



## RNR Statistical Release (RNR-SR) MINISTRY OF AGRICULTURE AND FORESTS



### Agricultural land use statistics for effective decision making

#### About the release

Land is the basis for most biological and human activities on Earth and is one of the key economic resources. The land statistics can be looked at from two different aspects- *land cover* and *land use*. Land cover statistics basically presents the biophysical coverage of land while the land use statistics indicate the socioeconomic use of land. These aspects of statistics are important as it provides the basis for spatial and territorial analyses including planning, management, prevention and mitigation of land resources.

The agricultural land statistics presented in this release are based on the data from the recent RNR Census of Bhutan 2019. It covers only agricultural land use statistics and do not present other classes in the Land-Use Classification. For example, forestry is also one of the key sectors in Bhutan to be considered if Land-Use statistics have to be comprehensive. Further, the agricultural land use statistics presented here pertains only to arable, cultivated and fallow which are relevant to monitor agriculture sector.

The definition of arable land differs from one region to other. FAO-WCA, SEEA and IPPC defines arable land in their own unique ways. For example, FAO, WCA defines arable land as the “*total of areas under temporary crops, temporary meadows and pastures, and land with temporary fallow. Arable land does not include land that is potentially cultivable but is not normally cultivated*”. However, there are also

country-specific definitions evolved to represent local context.

#### Arable land

For Bhutan, based on the data from RNR Census 2019, agricultural land use statistics on arable<sup>1</sup>, cultivated<sup>2</sup>, un-cultivated<sup>3</sup> and fallow land<sup>4</sup> were tabulated.

Table 1 shows the total land area by dzongkhag and by land use type. A total of about **268,194** acres of arable land was recorded. The percentage of arable land<sup>5</sup> according to the RNR Census of Bhutan 2019 was estimated at **2.83** percent.

Table 1 Total land area by dzongkhag and by land use type

Dzongkhag	(Acres)			
	Arable	Cultivated	Uncultivated	Fallow
Bumthang	10,630.24	6,609.42	4,020.82	3,712.16
Chukha	18,997.49	14,870.13	4,127.36	3,203.23
Dagana	18,238.44	14,786.88	3,451.56	2,634.03
Gasa	892.93	705.16	187.77	167.94
Haa	5,207.31	4,214.03	993.28	878.17
Lhuentse	7,031.79	4,873.24	2,158.55	1,839.44
Mongar	20,120.15	13,672.08	6,448.07	6,072.95
Paro	9,795.37	8,292.41	1,502.96	930.96
Pema Gatshel	18,747.27	9,546.79	9,200.48	8,844.98
Punakha	10,344.60	8,433.08	1,911.52	1,111.14
Samdrup Jongkhar	19,631.41	14,402.70	5,228.71	4,599.45
Samtse	33,294.55	25,938.72	7,355.83	4,469.90
Sarpang	19,744.54	15,097.05	4,647.49	3,351.48
Thimphu	2,698.48	2,306.02	392.46	319.50
Trashigang	19,146.27	9,587.46	9,558.81	8,888.39
Trashigang Yangtse	7,091.33	3,802.88	3,288.45	3,069.97
Trongsa	7,249.51	4,141.69	3,107.82	2,771.81
Tsirang	14,410.45	11,839.30	2,571.15	1,860.22
Wangdue Phodrang	10,479.28	7,794.91	2,684.37	1,878.82
Zhemgang	14,442.78	8,585.42	5,857.36	5,515.78
<b>TOTAL</b>	<b>268,194.19</b>	<b>189,499.37</b>	<b>78,694.82</b>	<b>66,120.32</b>

<sup>1</sup> **Arable land** is the land owned plus the land leased-in as reported in the RNR Census by the holders irrespective of the land type except for fallow land.

<sup>2</sup> **Cultivated land** is the operational land which includes total land area owned and lease-in minus the total land area leased-out and left fallow by the holders.

<sup>3</sup> **Uncultivated land** is the difference between the total arable land and cultivated land.

<sup>4</sup> **Fallow land** is the total land area left fallow and was not cultivated during the census reference period.

<sup>5</sup> **The percentage arable land** is ratio of total arable land to the total land area of the country, all expressed in the standardized unit.

