BHUTAN

N

GASA

LAYA

LUNANA

LINGZHI

SGE

GOENKHATOE

GOENKHAME

NARO

TOEWANG

KAZHI

SEPHU

KURTOE

LHUENTSE

CHHOEKHOR

RHOMA

BUMDELING

YANGTSE

PUNAKHA

CHHUBU

KABISA

GOENSHARI

DANGCHHU

NYISHO

NUBI

BUMTHANG

TANGI

GANGZUR

LHUENTSE

METSHO

MENBI

MINJAY

TRASHI YANGTSE

PARO

THIMPHU

TSENTO

DOTENG

CHANG

TOEPISA

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CHHUME

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TSENKHAR

SHERMUNG

BARTSHAM

TRASHIGANG

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GASELO OM

RUEPISA

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DHUR

SILAMBI

DREPUNG

MONGGAR

MERAK

TRASHIGANG

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TENDU

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TSIRANG

PATAKALA

DOBAN

DEKILING

GELEPHU

JIGMICHHOELING

TRONG

ZHEMGANG

BARDO

GOZHING

NGANGLA

PANGBANG

WRINGLA

GONGDUE

SALENG

JURMEY

NANONG

ZOBEL

PEMAGATSHEL

DECHHENLING

CHOKHORLING

NORBUGANG

SAMDRUP

JONGKHAR

MARTSHALA

SERTHIG

LANGCHENPHU

PHUNTSHOTHANG

DEWATHANG

BIRU

NAMGYEL

CHHOELING

CHENGMARI

DUNGTOE

DENCHHUKHA

SAMTSE

DORAKHA

Donaka

LOGCHINA

DUNGNA

BONGO

GETANA

DORONA

TSENDAGANG

NICHULA

SENGE

HILEY

UMLING

TAKLAI

PHANGKHAR

Gelephu

Phuentsholing

Samdrup Jongkhar

CHHUKHA

SAMDRUP JONGKHAR

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Abbreviations

ABTO	Association of Bhutanese Tour Operators
ADB	Asian Development Bank
BHU	Basic Health Unit
ECR	Extended Classrooms
EDP	Economic Development Policy
FYP	Five Year Plan
GIM	Grant Implementation Manual
GNH	Gross National Happiness
GNHC	Gross National Happiness Commission
HH	Household
JFPR	Japan Fund for Poverty Reduction
NCWC	National Commission for Women and Children
Nu	Ngultrum
ORC	Out Reach Clinic
PHCB	Population and Housing Census of Bhutan
PMU	Project Management Unit
PTM	Potato Tuber Moth
RNR	Renewable Natural Resources
SHG	Self Help Group
SPSS	Statistical Package for the Social Sciences

Glossary

Chiwog	Village
Dzongkhag	District
Gewog	Block
Gup	Elected Gewog Leader
Tengma	Flattened Maize
Mangmi	Deputy Gewog Leader
Tshogpa	Village Representative
Tseri	Slash and burn cultivation
Zorig Chhusum	Thirteen Arts and Crafts

Executive Summary

This Report describes and analyses the socio-economic situation and potential areas for advancing economic opportunities, mostly women within the geographical scope of the project "Advancing Economic opportunities of Women and Girls". The study, sponsored by the Japan Fund for Poverty Reduction (JFPR) through the Asian Development Bank (ADB) is to establish baseline socio economic data of the prospective beneficiaries of the project and provide analytical support to the Project Management Unit (PMU) and implementing partners in identifying production and processing techniques for niche market of agricultural, livestock, arts and crafts and home based industry products. This survey is specifically carried out to determine a viable product with competitive edge for all the 60 SHGs, which will be established through component C of the project. Further skills need assessment in the project areas were carried out to allow the project to make rational interventions in terms of skills development.

The survey methodology consists of quantitative and qualitative data obtained from consultations and interviews with community stakeholders, the use of household questionnaire and participatory observation during the survey. The study covered twelve Gewogs in 4 Dzongkhag[1] and a total of 747 respondents were involved in the socio-economic survey. An equivalent sample of 747 households was randomly selected for the purposes of conducting niche product identification study. The socio economic study revealed that communities aspire for a better lifestyle and they are supportive of the purpose and potential contribution of the project towards the improvement of their economic status, particularly in relation to formation of Self Help Groups. The study highlights the need for focused intervention in areas of farming, livestock and handicrafts in all Gewogs within the geographical scope of the project and for integrated efforts to be channeled in the areas of increasing productivity, value addition and enhancing marketing for all products identified. The study presents a huge potential in formation of SHGs around products in the areas of agriculture, livestock and handicrafts even though there exist SHGs in Gewogs under the purview of the study. As per the Farmers Group Inventory 2011 of the Department of Agricultural Marketing and Cooperatives, there are only 5 in Zhemgang; 8 in Pema Gatshel; 12 in Samtse and 84 in Trashigang in the agriculture and livestock sector. However, there seems to be lesser potential in the area of handicrafts specifically due to lack of skills among household members.

Results of Focused Group Discussions (FGDs) indicate that a considerable number of villagers sell a percentage of their produce. Only some respondents confirmed that they

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[1]*The PMU in collaboration with the Implementing partners has decided to establish focused areas of intervention in the 4 Dzongkhags and a total of 12 Gewogs were selected in consultation with the Dzongkhag Administrations.*

do not sell their product, due to their small land holding or lack of surplus of crop produce enough for marketing/sale and also due to lack of market base within the community. FGDs also indicate that most of the households do market their produce individually, while some sample members (members of existing SHGs) do marketing collectively in-group. As evident from the results of the FGDs, although there is collaborative group marketing but reveals total absence of organizational marketing through cooperatives or groups. There is a need for concerted efforts from the project for organized marketing to enable the members to benefit from the SHGs in the long run.

1   Background

The National Commission for Woman and Children (NCWC) is implementing the project "Advancing Economic Opportunities of Women and Girls" funded by the Asian Development Bank (ADB) which involve improving the economic status for vulnerable women and girls in the selected urban and rural areas by enhancing their capacity to access livelihood (including micro enterprise) and employment opportunities. The component of the project will support direct interventions aimed to: (i) Strengthen the livelihood and entrepreneurial skills of Self Help Groups (SHGs) to make their economic activities sustainable; (ii) Enhance employability of young people especially girls through improved and marketable skills and (iii) Support the implementing agents in providing assistance to SHGs.

In order to ensure sustainability of the SHGs, it was vital for the project to carry out a detailed study to determine the type of product in context of resource endowment, geographical location, social and cultural environment of the project area (Samtse, Zhemgang, Trashigang and Pemagatshel). Further need based skills assessment in the project areas are to be carried out within the baseline survey, which will enable the project to make rational interventions in terms of skills development.

This study was carried out by NT consultancy Services to advice and support the project team and the implementing partners in identifying production and processing techniques for niche market of agricultural, livestock, arts and crafts and home based industry products.

2   Objectives

The primary objective of the study is to provide advice and analytical support to the project team and implementing partners in establishing SHG production systems for increased income sources. To fulfill these objectives the following activities were performed:

i.   Developing and carrying out an in-depth analysis of who could be interested in participating in the formation of Self Help Groups including a skill needs assessment. This required several different approaches taking into consideration area based socio economic factors including baseline average income of the prospective members. The research included gauging possible interest from local governments, community groups and others.

ii. Recommending a methodology to use this for identifying a list of niche products for the SHGs taking into consideration the resource endowment, access to market and socio cultural environment of the project areas.

iii. Developing a feasibility study of what would be the necessary conditions for the SHGs especially related to the products to work on a self-sustainable basis,

including the development of a financial model, pricing model, and a governance structure.

iv. Merging the demand and supply analysis based on the results from (1) and (2) above to analyze different scenarios. This analysis led to assessing the existing and potential local, regional and/or international markets for the viable products under review.

3 Methodology
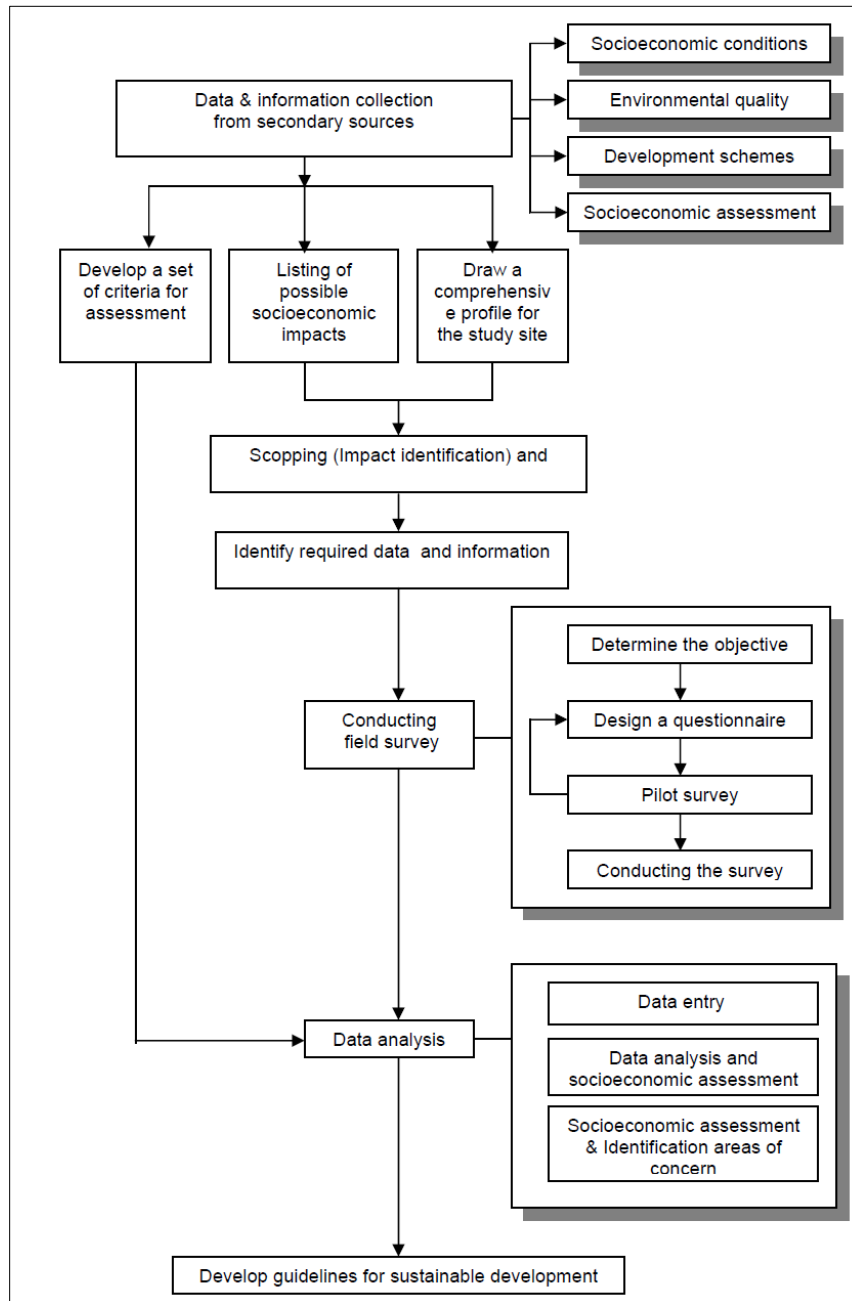
Figure 1: Methodology

The study used both primary and secondary data sources. It blended qualitative and quantitative methods of inquiry buttressed by participatory research/survey techniques. Qualitative data was largely (but not exclusively) generated by key informant interviews and focus group discussions, giving due consideration to gender related issues. Quantitative data was largely collected from official reports/documents & publication (desk research) and administration of surveys in the project areas.

3.1 Sampling Procedure

The survey was conducted in four Dzongkhags to support 20 SHGs in selected *Gewogs* in *Zhemgang* Dzongkhag (central region), 10 SHGs in selected *Gewogs* of *Pemagatshel* and *Trashigang* Dzongkhag (eastern region), and 30 SHGs in selected *Gewogs* in *Samtse* Dzongkhag (southern region).

A. Dzongkhag	B.No of SHGs	C. Gewog	D. No. of Regular Households	E. Population-Male	F. Population-Female	G.Total Population (G=E+F)	Sample size by no. of households (15% of D)
Trashigang	5	Lumang	611	2309	2445	4754	92
Pemagatshel	5	Chimong	176	347	402	749	26
		Dungmin	355	680	790	1470	53
Zhemgang	20	Phangkhar	220	657	710	1367	33
		Trong	597	1759	1555	3314	90
		Nangkhor	492	1276	1251	2527	74
		Shingkhar	325	782	764	1546	49
Samtse	30	Namgaycholing	242	1521	1383	2904	36
		Bara	606	1743	1660	3403	91
		Denchukha	238	721	720	1441	36
		Dumtoe	329	910	929	1839	49
		Tading	790	2165	1950	4115	119
		Total	4981	14870	14559	29429	747

Table 1: Sampling Plan

 The methodology used in this study was especially guided by the terms of reference and available documentation on Gewogs in the above Dzongkhags. A multistage purposive sampling procedure was employed in the selection of the survey population. The main sampling unit of the survey was the household. The team of enumerators interacted and considered the opinion of the local leadership to select truly representative but feasible samples, given the limited timeframe and coverage of the survey. The purposive sampling method employed in this survey was based on the understanding that communities are not homogeneous particularly in terms of

geographical location, climatic conditions, local traditions, conservation challenges, socio-economic values attached and development concerns and threats. Subsequently random sampling was done in identified villages to select households to participate in the survey as respondents. The study team held discussions with the Gewog leaders (Gup, Mangmi and Tshogpas) and also with the Sector Heads of the Dzongkhag Administrations and Gewog Extension Officers. Overall, a total of four (04) Dzongkhags, twelve (12) *Gewogs* and 747 households were considered representative enough for the socio-economic survey. **Table 1** illustrates a summary of the sampling procedure (sampling was done by proposing a table representing demographic details of each Gewog and taking into account 15% of the number of regular households of all Gewogs under the purview of the survey). The sample size was finalized after seeking concurrence of the PMU.

3.2   Data Collection Methods

PRIMARY NOTE: Sex disaggregated data collection was ensured for all methods.

3.3   Questionnaires

The basic method used in this survey was qualitative/key informant interviews. Using this method, the enumerators collected primary data from the people of the area and also conducted several interviews with prospective stakeholders in the development and management of SGHs within the project sites. Although respondents were randomly selected, every attempt was made to get a balanced opinion of the socio-economic issues in the study areas and how they will affect the success and sustainability of SHGs, taking into consideration the baseline average income of the prospective members, resource endowment, access to market and socio cultural environment.

3.4   Literature Review

The study also used secondary data for content analysis. In this method, published research work of the country, Dzongkhags and Gewogs were analyzed to assess trends, changes and correlate such data with the current facts on ground.

3.5   Focus Group Discussions (FGDs)

Subsequently, FGDs were conducted as a follow-up to the content analysis and individual interactions in interviews. FGDs were conducted at the Chiwog and Gewog levels mainly consisting of people with administrative roles in the local governance. Further discussions were held with Gewog Extension Officers to analyze feasibility and development of the SHGs. FGDs also enabled the study to yield specific and pertinent assessment results on identification of a list of products for consideration.

3.6 Data Processing and Analysis

The team developed a data code sheet that was used to maintain the data uniformly for data entry. The data was then entered and analyzed using CSPro program, SPSS and MS Excel. The study team specified the most crucial questions to be analyzed and the kind of analysis they need. Some of the survey questions allowed the respondents to give more than one response. The advantage of this method of inquiry was that it allowed the respondents to give all possible responses to the issue in question.

Data analysis resulted in findings and recommendations within the following primary parameters:

1. Establishment of sex disaggregated baseline socio-economic report including skills need assessment;

2. Identification of prospective niche products for each Gewog and;

3. Proposing market and pricing models for the products identified.

3.7 Quality Control

Interviewers/Enumerators were instructed to check completeness of the questionnaire and accuracy on interview site. At the end of each day, questionnaire-debriefing sessions were held between the supervisor and all interviewers to identify any complications and to agree on common definitions. Interviewers were asked to write down all additional qualitative information. This proved to be useful in capturing important data that would have otherwise been left out by the restrictive design of the survey instruments.

4 Limitations and Constraints of the Survey

1. Covering 12 Gewogs in 4 Dzongkhags in the survey within a month presented administrative and logistic problems. The survey areas were geographically scattered and lack of motorable roads posed the biggest challenge in administration of the survey.

2. The surveys had to be conducted late in the evenings when workingmen and women - the key household members return from their day work. After a hard day's work, these people were physically and mentally tired to give accurate responses. In most cases the interviews were conducted with people, who would have no knowledge of key economic information on family matters.

3. The socio economic survey covering numerous topics was a tiring assignment and 66 out of 747 households (sample size) asked to participate in the survey did not co-operate.

4. Discrepancy has been noticed in various Gewog level data available from various secondary sources. Educated judgment has been used while using the data from a particular source.

5 FINDINGS OF THE SOCIO ECONOMIC SURVEY

5.1 Synthesis and Report Design

This section of the report is the most important part of the socio economic survey research as it is the key in communicating the findings to the project management unit and its implementing partners who can make informed decisions pertaining to project implementation. Every possible attempt has been made to present the findings supported by empirical data from the field, in a precise approach that would enable the stakeholders to make sound interventions. The component C of the Project "*Advancing Economic Opportunities for Women and Girls*" intends to establish 60 SHGs in 12 Gewogs within the geographical scope of the project. According to the Grant Implementation Manual (GIM) of the project, number of SHGs to be established in each Gewog has been apportioned (refer survey plan). Therefore, the findings of the socio economic survey are presented Gewog wise for understanding and clarity. Also, it would mean plausible data analysis from a homogenous administrative, socio economical and geographical/climatic survey zone.

5.2 Literature Review

For identification of products for SHGs, due consideration was given to the existing government policies and programs purposely to provide avenue for complementarities in efforts from various sectors relevant to a particular product. The Economic Development Policy (EDP) of the Government[2] clearly spells out that a broad range of economic opportunities have been identified and these will be based on developing the "Brand Bhutan" in natural resources, tourism, culture, handicrafts, textiles and agro produce. All analysis including identification and market study were fine-tuned and limited to the contents of the EDP 2010 as the areas identified above are those that have the highest potential to generate wealth, employment and sustainable growth within the framework of Gross National Happiness (GNH).

Therefore, these will be the areas that will receive encouragement and support from the Royal Government. As such, sustainability of the SHGs after completion of the project will hinge on continued support of the Government. Further, one of the primary policy

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[2]*The Economic Development Policy sets the agenda and the general direction for the development of sectors that have the highest potential. This Policy departs from the usual sector/agency based approach. It is a document prepared in consultation with a wide range of stakeholders from private to government and its success depends on an integrated and wholesome involvement of all the stakeholders.*

objectives of the Government in the RNR sector is "to enhance sustainable livelihoods through improved agricultural and livestock productivity and expansion of commercial prospects of agriculture and other natural resource endowments" (10th Five Year Plan, Volume 1: GNHC). Thus, emphasis of the study especially in identification of viable products has been given to agricultural and livestock based products. The list of crops and livestock has been adapted from the One Gewog Three Products (OGTP)[3] of the 10th FYP of the Ministry of Agriculture.

6 Chimung Gewog

6.1 General Profile

Chimung Gewog comprises six villages with 198 households. The Gewog covers an area of approximately 41.60 square kilometers. The climate in Chimung is moderate. Tseri and dry land dominate Land use pattern with no wetland farming at all.

6.2 Infrastructure Profile

Chimung Gewog Center is 8 kilometers away from the nearest road end. The farm roads are still under construction and are expected to be complete by the end of the 10th FYP. The following table shows the distance of Chiwogs from the nearest farm road:

Chiwogs in Chhimung Gewog
Pemagatshel Dzongkhag
Scale: 1:35,000

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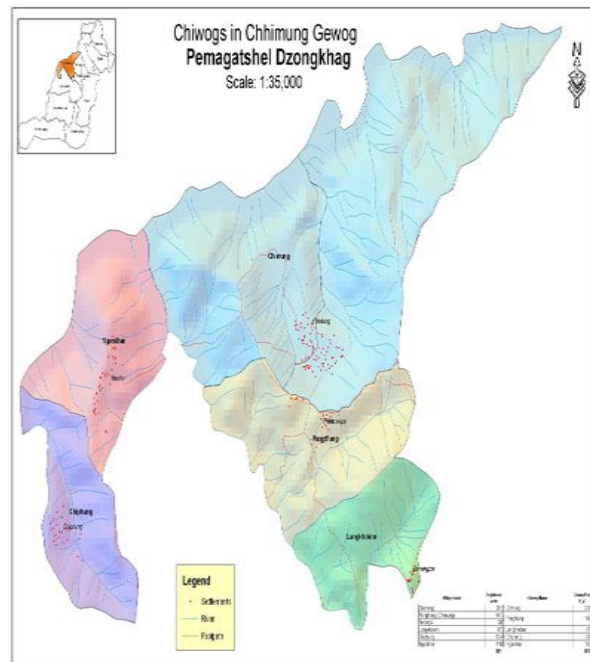
[3]*The objective of the OGTP was to make best use of available resources and existing expertise for development of potential commodities and products in accordance to agro-ecological domain and priorities of the farmers. This very model was planned and implemented in almost 205 Gewogs (Local administrative unit) in 20 Dzongkhags (Districts) to transform potency of extension service through appropriate technical interventions with focus to market oriented productions and value additions. The OGTP based approach strengthened the common platform for extensionists, farmers and researchers to provide a holistic support for products development and production increase leading to marketable surpluses and commercialization of selected agriculture produce in Bhutan. The implementation of OGTP at real field situation therefore was necessary to match with emerging rural development needs within the socio-economic paradigm and resources endowment.*

Sl. No	Name of the Chiwog	No of Households	Accessibility
1	Lungkholum	21	1 hour walk
2	Pangthang	29	Connected to farm road
3	Redingla	6	20 minutes walk from farm road
4	Nyaskhar	36	3hours walk from farm road
5	Chiphung	27	2 & ½ hours walk from farm road
6	Chimung	79	2 hours walk from farm road

Table 2: Distance of Chiwogs from nearest road

As evident from **Table 2**, most of the major Chiwogs are not connected by roads, which have diverse impacts on the livelihood of the people in the Chiwogs primarily in terms of marketing their surplus products. Also, the input cost of their farming as well as livestock rearing tends to be higher compared to other Gewogs, which are accessible, by road. This is mainly owing to the cost of transportation related to agriculture seeds, fertilizers and livestock feed. Another major implication of the inaccessibility is poor progress in mechanization of the farming works.

Development services in the six Chiwogs are provided by one RNR center, one BHU, one ORC, one primary school, one community school, about 48 km of mule tracks, and water supply schemes. **Table 3** showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/ Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	
2	Television service	No	
3	Post office	No	
4	Electricity	No	
5	Drinking water	Yes	
6	BHU	Yes	
7	ORC	Yes	
8	Irrigation	Yes	Limited source and there are plans to construct water pump to increase supply
9	School	Yes	1 Primary school and 1 Extended Class room (ECR)
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	SHGs	Yes	Poultry and Piggery

Table 3: Infrastructure/Facilities Profile

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6.3 Demography and Household Characteristics

The population of the Chimung Gewog is 1687 with 784 male and 903 female (www.dzongkhag.gov.bt). **Figure 2** shows age groups by sex of persons covered by the survey. The average family size is 5 persons with highest of 15 persons and lowest of 1 person per household.
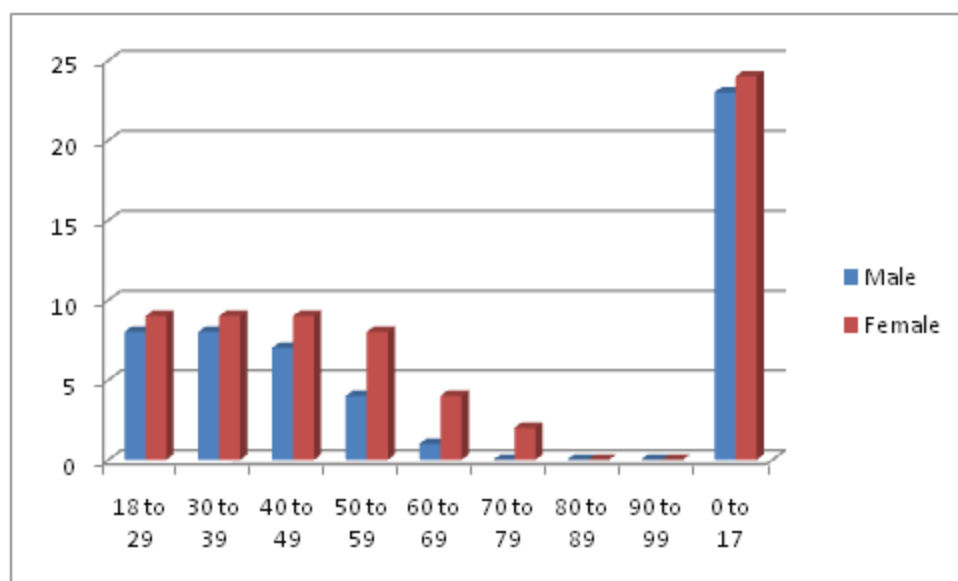
Figure 2: Age by Sex

Age	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
	M	F	M	F	M	F	M	F	M	F	M	F
Total	21	45	17	12	9	8	2	0	1	0	1	0
G Total	66		29		17		2		1		1	
Percentage	57%		25%		15%		2%		1%		1%	
18 to 29	2	5	0	1	3	3	2	0	1	0	0	0
39 to 39	4	8	3	1	0	0	0	0	0	0	1	0
40 to 49	6	9	1	0	0	0	0	0	0	0	0	0
50 to 59	4	8	0	0	0	0	0	0	0	0	0	0
60 to 69	1	4	0	0	0	0	0	0	0	0	0	0
70 to 79	0	2	0	0	0	0	0	0	0	0	0	0
80 to 89	0	0	0	0	0	0	0	0	0	0	0	0
90 to 99	0	0	0	0	0	0	0	0	0	0	0	0
0 to 17	4	9	13	10	6	5	0	0	0	0	0	0

Table 4: Education profile based on Sex and age group

Table 4 presents sex disaggregated data for education levels of persons covered by the survey. Accordingly, 57% of persons covered by the survey have no formal education, while about 25% have completed Primary education. Rest fall within other categories as completed Lower Secondary School (15%), Higher Secondary (2%), or University Degree and Monastic education (1%). None of the respondents have indicated that any of their household members to possess diploma qualification.

6.4   Livelihood and Economic Characteristics

Chimung Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity in the past one year as evident from **Figure 3**.

Consequentially, survey results show that majority of the respondents generate their household income from sale of agriculture produce. On the contrary, results demonstrate that respondents did not earn any income from sale of livestock produce. This indicates that livestock rearing and produce thereof is sufficient for household consumption only. Results shown in **Figure 4** indicate that about 80% of respondents secure their main household income from farming followed by salary/wages (16%). Only 4% indicated that their main source of household income was from remittances.

Figure 3: Main activity by No. of HHs   Figure 4: Primary source of income by No. of HHs
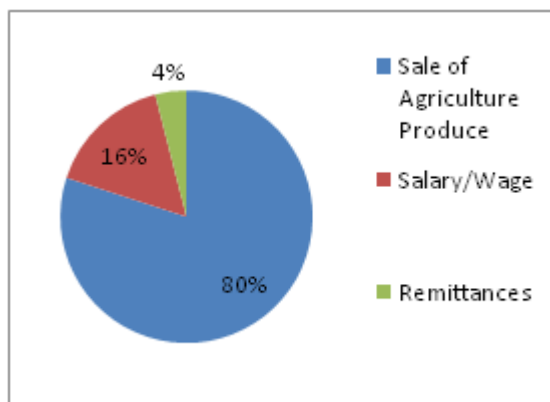
The annual household income ranges between Nu.1000 to Nu.50, 000. **Table 5** shows the number of households in different income brackets.

