divisions (Territorial Divisions, Parks & Dzongkhag Forestry Sector) who are the implementing agencies.

FOREST COVERAGE

As per the LCMP, 2010 carried out by the Ministry of Agriculture & Forests, 80.89 % of the total land cover constitutes forest cover including 70.46 % tree cover and another 10.43 % of shrubs. Broadleaf forest encompasses about 43.99 % of the total land cover followed by mixed conifer forest (15.99%) and fir forests (4.77%). Blue pine and Chir pine forest constitute about 2.08 and 2.80 % respectively of the total land cover.

In December 2015 Bhutan completed its first ever National Forest Inventory and the survey for ensuring quality data is still ongoing.

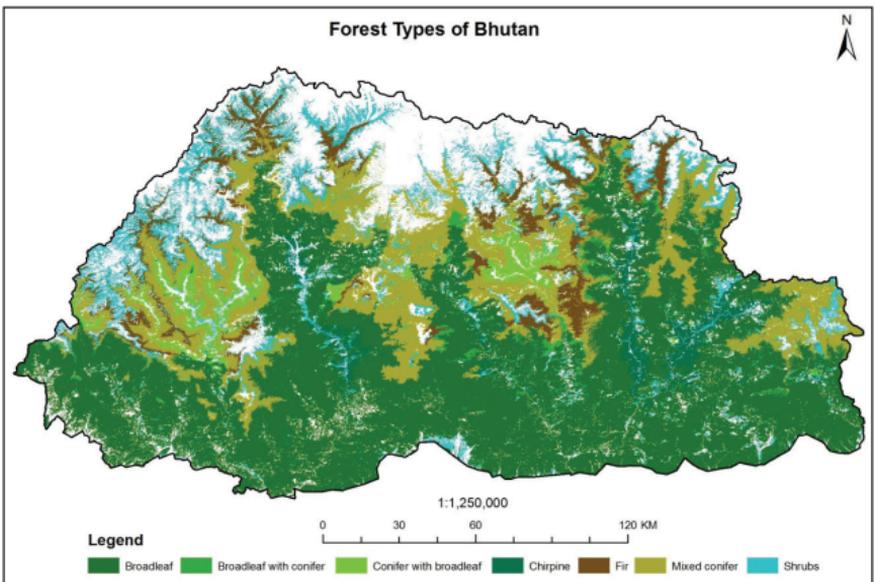


Figure 2: Forest type map of Bhutan (LCMP, 2010)

PROTECTED AREAS

The protected area system in Bhutan stands out significantly not only because of its conservation plans in place but also because it is one of the few countries where people still managed to live inside the protected areas and benefit from it. The Department is currently carrying out physical demarcation and zonation of all the protected areas and till date zonation of two Parks namely Jigme Dorji National Park & Phrumshingla Wildlife Sanctuary were completed and zonation for Jigme Singye Wangchuck National Park is ongoing.

Table 2: Protected Area system

Total Protected Area & Biological Corridors	Area in (Km ²)	Percentage (%)
Total Protected Area System	16,396.43	42.71
Total Area Biological Corridors	3,307.14	8.61
Royal Botanical Park	47.00	0.12
Total PAs & BCs	19,703.57	51.44

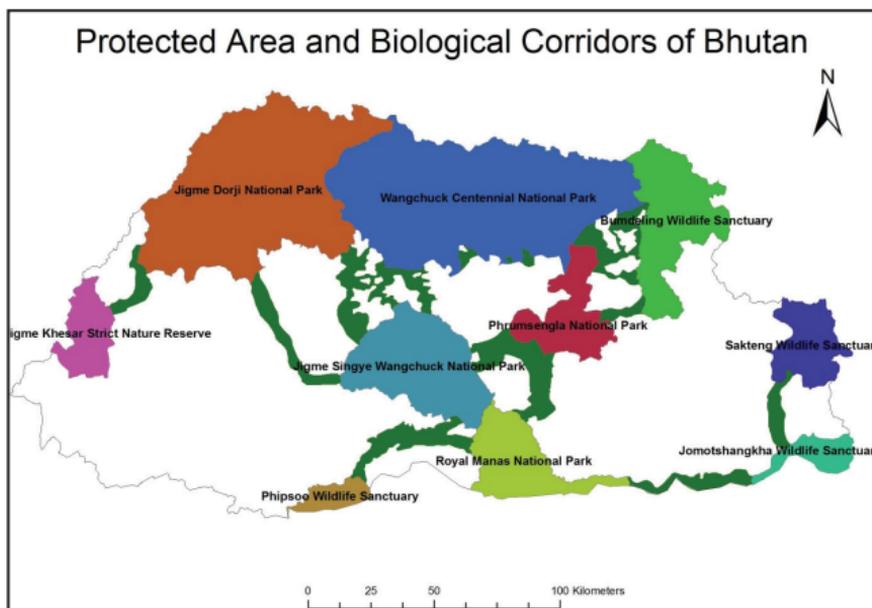


Figure 3: Protected Area Network map of Bhutan

FOREST MANAGEMENT AREAS

Forest Resources Potential Assessment (FRPA)

FRPA, 2013 was carried out to assess resource potential of Bhutan forest and to update the results of FRPA 2004. Potential forest area feasible for sustainable management based on slope less than or equal to 35° is 892.68 thousand hectare which is equal to 23.25% of country's geographical area and 33% to total forest land. However, a total of 1071.83 thousand hectare of forest land, which is equal to 27.92% of country's geographical area and 39.62% to total forest land, was found potential for forest management based on slope less than or equal to 45°.

