

Monograph ¹⁷15
June 2005

**Beneficiary Labour Contribution
(Woola)**

Karma Ura

The Centre for Bhutan Studies

Monograph 13
June 2005

Beneficiary Labour Contribution (Woola)

Karma Ura

Data processing

Matthieu Plaante, Dechen Pelmo and the CBS staff

Research Supported by UNDP

The Centre for Bhutan Studies

Beneficial Labour Contribution (Woola)

By Karma Ura

Copyright© The Centre for Bhutan Studies, 2005

Published by

The Centre for Bhutan Studies
Post Box No. 1111
Thimphu, Bhutan

Tel: 975-02-321005, 321111
Facsimile: 975-02-321001
email: cbs@druknet.bt

<http://www.bhutanstudies.org.bt>

ISBN 99936-14-29-7

Content

1.	Introduction	1
2.	Data	2
3.	Results on households	3
4.	Results on woola-performing individuals	6
5.	Table 1 Exempted Households and Average Number of Woola-liable Household Member(s) in Percent for Each Dzongkhag (Question 1)	12
6.	Table 2 Reasons Households Were Exempted From Woola in Percent for Each Dzongkhag (Question 2).....	13
7.	Table 3 Institutions who Authorized Exemption from Woola in Percent for Each Dzongkhag (Question 3).....	15
8.	Table 4.1 Reaction of Liable Households Towards Woola in Percent for Each Dzongkhag (Question 5).....	16
9.	Table 4.2 Reaction of Urban Liable Households Towards Woola in Percent for Each Dzongkhag (Question 5)	17
10.	Table 4.3 Reaction of Non-Urban Liable Households Towards Woola in Percent for Each Dzongkhag (Question 5)	18
11.	Table 4.4 Reaction of Liable Households Towards Woola in Percent for Each Type of Highway Access (Question 5).....	19
12.	Table 4.5 Reaction of Liable Households Towards Woola in Percent for Each Type of Poverty Level (Question 5)	19
13.	Table 5 Reasons for Performing Woola With Own-Household Labour in Percent for Each Dzongkhag (Question 6)	20
14.	Table 6 Reasons for Substituting Labour by a Cash Payment in Percent for each Dzongkhag (Question 7).....	21
15.	Table 7 Perception of the Trend Relative to the Number of Days of Woola Required over the Last Five Years, in Percent for Each Dzongkhag (Question 9)	22
16.	Table 8.1 Money Received for Woola Over the Last Twelve Months in Percent for Each Dzongkhag (Question 10)	23
17.	Table 8.2 Money Received by Household for Woola Over the Last Twelve Months in Percent for Each Status (Question 1 & 10)	24
18.	Table 8.3 Money Received for Woola Over the Last Twelve Months in Percent for Each Liable Household Reaction (Question 5 & 10).....	24
19.	Table 9.1 General Characteristics on Woola-Performing Individuals in Dzongkhag (Question 8)	25
20.	Table 9.2 Average Number of Days Performed and Average Money Received for Family Members and Non-Family Members (Question 8)	26

21. Table 10.1 Types of Woola Performed by Individuals in Percent for Each Dzongkhag (Question 8).....	27
22. Table 10.2 Type of Woola performed by a Representative Woola Performer, in Average Number of Days Performed, for Each Dzongkhag (Question 8).....	29
23. Table 11 Age and Gender of Woola Performers in Percent for Each Gender Category in Bhutan (Question 8).....	31
24. Table 12 Age and Types of Woola for Woola Performers in Percent for Each Type of Woola Category in Bhutan (Question 8).....	32
25. Table 13 Age and Number of Days Performed by Woola Performers in Percent for Each Number of Days Category in Bhutan (Question 8).....	33
26. Table 14.1 Age and Cash Received by Woola Performers in Percent for Each Cash Category in Bhutan (Question 8).....	33
27. Table 14.2 Age and Cash Received by Family Member Woola Performers in Percent for Each Cash Category in Bhutan (Question 8).....	34
28. Table 15. Gender and Types of Woola for Woola Performers in Percent for Each Gender Category in Bhutan (Question 8).....	35
29. Table 16. Gender and Number of Days Performed by Woola Performers in Percent for Each Gender Category in Bhutan (Question 8).....	36
30. Table 17. Gender and Cash Received by Woola Performers in Percent for Each Gender Category in Bhutan (Question 8).....	36
31. Table 18. Types of Woola and Cash Received by Woola Performers in Percent for Each Type of Woola Category in Bhutan (Question 8).....	37
32. Table 19. Number of Days Performed and Cash Received by Woola Performers in Percent for Each Number of Days Category in Bhutan (Question 8).....	38
33. Table 20. Types of Woola and Number of Days Performed by Woola Performers in Percent for Each Type of Woola Category in Bhutan (Question 8).....	39
34. Table 21.1 Wage Received by Woola Performers, for Each Gender (Question 8).....	40
35. Table 21.2 Wage Received by Woola Performers, for Each Age Group (Question 8).....	40
36. Table 21.3 Wage Received by Woola Performers, for Each Type of Woola (Question 8).....	41
37. Table 22. Correlation Coefficients for Different Variables.....	42
38. Appendix.....	43
39. Highway Access in Bhutan.....	45
40. References.....	46

Beneficiary Labour Contribution¹

Introduction

In March and April 2004, the first literacy survey in Bhutan, financed by the UNDP and RGOB, was carried out. This national survey also carried a one-page questionnaire, designed by the Centre for Bhutan Studies, which was not related to investigation into literacy.

The one-page questionnaire, attached to the rest of the larger literacy survey form, concerned labour contributions made by households, primarily rural, to the construction and maintenance of a wide range of communal infrastructure. The questionnaire of the survey is included in the appendix of this report. Mobilization of labour system, a requisition known as woola, which is a generic term for various kinds of labour input, has been a traditional feature.

A detailed topography of woola, as it existed till mid 19th century was analysed in Ura (1995), and a more recent catalogue of woola pertaining to a village was described in Ura (1988).

However, despite the national importance and uses of woola as an input into creation of many communal and national infrastructure of certain kind, there has not been any systematic appraisal of woola on a national level. This small study, made possible by taking advantage of the Literacy Survey of 2004, is a modest beginning towards understanding woola. This study will need to be supplemented by further researches in future if the variable incidence of woola between

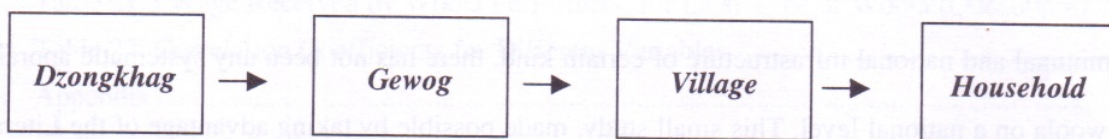
¹ The present study has benefited from discussion and support from Villaincourt F, Plante Matthieu, Mayumi Murayama, Karma Gaylay and Dorji Penjore. I thank them for their helpful discussions. My particular thanks are to Matthieu Plante, M.Sc. student of University of Montreal, for processing and tabulation of data.

households and individuals within a households as well as opportunity cost of woola are to be assessed.

Data

The survey probed into 15 different variables related to woola. The woola survey included a little over 9000 households as respondents, i.e. the survey yielded 9000 forms filled by that number of households. Of these, 7378 forms were valid, and rest were spoiled due to entry errors. Therefore, the database that consists of 7378 households from all districts, a sample size large enough to ensure precision of the results. We also have indirect information about woola performers. This information is indirect because it is reported by the households, and not the woola performers. Note that households may or may not have a woola performer. For example, a household can be exempted from woola. Also, woola performers may be a family member.

The database was organized in a geographical fashion, by dzongkhag, gewog and village, as can be seen in Figure 1. Each household, who filled a survey form, is denoted by a household identity number.



The fifteen variables of the survey are examined in 22 main tables presented in this paper. Households who answered the survey fell in two main categories: those exempted from *woola* and those liable to perform *woola*. Within the exempted category, only four questions were asked. More interestingly, the woola – performers' category opened the door to a larger spectrum of information on labour contribution in the country.

Beneficiary Labour Contribution

Data is aggregated and computed at the level of dzongkhag, although it can also be done at the gewog and village levels.

Tables 1 to 8.3 present different variables regarding households categorized by every dzongkhag. Tables 9.1 to 21.3 describe variables concerning woola performers, generally for the country as a whole. Finally, table 22 gives the correlation matrix for some variables. Frequently, variables are expressed in percent in order to facilitate the interpretation from the sample data to the population. Furthermore, some numerical variables, such as age, were transformed into intervals to have more details. For example, Table 11 gives the proportion of the age categories for each gender category of woola performers in Bhutan.

Results on households

This section presents the most interesting results, in table 1 to 8.3. The tables are based on household-level information only. One can use the questionnaire in the appendix to understand the background to the analysis. Every table's title contains the related question number in the questionnaire.

Table 1 shows the percentage of *exempted* households and the average *number of woola-liable members* within a household for all dzongkhags. Chukha, Thimphu and Samdrupjongkhar show the largest percentage of exempted households, while Wangdue, Mongar and Bumthang show the smallest percentage of exempted households. Overall, 30.85% of households are exempted from woola and 69.15% of the households contribute to woola. The striking difference is that 70.3% of urban households do not contribute to woola while only 23.51% of rural households do not do so. But there is much larger percentage of exempted households in urban (i.e. "town") area compared

to rural areas. Samtse, Samdrupjongkhar and Haa have the highest average number of woola-able members, while Paro and Bumthang have the lowest. Finally, woola liable households have a tendency to contain a larger number of woola performers.

