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Abbreviations

BAFRA	Bhutan Agriculture Food and Regulatory Authority
CoRRB	Council for RNR Research of Bhutan
DoA	Department of Agriculture
DoF	Department of Forests
DoL	Department of Livestock
DRC	Department of Revenue and Customs
DSLRL	Department of Survey and Land Records
FCB	Food Corporation of Bhutan
GIS	Geographical Information Systems
HH	Farm households
IMS	Information Management Section
Kg	Kilogram
Km ²	Square kilometer
MoA	Ministry of Agriculture
MT	Metric ton
NA	Not applicable
No.	Number
Nos.	Numbers
NSB	National Statistical Bureau
JSWNP	Jigme Singye Wangchuck National Park
Nu.	Ngultrum (Bhutanese currency)
PPD	Policy and Planning Division
RNR	Renewable Natural Resources

1. National key figures

Table 1 RNR Sector share of gross domestic product (GDP)

Year	2000	2001	2002	2003
Agriculture Share (%)	35.9	32.9	33.2	32.7

Source: NSB, March 2004

Table 2 Commodities auctioned, 2003

Items	Quantity (MT)
Potato	20,335
Apple	349
Orange	3,242
Other Fruits	2
Pulses/Spices	478
Vegetables	1,783
Forest Products	0.3

Source FCB

Table 3 Import of major food items, 2003

Items	Quantity (MT)
Rice	54,911
Wheat/Wheat Product	34,917
Sugar	7,110
Oil	13,222

Source: DRC

Table 4 Export of major food items, 2003

Items	Quantity (MT)	Value (million Nu.)	Info. Source
Potato	17,911	71.91	DRC
Apple	3,816		BAFRA
Orange	19,735		BAFRA
Spices	1,038	0.07	DRC
Vegetables	225	0.01	DRC
Forest Products (Medicinal Plants)	83	0.0002	DRC

Table 5 Protected areas in Bhutan

Name of the protected area	Area (Km ²)	% Of country's total area of 38,394 km ²
Jigme Dorji National Park	4,349	11.3
Bomdeling Wildlife Sanctuary	1,487	3.9
Black Mountain National Park (JSWNP)	1,400	3.6
Royal Manas National Park	1,023	2.7
Thrumshingla National Park	768	2
Torsa Strict Nature Reserve	651	1.7
Sakteng Wildlife Sanctuary	650	1.7
Phibsoo Wildlife Sanctuary	278	0.7
Khaling Wildlife Sanctuary	273	0.7
Total protected area	10,879	28.3

Source: DoF, MoA, 2004

Table 6 Agriculture area registered under various land use types

Land use type	Wetland	Dry Land	Tseri	Pangzhing	Kitchen garden	Total
Area (acre)	71,832	239,576	148,582	30,752	4,181	494,923
Area (%)	14.5	48.4	30.0	6.2	0.8	100.0

Source: Department of Survey and Land Records, 2004

Table 7 Productions of major crops, 2003

Crop	Area (Acre)	Production (Kg)	Yield (Kg/Acre)	Percent households who cultivated the crops
Paddy	48,700	45,805,973	941	56.3
Maize	69,422	49,681,602	716	65.8
Wheat & Barley	9,552	5,747,852	602	<20.0
Buckwheat	9,295	2,184,188	235	<20.0
Millet	10,360	2,895,932	280	<20.0
Potato	10,202	40,532,160	3,913	31.7
Mustard	5,124	3,549,559	343	<20.0
Others (mixed vegetable including chili)	3,418	6,931		51.0

Source: RNR Sample Survey, 2003

Table 8 Livestock population

Type of Livestock	Numbers	Percent holders
Local Cattle	268,641	72.0
Jersey Cross	39,489	29.6
Swiss Brown Cross	5,219	3.2
Yak	19,100	2.7
Horses	8,479	20.1
Sheep	5,304	0.8
Pigs	19,622	28.4
Poultry	45,197	55.1

Source: RNR Sample Survey, 2003

Table 9 Collection of non-wood forest products

Type of product	Quantity	Unit
Bamboo	2,470,491	Nos.
Cane	474,661	Nos.
Mushroom	1,395,744	KG
Fern tops	2,673,409	KG
Damburoo	521,177	KG
Lemon grass oil	85,431	KG
Chirata	44,575	KG
Peepala	14,510	KG

Source: RNR Sample Survey, 2003

Table 10 Selected RNR development indicators by dzongkhag, 2003

Dzongkhag	Cereal Production Kg / hh)	Potato Production Kg / hh)	Oil Seed Production Kg / hh)	Spices Production (Kg / hh)	Mixed Veg Production Kg / hh)	Nos. Fruit Trees / hh	Number of Livestock Unit / hh
Thimphu	1,473	509	41.8	11.5	194.3	39.4	5.7
Paro	1,717	1,159	67.1	0.4	489.2	80.1	5.8
Ha	707	1,259	7.8	0.1	201.5	30.1	10.5
Chhukha	1,879	963	56.9	19.9	94.3	96.0	7.6
Samtse	1,640	306	56.5	54.8	11.7	29.5	5.2
Punakha	2,989	244	218.3	1.5	254.5	14.7	5.2
Gasa	721	463	86.1	2.4	22.3	0.0	9.6
Wangdue	1,680	1,644	70.2	4.2	298.0	8.1	6.9
Tsirang	2,325	336	119.3	6.0	22.0	61.5	5.0
Dagana	1,976	312	93.1	1.5	41.2	53.5	6.0
Bumthang	560	2,218	14.5	2.0	97.9	11.8	7.9
Trongsa	2,332	726	110.6	1.5	186.5	3.0	9.4
Zhemgang	1,999	312	82.1	0.7	31.8	58.0	6.1
Sarpang	2,252	456	123.5	23.9	22.8	96.3	7.1
Lhuentse	1,754	675	9.9	3.0	78.5	5.5	6.9
Mongar	2,036	705	27.8	3.6	117.5	16.8	6.1
Trashigang	1,565	869	45.1	3.5	50.5	3.9	4.3
Yangtse	1,556	540	8.4	1.9	46.0	2.4	3.9
Pemagatshel	854	274	30.5	2.0	18.7	12.1	2.4
S/Jongkhar	1,374	321	16.7	22.5	62.3	85.6	4.9
Bhutan	1,735	662	60.0	12.4	98.7	38.1	5.7

Note: Selected indicators were calculated to give an idea on how well the farming households are doing in terms of RNR development. The livestock units represent the value of one standard cattle, worth Nu. 8295/- and include all farm animals.

Source: RNR Sample Survey-2003

2. Agriculture

Table 11 Dzongkhag wise agriculture area registered under different land use types (acres), 2003

Dzongkhag	Wetland	Dry Land	Tseri	Pangzhing	Kitchen garden	Total
Thimphu	3,365	8,278	283	1,840	430	14,196
Paro	3,935	6,827	858	597	545	12,762
Ha	113	3,856	2,639	833	134	7,575
Chhukha	2,706	11,654	23,008	75	256	37,699
Samtse	9,604	15,257	13,997	141	2	39,001
Punakha	7,026	1,185	198	1,395	500	10,304
Gasa	286	583	2	188	52	1,111
Wangdue	7,061	4,369	689	1,815	702	14,636
Tsirang	6,388	24,262	3,260	231	0.21	34,141
Dagana	3,190	13,248	3,196	31	84	19,749
Bumthang	0	4,679	1,154	9,336	219	15,388
Trongsa	2,948	4,343	4,311	2,020	181	13,803
Zhemgang	2,596	9,044	16,549	247	131	28,567
Sarpang	6,482	14,887	3,024	131	58	24,582
Lhuentse	3,512	8,468	2,900	1,035	418	16,333
Mongar	2,155	28,305	7,203	1,780	95	39,538
Trashigang	4,933	39,861	9,652	3,384	228	58,058
Yangtse	3,597	10,788	1,947	3,938	20	20,290
Pemagatshel	215	8,185	24,150	479	116	33,145
S/Jongkhar	1,721	21,499	29,561	1,256	7	54,044
Bhutan	71,832	239,576	148,582	30,752	4,181	494,923

Source: Department of Survey and Land Records, Ministry of Agriculture, 2004.