Household Income	Total
Total	**25**
0 to 4999	2
5000 to 9999	5
10000 to 19999	6
20000 to 29999	5
30000 to 39999	3
40000 to 49999	2
50000 to 59999	1
60000 to 69999	0
70000 to 79999	0
80000 to 89999	0
90000 to 99999	1

Table 5: Income by no. of HHs

6.5 Landholding and Land Use

Survey results indicate that respondents also varied with regard to characteristics of their land holdings. About 44% of the respondents are owners of small farms (less than 2 acres), and 40 % of them are owners of average farms (2-5 acres) while only 16% said that they own farms, which are more than 5 acres. **Table 6** shows number of households who own land in different range of acreage.

In terms of land use, most of the households use their land for agriculture farming while very few households reported that some portion of their land are kept barren due to irrigation and other land related problems like infertility of soil. Generally, there are no severe land problems. **Figure 5** showcases the categorization of land use by number of households.

Land Holding	Total
Total	**25**
1 to 49 decimal	1
50 to 99 decimal	3
100 to 149 decimal	4
150 to 199 decimal	3
200 to 249 decimal	4
250 to 299 decimal	0
300 to 349 decimal	4
350 to 399 decimal	1
400 to 449 decimal	1
450 to 499 decimal	0
500 and above	4

Table 6: Land Holdings by No. of HHs
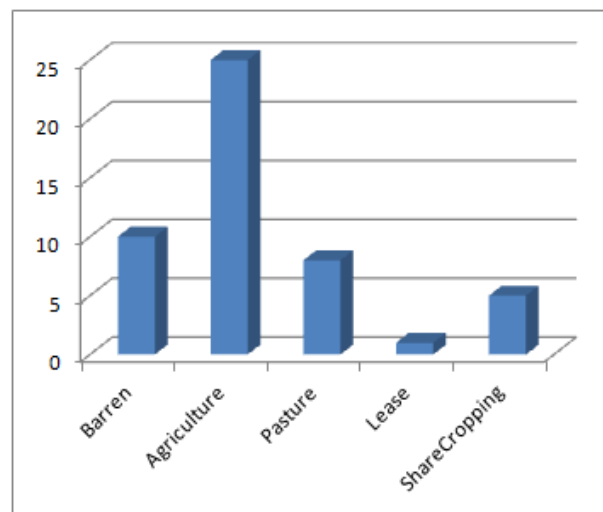
Figure 5: Type of land use
(Some of the respondents gave more than one response)

6.6　Prospective SHG Membership

Results of the FGDs with the Gewog officials indicate that there are few SHGs established in piggery and poultry. However, the respondents feel that the reach of the SHGs is limited and with the success and advantages of SHGs, most respondents feel that there should be more SHGs to increase their household income. **Figure 6** shows the percentage of respondents interested to join new SHGs. Majority (92%) of the respondents said that they were interested to join SHGs against 8% who expressed their lack of interest to join any kind of SHGs. Also a cursory of the education profile of the households covered by the survey shows that there is adequate availability of females to man different positions in the governance structure of the SHGs as evident from **Table 4**. Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
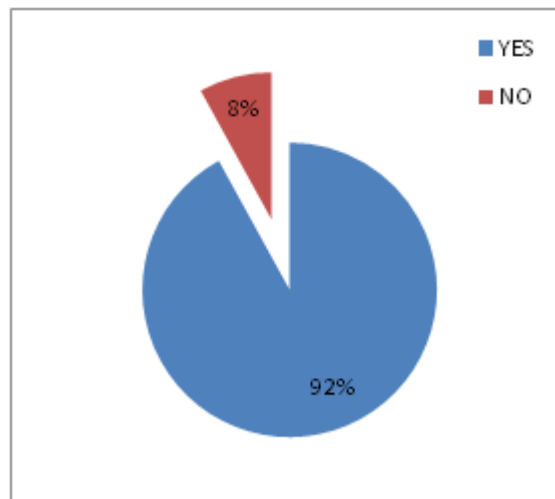
Figure 6: Interest to join SHG

6.7　Skills Assessment

Generally, there is less prevalence of skills amongst the villages covered by the survey. **Table 7** shows skills by number of persons. 69 of them did not possess any skills. 29 of them have weaving skills followed by Zorig Chhusum with 8 and the rest have skills in either masonry or carpentry. A closer examination of prevalence of skills among males and females shows that out of 29 people with weaving skills, 28 are females. In terms of quality of skills, majority of the respondents with skills stated that they have higher level of skills which is evident from their years of real work experience and their earnings from the use of their skills

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Existing Skills	Sex		
	Total	MALE	FEMALE
Total	**116**	**51**	**65**
None	69	33	36
Carpentry	3	3	0
Masonry	6	6	0
Electrical	0	0	0
Plumbing	0	0	0
Hair Dressing	0	0	0
Tailoring	0	0	0
Weaving	29	1	28
Traditional Arts and Crafts	8	7	1
Others	1	1	0

Table 7: Existing Skills by Sex

The choice of trade for increasing household income is not well distributed. There seems to be a wide difference in the number of respondents in choice of different trades. **Figure 7** illustrates the choice of skills with the highest potential to increase household income.
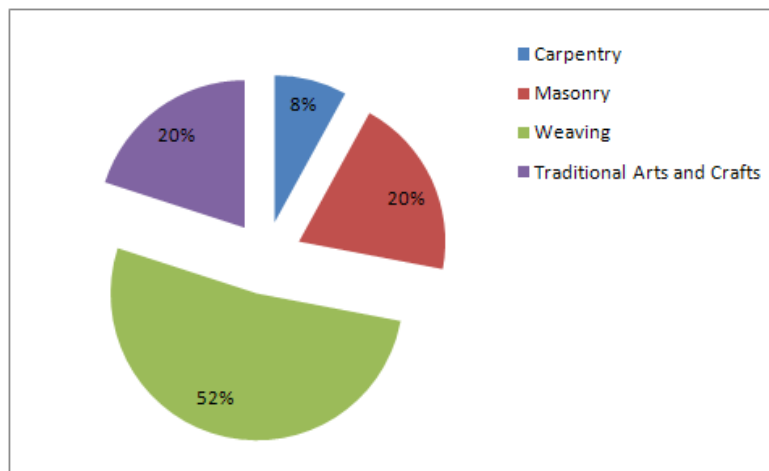
Figure 7: Highest Potential Skills by No. of HHs

The proportion of respondents opting for different trades ranges from 8% to 52%. None of the respondents felt that plumbing, electrical, hairdressing and tailoring has the potential to increase their household income. Meanwhile an overwhelming 52% chose weaving followed by masonry and Zorig Chhusum[4] with 20% each. Only 8% went with carpentry as a choice of trade. As evident from the figure, given the demand for skills

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[4] Many respondents who chose Zorig Chhusum preferred cane and bamboo product and they mentioned that if sustainable use of the available resources is ensured, Chimung has a huge potential in increasing their household income from sale of these products.

and income generation potential of skills, weaving training with value addition techniques will be appropriate, at least for Chimung Gewog.

6.8 Product/Service Survey

6.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondents' state that majority of households have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers of Chimung Gewog. Results in **Table 8** present various crops grown by the survey sample. It is clear from table data that large majority of farmers grow maize (100%), Chili (96%) and ginger & mandarin orange (80%). Other crops, mostly vegetables (ground nut and beans) are grown by fairly lesser number of farmers.

Sl.#	Crops Grown	Total	Sl.#	Crops Grown	Total
1	Apple	0	17	Passion Fruit	0
2	Areca nut	0	18	Potato	1
3	Asparagus	0	19	Sugar Cane	11
4	Cardamom	0	20	Organic Vegetables	1
5	Chili	24	21	Vegetables	10
6	Ginger	20	22	Walnut	2
7	Groundnut	11	23	Coffee	0
8	Maize	25	24	Hazelnut	0
9	Mandarin Orange	20	25	Broom Grass	1
10	Mango	0	26	Lemon Grass oil	3
11	Mung Bean	14	27	Medicinal and aromatic Plants	0
12	Mushroom	0	28	Spices	0
13	Mustard	3	29	Wild Vegetables	0
14	Peas	11	30	Buck Wheat	11
15	Rajma Beans	10	31	Millet	2
16	Rice	5			

Table 8: Different crops grown by number of household.

(Note: Some of the respondents gave more than one response)

Banking on their farming experience in the survey area, this study analyses the farmer's take on the potential of different crops to increase their household income. **Figure 8** shows the choice of crops by the respondents. Majority of the respondents (56%) felt that

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mandarin orange has the highest potential to increase their household income mainly due to the prevailing practice of growing mandarin orange in the Gewog and higher income earning accrued from this crop while 24% of the respondents chose maize.
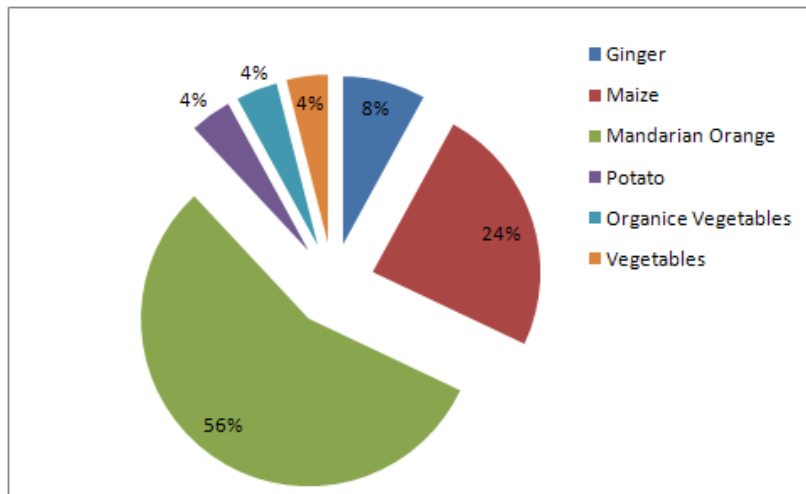
Figure 8: Highest potential crops by no of HH

6.8.2 Livestock

Survey findings in **Table 9** revealed that majority (84%) respondents do poultry farming followed by 68% of them raising cattle. 60% of the respondents turned out to be practicing poultry farming.

Live Stock	Total
Cattle	17
Goats	0
Pigs	15
Horse/Donkeys	10
Chicken	21
Broiler	2
Fish	0
Sheep	0
Buffalo	0
Honey bees	1
Others	0

Table 9: Livestock by No. of HHs

(Note: Some of the respondents have *given more than one answer*)

Figure 9 shows the choice of livestock by the respondents. About 36% of the respondents felt that chicken and related products has the highest potential to increase their household income because of the huge demand for eggs in the local market ever since the Government banned import of eggs from other countries while 28% of the

respondents chose cattle followed closely by horses/donkeys (24%). Only 12 % of the respondents felt that pig rearing would enhance their household income.
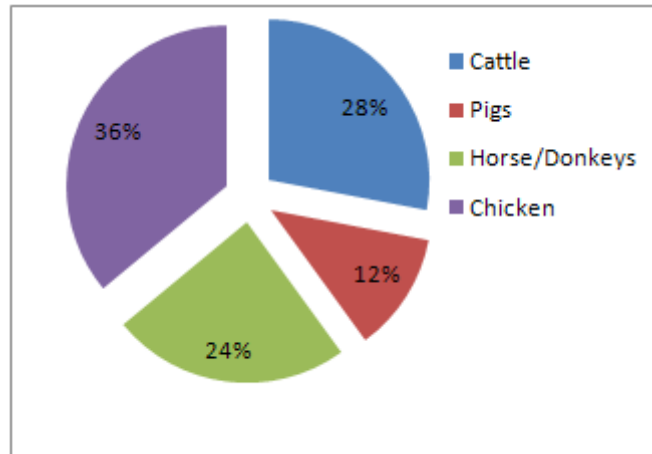
Figure 9: Highest potential livestock by HHs

6.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveal that most of the villagers under the purview of the skills assessment survey possess skills in producing garments (48%) followed closely by cane and bamboo (42%) as illustrated in **Table 10.** About 12 % of the household-respondents have mentioned that they have some skills in producing copper and iron based handicrafts. Few of the households have skills in the areas of producing incense and wood based handicrafts.

Handicraft Skills	Total
Cane and Bamboo	11
Garments	12
Pottery	0
Religious Items	0
Wood Based	1
Copper and Iron Based	3
Zorig Chhusum	0
Daphne Paper	0
Incense	1

Table 10: Handicraft skills by no of HHs
(Note: some of the *respondents have given more than one answer*)

In order to study the feasibility of establishing SHGs in the handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 10** depicts the choice of handicrafts by number of

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households. Most of the respondents (48%) rated garments to have the highest potential to increase their household income. Meanwhile 16% of the respondents felt that wood based and cane & bamboo handicrafts could increase their income followed closely by religious items (12%). Only 1 household-respondent chose cooper and iron based handicrafts.
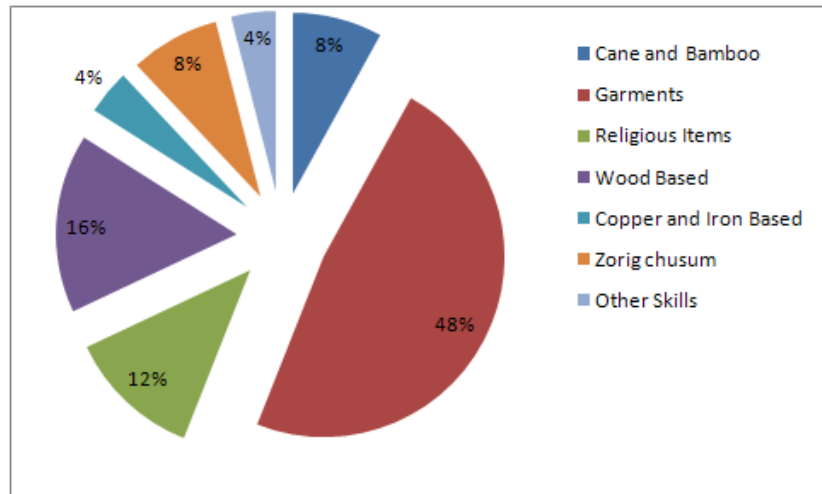
Figure 10: Highest potential handicraft product by No. of HHs

7 Dungmin Gewog

7.1 General Profile

Dungmin Gewog has an area of 122.5 square kilometers with 382 households in 13 villages.

Dungmin Gewog enjoys moderate climate in most Chiwogs except in the high altitudes of Benang Goenpa, Tomi and Zimzore. The steep slopes and deep gorges, and sparsely scattered settlements characterize the topography of the Gewog. Tseri and dry land dominate agriculture land use with negligible wetland cultivation.
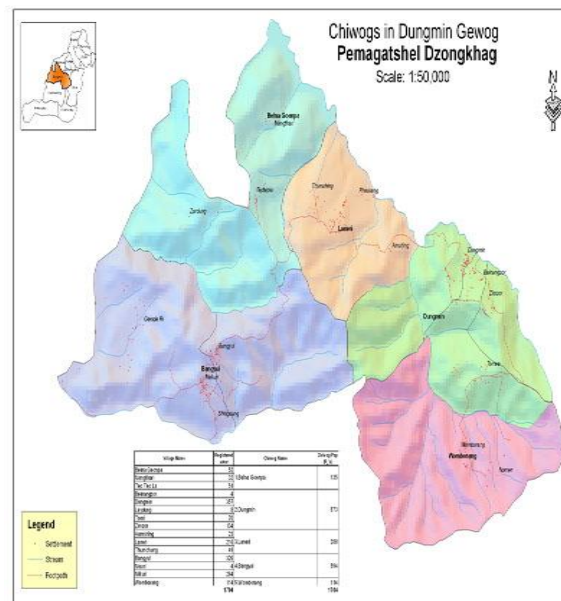
7.2   Infrastructure Profile

Dungmin Gewog Center is two and half hours away from the road end. None of the villages are connected to farm roads. The following table shows the distance of major Chiwogs from the nearest farm road

Sl. No	Name of Chiwog	Accessibility characteristics
1	Benang Goenpa	4 hours walk
2	Mikuri	6 hours walk
3	Langyiri	4 hours walk
4	Woongborang	3 hours walk
5	Dungmin	2 and half hours walk

Table 11: Distance of Chiwogs from nearest road

As evident from **Table 11**, most of the major Chiwogs are not connected by roads, which have diverse impacts on the livelihood of the people in the Chiwogs primarily in terms of marketing their surplus products. Also, the input cost of their farming as well as livestock rearing tends to be higher compared to other Gewogs, which are accessible, by road. This is mainly owing to the cost of transportation related to agriculture seeds, fertilizers and livestock feed. Another major implication of the inaccessibility is poor progress in mechanization of the farming works.

Table 12 showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	
2	Television service	No	
3	Post office	No	
4	Electricity	Yes	
5	Drinking water	Yes	
6	BHU	Yes	
7	ORC	Yes	
8	Irrigation	No	
9	School	Yes	
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	Existing SHG	Yes	Citrus Group, poultry, Piggery and Community Forest

Table 12: Infrastructure/Facilities Profile

7.3 Demography and Household Characteristics

The population of the Dungmin Gewog is 3252 with 1630 males and 1622 females (*www.dzongkhag.gov.bt.*) **Figure 11** shows age group by sex of the persons covered by the survey. The average family size is 4 persons with highest of 15 persons and lowest of 1 person per household.

Figure 11: Age by Sex

Age	None M	F	Primary (class VI) M	F	Lower Secondary (Class X) M	F	Higher Secondary (class XII) M	F	University Degree M	F	Monastic Education M	F
Total	**60**	**93**	**25**	**18**	**16**	**10**	**1**	**2**	**1**	**0**	**6**	**0**
G Total	**153**		**43**		**26**		**3**		**1**		**6**	
Percentage	**66%**		**19%**		**11%**		**1%**		**0%**		**3%**	
18 to 29	11	19	4	2	7	4	0	2	1	0	1	0
39 to 39	5	15	1	0	1	1	1	0	0	0	0	0
40 to 49	8	11	1	0	0	0	0	0	0	0	0	0
50 to 59	11	13	0	0	0	0	0	0	0	0	0	0
60 to 69	13	11	0	0	0	0	0	0	0	0	1	0
70 to 79	2	6	0	0	0	0	0	0	0	0	1	0
80 to 89	2	5	0	0	0	0	0	0	0	0	0	0
90 to 99	0	0	0	0	0	0	0	0	0	0	0	0
0 to 17	8	13	19	16	8	5	0	0	0	0	3	0

Table 13: Education profile based on Sex and age group

In terms of education, results presented in **Table 13** state that 66% of persons covered by the survey have no formal education, while about 19% have completed primary education. Rest has fallen within other categories as completed Lower Secondary School (11%), Higher Secondary (1%), or University Degree and Monastic Education (3%). None of the respondents have indicated that any of their household members to possess diploma qualification.

7.4   Livelihood and Economic Characteristics

Dungmin Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 12.**
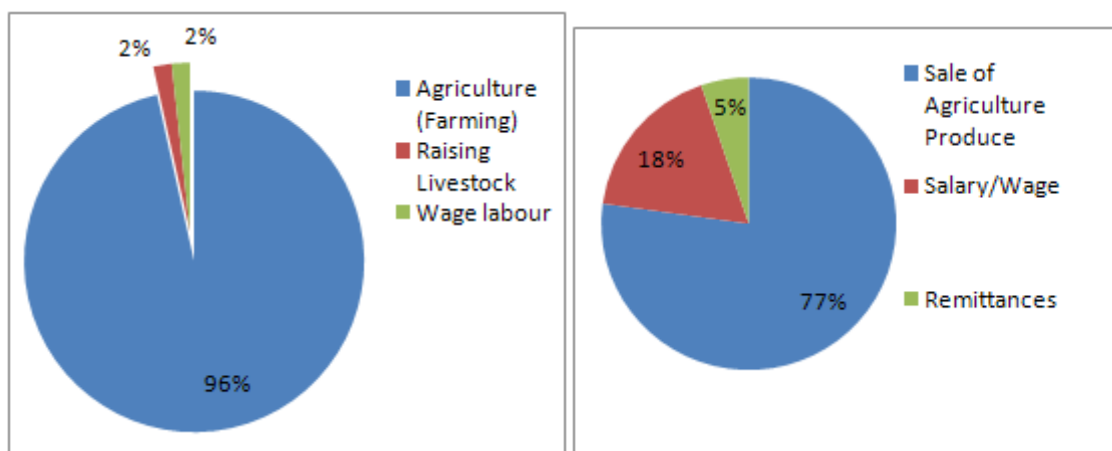
Figure 12: Main activity by No. of HHs   Figure 13: Primary source of income by No. of HHs

Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture produce. On the contrary, results demonstrate that respondents did not earn any income from sale of livestock produce. This indicates that livestock rearing and produce thereof is adequate for household consumption only.

Results shown in **Figure 13** indicate that about 77% of respondents secure their main household income by sale of agriculture produce. 18% of the Household- respondent cited salary/wage as their main source of income. Only 5% indicated that their main source of household income was from remittances.

The annual household income ranges between Nu.1000 to Nu.45, 000. **Table 14** showcases the number of households in different income brackets.

Household Income (Nu.)	Total
Total	57
0 to 4999	11
5000 to 9999	17
10000 to 19999	21
20000 to 29999	6
30000 to 39999	1
40000 to 49999	1

Table 14: Income by No of HH

7.5 Landholding and Land Use

Survey results indicate that respondents varied with regard to characteristics of their land holdings. About 65% of the respondents are owners of small farms (less than 2 acres), and 36 % of them are owners of average farms (2-5 acres) while meager 4% said that they own farms, which are more than 5acres. **Table 15** shows number of households who own land in different range of acreage.

| Land Holding	Total
Total	57
1 to 49 decimal	9
50 to 99 decimal	11
100 to 149 decimal	12
150 to 199 decimal	5
200 to 249 decimal	8
250 to 299 decimal	3
300 to 349 decimal	5
350 to 399 decimal	1
400 to 449 decimal	2
450 to 499 decimal	2
500 and above	1

Figure 14: Land use type

Table 15: Land Holdings by No. of HHs
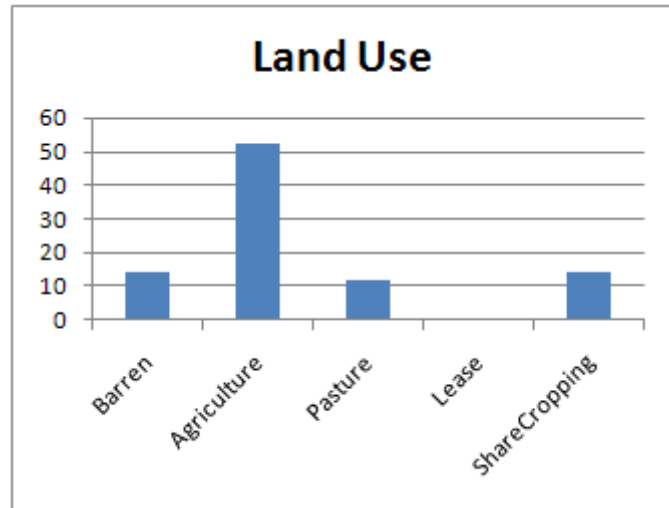
(Note: *some of the respondent have given more than one answer*)

In terms of land use, most of the households use their land for agriculture farming while few households indicated that some portion of their land are kept barren due to irrigation and other land related problems like infertility and pests attack.

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In terms of land use, most of the households use their land for agriculture farming while some portion of their land are kept barren due to irrigation and other land related problems. **Figure 14** showcases the categorization of land use by the number of households.

7.6   Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that few households in the Gewog are members of existing SHGs in the areas of piggery and poultry. However, most respondents feel that the reach of the SHGs is limited and with the success and advantages of SHGs, most respondents feel that there should be more SHGs to increase their household income. **Figure 15** shows the percentage of respondents interested to join new SHGs. About 77 % of the respondents said that they were interested to join SHGs against 23% who expressed their lack of interest to joining any kind of SHGs. Also a cursory of the education profile of the households covered by the survey, there is adequate availability of females to take up different positions in the governance structure of the SHGs as evident from **Table 13**. Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
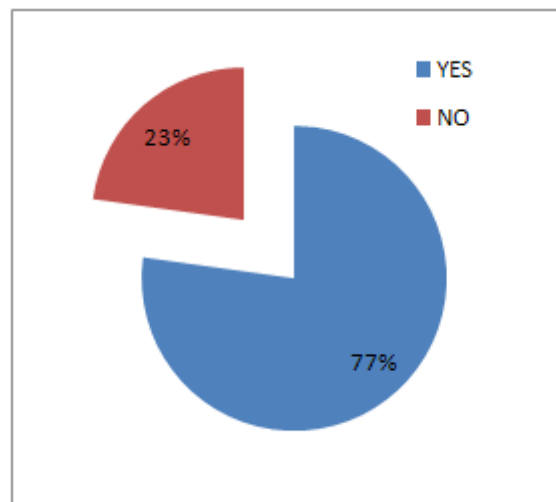
Figure 15: Interest to join SHG

7.7   Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 16** shows skills by number of persons. 132 of them did not possess any skills, 61 of them have weaving skills followed by Zorig Chhusum with 22 and the rest have skills in masonry, carpentry and plumbing. A closer examination of prevalence of skills among males and females shows that there is comparatively lesser number of women with skills than men. However, out of 61 persons with weaving skills, 58 are females. There is also

a lone woman with masonry skills. In terms of quality of skills, most of the respondents with skills have the highest level and huge years of experience especially in weaving as most of the female members of the household use these skills as an additional source of income apart from their income from sale of agricultural produce.

Existing Skills	Sex		
	Total	MALE	FEMALE
Total	**232**	**109**	**123**
None	132	68	64
Carpentry	11	11	0
Masonry	5	4	1
Electrical	0	0	0
Plumbing	1	1	0
Hair Dressing	0	0	0
Tailoring	0	0	0
Weaving	61	3	58
Traditional Arts and Crafts	22	22	0

Table 16: Existing Skills by Sex

The choice of trade for increasing household income is not well distributed. There seems to be a wide difference in the number of respondents in choice of different trades. **Figure 16** illustrates the choice of skills with the highest potential to increase household income.
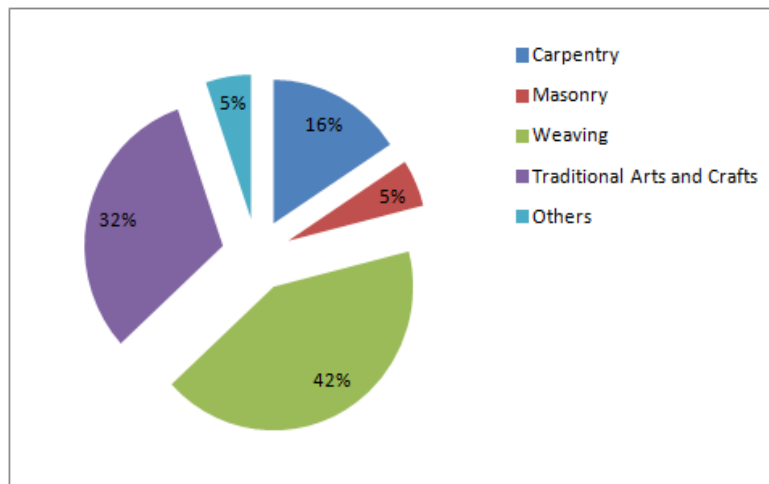
Figure 16: Highest Potential Skills by No. of HHs

The proportion of participants opting for different trades ranges from 5% to 42%. None of the respondents felt that plumbing, electrical, hairdressing and tailoring has the potential to increase their household income. Meanwhile 42% chose weaving closely followed by

Zorig Chhusum[5] with 20% each. Only 5% went with carpentry as a choice of trade. As will be evident later in the report, given the demand for skills and income generation of the skills, weaving training with value addition techniques will be appropriate, at least for Dungmin Gewog.