Potential forest area based on forest function and management objectives with slope $\leq 35^\circ$ is illustrated in following table in detail.

Table 3 Details of potential forest production area in different management area (slope ≤ 35°)

Category	Area (000Ha)	Percentage to geographical area	Percentage to total forest land
Potential Production Forest area of Bhutan (S11)	892.68	23.25%	33.00%
Potential Production Forest area outside Protected Area Network (S22)	432.52	11.27%	15.99%
Potential Production Forest area inside Protected Area Network (S33)	452.54	11.79%	16.73%
Potential Production Forest area outside Major Watersheds (S44)	679.62	17.70%	25.12%
Potential Production Forest area inside Major Watersheds (S55)	212.48	5.53%	7.85%
Potential Production Forest area outside Protected Area Network and Major Watersheds (S66)	333.04	8.67%	12.31%

Source: FRPA 2014

Forest Management Units and Working Schemes

There are 19 FMUs to meet the timber demand of the people for both commercial & rural purposes as of 2015. Three plans were developed (revised) in the 2014-2015 FY including Haa East FMU, Gogona FMU & Wangdigang FMU.

Table 4: Forest Management Units in the country (Operational as of 2015)

Name of Forest Management Units	Dzongkhag	Total FMU area (ha)	Net Operable area (ha)
Dawathang	Bumthang	17,536.72	6,529.28
Rudongla		14,686.58	5,738.06
Karshong		4,715.77	1,554.00
Haa East	Haa	6,580.99	1,532.16
Lon Chhu		12,567.01	2,957.10
Sele La		9,157.00	3,828.60
Korila	Mongar	13,839.89	3,352.33
Lingmithang		10,578.60	3,854.68
Paro-Zonglela	Paro	16,155.81	5,543.72
Bitekha		7,259.70	3,386.70

Name of Forest Management Units	Dzongkhag	Total FMU area (ha)	Net Operable area (ha)
Gidakom	Thimphu	13,100.00	3,437.00
Chamgang		4,692.85	1,843.00
Dongdechu	Trashiyangtse	4,856.00	2,403.00
Chendebji	Trongsa	8,123.93	2,284.44
Khotokha	Wangdue	9,407.48	-
Gogona		8,080.60	3,675.60
Wangdigang	Zhemgang	8,759.00	1,130.00
Rongmanchu	Lhuntse	6,401.00	3,215.00
Khaling Kharungla	Trashigang	7,265.40	795.46
Total		183,764.33	57,060.13



COMMUNITY FORESTS

There are about 645 registered community forests (CFs) covering an area of **71,517.987** ha within the country as of December 2015 with **27,215** households actively participating at community level forest management.

As of December 2014, there were only 561 Community Forests with 23,962 households covering 62,115.45 ha of GRF. However, in 2015, 84 additional community forests were established with 3253 additional households involved in Community Forest management covering a total area of 71,517.987 ha.

Table 5: CFs established in the country as of 2015

Dzongkhag	No of CF	No of CFMG Member HH	Total CF Area (ha)
Bumthang	27	821	2865.77
Chukha	43	1431	2912.84

Dzongkhag	No of CF	No of CFMG Member HH	Total CF Area (ha)
Dagana	23	890	1776.837
Gasa	7	181	452.46
Haa	17	522	1648.8
Lhuntse	23	721	1608
Mongar	30	1808	6518.9
Paro	25	1413	3970.23
Pemagatshel	43	2112	3724.18
Punakha	39	1276	3392.04
Samdrup Jongkhar	40	2043	5183.41
Samtse	49	1962	4198.03
Sarpang	29	1093	2463.32
Thimphu	21	837	2749.77
Trashigang	50	2818	9228.66
Trashi Yangtse	25	1164	2784.26
Trongsa	26	860	2728.88
Tsirang	37	2274	5735.63
Wangdue Phodrang	67	1982	4980.7
Zhemgang	24	1007	2595.27
Grand Total	645	27215	71517.987

Plantation

The Department has established 17,485.65 hectares according to the sources from Social Forestry and Extension Division. The Department in 2015 alone created 632.44 hectares of plantations across the country through the Territorial Divisions, Parks and Dzongkhags. On 2nd June 2015, the Department of Forests and Park Services commemorated the 60th birth anniversary of our Fourth King by planting 49,672 tree seedlings by 100 people, in 1 hour, creating a Guinness World record.