Table 12 Percentage of farm households producing various crops, 2003

Dzongkhag	Paddy	Maize	Wheat	Barley	Bitter Buckwheat	Sweet Buckwheat	Finger Millet	Foxtail Millet	Mustard	Potato	Others
Thimphu	44	10	23	2	0	0	1	0	14	23	16
Paro	72	4	47	3	2	4	3	0	16	49	23
Ha	14	17	60	3	32	30	11	1	3	47	15
Chhukha	50	75	28	3	20	27	37	5	22	32	62
Samtse	66	85	9	2	7	12	43	15	18	18	81
Punakha	92	21	65	3	10	3	0	0	52	18	30
Gasa	49	3	33	23	0	5	5	1	35	61	45
Wangdue	72	14	57	5	13	7	3	0	37	34	35
Tsirang	68	83	7	1	0	9	33	1	22	20	39
Dagana	67	85	3	1	8	21	33	5	19	22	76
Bumthang	8	5	46	8	25	36	0	0	3	63	55
Trongsa	87	70	44	21	19	17	7	3	22	45	47
Zhemgang	60	87	15	0	18	5	26	17	12	13	16
Sarpang	70	81	1	1	1	12	52	4	25	34	76
Lhuentse	70	78	6	0	0	0	8	1	4	51	66
Mongar	48	91	8	9	7	11	1	2	10	55	50
Trashigang	47	85	5	1	2	14	2	2	14	35	32
Yangtse	77	80	1	0	1	3	16	2	2	23	41
Pemagatshel	2	83	5	1	5	15	2	9	7	16	20
S/Jongkhar	29	82	4	1	5	24	11	12	12	21	78
Bhutan	56	66	18	3	7	13	17	5	18	32	51

Note: Others include chili and vegetables

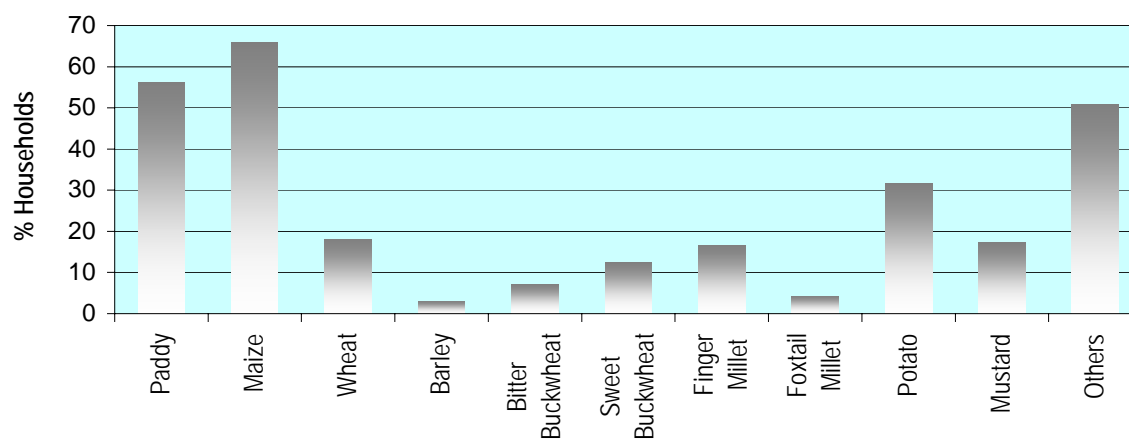


Figure 1: Farm households producing various crops

Table 13 Area cultivated under various crops (acre), 2003

Dzongkhag	Paddy	Maize	Wheat & Barley	Buckwheat	Millet	Potato	Mustard	Others
Thimphu	1,672	147	494	<25	<25	176	133	<25
Paro	2,950	<25	1,100	91	<25	814	206	109
Ha	180	138	781	265	43	319	<25	<25
Chhukha	2,164	4,878	858	966	1,356	869	300	311
Samtse	7,272	9,723	470	599	3,489	526	563	939
Punakha	4,594	235	942	132	*	112	573	77
Gasa	248	<25	142	<25	<25	56	52	<25
Wangdue	3,790	150	1,523	339	<25	1,251	345	87
Tsirang	4,158	4,634	173	152	651	213	375	69
Dagana	2,991	4,631	66	531	729	197	289	166
Bumthang	**96	75	671	709	*	797	40	31
Trongsa	1,710	865	642	498	67	211	160	45
Zhemgang	1,264	2,493	191	339	391	136	164	<25
Sarpang	5,695	6,771	61	202	1,865	526	668	229
Lhuentse	1,501	2,038	52	*	120	408	25	130
Mongar	1,348	6,802	747	396	92	925	184	252
Trashigang	2,861	8,708	269	882	118	1,650	475	201
Yangtse	1,832	2,560	30	51	343	405	<25	135
Pemagatshel	107	2,395	104	269	157	186	74	<25
S/Jongkhar	2,268	12,178	238	2,866	902	424	471	654
Bhutan	48,700	69,422	9,552	9,295	10,360	10,202	5,124	3,481

*Note: * represents either no data or not applicable. The figures represented by <25 are added to the Bhutan figures. Sweet and Bitter Buckwheat are combined, Wheat and Barley are combined, Foxtail and Finger Millet are combined. ** Bumthaps cultivate paddy in Trongsa and Mongar dzongkhags.*

- Others include chili and vegetables

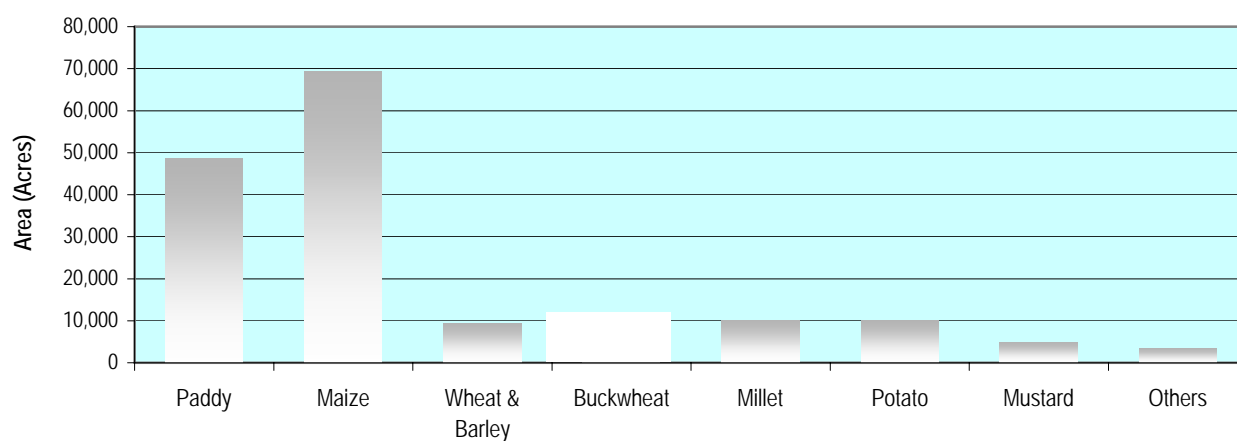
**Figure 2: National areas cultivated under various crops - 2003**