The detailed total land use area by dzongkhag and by land type are provided in Table 2. From the total of 268,194 acres of arable land, about 21 percent were wetland, about 73 percent were dryland, and the rest 7% were observed as orchard and other arable land.

Figure 1 gives the percentage distribution of arable land by dzongkhag. Across the dzongkhag, Samtse (about 12 percent), Monggar (about 8%) and Sarpang (about 7%) recorded the highest percentage of arable land in the country.

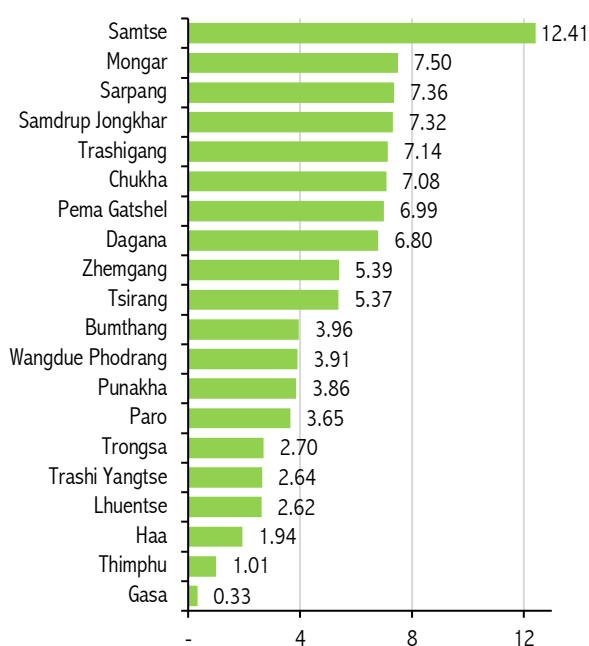


Figure 1 Percentage distribution of arable land by dzongkhag

### Cultivated land

From the total arable land, about **189,499** acres of cultivated land was observed and this translates to **70.66** percent of cultivated land in the country.

Figure 2 provides the percentage distribution of cultivated land by dzongkhag. Across the dzongkhag, Samtse (about 14 percent), Sarpang (about 8%) and Chukha (about 8 percent) recorded the highest percentage of cultivated land. From the total area of cultivated land, about 22 percent were wetland, about 71 percent were dryland, and the rest 8% were orchard and other cultivated land.

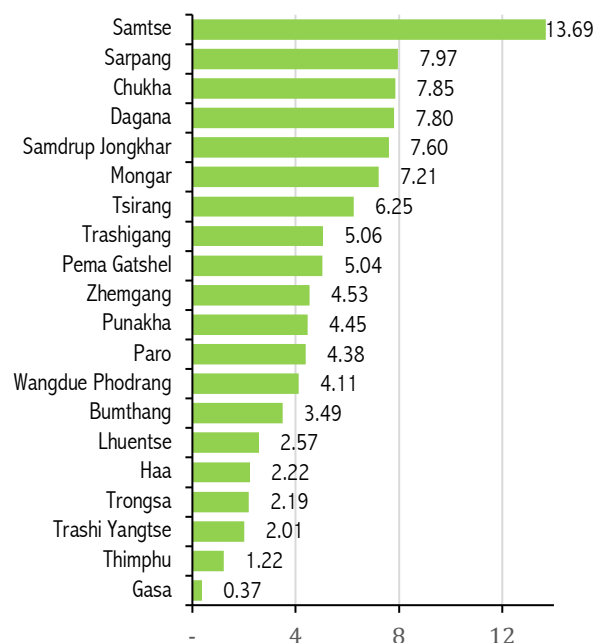


Figure 2 Percentage distribution of cultivated land by dzongkhag

### Uncultivated land

A total of about **78,694** acres of un-cultivated land was recorded, of which about **19** percent were wetland and about **77** percent were dryland.

Figure 3 gives the percentage distribution of uncultivated land by dzongkhag. Across the dzongkhag, Trashigang (about 12 percent), Pema Gatshel (about 12 percent) and Samtse (about 9 percent) recorded the highest percentage of uncultivated land in the country.

In Trashigang, the majority of uncultivated land were dryland (about 91 percent) compared to about 8% wetland. Similarly, Pema Gatshel dzongkhag also observed uncultivated dryland of about 95 percent compared to wetland 2%. Samtse dzongkhag on the other hand recorded about 51 percent dryland compared to about 37 percent uncultivated wetland.