Table 6: Plantation done by Dzongkhag Forestry Sectors in 2015

Dzongkhags	Area(Ha)
Bumthang	1.62
Chukha	26.5
Dagana	13.00
Haa	6.00
Lhuntse	14.00
Mongar	102.1
Mongar (Only Fencing)	23.54
Punakha	7.6
Pemagatshel	2.00
S/Jongkhar	6.5



Sarpang	3.23
Trashigang	27.72
T/Yangtse	16.00
Trongsa	22.00
Tsirang	21.04
Wangdue	12.1
Zhemgang	5.32
Thimphu	13.00
Samtse	20.95
Total	344.22

Table 7: Plantation done by Divisions/Parks in 2015

Division/Parks	Area(Ha)
Bumthang	14
Thimphu	2.70
Tashigang	28
SWS	4.8
Tsirang	101.72
Wangdue	40
Zhemgang	77
BBPL	10
SFED	10
Total	288.22



RESOURCE UTILIZATION

Timber Supply

Timber supplied in different form to the general public in 2015 by the Department of Forests and Park Services amounts to a total volume of 47,584.28 m³ at commercial rate of royalty and 3,56,245.01 m³ at concessional rate of royalty. The details are mentioned in the tables below.

Table 8: Timber supplied in cft (2015)

Product type	Commercial	Concessional	Free
Bakal	8155.03	14539.83	0.00
Cham	48889.94	726197.57	0.00
Champ tree	26269.60	0.00	0.00
Dangchung	1897.39	4244.40	0.00
Drashing	165751.46	10344460.50	2020.30
Drift wood	951.52	284.68	0.00
Firewood	1031435.83	1216281.99	12029.99

Logs	35360.97	79.82	0.00
Lops and Tops	59046.56	38565.91	1172.62
Mushroom billets	24699.28	2260.83	0.00
Others	100958.69	4958.93	0.00
Flag Poles/poles	44416.31	99932.29	146.58
Post	32405.39	84193.70	0.00
Sawn Timber	48738.42	5122.46	0.00
Shinglep	1655.80	7907.44	0.00
Toona Tree	459.16	0.00	0.00
Tree	1126.00	0.00	0.00
Tsim	3147.37	33543.40	0.00
Woodchips	45220.20	0.00	0.00
Fallen timber	91.83	0.00	0.00
Total	1680676.77	12582573.75	15369.50

Royalty realized

Royalty are levied on service delivered by the Department of Forests and Park Services. There are mainly two types of royalty, commercial royalty which is levied on the produce supplied for commercial purpose and also for supply of produce in urban areas while a rural rate of royalty is levied on supply of forest produce for rural purposes in rural areas.

Table 9: Timber supplied by Division in cft (2015)

Division / Park	Bumthang	Gedu	Mongar	Paro	S/Jongkhar	Samtse	Sarpang	Thimphu	Trashigang	Tsirang	Wangdue	Zhemgang
Bakal	5554.07	0.00	5784.00	221.10	175.19	0.00	0.00	956.47	700.75	628.70	585.61	6693.14
Cham	42478.66	25098.39	17801.28	66164.96	12250.39	77.70	0.00	17366.84	57811.78	8547.44	252679.28	6809.70
Champ tree	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26269.60	0.00
Dangchung	118.32	215.45	47.33	0.00	137.39	68.52	668.25	0.00	0.00	1526.53	463.75	127.86
Drashing	16067.07	32921.77	22512.97	102857.14	45520.06	105348.96	153380.99	10638.38	80486.16	26585.36	90511.03	16235.90
Drift wood	282.56	282.56	565.12	0.00	2.12	0.00	0.00	0.00	101.72	0.00	2.12	0.00
Firewood	142576.60	176750.46	147801.48	116608.98	52347.77	87607.73	89503.35	39985.77	291156.89	164528.68	306492.83	66247.96
Logs	2238.58	8874.50	860.04	0.00	5422.33	10679.36	4373.32	126.09	1.06	1071.96	1089.27	62.16
Lops and Tops	5509.92	17993.77	1554.08	12792.90	205.21	282.56	16734.62	12008.80	1554.08	0.00	22580.08	5266.21
Mushroom billets	0.00	0.00	494.48	18295.76	0.00	0.00	0.00	0.00	5845.81	0.00	1087.86	0.00
Others	505.08	1377.48	0.00	321.41	5545.24	0.00	0.00	93393.14	4637.52	0.00	137.75	0.00
Poles	9204.39	6310.27	15273.43	6079.28	2810.06	7324.31	22415.84	12475.02	16084.37	1089.62	15217.98	16315.72
Post	4522.73	4487.76	6590.71	1772.71	3572.62	2188.43	8640.33	5242.90	38670.10	4293.50	9742.67	8312.92
Sawn Timber	6176.06	421.72	1806.62	0.00	7202.45	0.00	3844.94	1124.59	460.93	10465.67	6586.83	113.73
Shinglep	0.00	1059.60	0.00	565.12	141.28	0.00	0.00	0.00	0.00	456.33	2325.47	0.00
Toona Tree	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	459.16	0.00
Tree	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tsim	3346.22	875.58	23.66	1935.89	70.99	75.58	0.00	719.47	1593.29	125.39	12281.82	1248.92
Woodchips	0.00	0.00	0.00	0.00	1130.24	0.00	2055.62	0.00	5262.68	0.00	36732.80	38.85
Total (Volume)	238580.24	276669.33	221115.21	327615.25	136533.35	213653.15	301617.26	194037.48	504458.96	220215.61	785245.90	127610.81