Table 14 Production of cereals, mustard, potato and mixed vegetables (MT), 2003

Dzongkhag	Paddy	Maize	Wheat & Barley	Buck wheat	Millet	Mustard	Potato	Mixed Vegetables
Thimphu	2,009	49	251	1	2	66	799	323
Paro	3,871	13	638	57	5	176	3,094	1,309
Ha	151	73	437	106	17	6	1,397	226
Chhukha	1,765	3,543	596	232	323	192	3,308	396
Samtse	4,775	4,780	260	124	541	334	1,957	452
Punakha	5,396	241	674	46	*	458	518	551
Gasa	216	6	111	1	1	40	215	11
Wangdue	3,818	119	821	106	5	202	4,765	877
Tsirang	3,331	3,311	123	33	190	357	1,009	86
Dagana	2,154	2,764	28	145	203	247	836	117
Bumthang	127	29	329	293	*	20	3,083	139
Trongsa	1,586	945	516	154	18	152	1,003	260
Zhemgang	1,332	1,883	95	87	117	144	548	57
Sarpang	5,063	3,785	40	38	586	520	1,927	199
Lhuentse	1,802	2,164	24	*	76	19	1,564	193
Mongar	1,396	7,953	511	123	35	127	3,469	605
Trashigang	3,227	8,913	116	198	19	344	6,927	446
Yangtse	2,017	2,686	24	20	374	16	1,776	169
Pemagatshel	130	1,939	45	63	93	67	729	69
S/Jongkhar	1,639	4,484	110	358	291	63	1,606	445
Bhutan	45,806	49,682	5,748	2,184	2,896	3,550	40,532	6,931

Note: * represents either no data or not applicable

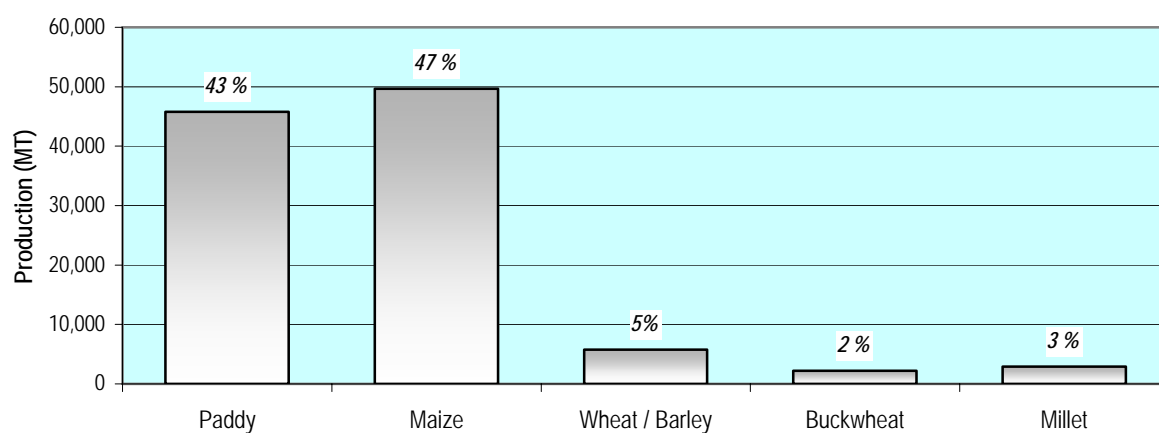
**Figure 3: Percent contribution of various crops to total cereal production**

Table 15 Percent contribution of various crops to the total dzongkhag cereal production, 2003

Dzongkhag	Paddy	Maize	Wheat & Barley	Buckwheat	Millet
Thimphu	86.94	2.11	10.85	0.04	0.07
Paro	84.45	0.29	13.92	1.24	0.10
Ha	19.31	9.34	55.64	13.49	2.23
Chhukha	27.33	54.86	9.22	3.58	5.00
Samtse	45.56	45.61	2.48	1.18	5.16
Punakha	84.87	3.80	10.60	0.73	0.00
Gasa	64.56	1.65	33.20	0.18	0.42
Wangdue	78.40	2.44	16.87	2.19	0.11
Tsirang	47.67	47.38	1.76	0.47	2.72
Dagana	40.68	52.21	0.53	2.74	3.84
Bumthang	16.34	3.79	42.25	37.61	0.00
Trongsa	49.28	29.35	16.02	4.77	0.56
Zhemgang	37.92	53.59	2.69	2.47	3.32
Sarpang	53.23	39.79	0.42	0.40	6.16
Lhuentse	44.32	53.22	0.60	0.00	1.86
Mongar	13.94	79.38	5.10	1.23	0.35
Trashigang	25.87	71.46	0.93	1.59	0.15
Yangtse	39.39	52.44	0.47	0.39	7.31
Pemagatshel	5.74	85.43	1.98	2.77	4.08
S/Jongkhar	23.81	65.15	1.60	5.20	4.23
Bhutan	43.08	46.73	5.41	2.05	2.72

Table 16 Production of vegetables (Kg), 2003

Dzongkhag	Soyabean	Beans	Broccoli	Chili	Cabbage	Cauliflower	Radish	Carrot	Brinjal	Peas	Tomato	Pumkin	Onion	Ginger
Thimphu	*	*	480	286,398	5,939	506	6,103	2,761	*	2,247	<100	281	9,672	*
Paro	2,580	5,838	2,940	685,136	329,951	*	152,408	24,818	8,732	79,444	11,886	4,528	*	*
Ha	2,508	*	*	6,852	44,645	7,145	96,327	<100	*	63,633	<100	4,941	*	*
Chhukha	3,836	*	*	38,938	85,401	602	116,392	29,711	641	32,826	537	18,879	<100	68,406
Samtse	27,202	427	383	5,903	690	132	25,556	109	1,418	136	6,649	33,353	1,228	323,182
Punakha	6,052	*	19,211	385,418	6,350	191	91,750	174	6,839	19,404	8,323	3,651	2,538	350
Gasa	*	*	18	2,812	1,873	149	4,622	<100	339	362	*	<100	1,010	*
Wangdue	927	2,126	*	283,351	122,322	*	427,120	12,496	991	3,261	1,423	10,827	6,194	3,677
Tsirang	1,325	*	155	23,834	945	171	22,475	*	1,560	2,533	952	13,505	2,914	14,582
Dagana	2,874	1,065	50	23,826	3,922	*	40,961	<100	758	*	945	38,781	1,347	2,041
Bumthang	*	*	173	33,651	16,330	2,541	79,709	405	262	1,975	510	495	388	*
Trongsa	245	*	*	161,273	3,665	*	74,070	538	185	9,337	139	8,145	347	1,499
Zhemgang	418	*	177	31,172	886	149	17,421	*	144	<100	<100	5,804	*	965
Sarpang	1,372	680	540	6,438	5,009	1,449	40,618	712	7,628	604	5,238	27,473	2,598	91,966
Lhuentse	4,224	*	156	110,603	6,238	228	30,598	*	1,959	933	674	30,482	3,339	<100
Mongar	9,847	*	23	202,782	27,242	3,232	294,122	5,050	565	10,162	115	34,665	1,257	7,931
Trashigang	16,190	1,614	2,059	282,995	24,695	1,084	59,759	*	420	12,334	623	16,945	7,631	1,918
Yangtse	11,117	*	2,363	112,477	9,230	2,108	12,830	<100	1,809	631	187	9,716	745	944
Pemagatshel	14,330	*	*	38,619	5,862	243	4,270	*	*	*	*	606	163	1,798
S/Jongkhar	20,333	*	943	26,841	2,876	1,767	136,817	402	1,306	6,629	1,401	132,982	1,637	108,104
Bhutan	125,378	11,751	29,675	2,749,318	704,073	21,699	1,733,928	77,422	35,556	246,508	39,820	396,148	43,071	627,425

Note: * represents either no data or not applicable.