Table 2 Total land use area by dzongkhag and by land type

Dzongkhag	Arable Land				Cultivated Land				Un-cultivated Land				Fallow Land			
	Wetland	Dryland	Others	TOTAL	Wetland	Dryland	Others	TOTAL	Wetland	Dryland	Others	TOTAL	Wetland	Dryland	Others	TOTAL
Bumthang	3.67	10,529.20	97.37	10,630.24	1.37	6,515.49	92.56	6,609.42	2.30	4,013.71	4.81	4,020.82	0.50	3,706.86	4.80	3,712.16
Chukha	2,061.27	15,758.94	1,177.28	18,997.49	1,713.45	12,167.94	988.74	14,870.13	347.82	3,591.00	188.54	4,127.36	203.18	2,829.45	170.60	3,203.23
Dagana	4,281.10	12,584.30	1,373.04	18,238.44	3,302.75	10,245.69	1,238.44	14,786.88	978.35	2,338.61	134.60	3,451.56	648.80	1,861.41	123.82	2,634.03
Gasa	213.92	647.26	31.75	892.93	135.41	538.65	31.10	705.16	78.51	108.61	0.65	187.77	59.90	108.04	-	167.94
Haa	174.61	4,524.04	508.66	5,207.31	140.61	3,617.09	456.33	4,214.03	34.00	906.95	52.33	993.28	28.95	798.45	50.77	878.17
Lhuentse	2,021.17	4,771.42	239.20	7,031.79	1,417.48	3,217.64	238.12	4,873.24	603.69	1,553.78	1.08	2,158.55	433.13	1,405.34	0.97	1,839.44
Mongar	1,428.90	18,033.87	657.38	20,120.15	822.19	12,197.89	652.00	13,672.08	606.71	5,835.98	5.38	6,448.07	490.12	5,578.61	4.22	6,072.95
Paro	3,567.52	5,595.33	632.52	9,795.37	3,052.13	4,616.22	624.06	8,292.41	515.39	979.11	8.46	1,502.96	54.53	869.52	6.91	930.96
Pema Gatsel	357.78	16,772.12	1,617.37	18,747.27	130.31	8,056.06	1,360.42	9,546.79	227.47	8,716.06	256.95	9,200.48	208.18	8,395.81	240.99	8,844.98
Punakha	8,225.09	1,740.57	378.94	10,344.60	6,866.27	1,203.35	363.46	8,433.08	1,358.82	537.22	15.48	1,911.52	597.17	499.98	13.99	1,111.14
Samdrup Jongkhar	2,268.63	16,444.95	917.83	19,631.41	1,929.38	11,560.62	912.70	14,402.70	339.25	4,884.33	5.13	5,228.71	156.50	4,440.18	2.77	4,599.45
Samtse	8,115.87	22,172.65	3,006.03	33,294.55	5,394.65	18,396.52	2,147.55	25,938.72	2,721.22	3,776.13	858.48	7,355.83	1,261.69	2,505.27	702.94	4,469.90
Sarpang	5,544.11	11,313.13	2,887.30	19,744.54	3,872.25	9,381.66	1,843.14	15,097.05	1,671.86	1,931.47	1,044.16	4,647.49	981.23	1,437.71	932.54	3,351.48
Thimphu	498.87	1,960.75	238.86	2,698.48	429.07	1,665.66	211.29	2,306.02	69.80	295.09	27.57	392.46	31.04	263.29	25.17	319.50
Trashigang	2,556.37	15,766.83	823.07	19,146.27	1,747.56	7,068.60	771.30	9,587.46	808.81	8,698.23	51.77	9,558.81	556.36	8,285.37	46.66	8,888.39
Trashi Yangtse	1,670.58	5,101.03	319.72	7,091.33	958.16	2,532.05	312.67	3,802.88	712.42	2,568.98	7.05	3,288.45	586.41	2,478.34	5.22	3,069.97
Trongsa	2,019.39	4,965.77	264.35	7,249.51	1,255.55	2,636.81	249.33	4,141.69	763.84	2,328.96	15.02	3,107.82	541.54	2,218.35	11.92	2,771.81
Tsirang	4,410.37	8,566.70	1,433.38	14,410.45	3,348.34	7,246.22	1,244.74	11,839.30	1,062.03	1,320.48	188.64	2,571.15	679.93	1,014.27	166.02	1,860.22
Wangdue Phodrang	4,962.94	5,120.92	395.42	10,479.28	3,557.74	3,858.93	378.24	7,794.91	1,405.20	1,261.99	17.18	2,684.37	888.52	974.27	16.03	1,878.82
Zhemgang	1,686.40	12,258.32	498.06	14,442.78	1,071.23	7,040.91	473.28	8,585.42	615.17	5,217.41	24.78	5,857.36	550.13	4,943.45	22.20	5,515.78
<b>TOTAL</b>	<b>56,068.56</b>	<b>194,628.10</b>	<b>17,497.53</b>	<b>268,194.19</b>	<b>41,145.90</b>	<b>133,764.00</b>	<b>14,589.47</b>	<b>189,499.37</b>	<b>14,922.66</b>	<b>60,864.10</b>	<b>2,908.06</b>	<b>78,694.82</b>	<b>8,957.81</b>	<b>54,613.97</b>	<b>2,548.54</b>	<b>66,120.32</b>