Table 2 shows the importance of various *reasons* why households were exempted in each dzongkhag. Most of the exempted households responded *Other* as the reason for exemption (56.78%). The miscellancy of reasons under “other” category have not been listed. Thus, we do not know what the other reasons are for exemption from woola. Aside from *Other*, the most frequent reasons for exemption were *Community post* (18.84%) and *Original house is vacated/migrated* (6.16%). Thus, a households’ appointment to assume community post or responsibility and migration leading to empty-houses are the two leading reasons for exemption from woola. Another striking feature is the large importance of the *Old or sick household members* answer in Lhuntse, Mongar and Trashiyangtse.

Table 3 presents the positions of authorities who grant exemption from woola in each dzongkhag. Here again, most of the respondents answered *Other* (82.04%) authorities whose details are not listed here. The second most frequent answer was *Gup* (11.75%). However, for Dagana, Haa, Mongar, Sarpang, Thimphu and Tsirang, households cited more frequently the *dzongda* as the authority who granted exemption, compared to *Gup*.

Table 4.1 to 4.5 show the *reaction* of woola liable households towards their woola task. The reaction towards a call for woola by a household may be its performance by a household member or hiring someone. Overall, 85.92% of the household said that woola is performed by household members. The result is further segregated into urban and non-urban households.

Beneficiary Labour Contribution

Table 4.1 gives the results for all the woola liable households, while table 4.2 and 4.3 concentrate on urban and non-urban woola liable households respectively. Table 4.4 illustrate the reactions for different road access types^a and table 4.5 does the same analysis for different poverty status. As can be seen by comparing the overall reactions in table 4.1 to 4.3, most woola liable households perform their woola task by a household member (85.92%), but urban households are more likely to hire someone out of the household than non-urban ones (39.83% vs. 11.24%). Furthermore, in Paro, Thimphu and Chukha districts woola liable households are the most prone to hire someone else to perform the woola tasks. The districts least prone to hiring people to work for them on woola are Dagana, Samdrupjongkhar and Sarpang. We can conclude from table 4.4 that an easier access to motorable road seems to increase the probability that woola liable households will hire someone. Finally, table 4.5 shows that the more poverty there is, the most likely it is that households will perform woola by themselves, an obvious conclusion.

Table 5 and 6 are natural extensions of table 4. Table 5 gives the relative importance of various *reasons* for a woola liable household to perform woola with its own household member(s). The most frequent answers are *Lack of money* (68.25%) and *Surplus of labour* (17.21%). Relatively to other districts, Bumthang and Lhuntse have a high percentage of *Surplus of labour* (45.10% and 44.92%) answer, and Pema Gatshel has a high percentage of *Lack of money* (98.37%) answer. Table 6 shows the importance of various *reasons* for hiring someone instead of doing woola with the household labour. The most frequent answer is *Shortage of labour* (74.51%). An interesting feature is the relatively high percentage of *Remittance from family member* (37.50%) answer in Lhuntse.

^a A road map has been included in the Appendix to give an overall impression of the highway system.

Table 7 reviews the households' *perception of the trend* in woola requirements over the last five years. Most households perceived a *Decreasing* trend (60.88%). This answer is particularly frequent in Bumthang (95.08%), Gasa (96.08%) and Pema Gatshel (94.29%). Finally, a relatively high number of *Increasing* trend answers have been found in Sarpang (40.95%), Trongsa (41.41%) and Zhemgang (41.67%).

Table 8.1 to 8.3 looks at various intervals in the amount of *money received* for woola by households in last year before the survey, which is 2003. As can be seen in table 8.1, most of the households received no money at all (67.74%) and 11.33% of households received between Nu. 1000 and Nu. 1999. Households in Trashiyangtse and Trongsa received relatively the maximum amount of money for woola. Table 8.2 separates households in two categories: woola *exempted* and woola *liable*. A strong feature is that almost every exempted households received no money for woola (97.78%). As for woola liable households, 56.52% received no money. The average money received for an woola exempted household is Nu. 62 while it is Nu. 2163 for a woola liable household. Table 8.3 divides the liable households category in 3 categories: *perform by household member*, *hiring someone with cash payment* and *paid time for being absent*. The proportions of woola liable household receiving no money for those three categories are 51.20%, 71.62% and 85.29%, respectively. The average money received for a woola liable household performing woola with own-labour is high (Nu. 2518) relative to the hiring households (Nu. 758).

Results on woola-performing individuals

Table 9.1 to 22 present woola performer-level information only. This information was sometimes obtained indirectly, because performers are recorded by households. Thus, the performer needs

Beneficiary Labour Contribution

not to be the respondent of the survey. Again, one can use the questionnaire to understand the thrust of the question.

Table 9.1 and 9.2 present different characteristics on woola-performing individuals. Table 9.1 is an important one in that it summarises important conclusions about woola. Table 9 shows that, overall, woola performers are men (73.98%). Woola performers are members of the family (90.27%). Only in Haa, women woola performers outstrip men, as men form only 47.83% of the sample. In Paro, a relatively smaller percentage of woola performers are member of the family who hire them (65.45%). The average age of woola performer is 36.01 and quite homogenous for every dzongkhag. The average number of days performed for a woola task in a year is 22.76 days. The highest number of days is in Paro (75.20 days), while the lowest is in Dagana (8.01 days). The high number of woola-days in Paro in 2003 may be related to Taktsang renovation. The highest average money received if hired for a task (excluding zero Nu. remunerations) is in Paro (Nu. 5484) and the lowest is in Trashigang (Nu. 185). Table 9.2 divides the average number of days and the average money received (including zero Nu. remunerations) in three components: *family member*, *non-family member* and *all*. Overall, non-family members seem to spend more days in woola task (39.24 days) compared to 22.57 days for family members. We can see that values in the *family member* column are very close the values in the *all* column. This is because most of woola-performers are family members. Also, non-family members earn more money for their task on average (Nu. 1920) than family members (Nu. 60). Those differences are even more striking for Paro, where family members spend 46.91 days on average doing wools work and non-family members spend 131.09 days. Always in that district, family members earn on average Nu. 347.06 for a task, while non-family members earn Nu. 5653. Finally, the average daily salary for woola is calculated for each district. The daily salary can be interpreted as the market value of

woola task. In fact, it is constructed for non-zero remunerations and non-family members only. We see that the daily salary is at its highest in Gasa (Nu. 208) and at its lowest in Trashigang (Nu. 10). The overall average daily salary is Nu. 98.

Table 10.1 presents various types of woola performed, for all districts. Generally, the most frequent types of woola are temple or *Lhakhang construction* (33.71%) and *Schools* (23.74%). For Gasa and Haa, however, the most frequent type of woola performed is *Chadri preparation for official visits* (35.71% and 46.91%, respectively). Only about 4% of the households cited that woola are related to drinking water supply, BHUs, irrigation channels, agricultural centres. Table 10.2 presents the average number of days a district-representative woola performer would spend in each type of woola task. This is an important table, which enables us to find out the duration of a specific woola tasks in a given district.

Table 11 shows different age intervals for male and female woola performers. Relatively more women occupy the 0-19 years category, while relatively more men occupy the 50-59 years and 60 + years categories. The average age for male performers is 37.33 years and is 32.49 years for female performers.

On table 12, the age intervals are given for each type of woola performed. The results, for each type of Woola, are very similar to the average level. However, we can see that the *Carrying baggages for officials* is on average the task where the woola performers are the oldest. Also, *Gup office maintenance* is the task where the performers are the youngest.

Beneficiary Labour Contribution

Table 13 shows the *age* intervals for groups of number of days performed in a woola task. The young group (*0-19 years*) and the elderly (*60 + years*) seem to work less in long woola tasks (*50+ days*) than other age groups.

Table 14.1 to 14.3 show the *age* intervals for different amounts of money paid. Table 14.2 concentrate on family members, whereas table 14.3 concerns non-family members. We can see from table 14.1 that the *0-19 years* and the *60+ years* groups earn relatively smaller amounts (Nu. 2001) than other age groups. Also, we can conclude that the family members of *0-19 years* age group earn relatively less than the non-family members of the same age group. Finally, family members woola performers tend to be older than non-family members.

On table 15, *type of woola* groups are given for *male* and *female* woola performers. As was said before, the most frequent types of woola are *Lhakhang construction* and *Schools*. However, some differences exist between male and female performers. *Male* performers are more concentrated in *Schools* (25.35%) and *Bridge construction* (6.47%). *Female* performers are relatively more into *Thungchhu* (5.93%) and *Chadri preparation for official visits* (7.71%).

Table 16 show different *number of days* (for a woola task) intervals are given for male and female performers. For the two smallest number of days categories (*1-9 days* and *10-19 days*), no important differences can be seen for male and female performers. However, for the middle categories (*20-29 days* and *30-39 days*) relatively more women are involved. Also, for the highest number of days categories (*40-49 days* and *50 + days*) relatively more men are involved. Finally, the average number of days for a woola task is slightly higher for men (23.12 days) than for women (21.73 days).

Table 17 shows *cash received* intervals for male and female Woola-performing individuals. No element in the table seems very unusual. The results are mostly gender-homogenous, aside from the relatively higher percentage of women in the Nu. 2000 category (38.83%) and the smaller percentage of women in the Nu. 501-1000 category (9.71%).

On table 18 *cash received* intervals are given for different types of woola tasks. We can see that the most “paying” woola tasks are *Lhakhang construction* and *Irrigation channels*. However, the least “paying” are *Thungchhu* and *Animal husbandry centres*. One should note that cash received is independent of the number of days spent at the task. It is thus different from the daily salary indicator.

Table 19 gives *cash received* intervals for various number of days categories. As was expected, cash received for a task is low for short tasks and higher for longer tasks.