Table 17 Production of tree crops (Kg), 2003

Dzongkhag	Apple	Orange	Mango	Walnut	Banana	Peach	Pear	Plum
Thimphu	1,087,248	83,095		1,743	1,524	1,083	13,409	888
Paro	3,644,492	*	1,044	38,335	*	78,954	8,363	14,318
Ha	217,124	342,507	*	1,154	*	574	70	786
Chhukha	97,024	3,472,525	3,900	776	86,484	48,590	23,539	2,465
Samtse	*	2,668,560	24,968	*	142,452	15,744	20,477	2,123
Punakha	16,228	488,350	29,973	20,595	14,881	35,299	45,647	27,460
Gasa	*	*	*	*	*	*	*	*
Wangdue	85,750	308,563	2,847	4,575	7,657	54,982	49,045	25,104
Tsirang		5,590,567	22,891		50,146	3,320	55,244	27,727
Dagana	12,038	2,095,952	30,807	6,750	44,840	49,961	72,465	24,086
Bumthang	374,479	*	*	11,834	*	18,703	26,652	6,485
Trongsa	7,914	116,991	3,126	10,256	691	15,041	4,839	3,945
Zhemgang	*	1,360,323	3,155	2,468	24,144	2,713	*	373
Sarpang	*	8,179,309	105,417	3,000	174,282	26,976	70,483	16,383
Lhuentse	66,315	182,318	1,508	11,980	7,220	71,799	38,209	40,043
Mongar	47,780	2,115,285	35,159	51,630	39,299	150,650	93,771	58,022
Trashigang	26,893	524,388	47,228	9,922	11,980	41,553	23,002	19,760
Yangtse	8,783	138,765	1,300	16,384	6,494	78,121	4,529	4,370
Pemagatshel	*	967,020	416	*	7,059	1,041	3,123	1,141
S/Jongkhar	*	7,697,478	32,980	13,563	65,523	130,102	23,324	36,245
Bhutan	5,692,070	36,331,996	346,719	204,966	684,675	825,206	576,192	311,724

Note: * represents either no data or not applicable.

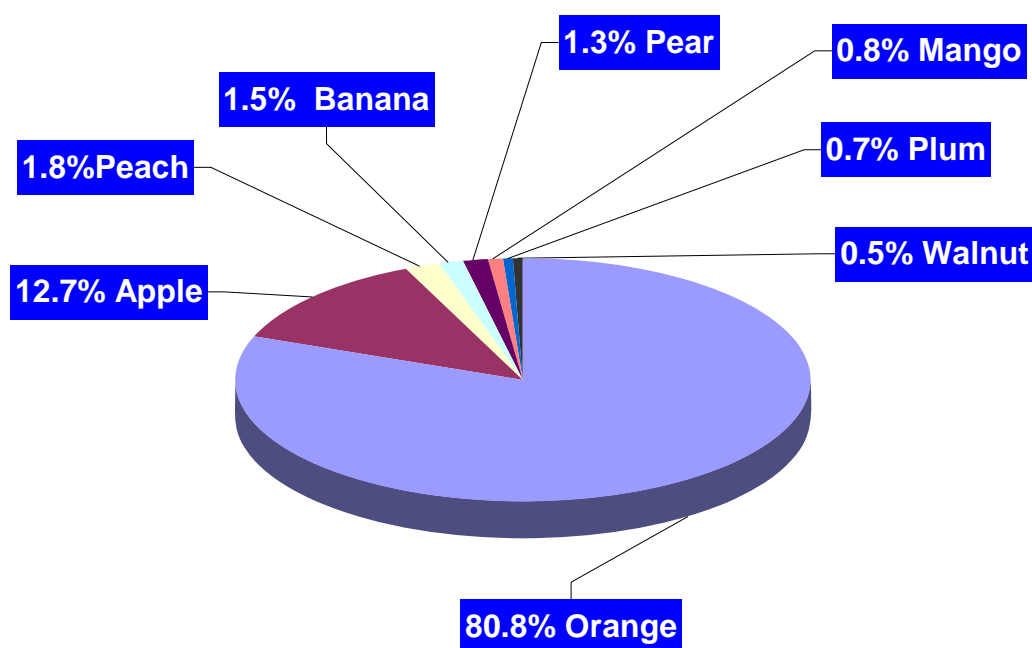


Figure 4: Percent contribution of various fruits to the total national fruits production

3. Livestock

Table 18 Livestock population, 2003

Dzongkhag	Local Cattle	Jersey	Brown Swiss	Yak	Horses	Sheep	Pigs	Poultry
Thimphu	4,523	1,129	*	4136	466	<100	410	729
Paro	9,092	3,559	<100	694	836	*	2,294	5,485
Ha	7,373	1,862	<100	1,402	647	*	195	675
Chhukha	22,065	2,651	<100	<100	242	214	2,344	3,358
Samtse	30,694	1,514	<100	*	160	589	1,109	3,468
Punakha	9,086	1,356	<100	*	187	*	989	1,964
Gasa	812	137	<100	2,889	677	<100	<100	550
Wangdue	15,440	1,499	1,269	622	425	617	1,408	1,593
Tsirang	11,073	3,492	<100	*	<100	248	1,112	3,800
Dagana	13,317	2,060	<100	*	<100	<100	1,489	2,769
Bumthang	5,866	829	2,274	1,444	396	1,013	*	1,121
Trongsa	10,790	1,048	445	*	304	248	121	980
Zhemgang	9,021	977	*	*	291	*	584	887
Sarpang	27,070	2,485	<100	*	<100	186	1,091	5,156
Lhuentse	11,699	2,261	566	*	507	205	1,162	3,096
Mongar	22,846	3,868	344	*	1,088	155	2,393	3,854
Trashigang	22,840	2,800	<100	7,832	772	1,583	1,334	2,745
Yangtse	10,922	1,268	*	*	283	*	490	742
Pemagatshel	4,568	1,681	*	*	<100	*	149	1,118
S/Jongkhar	19,543	3,012	*	*	898	<100	920	1,115
Bhutan	268,641	39,489	5,219	19,100	8,479	5,304	19,622	45,204

Note: * represents either no data or not applicable. The figures represented by <100 are added to the Bhutan figures.