7.8 Product/Service Identification
7.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondents' state that majority of households have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Dungmin Gewog. Results in **Table 17** present various crops grown by the survey sample. It is clear from table data that large majority of farmers grow maize (100%), Chili (88%) mandarin orange (79%) followed by Ginger (44%) Other crops, mostly vegetables (ground nut and beans, are only grown by fairly lesser number of farmers.

Sl.No	Crops Grown	Total HH	Sl.No	Crops Grown	Total HH
1	Apple	0	17	Passion Fruit	1
2	Areca nut	0	18	Potato	39
3	Asparagus	0	19	Sugar Cane	16
4	Cardamom	0	20	Organic Vegetables	30
5	Chilli	50	21	Vegetables	18
6	Ginger	25	22	Walnut	0
7	Groundnut	3	23	Coffee	0
8	Maize	57	24	Hazelnut	0
9	Mandarin Orange	45	25	Broom Grass	0
10	Mango	1	26	Lemon Grass oil	0
11	Mung Bean	24	27	Medicinal and aromatic Plants	0
12	Mushroom	0	28	Spices	0
13	Mustard	2	29	Wild Vegetables	1
14	Peas	15	30	Buck Wheat	20
15	Rajma Beans	6	31	Millet	4
16	Rice	2			

Table 17: Different crops grown by number of household.

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[5] *Many respondents who chose Zorig Chhusum preferred cane and bamboo products and they mentioned that if sustainable use of the available resources is ensured, Dungmin Gewog has a huge potential in increasing their household income from use of this skill.*

Based on their farming experience in the survey area, this study analyses the farmers take on potential of different crops to increase their household income. **Figure 17** shows highest potential crops by number of HHs. Majority of the respondents (53%) felt that mandarin orange has the highest potential to increase their household income mainly due to the prevailing practice of growing mandarin orange in the Gewog and higher income earning accrued from this crop while 19% of the respondents chose chili because of the emerging market demand for this crop.
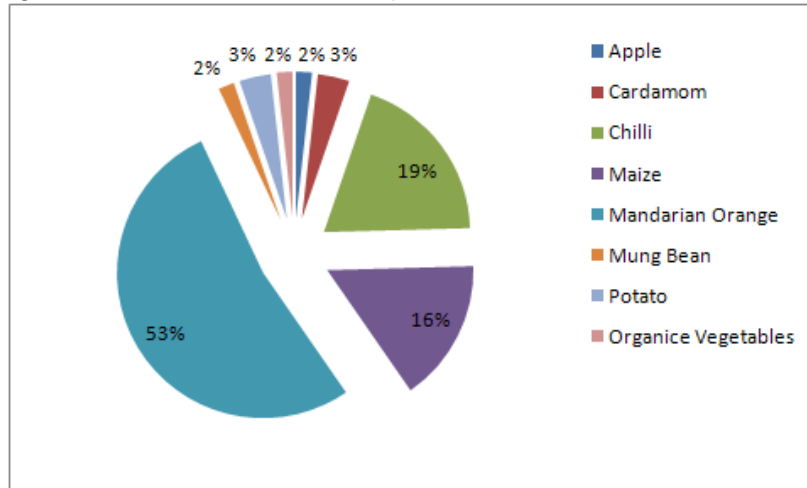
Figure 17: Highest potential crops by no of HH
(Some of the respondent gave more than one answer)

7.8.2 Livestock

Survey findings revealed that majority (79%) respondents raise cattle. 51% keep chickens and 44% of respondents stated that they keep horses and donkeys with equal number of pigs. **Table 18** showcases the different livestock raised by number of households.

Livestock	Total
Cattle	43
Goats	3
Pigs	25
Horse/Donkeys	25
Chicken	29
Broiler	0
Fish	0
Buffalo	0
Honey bees	0
Sheep	0
Others	0

Table 18: Livestock by No. of HH

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Figure 18 shows the choice of livestock by the respondents. About 30% of the respondents felt that chicken and related products have the highest potential to increase their household income because of the huge demand for eggs in the local market ever since the Government banned import of eggs from other countries while 26% of the respondents chose cattle followed closely by pigs (23%) and horses/donkey (21%).
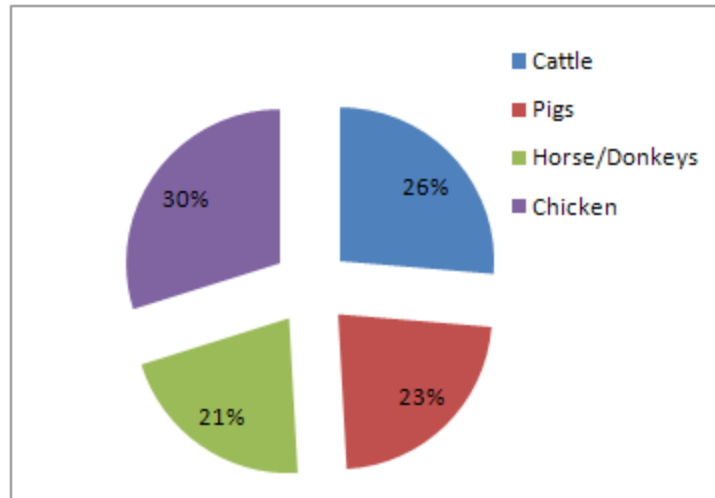
Figure 18: Highest potential livestock by HHs

7.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveal that most of the villagers under the purview of the skills assessment survey possess skills in producing cane and bamboo products (53%) followed by garments (35%) as illustrated in **Table 19.** About 14 % of the household-respondents have mentioned that they have some skills in producing wood based handicrafts and Daphne paper. Few of the households have skills in the areas of Zorig Chhusum and producing iron and copper based handicraft products

Handicraft Skills	Total HH
Cane and Bamboo	30
Garments	20
Religious Items	0
Wood Based	0
Copper and Iron Based	3
Zorig Chhusum	6
Daphne Paper	8
Incense	o
Others	o

Table 19: Handicraft skills by no of HH
(Note: *Some of the respondents have given more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Dungmin Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 19** depicts the choice of handicrafts by number of households. 30% of the respondents rated garments to have the highest potential to increase their household income followed closely by cane and bamboo products. Meanwhile 14% of the respondents felt that Zorig Chhusum related products could increase their income. Rest of the respondents felt that religious items, copper and iron based handicrafts could increase their household income. Only 2% of the respondents said that producing Daphne paper would be a viable option for diversifying their income sources.
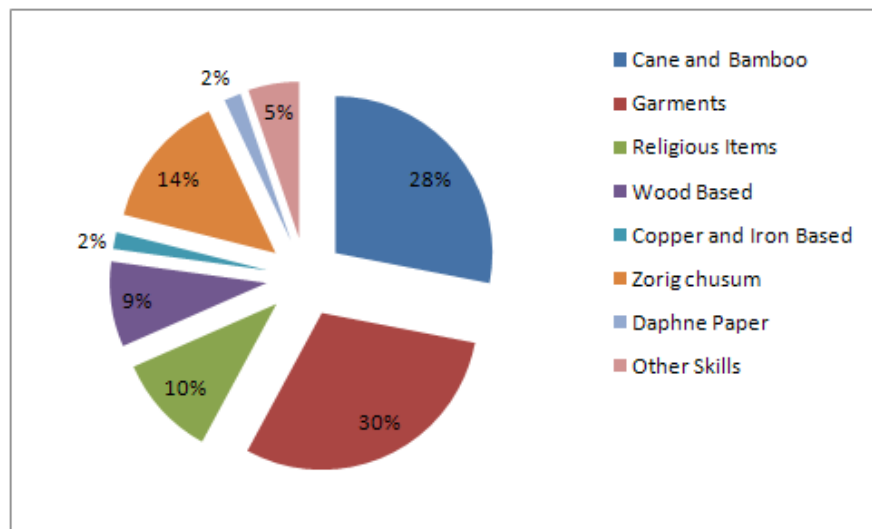
Figure 19: Highest potential handicraft product by No. of HHs

8 Lumang Gewog

8.1 General Profile

Lumang Gewog comprises 32 villages with 744 households. The Gewog covers an area of 102.9 square kilometers and is bordered by Uzorong, Thrimshing and Khaling Gewogs. The Gewog falls within the administrative jurisdiction of Wamrong Dungkhag.

8.2 Infrastructure Profile

Lumang Gewog Center is located in Kharphoog Kurchhilo. All the Chiwogs are connected by road. The following table shows the distance of Chiwogs from the nearest farm road:
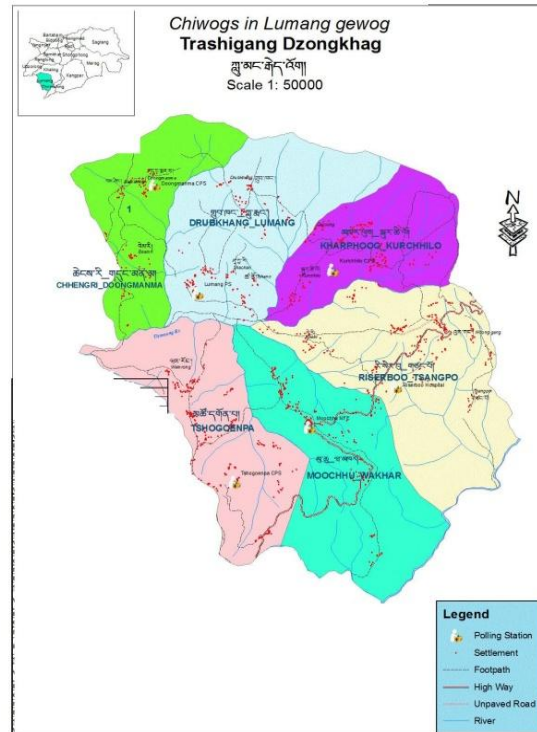
Sl. No	Name of Chiwog	Accessibility characteristics
1	Tshogoenpa	Connected to road and it is 36 KMs away from the Gewog center
2	Chhengri Dungmanma	Connected to road and it is 22 KMs away from the Gewog center
3	Risarboo Tsangpo	Connected to road and it is 15 KMs away from the Gewog center
4	Moochhu Wakhar	Connected to road and it is 20 KMs away from the Gewog center
5	Dubkhang Lumang	Connected to road and it is 10 KMs away from the Gewog center
6	Kharphoog Kurchhilo	Gewog center

Table 20: Infrastructure/Facilities Profile

Table 21 shows the profile of facilities and infrastructure within the Gewog

Sl. No	Infrastructure/ Facilities	Accessibility Yes /No	Remarks
1	Telephone service	yes	
2	Television service	Yes	
3	Post office	yes	
4	Electricity	yes	
5	Drinking water	yes	
6	BHU	yes	
7	ORC	Yes	
8	Irrigation	No	
9	School	Yes	
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	Existing SHGs	Yes	Poultry and Piggery

Table 21: Distance of Chiwogs from nearest road

8.3 Demography and Household Characteristics

The population of Lumang Gewog is 6366 with males and females (*www.dzongkhag.gov.bt*.) **Figure 20** shows age groups by and sex of the persons covered by the survey. The average family size is 5 persons with the highest of 14 persons and lowest of 2 persons per household.

Figure 20: Age by Sex

Age	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
	M	F	M	F	M	F	M	F	M	F	M	F
Total	40	53	18	23	4	2	1	1	0	0	1	0
G Total	93		41		6		2		0		1	
Percentage	65%		29%		4%		1%		0		1%	
18 to 29	2	6	3	1	2	0	1	1	0	0	1	0
39 to 39	10	11	1	0	0	0	0	0	0	0	0	0
40 to 49	7	6	0	0	0	0	0	0	0	0	0	0
50 to 59	6	5	0	0	0	0	0	0	0	0	0	0
60 to 69	3	1	0	0	0	0	0	0	0	0	0	0
70 to 79	7	6	0	0	0	0	0	0	0	0	0	0
80 to 89	0	1	0	0	0	0	0	0	0	0	0	0
90 to 99	0	1	0	0	0	0	0	0	0	0	0	0
0 to 17	5	16	14	22	2	2	0	0	0	0	0	0

Table 22: Age by Education Level and Sex

In terms of education level attained, results presented in **Table 22** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 65 % of persons covered by the survey have no formal education, while about 29% have completed primary education and 4% have studied up to lower secondary classes. Rest has fallen within other categories as either completed higher secondary school (1%) or Monastic Education (1%). None of the respondents have indicated that any of their household members to possess diploma qualification.

8.4 Livelihood and Economic Characteristics

Lumang Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 21**.
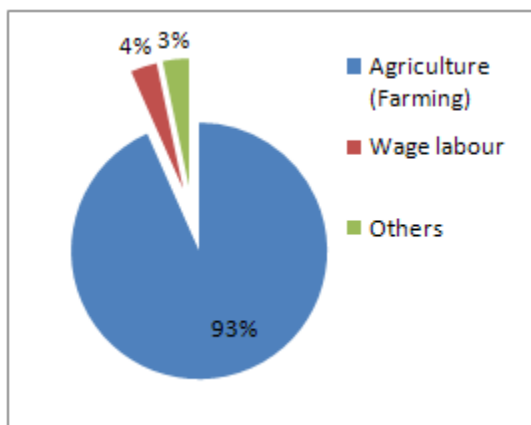
Figure 21: Main activity by No. of HHs   Figure 22: Primary source of income by No. of HHs
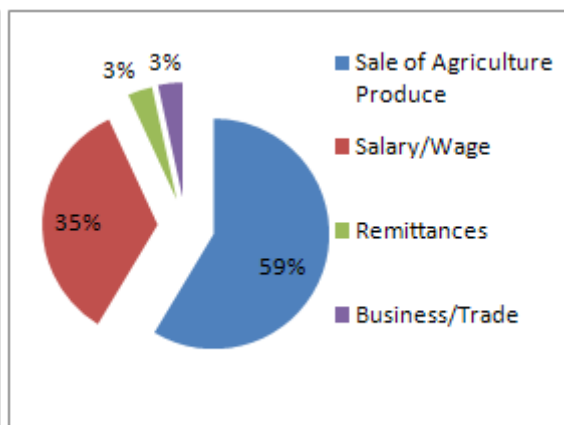
Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture produce. On the contrary, results demonstrate that respondents did not earn any income from sale of livestock produce. This indicates that livestock rearing and produce thereof is adequate for household consumption only. **Figure 22** Indicate that about 59% of respondents secure their main household income by sale of agriculture produce. Unlike other Gewogs, 35% of the Household- respondent cited salary/wage as their main source of income. Only 3% indicated that their main source of household income was from remittances and another 3% stated Business and trade to be their main source of income.

The annual household income ranges between Nu.1000 to Nu. 58,000. **Table 23** showcases the number of households in different income brackets.

Household Income	Total
Total	**30**
0 to 4999	4
5000 to 9999	11
10000 to 19999	10
20000 to 29999	1
30000 to 39999	2
40000 to 49999	1
50000 to 59999	1

Table 23: Income by No. of HHs

8.5   Landholding and Land Use

Survey results indicate that respondents varied with regard to characteristics of their land holdings. About 40% of the respondents are owners of small farms (less than 2 acres), and 41 % of them are owners of average farms (2-5 acres) while 23% said that

they own farms, which are more than 5 acres. **Table 24** shows number of households who own land in different range of acreage.

Land Holding	Total
Total	**30**
1 to 49 decimal	1
50 to 99 decimal	1
100 to 149 decimal	7
150 to 199 decimal	2
200 to 249 decimal	5
250 to 299 decimal	0
300 to 349 decimal	5
350 to 399 decimal	0
400 to 449 decimal	2
450 to 499 decimal	0
500 and above	7

Table 24: Land Holdings by No. of HHs
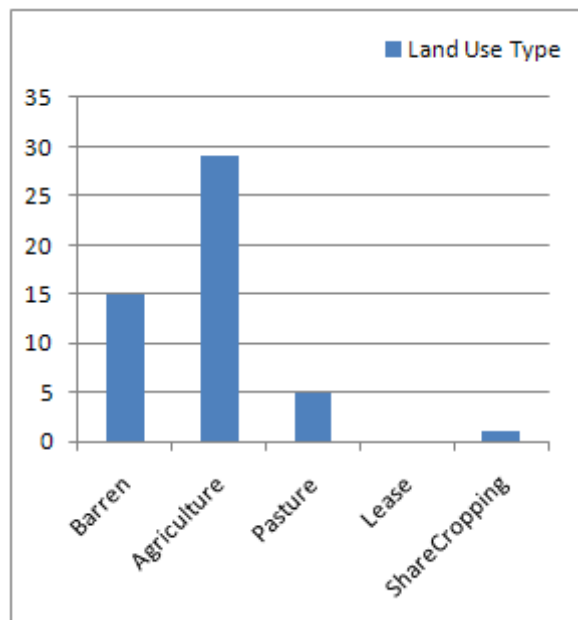
Figure 23: Type of land use
(Some of the respondents gave more than one response)

In terms of land use, most of the households use their land for agriculture farming while some portion of their land are kept barren due to irrigation and other land related problems like soil erosion and landslides. **Figure 23** showcases the categorization of land use by the number of households.

8.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that are few SHGs established for in piggery and poultry. However, the respondents feel that the reach of the SHGs is limited and with the success and advantages of SHGs, most respondents feel that there should be more SHGs to increase household income of the Gewog. **Figure 24** shows the percentage of respondents interested to join new SHGs. Majority (77%) of the respondents said that they were interested to join SHGs against 23% who expressed their lack of interest to joining any kind of SHGs. Also a cursory of the education profile of the households covered by the survey, there is adequate availability of females to man different positions in the governance structure of the SHGs as evident from **Table 22.** Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
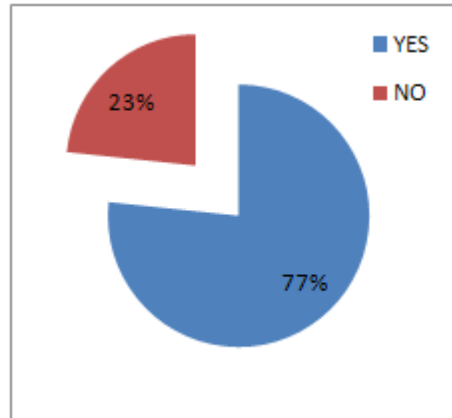
Figure 24: Interest to join SHG

8.7   Skills Assessment

Generally, there is less prevalence of skills amongst the villages covered in the survey. **Table 25** shows the skills people by number of persons. 106 did not possess any skills. 15 of them have weaving skills followed by Zorig Chhusum with 9 persons and the rest have skills in masonry, carpentry and plumbing. A closer examination of prevalence of skills among males and females shows that there are almost no skills among females. However, all the 15 persons with weaving skills are females.

Existing Skills	Sex		
	Total	**Male**	**Female**
Total	**143**	**64**	**79**
None	106	44	62
Carpentry	5	5	0
Masonry	3	2	1
Electrical	1	1	0
Plumbing	1	1	0
Hair Dressing	0	0	0
Tailoring	1	0	1
Weaving	15	0	15
Traditional Arts and Crafts	9	9	0
Others	2	2	0

Table 25: Existing Skills by Sex

The choice of trade for increasing household income appears fairly well distributed. There does seem to be a wide difference in the number of respondents in choice of different trades. **Figure 25** illustrates the choice of skills with the highest potential to increase household income. The proportion of participants opting for different trades ranges from 3% to 23%. None of the respondents felt that hairdressing has the potential

to increase their household income. Meanwhile 23% chose weaving closely followed by Zorig Chhusum[6] and carpentry with 20% each. Only 10% went with masonry and 7% went with tailoring as a choice of trade. As will be evident from the analysis above, given the demand for skills and income generation from use of skills, weaving training with value addition techniques will be appropriate for Lumang Gewog.
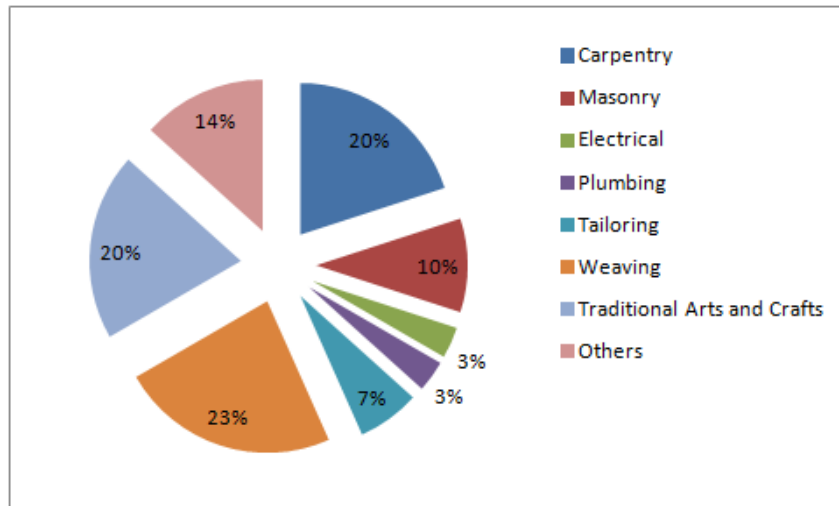
Figure 25: Highest Potential Skills by No. of HHs

8.8 Product/Service Identification

8.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Lumang Gewog. Results in **Table 26** present various crops grown by the survey sample. It is clear from table data that large majority of farmers grow maize (97%), Chili (80%) organic vegetables (79%) followed by Mung Beans (44%) Other crops, mostly grains and vegetables (millet, buckwheat, potato and Rajma beans, are only grown by fairly lesser number of farmers.

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[6] *Many respondents who chose Zorig Chhusum preferred cane and bamboo products and they mentioned that if sustainable use of the available resources is ensured, Lumang Gewog has a huge potential in increasing their household income from this skill.*

Sl.No	Crops Grown	Total HH		Sl.No	Crops Grown	Total HH
1	Apple	1		17	Passion Fruit	0
2	Areca nut	0		18	Potato	23
3	Asparagus	0		19	Sugar Cane	2
4	Cardamom	0		20	Organic Vegetables	16
5	Chili	24		21	Vegetables	6
6	Ginger	1		22	Walnut	3
7	Groundnut	1		23	Coffee	0
8	Maize	29		24	Hazelnut	0
9	Mandarin Orange	1		25	Broom Grass	0
10	Mango	0		26	Lemon Grass oil	0
11	Mung Bean	12		27	Medicinal and aromatic Plants	1
12	Mushroom	0		28	Spices	0
13	Mustard	8		29	Wild Vegetables	0
14	Peas	13		30	Buckwheat	8
15	Rajma Beans	12		31	Millet	4
16	Rice	0				

Table 26: Different crops grown by number of household
(Note: Some of the respondents gave more than one response)

Banking on their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. Figure no. 3 shows the choice of crops by the respondents. Majority of the respondents (50%) felt that Potatoes has the highest potential to increase their household income because the respondents feel that the potato is the most favorable crop from the soil in the Gewog and the transportation to the auction yard is not much as all the villages are connected by roads while 17% of the respondents chose Rajma beans. Another 10% believes that maize and organic vegetables have the highest potential to increase their household income. **Figure 26** depicts highest potential crops by number of HHs
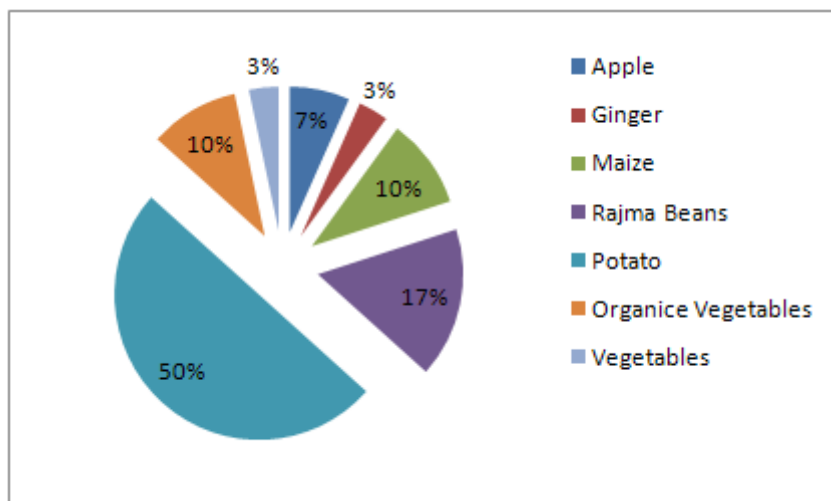
Figure 26: Highest potential crops by no of HH
(*Some of the respondents have given more than one answer*)

8.8.2   Livestock

Survey findings revealed that about 57% of the respondents raise cattle. 43% keep chickens and 23% of respondents stated that they rear pigs. None of the respondents keep horses/donkeys as the Gewog is accessible by road. **Table 27** showcases the different livestock raised by percentage of households covered by the survey.

Livestock Raised	Total HH
Cattle	17
Goats	0
Pigs	7
Horse/Donkeys	0
Chicken	13
Broiler	1
Fish	0
Buffalo	0
Sheep	0
Honey bees	0
Others	0

Table 27: Livestock by No. of HH
(*Some of the respondents have given more than one answer*)

Figure 27 shows the choice of livestock by the respondents. About 43% of the respondents felt that cattle and related products have the highest potential to increase their household income followed closely by chicken (40%). The main reason for choosing cattle is due to high returns from the sale of livestock products like butter and cheese vis-à-vis the input costs. Further, the preference can be attributed to the low capital

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requirement in purchase of cattle. While 17% of the respondents stated that rearing pigs could enhance their household income considerably.
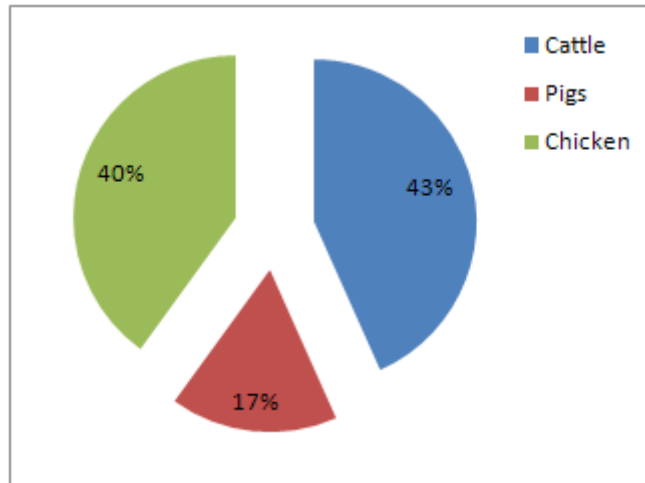
Figure 27: Highest potential livestock by HHs

8.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is very less prevalence of skills within the households in Lumang Gewog. Out of the survey sample only 23% have skills in producing cane and bamboo related handicrafts followed by garments (7%) as illustrated in **Table 28**. only 3 % of the household-respondents have mentioned that they have some skills in producing wood based, copper and iron based handicrafts, Zorig Chhusum and Daphne paper.

Handicraft Skills	Total HH
Cane and Bamboo	7
Garments	2
Pottery	0
Religious Items	0
Wood Based	1
Copper and Iron Based	1
Zorig Chhusum	1
Daphne Paper	1
Incense	0

Table 28: Handicraft skills by number of HH
(Note: *some respondents has given more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Lumang Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 28** depicts the choice of handicrafts

by number of households. 50% of the respondents rated cane and bamboo products to have the highest potential to increase their household income followed by wood based products. Only 2% of the respondents said that producing Daphne paper would be a viable option for diversifying their income sources.
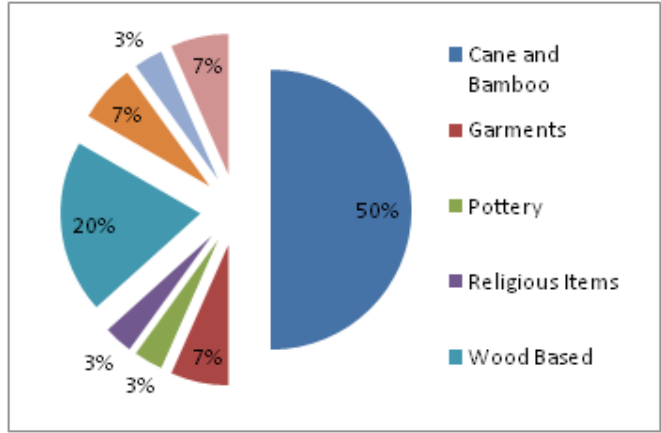
Figure 28: Highest potential handicraft product by No. of HHs

9 Nangkhor Gewog

9.1 General Profile

Nangkhor Gewog is situated between the Mangde River and Dakphay and Duenmang Villages. And it comprises eleven villages with 278 households. The Gewog covers an area of approximately 494 square kilometers. It is the largest Gewog in Zhemgang Dzongkhag with an elevation ranging from 1000 to 1800 meters above sea level.