Table 20 shows the *number of days* categories for all types of woola performed. The types of woola with the highest percentage in the 50 + *days* category are *Lhakhang construction* and *Irrigation channels*. They are, on average, the longest types of woola tasks to undertake. The types with the highest percentage in the 1-9 *days* category are *Bridge construction* (78.05%), *Carrying baggages for officials* (68.97%) and *Carrying messages between villages* (69.29%). They are, on average, the shortest types of woola task.

Table 21.1 to 21.3 give the average daily salary for genders, age groups and types of woola. Table 21.1 shows that the average daily salary for woola is slightly higher for women (Nu. 100) than for men (Nu. 98). We can see from table 21.2 that the average daily salary tends to increase with age

Beneficiary Labour Contribution

until the *50-59 years* group, and then tends to decrease for the last age group (*60 + years*). As for the types of woala, shown in table 21.3, the highest average daily salary is in *Irrigation channels* (Nu. 136) and the lowest one is in *Bridge construction* (Nu. 63).

Finally, table 22 displays the correlation coefficient matrix for five interesting variables. The percentage of urban area in a district is negatively correlated with the probability of liable households to perform woala with own-labour. It is also negatively correlated with the poverty index and positively correlated with the highway accessibility. The probability of woala liable households to perform woala with own-labour is negatively correlated with the average daily salary and the highway accessibility, while it is highly positively correlated with the poverty index. Unexpectedly, the average daily salary is positively correlated with poverty index and negatively correlated with the highway accessibility index. However, those correlations are small and may well be statistically insignificant. Finally, as expected, the highway accessibility index is strongly negatively correlated with the poverty index. However, such correlation must be treated with caution because the poverty index is partly constructed on the basis of highway accessibility^b.

^b For more details on these index, see the Poverty Assessment and Analysis Report (2000).

Table 1 Exempted Households and Average Number of Woola-liable Household Member(s) in Percent for Each Dzongkhag (Question 1)

Dzongkhag	Exempted households (% of total households)			Average number of Woola-liable household member(s)		
	Urban	Non- urban	All	Exempted	Liabile	All
Bumthang	0.00	11.68	11.19	0.44	0.97	0.91
Chukha	94.98	35.27	51.51	1.10	1.52	1.31
Dagana	76.47	19.69	22.62	1.41	2.04	1.92
Gasa	74.36	17.86	30.17	0.46	1.64	1.57
Haa	5.36	21.72	18.11	1.70	2.35	2.23
Lhuntse	n/a	15.83	15.83	1.74	1.94	1.92
Mongar	16.67	10.80	11.11	0.92	1.68	1.59
Paro	29.73	29.85	29.83	0.21	1.13	0.86
Pemagatshel	92.59	29.51	34.64	1.64	2.01	1.82
Punakha	62.50	29.53	38.49	1.90	2.14	1.98
Samdrupjongkhar	97.27	22.92	43.47	1.97	2.44	2.24
Samtse	68.42	21.42	24.38	1.85	2.55	2.35
Sarpang	82.02	32.22	41.51	1.46	1.85	1.68
Thimphu	61.25	26.98	47.17	1.78	1.78	1.78
Trashigang	83.33	23.45	27.60	1.28	1.92	1.75
Trashiyangtse	n/a	32.89	32.89	0.93	1.53	1.30
Trongsa	76.00	29.77	42.54	0.71	1.85	1.29
Tsirang	63.33	18.40	27.10	1.56	2.15	1.99
Wangdue	n/a	8.94	8.94	1.73	1.99	1.98
Zhemgang	88.24	24.54	29.18	1.90	1.81	1.83
Total Bhutan ^c	70.33	23.51	30.85	1.39	1.90	1.74

^c Here a weighted average of all Dzongkhag is calculated. We are assuming there a weighted average for the tables to come also.

Beneficiary Labour Contribution

Table 2 Reasons Households Were Exempted From Woola in Percent for Each Dzongkhag (Question 2)

Dzongkhag (1 st of 2)	Reason for exemption									
	Mephu household (%)	Zurpa household (%)	Community post (%)	Old or sick household members (%)	Past merit/kasho (%)	Death in the household (%)	Original house is vacated/migrated (%)	Did not want to contribute (%)	Other (%)	100 %
Bumthang	0.00	0.00	62.50	12.50	12.50	6.25	0.00	0.00	6.25	100.00
Chukha	0.78	1.55	6.98	0.39	1.55	0.39	3.49	4.26	80.62	100.00
Dagana	0.00	0.00	30.00	3.33	3.33	0.00	6.67	0.00	56.66	100.00
Gasa	3.03	0.00	0.00	12.12	0.00	3.03	6.06	0.00	75.76	100.00
Haa	6.82	0.00	29.55	9.09	0.00	0.00	4.55	0.00	49.99	100.00
Lhuntse	10.81	5.41	21.62	24.32	0.00	2.70	0.00	0.00	35.14	100.00
Mongar	3.23	0.00	29.03	22.58	0.00	0.00	0.00	0.00	45.17	100.00
Paro	7.07	19.19	9.09	11.11	4.04	1.01	6.06	0.00	42.42	100.00
Pemagatshel	0.00	0.95	30.48	13.33	0.95	0.00	0.00	0.00	54.28	100.00
Punakha	1.03	1.03	26.80	7.22	4.12	1.03	9.28	0.00	49.48	100.00
Samdrupjongkhar	8.82	0.00	37.65	4.12	0.59	1.18	0.59	0.00	47.05	100.00
Samtse	0.00	0.00	25.74	4.41	2.94	0.74	15.44	0.00	50.74	100.00

Karma Ura

Dzongkhag (2 nd of 2)	Reason for exemption									
	Mephu household (%)	Zurpa household (%)	Community post (%)	Old or sick household members (%)	Past merit/kasho (%)	Death in the household (%)	Original house is vacated/migrated (%)	Did not want to contribute (%)	Other (%)	100 %
Sarpang	0.54	0.54	9.24	2.17	0.00	0.54	7.07	0.00	79.88	100.00
Thimphu	0.00	19.02	7.32	1.46	1.95	0.49	19.51	0.00	50.25	100.00
Trashigang	10.19	3.82	19.11	11.46	4.46	1.27	0.64	0.00	49.05	100.00
Trashiyangtse	0.89	0.00	21.43	22.32	16.96	2.68	0.89	0.00	34.83	100.00
Trongsa	1.45	0.00	24.64	10.14	1.45	1.45	5.80	0.00	55.07	100.00
Tsirang	0.00	0.00	19.44	0.00	1.39	0.00	4.17	0.00	75.00	100.00
Wangdue	0.00	2.70	21.62	5.41	0.00	0.00	0.00	0.00	70.27	100.00
Zhemgang	0.00	3.57	16.07	12.50	7.14	1.79	10.71	0.00	48.21	100.00
Total Bhutan	2.72	3.90	18.84	7.14	2.93	0.92	6.16	0.56	56.78	100.00

Beneficiary Labour Contribution

Table 3 Institutions who Authorized Exemption from Woola in Percent for Each Dzongkhag (Question 3)

Dzongkhag	Authority who permitted exemption					100 %
	Dzongda (%)	Gup (%)	Mangap (%)	Tshogpa (%)	Other (%)	
Bumthang	0.00	0.00	0.00	0.00	100.00	100.00
Chukha	0.00	0.00	0.00	0.00	100.00	100.00
Dagana	3.33	0.00	0.00	0.00	96.67	100.00
Gasa	0.00	9.09	0.00	0.00	90.91	100.00
Haa	2.22	0.00	0.00	0.00	97.78	100.00
Lhuntse	0.00	0.00	0.00	0.00	100.00	100.00
Mongar	5.00	2.50	2.50	0.00	90.00	100.00
Paro	0.00	0.00	0.00	0.00	100.00	100.00
Pemagatshel	0.00	0.00	0.00	0.00	100.00	100.00
Punakha	0.00	0.00	1.12	0.00	98.87	100.00
Samdrupjongkhar	4.76	34.52	0.60	0.00	60.12	100.00
Samtse	3.68	25.00	0.00	0.00	71.33	100.00
Sarpang	10.05	0.00	0.53	0.00	89.42	100.00
Thimphu	3.81	2.38	0.00	0.48	93.34	100.00
Trashigang	0.00	32.89	0.00	1.32	65.79	100.00
Trashiyangtse	0.00	30.40	0.00	0.00	69.60	100.00
Trongsa	13.51	25.68	0.00	0.00	60.81	100.00
Tsirang	2.78	1.39	0.00	0.00	95.83	100.00
Wangdue	3.70	7.41	3.70	0.00	85.18	100.00
Zhemgang	12.73	25.45	3.64	1.82	56.36	100.00
Total Bhutan	3.34	11.75	0.37	0.21	84.34	100.00

Table 4.1 Reaction of Liable Households Towards Woola in Percent for Each Dzongkhag (Question 5)

Dzongkhag	Reaction towards Woola task			
	Perform by household member(s) (%)	Hiring someone with cash payment (%)	Paid time for being absent (%)	100 %
Bumthang	80.00	20.00	0.00	100.00
Chukha	77.98	21.10	0.92	100.00
Dagana	96.32	3.68	0.00	100.00
Gasa	88.50	11.50	0.00	100.00
Haa	83.74	16.26	0.00	100.00
Lhuntse	90.82	8.70	0.48	100.00
Mongar	91.96	7.79	0.25	100.00
Paro	63.49	34.52	1.98	100.00
Pemagatshel	85.97	14.03	0.00	100.00
Punakha	81.60	18.40	0.00	100.00
Samdrupjongkhar	96.05	3.95	0.00	100.00
Samtse	92.81	6.03	1.16	100.00
Sarpang	91.04	5.38	3.58	100.00
Thimphu	63.91	31.95	4.14	100.00
Trashigang	89.89	8.05	2.07	100.00
Trashiyangtse	81.96	15.69	2.35	100.00
Trongsa	82.35	16.67	0.98	100.00
Tsirang	91.32	8.22	0.46	100.00
Wangdue	83.23	13.23	3.55	100.00
Zhemgang	92.07	7.32	0.61	100.00
Total Bhutan	85.92	12.80	1.28	100.00