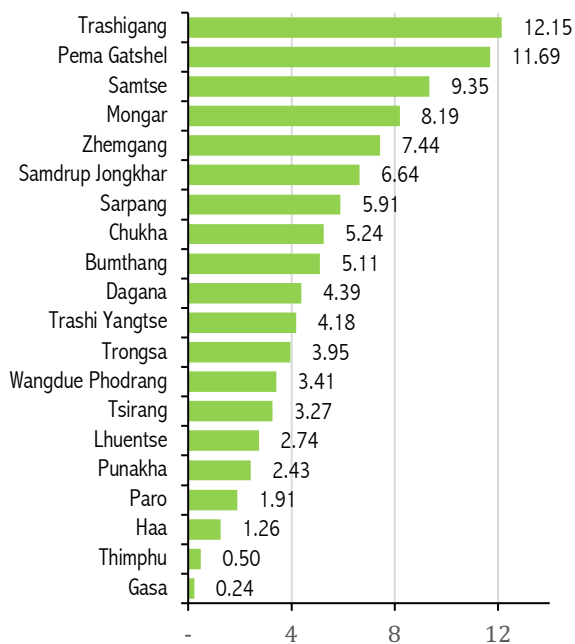


Figure 3 Percentage distribution of uncultivated land by dzongkhag

## Fallow land

A total of **66,120** acres of fallow land was observed and estimated about **25** percent of fallow land<sup>6</sup> in the country.

Figure 4 gives the percentage distribution of fallow land by dzongkhag and by land type. Across the dzongkhag, Samtse (about 14 percent), Sarpang (about 11 percent) and Wangdue Phodrang (about 10 percent) recorded the highest percentage of fallow wetland in the country. In terms of fallow dryland, Pema Gatshel (about 15 percent), Trashigang (about 15 percent) and Monggar (about 10 percent) recorded the highest percentage.

