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དཔལ་ལྡན་འབྲུག་གཞུང་། ཐིམ་ཕུ།

DEPARTMENT OF AGRICULTURE
MINISTRY OF AGRICULTURE AND FORESTS
ROYAL GOVERNMENTOF BHUTAN
TRASHICHHODZONG: THIMPHU

Foreword

The publication contains the data on the agricultural area, yield and production levels and administrative data that are of immediate concerns to the sector. There are two Volumes: Volume I deals with the data aggregated at national and Dzongkhag level and Volume II with data at the geog level.

We hope that the data in this publication will provide with a better understanding of the sector in order to make informed decisions and develop focussed programmes particularly those that aim for the rural communities. We do not claim that the data are as accurate as they should be and hope to provide better and more data on the sector in the subsequent annual publications.

The Department of Agriculture would like to acknowledge the support and cooperation received from Dzongkhag Administration and agencies in bringing out this publication. We would like to offer our deep appreciation to National Statistics Bureau for sparing the staff and for providing the required guidance in the field to conduct the sample survey, analysis and tabulation.

Lastly, I congratulate my colleagues of the Department of Agriculture and Information Management Section who took the lead role for successfully bringing out this publication. Their efforts will go a long way in enhancing the living standard of the rural communities.

CHENCHO NORBU
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Date: 23 July 2010

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1 Introduction

The annual agriculture sample survey was initiated since 2004. Since then the annual publication endeavors to presents comprehensive information on area, production and yield of principle crops viz: food-grains, oil seeds, pulses and spices, and horticultural crops. The publication comprises of two Volumes, Volume I and Volume II. Volume I represents aggregated information at the Dzongkhag and Volume II at the geog level.

Further, the publications also include administrative and secondary data from agencies. Unlike in the past this year we have included the food self sufficiency and coping mechanisms as reported by the respondents in 2009.

During the survey period, the production of cereals Maize and others crops recorded low compared to past years. This is mainly attributed to crops destroyed by wind storm and others factors.

2 Objectives

The objectives of the survey are:

- To establish reliable information on crop production and land use for planning and monitoring of agriculture development programmes.
- The immediate objective is to generate data needed for preparation of the plans, programs and to assess the achievements.
- Prepare time series data of Land use and agriculture production trend.
- Provide baseline data for monitoring of millennium development goals (MDGs) particularly poverty and food security situations

3 Organization of the Survey

The survey focussed on the rural farming household. Information Management Section under Department of Agriculture took lead in the conceptualization, preparing of questionnaires and co-ordinating the sample survey. All attempts have been made to cover 205 geogs however, due to unavoidable circumstances the annual survey for Shaba geog in Paro Dzongkhag was missing or reported as non responses by extension agent. The extension staff collected the data by using the set of questionnaire from December 2009 to February 2010. The questionnaires contain information on Land use status, Area and production of Cereals, Oilseeds and spices, Pulses, Tree crops, Vegetables, Accessibility and Food self sufficiency and coping mechanisms.

4 Survey Methodology

Sampling design

The survey adopted Linear Systematic Sampling to select the rural farming households. It consists of drawing the sample, unit by unit, giving equal probability of selection to every unit in the population at each draw. The 10 and 30 percent sample was applied to all the Geogs irrespective of the sizes and economic activities undertaken.

Sampling Units and Sampling Frames

All the 205 Geogs in the country served as the domain for the sample survey. All the Geogs were included in the sample survey in order to cover different ecological resources endowment, and development stages. A household is the lowest sampling unit. The household lists for each Geog served as the sample frame from which a 10 - 30 percent sample was chosen for interview. The survey adopted Linear Systematic Sampling to select the sample households. The 10 – 30 percent sample was applied depending on the total numbers of the rural households in the geogs. As per the recommendation of the National Statistics Bureau we have applied 10 percent sample that has more than 300 households and 30 percent for less than 300 households respectively. This is to get better estimates and minimize standard errors.

Sampling Procedures

The IMS, DoA in consultation with the DAOs and extension agents selected the sample households during the survey briefing. The household samples were drawn by applying Linear Systematic Sampling from household lists maintained and updated annually by the extension agents. This selected sample list was distributed to the enumerators for identification and interview.

5 Field Operation

The source of data actually begins from the enumeration; a mistake committed at the enumeration stage is a mistake that will have a greatest impact on the quality of the final data. In order to bring down the field enumeration errors to as minimum level as possible, day long briefing to Agriculture extension staff, Astt. DAO, DAO were conducted in their respective Dzongkhags to eradicate on the following topics to avoid data collection problems and discrepancies at the time of compilation.

- The purpose and objective of the annual survey
- The structure of the questionnaire and the logic behind.

- Familiarize with the concepts and terms used in the questionnaire.
- Questioning very clearly without changing its original meaning.
- To have patience and tolerance with respondents.
- To perform the duties with honesty, diligence and sincerity.
- To carry out the interview as planned and instructed by the supervisors or the coordinators.
- To submit the completed questionnaires to the supervisors for necessary checking

6 Method of data collection

The geog Agriculture extension agent conducted enumeration by visiting individual households and interviewed by administering a set of structured questionnaire. Generally, the respondents shall be the head of the household or someone in the family who knows about the farming activities of the household. The monitoring was done by ADAO and DAO during the survey and the validation of questionnaires after submission of questionnaires to Dzongkhag office. The data inconsistencies observed were removed during the validation processes.

7 Time reference

The annual agriculture survey 2009 has captured all agricultural areas and productions between January 2009 and December 2009. The enumeration period was from December 2009 to February 2010.

8 Data processing, entry, analysis and publication.

All the 20 Dzongkhags ADAO/ Dzongkhag Extension Officer were called to Paro with survey questionnaires for data entry in March 2010. The data entry was done in CSPro database and analyze and tabulation in SPSS. However, due to time constraints they could not analysis the Meta data. This was done by IMS, DoA in consultation with National Statistics Bureau. All efforts were made to verify and validate the data and analysis before publication with dzongkhags Agriculture authorities, Departments and NSB.

9 Survey coverage and response rates.

The survey covered 10,434 rural agriculture farming households out of 10,689 sampled households. The non responses were 2.5 percent in 2009 excluding Shaba geog in Paro Dzongkhag. We have applied the appropriate weights as per the sample selection scheme. The estimated total rural agriculture households for 2009 were 67,177.

10 Major constraints in Agriculture data

One of the major problems related to agriculture statistics is that the information provided by the farmer is based on their memory, as there is no tradition of keeping farm records. Furthermore, some farmers may be reluctant to provide correct information on e.g. land holdings and cash crop production due to fear of taxation.

Another key constraint is the fact that many farmers still use local measurement units that differ from place to place. Instead of reporting in Kg and Acre they may report in langdo, bags, baskets, etc. As a result, it not only poses difficulties in compilation but also affects the quality of data in terms of area and production.

In order to frame the sample list it is necessary to know how many households are registered in the Geogs and farming households. But these data in some Dzongkhags have been very difficult to get access to and some are not updated. Further, information sharing on this is not timely.