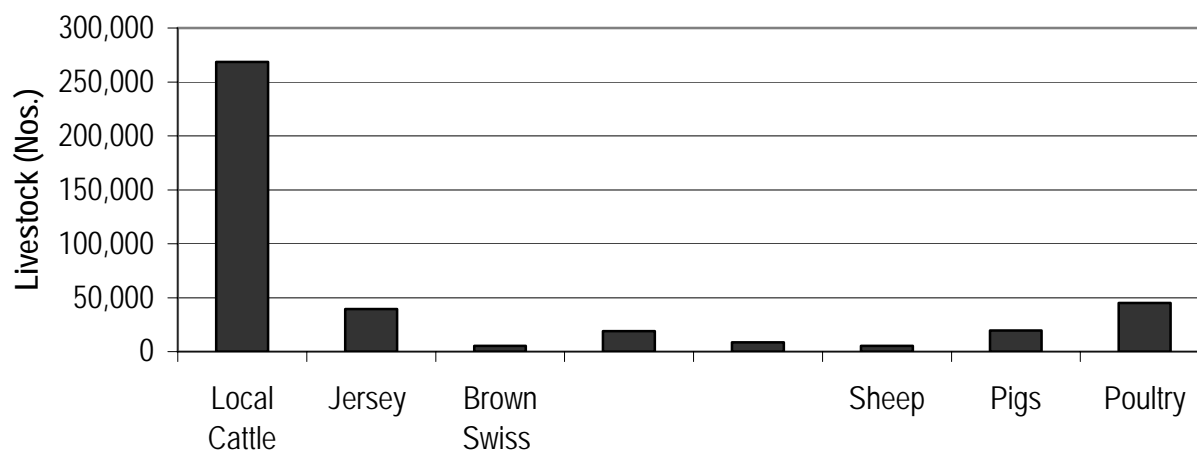


Figure 5: National livestock population

Table 19 Percentage of households owning different types of livestock, 2003

Dzongkhag	Local Cattle	Jersey	Swiss Brown	Yak	Horses	Sheep	Pig	Poultry
Thimphu	42	25	0	31	30	2	12	26
Paro	70	58	1	1	22	0	52	45
Ha	62	46	1	9	29	0	19	46
Chhukha	78	28	1	0	11	4	53	78
Samtse	81	9	0	0	4	23	23	79
Punakha	86	33	2	0	23	0	48	54
Gasa	65	31	3	27	65	0	14	52
Wangdue	81	29	11	4	25	6	47	50
Tsirang	78	43	1	0	8	10	28	73
Dagana	80	33	0	0	11	6	44	85
Bumthang	65	24	47	10	22	15	1	36
Trongsa	81	39	21	0	27	9	9	49
Zhemgang	72	22	0	0	19	0	20	51
Sarpang	81	24	1	0	12	11	26	68
Lhuentse	76	42	10	0	48	1	39	78
Mongar	84	43	3	0	36	2	42	72
Trashigang	56	19	1	6	15	3	12	36
Yangtse	66	20	0	0	21	0	12	20
Pemagatshel	46	31	0	0	4	0	6	16
S/Jongkhar	68	32	0	0	30	1	21	41
Bhutan	72	30	3	3	20	1	28	55

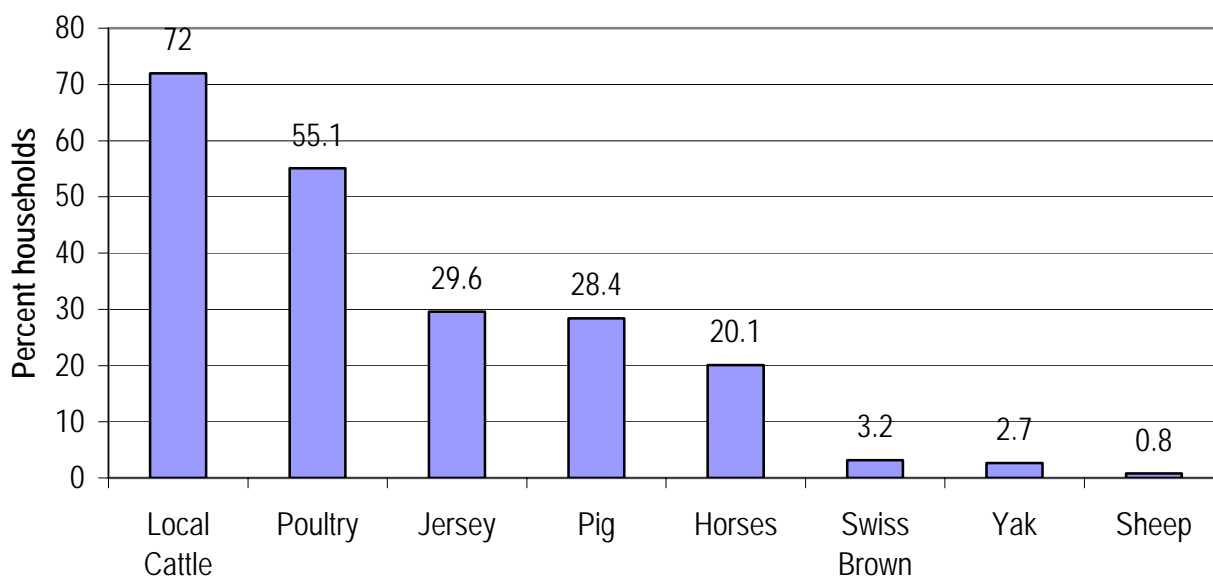


Figure 6: National level percentage of households with different types of livestock

4. Forests

Table 20 Collection of non-wood forest products, 2003

Dzongkhag	Bamboo (No)	Cane (No)	Mushroom (Kg)	FernTops (Kg)	Damburoo (Kg)	Lemon grass oil (Kg)	Chirata (Kg)	Peepla (Kg)
Thimphu	*	*	20,376	7,386	390	*	*	*
Paro	27,320	*	276,964	13,474	*	*	*	*
Ha	623	9,330	6,388	27,414	2,651	*	282	*
Chhukha	64,531	51,782	50,635	93,975	62,259	*	53	32
Samtse	1,263,555	82,667	391,117	1,188,090	109,367	*	8,164	*
Punakha	3,466	1,519	18,761	56,374	15,245	*	*	*
Gasa	*	*	1,956	2,803	292	*	*	*
Wangdue	127,591	27,257	94,740	193,076	27,180	*	2,201	324
Tsirang	46,633	42,736	65,340	141,657	4,632	*	1,404	221
Dagana	38,081	28,921	48,932	155,532	34,037	*	1,145	13,312
Bumthang	110,576	*	17,984	*	13,545	*	*	*
Trongsa	26,956	52,666	15,322	62,859	36,618	*	*	*
Zhemgang	88,957	22,578	92,133	109,421	39,211	*	12,844	*
Sarpang	68,026	39,396	57,309	167,187	16,503	*	619	*
Lhuentse	321,856	64,381	39,757	203,962	48,940	39,356	*	361
Mongar	81,043	14,732	32,583	44,327	17,582	13,569	*	10
Trashigang	100,153	9,006	52,130	68,059	19,144	29,542	*	*
Yangtse	36,046	1,347	33,893	66,275	54,062	2,944	*	*
Pemagatshel	*	*	23,968	14,559	339	*	*	*
S/Jongkhar	65,078	26,341	55,458	56,981	19,180	*	17,863	250
Bhutan	2,470,491	474,661	1,395,744	2,673,409	521,177	85,411	44,575	14,510

Table 21 Timber supplied for dzongs, monasteries, and others (July 2003-June 2004)

Organization	Type of Rates	Drashing (Nos)	Shinglep (Nos)	Chams (Nos)	T'shim (Nos)	Dangchung (Nos)	Poles (Nos)	Fencing post (Nos)	Sawn timber (cft.)	Flag pole (Nos.)	Firewood (T/L)	Firewood (M3)	Firewood (H/L)	Logs (cft.)	Other trees (Nos)	Firewood tress (Nos)	Other posts (Nos)	Lops & Tops (M3)
Dzongs & Monasteries	Subsidized	1,746	8	78	524	40	101	91	0	1,586	0	1,612	0	144,202	0	257	1,400	0
	Commercial	50	50	0	15	50	5,287	0	0	678	12,531	59	0	1,955	77	280	0	6,329
Rural & others	Free of royalty	676	150	7,260	4,709	4,396	0	120	0	465	638	0	0	132,737	408	0	0	4,221
Govt. & other organization	Commercial	3,234	19	1,108	1,528	1,353	13,206	17,467	1,799	5,340	10,364	5,818	587	174,643	93	1,553	1,327	44,565
Urban	Commercial	190	0	0	1,940	0	14,164	6,916	26,060	0	1,834	33	0	2,767,644	190	194	1,276	14,851
Total		5,896	227	8,446	8,716	5,839	32,758	24,594	27,859	8,069	25,367	7,522	587	3,221,181	768	2,284	4,003	69,966