9.2 Infrastructure Profile

Nangkhor Gewog Center is located in Buli, 35 kilometers (Two and half hours) from Zhemgang town. Most villages are connected to farm roads except for Dungmin and Kamjong. The following
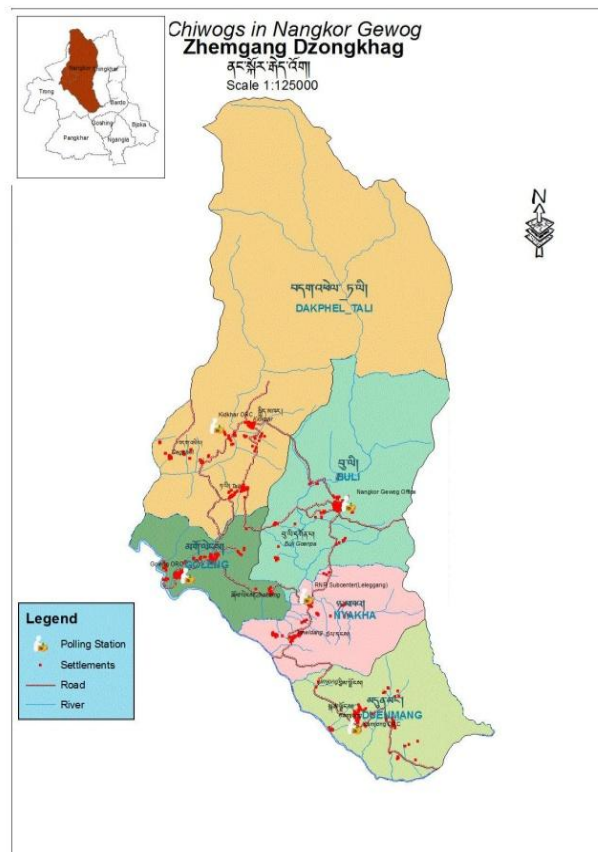
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table shows the distance of Chiwogs from the nearest farm road:

Sl. No	Name of Chiwog	Accessibility characteristics
1	Buli	Connected to farm road
2	Goleng	Connected to farm road
3	Duenmang	3 and half hours walk to Kamjong and 1 day walk to Duenmang
4	Tsheldang Nyakha	2 hours walk from road end
5	Dhakphay- Tali	Connected to farm road

Table 29: Distance of Chiwogs from nearest road

As evident from **Table 29**, two Chiwogs are not connected by roads, which have diverse impacts on the livelihood of the people in the Chiwogs primarily in terms of marketing their surplus products. Also, the input cost of their farming as well as livestock rearing tends to be higher compared to other Gewogs, which are accessible, by road. This is mainly owing to the cost of transportation related to agriculture seeds, fertilizers and livestock feed. Another major implication of the inaccessibility is poor progress in mechanization of the farming works.

The table below showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	
2	Television service	Yes	
3	Post office	Yes	
4	Electricity	Yes	
5	Drinking water	Yes	
6	BHU	Yes	
7	ORC	Yes	
8	Irrigation	Yes	
9	School	Yes	
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	Existing SGH	Yes	Women Vegetable Group, Poultry.

Table 30: Infrastructure/Facilities Profile

9.3 Demography and Household Characteristics

The population of Nangkhor Gewog is 2572 with 1276 males and 1252 females (*PHCB 2005*). **Figure 29** shows age groups by sex of the persons covered by the survey. The average family size is 6 persons with the highest of 15 persons and lowest of 1 person per household.
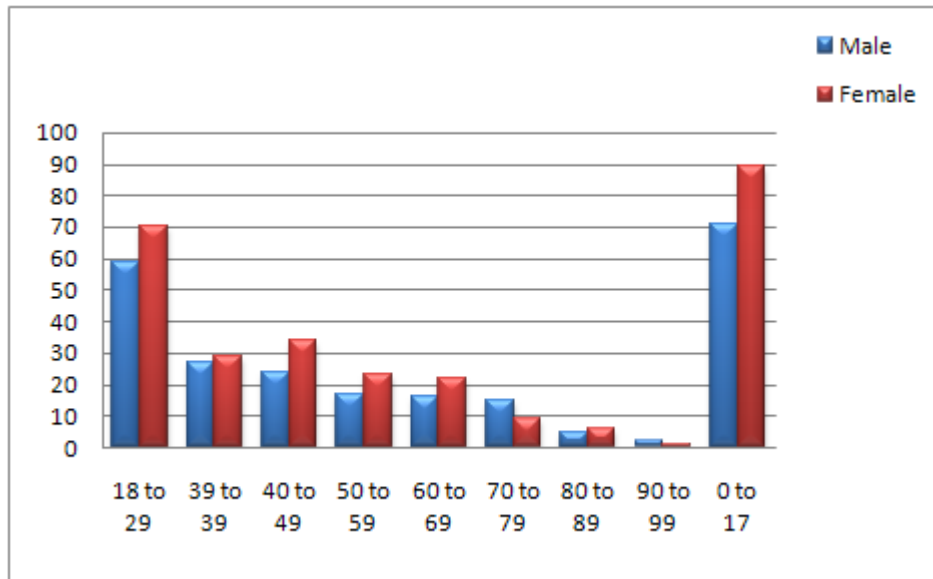
Figure 29: Age by Sex

Age	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
	M	F	M	F	M	F	M	F	M	F	M	F
Total	121	196	54	60	16	17	8	8	1	1	36	1
G Total	317		114		33		16		2		37	
Percentage	61%		22%		6%		3%		0%		7%	
18 to 29	23	38	6	15	9	8	6	7	0	1	15	1
39 to 39	12	27	6	1	0	1	0	0	1	0	8	0
40 to 49	18	34	2	0	1	0	1	0	0	0	2	0
50 to 59	12	22	1	1	0	0	0	0	0	0	4	0
60 to 69	14	22	1	0	0	0	0	0	0	0	1	0
70 to 79	13	9	0	0	1	0	0	0	0	0	1	0
80 to 89	5	6	0	0	0	0	0	0	0	0	0	0
90 to 99	2	1	0	0	0	0	0	0	0	0	0	0
0 to 17	22	37	38	43	5	8	1	1	0	0	5	0

Table 31: Education profile based on Sex and age group

In terms of education level attained, **Table 31** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 61 % of persons covered by the survey have no formal education, while about 22% have completed primary education and 6% have studied up to lower secondary classes. Rest has fallen within other categories as either completed higher secondary school (3%) or monastic education (7%). None of the respondents have indicated that any of their household members to possess diploma qualification.

9.4   Livelihood and Economic Characteristics

Nangkhor Gewog is predominately an agrarian society with 60% of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 30**.
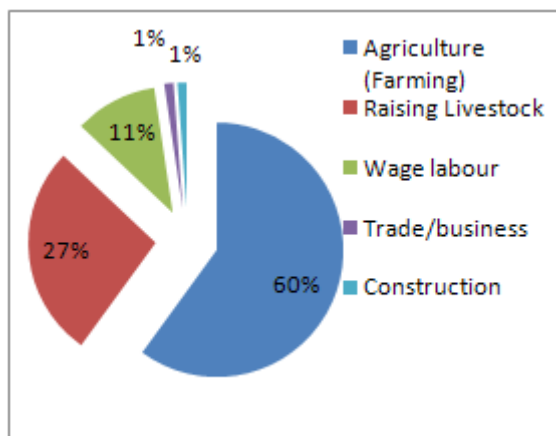
Figure 30: Main activity by No. of HHs   Figure 31: Primary source of income by No. of HHs
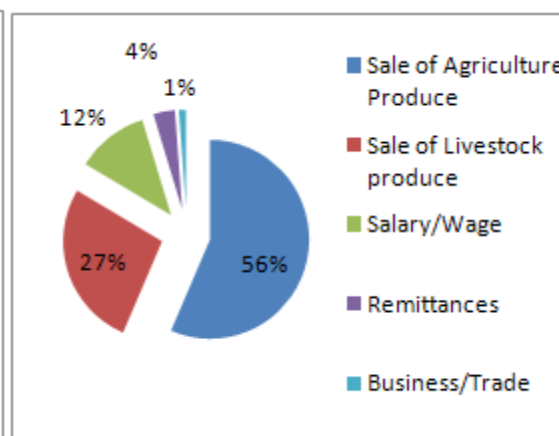
Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture and livestock produce. Results shown in **Figure 31** indicate that about 56% of respondents secure their main household income by sale of agriculture produce followed by sale of livestock produce (27%). 12% of the household-respondents stated that their main source of income was salary/wages. A small 4% stated remittances as their main source of income

The annual household income ranges between Nu.1000 to Nu. 68,000. **Table 32** showcases the number of households in different income brackets.

Household Income	Total
Total	**85**
0 to 4999	53
5000 to 9999	17
10000 to 19999	6
20000 to 29999	3
30000 to 39999	1
40000 to 49999	2
50000 to 59999	1
60000 to 69999	2

Table 32: Income by No. of HHs

9.5   Landholding and Land Use

Survey results indicate that respondents varied with regard to characteristics of their land holdings. About 52 % of the household-respondents are owners of average farms (2-5 acres) and 29 % of the respondents are owners of small farms (less than 2 acres) while 22% said that they own farms, which are more than 5acres. **Table 33** shows number of households who own land in different range of acreage.

Land Holding	Total
Total	**85**
1 to 49 decimal	5
50 to 99 decimal	6
100 to 149 decimal	5
150 to 199 decimal	6
200 to 249 decimal	10
250 to 299 decimal	3
300 to 349 decimal	21
350 to 399 decimal	2
400 to 449 decimal	7
450 to 499 decimal	1
500 and above	19
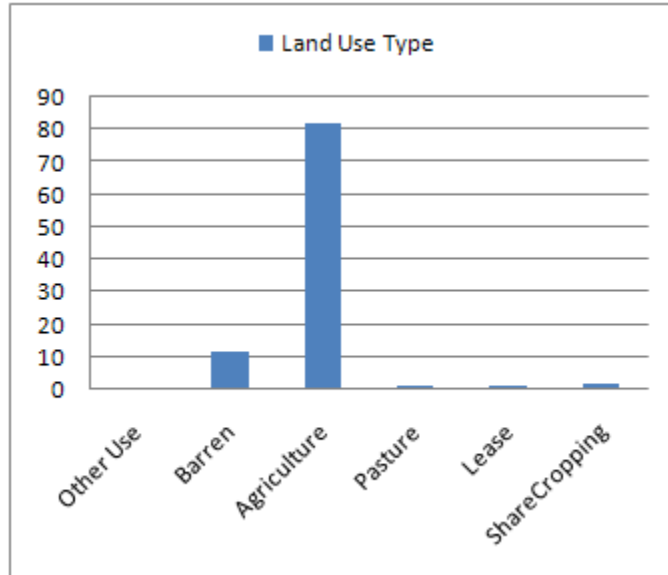
Figure 32: Type of land use
(Some of the respondents gave more than one response)

Table 33: Land Holdings by No. of HHs

In terms of land use, most of the households use their land for agriculture farming while few households indicated that some portion of their land is kept barren due limited manpower in the household. **Figure 32** showcases the categorization of land use by the number of households.

9.6   Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that there are two women's SHG formed for vegetables and poultry. However, the respondents feel that the reach of the SHGs is limited and with the success and advantages of SHGs, most respondents feel that there should be more SHGs to increase household income of the Gewog.

Figure 33 shows the percentage of respondents interested to join new SHGs. Absolute majority (99%) of the household-respondents said that they were interested to join SHGs against only 1 % who expressed their lack of interest to joining any kind of SHGs. Also a cursory of the education profile of the households covered by the survey, there is adequate availability of females to man different positions in the governance structure of the SHGs as evident from **Table 31**. Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
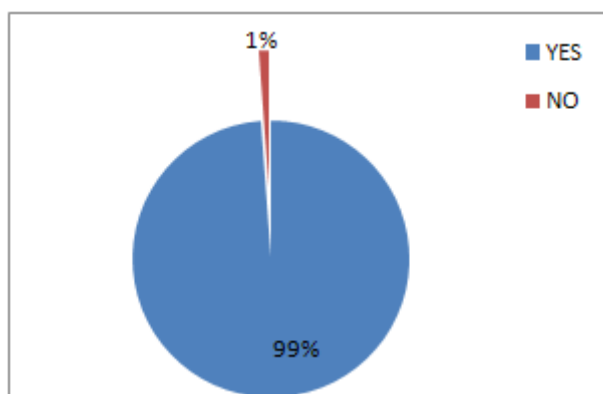
Figure 33: Interest to join SHG

9.7   Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 34** shows the skills by number of persons. 455 out of 519 persons covered by the survey did not possess any skills. 40 of them have weaving skills followed by carpentry with 8. A smaller number of persons have skills in masonry, electrical, hairdressing and Zorig Chhusum. A closer examination of prevalence of skills among males and females

shows that almost nonexistent of any skills among females except in case of weaving wherein 38 out of 40 persons are females. In terms of quality of skills, most women reported that they have high level of weaving skills as this is their age old tradition of the Gewog and the Gewog is well known for producing high quality garments, In other areas of skills, the respondents indicate that they have been undertaking all the skills related works in the Gewog.

Existing Skills		Sex	
	Total	MALE	FEMALE
Total	**519**	**236**	**283**
None	455	211	244
Carpentry	8	8	0
Masonry	3	3	0
Electrical	2	2	0
Plumbing	1	1	0
Hair Dressing	1	0	1
Tailoring	0	0	0
Weaving	40	2	38
Traditional Arts and Crafts	6	6	0
Others	3	3	0

Table 34: Existing Skills by Sex

The choice of trade by households to increase income does not appear well distributed. There seems to be a wide difference in the number of respondents in choice of different trades. **Figure 34** illustrates the choice of skills with the highest potential to increase household income.
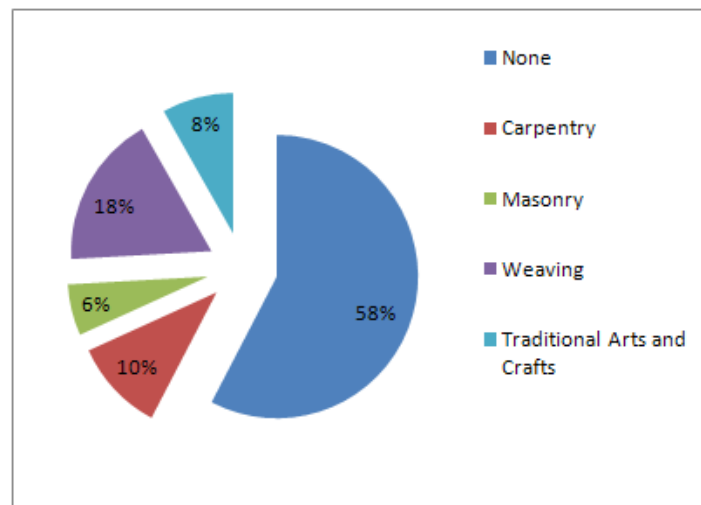
Figure 34: Highest Potential Skills by No. of HHs

The proportion of participants opting for different trades ranges from 6% to 58%. None of the respondents felt that hairdressing, tailoring, plumbing and electrical trades have the

potential to increase their household income. Meanwhile 58% felt none of the trades would enhance their household income, which is very unique compared to other Gewogs. 18% chose weaving closely followed by carpentry (10%) and Zorig Chhusum (8%). Only 6% went with masonry as a choice of trade. As evident from the analysis above, given the demand for skills and income generation from use of skills thereof, weaving training with value addition techniques and carpentry training will be well received by Nangkhor Gewog.

9.8 Product/Services Survey

9.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households   have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Nangkhor Gewog. Results in **Table 33** present various crops grown by the survey sample. It is clear from table that large majority of farmers grow maize (81%), rice (62%), vegetables (61%) followed by chili (27%) and Mandarin orange (24%) Other crops, like ginger, organic vegetables and buckwheat, are only grown by fairly lesser number of farmers.

Sl. No.	Crops Grown	Total HH	Sl.No.	Crops Grown	Total HH
1	Apple	1	17	Passion Fruit	1
2	Areca nut	0	18	Potato	43
3	Asparagus	0	19	Sugar Cane	1
4	Cardamom	0	20	Organic Vegetables	11
5	Chilli	23	21	Vegetables	52
6	Ginger	12	22	Walnut	0
7	Groundnut	2	23	Coffee	0
8	Maize	69	24	Hazelnut	0
9	Mandarin Orange	20	25	Broom Grass	0
10	Mango	0	26	Lemon Grass oil	0
11	Mung Bean	0	27	Medicinal and aromatic Plants	0
12	Mushroom	1	28	Spices	1
13	Mustard	34	29	Wild Vegetables	1
14	Peas	4	30	Buckwheat	4
15	Rajma Beans	2	31	Millet	0
16	Rice	53			

Table 35: Different crops grown by number of household.
(Note: Some of the respondents gave more than one response).

Banking on their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. **Figure 35** shows the choice of crops by the respondents. 25% of the Household-respondents felt that maize has the highest potential to increase their household income followed closely by rice (22%) while 19% of the respondents chose mandarin orange. The reason for choosing maize as their preferred crop is due to the high yield of this crop in the area as the soil is suitable for growing this crop. Further, they feel that maize has multipurpose in their livelihood as staple diet, livestock feed and other commercial products like flattened maize, which has a huge demand in Bhutan. Another 13% believes that vegetables have the highest potential to increase their household income. Further, 12% stated that potatoes would have high potential in enhancing their income.
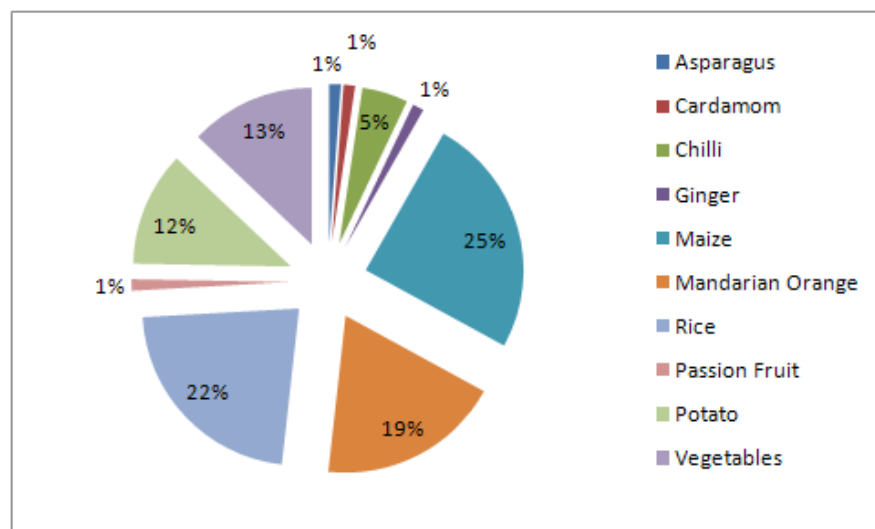
Figure 35: Highest potential crops by number of HH

9.8.2   Livestock

Survey findings revealed that about 69% of the household-respondents raise cattle. 51% keep chickens and 21% of respondents stated that they rear pigs. About 13% of them keep horses/donkeys and these are households where there is access to roads. A small group of 4% keeps goats. **Table 36** showcases the different livestock raised by percentage of households covered by the survey.

Livestock Raised	Total HH
Cattle	59
Goats	3
Pigs	18
Horse/Donkeys	11
Chicken	43
Broiler	0
Fish	0
Buffalo	0
Honey bees	0
Sheep	0
Others	0

Table 36: Livestock by No. of HH

Figure 36 show the choice of livestock by the respondents, which they feel has the highest potential to increase their household income. Majority of the household-respondents (74%) stated that cattle and related products have the highest potential to increase their household income while 20% of the respondents' favored rearing chicken. The respondents feel that cattle products have a huge demand in the country and the climatic condition of the Gewog provides for huge areas of fodder.
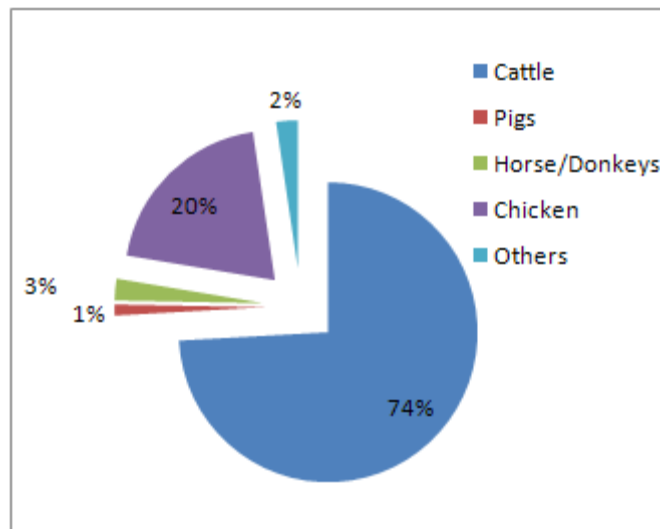
Figure 36: Highest potential livestock by HHs

9.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is very less prevalence of skills to produce handicrafts within the households in Nangkhor Gewog. Out of the survey sample only 19% have skills in producing garment followed by

wood based handicrafts (9%) as illustrated in **Table 37**. only 4 % of the household-respondents have mentioned that they have some skills in producing cane and bamboo handicrafts.

Handicraft Skills	Total HH
Cane and Bamboo	3
Garments	16
Pottery	0
Religious Items	0
Wood Based	8
Copper and Iron Based	0
Zorig Chhusum	5
Daphne Paper	0
Incense	0
None	2

Table 37: Handicraft skills by no of HH
(Note: *some of the respondents gave more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Nangkhor Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 37** depicts the choice of handicrafts by number of households. 21% rated garments to have the highest potential to increase their household income followed closely by copper and iron based products. Meanwhile 7% of the respondents felt that cane and bamboo products could increase their income. On the contrary, 48% of the respondents felt that none of the handicrafts listed in the questionnaire would increase their household income, which is very unusual compared to other Gewogs covered by the survey. Analysis of the results from **Table 37** and **Figure 37**(potential handicrafts), there is a clear indication that choosing handicraft product for formation of SHG in the Gewog is not practicable for the implementing NGOs. However, a small group of respondents (5%) have stated that incense products could enhance their household income and there is resource endowment in the Gewog for this particular product. Implementing partners could explore the possibility of manufacturing incense at a smaller scale in the Gewog.
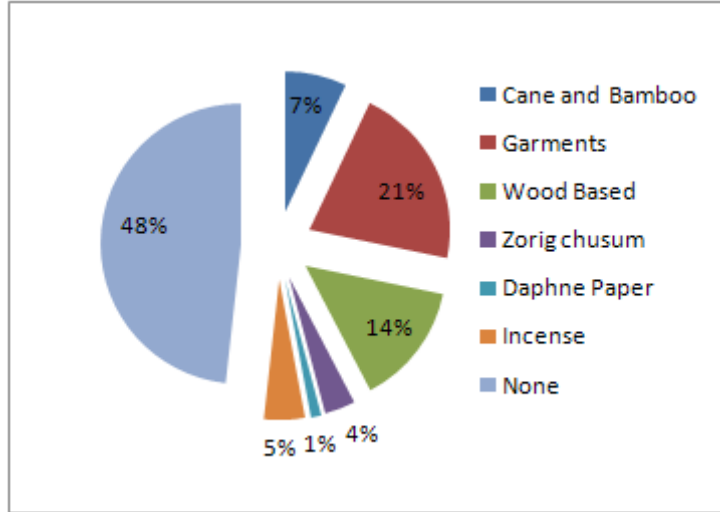
Figure 37: Highest potential handicraft product by No. of HHs

10 Shingkhar Gewog

10.1 General Profile

Shingkhar Gewog comprises seven villages with 262 households. The Gewog covers an area of approximately 209 square kilometers with elevations ranging from 1,000 meters to 4,000 meters above sea level. Education in the Gewog is provided by three community primary schools while health services are provided by one BHU II and three ORC. Agricultural extension services are availed from the RNR center in the Gewog. Only over 48% of the populations have access to potable drinking water supply.
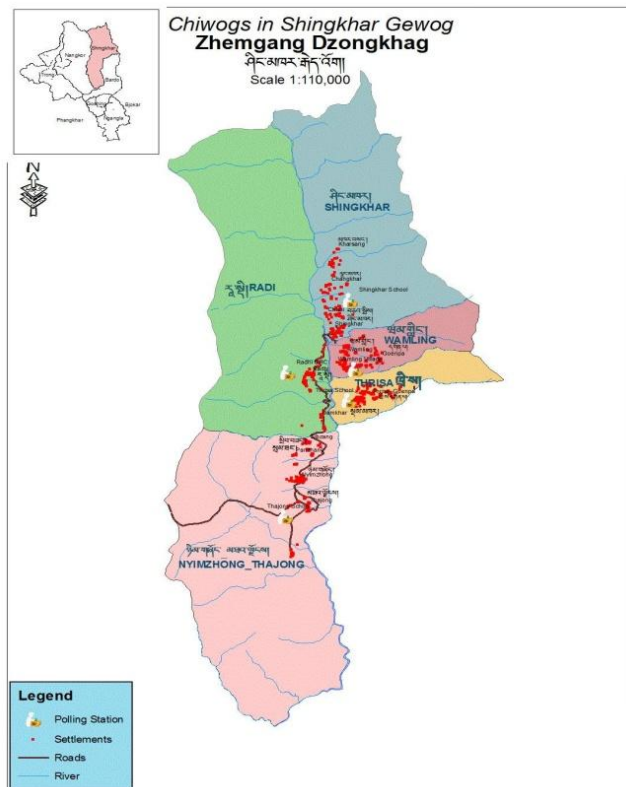
10.2 Infrastructure Profile

Shingkhar Gewog Center located in Shingkhar Chiwog and is officially 3 days walk from Buli in Nangkhor Gewog. The entire Gewog is not connected to road. The following table shows the distance of Chiwogs from the nearest farm road:

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Sl. No	Name of Chiwog	Accessibility characteristics
1	Radhi	3 hours walk from the Gewog Center
2	Shingkhar	Gewog Center 3 days walk
3	Wamling	Half an hour walk from Gewog Center
4	Thrisa	2 Hours walk from Gewog Center
5	NyimzhongThajong	1 day walk from Buli

Table 38: Distance of Chiwog from nearest road

As evident from Table 36, most of the major Chiwogs are not connected by roads, which have diverse impacts on the livelihood of the people in the Chiwogs primarily in terms of marketing their surplus products. Also, the input cost of their farming as well as livestock rearing tends to be higher compared to other Gewogs, which are accessible, by road. This is mainly owing to the cost of transportation related to agriculture seeds, fertilizers and livestock feed. Another major implication of the inaccessibility is poor progress in mechanization of the farming works.

The table below showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	100 % Mobile connection and 37 fix line connection.
2	Television service	No	
3	Post office	No	
4	Electricity	No	
5	Drinking water	Yes	
6	BHU	Yes	
7	ORC	Yes	
8	Irrigation	Yes	
9	School	Yes	
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	Existing SHG	None	

Table 39: Infrastructure/Facilities Profile

10.3 Demography and Household Characteristics

The population of the Shingkhar Gewog is 1546 with 782 males and 764 females (PHCB 2005) **Figure 38** shows age groups by and sex of the persons covered by the survey. The average family size is 7 persons with the highest of 15 persons and lowest of 3 persons per household.