Beneficiary Labour Contribution

Table 4.2 Reaction of Urban Liable Households Towards Woola in Percent for Each Dzongkhag (Question 5)

Dzongkhag	Reaction towards Woola task			100 %
	Perform by household member(s) (%)	Hiring someone with cash payment (%)	Paid time for being absent (%)	
Bumthang	66.67	33.33	0.00	100.00
Chukha	70.00	30.00	0.00	100.00
Dagana	100.00	0.00	0.00	100.00
Gasa	80.00	20.00	0.00	100.00
Haa	80.77	19.23	0.00	100.00
Lhuntse	n/a	n/a	n/a	n/a
Mongar	8.33	83.33	8.33	100.00
Paro	40.00	48.00	12.00	100.00
Pemagatshel	66.67	33.33	0.00	100.00
Punakha	59.26	40.74	0.00	100.00
Samdrupjongkhar	33.33	66.67	0.00	100.00
Samtse	0.00	100.00	0.00	100.00
Sarpang	68.75	18.75	12.50	100.00
Thimphu	25.81	61.29	12.90	100.00
Trashigang	83.33	16.67	0.00	100.00
Trashiyangtse	n/a	n/a	n/a	n/a
Trongsa	50.00	50.00	0.00	100.00
Tsirang	42.11	57.89	0.00	100.00
Wangdue	n/a	n/a	n/a	n/a
Zhemgang	100.00	0.00	0.00	100.00
Total Bhutan	55.93	39.83	4.24	100.00

Table 4.3 Reaction of Non-Urban Liable Households Towards Woola in Percent for Each Dzongkhag (Question 5)

Dzongkhag	Reaction towards Woola task			
	Perform by household member(s) (%)	Hiring someone with cash payment (%)	Paid time for being absent (%)	100 %
Bumthang	80.67	19.33	0.00	100.00
Chukha	78.30	20.75	0.94	100.00
Dagana	94.24	5.76	0.00	100.00
Gasa	92.92	7.08	0.00	100.00
Haa	84.77	15.23	0.00	100.00
Lhuntse	90.82	8.70	0.48	100.00
Mongar	94.56	5.44	0.00	100.00
Paro	66.08	33.04	0.88	100.00
Pemagatshel	86.24	13.76	0.00	100.00
Punakha	86.03	13.97	0.00	100.00
Samdrupjongkhar	96.89	3.11	0.00	100.00
Samtse	93.24	5.59	1.17	100.00
Sarpang	92.40	4.56	3.04	100.00
Thimphu	72.46	25.36	2.17	100.00
Trashigang	89.98	7.93	2.10	100.00
Trashiyangtse	81.96	15.69	2.35	100.00
Trongsa	85.87	13.04	1.09	100.00
Tsirang	96.00	3.50	0.50	100.00
Wangdue	83.23	13.23	3.55	100.00
Zhemgang	91.98	7.41	0.62	100.00
Total Bhutan	87.68	11.24	1.08	100.00

Beneficiary Labour Contribution

Table 4.4 Reaction of Liable Households Towards Woola in Percent for Each Type of Highway Access (Question 5)

Highway access ^d	Reaction towards Woola task			100 %
	Perform by household member(s) (%)	Hiring someone with cash payment (%)	Paid time for being absent (%)	
Less than 3h.	83.01	15.08	1.91	100.00
3h. to 8h.	89.10	10.47	0.43	100.00
More than 8h.	88.84	10.69	0.48	100.00
All	85.92	12.80	1.28	100.00

Table 4.5 Reaction of Liable Households Towards Woola in Percent for Each Type of Poverty Level (Question 5)

Poverty level ^e	Reaction towards Woola task			100 %
	Perform by household member(s) (%)	Hiring someone with cash payment (%)	Paid time for being absent (%)	
Very low	53.93	40.45	5.62	100.00
Low	85.54	13.07	1.40	100.00
Medium	88.54	10.60	0.86	100.00
High	92.06	7.78	0.16	100.00
All	85.92	12.80	1.28	100.00

^d Number of hours from motorable road. See the Poverty Assessment and Analysis Report (2000) for more details.

^e Composite poverty index, priority weights. According to the terminology used in the Poverty Assessment and Analysis Report (2000) : Very low poverty = Excellent, Low poverty = Fine, In between = Medium, Difficult = High.

Table 5 Reasons for Performing Woola With Own-Household Labour in Percent for Each Dzongkhag (Question 6)

Dzongkhag	Reason for performing Woola					100 %
	Lack of money (%)	Opportunity of income (%)	Surplus of labor (%)	Not allowed to substitute (%)	Other (%)	
Bumthang	45.10	9.80	45.10	0.00	0.00	100.00
Chukha	63.14	7.63	22.46	5.51	1.27	100.00
Dagana	91.98	0.00	6.17	0.62	1.24	100.00
Gasa	57.43	15.84	18.81	7.92	0.00	100.00
Haa	76.02	4.68	12.87	6.43	0.00	100.00
Lhuntse	24.60	19.79	44.92	10.70	0.00	100.00
Mongar	48.77	31.88	4.09	0.54	14.71	100.00
Paro	43.27	26.90	23.98	2.92	2.92	100.00
Pemagatshel	98.37	0.00	1.09	0.00	0.54	100.00
Punakha	73.23	8.66	11.81	6.30	0.00	100.00
Samdrupjongkhar	91.00	0.95	8.06	0.00	0.00	100.00
Samtse	56.85	1.78	40.10	0.51	0.76	100.00
Sarpang	78.82	2.35	17.65	1.18	0.00	100.00
Thimphu	70.80	8.85	11.50	2.65	6.19	100.00
Trashigang	86.51	2.04	8.40	0.25	2.80	100.00
Trashiyangtse	82.52	13.59	3.40	0.49	0.00	100.00
Trongsa	77.53	20.22	2.25	0.00	0.00	100.00
Tsirang	69.42	2.43	25.24	0.97	1.95	100.00
Wangdue	56.06	7.20	25.76	6.06	4.93	100.00
Zhemgang	78.95	18.42	1.32	0.66	0.66	100.00
Total Bhutan	68.25	9.63	17.21	2.37	2.54	100.00

Beneficiary Labour Contribution

Table 6 Reasons for Substituting Labour by a Cash Payment in Percent for each Dzongkhag (Question 7)

Dzongkhag	Reason for substituting labour by cash						100 %
	Cash available (%)	Shortage of labor (%)	Own-labor supplying impossible ^f (%)	Sickness (%)	Remittance from family member (%)	Other (%)	
Bumthang	0.00	100.00	0.00	0.00	0.00	0.00	100.00
Chukha	5.17	82.76	5.17	3.45	3.45	0.00	100.00
Dagana	66.67	33.33	0.00	0.00	0.00	0.00	100.00
Gasa	12.50	62.50	0.00	0.00	12.50	12.50	100.00
Haa	13.33	86.67	0.00	0.00	0.00	0.00	100.00
Lhuntse	6.25	12.50	37.50	6.25	37.50	0.00	100.00
Mongar	31.51	34.25	32.88	0.00	1.37	0.00	100.00
Paro	7.69	61.54	30.77	0.00	0.00	0.00	100.00
Pemagatshel	12.12	87.88	0.00	0.00	0.00	0.00	100.00
Punakha	0.00	95.24	0.00	0.00	4.76	0.00	100.00
Samdrupjongkhar	28.57	64.29	0.00	7.14	0.00	0.00	100.00
Samtse	13.13	80.00	6.67	0.00	0.00	0.00	100.00
Sarpang	40.91	54.55	4.55	0.00	0.00	0.00	100.00
Thimphu	8.33	91.67	0.00	0.00	0.00	0.00	100.00
Trashigang	7.14	89.29	3.57	0.00	0.00	0.00	100.00
Trashiyangtse	3.06	94.90	0.00	1.02	1.02	0.00	100.00
Trongsa	16.67	83.33	0.00	0.00	0.00	0.00	100.00
Tsirang	12.50	66.67	0.00	20.83	0.00	0.00	100.00
Wangdue	3.33	90.00	0.00	0.00	6.67	0.00	100.00
Zhemgang	16.67	83.33	0.00	0.00	0.00	0.00	100.00
Total Bhutan	12.75	74.51	7.84	1.96	2.75	0.20	100.00

^f Or not allowed.