Source: Department of Forests, 2004

5. Temperatures and Precipitations

Table 22 Mean monthly temperatures (degree centigrade) from 1985-2003

Dzongkhag	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Thimphu	5.5	7.5	10.5	14	17	20	20.5	20.5	19	15.5	11	7
Paro	6.5	8.5	11.5	14.5	17.5	19	21	20.5	18.5	15	10	7
Ha	3	4.5	6.5	9.5	13.5	16	17	17	15	11	7	4.5
Chhukha	10	10.5	13	16	18	20	19	19	18.5	16.5	14	11
Samtse	17.5	19.5	22.5	25	25.5	26.5	25.5	26.5	25.5	24	22	19
Punakha	11	14	16	20	22	24	24	24	24	22	16	13
Gasa	4.5	4.5	8	10.5	13	15.5	16	17	15.5	13	10	6
Wangdue	11	13.5	16.5	19.5	22	24.5	24	24	23	20.5	16	12.5
Tsirang	12.5	14	16.5	19.5	21	23	24	23.5	22	19.5	16.5	14
Dagana	9.5	10	13	16.5	18.5	20	20.5	20	20	18	14	11.5
Bumthang	4.5	6	8.5	11.5	14.5	17.5	18	18	16.5	12.5	8.5	5.5
Trongsa	9	10	13	15.5	17	19.5	21	20.5	19	16	12.5	10
Zhemgang	14	15.5	18.5	20	24	26	25.5	25.5	24.5	21.5	18.5	15.5
Sarpang	17.5	18.5	21.5	24.5	25.5	26.5	27	27	26.5	25	22	19
Lhuentse	10	11.5	15	16.5	19.5	21.5	22.5	22.5	21.5	18	14	11
Mongar	11	13	16	19	21	23	23	23	22	19	16	12.5
Trashigang	10.5	13	17	19	21	23	23.5	22.5	22	19.5	16.5	13
Yangtse	9	10	12.5	15.5	18	20.5	22	21.5	20.5	17	13	10
Pemagatshel	11	12	15	17	19	20.5	21.5	21	20.5	18	15.5	12.5
S/Jongkhar	18.5	20	22.5	24.5	26	27	28	27.5	27	24.5	22.5	19.5

Source: CoRRB, MoA, 2004

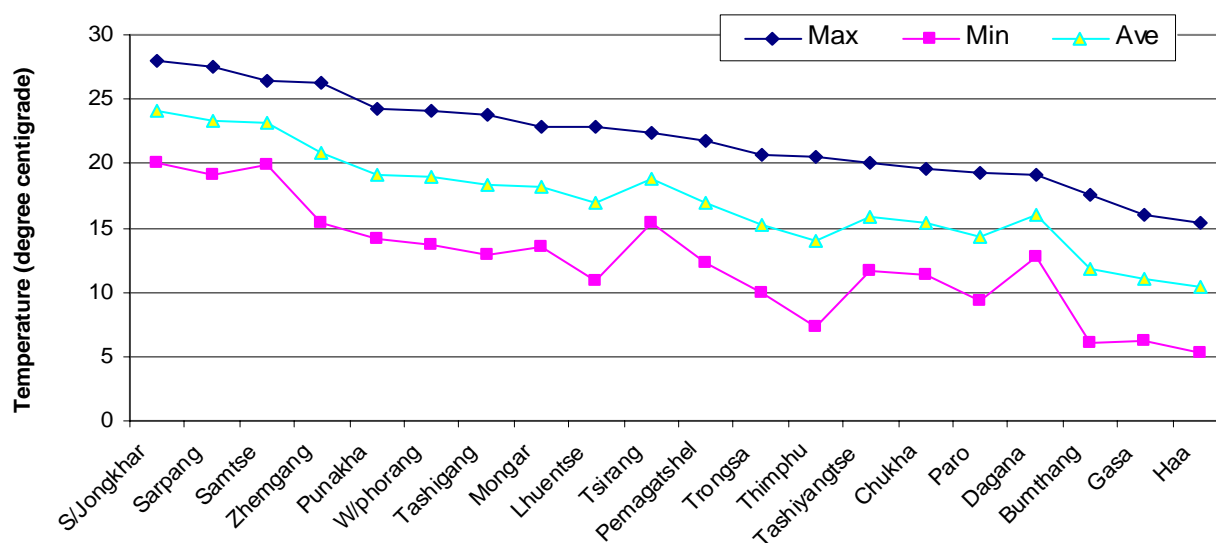


Figure 7: Maximum, minimum and average temperature

Table 23 Precipitations (mm) from 1985-2003

Dzongkhag	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Thimphu	1	5	25	39	57	142	212	113	87	26	2	9	718
Paro	12	2	30	29	56	115	172	140	118	48	22	12	758
Ha	21	30	51	64	83	156	201	182	146	69	4	6	1015
Chhukha	24	49	76	124	164	280	289	286	187	71	19	12	1581
Samtse	25	32	64	189	418	738	864	1008	660	246	39	9	4292
Punakha	21	8	82	56	55	125	255	175	115	55	6	8	961
Gasa	12	39	91	121	231	312	482	415	290	160	45	30	2228
Wangdue	12	9	17	45	53	105	143	154	90	30	10	6	676
Tsirang	1	13	24	45	106	388	533	275	157	41	2	6	1590
Dagana	17	47	44	120	231	378	431	983	662	104	19	11	3048
Bumthang	7	10	29	50	83	126	141	137	94	53	8	6	745
Trongsa	18	34	50	91	145	206	230	224	163	71	13	8	1255
Zhemgang	4	15	71	43	142	381	501	495	223	78	0	2	1956
Sarpang	23	23	58	175	392	841	1119	1261	691	334	59	19	4995
Lhuentse	21	14	36	74	108	105	146	177	100	46	5	6	839
Mongar	9	11	35	57	92	143	205	192	88	52	7	4	895
Trashigang	22	27	44	72	102	223	278	240	118	70	3	4	1203
Yangtse	12	26	38	92	131	176	222	237	175	64	18	6	1198
Pemagatshel	18	34	120	119	189	341	454	352	185	122	45	21	2000
S/Jongkhar	37	52	92	161	328	625	559	478	453	197	13	11	3005