Figure 38: Age by Sex

Age	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
	M	F	M	F	M	F	M	F	M	F	M	F
Total	85	117	37	27	27	27	6	5	0	0	22	4
G Total	202		64		54		11		0		26	
Percentage	57%		18%		15%		3%		0%		7%	
18 to 29	14	14	6	6	13	9	6	4	0	0	11	1
39 to 39	16	25	4	2	2	1	0	0	0	0	2	0
40 to 49	13	18	3	1	3	0	0	0	0	0	2	0
50 to 59	9	14	0	0	0	0	0	0	0	0	1	1
60 to 69	12	11	1	0	0	0	0	0	0	0	0	1
70 to 79	4	12	0	0	0	0	0	0	0	0	0	0
80 to 89	5	2	0	0	0	0	0	0	0	0	0	0
90 to 99	1	0	0	0	0	0	0	0	0	0	0	0
0 to 17	11	21	23	18	9	17	0	1	0	0	6	1

Table 40: Education profile based on Sex and age group

In terms of education level attained, **Table 40** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 57 % of persons covered by the survey have no formal education, while about 18% have completed primary education and 15% have studied up to lower secondary classes. Rests have fallen within other categories as either completed higher secondary school (3%) or Monastic Education (7%).   None of the respondents have indicated that any of their household members to possess diploma qualification.

10.4 Livelihood and Economic Characteristics

Shingkhar Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 39**.
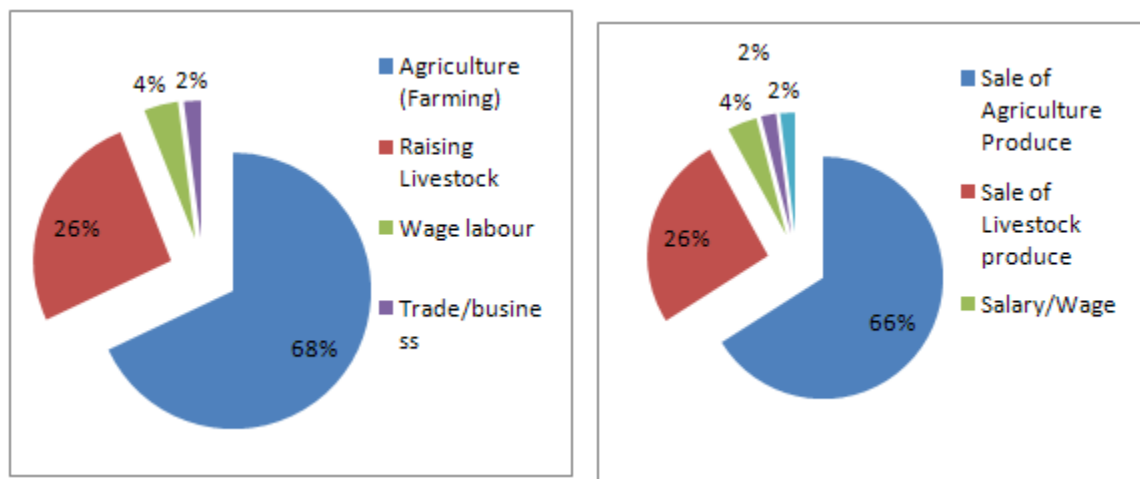
Figure 39: Main activity by number of HHs   Figure 40: Primary source of income by number of HHs

Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture and livestock produce. Results shown in **Figure 40** indicate that about 66% of respondents secure their main household income by sale of agriculture produce followed by sale of livestock produce (26%). 4% of the household-respondents stated that their main source of income was salary/wages. A small 2% stated trade/business as their main source of income

The annual household income ranges between Nu.1000 to Nu. 64,000. **Table 41** showcases the number of households in different income brackets.

Household Income	Total
Total	50
0 to 4999	8
5000 to 9999	28
10000 to 19999	8
20000 to 29999	2
30000 to 39999	1
40000 to 49999	0
50000 to 59999	2
60000 to 69999	1

Table 41: Income by No. of HHs

10.5 Landholding and Land Use

Survey results indicate that respondents varied with regard to characteristics of their land holdings. About 84 % of the household-respondents are owners of small farms (less than 2 acres) and 14 % of the respondents are owners of average farms (2-5 acres) while8% said that they own farms, which are more than 5acres. **Table 42** shows number of households who own land in different range of acreage.

Land Holding	Total
Total	50
1 to 49 decimal	2
50 to 99 decimal	12
100 to 149 decimal	15
150 to 199 decimal	7
200 to 249 decimal	7
250 to 299 decimal	0
300 to 349 decimal	3
350 to 399 decimal	0
400 to 449 decimal	0
450 to 499 decimal	0
500 and above	4

Table **42**: Land Holdings by no. of HHs
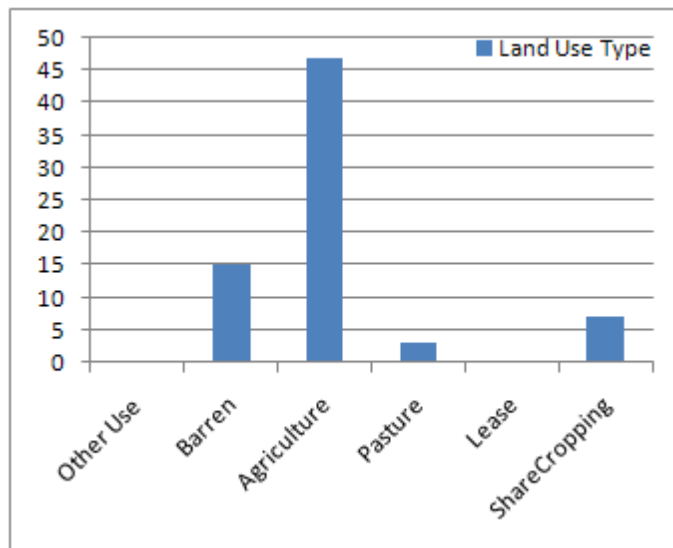
Figure 41: Type of land use
(Some of the respondents gave more than one response)

In terms of land use, most of the households use their land for agriculture farming while few households reported that some portion of their land is kept barren due to land related problems like infertility and soil erosion. The other driving force for keeping the land barren is due to lack of market for their agricultural produce. **Figure 41** showcases the categorization of land use by the number of households.

10.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that there are no SHGs in the Gewog. **Figure 42** shows the percentage of respondents interested to join new SHGs. majority (90%) of the Household-respondents said that they were interested to join SHGs against only 10 % who expressed their lack of interest to joining any kind of SHGs. Also a cursory of the education profile of the households covered by the survey, there is adequate availability of females to man different positions in the governance structure of the SHGs as evident from **Table 40**. Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
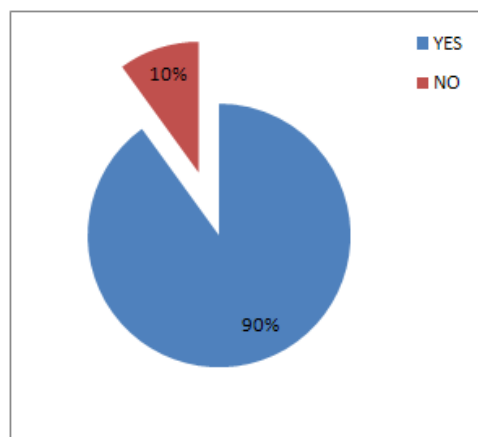
Figure 42: Interest to join SHG

10.7 Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey.

Existing Skills	Sex		
	Total	**MALE**	**FEMALE**
Total	357	177	180
None	274	148	126
Carpentry	23	21	2
Masonry	3	3	0
Electrical	0	0	0
Plumbing	0	0	0
Hair Dressing	0	0	0
Tailoring	0	0	0
Weaving	53	2	51
Traditional Arts and Crafts	3	3	0
Others	1	0	1

Table 43: Existing Skills by Sex

Table 43 shows skills by number of persons. 274 out of 357 persons did not possess any skills. 53 of them have weaving skills followed by carpentry with 23. Smaller number of persons has skills in masonry and Zorig Chhusum. A closer examination of prevalence of skills among males and females shows that only 2 females have carpentry skills. However, 51 out of 53 persons with weaving skills are females.

The choice of trade by households to increase income does not appear well distributed. There seem to be a wide difference in the number of respondents in choice of different trades. **Figure 43** illustrates the choice of skills with the highest potential to increase household income.
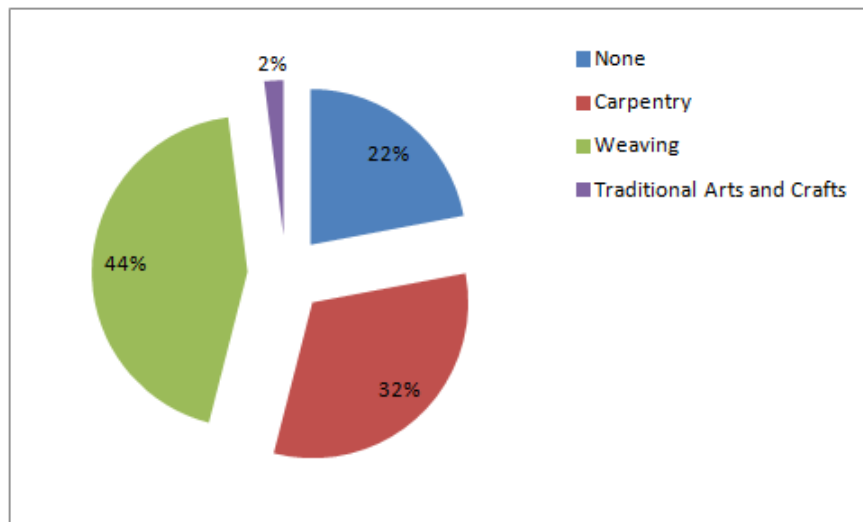
Figure **43**: Highest Potential Skills by No. of HHs

The proportion of participants opting for different trades ranges from 2% to 44%. None of the respondents felt that hairdressing, tailoring, plumbing, masonry and electrical trades have the potential to increase their household income. Meanwhile 44% chose weaving closely followed by carpentry (32%) and Zorig Chhusum (2%). 22 % of the household did not choose any of the trades. As evident from the analysis above, given the demand for skills and income generation from use of skills, weaving training with value addition techniques and carpentry training will be well received by Shingkhar Gewog.

10.8 Product/Services Survey

10.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households have been involved in general farming for more than 10 years. In order to assess the viability of

products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Shingkhar Gewog.

Results in **Table 44** present various crops grown by the survey sample. It is clear from table that large majority of farmers grow maize (88%), chilli (86%) followed by rice (80%). Other crops, like ginger and vegetables are only grown by fairly lesser number of farmers.

Sl.No	Crops Grown	Total HH	Sl.No	Crops Grown	Total HH
1	Apple	0	17	Passion Fruit	0
2	Areca nut	0	18	Potato	33
3	Asparagus	0	19	Sugar Cane	5
4	Cardamom	0	20	Organic Vegetables	0
5	Chilli	43	21	Vegetables	13
6	Ginger	9	22	Walnut	2
7	Groundnut	0	23	Coffee	0
8	Maize	44	24	Hazelnut	0
9	Mandarin Orange	3	25	Broom Grass	0
10	Mango	0	26	Lemon Grass oil	0
11	Mung Bean	2	27	Medicinal and aromatic Plants	0
12	Mushroom	0	28	Spices	0
13	Mustard	0	29	Wild Vegetables	3
14	Peas	12	30	Buckwheat	0
15	Rajma Beans	5	31	Millet	0
16	Rice	40			

Table 44: Different crops grown by number of household.

(Note: Some of the respondents gave more than one response)

Banking on their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. **Figure 44** shows the choice of crops by the households. 50% of the Household-respondents felt that maize has the highest potential to increase their household income followed by rice (24%) while 18% of the respondents chose chili. Another 8% believes that potatoes have the highest potential to increase their household income.
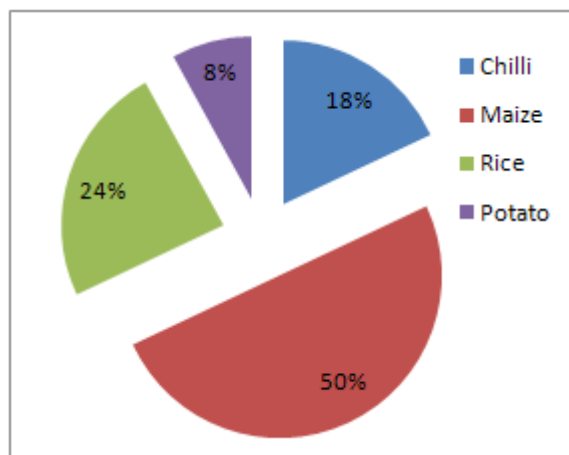
Figure 44: Highest potential crops by number of HH

10.8.2 Livestock

Survey findings revealed that about 78% of the household-respondents raise cattle followed closely by horses/donkeys (74%). Only 10% keep chickens and 2% of respondents stated that they rear pigs. **Table 45** showcases the different livestock raised by percentage of households covered by the survey.

Livestock Raised	Total HH
Cattle	39
Goats	0
Pigs	1
Horse/Donkeys	37
Chicken	5
Broiler	0
Fish	0
Buffalo	0
Sheep	0
Honey bees	0
Others	0

Table 45: Livestock by No. of HH
(Note: *some of the respondents gave more than one answer*)

Figure 45 show the choice of livestock by the respondents, which they feel has the highest potential to increase their household income. Majority of the household-respondents (62%) stated that horses/donkeys have the highest potential to increase their household income. This is mainly because most of the villages in the Gewog are not accessible by road. Meanwhile 36% of the respondents favored cattle. A small percentage (2%) felt that poultry farming could enhance their household income.
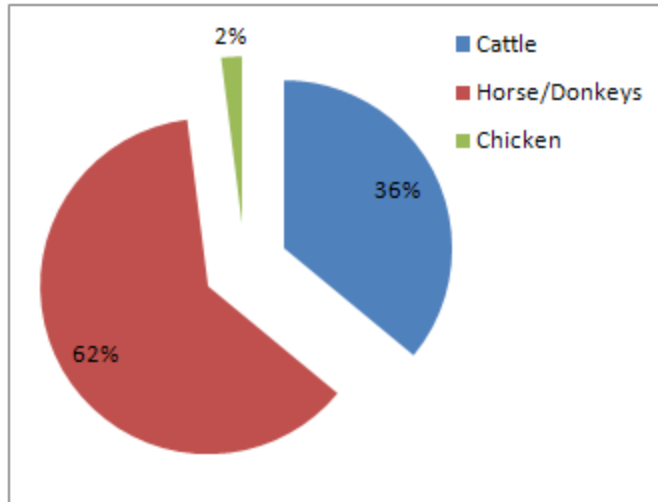
Figure 45: Highest potential livestock by HHs

10.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is very average prevalence of skills to produce handicrafts within the households in Shingkhar Gewog. Out of the survey sample 36% have skills in producing wood based products followed by garment (24%) as illustrated in **Table 46**. About 12% of the households have mentioned that they have some skills in producing cane and bamboo handicrafts.

Handicraft Skills	Total HH
Cane and Bamboo	6
Garments	12
Pottery	1
Religious Items	0
Wood Based	18
Copper and Iron Based	0
Zorig Chhusum	1
Daphne Paper	0
Incense	0
None	0

Table 46: Handicraft skills by no of HH
(Note: *some of the respondents have given more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Shingkhar Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 46** depicts the choice of handicrafts by number of households. 40% rated wood based products to have the highest potential

to increase their household income followed by garments (20%). Meanwhile 16% of the respondents felt that cane and bamboo products could increase their income. However, 22% of the respondents felt that none of the handicrafts listed in the questionnaire will increase their household income
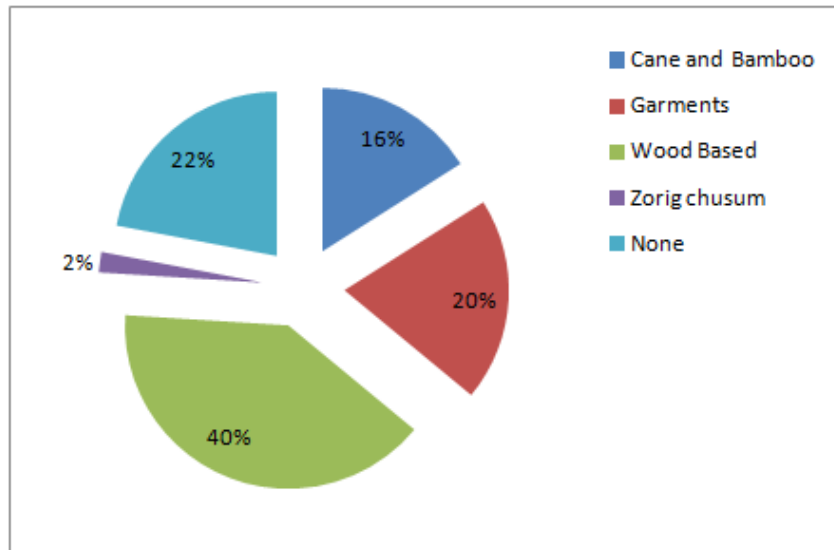
Figure 46: Highest Potential Handicraft Product by No. of HHs

11 Trong Gewog

11.1 General Profile

Trong Gewog comprises nine villages with 432 households. The Gewog covers an area of approximately 358 square kilometers with elevations ranging from 500meters to 2000 meters above sea level. The Gewog lies in the eastern part of the Dzongkhag. It is the most accessible Gewog in Zhemgang Dzongkhag. Education in the Gewog is provided by one High School, One Middle Secondary School, two Lower Secondary Schools, one Community Primary School and one Primary school while health services are availed from two BHU namely Zhemgang BHU I and
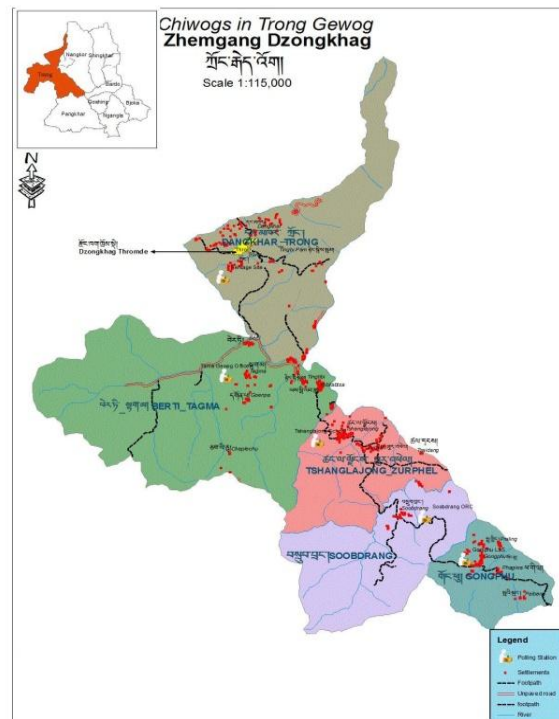
Gomphu BHU II. The facilities at the Yebilaptsa Hospital were improved. Extension services are provided by a RNR, AEC, LEC and a Veterinary Hospital. 75% of the Gewog population has potable drinking water supply.

11.2 Infrastructure Profile

Trong Gewog Center is located in Tingtibhi, 30 kilometers (Two and half hours) from Zhemgang town. All Chiwogs are connected to farm roads except for Soobdrang. However, it is expected to be complete by the end of the 10th FYP. The following table shows the distance of Chiwogs from the nearest farm road:

Sl. No	Name of Chiwog	Accessibility Characteristics
1	Berti Tagma	Connected to farm road
2	Zurbeythang	Connected to farm road
3	Gongphu	Connected to farm road
4	Soobdrang	2 hours walk from road end
5	Dangkhar Trong	Connected to road.

Table 47: Distance of Chiwog from nearest road

The table below showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	Mobile connection only.
2	Television service	Yes	
3	Post office	Yes	
4	Electricity	Yes	
5	Drinking water	Yes	
6	BHU	Yes	Located in Gongphu
7	ORC	Yes	
8	Irrigation	Yes	
9	School	Yes	
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	Existing SGH	Yes	Poultry, piggery, fishery and Women's Vegetable Group.

Table 48: Infrastructure/Facilities Profile

11.3 Demography and Household Characteristics

The population of Trong Gewog is 3314 with 1759 males and 1555 females (PHCB 2005). **Figure 47** shows age groups by and sex of the persons covered by the survey. The average family size is 5 persons with the highest of 12 persons and lowest of 2 person per household.
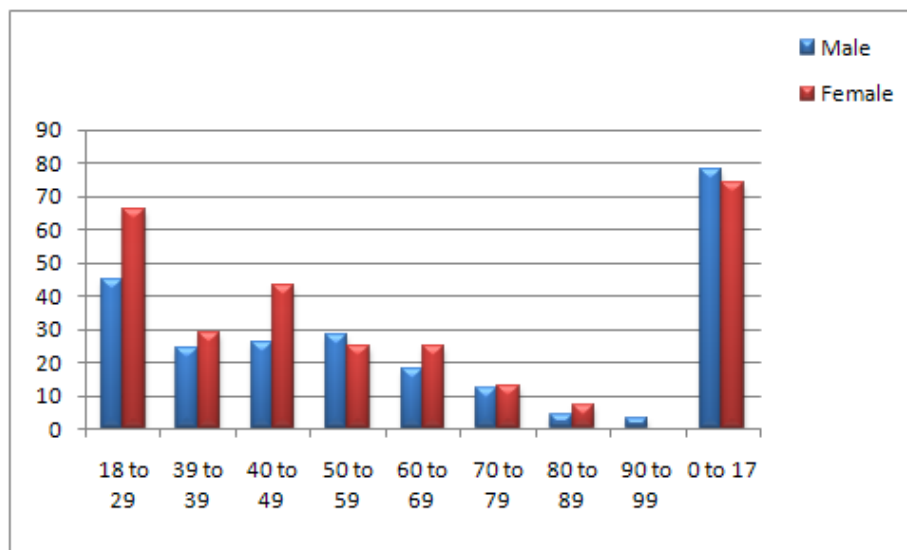
Figure 47: Age by Sex

Age	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
	M	F	M	F	M	F	M	F	M	F	M	F
Total	139	192	53	52	31	29	9	9	1	0	4	0
G. Total	331		105		60		18		1		4	
Percentage	64%		20%		12%		3%		0%		1%	
18 to 29	12	29	7	15	13	13	9	9	1	0	2	0
39 to 39	19	27	5	2	0	0	0	0	0	0	0	0
40 to 49	25	43	0	0	0	0	0	0	0	0	1	0
50 to 59	27	25	1	0	0	0	0	0	0	0	0	0
60 to 69	17	25	1	0	0	0	0	0	0	0	0	0
70 to 79	12	13	0	0	0	0	0	0	0	0	0	0
80 to 89	4	7	0	0	0	0	0	0	0	0	0	0
90 to 99	2	0	0	0	0	0	0	0	0	0	1	0
0 to 17	21	23	39	35	18	16	0	0	0	0	0	0
0 to 17	21	23	39	35	18	16	0	0	0	0	0	0

Table 49: Education profile based on Sex and age group

In terms of education level attained, **Table 49** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 64 % of persons covered by the survey have no formal education, while about 20% have completed primary education and 12% have studied up to lower secondary classes. Rest has fallen within other categories as either completed higher secondary school (3%) or monastic education (1%).

11.4 Livelihood and Economic Characteristics

Trong Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 48**.
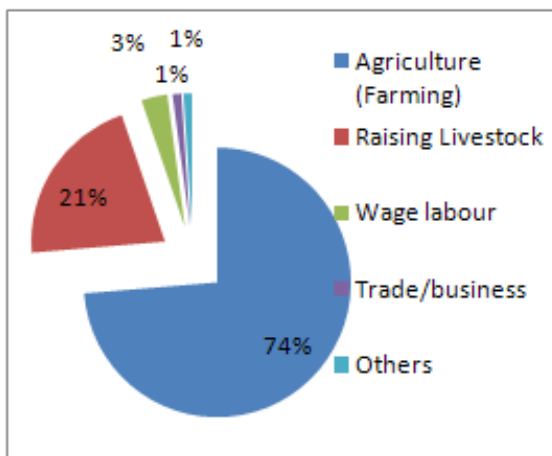
Figure 48: Main activity by No. of HHs
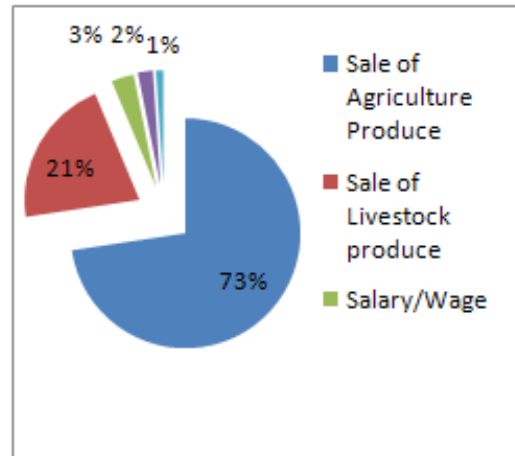
Figure 49: Primary source of income by No. of HHs

Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture and livestock produce. Results shown in **Figure 49** Indicate that about 73% of respondents secure their main household income by sale of agriculture produce followed by sale of livestock produce (21%). 3% of the household-respondents stated that their main source of income was salary/wages. A small 2% stated trade/business as their main source of income and 1% stated remittances as main source of income.

The annual household income ranges between Nu.1000 to Nu. 68,000. **Table 50** showcases the number of households in different income brackets.

Household Income	Total
Total	**95**
0 to 4999	48
5000 to 9999	22
10000 to 19999	15
20000 to 29999	6
30000 to 39999	0
40000 to 49999	3
50000 to 59999	0
60000 to 69999	1

Table 50: Income by No. of HHs

11.5 Landholding and Land Use

Survey results indicate that respondents varied with regard to characteristics of their land holdings. Unlike other Gewogs in Zhemgang, About 43 % of the household-respondents own farms which are more than 5 acres. 35% of them are owners of small farms (less than 2 acres) and 36 % of the respondents are owners of average farms (2-5 acres). **Table 51** shows number of households who own land in different range of acreage.

Land Holding	Total
Total	**95**
1 to 49 decimal	1
50 to 99 decimal	14
100 to 149 decimal	2
150 to 199 decimal	3
200 to 249 decimal	12
250 to 299 decimal	3
300 to 349 decimal	13
350 to 399 decimal	0
400 to 449 decimal	6
450 to 499 decimal	0
500 and above	41
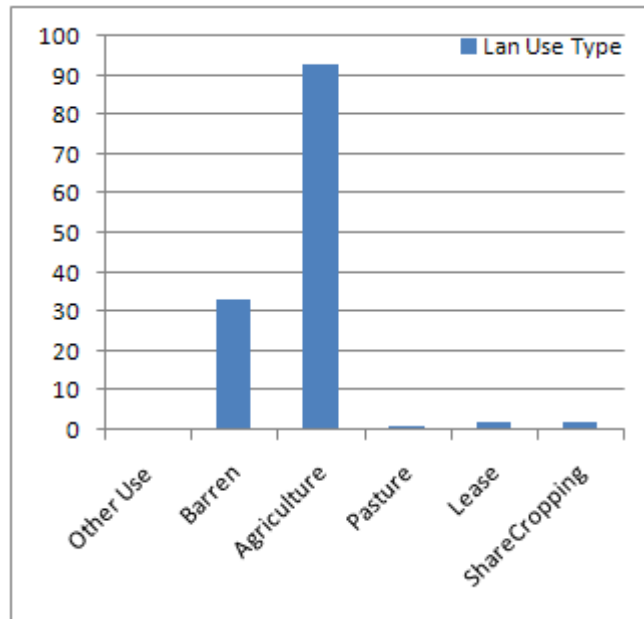
Figure 50: Type of land use
(Some respondents gave more than one response)

Table 51: Land Holdings by No. of HHs

In terms of land use, majority of the households (99%) use their land for agriculture/ farming while some portion of their land are kept barren due to irrigation and other land related problems like infertility of soil and pest attack. There are also few households who use their land for sharecropping. **Figure 50** showcases the categorization of land use by the number of households.