Karma Ura

Table 7 Perception of the Trend Relative to the Number of Days of Woola Required over the Last Five Years, in Percent for Each Dzongkhag (Question 9)

Dzongkhag	Perception of the trend of Woola requirements				
	Constant (%)	Increasing (%)	Decreasing (%)	Don't know (%)	100 %
Bumthang	0.00	4.92	95.08	0.00	100.00
Chukha	30.22	23.99	45.79	0.00	100.00
Dagana	14.11	8.59	77.30	0.00	100.00
Gasa	2.94	0.98	96.08	0.00	100.00
Haa	11.17	4.26	84.57	0.00	100.00
Lhuntse	12.23	18.09	69.68	0.00	100.00
Mongar	8.44	12.28	79.28	0.00	100.00
Paro	70.68	11.24	18.07	0.00	100.00
Pemagatshel	0.95	4.76	94.29	0.00	100.00
Punakha	23.13	11.56	64.63	0.68	100.00
Samdrupjongkhar	19.10	15.08	65.83	0.00	100.00
Samtse	23.79	25.83	50.38	0.00	100.00
Sarpang	27.16	40.95	31.90	0.00	100.00
Thimphu	21.33	18.00	60.67	0.00	100.00
Trashigang	13.91	13.91	72.18	0.00	100.00
Trashiyangtse	42.92	24.20	32.88	0.00	100.00
Trongsa	9.09	41.41	49.49	0.00	100.00
Tsirang	17.13	25.93	56.94	0.00	100.00
Wangdue	21.18	20.83	57.99	0.00	100.00
Zhemgang	8.33	41.67	50.00	0.00	100.00
Total Bhutan	20.46	18.64	60.88	0.02	100.00

Beneficiary Labour Contribution

Table 8.1 Money Received for Woola Over the Last Twelve Months in Percent for Each Dzongkhag (Question 10)

Dzongkhag	Money received (in ngultrum)						100 %
	0 (%)	1-999 (%)	1000-1999 (%)	2000-2999 (%)	3000-3999 (%)	4000 + (%)	
Bumthang	27.78	0.00	68.75	0.69	2.08	0.69	100.00
Chukha	5.71	31.43	45.71	0.00	14.29	2.86	100.00
Dagana	0.00	50.00	20.00	0.00	15.00	15.00	100.00
Gasa	39.43	4.00	21.71	14.86	12.00	8.00	100.00
Haa	94.55	1.56	1.95	0.00	1.17	0.78	100.00
Lhuntse	74.07	5.35	16.46	0.00	2.06	2.06	100.00
Mongar	85.04	4.72	4.72	1.97	2.36	1.18	100.00
Paro	57.30	0.83	0.28	1.65	6.89	33.06	100.00
Pemagatshel	0.00	26.09	21.74	26.09	4.35	21.74	100.00
Punakha	82.72	0.74	14.71	1.47	0.37	0.00	100.00
Samdrupjongkhar	0.00	0.00	72.06	1.47	20.59	5.88	100.00
Samtse	5.56	52.78	25.00	5.56	5.56	5.56	100.00
Sarpang	94.33	4.20	0.84	0.21	0.42	0.00	100.00
Thimphu	86.90	1.75	1.31	1.09	6.11	2.84	100.00
Trashigang	77.78	22.22	0.00	0.00	0.00	0.00	100.00
Trashiyangtse	0.00	3.01	6.02	1.50	42.11	47.37	100.00
Trongsa	0.00	4.30	1.08	0.00	65.59	29.03	100.00
Tsirang	55.73	32.82	8.40	0.76	0.00	2.29	100.00
Wangdue	75.24	2.64	14.66	1.92	2.40	3.13	100.00
Zhemgang	47.78	16.26	20.69	2.46	5.42	7.39	100.00
Total Bhutan	67.74	5.33	11.33	1.92	6.42	7.26	100.00

Table 8.2 Money Received by Household for Woola Over the Last Twelve Months in Percent for Each Status (Question 1 & 10)

Status	Money received (in ngultrum)							100%	Average money received by household (in Nu.)
	0 (%)	1-999 (%)	1000-1999 (%)	2000-2999 (%)	3000-3999 (%)	4000 + (%)			
Exempted	97.78	0.30	0.61	0.20	0.61	0.51	100.00	62.61	
Liabe	56.52	7.02	15.39	2.62	8.61	9.85	100.00	2163.30	
All	67.74	5.33	11.33	1.92	6.42	7.26	100.00	1576.49	

Table 8.3 Money Received for Woola Over the Last Twelve Months in Percent for Each Liabe Household Reaction (Question 5 & 10)

Reaction	Money received (in ngultrum)							100%	Average money received by household (in Nu.)
	0 (%)	1-999 (%)	1000-1999 (%)	2000-2999 (%)	3000-3999 (%)	4000 + (%)			
Perform by household member	51.20	7.72	17.39	3.00	9.71	10.98	100.00	2518.04	
Hiring someone with cash payment	71.62	5.04	9.02	1.33	6.90	6.10	100.00	758.44	
Paid time for being absent	85.29	2.94	2.94	2.94	5.88	0.00	100.00	283.97	
All liabe	67.74	5.33	11.33	1.92	6.42	7.26	100.00	2163.30	

Beneficiary Labour Contribution

Table 9.1 General Characteristics on Woola-Performing Individuals in Dzongkhag (Question 8)

Dzongkhag	Proportion of men (in % of all performers)	Age (average)	Family member (in % of all performers)	Average number of days performed ^g	Average number of days performed if paid ^h	Average money received ⁱ (in Nu.)	Average money received if paid ^j (in Nu.)	Average daily salary ^k for Woola (in Nu.)
Bumthang	65.41	33.63	81.34	15.66	17.40	264.69	1354.58	102.03
Chukha	90.77	37.31	82.01	17.10	15.54	288.58	1350.39	99.30
Dagana	70.91	34.28	97.68	8.01	4.88	75.34	2991.67	90.00*
Gasa	64.25	37.83	91.71	40.29	13.75	208.88	2301.58	208.33*
Haa	47.83	39.80	87.65	13.25	52.42	238.88	1426.67	76.53
Lhuntse	83.64	35.51	93.87	22.09	21.73	324.05	1839.19	88.79*
Mongar	60.41	35.76	90.96	22.27	20.23	109.62	1822.72	105.00
Paro	76.47	36.07	65.45	75.20	57.73	2183.77	5484.53	105.88
Pemagatshel	69.43	39.18	86.96	18.82	22.52	238.96	1772.94	102.67
Punakha	62.14	33.56	87.86	9.16	10.55	153.35	1258.75	101.27
Samdrupjongkhar	81.93	35.16	96.52	32.18	25.00	14.61	456.40	75.56*
Samtse	95.95	33.94	95.77	17.56	11.52	26.74	532.14	76.16
Sarpang	71.98	35.21	96.24	22.36	30.04	33.23	679.42	86.60*
Thimphu	81.15	37.78	92.90	29.75	32.44	576.70	2441.23	96.31
Trashigang	68.88	37.70	85.17	30.98	27.17	13.12	185.00	10.20
Trashiyangtse	58.17	35.61	76.17	47.07	117.73	728.14	4196.08	129.75
Trongsa	61.61	34.09	82.76	38.23	36.00	526.96	3219.05	93.85*
Tsirang	90.03	38.27	93.72	8.69	20.60	33.35	697.83	71.84
Wangdue	61.62	37.38	89.74	25.63	18.00	254.48	1674.41	134.43
Zhemgang	67.78	35.18	92.47	28.93	18.53	113.30	1573.25	86.80*
Total Bhutan	73.98	36.01	90.27	22.76	32.72	237.59	2257.88	98.47

^g Includes unpaid days.

^h Paid days only.

ⁱ Includes zero remunerations.

^j Non-zero remunerations only.

^k Calculated for non-family members with non-zero remuneration only.

* Average daily salary calculated from less than 15 observations.

Karma Ura

Table 9.2 Average Number of Days Performed and Average Money Received for Family Members and Non-Family Members (Question 8)

Dzongkhag	Average number of days performed			Average money received ¹ (in Nu.)		
	Family member	Non-family member	All	Family member	Non-family member	All
Bumthang	15.81	15.00	15.66	0.04	1408.00	264.69
Chukha	17.44	15.57	17.10	70.42	1282.79	288.58
Dagana	8.02	7.20	8.01	69.27	516.67	75.34
Gasa	39.17	55.60	40.29	35.14	2887.50	208.88
Haa	5.79	66.26	13.25	73.21	1398.50	238.88
Lhuntse	22.53	14.27	22.09	272.22	1179.17	324.05
Mongar	22.56	19.20	22.27	28.21	990.67	109.62
Paro	46.91	131.09	75.20	347.06	5653.10	2183.77
Pemagatshel	19.10	16.89	18.82	73.55	1341.70	238.96
Punakha	8.70	12.48	9.16	5.81	1168.40	153.35
Samdrupjongkhar	32.85	13.82	32.18	1.04	390.91	14.61
Samtse	17.80	12.12	17.56	2.59	572.89	26.74
Sarpang	22.61	15.64	22.36	2.35	920.00	33.23
Thimphu	29.47	30.63	29.75	173.79	1846.74	576.70
Trashigang	29.45	50.05	30.98	6.08	104.83	13.12
Trashiyangtse	49.07	35.40	47.07	220.09	3646.15	728.14
Trongsa	39.26	33.16	38.23	157.90	2280.00	526.96
Tsirang	8.46	12.16	8.69	4.22	468.10	33.35
Wangdue	25.79	24.31	25.63	92.05	1666.96	254.48
Zhemgang	29.17	25.94	28.93	69.57	681.77	113.30
Total Bhutan	22.57	39.24	22.76	60.45	1920.01	237.59

Beneficiary Labour Contribution

Table 10.1 Types of Woola Performed by Individuals in Percent for Each Dzongkhag (Question 8)

Dzongkhag	Type of Woola (1 st of 2)						
	Thungchhu	Lhakang construction	Schools	BHUs	Irrigation channels	Gup office maintenance	Bridge construction
Bumthang	0.74	91.85	0.74	0.00	0.74	1.48	0.74
Chukha	2.65	30.68	33.92	5.90	3.83	1.47	11.50
Dagana	4.80	26.72	26.93	5.64	1.25	7.72	0.84
Gasa	2.75	12.64	4.40	0.55	0.55	0.00	9.89
Haa	0.00	27.78	3.70	3.70	3.09	0.00	3.09
Lhuntse	0.00	57.55	25.47	0.00	0.94	1.42	6.60
Mongar	3.48	27.84	24.54	6.04	5.49	5.86	3.11
Paro	1.47	88.28	1.10	0.37	4.40	0.37	0.00
Pemagatshel	7.33	39.66	42.24	1.29	1.29	0.43	3.02
Punakha	0.94	57.28	12.21	0.00	2.35	0.00	4.23
Samdrupjongkhar	6.17	9.26	65.12	0.31	1.54	0.00	14.81
Samtse	5.42	5.58	40.03	6.38	2.55	2.87	17.38
Sarpang	16.17	20.55	13.16	3.93	9.47	3.93	8.31
Thimphu	3.90	32.20	13.17	0.49	11.22	0.49	4.39
Trashigang	6.30	29.39	19.34	4.05	1.20	10.04	5.10
Trashiyangtse	4.03	31.50	8.79	0.00	6.23	0.37	6.96
Trongsa	0.00	37.72	4.39	0.00	0.00	0.00	0.00
Tsirang	6.31	33.85	23.54	8.77	1.85	6.15	1.54
Wangdue	7.83	64.78	14.78	2.17	3.70	1.52	3.91
Zhemgang	8.16	19.59	31.02	7.35	9.39	4.08	5.71
Total Bhutan	5.06	33.71	23.74	3.87	3.60	3.13	6.12

¹Zero remunerations included.