Table 1: Percent of rural household normal walking distance from nearest motor – road

Dzongkhag	Less than 1 hour	1 to < 3 hours	3 to < 6 hours	6 hours to Less than 1 day	One day and above
Bumthang	94.17	4.92	0.91	0.00	0.00
Chukha	34.58	25.55	10.19	11.29	18.39
Dagana	49.50	27.18	15.72	5.19	2.41
Gasa	22.56	16.05	0.00	0.00	61.40
Haa	69.81	4.14	0.00	0.00	26.05
Lhuntse	40.30	21.71	15.79	13.09	9.11
Monggar	36.59	22.01	18.59	9.54	13.27
Paro	91.69	6.99	0.39	0.70	0.23
Pemagatshel	35.92	10.80	24.49	10.86	17.93
Punakha	84.21	14.67	0.82	0.31	0.00
Samdrupjongkhar	19.09	35.02	12.94	15.42	17.53
Samtse	38.70	24.07	15.56	5.09	16.59
Sarpang	67.26	18.29	4.24	0.58	9.64
Thimphu	82.68	3.42	0.16	0.00	13.74
Trashigang	56.69	16.43	9.15	2.14	15.59
Trashiyangtse	35.76	37.60	20.93	3.14	2.57
Trongsa	63.84	15.05	10.90	10.21	0.00
Tsirang	46.47	32.35	15.73	5.37	0.08
Wangdue	54.95	27.69	12.69	2.78	1.89
Zhemgang	34.00	4.60	10.40	23.64	27.36
Average	**52.94**	**18.43**	**9.98**	**5.97**	**12.69**

Table 2: Total household members' age wise (Nos) living and working on the farm and stayed more than 6 months regardless of the relationship in 2009.

Dzongkhag	0 - 6 yrs male	0 - 6 yrs Female	7 - 14 yrs male	7 - 14 yrs Female	15 - 64 yrs male	15 - 64 Female	More than 64 Male	More than 64 Female
Bumthang	483	720	890	770	1,826	2,523	347	307
Chukha	1,121	993	1,857	1,611	6,343	6,538	858	777
Dagana	1,455	1,139	2,408	2,020	6,347	7,131	693	504
Gasa	144	130	241	311	637	701	47	60
Haa	246	296	551	507	1,881	2,163	398	312
Lhuntse	783	650	1,253	1,285	3,473	4,968	621	655
Monggar	2,254	2,427	3,274	3,031	9,450	11,396	1,645	1,446
Paro	1,216	1,140	2,419	2,010	6,709	8,062	1,095	1,255
Pemagatshel	792	645	1,027	1,320	4,938	6,676	793	855
Punakha	1,531	1,221	2,198	2,147	6,666	7,174	1,248	1,318
Samdrupjongkhar	1,304	1,624	2,123	2,024	7,102	7,730	697	681
Samtse	2,469	2,155	3,307	3,035	15,764	15,952	2,914	1,410
Sarpang	1,760	1,360	2,106	1,954	8,107	9,939	824	673
Thimphu	656	403	1,103	1,154	3,267	3,339	346	287
Trashigang	1,710	1,865	3,478	3,715	11,414	13,175	1,489	1,626
Trashiyangtse	766	833	1,653	1,857	4,377	4,964	571	455
Trongsa	925	854	1,884	1,687	4,203	3,822	701	666
Tsirang	909	862	2,515	2,517	6,523	7,196	786	793
Wangdue	1,759	1,751	1,994	1,977	6,840	9,601	1,358	1,254
Zhemgang	746	717	898	978	3,798	4,654	508	647
Total	**23,027**	**21,785**	**37,179**	**35,911**	**119,668**	**137,704**	**17,940**	**15,983**

Table 3: Paddy harvested area (acres), Production in (MT) and Yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	28	27	977
Chukha	1,752	1,581	902
Dagana	3,967	3,163	797
Gasa	166	197	1,185
Haa	97	92	945
Lhuntse	2,216	3,287	1,483
Monggar	1,420	1,649	1,161
Paro	4,686	9,027	1,926
Pemagatshel	125	96	768
Punakha	8,518	12,981	1,524
Samdrupjongkhar	4,173	4,024	964
Samtse	7,547	6,266	830
Sarpang	5,108	4,157	814
Thimphu	650	1,054	1,621
Trashigang	2,198	3,124	1,422
Trashiyangtse	1,477	1,656	1,121
Trongsa	2,135	2,176	1,019
Tsirang	5,640	4,255	754
Wangdue	5,437	5,837	1,074
Zhemgang	1,267	1,117	882
Total	**58,609**	**65,763**	1,122

Table 4: Maize harvested area (acres), Production in (MT) and Yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	17	12	738
Chukha	4,314	3,163	733
Dagana	7,515	4,738	630
Gasa	3	3	969
Haa	254	182	716
Lhuntse	2,563	2,873	1,121
Monggar	8,855	11,625	1,313
Paro	72	123	1,700
Pemagatshel	3,482	3,283	943
Punakha	492	441	895
Samdrupjongkhar	5,613	4,346	774
Samtse	10,854	8,624	795
Sarpang	5,527	3,403	616
Thimphu	5	4	876
Trashigang	6,630	7,065	1,066
Trashiyangtse	1,930	2,236	1,159
Trongsa	2,169	1,860	858
Tsirang	6,630	3,829	577
Wangdue	452	323	715
Zhemgang	3,226	3,028	939
Total	**70,603**	**61,161**	**866**

Table 5: Wheat harvested area (acres), Production in (MT) and Yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	760	338	445
Chukha	410	215	524
Dagana	90	40	448
Gasa	107	54	505
Haa	725	325	448
Lhuntse	19	9	454
Monggar	79	31	390
Paro	804	512	637
Pemagatshel	37	10	280
Punakha	1,309	577	441
Samdrupjongkhar	106	27	259
Samtse	354	167	473
Sarpang	22	4	203
Thimphu	176	112	636
Trashigang	79	76	959
Trashiyangtse	39	21	545
Trongsa	635	361	569
Tsirang	104	40	379
Wangdue	1,676	666	397
Zhemgang	177	93	526
Total	**7,709**	**3,679**	**477**

Table 6: Barley harvested area (acres), Production in (MT) and Yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	450	162	361
Chukha	71	28	399
Dagana	38	11	293
Gasa	88	44	509
Haa	48	28	570
Lhuntse	15	5	363
Monggar	2,073	945	456
Paro	**128**	**150**	1,175
Pemagatshel	46	27	582
Punakha	33	13	406
Samdrupjongkhar	228	89	391
Samtse	76	36	475
Sarpang	7	5	657
Thimphu	29	7	244
Trashigang	735	411	559
Trashiyangtse	32	17	523
Trongsa	324	172	530
Tsirang	16	7	433
Wangdue	422	193	457
Zhemgang	97	47	488
Total	**4,956**	**2,398**	**484**

Table 7: Finger Millet harvested area (acres), Production in (MT) and Yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Chukha	1,046	395	378
Dagana	1,042	318	305
Haa	164	64	393
Lhuntse	91	64	698
Monggar	78	26	332
Paro	14	9	631
Pemagatshel	161	71	439
Punakha	4	3	880
Samdrupjongkhar	241	78	324
Samtse	2,514	974	388
Sarpang	1,624	779	480
Trashigang	88	39	444
Trashiyangtse	389	337	866
Trongsa	45	9	197
Tsirang	882	266	301
Wangdue	71	29	401
Zhemgang	135	75	556
Total	**8,587**	**3,535**	**412**

Table 8: Foxtail Millet harvested area (acres), Production in (MT) and Yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Chukha	90	41	460
Dagana	73	25	347
Haa	6	2	361
Lhuntse	10	6	603
Monggar	57	17	300
Paro	29	40	1,389
Pemagatshel	463	222	479
Samdrupjongkhar	137	58	425
Samtse	358	120	337
Sarpang	42	24	572
Trashigang	22	8	364
Trashiyangtse	65	56	863
Trongsa	2	0	100
Tsirang	13	3	219
Zhemgang	168	73	434
Total	**1,534**	**696**	**454**

Table 9: Sweet buckwheat harvested area (acres), Production in (MT) and Yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	446	150	337
Chukha	616	354	575
Dagana	352	158	450
Haa	280	97	346
Lhuntse	5	0	88
Monggar	399	125	312
Paro	22	15	680
Pemagatshel	268	90	336
Punakha	29	15	515
Samdrupjongkhar	1,047	388	370
Samtse	622	223	359
Sarpang	277	73	263
Trashigang	443	141	318
Trashiyangtse	21	14	641
Trongsa	428	251	586
Tsirang	148	37	251
Wangdue	71	27	374
Zhemgang	129	82	641
Total	**5,603**	**2,240**	**400**