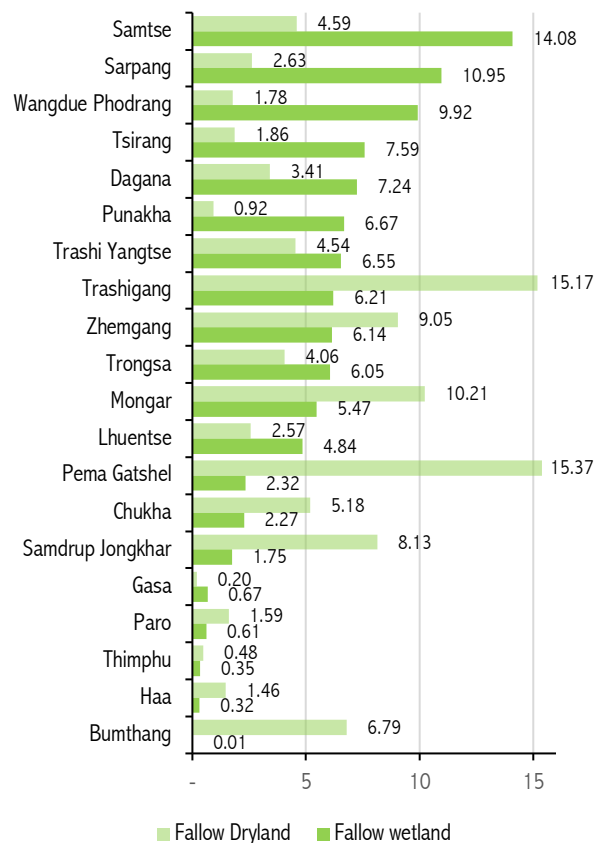


Figure 4 Percentage distribution of fallow land by dzongkhag and by land type

According to the RNR Census of Bhutan 2019, agricultural holding is categorized as holdings in the household<sup>7</sup> and non-household<sup>8</sup> sector. The non-household sector is further classified broadly as Private Limited Company<sup>9</sup>, Agriculture Groups or Cooperatives<sup>10</sup>, Monasteries<sup>11</sup> and Others<sup>12</sup>. Table 3 presents the detailed agricultural land use area by holding type and by land type.

<sup>6</sup> The percentage fallow land is the ratio of total fallow land to the total arable land, all expressed in the standardized unit.

<sup>7</sup> Holdings in household sector are those operated by household members.

<sup>8</sup> Non-household sector are corporations and government institutions.

<sup>9</sup> Private limited company or large commercial farms such as Samden Coffee Plantation, Druk Horticulture Farm, etc.

<sup>10</sup> Agriculture groups or cooperatives that are run by a group of farmers who leases land either from government or

community, share labour and market the produce for joint profit.

<sup>11</sup> Monasteries that often lease out land to others but sometimes may employ a caretaker or manager to run the farm or sometimes the months of a shedra may grow vegetables for their own consumption.

<sup>12</sup> Others category includes those holdings such as labour camp holdings, kukhor-owned holdings that are managed by a caretaker and armed force premises holdings who also rears some chickens or goats, etc.

*Table 3 Total land use area by holding type and by land type*

Holding Type	Arable land				Cultivated land				Fallow land			
	Wetland	Dryland	Others	TOTAL	Wetland	Dryland	Others	TOTAL	Wetland	Dryland	Others	TOTAL
	(Acres)				(Acres)				(Acres)			
Household	55,375.33	191,660.68	17,237.09	264,273.10	40,820.42	131,728.54	14,341.41	186,890.37	8,790.17	53,783.99	2,542.76	65,116.92
Private Ltd. Company	8.51	139.30	35.22	183.03	-	100.63	35.08	135.71	0.46	27.67	0.14	28.27
Groups/Co-operatives	41.67	856.29	12.69	910.65	32.53	535.34	12.15	580.02	6.45	317.99	0.05	324.49
Monastery	249.06	421.87	7.08	678.01	20.73	143.66	6.98	171.37	62.86	209.66	0.10	272.62
Others	393.94	1,549.94	205.45	2,149.33	272.22	1,255.86	193.95	1,722.03	97.87	268.86	11.25	377.98
<b>TOTAL</b>	<b>56,068.51</b>	<b>194,628.08</b>	<b>17,497.53</b>	<b>268,194.12</b>	<b>41,145.90</b>	<b>133,764.03</b>	<b>14,589.57</b>	<b>189,499.50</b>	<b>8,957.81</b>	<b>54,608.17</b>	<b>2,554.30</b>	<b>66,120.28</b>

### Acknowledgement

The RNR Statistics Division (RSD), Ministry of Agriculture and Forests has successfully conducted the third RNR Census from 1 March 2019 to 15 April 2019. For the preparation and administration of the census, RSD collaborated with many agencies of the government, agricultural holdings including institutional and households. We are highly appreciative of the support and cooperation rendered during the course of the census.

We would like to thank the RNR census team at the HQ, the national census coordinator (agriculture/livestock officials) in Dzongkhag and Gewogs, and all our valued agricultural holdings for their support and cooperation. Finally, we owe our deepest gratitude for the technical guidance and support of Technical Working Group (TWG-RNR Census) members for their unwavering support and facilitation in the smooth conduct of the census.

**For any queries and feedback:**

**Tobden Tobden**  
**Chief Statistical Officer**  
**RNR Statistics Division**  
**Tel: +975(02)331206**  
**Email: [rsd@moaf.gov.bt](mailto:rsd@moaf.gov.bt)**