Table 10: Timber supplied by Parks and Wildlife Sanctuaries in cft (2015)

Division / Park	BWLS	JDNP	JSWNP	PNP	RMNP	SWLS	WCNP
Bakal	0.00	282.56	28.26	180.84	0.00	904.19	0.00
Cham	55636.06	26302.80	3846.35	71720.79	0.00	17871.92	92623.17
Dangchung	4.59	264.90	94.66	2250.59	0.00	0.00	154.00
Drashing	11157.59	15266.36	7713.89	33319.12	3033.99	40222.42	16851.17
Firewood	338584.58	57658.49	19023.35	44699.23	2295.80	60474.90	43372.96
Flag Poles	0.00	0.00	0.00	0.00	0.00	97.13	0.00
Logs	1.77	0.00	0.00	640.70	0.00	0.00	0.00
Lops and Tops	0.00	0.00	0.00	847.68	0.00	0.00	282.56
Mushroom billets	0.00	0.00	494.48	0.00	0.00	741.72	0.00
Poles	688.03	957.53	790.46	5156.37	1766.00	1311.08	2981.71
Post	974.13	1021.10	1437.88	2032.31	8830.00	2446.62	1820.75
Sawn Timber	0.00	13617.63	0.00	1950.37	0.00	89.71	0.00
Shinglep	0.00	282.56	0.00	4732.88	0.00	0.00	0.00
Tsim	3360.34	1550.19	922.91	3538.00	706.40	960.70	3355.75
Fallen timber	0.00	91.83	0.00	0.00	0.00	0.00	0.00
Total	410407.10	117295.95	34352.23	171068.89	16632.19	125120.39	161442.07

Table 11: Division wise; Commercial Royalty realized in Ngultrum (2015)

Division / Park	Bumthang	Gedu	Mongar	Paro	S/Jongkhar	Sarpang	Samtse	Thimphu	Trashigang	Tsirang	Wangdue	Zhemgang
Bakal	8,828.00	-	500.00	3,981.00	310.00	-	-	13,487.00	680.00	802.58	1,470.00	84.00
Cham	1,920.00	5,100.00	-	3,360.00	1,100.64	-	380.00	3,360.00	3,140.00	930.00	11,250.00	5,260.00
Champ tree	-	-	-	-	-	-	-	-	-	-	493,455.00	-
Dangchung	300.00	-	-	280.00	200.00	6,144.00	680.00	-	-	3,480.00	-	472.00
Drashing	-	95,460.00	18,520.00	9,640.00	27,060.00	844,945.00	461,237.00	24,900.00	51,312.00	29,516.00	28,910.00	20,960.00
Firewood	34,543.16	115,005.00	35,614.78	44,890.00	25,904.70	25,882.63	35,360.00	14,302.50	53,649.32	108,768.40	49,155.00	36,136.50
Logs	30,866.28	120,824.80	-	-	85,013.02	8,575.56	162,682.00	1,513.44	840.00	5,873.76	602,139.40	931.20
Mushroom billets	-	-	-	18,000.00	-	-	-	-	5,875.00	-	360.00	-
Others	52,380.00	60.00	-	1,445.00	1,620.00	-	-	3,828.00	960.00	-	3,660.00	-
Poles	31,365.08	52,741.66	9,474.00	19,382.00	17,944.00	1,116.90	31,516.00	17,578.00	30,382.09	5,244.00	41,754.48	35,878.00
Post	192.00	11,274.00	1,710.00	2,800.00	4,890.00	-	4,948.00	5,400.00	73,700.85	18,744.00	8,790.00	38,770.00
Sawn Timber	175,408.80	4,651.41	21,227.25	-	167,946.80	69,520.35	-	14,461.02	5,165.52	82,818.27	31,076.56	1,250.15
Shinglep	-	-	-	2,180.00	2,400.00	-	-	-	-	1,287.00	14,344.00	-
Toona Tree	-	-	-	-	-	-	-	-	-	-	11,620.00	-
Tsim	2,200.00	-	-	1,510.00	-	-	-	-	240.00	480.00	10,780.00	3,200.00
Woodchips	-	-	-	-	2,000.00	3,637.50	-	-	9,312.50	-	64,160.00	1,800.00
Total							696,803.00	98,829.96	235,257.28	257,944.01	1,372,924.44	144,741.85

Table 12: Division wise; Concessional Royalty realized in Ngultrum (2015)