Table 10: Bitter Buckwheat harvested area (acres), Production in (MT) and Yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	457	156	340
Chukha	247	120	484
Dagana	217	69	319
Haa	356	145	407
Lhuntse	3	1	374
Monggar	192	62	326
Paro	104	171	1,652
Pemagatshel	306	94	307
Punakha	131	57	438
Samdrupjongkhar	114	50	438
Samtse	181	65	360
Sarpang	33	9	268
Trashigang	169	98	579
Trashiyangtse	16	7	442
Trongsa	436	171	391
Tsirang	48	8	169
Wangdue	749	250	334
Zhemgang	162	85	524
Total	**3,923**	**1,619**	**413**

Table 11: Bean Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	24	11	465
Chukha	130	142	1,087
Dagana	174	63	362
Gasa	4	2	534
Haa	21	21	1,001
Lhuntse	73	94	1,299
Monggar	386	417	1,081
Paro	99	85	860
Pemagatshel	115	58	507
Punakha	245	328	1,341
Samdrupjongkhar	119	90	759
Samtse	154	74	480
Sarpang	107	53	493
Thimphu	13	20	1,524
Trashigang	143	85	598
Trashiyangtse	136	50	370
Trongsa	49	32	649
Tsirang	123	50	402
Wangdue	94	90	956
Zhemgang	63	56	890
Total	**2,272**	**1,823**	802

Table 12: Rajma Bean Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Chukha	50	27	532
Dagana	269	153	571
Lhuntse	3	2	652
Monggar	252	100	397
Pemagatshel	71	29	409
Samdrupjongkhar	150	66	442
Samtse	46	25	542
Sarpang	103	33	321
Trashigang	283	83	294
Trashiyangtse	4	4	979
Tsirang	156	48	310
Wangdue	5	4	783
Zhemgang	3	2	529
Total	**1,393**	**576**	413

Table 13: Mung Bean Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Chukha	25	9	356
Dagana	116	21	182
Lhuntse	3	1	266
Monggar	196	44	227
Pemagatshel	42	21	497
Samdrupjongkhar	102	44	431
Samtse	17	10	554
Sarpang	91	22	239
Trashigang	42	23	542
Trashiyangtse	80	23	294
Trongsa	1	1	491
Tsirang	218	29	132
Zhemgang	8	5	671
Total	**942**	**253**	269

Table 14: Other Pulses Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Chukha	110	42	379
Dagana	335	33	97
Lhuntse	21	5	241
Monggar	226	54	241
Pemagatshel	39	17	432
Punakha	10	9	856
Samdrupjongkhar	107	52	488
Samtse	52	24	455
Sarpang	55	12	214
Trashigang	89	25	278
Trashiyangtse	9	2	199
Trongsa	1	0	395
Tsirang	157	25	161
Wangdue	10	6	635
Zhemgang	22	12	529
Total	**1,243**	**317**	**255**

Table 15: Mustard Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	155	25	160
Chukha	342	107	313
Dagana	205	54	261
Haa	118	36	302
Lhuntse	45	23	518
Monggar	207	68	327
Paro	309	305	985
Pemagatshel	87	40	457
Punakha	671	165	246
Samdrupjongkhar	499	112	224
Samtse	608	229	377
Sarpang	536	115	215
Thimphu	29	5	186
Trashigang	354	145	411
Trashiyangtse	57	11	193
Trongsa	286	50	176
Tsirang	399	61	154
Wangdue	411	103	251
Zhemgang	251	87	346
Total	**5,570**	**1,741**	**313**

Table 16: Soya bean Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Area	Production	Yield
Chukha	18	7	396
Dagana	38	7	176
Lhuntse	138	37	270
Monggar	199	62	311
Paro	3	2	750
Pemagatshel	184	35	189
Punakha	5	4	880
Samdrupjongkhar	126	40	320
Samtse	38	14	377
Sarpang	13	4	330
Trashigang	414	87	210
Trashiyangtse	369	203	550
Tsirang	76	15	201
Wangdue	3	2	436
Zhemgang	42	26	629
Total	**1,667**	**546**	**328**

Table 17: Peas Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	8	14	1,810
Chukha	30	39	1,296
Dagana	21	9	409
Haa	81	71	874
Lhuntse	2	1	450
Monggar	75	49	647
Paro	141	213	1,509
Pemagatshel	20	16	766
Punakha	75	114	1,523
Samdrupjongkhar	57	25	441
Samtse	9	3	362
Sarpang	9	7	811
Thimphu	14	16	1,199
Trashigang	28	15	537
Trashiyangtse	17	16	919
Trongsa	4	3	753
Tsirang	83	28	337
Wangdue	45	37	838
Total	**719**	**676**	**939**

Table 18: Garlic Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	22	14	628
Chukha	54	15	282
Dagana	74	15	202
Gasa	2	1	359
Haa	12	5	388
Lhuntse	72	38	533
Monggar	331	108	327
Paro	12	18	1,511
Pemagatshel	83	29	354
Punakha	96	77	806
Samdrupjongkhar	77	33	426
Samtse	19	8	398
Sarpang	15	9	560
Thimphu	2	1	628
Trashigang	229	127	554
Trashiyangtse	146	65	448
Trongsa	68	17	250
Tsirang	37	10	261
Wangdue	79	36	456
Zhemgang	5	3	541
Total	**1,436**	**629**	**438**

Table19: Ginger Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Chukha	343	749	2,186
Dagana	129	39	306
Lhuntse	6	4	581
Monggar	53	21	386
Pemagatshel	45	25	560
Samdrupjongkhar	280	563	2,015
Samtse	930	1,718	1,848
Sarpang	523	513	981
Trashigang	38	13	349
Trashiyangtse	15	8	545
Trongsa	3	1	410
Tsirang	127	72	567
Wangdue	25	14	567
Zhemgang	27	23	864
Total	**2,546**	**3,766**	**1,479**

Table 20: Cardamom Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Chukha	443	27	61
Dagana	673	25	36
Haa	431	29	68
Punakha	3	1	480
Samdrupjongkhar	11	3	272
Samtse	3,523	342	97
Sarpang	21	2	101
Trashigang	4	1	125
Trongsa	15	2	105
Tsirang	5	1	185
Total	**5,133**	**433**	84

Table 21: Asparagus Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	5	3	503
Chukha	3	1	194
Dagana	5	1	195
Haa	4	2	401
Lhuntse	3	1	314
Monggar	72	6	88
Paro	169	272	1,609
Punakha	11	4	340
Samdrupjongkhar	1	2	1,187
Thimphu	21	14	698
Trashigang	14	7	514
Trashiyangtse	18	4	232
Tsirang	36	1	19
Wangdue	11	7	652
Total	**374**	**325**	**868**

Table 22: Chili Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Area	Production	Yield
Bumthang	32	79	2,519
Chukha	126	265	2,093
Dagana	235	84	359
Gasa	22	24	1,085
Haa	31	35	1,115
Lhuntse	251	553	2,199
Monggar	842	1,252	1,487
Paro	972	2,131	2,191
Pemagatshel	139	93	670
Punakha	481	1,217	2,532
Samdrupjongkhar	269	175	651
Samtse	91	40	436
Sarpang	60	35	585
Thimphu	117	276	2,370
Trashigang	535	884	1,651
Trashiyangtse	443	494	1,114
Trongsa	290	393	1,356
Tsirang	175	107	610
Wangdue	435	608	1,397
Zhemgang	138	141	1,020
Total	5,686	8,887	1,563