Karma Ura

Dzongkhag	Type of Woola (2 nd of 2)						100 %
	Animal husbandry centres	Agriculture centres	Carrying baggages for officials	Carrying messages between villages	Chadri preparation for official visits	Other	
Bumthang	0.00	0.00	0.00	0.00	0.00	3.70	100.00
Chukha	0.59	3.54	2.36	2.36	1.18	0.00	100.00
Dagana	0.21	0.84	5.01	0.42	7.93	11.48	100.00
Gasa	0.00	0.00	4.95	0.55	35.71	28.02	100.00
Haa	0.00	1.85	4.94	1.85	46.91	3.09	100.00
Lhuntse	0.00	0.47	3.77	0.94	1.89	0.94	100.00
Mongar	0.55	2.01	13.74	0.18	5.86	1.10	100.00
Paro	0.00	1.10	0.37	0.00	2.56	0.00	100.00
Pemagatshel	0.43	0.00	2.16	1.29	0.43	0.43	100.00
Punakha	5.63	4.23	1.88	0.47	4.69	6.10	100.00
Samdrupjongkhar	0.31	0.00	0.31	0.00	0.62	1.54	100.00
Samtse	0.16	1.75	4.47	0.00	4.78	8.61	100.00
Sarpang	0.00	21.48	0.69	0.00	0.92	1.38	100.00
Thimphu	0.49	0.98	5.37	0.00	0.00	27.32	100.00
Trashigang	0.75	0.75	1.05	0.15	10.34	11.39	100.00
Trashiyangtse	0.73	0.00	0.37	0.00	2.20	38.83	100.00
Trongsa	0.00	0.00	0.00	0.00	0.00	57.89	100.00
Tsirang	1.69	4.92	5.85	1.08	4.15	0.31	100.00
Wangdue	0.22	0.43	0.00	0.00	0.65	0.00	100.00
Zhemgang	0.41	0.00	4.08	0.41	1.22	8.57	100.00
Total Bhutan	0.58	2.88	3.55	0.46	5.69	7.61	100.00

Beneficiary Labour Contribution

Table 10.2 Type of Woola performed by a Representative Woola Performer, in Average Number of Days Performed^m, for Each Dzongkhag (Question 8)

Dzongkhag	Type of Woola (1 st of 2)						
	Thungchhu	Lhakhang construction	Schools	BHUs	Irrigation channels	Gup office maintenance	Bridge construction
Bumthang	0.12	14.38	0.12	0.00	0.12	0.23	0.12
Chukha	0.45	5.25	5.80	1.01	0.66	0.25	1.97
Dagana	0.39	2.14	2.16	0.45	0.10	0.62	0.07
Gasa	1.11	5.09	1.77	0.22	0.22	0.00	3.99
Haa	0.00	3.68	0.49	0.49	0.41	0.00	0.41
Lhuntse	0.00	12.71	5.63	0.00	0.21	0.31	1.46
Mongar	0.78	6.20	5.47	1.35	1.22	1.31	0.69
Paro	1.11	66.39	0.83	0.28	3.31	0.28	0.00
Pemagatshel	1.38	7.46	7.95	0.24	0.24	0.08	0.57
Punakha	0.09	5.25	1.12	0.00	0.22	0.00	0.39
Samdrupjongkhar	1.99	2.98	20.96	0.10	0.50	0.00	4.77
Samtse	0.95	0.98	7.03	1.12	0.45	0.50	3.05
Sarpang	3.62	4.60	2.94	0.88	2.12	0.88	1.86
Thimphu	1.16	9.58	3.92	0.15	3.34	0.15	1.31
Trashigang	1.95	9.11	5.99	1.26	0.37	3.11	1.58
Trashiyangtse	1.90	14.83	4.14	0.00	2.93	0.17	3.28
Trongsa	0.00	14.42	1.68	0.00	0.00	0.00	0.00
Tsirang	0.55	2.94	2.05	0.76	0.16	0.53	0.13
Wangdue	2.01	16.60	3.79	0.56	0.95	0.39	1.00
Zhemgang	2.36	5.67	8.97	2.13	2.72	1.18	1.65

^m Obtained by multiplying values of table 10.1 with average number of days performed for woola in each Dzongkhag (table 9.2, column *All*).

Karma Ura

Dzongkhag	Type of Woola (2 nd of 2)						Average number of days performed
	Animal husbandry centres	Agriculture centres	Carrying baggages for officials	Carrying messages between villages	Chadri preparation for official visits	Other	
Bumthang	0.00	0.00	0.00	0.00	0.00	0.58	15.66
Chukha	0.10	0.61	0.40	0.40	0.20	0.00	17.10
Dagana	0.02	0.07	0.40	0.03	0.64	0.92	8.01
Gasa	0.00	0.00	1.99	0.22	14.39	11.29	40.29
Haa	0.00	0.25	0.66	0.25	6.22	0.41	13.25
Lhuntse	0.00	0.10	0.83	0.21	0.42	0.21	22.09
Mongar	0.12	0.45	3.06	0.04	1.31	0.25	22.27
Paro	0.00	0.83	0.28	0.00	1.93	0.00	75.20
Pemagatshel	0.08	0.00	0.41	0.24	0.08	0.08	18.82
Punakha	0.52	0.39	0.17	0.04	0.43	0.56	9.16
Samdrupjongkhar	0.10	0.00	0.10	0.00	0.20	0.50	32.18
Samtse	0.03	0.31	0.79	0.00	0.84	1.51	17.56
Sarpang	0.00	4.80	0.15	0.00	0.21	0.31	22.36
Thimphu	0.15	0.29	1.60	0.00	0.00	8.13	29.75
Trashigang	0.23	0.23	0.33	0.05	3.20	3.53	30.98
Trashiyangtse	0.34	0.00	0.17	0.00	1.04	18.28	47.07
Trongsa	0.00	0.00	0.00	0.00	0.00	22.13	38.23
Tsirang	0.15	0.43	0.51	0.09	0.36	0.03	8.69
Wangdue	0.06	0.11	0.00	0.00	0.17	0.00	25.63
Zhemgang	0.12	0.00	1.18	0.12	0.35	2.48	28.93

Beneficiary Labour Contribution

Table 11 Age and Gender of Woola Performers in Percent for Each Gender Category in Bhutan (Question 8)

Gender	Age (in years)						100%	Average age
	0-19 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50-59 (%)	60 + (%)		
Male	9.03	24.62	24.02	21.39	13.94	7.00	100.00	37.33
Female	14.95	32.14	22.82	18.04	8.84	3.21	100.00	32.49
All	10.56	26.56	23.71	20.52	12.62	6.02	100.00	36.01

Table 12 Age and Types of Woola for Woola Performers in Percent for Each Type of Woola Category in Bhutan (Question 8)

Type of Woola	Age (in years)						100%	Average age
	0-19 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50-59 (%)	60+ (%)		
Thungchhu	9.82	26.79	22.02	21.13	11.61	8.63	100.00	37.39
Lhakang construction	10.16	27.42	22.70	20.98	12.78	5.96	100.00	36.17
Schools	11.86	26.47	23.46	19.84	12.40	5.97	100.00	35.79
BHUs	8.68	27.27	26.45	21.49	11.16	4.96	100.00	36.36
Irrigation channels	7.02	26.75	26.75	21.49	10.53	7.46	100.00	36.84
Gup office maintenance	7.69	25.64	25.13	20.51	14.87	6.15	100.00	34.92
Bridge construction	11.20	28.27	25.87	20.00	10.67	4.00	100.00	36.95
Animal husbandry centres	8.11	21.62	21.62	29.73	13.51	5.41	100.00	35.29
Agriculture centres	13.07	25.57	25.00	16.48	15.91	3.98	100.00	35.10
Carrying baggages for officials	9.95	29.86	23.98	19.46	13.57	3.17	100.00	37.83
Carrying messages between villages	10.34	20.69	31.03	13.79	13.79	10.34	100.00	37.58
Chadri preparation for official visits	13.52	19.72	22.25	21.13	14.65	8.73	100.00	36.14
Other	9.63	26.91	23.41	21.88	12.69	5.47	100.00	33.75
All	10.56	26.56	23.71	20.52	12.62	6.02	100.00	36.01

Beneficiary Labour Contribution

Table 13 Age and Number of Days Performed by Woola Performers in Percent for Each Number of Days Category in Bhutan (Question 8)