Division / Park	Bumthang	Gedu	Mongar	Paro	S/Jongkhar	Samtse	Sarpang	Thimphu	Trashigang	Tsirang	Wangdue	Zhemgang
Bakal	1,000.00		660.00	-	-	-	-	-	560.00	-	4,500.00	570.00
Cham	32,849.40	14,160.00	14,100.00	47,850.00	17,840.00	-	-	13,020.00	43,924.00	5,670.00	257,610.00	900.00
Dangchung		2,596.00	80.00	-	320.00	400.00	1,580.24			350.00	1,820.00	-
Drashing	14,759.60	22,257.92	16,080.00	81,118.00	38,022.00	59,449.00	11,109,783.00	7,840.00	72,386.72	21,020.00	102,948.00	5,240.00
Firewood	28,852.00	10,659.00	53,210.00	16,848.00	14,335.00	17,210.00	44,875.12	16,125.50	134,757.30	26,140.00	98,740.00	3,305.00
Logs	-	-	-	-	-	53.00	-	-	-	-	-	160.00
Mushroom billets	-	-	500.00	-	-	-	-	-	20.10	-	500.00	-
Others	-	-	-	40.00	520.00	-	-	-	-	-	-	-
Poles	26,572.30	6,192.00	10,660.00	7,758.00	3,386.00	18,802.00	6,322.70	6,944.00	24,009.34	360.00	15,703.47	4,158.00
Post	2,573.71	8,430.00	25,658.00	7,422.00	5,826.00	7,554.00	20,689.70	4,076.00	56,614.68	1,554.00	42,467.00	1,316.00
Sawn Timber	-	-	-	-	3,000.00	-	-	-	367.44	12,978.84	7,482.32	-
Shinglep	-	180.00	-	200.00	-	-	-	-	-	4,188.60	680.00	-
Tsim	2,520.00	440.00	120.00	8,360.00	900.00	384.00	-	3,648.00	6,078.43	360.00	56,900.00	360.00
Total	109,127.01	64,914.92	121,068.00	169,596.00	84,149.00	103,852.00	11,183,250.76	51,653.50	338,718.01	72,621.44	589,350.79	16,009.00

Table 13: Park wise; Concessional Royalty realized in Ngultrum (2015)

Division / Park	BWLS	JDNP	WCNP	JSWNP	PNP	RMNP	SWLS
Bakal				50.00	600.00		1,600.00
Cham	42,960.00	18,330.00	52,920.00	2,970.00	55,940.00		13,800.00
Dangchung	80.00	520.00	480.00	160.00	5,170.00		
Drashing	9,920.00	6,951.13	11,960.00	5,720.00	55,480.00	3,052.00	35,480.00
Firewood	66,688.00	3,815.00	15,012.50	6,100.00	16,060.00	9,260.00	5,230.00
Logs					80.00		
Mushroom billets				1,500.00			750.00
Poles	3,184.00	640.00	7,736.00	2,064.00	4,713.00	450.00	6,878.00
Post	5,122.00	5,040.00	9,868.00	3,972.00	8,724.00	580.00	6,918.00
Sawn Timber		3,200.00					
Shinglep		160.00			2,680.00		
Tsim	17,040.00	6,900.00	10,980.00	1,620.00	16,950.00	240.00	4,680.00

Table 14: Park Wise Commercial Royalty realized in Ngultrum (2015)

Division / Park	BWLS	JDNP	JSWNP	PNP	RMNP	SWLS	WCNP
Bakal	-	500.00	-	120.00	-	-	-
Cham	-	1,200.00	-	6,960.00	-	-	17,400.00
Dangchung	-	-	-	1,340.00	-	-	-
Drashing	960.00	125,436.00	20,420.00	46,668.00	7,780.00	96,700.00	2,720.00
Firewood	8,920.00	27,420.00	420.00	8,885.00	2,160.00	47,485.00	2,230.00
Logs	1,667.52	-	-	9,877.20	-	-	-
Poles	612.00	960.00	-	18,189.00	-	945.00	180.00
Post	270.00	2,370.00	6,900.00	2,100.00	-	17,100.00	732.00
Sawn Timber	19,158.48	37,712.15	-	28,355.04	-	1,882.23	-
Tsim	-	960.00	3,000.00	-	-	840.00	6,036.00
Total	31,588.00	196,558.15	30,740.00	122,494.24	9,940.00	164,952.23	29,298.00

Table 15: Royalty realized in Million Ngultrum; 2015 (Product wise)

Product type	Commercial	Concessional
Bakal	0.031	0.010
Cham	0.061	0.635
Dangchung	0.013	0.014
Drashing	2.418	11.679
Firewood	0.677	0.587
Logs	1.031	0.000
Mushroom billets	0.024	0.003
Others	0.017	0.001
Poles	0.315	0.157
Post	0.201	0.224
Sawn timber	0.661	0.027
Shinglep	0.020	0.008
Tsim	0.032	0.142
Woodchips	0.081	0.000
Total	5.582	13.487



Timber allotted for Dzongs, Lhakhangs and other religious structures

Table 16: Timber allotted in 2015 in cft

Purpose	Volume (cft)
Dzongs	28917.78
Lhakhangs	8907.80
Other Religious activities	653.42
Total	38479.00



Non-wood Forest Produce



Parispelliphylla © Para Forest

Table 17: NWFPs supplied in 2015 with revenue generated through royalty in Ngultrum