Table 23: Cabbage Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	51	59	1,157
Chukha	42	124	2,976
Dagana	27	27	985
Gasa	14	8	604
Haa	18	46	2,565
Lhuntse	62	89	1,440
Monggar	187	316	1,689
Paro	146	352	2,417
Pemagatshel	38	29	768
Punakha	3	4	1,284
Samdrupjongkhar	47	44	944
Samtse	35	18	516
Sarpang	21	19	907
Thimphu	27	27	988
Trashigang	148	100	677
Trashiyangtse	59	104	1,761
Trongsa	80	90	1,133
Tsirang	58	52	894
Wangdue	86	231	2,703
Zhemgang	40	36	898
Total	**1,187**	**1,776**	**1,496**

Table 24: Cauliflower Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	5	10	2,156
Chukha	9	13	1,346
Dagana	15	7	453
Gasa	3	2	691
Haa	3	7	2,118
Lhuntse	33	43	1,282
Monggar	81	66	818
Paro	4	9	2,016
Pemagatshel	10	5	483
Punakha	2	3	1,073
Samdrupjongkhar	22	14	661
Samtse	21	9	447
Sarpang	11	11	966
Thimphu	17	15	857
Trashigang	47	33	690
Trashiyangtse	32	46	1,422
Trongsa	24	17	717
Tsirang	21	15	720
Wangdue	28	28	998
Zhemgang	15	12	811
Total	**405**	**364**	**898**

Table 25: Carrot Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	8	11	1,276
Chukha	21	59	2,792
Dagana	4	3	686
Haa	6	8	1,431
Lhuntse	23	5	221
Monggar	44	25	559
Paro	24	49	2,005
Pemagatshel	5	23	4,774
Punakha	4	4	997
Samdrupjongkhar	3	2	797
Samtse	5	5	879
Sarpang	4	4	969
Thimphu	15	20	1,368
Trashigang	18	8	458
Trashiyangtse	7	5	667
Trongsa	13	11	845
Tsirang	3	2	586
Wangdue	27	31	1,125
Zhemgang	2	2	985
Total	**238**	**277**	**1,162**

Table 26: Radish Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Prodction	Yield
Bumthang	60	272	4,515
Chukha	107	167	1,560
Dagana	206	121	590
Gasa	22	27	1,261
Haa	76	181	2,376
Lhuntse	150	174	1,161
Monggar	391	561	1,435
Paro	101	253	2,496
Pemagatshel	189	296	1,565
Punakha	107	238	2,214
Samdrupjongkhar	196	266	1,353
Samtse	152	130	854
Sarpang	115	154	1,330
Thimphu	71	163	2,291
Trashigang	217	459	2,111
Trashiyangtse	80	163	2,036
Trongsa	125	255	2,047
Tsirang	251	222	886
Wangdue	432	1,405	3,252
Zhemgang	118	167	1,412
Total	**3,167**	**5,672**	**1,791**

Table 27: Turnip Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	94	514	5,468
Chukha	69	190	2,754
Dagana	9	12	1,275
Gasa	11	14	1,356
Haa	393	2,418	6,153
Lhuntse	2	4	1,748
Monggar	16	19	1,144
Paro	253	606	2,395
Pemagatshel	7	7	985
Punakha	84	96	1,147
Samdrupjongkhar	3	8	2,606
Samtse	3	2	711
Sarpang	1	0	688
Thimphu	68	133	1,968
Trashigang	8	10	1,213
Trashiyangtse	4	5	1,353
Trongsa	38	70	1,842
Tsirang	3	3	729
Wangdue	1,071	5,253	4,904
Zhemgang	2	2	1,052
Total	**2,140**	**9,368**	**4,377**

Table 28: Tomato Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	24	89	3,653
Chukha	10	8	793
Dagana	8	5	690
Haa	8	39	4,651
Lhuntse	9	5	592
Monggar	17	19	1,104
Paro	40	111	2,782
Pemagatshel	4	2	539
Punakha	32	54	1,681
Samdrupjongkhar	21	11	514
Samtse	49	26	517
Sarpang	26	34	1,290
Thimphu	3	16	5,423
Trashigang	12	29	2,421
Trashiyangtse	33	34	1,015
Tsirang	12	7	594
Wangdue	30	58	1,932
Zhemgang	20	18	882
Total	**359**	**564**	**1,569**

Table 29: Potato Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	998	4,042	4,049
Chukha	528	3,125	5,919
Dagana	213	292	1,375
Gasa	53	73	1,377
Haa	552	3,347	6,059
Lhuntse	229	557	2,428
Monggar	1,618	3,781	2,336
Paro	1,284	3,496	2,724
Pemagatshel	352	1,398	3,974
Punakha	123	284	2,299
Samdrupjongkhar	537	827	1,540
Samtse	188	154	821
Sarpang	89	101	1,126
Thimphu	537	1,735	3,233
Trashigang	1,420	3,687	2,597
Trashiyangtse	519	1,260	2,427
Trongsa	118	254	2,144
Tsirang	273	312	1,144
Wangdue	2,322	17,117	7,371
Zhemgang	201	319	1,587
Total	**12,156**	**46,161**	**3,798**

Table 30: Green leaves Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Acre	Production	Yield
Bumthang	22	30	1,374
Chukha	134	275	2,050
Dagana	149	129	869
Gasa	4	2	613
Haa	20	19	954
Lhuntse	67	63	940
Monggar	214	147	684
Paro	49	43	888
Pemagatshel	64	48	755
Punakha	71	108	1,532
Samdrupjongkhar	139	163	1,174
Samtse	228	319	1,394
Sarpang	152	163	1,074
Thimphu	28	57	2,036
Trashigang	110	93	843
Trashiyangtse	43	51	1,195
Trongsa	78	48	619
Tsirang	193	188	974
Wangdue	182	181	994
Zhemgang	87	95	1,089
Total	**2,034**	**2,224**	**1,093**

Table 31: Onion Bulb Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Area	Production	Yield
Bumthang	5	1	302
Chukha	189	37	199
Dagana	67	9	130
Gasa	1	1	562
Haa	0.3	0.1	463
Lhuntse	32	15	465
Monggar	133	55	411
Paro	4	8	1,842
Pemagatshel	26	6	217
Punakha	301	82	271
Samdrupjongkhar	61	29	471
Samtse	41	20	477
Sarpang	27	10	372
Thimphu	1	1	754
Trashigang	86	35	409
Trashiyangtse	63	19	299
Trongsa	8	3	323
Tsirang	29	5	156
Wangdue	57	39	685
Zhemgang	25	20	815
Total	**1,155**	**392**	**339**

Table 32: Egg Plant Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Area	Production	Yield
Chukha	15	11	739
Dagana	8	4	531
Gasa	3	2	769
Haa	1	3	3,471
Lhuntse	28	24	860
Monggar	52	50	952
Paro	21	40	1,897
Pemagatshel	22	18	820
Punakha	17	56	3,385
Samdrupjongkhar	470	17	37
Samtse	26	12	452
Sarpang	18	14	793
Thimphu	300	2	6
Trashigang	13	11	846
Trashiyangtse	118	37	309
Trongsa	52	44	845
Tsirang	4	3	707
Wangdue	33	36	1,107
Zhemgang	23	22	936
Total	**1,225**	**406**	**331**

Table 33: Broccoli Harvested area (acres), Production (MT) and yield (Kg/acre)

Dzongkhag	Area	Production	Yield
Bumthang	2	1	694
Chukha	49	5	111
Dagana	16	9	574
Gasa	0	0	547
Haa	35	1	32
Lhuntse	13	8	628
Monggar	40	28	708
Paro	7	8	1,109
Pemagatshel	2	1	316
Punakha	21	23	1,110
Samdrupjongkhar	7	7	948
Samtse	17	10	574
Sarpang	20	11	543
Thimphu	13	6	409
Trashigang	16	11	695
Trashiyangtse	22	7	334
Trongsa	15	9	578
Tsirang	22	13	594
Wangdue	72	16	226
Zhemgang	3	3	795
Total	**393**	**176**	**449**