11.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that there are few SHGs established areas of piggery, poultry, fishery and vegetable. However, the respondents feel that the reach of the SHGs is limited and with the success and advantages of SHGs, most respondents feel that there should be more SHGs to increase household income of the Gewog.

Almost 91% of the Household-respondents said that they were interested to join SHGs against 9% who were disinterested to join any kind of SHGs as evident from **Figure 51**. Also a cursory of the education profile of the households covered by the survey, there is adequate availability of females to take up different positions in the governance structure of the SHGs as evident from **Table 49**. Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
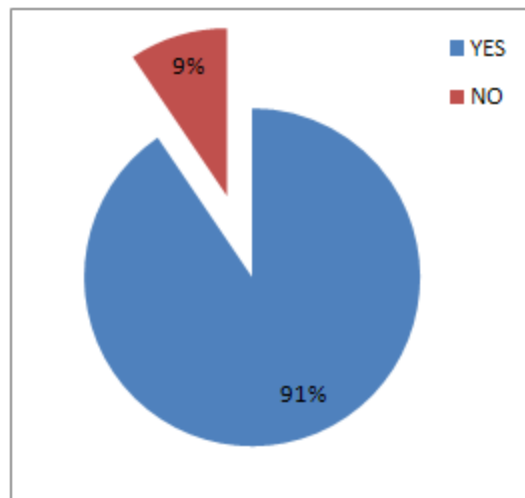
Figure 51: Interest to join SHG

11.7 Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 52** Shows skills by number of persons. 415 out of 520 persons did not possess any skills. 45 of them have weaving skills followed by 26 persons with carpentry skills and 16 with masonry skills. Smaller number of persons has skills in plumbing, electrical and tailoring. 13 persons have skills in Zorig Chhusum. A closer examination of prevalence of skills among males and females shows that there are only 3 females with

Zorig Chhusum skills and 1 with carpentry skills. Out of 45 persons with weaving skills, 43 are females. Most of the women with weaving skills have reported that they possess advanced skills including intricate patterns and designs of traditional garments. Persons with carpentry and masonry skills do not have advanced skills in modern construction areas.

Existing Skills	Sex		
	Total	Male	Female
Total	520	238	282
None	415	181	234
Carpentry	26	25	1
Masonry	16	16	0
Electrical	1	1	0
Plumbing	2	2	0
Hair Dressing	0	0	0
Tailoring	1	1	0
Weaving	45	2	43
Traditional Arts and Crafts	13	10	3
Others	1	0	1

Table 52: Existing Skills by Sex

The choice of trade by households to increase income does not appear well distributed. There seem to be a wide difference in the number of respondents in choice of different trades. **Figure 52** illustrates the choice of skills with the highest potential to increase household income.
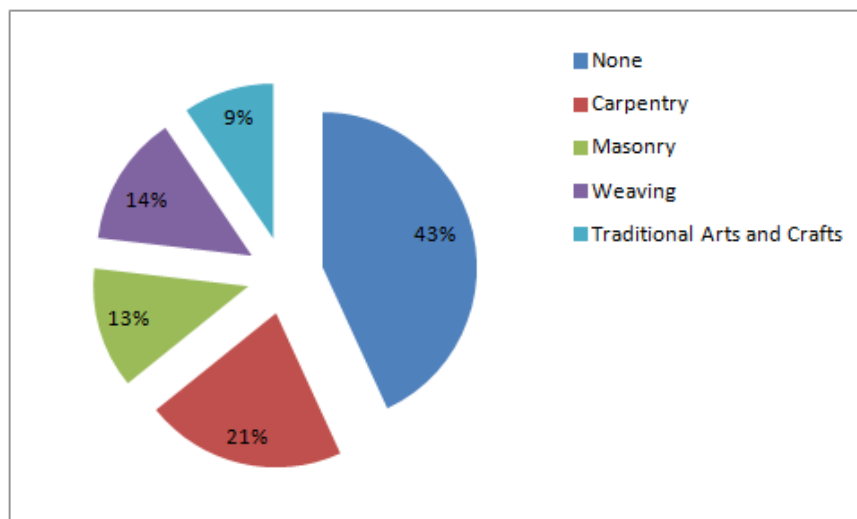
Figure 52: Highest Potential Skills by No. of HHs

The proportion of participants opting for different trades ranges from 9% to 21%. None of the respondents felt that hairdressing; tailoring, plumbing and electrical trades have the

potential to increase their household income. Meanwhile 21% chose carpentry followed by weaving (14%) and masonry (13%). On the contrary a huge 43 % of the household did not choose any of the trades. As evident from the analysis above, there is not much of demand for skills training in Trong Gewog. However, training in carpentry and weaving is mostly favored by the household- respondents

11.8 Product/Services Survey

11.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households   have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Trong Gewog. Results in **Table 53** present various crops grown by the survey sample. It is clear from table that large majority of farmers grow maize (93%), and rice (79%) followed by mandarin orange (76%), chili (69), potato (53%) and ginger (44%). Households covered by the survey in Trong Gewog grow large varieties of crops including fruits and high value products like cardamom, mushroom and organic vegetables.

Sl.No	Crops Grown	Total HH	Sl.No	Crops Grown	Total HH
1	Apple	0	17	Passion Fruit	6
2	Areca nut	0	18	Potato	50
3	Asparagus	4	19	Sugar Cane	14
4	Cardamom	5	20	Organic Vegetables	29
5	Chili	66	21	Vegetables	56
6	Ginger	42	22	Walnut	8
7	Groundnut	1	23	Coffee	1
8	Maize	88	24	Hazelnut	0
9	Mandarin Orange	72	25	Broom Grass	0
10	Mango	4	26	Lemon Grass oil	0
11	Mung Bean	20	27	Medicinal and aromatic Plants	0
12	Mushroom	5	28	Spices	0
13	Mustard	20	29	Wild Vegetables	0
14	Peas	19	30	Sweet Buckwheat	0
15	Rajma Beans	6	31	Millet	0
16	Rice	75			

Table 53: Different crops grown by number of household.
(Note: Some of the respondents gave more than one response)

Banking on their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. **Figure 53** shows the choice of crops by the households. 33% of the Household-respondents felt that maize has the highest potential to increase their household income owing to the same reasons as mentioned by respondents of Nangkhor Gewog, followed by mandarin orange (28%) while 16% of the respondents chose chili. Another 9% believes that ginger have the highest potential to increase their household income.
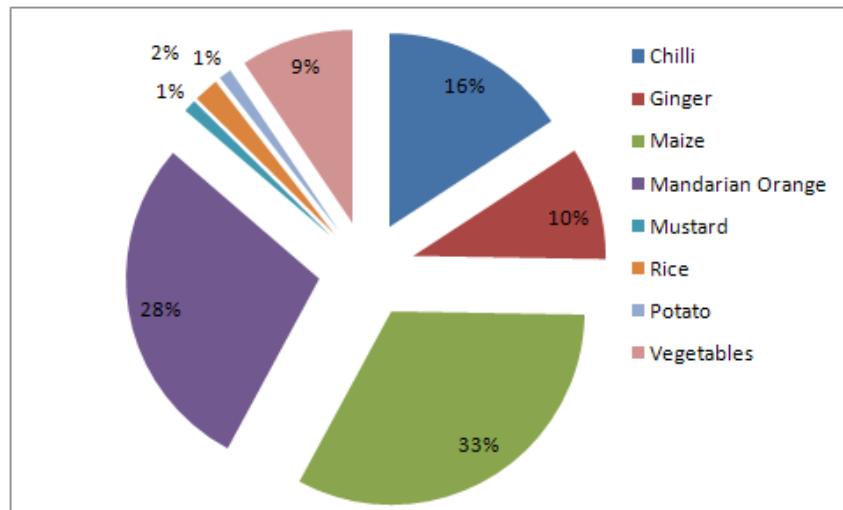
Figure 53: Highest potential crops by no of HH

11.8.2 Livestock

Survey findings revealed that about 86% of the household-respondents raise cattle followed by chickens (68%). Only 12% rear pigs. Trong is the only Gewog in Zhemgang where the survey found one household with a fishery. **Table 54** showcases the different livestock raised by percentage of households covered by the survey.

Livestock Raised	Total HH
Cattle	82
Goats	0
Pigs	11
Horse/Donkeys	5
Chicken	65
Broiler	0
Fish	1
Buffalo	0
Honey bees	0
Sheep	0
Others	1

Table 54: Livestock raised by no. of HH
(Note: Some of the respondents gave more than one response)

Figure 54 shows the choice of livestock with the highest potential to increase their household income by the household-respondents. Majority of the household-respondents (78%) stated that cattle have the highest potential to increase their household income while 19% indicated that poultry farming could lead to increase in income. The main reason for choosing cattle as a choice of livestock for formation of SHGs is the marketability of cattle related products.
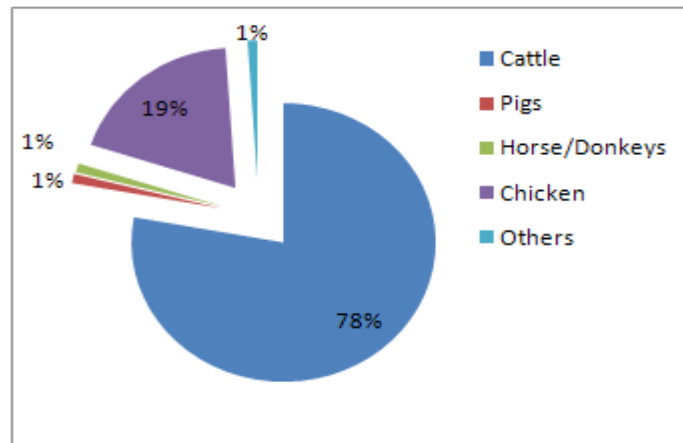
Figure 54: Highest potential livestock by HHs

11.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is very average prevalence of skills to produce handicrafts within the households in Trong Gewog. Out of the survey sample of 95 households, 26% of the households have some of their family members (mostly female) possessing skills in producing garments followed by wood based products (21%) as illustrated in **Table 55**. About 8% of the households have mentioned that they have some skills in producing cane and bamboo handicrafts.

Handicraft Skills	Total HH
Cane and Bamboo	8
Garments	25
Pottery	0
Religious Items	0
Wood Based	20
Copper and Iron Based	0
Zorig Chhusum	6
Daphne Paper	0
Incense	0
None	0

Table 55: Handicraft skills by no of HH
(Note: *some of the respondents gave more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Shingkhar Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 55** depicts the choice of handicrafts by number of households. 23% rated garments to have the highest potential to increase their household income followed closely by garments (20%). Meanwhile 11% of the respondents felt that cane and bamboo products could increase their income. On the contrary, 38% of the respondents felt that none of the handicrafts listed in the questionnaire would increase their household income.
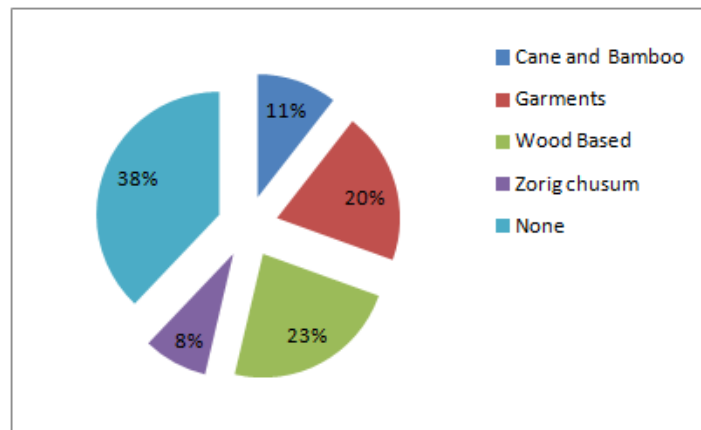
Figure 55: Highest potential handicraft product by No. of HHs

12 Phangkhar Gewog

12.1 General Profile

Phangkhar Gewog comprises fourteen main villages with 189 households. The Gewog covers an area of approximately 248 square kilometers. The Gewog lies in the southern part of the Dzongkhag. It is the largest Gewog in Zhemgang Dzongkhag. Education in the Gewog is provided by three-community primary Schools. Extension services are provided by a RNR and two health centers
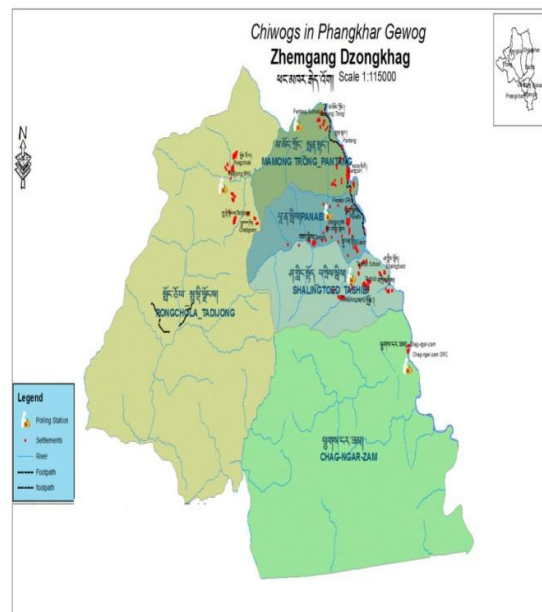
12.2 Infrastructure Profile

Phangkhar Gewog Center is located in Mamong Pangthang. The following table shows the distance of Chiwogs from the nearest farm road:

SI. No	Name of Chiwog	Accessibility characteristics
1	Panabi	2 Hours Walk
2	ShilingteyTashibi	4 Hours walk
3	MamongPangthangTrong	Connected to Road
4	Cha-Ngar-Zam	1 Day walk
5	PongchulaTadjong	3 Days walk

Table 56: Distance of Chiwogs from nearest road

As evident from **Table 56**, most of the major Chiwogs are not connected by roads, which have diverse impacts on the livelihood of the people in the Chiwogs primarily in terms of marketing their surplus products. Also, the input cost of their farming as well as livestock rearing tends to be higher compared to other Gewogs, which are accessible, by road. This is mainly owing to the cost of transportation related to agriculture seeds, fertilizers and livestock feed. Another major implication of the inaccessibility is poor progress in mechanization of the farming works.

The table below showcases the profile of facilities and infrastructure within the Gewog:

SI. No	Infrastructure/ Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	Mobile connection only.
2	Television service	No	
3	Post office	No	
4	Electricity	No	
5	Drinking water	Yes	
6	BHU	Yes	
7	ORC	Yes	
8	Irrigation	Yes	
9	School	Yes	
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	Existing SHG	None	

Table 57: Infrastructure/Facilities Profile

12.3 Demography and Household Characteristics

The population of Phangkhar Gewog is 1367 with 657 males and 710 females (*PHCB 2005*) **Figure 56** shows age groups by and sex of the persons covered by the survey. The average family size is 7 persons with the highest of 15 persons and lowest of 2 people per household.

Figure 56: Age by Sex

Age	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
	M	F	M	F	M	F	M	F	M	F	M	F
Total	62	68	28	29	30	11	0	0	0	0	3	0
G. Total	130		57		41		0		0		3	
Percentage	56%		25%		18%		0%		0%		1%	
18 to 29	14	18	6	5	14	4	0	0	0	0	1	0
39 to 39	10	10	5	3	2	0	0	0	0	0	0	0
40 to 49	10	10	1	2	2	0	0	0	0	0	0	0
50 to 59	11	13	3	0	0	0	0	0	0	0	0	0
60 to 69	5	3	0	0	0	0	0	0	0	0	1	0
70 to 79	2	1	1	2	0	0	0	0	0	0	0	0
80 to 89	1	2	0	0	0	0	0	0	0	0	1	0
90 to 99	0	0	0	0	0	0	0	0	0	0	0	0
0 to 17	9	11	12	17	12	7	0	0	0	0	0	0

Table 58: Education profile based on Sex and age group

In terms of education level attained, **Table 58** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 56 % of persons covered by the survey have no formal education, while about 25% have completed primary education and 18% have studied up to lower secondary classes. Rest has fallen within other categories as either completed monastic education (1%).

12.4 Livelihood and Economic Characteristics

Phangkhar Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 57**.
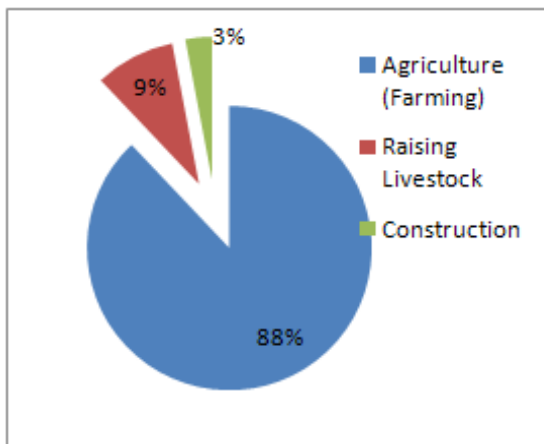
Figure 57: Main activity by No. of HHs
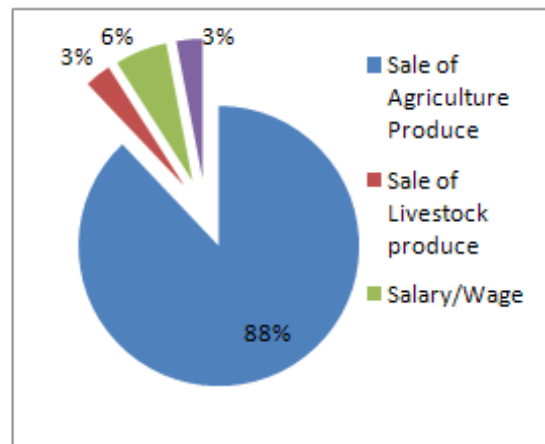
Figure 58: Primary source of income by No. of HHs

The annual household income ranges between Nu.1000 to Nu. 198,000. **Table 59** showcases the number of households in different income brackets.

Household Income	Total
Total	33
0 to 4999	3
5000 to 9999	3
10000 to 19999	14
20000 to 29999	1
30000 to 39999	2
40000 to 49999	3
50000 to 59999	2
60000 to 69999	1
70000 to 79999	1
80000 to 89999	2
150000 to 200000	1

Table 59: Income by No. of HHs

Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture and livestock produce. **Figure 58** Indicate that

about 88% of respondents secure their main household income by sale of agriculture produce. Only 3% of the household-respondents stated that their main source of income was from sale of livestock products.6% stated salary/wages as main source of income.

12.5 Landholding and Land Use

Survey results indicate that respondents did not varying characteristics of their land holdings. Unlike other Gewogs in Zhemgang, All the household-respondents covered by the survey stated that they own less than 50 decimal of land as shown in **Table 60**.

In terms of land use, most of the households use their land for agriculture farming while few households mentioned that some portion of their land is kept barren due to infertility of the soil. There are also few households who do sharecropping. **Figure 59** showcases the categorization of land use by the number of households.

Land Holding	Total HH
1 to 49 decimal	33
50 to 99 decimal	0
100 to 149 decimal	0
150 to 199 decimal	0
200 to 249 decimal	0
250 to 299 decimal	0
300 to 349 decimal	0

Table 60: Land Holdings by No. of HHs
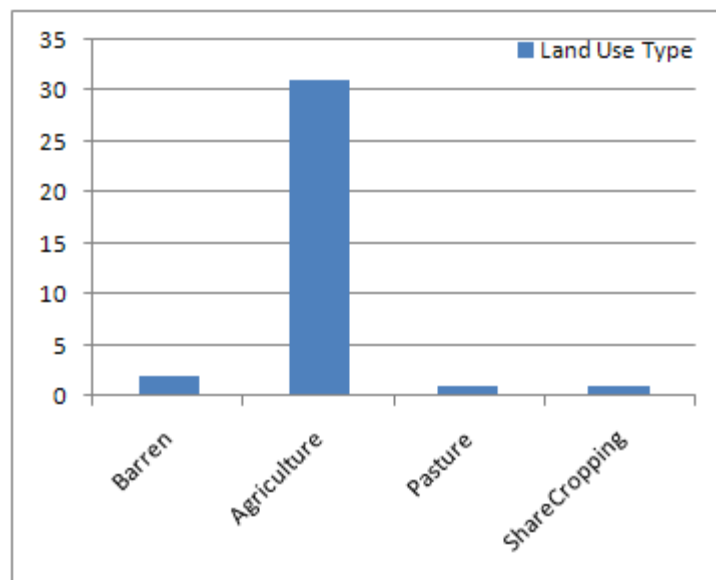
Figure 59: Type of land use
(Some respondents gave more than one response)

12.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that there is no SHGs in the Gewog. **Figure 60** shows the percentage of respondents interested to join new SHGs. majority (97%) of the Household-respondents said that they were interested to join SHGs against only 3 % who expressed their lack of interest to joining any kind of SHGs. Also a cursory of the education profile of the households covered by the survey, there is adequate availability of females to man different positions in the governance structure of the SHGs as evident from **Table 58.** Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
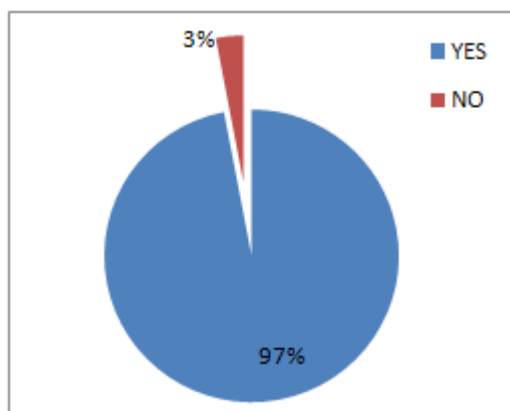
Figure 60: Interest to join SHG

12.7 Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 61** shows skills by number of persons. 179 out of 5231 persons did not possess any skills. 29 of them have weaving skills followed by 11 persons with carpentry skills and 3 with masonry skills. A closer examination of prevalence of skills among males and females shows that there are absolutely no skilled females except 27 with weaving skills.

Existing Skills	Sex		
	Total	Male	Female
Total	**231**	**123**	**108**
None	179	98	81
Carpentry	11	11	0
Masonry	3	3	0
Electrical	0	0	0
Plumbing	1	1	0
Hair Dressing	0	0	0
Tailoring	0	0	0
Weaving	29	2	27
Traditional Arts and Crafts	8	8	0

Table 61: Existing Skills by Sex

The choice of trade by households to increase income appears well distributed. There doesn't seem to be wide difference in the number of respondents in choice of different trades. **Figure 61** illustrates the choice of skills with the highest potential to increase household income.
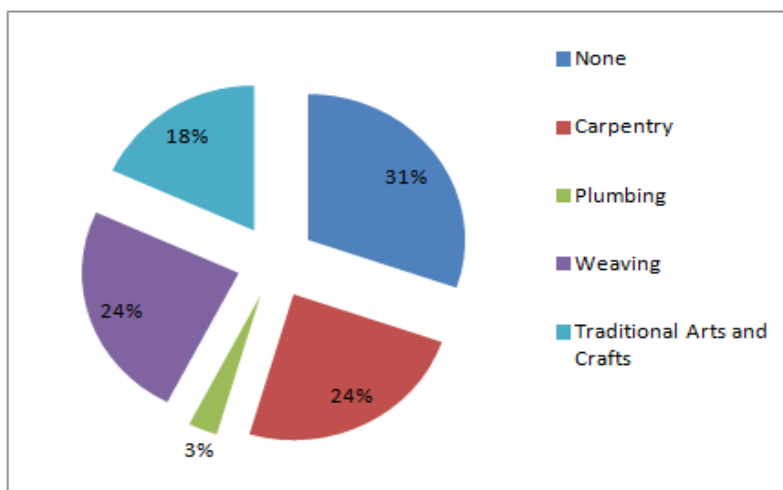
Figure 61: Highest Potential Skills by No. of HHs

The proportion of participants opting for different trades ranges from 2% to 24%. None of the respondents felt that hairdressing, tailoring, masonry and electrical trades have the potential to increase their household income. Meanwhile 24% chose carpentry and weaving. 18% chose Zorig Chhusum and a small 3% chose plumbing. On the contrary 31 % of the household did not choose any of the trades. Training in carpentry and weaving is mostly favored by most of the household- respondents

12.8 Product/Services Survey

12.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households   have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Phangkhar Gewog. Results in **Table 62** present various crops grown by the survey sample. The table shows that most of the farmers grow mandarin orange (94%) followed by maize (88%) and vegetables (64%). Other crops are grown by lesser number of households as evident from the table.

Sl.No	Crops Grown	Total HH		Sl.No	Crops Grown	Total HH
1	Apple	0		16	Passion Fruit	0
2	Areca nut	0		17	Potato	6
3	Asparagus	0		18	Sugar Cane	0
4	Cardamom	0		19	Organic Vegetables	7
5	Chilli	4		20	Vegetables	21
6	Ginger	5		21	Walnut	0
7	Groundnut	0		22	Coffee	0
8	Maize	29		23	Hazelnut	0
9	Mandarin Orange	31		24	Broom Grass	0
10	Mango	0		25	Lemon Grass oil	1
11	Mung Bean	0		26	Medicinal and aromatic Plants	0
12	Mushroom	0		27	Spices	0
13	Mustard	6		28	Wild Vegetables	0
14	Peas	3		29	Sweet Buckwheat	0
15	Rajma Beans	0		30	Millet	0
16	Rice	6				

Table **62**: Different crops grown by number of household.
(Note: Some of the respondents gave more than one response)

Banking on their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. **Figure 62** shows the choice of crops by the households. 60% of the Household-respondents felt that mandarin orange has the highest potential to increase their household income 28% of the household-respondents went with maize as their choice of crop. The main reason for choosing mandarin orange as their choice of crops was due to huge demand from the Agro industry in Gelephu.
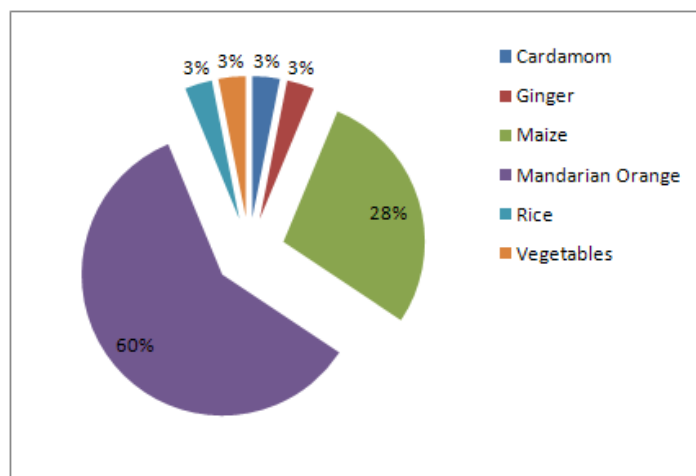
Figure **62**: Highest potential crops by no of HH

12.8.2 Livestock

Survey findings revealed that about 70% of the household-respondents keep chickens followed by cattle (70%). 48% rear pigs and an equal number keep horses/donkeys. **Table 63** showcases the different livestock raised by percentage of households covered by the survey.