Product Type	Unit	Qty supplied	Royalty realized (Nu.)
Aggregate	Truckload	19	1,520.00
Balu Soolu	Kilogram	2372	4,044.00
Bamboo	Bundle	2	24
Bamboo	Head load	855	3,440.00
Bamboo	Number	28604	19,844.00
Bamboo	Pieces	885	1,670.00
Bamboo	Truckload	801	1,620.00
Bamboo shoot	Head Load	16	92
Bamboos Mate	Number	25	100
Baroo	Kilogram	50	250
Broom	Head load	537	1,575.00
C/dust	Truckload	8	280
Cane	Head Load	563	1,992.00
Cane	Number	500	50
Cane	Truckload	16	284
Cane shoot	Head Load	188	460
Cane shoot	Kilogram	540	1,080.00
Cane shoot	Number	200	400
Cane shoot	Truckload	10.25	1,072.00
Charcoal	Kilogram	65630	26,520.00
Clay soil	Truckload	106.5	3,460.00
Colour soil	Kilogram	6550	5,100.00
Colour soil	Truckload	22	1,000.00
Cordyceps	Kilogram	50	150,000.00
Cordyceps	Number	646	275,260.00
Daphne bark	Kilogram	2701	2,800.00
Flat stone	Truckload	20	800
Gravel	Truckload	3420	57,050.00
Incense (wood)	Truckload	1	20
Leaf litters	Truckload	12	240
Leaf mould	Truckload	317.5	9490
Lemon grass oil	Liter	10	100
Mushroom	Kilogram	669	4,446.00
Mushroom billets	Number	1600	800
Ngashinjurma	Kilogram	100	500
Pepper	Kilogram	408	512
Picorrhiza (Putashing)	Kilogram	500	6,000.00
Pine needles	Head Load	85	1,303.00
Pipla	Kilogram	200	120
Poulzozia	Kilogram	650	1,300.00
Putashing	Kilogram	1099.49	20,587.08
Rosin/Resin	Kilogram	3308.5	6,617.00
Rubia	Kilogram	8521	150,736.00

Sand	Truckload	12311.5	294,821.40
Sea Buck Thron	Kilogram	213	1,060.00
Shilajit (dragzhuen)	Kilogram	175	1,400.00
Small bamboo	Bundle	238	216
Small bamboo	Kilogram	600	168
Small bamboo	Number	76808	13,394.50
Small bamboo	Truckload	1255	508
Soil	Truckload	684.5	22,340.00
Star anis	Kilogram	732	2,064.00
Stone	Truckload	105	800
Stone Boulders	Truckload	23102	590,606.00
Stone chips	Truckload	2121.5	48,386.00
Stone dust	Truckload	71	2,960.00
Top soil	Truckload	189	19,240.00
Wildlings	Bundle	51	492
Wildlings	Number	1090	1,430.00
Wood burrs	Number	1054	16,420.00
Yula(Bangchung)	Number	470	880

WOOD BASED INDUSTRIES

There are 117 sawmills and 139 furniture units registered in the country as of December 2015. Further there are about 6,417 registered power chain saw operators and 5 ply board industries in Bhutan as of December 2015.

Table 18: Number of sawmills and furniture unit

Dzongkhags	Sawmills	Furniture Units
Bumthang	15	17
Chukha	13	9
Dagana	0	3
Gasa	0	0
Haa	21	2
Lhuntse	2	1
Mongar	1	12
Paro	26	33
Pema Gatshel	1	1
Punakha	1	4
S/Jongkhar	0	4
Samtse	3	3
Sarpang	5	2
Thimphu	16	15
Trashigang	5	8
Trashhi Yangtse	1	6
Trongsa	1	1
Tsirang	1	3
Wangdue	3	9
Zhemgang	2	6
Total	117	139

Eco-tourism

Tourism in Bhutan is the second largest revenue generator after the hydro power, contributing immensely to the country's GDP. Various tourist treks were established across the length and breadth of the country which provides a breathtaking scenic beauty by our pristine environment, landscape and biodiversity. The number of trekkers along the different trekking routes in both 2013 and 2014 were given in the table below.

Table 19: Number of tourist using trekking routes

Trek Name	No of Trekkers in 2013	No of Trekkers in 2014	% Change from previous Year
Bumthang Cultural Trek	158	203	28.48
Bumthang Owl Trek	71	111	56.34
Chelela Trek	33	60	81.82
Dagala Thousand Lakes Trek	85	106	24.71
Dongla Trek	12	6	-50
Druk Path Trek	873	1222	39.98
Dur Hot Spring Trek	9	2	-77.78
Gangula Trek	6	6	0
GangkarPuensum Trek	5	13	160
Gangtey Trek	84	99	17.86
Jomolhari Trek	848	799	-5.78
LayaGasa Trek	189	291	53.97
Masagang Trek	4	16	300
Merak-Sakteng Trek	113	123	8.85
NabjiKorphu Community Based Trek	24	37	54.17
NubsonaPata Trek	32	19	-40.63
Punakha Winter Trek	10	14	40
Royal Manas Trek	2	39	1850
Sagala Trek	143	79	-44.76
Samtengang Trek	84	110	30.95
Sinchula Trek	29	31	6.9
Snowman Trek	128	107	-16.41
Wild East Rodungla Trek	1	2	100

Source: Bhutan Tourism Monitor Annual Report 2014

Payment of Environmental Services

The Department has been coordinating a joint effort with other partners to develop incentives for forest conservation and sustainable land management. As part of the Payment for Environmental Services program, 1st PES scheme on drinking water between Yakpugang CFMG and Mongar Town in Eastern Bhutan, established in 2011 and renewed for 5 more years in 2015 (2015-2019) with Mongar Referral as additional ES buyer.