Table 34: Other vegetables and crops Production (MT)

Dzongkhag	Pumkin	Cucumber	Squash	Gourds	Water melon
Bumthang	20	5	0	2	
Chukha	224	119	365	21	1
Dagana	510	116	246	14	
Gasa	3	10	0	0	
Haa	63	16	36	8	
Lhuntse	158	171	30	0	
Monggar	584	389	143	9	3
Paro	101	46	1	69	
Pemagatshel	393	154	185	5	
Punakha	257	399	67	6	
Samdrupjongkhar	372	237	102	47	
Samtse	428	150	622	57	
Sarpang	195	64	98	26	
Thimphu	43	27			
Trashigang	1,089	328	186	11	1
Trashiyangtse	381	173	91	7	
Trongsa	65	64	21	3	
Tsirang	260	184	574	17	
Wangdue	208	141	62	9	
Zhemgang	176	98	47	2	
Total	**5,532**	**2,889**	**2,875**	**310**	**4**

Table 35: Apple total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Bumthang	10,864	8,665	168	19
Chukha	4,221	3,811	73	19
Dagana	777	424	3,377	8
Gasa	33	3	0.07	20
Haa	28,930	22,442	517	23
Lhuntse	2,143	380	4,687	12
Monggar	10,053	2,688	89	33
Paro	193,965	154,458	4,457	29
Pemagatshel	1,090	390	5	13
Punakha	631	282	9	33
Samdrupjongkhar	341			
Thimphu	133,316	119,009	1,648	14
Trashigang	4,318	431	6	13
Trashiyangtse	875	477	9	20
Trongsa	127	30	1	40
Wangdue	3,416	2,282	36	16
Zhemgang	270	103	3	31
Total	395,372	315,875	15,086	48

Table 36: Mandarin total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Chukha	254,231	131,312	1,628	12
Dagana	376,124	232,614	6,507	28
Haa	1,738	1,277	20	16
Lhuntse	23,456	6,692	233	35
Monggar	92,364	36,604	1,504	41
Pemagatshel	537,474	297,364	4,006	13
Punakha	43,190	26,696	446	17
Samdrupjongkhar	272,601	123,852	3,371	27
Samtse	166,453	109,731	2,679	24
Sarpang	326,431	193,100	8,430	44
Trashigang	47,890	15,244	450	30
Trashiyangtse	33,512	9,691	433	45
Trongsa	9,684	2,856	112	39
Tsirang	245,345	158,889	8,750	55
Wangdue	28,805	19,390	312	16
Zhemgang	344,990	205,068	5,296	26
Total	**2,804,287**	**1,570,380**	**44,177**	**28**

Table 37: Mango total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Chukha	544	53	1	21
Dagana	3,443	838	50	60
Lhuntse	1,277	1,203	30	25
Monggar	7,716	2,922	49	17
Pemagatshel	3,090	1,190	44	37
Punakha	4,547	2,284	24	11
Samdrupjongkhar	3,302	625	14	22
Samtse	2,173	557	25	45
Sarpang	8,002	1,105	31	28
Trashigang	2,971	755	5	7
Trashiyangtse	479	43	0	8
Trongsa	90	53	0	9
Tsirang	2,394	774	30	39
Wangdue	1,467	637	4	6
Zhemgang	2,606	238	7	29
Total	**44,101**	**13,279**	**315**	24

Table 38: Pear total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Bumthang	183	110	4	33
Chukha	636	468	19	40
Dagana	1,731	1,311	197	150
Gasa	164	80	2	30
Haa	95	54	1	15
Lhuntse	2,232	1,192	51	43
Monggar	4,749	1,864	89	48
Paro	1,450	784	21	27
Pemagatshel	419	245	11	47
Punakha	3,737	2,264	52	23
Samdrupjongkhar	2,567	1,245	50	40
Samtse	1,590	1,062	43	40
Sarpang	1,350	933	95	101
Thimphu	153	123	4	31
Trashigang	4,832	1,844	59	32
Trashiyangtse	519	329	15	45
Trongsa	267	156	11	69
Tsirang	3,662	2,131	348	163
Wangdue	2,023	1,095	37	34
Zhemgang	114	44	1	22
Total	**32,472**	**17,334**	**1,109**	**64**

Table 39: Peach total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Bumthang	576	430	12	29
Chukha	957	715	25	35
Dagana	1,502	1,225	84	69
Gasa	126	78	3	41
Haa	613	428	10	24
Lhuntse	4,008	2,652	87	33
Monggar	7,666	5,685	284	50
Paro	2,868	2,034	51	25
Pemagatshel	3,064	2,130	54	25
Punakha	2,476	1,440	30	21
Samdrupjongkhar	4,740	3,374	157	46
Samtse	1,642	1,267	45	35
Sarpang	1,098	945	39	42
Thimphu	1,390	996	17	17
Trashigang	7,487	4,179	127	30
Trashiyangtse	2,661	2,207	77	35
Trongsa	837	566	23	40
Tsirang	1,558	1,065	45	42
Wangdue	2,537	2,035	55	27
Zhemgang	454	301	8	28
Total	**48,260**	**33,754**	**1,234**	37

Table 40: Plum total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Bumthang	283	170	7	44
Chukha	67	27	1	27
Dagana	734	535	27	50
Haa	74	67	2	28
Lhuntse	1,782	1,254	53	42
Monggar	2,983	1,871	93	50
Paro	304	227	6	27
Pemagatshel	1,248	958	31	33
Punakha	1,160	738	18	24
Samdrupjongkhar	886	513	20	39
Samtse	287	273	8	28
Sarpang	300	276	6	23
Thimphu	1,413	1,297	10	8
Trashigang	4,057	1,813	63	35
Trashiyangtse	422	294	20	69
Trongsa	379	265	12	46
Tsirang	1,381	948	29	31
Wangdue	651	533	21	40
Zhemgang	251	176	6	36
Total	**18,663**	**12,236**	**434**	**36**

Table 41: Walnut total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Bumthang	1,180	530	12	23
Chukha	961	77	1	17
Dagana	2,700	259	8	32
Haa	572	207	1	7
Lhuntse	1,866	707	15	21
Monggar	2,919	803	18	23
Paro	3,409	2,496	31	12
Pemagatshel	1,227	274	6	23
Punakha	4,772	1,192	27	23
Samdrupjongkhar	6,366	2,608	24	9
Samtse	61	20	1	25
Sarpang	2,099	142	2	12
Thimphu	1,293	826	16	19
Trashigang	7,436	2,366	41	17
Trashiyangtse	2,920	1,347	18	13
Trongsa	1,332	125	1	12
Tsirang	1,172	37	1	20
Wangdue	3,325	411	6	15
Zhemgang	973	284	6	20
Total	**46,582**	**14,711**	**236**	**16**

Table 42: Areca nut total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Chukha	67,701	39,376	279	7
Dagana	185,415	94,903	773	8
Monggar	352	192	1	6
Pemagatshel	21,175	4,739	34	7
Samdrupjongkhar	144,764	82,686	1,097	13
Samtse	521,978	176,728	2,420	14
Sarpang	750,610	183,624	1,708	9
Tsirang	699	236	2	9
Zhemgang	10,473	3,163	59	19
Total	**1,703,168**	**585,649**	**6,375**	**11**