Livestock Raised	Total HH
Cattle	22
Goats	0
Pigs	16
Horse/Donkeys	16
Chicken	23
Broiler	0
Fish	0
Buffalo	0
Sheep	0
Honey bees	0
Others	0

Table 63: Livestock raised by no. of HH

(Note: *some of the respondents gave more than one answer*)

Figure 63 shows the choice of livestock with the highest potential to increase their household income by the household-respondents. Most of the household-respondents (63%) stated that cattle have the highest potential to increase their household income while 16% indicated that poultry farming could lead to increase in income. Further 9% indicated that horses and pigs could enhance their income. Only 3% of the households felt that beekeeping could enhance their household income.
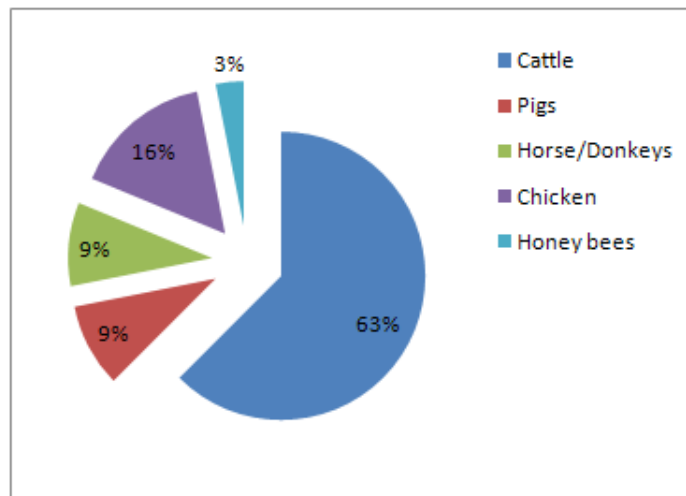
Figure 63: Highest potential livestock by HHs

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12.8.3 Handicraft

A cursory of households with skills to produce handicraft products reveals that there is average prevalence of skills to produce handicrafts within the households in Phangkhar Gewog. Out of the survey sample of 33 households, 33% of the households have some of their family members possessing skills in producing wood based products followed by garments (21%) as illustrated in **Table 64**. About 9% of the households have mentioned that they have some skills in producing cane and bamboo products and Zorig Chhusum related handicrafts.

Handicraft Skills	Total HH
Cane and Bamboo	3
Garments	6
Pottery	0
Religious Items	1
Wood Based	11
Copper and Iron Based	0
Zorig Chhusum	3
Daphne Paper	1
Incense	0
None	0

Table 64: Handicraft skills by no of HH
(Note: *One respondent has given more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Phangkhar Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income.

Figure 64 depicts the choice of handicrafts by number of households. 34% rated wood based products to have the highest potential to increase their household income followed by garments (19%). Meanwhile 16% stated that cane and bamboo products would enhance their income. On the contrary, 19% of the respondents felt that none of the handicrafts listed in the questionnaire would increase their household income, which is very unusual compared to other Gewogs covered by the survey.
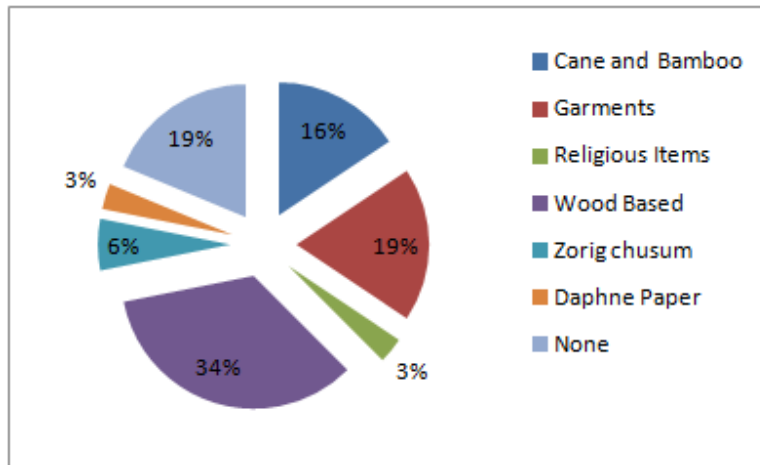
Figure 64: Highest potential handicraft product by No. of HHs

13 Norgaygang (Bara) Gewog

13.1 General Profile

Norgaygang (Bara) Gewog comprises 6 villages with 653 Households. It is located to the extreme northwest of Samtse Dzongkhag. It has an approximate area of 187.51 km2. Ha Dzongkhag borders the Gewog to the east. Tendruk Gewog to the Southeast and the Indian state of the West Bengal to the South and North West .The Gewog is located at an elevation ranging from 500 meters to 2400 meters above the sea level. The Gewog experience war summer and cold winter with snow fall in the northern region of the geog. The annual rainfall ranges from 1200mm-3000mm that occurs within the monsoon months.

13.2 Infrastructure Profile

Norgaygang Gewog Center is 3 hours walk from Tendruk. The entire Gewog is not connected by road however is expected to be completed by the end of the 10th FYP.

The following table shows the distance of Chiwogs from the nearest farm road:

Sl. No	Name of Chiwog	Accessibility characteristics
1	Dangreyboog- Patshaling	(Gewog Centre) 3 hours walk from the road end.
2	Khabaabgang Noryog	Khababgang is 1hr 30mins walk and Norwog is 2hrs 30mins from the gewog center.
3	Chhungu-Phendegang	1 day walk
4	Chongzhu-Tshachhu	Tsangju is 2hrs 30mins walk. Assatsa and Khongkha is 1 day walk from the Gewog Center.
5	Joennpang Lingarnang	6 hours walk from the Gewog Center.
6	Miphelgang Samphelgang	2 hours walk from the Gewog Center

Table 65: Distance of Chiwog from nearest road

As evident from **Table 65**, most of the major Chiwogs are not connected by roads, which have diverse impacts on the livelihood of the people in the Chiwogs primarily in terms of marketing their surplus products. Also, the input cost of their farming as well as livestock rearing tends to be higher compared to other Gewogs, which are accessible, by road. This is mainly owing to the cost of transportation related to agriculture seeds, fertilizers and livestock feed. Another major implication of the inaccessibility is poor progress in mechanization of the farming works.

The table below showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	100 % Mobile connection and 37 fix line connection.
2	Television service	Yes	Dish TV only
3	Post office	No	
4	Electricity	No	
5	Drinking water	Yes	
6	BHU	No	Under construction.
7	ORC	Yes	
8	Irrigation	Yes	
9	School	Yes	
10	Agriculture Extension Office	No	Shares the centers in Tendu Gewog.
11	Livestock Extension Office	No	
12	Forestry Extension office	No	
13	Existing SHG	Yes	Vegetable Tshogpa, Fishery, Poultry, Dairy and Weaving Tshogpa.

Table 66: Infrastructure/Facilities Profile

13.3 Demography and Household Characteristics

The population of the Norgaygang Gewog is 3381 with 170 males and 1681 females (www.dzongkhag.gov.bt). Figure **65** shows age groups by and sex of the persons covered by the survey. The average family size is 6 persons with the highest of 12 persons and lowest of 2 persons per household.
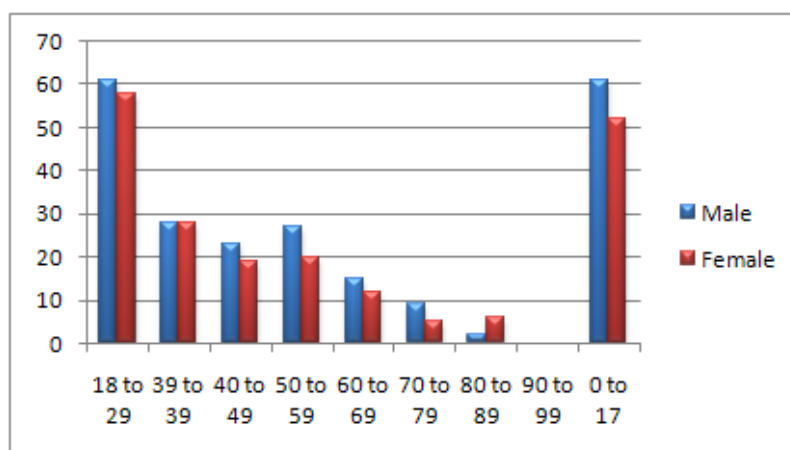
Figure 65: Age by Sex

Age	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
	M	F	M	F	M	F	M	F	M	F	M	F
Total	133	142	70	42	18	12	3	3	0	0	0	0
G. Total	275		112		30		6		0		0	
Percentage	65%		26%		7%		1%		0%		0%	
18 to 29	39	39	15	9	3	6	2	3	0	0	0	0
39 to 39	18	25	8	3	2	0	0	0	0	0	0	0
40 to 49	18	17	5	2	0	0	0	0	0	0	0	0
50 to 59	18	19	6	1	3	0	0	0	0	0	0	0
60 to 69	12	11	2	1	0	0	1	0	0	0	0	0
70 to 79	8	5	0	0	1	0	0	0	0	0	0	0
80 to 89	1	6	1	0	0	0	0	0	0	0	0	0
90 to 99	0	0	0	0	0	0	0	0	0	0	0	0
0 to 17	19	20	33	26	9	6	0	0	0	0	0	0

Table 67: Education profile based on Sex and age group

In terms of education level attained, **Table 67** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 65 % of persons covered by the survey have no formal education, while about 26% have completed primary education and 7% have studied up to lower secondary classes and 1% has completed higher secondary school.

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13.4 Livelihood and Economic Characteristics

Norgaygang Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 66**.

Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture and livestock produce. **Figure 67** Indicate that about 71% of respondents secure their main household income by sale of agriculture produce. 25% of the household-respondents stated that their main source of income was from salary/wages and 4% secured their household income from business/trade.
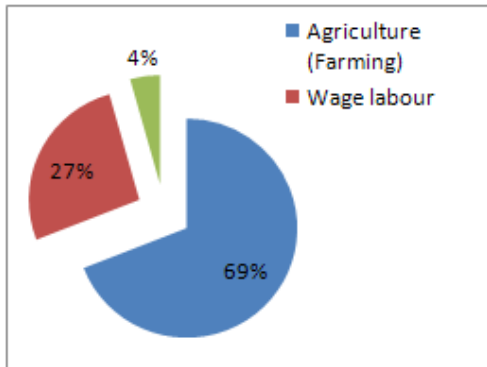
Figure 66: Main activity by No. of HHs
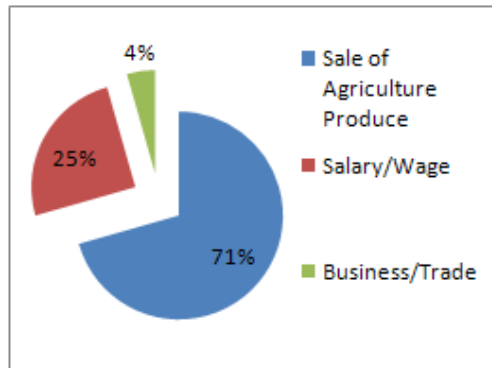
Figure 67: Primary source of income by No. of HHs

The annual household income ranges between Nu.1000 to Nu. 146,000. **Table 68** showcases the number of households in different income brackets.

Household Income	Total
Total	**68**
0 to 4999	10
5000 to 9999	11
10000 to 19999	7
20000 to 29999	9
30000 to 39999	6
40000 to 49999	6
50000 to 59999	6
60000 to 69999	6
70000 to 79999	1
80000 to 89999	2
90000 to 99999	1
100000 to 149999	3

Table 68: Income by No. of HHs

13.5 Landholding and Land Use

Survey results indicate that characteristics of land holdings of the household-respondents are not varied. All the household-respondents covered by the survey stated that they own less than 50 decimal of land.

In terms of land use, most of the households use their land for agriculture farming while few households said that some portion of their land is kept barren due to irrigation problems. There are also few households who do sharecropping. **Figure 69** showcases the categorization of land use by the number of households.

Land Holding	Total
Total	**68**
1 to 49 decimal	68
50 to 99 decimal	0
100 to 149 decimal	0
150 to 199 decimal	0
200 to 249 decimal	0
250 to 299 decimal	0
300 to 349 decimal	0
350 to 399 decimal	0
400 to 449 decimal	0
450 to 499 decimal	0
500 and above	0
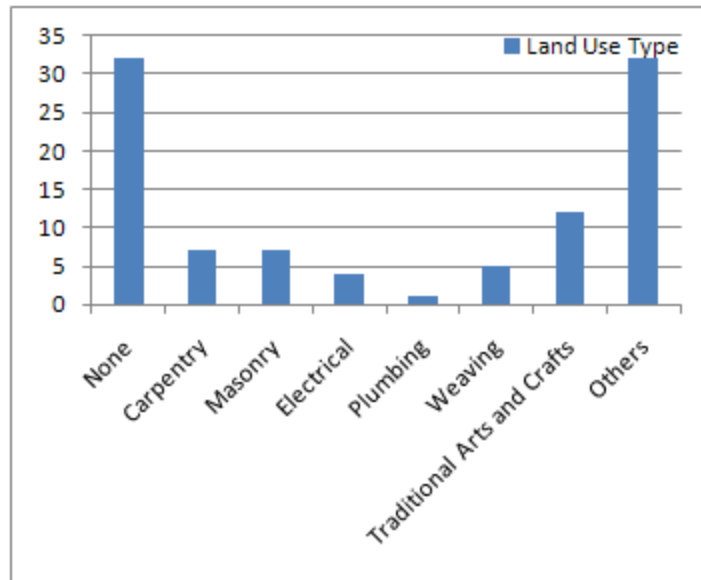
Figure 68: Type of land use.
Some of the respondents gave more than one response

Table 69: Land Holdings by No. of HHs

13.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that almost all the villages has established SHGs in weaving, fishery, piggery, diary, vegetable and poultry. However, the respondents feel that the reach of the SHGs is limited and with the success and advantages of SHGs, most respondents feel that there should be more SHGs to increase household income of the Gewog. All the household respondents expressed 100% interest to join new SHG

13.7 Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 70** shows skills by number of persons. 372 out of 426 persons did not possess any skills. 15 of them have weaving and Zorig Chhusum skills followed by 13 persons

with carpentry skills and. A closer examination of prevalence of skills through a gender lens indicates that there is lesser prevalence of skills amongst female and they have mostly weaving skills.

Skills	Total	MALE	FEMALE
Total	426	226	200
None	372	186	186
Carpentry	13	13	0
Masonry	5	5	0
Electrical	4	3	1
Plumbing	1	1	0
Hair Dressing	0	0	0
Tailoring	0	0	0
Weaving	15	2	13
Traditional Arts and Crafts	15	15	0
Others	1	1	0

Table 70: Existing Skills By sex

The choice of trade by households to increase income appears to be well distributed among few skills. **Figure 69** illustrates the choice of skills with the highest potential to increase household income. The proportion of participants opting for different trades ranges from 1% to 18%. None of the respondents felt that hairdressing and tailoring, trades have the potential to increase their household income. Meanwhile 18% chose Zorig Chhusum followed by carpentry (10%) and masonry (10%). On the contrary a huge 47 % of the household did not choose any of the trades. As evident from the analysis above, there is not much of demand for skills training in Norgaygang Gewog. However, the household- respondents mostly favor training in Zorig Chhusum
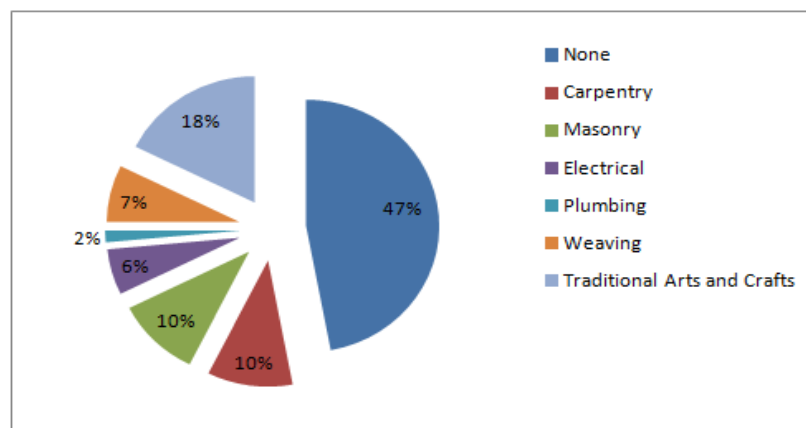
Figure 69: Highest Potential skills by No. of HHs

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13.8 Product/Services Survey

13.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Norgaygang Gewog. Results in **Table 71** present various crops grown by the survey sample. It is clear from table that majority of farmers grow cardamom (88%), organic vegetables (81%), maize (75%) and chili (72%) followed by rice (59%), ginger (51%) and Mung bean (44%). Households covered by the survey in Norgaygang Gewog grow large varieties of crops including fruits cardamom, orange, mango and passion fruit. Other crops like mustard, potatoes and organic vegetables are also grown by comparatively lesser number of households.

Sl.No	Crops Grown	Total HH	Sl.No	Crops Grown	Total HH
1	Apple	0	17	Passion Fruit	1
2	Areca nut	1	18	Potato	14
3	Asparagus	0	19	Sugar Cane	0
4	Cardamom	60	20	Organic Vegetables	55
5	Chilli	49	21	Vegetables	8
6	Ginger	35	22	Walnut	0
7	Groundnut	0	23	Coffee	0
8	Maize	51	24	Hazelnut	0
9	Mandarin Orange	4	25	Broom Grass	1
10	Mango	2	26	Lemon Grass oil	0
11	Mung Bean	21	27	Medicinal and aromatic Plants	0
12	Mushroom	0	28	Spices	0
13	Mustard	6	29	Wild Vegetables	0
14	Peas	16	30	Sweet Buckwheat	1
15	Rajma Beans	3	31	Millet	0
16	Rice	40			

Table 71: Different crops grown by number of household.
(Note: Some of the respondents gave more than one response)

Banking on their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. **Figure 70** shows the choice of crops by the households. Large majority of the Household-respondents (75%) felt that cardamom has the highest potential to increase their

household income as this is a high value low volume crop and the return from the crop is very high comparing to the input and labor costs.
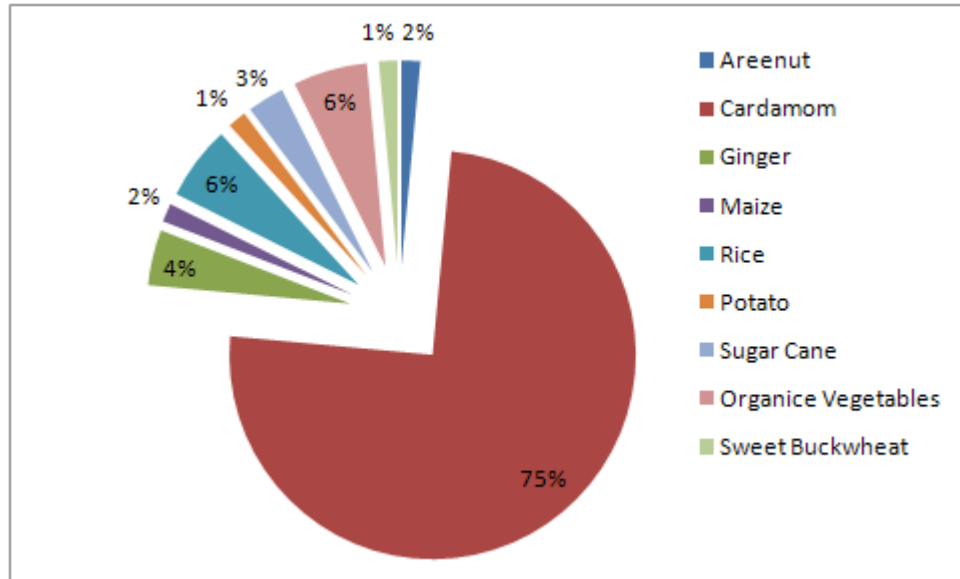
Figure 70: Highest potential crops by no of HH

13.8.2 Livestock

Survey findings revealed that about 90% of the household-respondents raise cattle followed by goats (74%). 68% of the respondents keep chickens and 32% keep horses/donkeys. **Table 72** showcases the different livestock raised by percentage of households covered by the survey.

Livestock Raised	Total HH
Cattle	61
Goats	50
Pigs	20
Horse/Donkeys	22
Chicken	46
Broiler	0
Fish	0
Buffalo	0
Honey bees	0
Sheep	1

Table 72: Livestock raised by no. of HH
(Note: *some of the respondents gave more than one answer*)

Figure 71 shows the choice of livestock with the highest potential to increase their household income by the household-respondents. 46% of the household-respondents stated that cattle has the highest potential to increase their household income while 22% indicated that raising goats could lead to increase in their household income. Another 15

% felt that horses/donkeys also have the potential to increase their income followed by chickens (13%). Only 3% of the households felt that rearing pigs could enhance their household income.
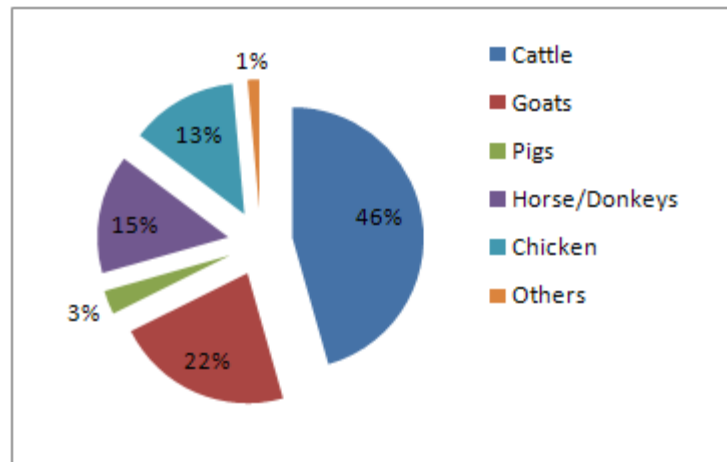
Figure 71: Highest potential livestock by HHs

13.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is very less prevalence of skills to produce handicrafts within the households in Norgaygang Gewog. Out of the survey sample of 68 households, only 12% of the households have some of their family members (mostly female) possessing skills in producing garments followed by copper and iron products (10%) as illustrated in **Table 73**. About 9% of the households have mentioned that they have some skills in producing cane and bamboo products.

Handicraft Skills	Total HH
Cane and Bamboo	6
Garments	8
Pottery	0
Religious Items	0
Wood Based	6
Copper and Iron Based	7
Zorig Chhusum	2
Daphne Paper	0
Incense	0
None	0

Table 73: Handicraft skills by no of HH
(Note: *One respondent has given more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Norgaygang Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 72** depicts the choice of handicrafts by number of households. 18% rated wood based products to have the highest potential to increase their household income followed by cane and bamboo products (15%). Meanwhile 10% of the respondents felt that garments could increase their income and an equal percentage stated that copper and iron-based products would enhance their income. On the contrary, 44% of the respondents felt that none of the handicrafts listed in the questionnaire would increase their household income, which is very unusual compared to other Gewogs covered by the survey. Analysis of the results from existing skills table and figure potential handicrafts, there is a clear indication that choosing handicraft product for formation of SHG in the Gewog is no practicable for the implementing NGOs.
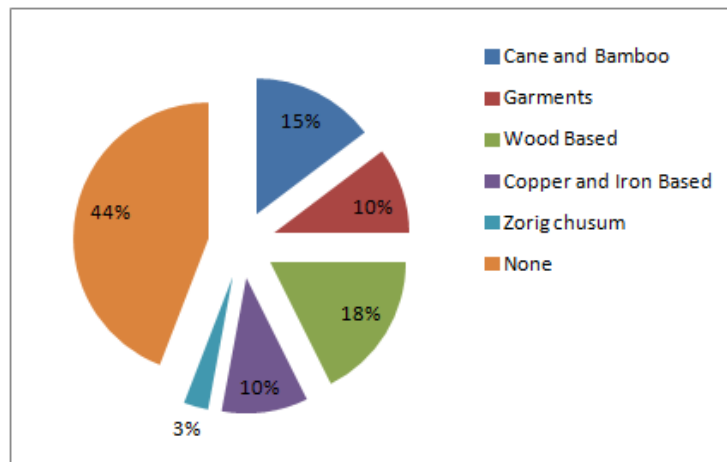
Figure 72: Highest potential handicraft product by No. of HHs

14 Duenchukha Gewog

14.1 General Profile

Duenchukha Gewog comprises 5 villages with 384 Households. Duenchukha falls under the administrative jurisdiction of Dophuchen Dungkhag and is located to the north east of the Samtse Dzongkhag and is one of the remotest Gewog. The Gewog is bordered by Haa Dzongkhag in north, Chukha Dzongkhag in east, Dungtoe to the west and Dophuchen Gewog to the south. It covers about 102.15 square kilometers of area. The Gewog lies in sub-tropical type of climate & experience hot and humid summer, cold and dry winter with annual rainfall ranges from 1500mm to 4000 mm. The monthly temperature ranges from 15 degree Celsius to 30 degree Celsius in summer.
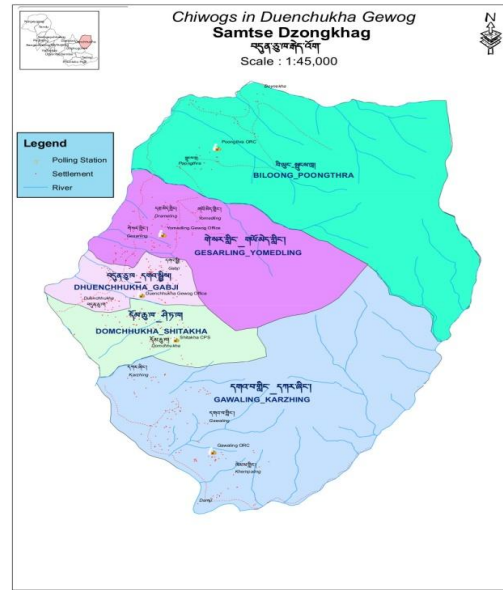
14.2 Infrastructure Profile

Duenchukha Gewog Center is located in Domchhukha Shetakha and it is 30kms from the road end in Dorokha. The following table shows the distance of Chiwogs from the nearest farm road:

Sl. No	Name of the Chiwog	Accessibility characteristics
1	BiloongPoongthra	5hrs walk
2	GesarlingYodmedling	1hr 30mins walk
3	DomchhukhaShetakha	15 minutes walk
4	DuenchukhaGabji	
5	GawalingKarzhing	4 hours walk

Table 74: Distance of Chiwog from nearest road

As evident from **Table 70**, most of the major Chiwogs are not connected by roads, which have diverse impacts on the livelihood of the people in the Chiwogs primarily in terms of marketing their surplus products. Also, the input cost of their farming as well as livestock rearing tends to be higher compared to other Gewogs, which are accessible, by road. This is mainly owing to the cost of transportation related to agriculture seeds, fertilizers and livestock feed. Another major implication of the inaccessibility is poor progress in mechanization of the farming works.

The table below showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	Mobile phone connection only.
2	Television service	No	
3	Post office	No	
4	Electricity	No	
5	Drinking water	Yes	
6	BHU	Yes	
7	ORC	Yes	
8	Irrigation	No	Under construction
9	School	Yes	
10	Agriculture Extension Office	No	Under construction
11	Livestock Extension Office	No	Under construction
12	Forestry Extension office	No	Under construction
13	Existing SGH	None	

Table 75: Infrastructure/Facilities Profile

14.3 Demography and Household Characteristics

The population of the Duenchukha Gewog is 2026 with 1016 males and 1010 females (www.dzongkhag.gov.bt) Figure **73** shows age groups by and sex of the persons covered by the survey. The average family size is 6 persons with the highest of 12 persons and lowest of 2 person per household.

Figure 73: Age by Sex

	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
Age	M	F	M	F	M	F	M	F	M	F	M	F
Total	74	64	29	22	21	14	1	1	0	0	0	0
G. Total	138		51		35		2		0		0	
Percentage	61%		23%		15%		1%		0%		0%	
18 to 29	7	14	3	6	11	9	0	0	0	0	0	0
39 to 39	10	13	2	1	1	0	1	0	0	0	0	0
40 to 49	17	11	3	0	0	0	0	0	0	0	0	0
50 to 59	7	5	1	1	0	0	0	1	0	0	0	0
60 to 69	4	4	0	0	0	0	0	0	0	0	0	0
70 to 79	6	2	0	0	0	0	0	0	0	0	0	0
80 to 89	0	0	0	0	0	0	0	0	0	0	0	0
90 to 99	0	0	0	0	0	0	0	0	0	0	0	0
0 to 17	23	15	20	14	9	5	0	0	0	0	0	0

Table 76: Education profile based on Sex and age group

In terms of education level attained, **Table 76** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, about 61 % of persons covered by the survey have no formal education, while about 23% have completed primary education and 15% have studied up to lower secondary classes and 1% has completed higher secondary school. Another 1% stated that they have diploma level qualification.