Number of days performed	Age (in years)						100%	Average age
	0-19 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50-59 (%)	60 + (%)		
1-9	11.20	25.91	24.39	19.78	11.79	6.93	100.00	36.16
10-19	9.96	27.64	23.02	20.45	13.32	5.61	100.00	36.18
20-29	12.99	23.38	24.24	20.78	10.39	8.23	100.00	36.34
30-39	10.44	28.22	22.00	20.89	13.00	5.44	100.00	36.02
40-49	13.56	26.55	20.90	25.99	8.47	4.52	100.00	34.63
50 +	7.83	25.41	25.26	21.86	15.07	4.58	100.00	36.72
All	10.56	26.56	23.71	20.52	12.62	6.02	100.00	36.01

Table 14.1 Age and Cash Received by Woola Performers in Percent for Each Cash Category in Bhutan (Question 8)

Cash paid if hired (in Nu.)	Age (in years)						100%	Average age
	0-19 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50-59 (%)	60 + (%)		
0	12.47	25.78	22.79	20.01	12.54	6.41	100.00	36.17
1-500	20.55	24.66	21.46	19.18	12.33	1.83	100.00	34.13
501-1000	14.61	24.72	17.98	21.35	14.61	6.74	100.00	38.39
1001-1500	7.63	32.20	27.97	17.80	9.32	5.08	100.00	35.33
1501-2000	20.83	16.67	29.17	16.67	16.67	0.00	100.00	33.25
2001 +	11.06	29.65	25.66	21.68	10.62	1.33	100.00	35.41
All	12.67	25.94	22.90	20.01	12.45	6.03	100.00	36.01

Table 14.2 Age and Cash Received by Family Member Woola Performers in Percent for Each Cash Category in Bhutan (Question 8)

Cash paid if hired (in Nu.)	Age (in years)						100%	Average age
	0-19 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50-59 (%)	60+ (%)		
0	12.47	25.67	22.64	20.16	12.65	6.41	100.00	36.23
1-500	20.25	13.92	21.52	24.05	16.46	3.80	100.00	36.74
501-1000	15.00	15.00	15.00	25.00	10.00	20.00	100.00	41.45
1001-1500	7.14	14.29	17.86	25.00	17.86	17.86	100.00	43.18
1501-2000	0.00	50.00	50.00	0.00	0.00	0.00	100.00	28.50
2001+	5.08	32.20	27.12	13.56	18.64	3.39	100.00	37.18
All	12.48	25.50	22.63	20.18	12.77	6.44	100.00	36.29

Table 14.3 Age and Cash Received by Non-Family Member Woola Performers in Percent for Each Cash Category in Bhutan (Question 8)

Cash paid if hired (in Nu.)	Age (in years)						100%	Average age
	0-19 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50-59 (%)	60+ (%)		
0	12.40	30.58	29.75	13.22	7.44	6.61	100.00	33.85
1-500	20.71	30.71	21.43	16.43	10.00	0.71	100.00	32.07
501-1000	14.49	27.54	18.84	20.29	15.94	2.90	100.00	37.48
1001-1500	7.78	37.78	31.11	15.56	6.67	1.11	100.00	32.77
1501-2000	22.73	13.64	27.27	18.18	18.18	0.00	100.00	33.68
2001+	13.17	28.74	25.15	24.55	7.78	0.60	100.00	34.68
All	14.45	30.21	25.45	18.39	9.36	2.13	100.00	33.80

Beneficiary Labour Contribution

Table 15. Gender and Types of Woola for Woola Performers in Percent for Each Gender Category in Bhutan (Question 8)

Gender	Type of Woola (1 st of 2)						
	Thungchhu (%)	Lhakhang construction (%)	Schools (%)	BHUs (%)	Irrigation channels (%)	Gup office maintenance (%)	Bridge construction (%)
Male	4.76	33.92	25.35	4.04	3.43	3.09	6.47
Female	5.93	33.09	19.08	3.36	4.10	3.24	5.08
All	5.06	33.71	23.74	3.87	3.60	3.13	6.12

Gender	Type of Woola (2 nd of 2)						
	Animal husbandry centres (%)	Agriculture centres (%)	Carrying baggages for officials (%)	Carrying messages between villages (%)	Chadri preparation for official visits (%)	Other (%)	100 %
Male	0.53	2.86	3.39	0.51	4.99	6.65	100.00
Female	0.73	2.94	4.04	0.31	7.71	10.39	100.00
All	0.58	2.88	3.55	0.46	5.69	7.61	100.00

Table 16. Gender and Number of Days Performed by Woola Performers in Percent for Each Gender Category in Bhutan (Question 8)

Gender	Number of days performed						100%	Average number of days
	1-9 (%)	10-19 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50 + (%)		
Male	37.70	30.99	3.50	13.68	2.97	11.16	100.00	23.12
Female	37.36	29.47	4.80	16.10	2.49	9.78	100.00	21.73
All	37.61	30.60	3.84	14.31	2.85	10.80	100.00	22.76

Table 17. Gender and Cash Received by Woola Performers in Percent for Each Gender Category in Bhutan (Question 8)

Gender	Cash received if hired (in ngultrum)					100%	Average cash received ⁿ
	1-500 (%)	501-1000 (%)	1001-1500 (%)	1501-2000 (%)	2000 + (%)		
Male	32.99	14.02	18.12	3.59	31.28	100.00	2255.97
Female	33.01	9.71	15.53	2.91	38.83	100.00	2268.66
All	32.99	13.37	17.73	3.49	32.41	100.00	2257.88

ⁿ Excluding zero Nu. remunerations

Beneficiary Labour Contribution

Table 18. Types of Woola and Cash Received by Woola Performers in Percent for Each Type of Woola Category in Bhutan (Question 8)

Type of Woola	Cash received if hired (in ngultrum)					100%	Average cash received ^o
	1-500 (%)	501-1000 (%)	1001-1500 (%)	1501-2000 (%)	2000 + (%)		
Thungchhu	71.43	9.52	9.52	0.00	9.52	100.00	658.75
Lhakhang construction	21.51	10.48	18.01	5.11	44.89	100.00	3132.11
Schools	41.53	20.34	11.02	5.93	21.19	100.00	1388.61
BHUs	43.48	13.04	26.09	0.00	17.39	100.00	1115.00
Irrigation channels	25.00	15.00	20.00	5.00	35.00	100.00	1765.95
Gup office maintenance	52.94	17.65	17.65	0.00	11.76	100.00	1117.69
Bridge construction	53.13	9.38	31.25	0.00	6.25	100.00	1019.37
Animal husbandry centres	66.67	0.00	33.33	0.00	0.00	100.00	733.33
Agriculture centres	54.55	22.73	0.00	0.00	22.73	100.00	868.86
Carrying baggages for officials	52.63	10.53	10.53	0.00	26.32	100.00	1509.33
Carrying messages between villages	33.33	0.00	66.67	0.00	0.00	100.00	1166.67
Chadri preparation for official visits	71.43	7.14	10.71	0.00	10.71	100.00	1159.55
Other	19.64	5.36	7.14	7.14	60.71	100.00	2512.18
All	32.99	13.37	17.73	3.49	32.41	100.00	2257.88

^o Excluding zero Nu. remunerations.

Table 19. Number of Days Performed and Cash Received by Woola Performers in Percent for Each Number of Days Category in Bhutan (Question 8)

Number of days performed	Cash received if hired (in ngultrum)						Average cash received ^p
	1-500 (%)	501-1000 (%)	1001-1500 (%)	1501-2000 (%)	2000 + (%)	100%	
1-9	79.41	15.69	1.96	1.47	1.47	100.00	603.09
10-19	17.05	23.04	49.77	4.15	5.99	100.00	1265.63
20-29	8.70	4.35	17.39	21.74	47.83	100.00	2098.36
30-39	11.59	1.45	3.62	3.62	79.71	100.00	2891.84
40-49	33.33	0.00	0.00	0.00	66.67	100.00	2645.21
50 +	13.14	2.19	0.73	7.30	76.64	100.00	5953.01
All	32.99	13.37	17.73	3.49	32.41	100.00	2257.88

^p Excluding zero Nu. remunerations.

Beneficiary Labour Contribution

Table 20. Types of Woola and Number of Days Performed by Woola Performers in Percent for Each Type of Woola Category in Bhutan (Question 8)

Type of Woola	Number of days performed						100 %	Average number of days
	1-9 (%)	10-19 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50 + (%)		
Thungchhu	43.79	21.75	3.95	14.12	5.65	10.73	100.00	24.46
Lhaxhang construction	30.30	32.27	3.77	14.00	2.38	17.28	100.00	29.45
Schools	41.09	34.61	3.50	11.21	2.07	7.52	100.00	17.87
BHUs	50.99	28.82	4.80	18.78	1.75	6.32	100.00	15.23
Irrigation channels	28.82	29.26	4.80	18.78	1.75	16.59	100.00	27.61
Gup office maintenance	58.44	22.94	4.76	8.66	1.73	16.59	100.00	16.29
Bridge construction	28.15	37.53	2.96	16.54	9.38	3.46	100.00	21.73
Animal husbandry centres	78.05	21.95	0.00	0.00	0.00	5.43	100.00	5.35
Agriculture centres	42.31	36.26	5.49	12.64	0.55	0.00	100.00	16.33
Carrying baggages for officials	52.97	15.68	0.42	26.27	2.12	2.75	100.00	15.11
Carrying messages between villages	68.97	31.03	0.00	0.00	0.00	2.54	100.00	6.75
Chadri preparation for official visits	69.29	19.29	4.89	2.45	1.63	0.00	100.00	9.37
Other	24.01	23.21	3.17	29.17	3.37	2.45	100.00	29.35
All	37.61	30.60	3.84	14.31	2.85	10.80	100.00	22.76

Table 21.1 Wage Received by Woola Performers, for Each Gender (Question 8)

	Gender	Average daily salary ^q (in Nu.)
	Male	98.16
	Female	100.65
	All	98.47

Table 21.2 Wage Received by Woola Performers, for Each Age Group (Question 8)

	Age (in years)	Average daily salary ^r (in Nu.)
	0-19	83.54
	20-29	94.48
	30-39	93.38
	40-49	102.21
	50-59	111.50
	60 +	55.00
	All	98.47

^q Calculated for non-family members with non-zero remuneration only.