Table 43: Guava total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Chukha	1,547	1,203	24	20
Dagana	4,551	2,439	75	31
Lhuntse	1,040	860	25	29
Monggar	3,889	3,129	114	36
Pemagatshel	4,133	3,055	52	17
Punakha	8,529	6,986	135	19
Samdrupjongkhar	4,470	3,496	77	22
Samtse	5,047	3,255	99	30
Sarpang	7,865	4,346	77	18
Trashigang	2,979	2,119	58	27
Trashiyangtse	937	753	31	41
Trongsa	1,367	1,157	22	19
Tsirang	4,609	3,548	74	21
Wangdue	4,576	3,606	79	22
Zhemgang	1,298	705	14	19
Total	**56,835**	**40,656**	**955**	23

Table 44: Persimmon total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Dagana	92	40	1	29
Gasa	13	7	0	8
Haa	35	35	0	4
Lhuntse	100	7	0	43
Monggar	708	254	8	30
Paro	413	323	11	33
Pemagatshel	50			
Punakha	2,026	1,602	45	28
Samdrupjongkhar	83	60	2	33
Samtse	60	60	3	55
Thimphu	7	3	0	30
Trashigang	541	308	14	45
Trashiyangtse	280	250	9	35
Trongsa	41	31	1	33
Tsirang	7	3	0	3
Wangdue	2,167	1,606	71	44
Zhemgang	30	20	1	30
Total	**6,653**	**4,610**	**166**	**36**

Table 45: Banana total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Chukha	23,253	8,130	69	8
Dagana	34,897	16,914	254	15
Haa	1,186	470	6	12
Lhuntse	9,473	1,864	24	13
Monggar	19,401	6,533	77	12
Pemagatshel	50,070	8,354	104	13
Punakha	9,310	2,994	35	12
Samdrupjongkhar	27,842	12,225	162	13
Samtse	135,678	36,399	460	13
Sarpang	130,038	38,761	588	15
Trashigang	52,028	4,266	36	8
Trashiyangtse	13,594	3,137	24	8
Trongsa	617	283	2	9
Tsirang	59,868	16,863	259	15
Wangdue	22,088	5,750	42	7
Zhemgang	5,434	2,812	39	14
Total	**594,775**	**165,756**	**2,183**	**13**

Table 46: Passion fruit total and bearing trees in numbers, production in MT and yield (kg/tree)

Dzongkhag	Trees	Bearing Trees	Production	Yield(kg/Tree)
Chukha	262	161	2	11
Dagana	9,794	1,676	14	8
Lhuntse	195	124	6	50
Monggar	655	472	17	36
Paro	10	10	0	40
Pemagatshel	390	210	4	18
Punakha	654	621	12	19
Samdrupjongkhar	673	137	2	15
Samtse	517	228	2	11
Sarpang	981	784	15	19
Trashigang	681	485	18	37
Trashiyangtse	1,228	348	4	12
Trongsa	330	250	7	30
Tsirang	2,179	1,181	37	31
Wangdue	1,368	1,247	29	23
Zhemgang	194	160	5	30
Total	**20,110**	**8,094**	**174**	21

Table 47: Percentage of food grain produced enough for household consumption in 2009

Dzongkhag	Yes	No
Bumthang	32.12	67.88
Chukha	26.98	73.02
Dagana	43.25	56.75
Gasa	25.81	74.19
Haa	36.55	63.45
Lhuntse	60.74	39.26
Monggar	75.03	24.97
Paro	61.19	38.81
Pemagatshel	82.57	17.43
Punakha	77.72	22.28
Samdrupjongkhar	35.30	64.70
Samtse	20.23	79.77
Sarpang	32.68	67.32
Thimphu	26.97	73.03
Trashigang	60.92	39.08
Trashiyangtse	48.64	51.36
Trongsa	40.06	59.94
Tsirang	30.32	69.68
Wangdue	46.56	53.44
Zhemgang	49.81	50.19

Table 47.1 The percent of food grain shortages month wise in 2009

Dzongkhag	Jan.	Feb.	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Bumthang	3.10	2.62	2.22	2.11	2.15	1.90	1.88	2.24	2.64	3.36	5.51	6.05
Chukha	3.09	5.24	7.44	7.94	7.57	6.80	5.78	4.22	2.62	2.25	1.89	2.32
Dagana	2.26	3.62	5.25	5.58	6.49	6.40	6.63	5.17	3.93	3.13	1.14	1.13
Gasa	2.32	1.74	1.29	0.98	0.74	0.68	0.77	1.04	1.50	2.67	3.47	2.29
Haa	0.91	4.82	5.49	4.45	3.49	2.85	2.43	1.82	1.35	1.14	0.87	0.68
Lhuntse	0.77	0.63	0.38	1.54	2.24	3.21	2.89	1.81	1.87	1.30	0.94	0.59
Monggar	0.41	1.67	2.43	2.82	3.53	4.46	4.33	3.47	1.85	0.47	0.53	0.40
Paro	12.84	9.51	6.89	3.20	2.49	2.81	4.00	4.04	4.40	4.66	5.68	8.65
Pemagatshel	0.85	0.91	2.16	2.75	2.58	2.41	1.76	0.92	0.87	0.57	0.86	1.22
Punakha	0.80	1.23	1.10	1.25	1.50	2.18	2.75	4.17	4.18	3.21	1.48	1.02
Samdrupjongkhar	6.26	4.47	5.31	6.58	6.95	4.29	2.87	4.00	4.68	4.36	2.49	5.13
Samtse	5.97	9.23	14.01	15.88	17.20	16.77	16.76	14.40	15.28	14.95	10.92	8.09
Sarpang	21.46	16.41	11.53	8.91	8.06	10.18	11.36	13.47	13.85	15.72	20.74	20.62
Thimphu	11.01	8.51	6.16	4.45	3.54	3.26	3.82	5.41	6.40	7.30	9.70	10.37
Trashigang	4.59	3.53	2.28	2.05	3.12	4.32	5.20	6.06	5.02	2.68	3.54	4.89
Trashiyangtse	4.59	3.53	2.28	2.05	3.12	4.32	5.20	6.06	5.02	2.68	3.54	4.89
Trongsa	1.05	3.66	3.36	3.79	3.10	2.84	2.22	1.24	0.09	0.00	0.00	0.00
Tsirang	6.62	6.68	7.84	9.77	8.59	8.36	8.29	8.18	6.72	6.59	6.05	5.14
Wangdue	4.23	3.99	3.56	3.86	4.01	4.68	5.97	9.59	13.86	15.76	13.14	9.38
Zhemgang	0.78	1.08	1.78	2.91	3.47	3.33	3.36	1.20	0.77	0.73	0.72	0.77

Table 47.2: The most important coping mechanisms in 2009

Dzongkhag	Sale of potato	Sale of vegetables	Sale of fruits	Sale of forest products	Borrowed from neighbours	Sale of livestock dairy and meat products
Bumthang	66.98	16.67	0.00	3.95	36.11	24.49
Chukha	90.84	24.21	45.65	30.30	3.44	43.74
Dagana	44.44	29.96	62.13	0.00	17.63	21.55
Gasa	56.52	20.59	0.00	83.40	12.07	11.72
Haa	54.42	4.17	20.45	10.42	0.00	35.69
Lhuntse	11.24	17.17	0.00	0.00	18.10	51.46
Monggar	32.09	16.85	21.62	0.00	23.68	38.55
Paro	81.09	47.46	51.92	41.18	4.84	49.59
Pemagatshel	58.82	0.00	54.52	76.92	14.20	0.00
Punakha	76.92	44.91	22.38	29.63	35.29	35.14
Samdrupjongkhar	22.96	29.94	61.86	31.62	30.73	16.65
Samtse	100.00	25.33	46.92	38.69	9.31	14.59
Sarpang	0.00	11.24	51.50	76.92	7.87	36.30
Thimphu	71.46	37.69	63.99	25.50	0.00	63.24
Trashigang	27.22	16.80	9.49	0.00	2.76	14.95
Trashiyangtse	34.30	31.53	19.80	42.25	42.59	60.38
Trongsa	33.33	62.17	31.03	50.00	8.29	38.30
Tsirang	37.93	30.32	55.82	56.52	7.94	19.03
Wangdue	70.50	28.35	22.50	42.73	13.84	24.23
Zhemgang	71.43	15.72	82.28	54.00	39.34	39.83
Average	**52.13**	**25.55**	**36.19**	**34.70**	**16.45**	**16.45**