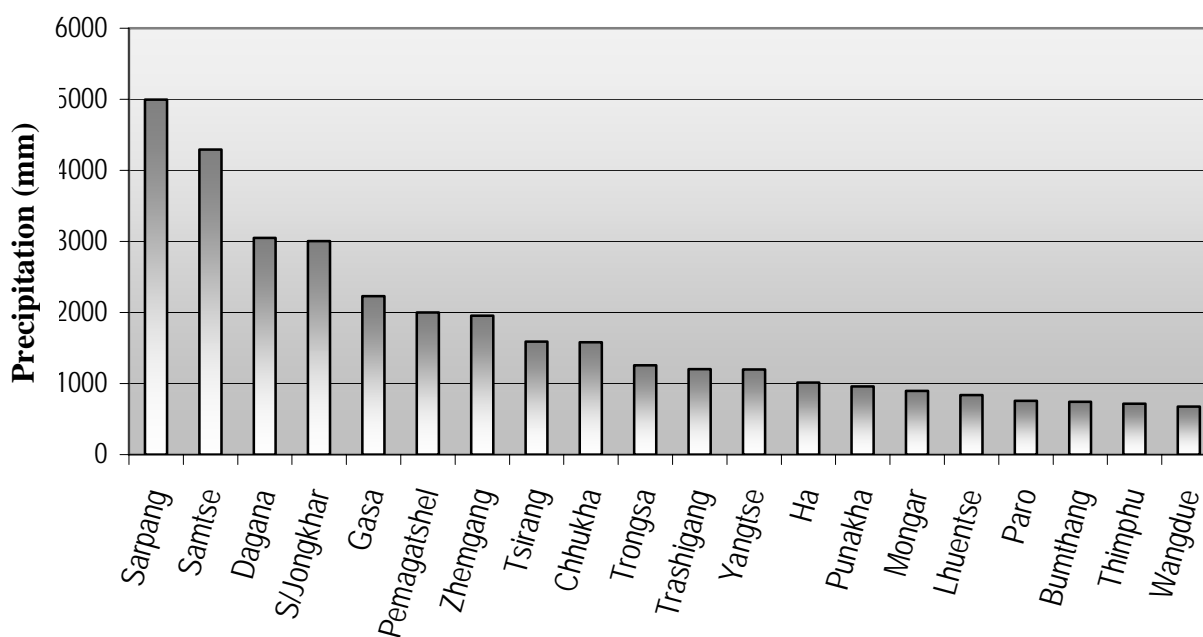
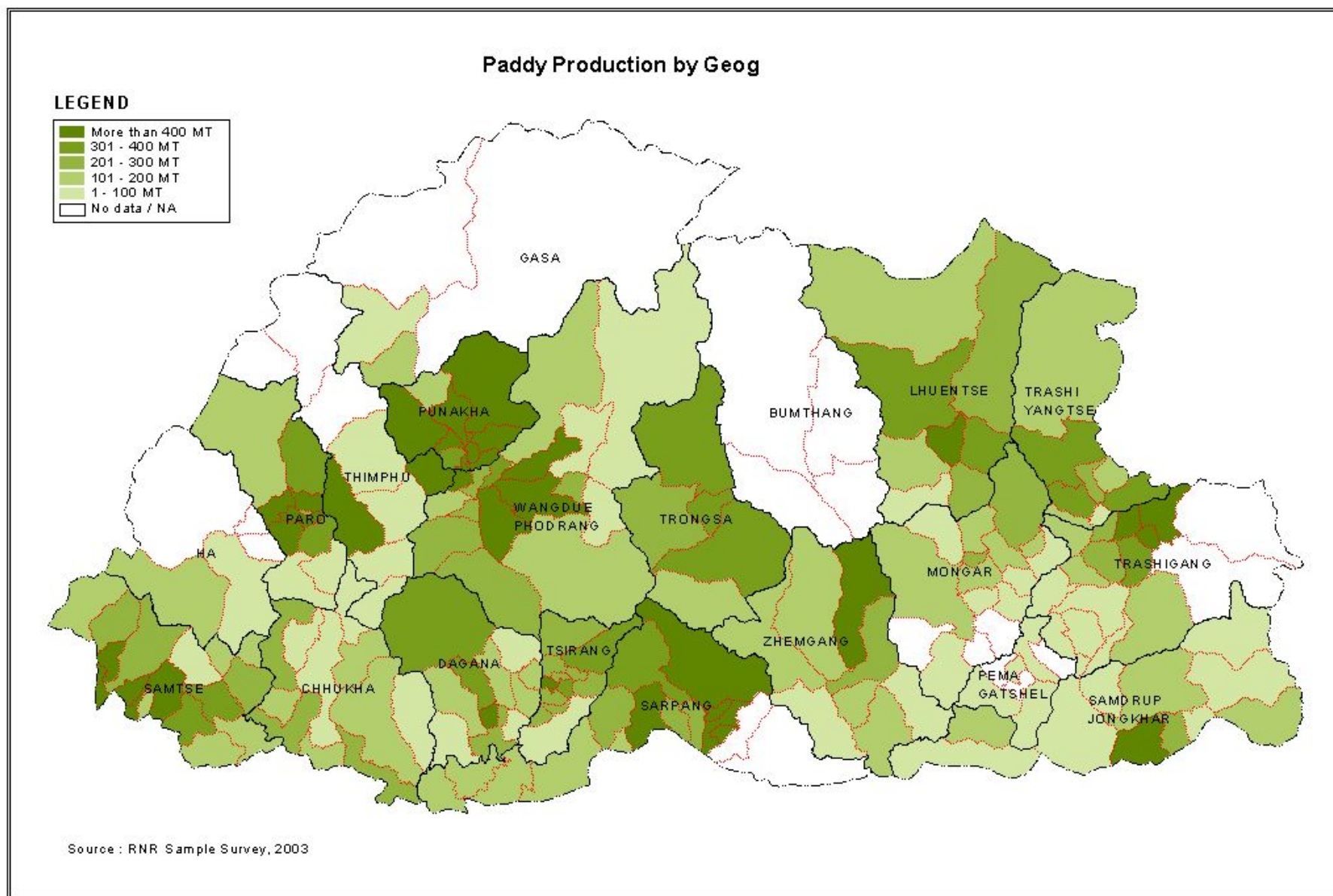
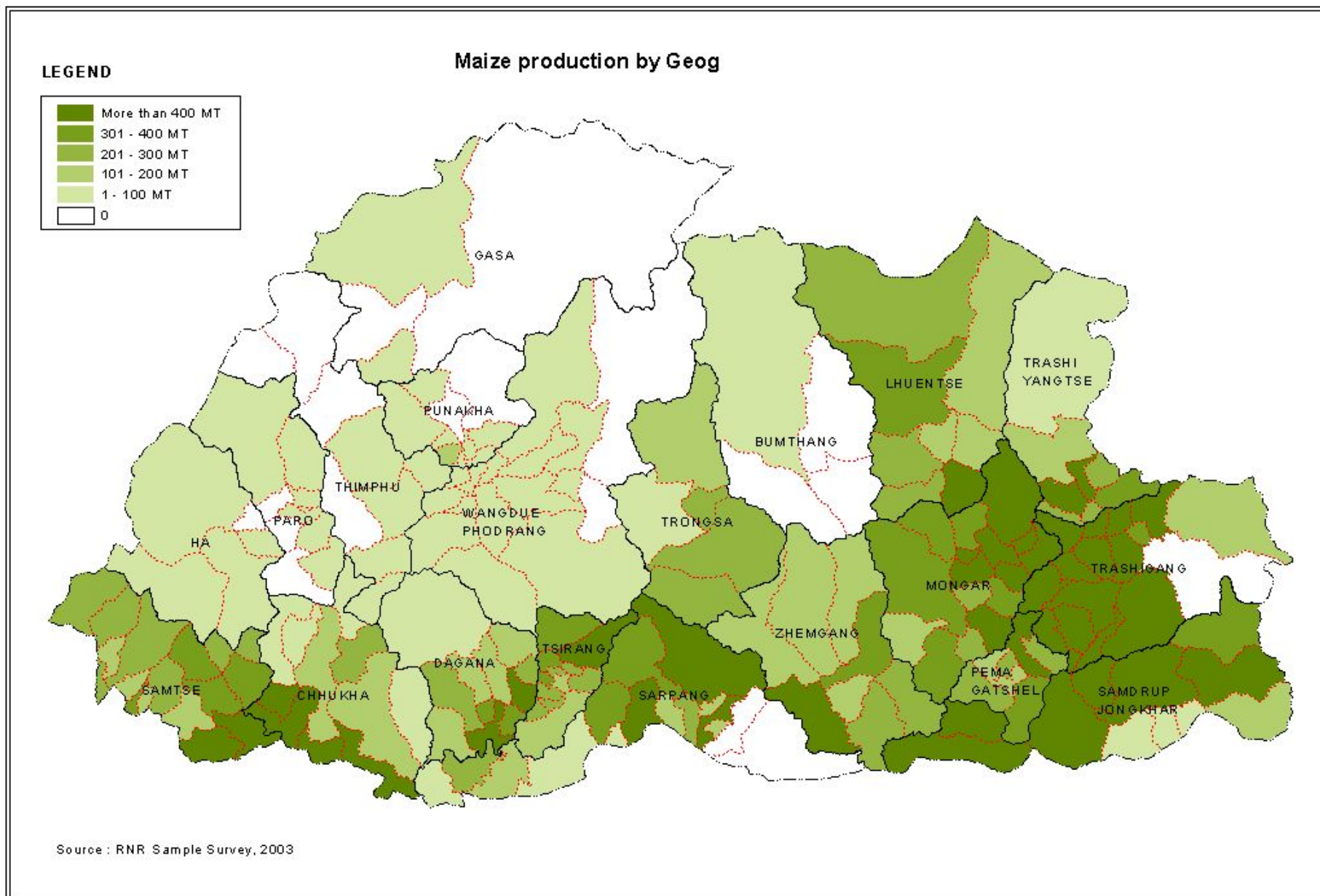
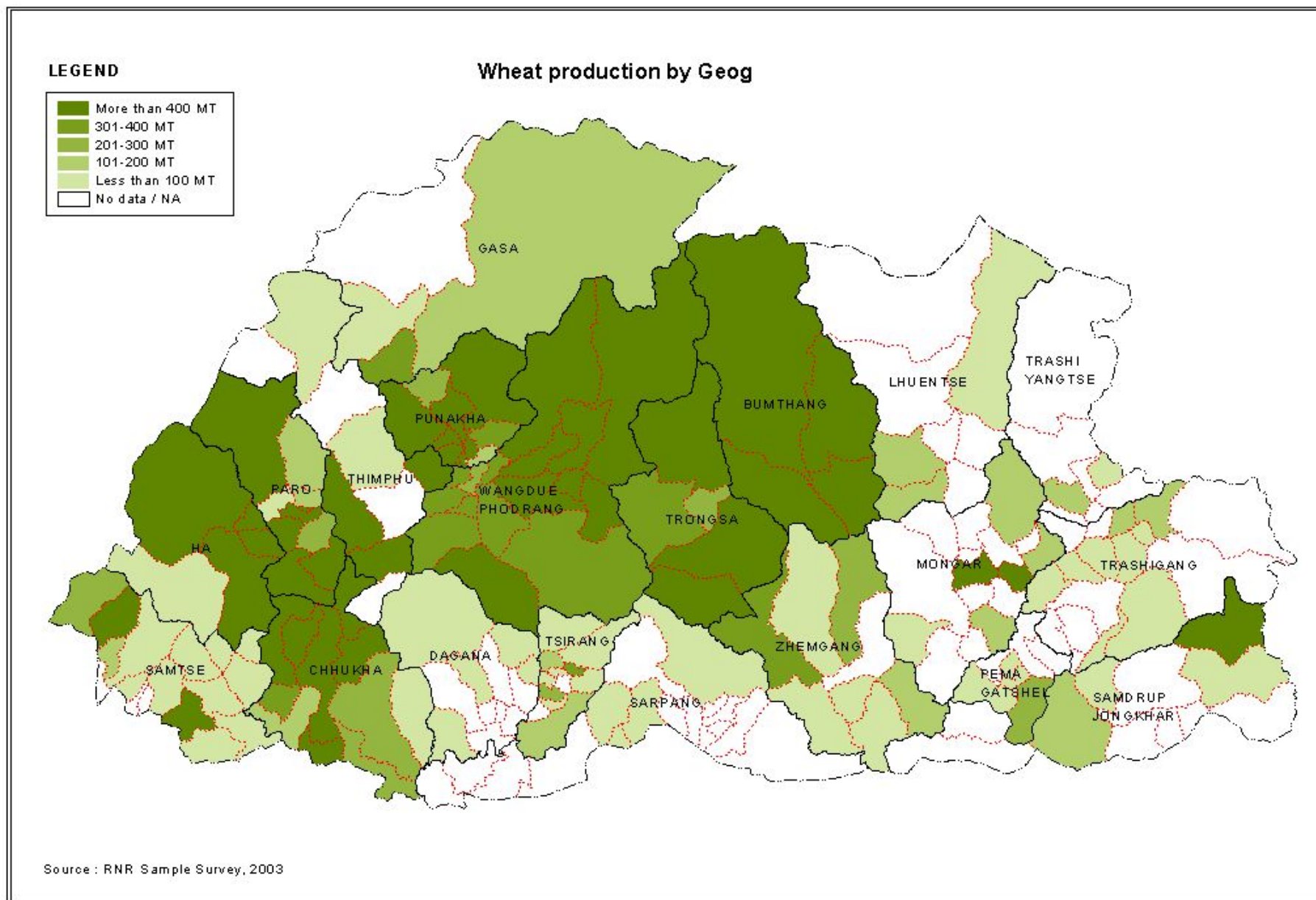