2nd PES scheme in on drinking water between Burkhey watershed community & five Industrial companies (Coco cola, Majyur Oxygen & gases, Bhutan Carbide & chemicals limited, Druk Cement & Bhutan Soya Proteins) based in Passakha under Chukha Dzongkhag. The PES contract term was from 2015-2019.

3rd PES scheme also on drinking water established in October 2015 between Namay Nichu under Tsento Geog of Paro Dzongkhag, where CFMG members are Environmental Service provider and four hoteliers (Amba resort, Tiger Nest Resort, Zhiwaling Hotel & Norwangs lodge) & Satsam Water Association as ES user.

Revenue generated through the visitor centers

Three visitor centers, namely, Takin preserve at Motithang, Thimphu, Lampheri Botanical Park and Gharial Farm at Phuntsholing had collected a sum of Nu. 2,558,095.00 as fees from the visitors in 2015. A total of 99,282 visitors (Local and International) visited the centers in 2015 with Gharial Farm at Phuntsholing having highest number of visitors and subsequently generating highest amount of revenue.

Table 20: Revenue generated by visitor centers (2015)

Name of Park	Number of visitors			Total amount collected (Million Nu)
	International	Local	Total	
Lampelri Botanical Park	3710	5895	9605	0.562
Gharial Farm, Phuntsholing	38527	22454	60981	0.991
Takin Preserve ,Motithang	24646	4050	28696	1.005
Total	66883	32399	99,282	2.558

CHALLENGES

Forest Fire

2014-2015 saw about 64 fire incidence losing 45,095 acres of forest areas. Wangdue Dzongkhag saw highest number of fire incidence losing 22,914 acres of forest land followed by Trashigang Dzongkhag.

Table 21: Fire incidences in Bhutan (2014-15)

Dzongkhag	2014-2015	
	No. of cases	Area burnt (Acres)
Bumthang	0	0
Chhukha	1	30.7
Dagana	0	0
Gasa	0	0

Haa	0	0
Lhuntse	2	55
Monggar	5	1819.98
Paro	1	100
Punakha	1	35.9
Pemagatshel	2	4150
S/Jongkhar	0	0
Sarpang	0	0
Samtse	1	134
Trashigang	3	163.75
Trashiyangtse	3	2724.64
Thimphu	5	172.65
Tsirang	3	5966
Trongsa	1	0
Wangdue	5	23
Zhemgang	0	0
Total area (Acre)	33	15,375.62



Government Reserve Forest (GRF) Land allotted for developmental activities

Every year, huge GRF land is lost to developmental activities. In 2015 alone, about 4865.52 acres of GRF land has been allotted for different purposes.

Table 22 : GRF land allotted for different purpose in acres (2015)

land type allotted	Land Substitution	Land lease	Land Kidu/allotment	Transmission line	Motor Roads
Bumthang	15.28	4.56	0.14	0.16	9.49
Chukha	195.83	565.83			16.00
Dagana	19.15		10.17	2.50	12.93
Haa	9.05	5.56			20.25
Paro	0.62	105.92		3.39	30.23
Pema Gatsel	9.50	58.00	0.20	50.48	35.07
T/Yangtse	3.50				0.50
Trongsa		0.06		6.02	5.64
Thimphu		53.00	0.15	2.30	5.04
S/Jongkhar	2.47	10.00	25.00	344.00	67.00
Zhemgang	4.09	0.07	7.53	12.20	6.07
Sarpang	11.00	23.83	4.46	15.58	10.03
Wangdue	27.90	1888.00	9.00	0.20	264.45
Samtse	3.32	549.00		1.27	82.60
T/gang				1.27	122.50
Mongar	0.87	15.80	1.01	7.80	73.92
Lhuentse	1.05	0.30	0.64	6.20	8.58
Total (Acres)	303.63	3279.93	58.30	453.37	770.29

Forest Offence

In 2015 about 489 offence cases were detected across the country which is about 52.35% less from the previous year. A total of 934 cases were recorded in 2014. Dzongkhag wise and Division/Park wise data is as follow:

Table 23: Division wise offence detected and fine imposed in 2015 (Million Nu.)

Divisions	No. of cases (2014)	No. of cases (2015)	Fine Imposed	Reward
Bumthang	46	19	0.528	0.500
Gedu	86	54	14.397	4.039
Mongar	69	33	1.602	0.450
Paro	146	71	10.794	2.598
Samdrup Jongkhar	53	46	0.874	0.329
Samtse	39	31	1.028	0.287
Sarpang	98	54	5.083	5.692
Thimphu	35	21	1.011	0.472
Trashigang	65	24	0.478	0.169
Tsirang	18	18	0.217	0.063
Wangdue	134	74	4.639	1.707
Zhemgang	62	6	0.125	0.041
Total	851	451	40.775	16.347

Table 24: Park wise offence detected and fine imposed in 2015 (Million Nu.)