Table 47.2 : The most important coping mechanisms in 2009

Dzongkhag	Sale of forest and by products	Cash remittance from employed members	Barter with dairy products	Off farm activities (contracts works, weaving)	Hire out of bullocks, horses and mules	Exchange with labour
Bumthang	66.67	39.09	0.00	42.02	29.82	20.98
Chukha	0.00	53.42	14.60	50.56	26.81	21.93
Dagana	33.66	54.51	11.48	54.58	10.32	5.93
Gasa	10.26	100.00	1.84	37.84	11.20	70.00
Haa	0.00	22.16	12.35	34.52	21.14	41.13
Lhuntse	0.00	37.02	0.00	75.76	76.92	18.87
Monggar	50.00	42.69	23.44	69.06	31.11	20.46
Paro	100.00	45.54	6.48	51.03	0.00	46.02
Pemagatshel	18.75	46.57	0.00	46.60	10.45	9.23
Punakha	0.00	58.39	23.60	52.86	5.77	32.08
Samdrupjongkhar	78.95	41.38	28.42	64.31	11.72	21.38
Samtse	0.00	53.21	10.00	52.63	14.60	25.92
Sarpang	0.00	48.07	0.00	51.30	59.80	21.71
Thimphu	0.00	66.37	0.00	46.37	22.22	12.98
Trashigang	0.00	38.79	77.76	66.77	7.66	34.09
Trashiyangtse	12.35	28.25	0.00	55.39	67.12	13.32
Trongsa	23.26	33.33	5.88	45.78	54.70	13.11
Tsirang	50.00	40.71	28.81	55.07	25.97	18.96
Wangdue	18.89	44.81	8.64	35.07	34.83	39.17
Zhemgang	38.57	25.35	14.89	53.55	15.60	11.59
Average	**25.07**	**45.98**	**13.41**	**52.05**	**26.89**	**24.94**

Table 48: The Agriculture commodities exported year wise

Year	Commodities	Apple	Mandarin	Mushroom	Cordyceps	Potato
2000	Qty (MT)	188.46	111,60.54	0.03		180,26.48
2001	Qty (MT)	2,941.56	158,79.03	1.47		254,52.50
2002	Qty (MT)	2,585.58	141,97.57	1.46		230,35.58
2003	Qty (MT)	3,815.57	197,34.58	3.72		203,35.44
2004	Qty (MT)	2,439.36	185,77.67	2.66	0.18	228,34.77
2005	Qty (MT)	4,743.46	232,83.68	2.73	0.20	237,66.54
2006	Qty (MT)	3,838.73	185,84.83	1.67	0.51	206,22.21
2007	Qty (MT)	3,097.70	239,45.11	2.97	0.14	244,49.62
2008	Qty (MT)	3,885.40	274,96.55	3.79	0.69	211,09.02
2009	Qty (MT)	2,461.74	226,22.30	2.21	0.59	309,98.56

Source: DAMS, MoAF, May 2010

Table 49: Plant Protection chemicals supplied to Dzongkhags in Kg/Litres (2008-2009)

Products **INSECTICIDES**	Bumthang	Chhukha	Dagana	Haa	Lhuentse	Mongar	Punakha	Paro	Pemagatshel	Samtse
Chlorpirifos20 EC	12.9	0	0	39.2	0	30.5	10.6	53	1.4	0
Cypermethrin 10EC	3.5	2	8.5	31.3	0	81.5	3.5	308.3	8	0
Dimethoate 30EC	0.8	0	30.7	4	0	10	10.6	0	24	0
Fenvelerate 0.4D	0	0	18	1	0	0	40	257	25	0
Malathion 5D	0	0	1	24	0	420	68	0	37	5
Malathion 50EC	0	2.5	1.5	0	0	5	5.4	31.6	0	0.5
Total	**17.2**	**4.5**	**59.7**	**99.5**	**0**	**547**	**138.1**	**649.9**	**95.4**	**5.5**
FUNGICIDES										
Calcium Hydroxide	0	0	0	0	0	0	0	0	0	0
Copper Sulphate	0	0	0	0	0	0	0	0	0	0
Captan 50 EC	0	0	0	22	0	1	0	9	0	0
Carbendazim 50 WP	11	2.5	0	44	0	10	5.5	167	0	0
Cu oxychloride 50WP	0.5	7	1	0.5	0	1	0	10		0.5
Hexaconazole 5 Ec	0	0	0.3	34.8	0	10	0	1.2	0	0
Mancozeb 75 WP	47.5	1.5	1.5	55.5	0	3.5	3	289	0	0
Propiconazole 25 EC	0	6	0	0	15	67	0	0	8	0
Ridomil 72 WP	0	0	0	0	0	10	1.1	3	0	0
Tricyclazole 75 WP	0	0	0	0	0	3.5	2.4	0	0	0
Total	**59**	**17**	**2.8**	**156.8**	**15**	**106**	**12**	**479.2**	**8**	**0.5**
HERBICIDES										
Glyphosate 41 SL	0	2	2	0	0	16	5	28	0	0
Metribuzin 70 WP	166.5	1.2	0	0.5	0	5	0	15.2	0	0
Total	**166.5**	**3.2**	**2**	**0.5**	**0**	**21**	**5**	**43.2**	**0**	**0**
RODENCIDES										
Zinc phosphide 80	**0.03**	**0.17**	**3.37**	**1.37**	**0**	**3**	**5.32**	**0.23**	**0.36**	**0**
ACARICIDES										
Dicofol 18.5 EC	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**
NON-TOXIC										
Protein hydrolysate	0	0	0	0	0	2.5	0	0	0	0
Sandovit	0	1	8	18	0	2	2	61	13	0
Tree Spray Oil	13	0	15	182	0	0	0	2653	0	0
Total	**13**	**1**	**23**	**200**	**0**	**4.5**	**2**	**2714**	**13**	**0**
BIO-PESTICDES										
Nim Oil	0	0	0	0	0	4	0	0	0	0
Total	0	0	0	0	0	4	0	0	0	0
Grand Total	**256**	**33**	**91**	**458**	**15**	**698**	**162**	**3887**	**117**	**6**

Source. NPPC, March 2010

Table 49.1 : Plant Protection chemicals supplied to Dzongkhags in Kg/Litres (2008-2009)