Figure 8: Total precipitation (mm)

Annex: Thematic maps

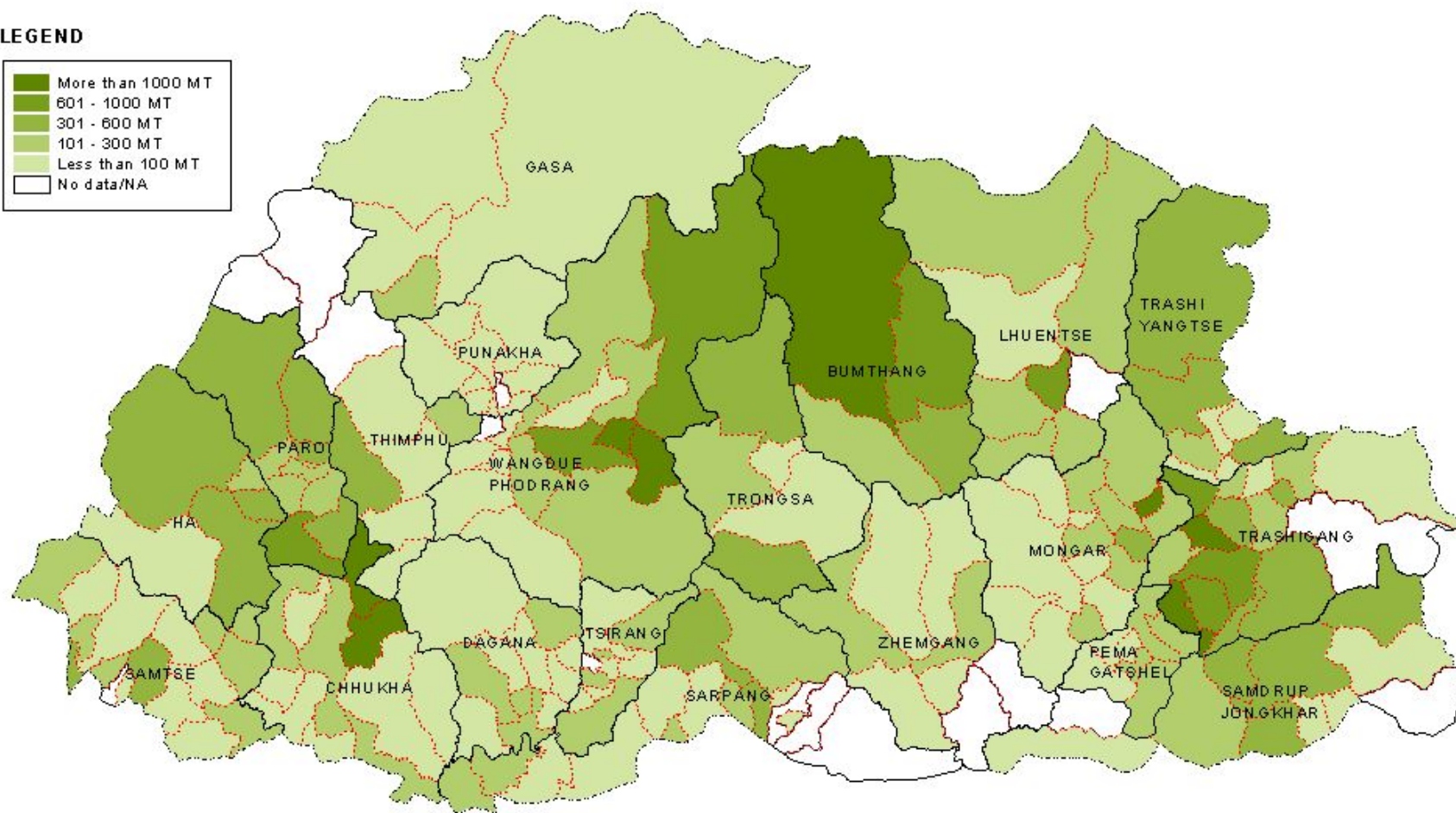
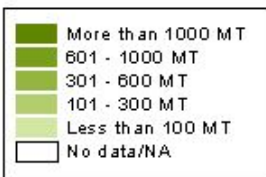






Potato production by Geog

LEGEND



Source : RNR Sample Survey, 2003