Parks	No. of cases (2014)	No. of cases (2015)	Fine Imposed	Reward
BWLS	13.000	9.000	0.573	0.424
JDNP	19.000	16.000	0.479	0.332
JSWNP	13.000	2.000	0.040	0.014
PNP	22.000	NA	0.122	0.057
RMNP	5.000	1.000	0.005	0.001
WCNP	0.000	10.000	3.033	1.736
SWS	11.000	0.000	0.000	0.000
Total	83.000	38.000	4.252	2.564

Wangdue and Paro Division (Haa and Paro Dzongkhag) saw the maximum number of offence cases mainly due to huge number of illegal timber and fishing related cases. Sakteng Wildlife Sanctuary saw the minimum number of offence cases compared to other territorial divisions and parks in the country.



Table 25: Offence detected (Offence type) with total revenue generated (in Million Ngultrum) for 2015 (DoFPS)

Offence type	Fine imposed (Nu)	Detector rewarded (Nu)	Revenue deposited
Boulder collection	0.790	0.189	0.600
Construction without Forestry clearance	0.171	0.043	0.128
Cordyceps collection	0.539	0.471	0.068
Dumping in GRF	0.045	0.016	0.029
Encroachment of GRF	0.271	0.068	0.203
Firewood collection	0.154	0.031	0.123
Fishing	0.757	0.771	-0.015
Forest fire	0.031	0.008	0.023
Gravel collection	0.636	0.160	0.476
Grazing in restricted areas	0.041	0.035	0.006
NWFP collection	2.061	0.281	1.780
<i>Paris polyphylla</i> collection	0.793	0.128	0.665
Power chain operation	0.005	0.001	0.004
Sand collection	0.466	0.124	0.342

sander wood transportation	15.697	3.936	11.761
Timber	9.002	4.184	4.818
Wildlife	8.379	6.783	1.596
Others	5.189	1.671	3.518
Total	45.028	18.901	26.127

Human Wildlife Conflict

Department has recorded a total of 40 livestock depredation/kill in the year 2014. Most of the cases recorded with the Department were preyed upon by Leopard and Tiger. Livestock preyed upon by other predators were not reported mainly because the Human Wildlife Conflict Endowment Fund compensates only those livestock preyed upon by Leopard and Tiger.



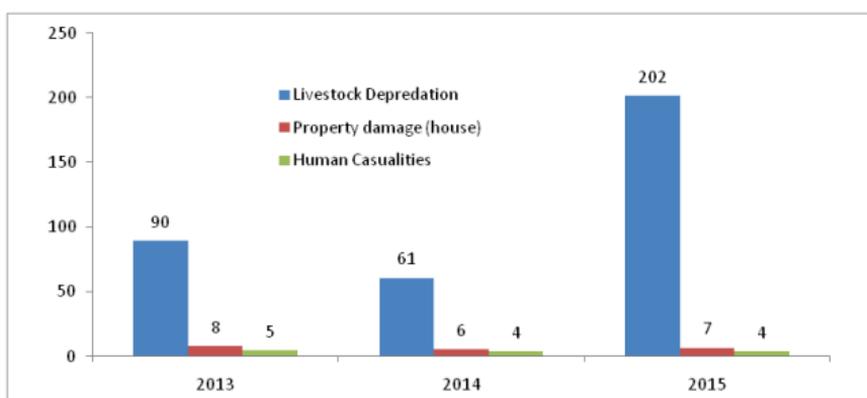
Table 26: Dzongkhag wise HWC incidences in 2015

Year	2015			2014			2013			
	Dzongkhag	Livestock Depredation	Property damage (house)	Human Casualties	Livestock Depredation	Property damage (House)	Human Casualties	Livestock Depredation	Property damage (House)	Human Casualties
Bumthang	2			2						
Chukha								2		
Gasa	13	6		3	1		16			
Haa	7									
Mongar						1				
Paro	2		2							3
Pemagastel	5			1						1
Punakha	1			1			1			
Samtse					2					
Sarpang				1	3	1		1		
S/Jongkhar								5		

Tashigang	6			9					
Trongsa	141	1	2	12			67		
Thimphu	10			11		1	1		
Wangdi Phordang	10			14		1	1		
Zhemgang	5			7			4		1
Total	202	7	4	61	6	4	90	8	5

A total of Nu. 5,67,750 has been paid as compensation to the people or damages made by wildlife in the year 2014. Out of the compensation paid, Nu. 4,57,750 was paid as compensation or livestock depredated by Tigers and Snow Leopard, whereas a sum of Nu. 1,10,000 was paid as semso to human being injured/killed by wildlife.

Graph 1: Trends in HWC incidences form 2013-2015



In 2015 due to constrains in funds no compensations were paid for damages caused by the wild animals.



National Forest Inventory

The field work for the first ever multipurpose National Forest Inventory (NFI) formally concluded in January, 2016. Began in 2012, the fieldwork lasted for three and half years and covered 2424 cluster plots laid at 4 km by 4 km grid covering all land use classes. However, the preparatory phase of NFI began in 2009 and data analysis is expected to take some time.

Amongst others, NFI will provide estimates of forest cover and forest quality information, which will enable sound policy decisions and implementation of relevant programs which will eventually contribute towards sustainable forest management.