Products **INSECTICIDES**	Samdrup jongkhar	Sarpang	Tsirang	Trongsa	Trashigang	Trashi Yangtse	Thimphu	Wangdue	Zhemgang
Chlorpirifos20 EC	0	0	0	1.5	6	14	72.7	11.7	2
Cypermethrin 10EC	40	32	26.9	1.3	8	29.7	374	18.5	3.5
Dimethoate 30EC	0	44	33.3	0.1	5.1	12.6	125.2	27	2.5
Fenvelerate 0.4D	36	0	3	30	110	2	667	6	130
Malathion 5D	0	0	2	125	25	34	73	16	0
Malathion 50EC	1	5	7.8	0	5	0.3	70.5	9	1
Total	**77**	**81**	**73**	**157.9**	**159.1**	**92.6**	**1382.4**	**88.2**	**139**
FUNGICIDES									
Calcium Hydroxide	0	0	0	0	0	0	14	0	0
Copper Sulphate	0	0	0	0	0	0	14	0	0
Captan 50 EC	0	0	0.5	0	0	5	79	0	0
Carbendazim 50 WP	0	5	17	2.5	0	0	357	10	0
Cu oxychloride 50WP	7	0.5	3.5	2.5	6.5	1	76	16.5	5
Hexaconazole 5 Ec	0	0	0	0	0	0.3	31.3	0	0
Mancozeb 75 WP	0	5	29.5	2.5	100	18	570	148	0
Propiconazole 25 EC	0	0	0	0	28	12	0	2	0
Ridomil 72 WP	0	1	0.9	0.3	0	0.5	38.8	181	0
Tricyclazole 75 WP	0	2	7.6	0	0	0	1.3	2	1
Total	**7**	**13.5**	**59**	**7.8**	**134.5**	**36.8**	**1181.4**	**359.5**	**6**
HERBICIDES									
Glyphosate 41 SL	0	20	0	36	0	5	62	1629	2
Metribuzin 70 WP	0	0	0.2	21.5	0	0.4	49.3	623	
Total	**0**	**20**	**0.2**	**57.5**	**0**	**5.4**	**111.3**	**2252**	**2**
RODENCIDES									
Zinc phosphide 80	**1.7**	**0.68**	**2.67**	**3**	**10.15**	**3.45**	**5.87**	**8.02**	**2**
ACARICIDES									
Dicofol 18.5 EC	**0**	**0**	**0.4**	**0**	**0**	**0**	**0**	**0**	**0**
NON-TOXIC									
Protein hydrolysate	4	0	0	0	0	0	3.5	1	0
Sandovit	5	11	9	0	15	0	163	32	
Tree Spray Oil	0	0	0	0	0	0	4795	0	0
Total	**9**	**11**	**9**	**0**	**15**	**0**	**4961.5**	**33**	**0**
BIO-PESTICDES									
Nim Oil	0	0	0	0	0	6		11	
Total	0	0	0	0	0	6		11	
Grand Total	**95**	**126**	**144**	**226**	**319**	**138**	**7642**	**2752**	**149**

Source. NPPC, March 2010

Table 50: Quantity of chemical fertilizers distributed to the Dzongkhags during the year 2009

Sl. No	Dzongkhag	Urea (Kg)	Suphala(Kg)	SSP(Kg)	B/Meal(Kg)	MOP(Kg)	Borax(Kg)	DAP(Kg)	R/Phosphate (Kg)	Butachlor(Kg)
1	Bumthang	179,850	52,450	315,500						
2	Chukha	36,860	103,020	3,000	2,800	2,000	5	100		5,920
3	Dagana	7,750	3,050		150					2,940
4	Gasa									
5	Haa	11,000	24,000							1,100
6	Lhuntse	43,000								13,200
7	Monggar	123,500	10,500	500	750					3,070
8	Paro	133,380	125,210	5,000			200			93,220
9	Pemagatshel	56,800	32,800							
10	Punakha	96,500	68,100	5,500	400					39,100
11	Samdrup Jongkhar	5,400								
12	Samtse	4,000	3,100	3,400		1,100				3,810
13	Sarpang	6,200	3,000		300					9,350
14	Thimphu	85,650	105,850	46,750	3,500	11,000	300		500	21,750
15	Trashigang	419,500	132,550	56,600						16,550
16	Trashiyangtse	108,550	3,850							33,720
17	Trongsa	4,600	6,100							13,300
18	Tsirang	8,700	7,000	500	500					5,350
19	Wangdue Phodrang	145,490	339,970	57,100	150	1,000				64,500
20	Zhemgang	2,250	3,400	1,900						2,300
	TOTAL	**1,478,980**	**1,023,950**	**495,750**	**8,550**	**15,100**	**505**	**100**	**500**	**329,180**

Source: DSC, Paro, March 2010

Table 51: RNR infrastructure inventories as of December 2009

Dzongkhag	Nos. of Geogs	RNR Centre (Nos.)	AEC (Nos)	Technology park (Nos.)
Bumthang	4	4	1	2
Chukha	11	6	5	6
Dagana	14	8	2	4
Gasa	4	2	1	
Haa	6	3	2	3
Lhuntse	8	8		4
Mongar	17	16	1	5
Paro	10	7	2	1
Pemagatshel	11	10	2	0
Punakha	11	9	2	1
Samdrupjongkhar	11	6	3	0
Samtse	15	7	2	2
Sarpang	12	6	5	1
Thimphu	8	5	1	0
Trashigang	15	13	2	4
Trashiyangtse	8	8	1	3
Trongsa	5	5		3
Tsirang	12	7	7	2
Wangdue	15	8	3	8
Zhemgang	8	8	5	1
Total	**205**	**146**	**47**	**50**

Source: Dzongkhag Agriculture Sector, June 2010

Table 52: Total irrigation schemes and length (KM) as of June 2010

Dzongkhag	Numbers of Irrigation schemes	Total length (KM)
Bumthang	13	16.13
Chhukha	58	140.53
Dagana	55	114.77
Gasa	15	28.69
Ha	13	31.18
Lhuentse	63	268.80
Mongar	63	125.33
Paro	38	90.13
Pemagatshel	11	18.05
Punakha	114	382.38
Samdrup Jongkhar	41	100.54
Samtse	20	56.85
Sarpang	259	385.06
Thimphu	35	110.30
Trashi Yangtse	32	96.80
Trashigang	61	145.55
Trongsa	83	240.90
Tsirang	178	359.53
Wangdue	114	493.77
Zhemgang	41	87.13
Total	**1307**	**3292.42**

Source: Dzongkhag Agriculture Sector, June 2010

Table 53: Farm Road and PTT inventories as of June 2010

Dzongkhag	Type of Construction	Total length (KM)
Bumthang	Farm Road	86.98
Chhukha	Farm Road	75.00
Chhukha	Feeder Road	20.00
Chhukha	Internal Access Road	13.00
Chhukha	Power Tiller Track	10.30
Chhukha	Private Farm Road	2.00
Dagana	Farm Road	101.00
Dagana	Power Tiller Track	17.40
Gasa	Farm Road	18.32
Ha	Farm Road	46.67
Lhuentse	Farm Road	196.00
Mongar	Farm Road	147.52
Paro	Farm Road	189.03
Pemagatshel	Farm Road	56.05
Punakha	Farm Road	203.64
Punakha	Feeder Road	21.00
Punakha	Power Tiller Track	10.20
Punakha	Private Farm Road	10.20
Samdrup Jongkhar	Farm Road	71.94
Samtse	Farm Road	54.92
Sarpang	Approach road	2.25
Sarpang	Community road	1.50
Sarpang	Farm Road	78.73
Sarpang	Feeder Road	12.30
Sarpang	Forest road	16.00
Sarpang	Internal access Road	3.00

Dzongkhag	Type of Construction	Total length (KM)
Thimphu	Farm Road	30.93
Thimphu	Power Tiller Track	5.00
Trashigang	Farm Road	159.10
Trashiyangtse	Farm Road	41.73
Trashiyangtse	Feeder Road	23.50
Trashiyangtse	Power Tiller Track	14.00
Trongsa	Farm Road	72.09
Trongsa	Internal Access Road	30.00
Trongsa	Power Tiller Track	24.00
Tsirang	Farm Road	29.10
Tsirang	Power Tiller Track	37.80
Wangdue	Approach road	4.40
Wangdue	Farm Road	83.75
Wangdue	Feeder road	56.50
Wangdue	Power Tiller Track	18.50
Zhemgang	Farm Road	108.02
Zhemgang	Power Tiller Track	14.00

Source: Dzongkhag Agriculture Sector, June 2010