^r Idem.

Beneficiary Labour Contribution

Table 21.3 Wage Received by Woola Performers, for Each Type of Woola (Question 8)

Type of Woola	Average daily salary ^s (in Nu.)
Thungchhu	70.39
Lhakhang construction	96.51
Schools	111.91
BHUs	96.79
Irrigation channels	136.81
Gup office maintenance	83.17
Bridge construction	63.06
Animal husbandry centres	100.00
Agriculture centres	87.69
Carrying baggages for officials	118.16
Carrying messages between villages	n/a
Chadri preparation for official visits	113.03
Other	93.37
All	98.47

^s Idem.

Table 22. Correlation Coefficients for Different Variables

	% of urban in Dzongkhag ^t	% perform by household member(s) ^u	Average daily salary ^v for Woola	Highway access index	Poverty index
% of urban in Dzongkhag	1	-0.527	-0.002	0.336	-0.331
% perform by household member(s)		1	-0.185	-0.217	0.406
Average daily salary for Woola			1	-0.239	0.158
Highway access index				1	-0.917
Poverty index					1

^t Index of the proportion of urban regions in each Dzongkhag.

^u Proportion of liable households performing Woola by a household member.

^v Calculated for non-family members with non-zero remuneration only.

Beneficiary Labour Contribution

Appendix

**Bhutan National Literacy Survey 2003
Questionnaire on Local Resource Contribution**

Household ID:

Village:..... Gewog:..... Dzongkhag.....

1. Are you exempted from Zhapto Lemi/woola or liable household?

- | | |
|-------------|------------------|
| 1. exempted | 2. Liable (>>Q4) |
|-------------|------------------|

2. If you are exempted from Zhapto Lemi/woola, what were the reasons for this? (Circle the codes)

- | | | |
|---------------------------------------|-------------------------------|---------------------------|
| 1. Mephu household | 2 Zurpa household | 3. Community Post |
| 4. Old or sick household members | 5. Past merit/kasho | 6. Death in the household |
| 7. Original house is vacated/migrated | 8. Did not want to contribute | 9. Other.....; |

3. Who authorized the exemption?

- | | | |
|------------|-------------------------------|----------|
| 1. Dzongda | 2 Gup | 3.Mangap |
| 4. Tshogpa | 5.Other authorities (specify) | |

4. How many members within your household have the capacity to perform Zhapto Lemi?(..2..)
(End interview for the EXEMPTED household)

5. Did your household perform Zhapto Lemi / Woola by household members or pay cash in substitution?

- | | |
|--------------------------------------|-------------------------------------|
| 1. Perform by household member(s) | 2. Pay cash to hire somebody (>>Q8) |
| 3. Paid time for being absent (>>Q8) | |

6. If Zhapto Lemi was performed with own labour instead of giving cash, what were the reasons? (Select one of the most important reason)

- | | | |
|----------------------------|-------------------------|-----------------------------------|
| 1. Lack of money | 2.Opportunity of income | 3. Surplus of labour in household |
| 4. Not allow to substitute | 5. Other..... | |

Karma Ura

7. (SKIP if no replacement) If you substitute the labour by a cash payment for at least one type of woola, what were the reasons? (select only the most important reason)

- | | |
|---|--|
| 1. Cash available | 2. Shortage of labour in the household |
| 3. Providing of labour not allowed/possible | 4. Sickness |
| 5. Remittance from family member | 6. Other |

8. Who performed the Zhapto Lemi/woola during the past 12 months for your household including family members as well as other persons?

9.

Sr.	Name	Sex 1-M 2-F	Age	Family members 1-Yes 2-No	Types of Zhapto Lemi/woola	Numbers of Days Performed	Cash paid if the worker was hired
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1							
2							
3							
4							
5							
6							
7							
8							

Types of Zhapto Lemi/woola (Write appropriate codes in the table)

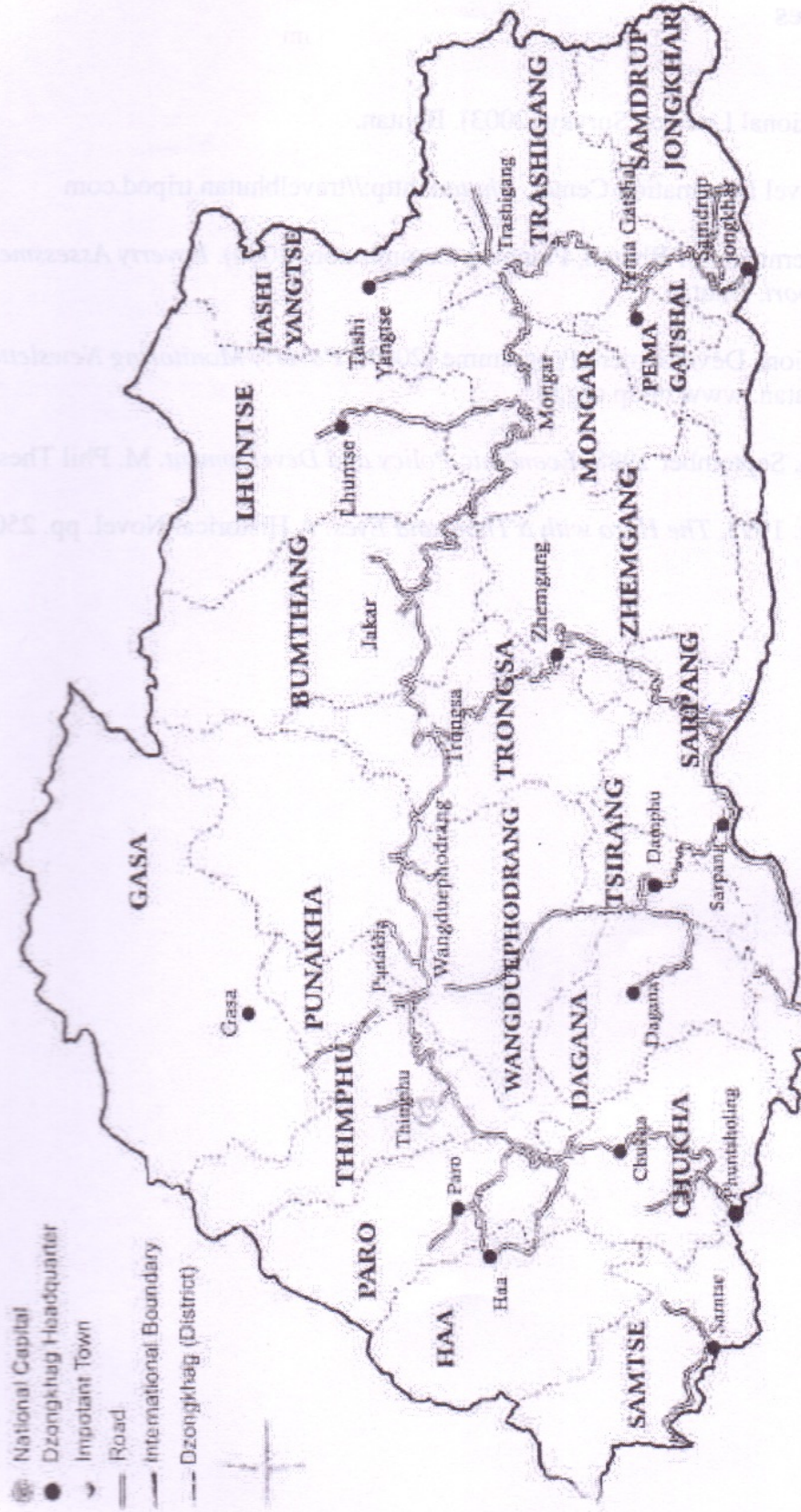
- | | | |
|--|---|---------------------------|
| 1. Thungchhu | 2. Lhakhang Construction | 3. Schools |
| 4. BHUs | 5. Irrigation channel | 6. Gup office maintenance |
| 7. bridge construction | 8. animal husbandry centres | 9. agriculture centres |
| 10. carrying baggage for officials | 11 carrying messages (serem etc.) from one village to another | |
| 12. chadri preparation for official visits | | |
| 13. other (specify)..... | | |

10. What was the trend of total number of days performed Zhapto Lemi/woola over past five years?

- | | |
|--------------------|----------------|
| 1. Stayed the same | 2. Increased |
| 3. Decreased | 4. Do not know |

11. How much cash, in total, did you receive for Zhapto Lemi during the past 12 months? Nu.(....)

Highway Access in Bhutan^w



^w Map found at the Bhutan Travel Information Center site : <http://travelbhutan.tripod.com>

References

Bhutan National Literacy Survey (2003). Bhutan.

Bhutan Travel Information Center. *Bhutan*. <http://travelbhutan.tripod.com>

Royal Government of Bhutan, Planning Commission (2000). *Poverty Assessment and Analysis Report*. Bhutan.

United Nations Development Programme (2003). *Poverty Monitoring Newsletter*. Thimphu, Bhutan. www.undp.org.bt

Karma Ura. September 1988. *Economic Policy and Development*. M. Phil Thesis, pp.154.

Karma Ura. 1995. *The Hero with a Thousand Eyes*. A Historical Novel. pp. 250.

The Centre for Bhutan Studies

Post Box No. 1111

Thimphu, Bhutan

Tel: 975-02-321005, 321111

Facsimile: 975-02-321001

email: cbs@druknet.bt

<http://www.bhutanstudies.org.bt>

ISBN 99936-14-29-7