14.4 Livelihood and Economic Characteristics

Duenchukha Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that 41% of the respondents listed agriculture as their main activity for the past one year followed by wage labor (33%) as evident from **Figure 74**. Further analysis of the data available indicates that 33% of the respondents who listed wage labour as their main household activity were also involved in farming.

Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture and salary/wages. Results shown in **Figure 75** indicate that an equal 41% of respondents secure their main household income by sale of agriculture products. Similarly 33% of the household-respondents stated that their main source of income was from salary/wages and 13% secured their household income from sale of livestock produce. Another 13% stated that their main source of income was from business/trade

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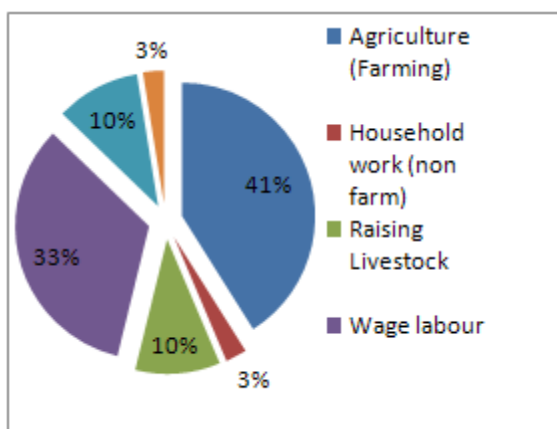
Figure 74: Main activity by No. of HHs
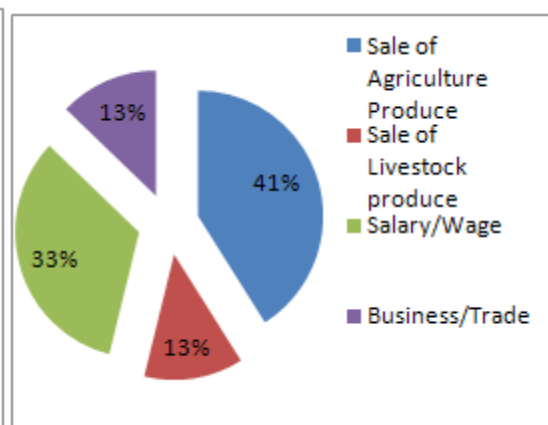
Figure 75: Primary source of income by No. of HHs

The annual household income ranges between Nu.1000 to Nu. 49,000. **Table 77** showcases the number of households in different income brackets.

Household Income	Total
Total	39
0 to 4999	10
5000 to 9999	8
10000 to 19999	16
20000 to 29999	3
30000 to 39999	1
40000 to 49999	1

Table 77: Income by No. of HHs

14.5 Landholding and Land Use

Survey results indicate that characteristics of land holdings of the household-respondents are not varied. All the household-respondents covered by the survey stated that they own less than 50 decimal of land.

In terms of land use, most of the households use their land for agriculture farming while few households keep some portion of their land barren due to irrigation and other land related problems like infertility and soil erosion. There is also high incidence of sharecropping with 51% of the household respondents involved in sharecropping. Some portion of the land owned by the household-respondents is used as pasture land. **Figure 78** showcases the categorization of land use by the number of households.

Land Holding	Total HH
Total	**39**
1 to 49 decimal	39
50 to 99 decimal	0

Table 78: Land Holdings by No. of HHs
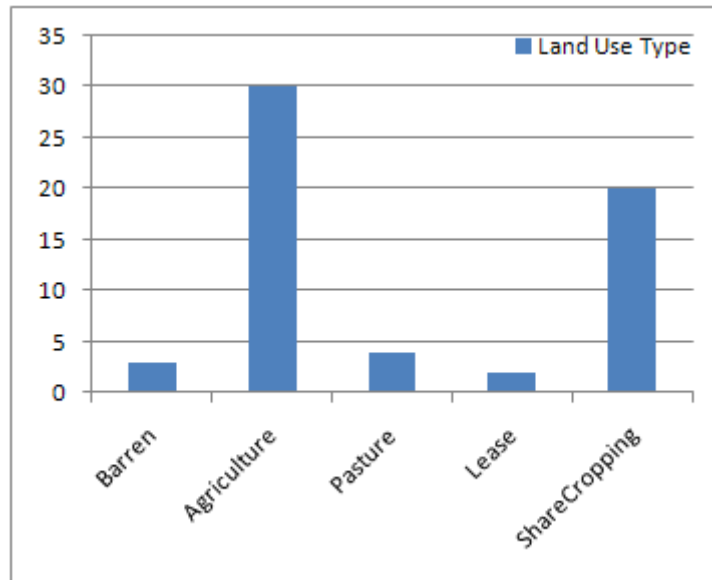
Figure 76: Type of land use
(Some of the respondents gave more than one response)

14.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that there are no existing SHGs in the Gewog. **Figure 78** Shows the percentage of respondents interested to join new SHGs. majority (97%) of the Household-respondents said that they were interested to join SHGs against only 3 % who expressed their lack of interest to joining any kind of SHGs. Also a cursory of the education profile of the households covered by the survey, there is adequate availability of females to man different positions in the governance structure of the SHGs as evident from **Table 76.** Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
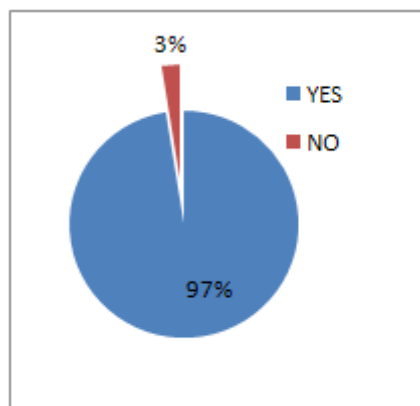
Figure 77: Interest to join SHG

14.7 Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 79** Shows skills by number of persons. 203 out of 228 persons did not possess any skills. 11 of them have carpentry skills followed by 10 persons with masonry skills and 2 with weaving skills. A closer examination of prevalence of skills through a gender lens shows that most of the females covered by the survey don't have any skills except for 3 of them who have masonry and weaving skills.

Existing Skills	Sex		
	Total	MALE	FEMALE
Total	228	126	102
None	203	104	99
Carpentry	11	11	0
Masonry	10	9	1
Electrical	0	0	0
Plumbing	1	1	0
Hair Dressing	0	0	0
Tailoring	0	0	0
Weaving	2	0	2
Traditional Arts and Crafts	1	1	0

Table 79: Existing Skills by Sex

The choice of trade by households to increase income does not appear well distributed. There seem to be a wide difference in the number of respondents in choice of different trades. **Figure 79** illustrates the choice of skills with the highest potential to increase household income.
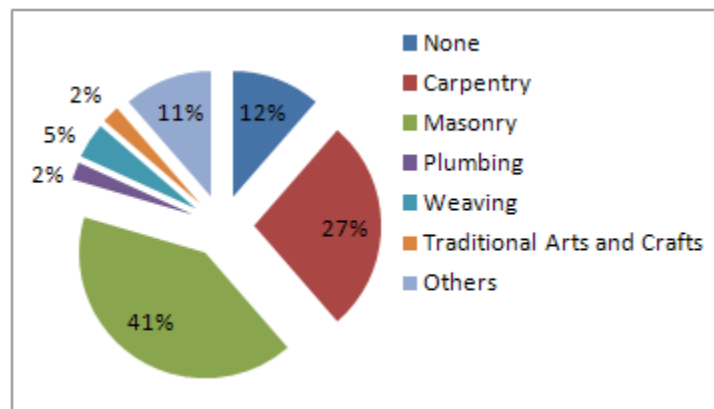
Figure 78: Highest Potential Skills by No. of HHs

The proportion of participants opting for different trades ranges from 3% to 46%. None of the respondents felt that hairdressing, tailoring, and electrical trades have the potential

to increase their household income. Meanwhile 41% chose masonry followed by carpentry (27%). About 5% felt that weaving has the potential to increase their household income. Only 12 % of the household did not choose any of the trades. As evident from the analysis above, there is huge demand for skills training in masonry and carpentry trades.

14.8 Product/Services Survey

14.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Duenchukha Gewog. Results in **Table 80** present various crops grown by the survey sample. It is clear from table that most of farmers grow maize (79%), rice (74%), chilli (74%) and potatoes (54%) followed by ginger (51%), organic vegetables (38%) and cardamom (36%). Households covered by the survey in Duenchukha Gewog grow large varieties of crops including fruits like orange, and sugar cane. Other crops like mustard, millet, Mung bean and peas are also grown by comparatively lesser number of households. Also there are small numbers of farmers who grow spices and broom grass

Sl.No	Crops Grown	Total HH	Sl.No	Crops Grown	Total HH
1	Apple	0	17	Passion Fruit	0
2	Areca nut	0	18	Potato	21
3	Asparagus	0	19	Sugar Cane	2
4	Cardamom	14	20	Organic Vegetables	15
5	Chilli	29	21	Vegetables	9
6	Ginger	20	22	Walnut	0
7	Groundnut	0	23	Coffee	0
8	Maize	31	24	Hazelnut	0
9	Mandarin Orange	8	25	Broom Grass	3
10	Mango	0	26	Lemon Grass oil	0
11	Mung Bean	4	27	Medicinal and aromatic Plants	0
12	Mushroom	0	28	Spices	1
13	Mustard	0	29	Wild Vegetables	1
14	Peas	1	30	Sweet Buckwheat	3
15	Rajma Beans	1	31	Millet	2
16	Rice	29			

Table 80: Different crops grown by number of household.
(Note: Some of the respondents gave more than one response)

Banking on their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. There is huge variation in the choice of crops. **Figure 79** shows the choice of crops by the households. About 28% felt that rice has the highest potential to increase their household income followed by cardamom 23% and maize (15%).
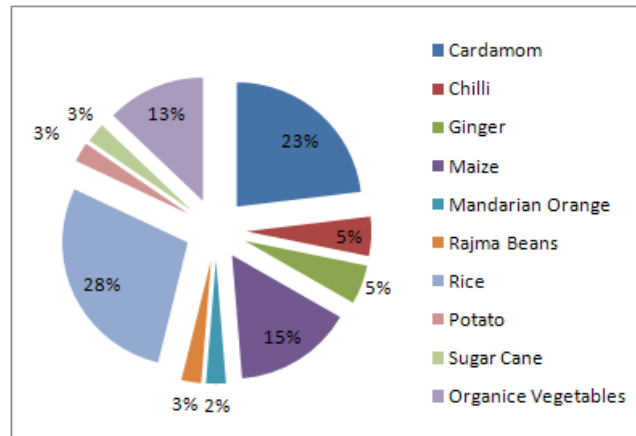
Figure 79: Highest potential crops by no of HH

14.8.2 Livestock

Survey findings revealed that about 74% of the household-respondents raise cattle followed by goats (56%). 41% of the respondents keep chickens and 21% rear pigs. Unlike other Gewogs in Samtse, 18% of the household respondents do bee keeping which could be a potential product for formation of SHGs. **Table 81** showcases the different livestock raised by percentage of households covered by the survey.

Livestock Raised	Total HH
Cattle	29
Goats	22
Pigs	8
Horse/Donkeys	5
Chicken	16
Broiler	0
Fish	0
Buffalo	0
Sheep	2
Honey bees	7
None	0

Table 81: Livestock raised by no. of HH
(Note: *some of the respondents gave more than one answer*)

Figure 80 shows the choice of livestock with the highest potential to increase their household income by the household-respondents. 56% of the household-respondents stated that cattle has the highest potential to increase their household income while 13% indicated that raising goats could lead to increase in their household income. Another 8% felt that horses/donkeys, pigs and chicken also have the potential to increase their income. Only 3% of the households felt that bee keeping could enhance their household income but honey could be a good product given the market potential of the product.   If proper packaging and branding of the product is done, there is a huge potential of this product to increase the household income of the prospective SHG members.

The main reason for choosing cattle is due to high returns from the sale of livestock products like butter and cheese vis-à-vis the input costs. Further, the preference can be attributed to the low capital requirement in purchase of cattle.
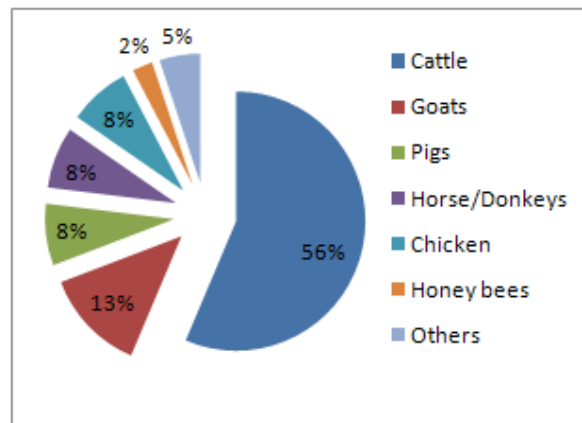
Figure 80: Highest potential livestock by HHs

14.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is very less prevalence of skills to produce handicrafts within the households in Duenchukha Gewog. Out of the survey sample of 39 households, only 31% of the households have some of their family members possessing skills in producing wood based products followed by cane and bamboo products (8%) as illustrated in **Table 82**. About 5% of the households have mentioned that they have some skills in producing garments.

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Handicraft Skills	Total HH
Cane and Bamboo	3
Garments	2
Pottery	0
Religious Items	0
Wood Based	12
Copper and Iron Based	1
Zorig Chhusum	3
Daphne Paper	0
Incense	0
None	0

Table 82: Handicraft skills by no of HH
(Note: *One respondent has given more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Duenchukha Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 81** depicts the choice of handicrafts by number of households. 33% rated wood based products to have the highest potential to increase their household income followed by Garments (15%). Meanwhile 10% of the respondents felt that garments could increase their income and an equal percentage stated that cane and bamboo products would enhance their income. On the contrary, 31% of the respondents felt that none of the handicrafts listed in the questionnaire would increase their household income.
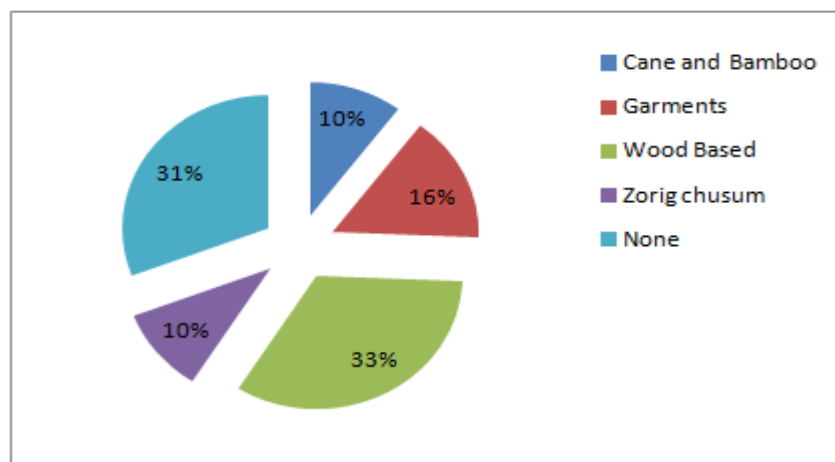
Figure 81: Highest potential handicraft product by No. of HHs

15 Doongtoed Gewog

15.1 General Profile

Doongtoed Gewog comprises 5 villages with 285 Households. It is located in the north east of the Samtse Dzongkhag and is one of the remotest Gewog of the Dzongkhag. It has an approximate area of 48.8 square Kilometers. The Gewog is bordered by Dophuchen Gewog to the south, Norbugang to the southwest, Namgaychholing Gewog to the west and Haa Dzongkhag to the north border. Its three days walk from the Dzongkhag Headquarters and have no facility of electricity and telecommunications. The Gewog lies in sub-tropical monsoon climate zone & experience hot and humid summer, cold and dry winter with annual rainfall ranges from 1500mm to 4000 mm. The monthly temperature ranges from 15 degree Celsius to 30 degree Celsius in summer.
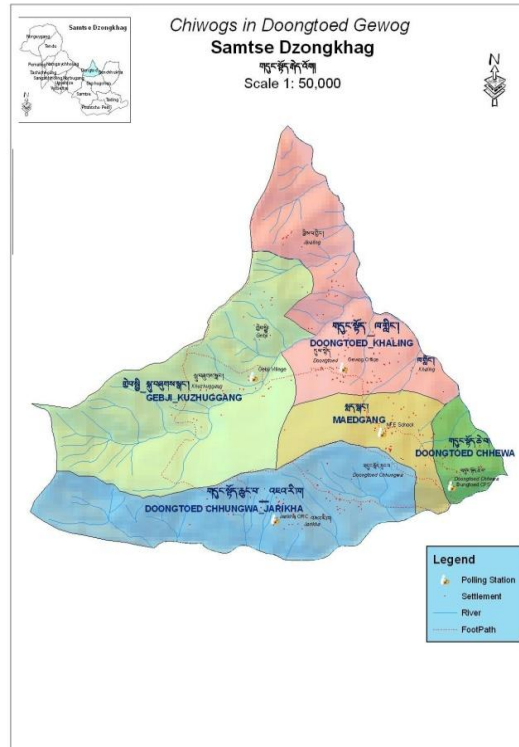
15.2 Infrastructure Profile

Doongtoed Gewog Center is located in Doongtoed Khaling. The following table shows the distance of Chiwogs from the nearest farm road:

Sl. No	Name of Chiwog	Accessibility characteristics
1	Doongtoed Khaling	Connected to road
2	Maedgang	Half an hour walk
3	Doongtoed Chhewa (Thulo Doongtoed)	1 hour walk
4	GebjiKuzhug Gang	1 and half hour walk
5	Doongtoed ChhungwaJarikha	2 and half hours walk

Table 83: Distance of Chiwog from nearest road

The table below showcases the profile of facilities and infrastructure within the Gewog:

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Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	Mobile connection only.
2	Television service	No	
3	Post office	No	
4	Electricity	No	
5	Drinking water	Yes	
6	BHU	Yes	
7	ORC	Yes	
8	Irrigation	Yes	
9	School	Yes	
10	Agriculture Extension Office	No	
11	Livestock Extension Office	No	
12	Forestry Extension office	No	
13	Existing SHG	Yes	Poultry

Table 84: Infrastructure/Facilities Profile

15.3 Demography and Household Characteristics

The population of the Doongtoed Gewog is 1258 with 647 males and 611 females (*www.dzongkhag.gov.bt*) Figure **82** shows age groups by and sex of the persons covered by the survey. The average family size is 6 persons with the highest of 12 persons and lowest of 2 person per household.

Figure 82: Age by Sex

	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		**Sex**		**Sex**		**Sex**		**Sex**		**Sex**	
Age	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Total	**108**	**106**	**45**	**29**	**12**	**6**	**4**	**0**	**0**	**0**	**0**	**0**
G. Total	**214**		**74**		**18**		**4**		**0**		**0**	
Percentage	**69%**		**24%**		**6%**		**1%**		**0%**		**0%**	
18 to 29	30	41	4	5	7	2	1	0	0	0	0	0
39 to 39	22	19	3	1	0	0	0	0	0	0	0	0
40 to 49	15	13	0	0	0	0	0	0	0	0	0	0
50 to 59	18	9	0	0	0	0	0	0	0	0	0	0
60 to 69	6	4	0	0	0	0	0	0	0	0	0	0
70 to 79	3	2	0	0	0	0	0	0	0	0	0	0
80 to 89	1	1	0	0	0	0	0	0	0	0	0	0
90 to 99	0	0	0	0	0	0	0	0	0	0	0	0
0 to 17	13	17	38	23	5	4	3	0	0	0	0	0

Table 85: Education profile based on Sex and age group

In terms of education level attained, **Table 85** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 69 % of persons covered by the survey have no formal education, while about 24% have completed primary education and 6% have studied up to lower secondary classes and 1% has completed higher secondary school.

15.4 Livelihood and Economic Characteristics

Doongtoed Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. However, 49% of the household respondents stated wage labour in farming as the main activity in the past one year. And lesser proportion of the respondents (39%) stated agriculture/farming on their own land as their main activity as evident from **Figure 83**

Consequentially, survey results shows that majority of the respondents generate their household income from sale of wages from farming. Results shown in **Figure 84** indicate that about 45% of respondents secure their main household income through wages. 41% of the household-respondents stated that their main source of income was from sale of agricultural products and 10% secured their household income sale of livestock produce followed by business/trade (4%).
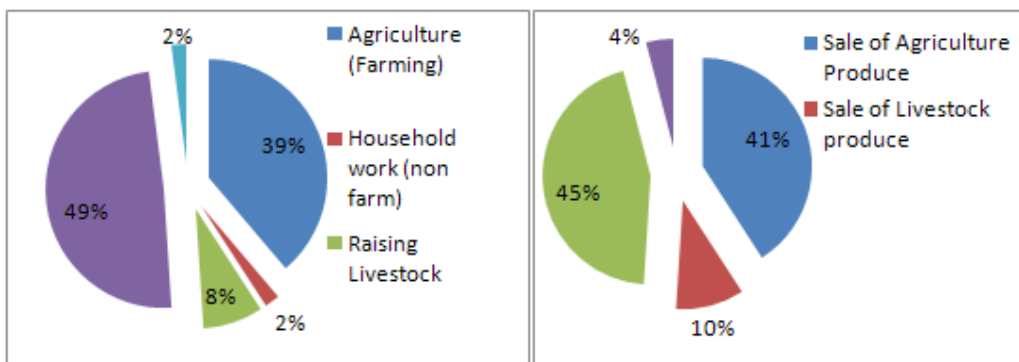
Figure 83: Main activity by No. of HHs   Figure 84: Primary source of income by No. of HHs

The annual household income ranges between Nu.1000 to Nu. 60,000. **Table 82** showcases the number of households in different income brackets.

Household Income	Total
Total	**49**
0 to 4999	7
5000 to 9999	8
10000 to 19999	20
20000 to 29999	5
30000 to 39999	6
40000 to 49999	1
50000 to 59999	2

Table 86: Income by No. of HHs

15.5 Landholding and Land Use

Survey results indicate that there is no variation in characteristics of land holdings of the household-respondents. All the household-respondents covered by the survey stated that they own less than 50 decimal of land as shown in **Table 87**.

In terms of land use, most of the households use their land for agriculture farming while some portion of their land are kept barren due to irrigation and other land related problems. There are also few households who do sharecropping and some portion of their land holdings are used as pasture.   **Figure 85** showcases the categorization of land use by the number of households.

Figure 85: Type of land use

(Some of the respondents gave more than one response)

Land Holding	Total HH
Total	**49**
1 to 49 decimal	49
50 to 99 decimal	0
100 to 149 decimal	0

Table 87: Land Holdings by No. of HHs

15.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that there are few existing SHGs in poultry. However, the respondents feel that the reach of the SHGs is limited and with the success and advantages of SHGs, most respondents feel that there should be more SHGs to increase household income of the Gewog. **Figure 86** shows the percentage of respondents interested to join new SHGs. majority (98%) of the Household-respondents said that they were interested to join SHGs against only 2 % who expressed their lack of interest to joining any kind of SHGs. Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
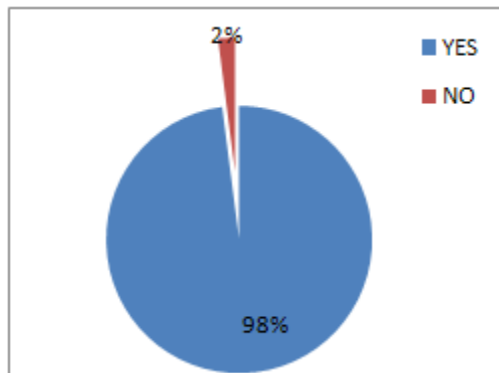
Figure 86: Interest to join SHG

15.7 Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 88** Shows skills by number of persons. 246 out of 310 persons don't possess any skills. 27 of them have carpentry skills followed by 24 persons with masonry skills and 5 with tailoring skills. Smaller number of persons has skills in, electrical, weaving and Zorig Chhusum. A closer examination of prevalence of skills through a gender lens indicates there are fairly lesser skills among female compared to male. However, it is encouraging to note that about 5 female have skills in nontraditional trades like carpentry and masonry.

Existing Skills	Sex		
	Total	MALE	FEMALE
Total	**311**	**169**	**142**
None	247	120	127
Carpentry	27	25	2
Masonry	24	21	3
Electrical	1	1	0
Plumbing	0	0	0
Hair Dressing	0	0	0
Tailoring	5	1	4
Weaving	4	1	3
Traditional Arts and Crafts	3	0	3
Others	0	0	0

Table 88: Existing Skills by Sex

The choice of trade by households to increase income does not appear well distributed. There seem to be a wide difference in the number of respondents choosing different trades. **Figure 87** illustrates the choice of skills with the highest potential to increase household income.
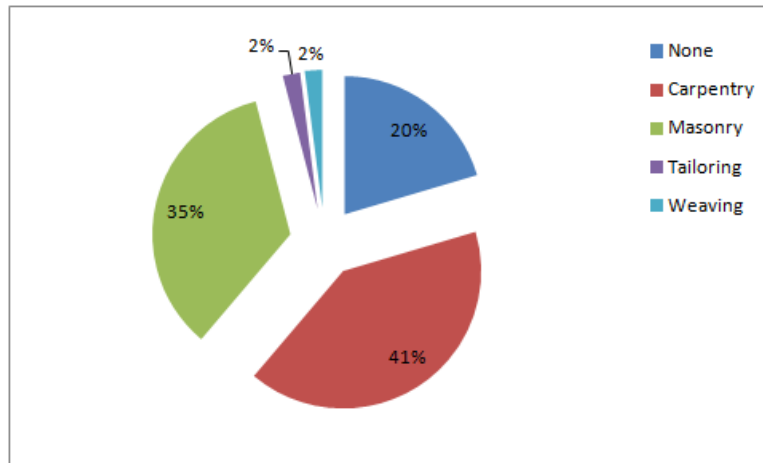
Figure 87: Highest Potential Skills by No. of HHs

The proportion of participants opting for different trades ranges from 2% to 41%. None of the respondents felt that hairdressing, plumbing and electrical trades have the potential to increase their household income. Meanwhile 41% chose carpentry followed by masonry (35%). On the contrary a huge 20 % of the household did not choose any of the trades. As evident from the analysis above, there is huge demand for skills training in the areas of carpentry and masonry. Therefore, carpentry and masonry training will be well received by Doongtoed Gewog.

15.8 Product/Services Survey

15.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households   have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Doongtoed Gewog. Results in **Table 89** present various crops grown by the survey sample. It is clear from table that majority of farmers grow maize (88%), chili (84%) and ginger (71%) followed by potatoes (55%), cardamom (47%), ginger (51%), orange (35%) and Mung bean (31%). Households covered by the survey in Doongtoed Gewog grow large varieties of crops mustard, Rajma beans, peas, rice, vegetables and etc.

Sl.#	Crops Grown	Total		Sl.#	Crops Grown	Total
1	Apple	0		17	Passion Fruit	0
2	Areca nut	0		18	Potato	27
3	Asparagus	0		19	Sugar Cane	11
4	Cardamom	23		20	Organic Vegetables	15
5	Chili	41		21	Vegetables	19
6	Ginger	35		22	Walnut	0
7	Groundnut	0		23	Coffee	0
8	Maize	43		24	Hazelnut	0
9	Mandarin Orange	17		25	Broom Grass	4
10	Mango	0		26	Lemon Grass oil	0
11	Mung Bean	15		27	Medicinal and aromatic Plants	2
12	Mushroom	0		28	Spices	1
13	Mustard	0		29	Wild Vegetables	2
14	Peas	8		30	Buck Wheat	2
15	Rajma Beans	6		31	Millet	1
16	Rice	14				

Table 89: Different crops grown by number of household.
(Note: Some of the respondents gave more than one response)

Banking on their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. There is a huge variation in the choice of crops. **Figure 88** shows the choice of crops by the households. About 29% of the Household-respondents felt that cardamom has the highest potential to increase their household income followed by mandarin orange (23%). Another 16% of the household respondents stated that organic vegetables have the highest potential to increase their household income.
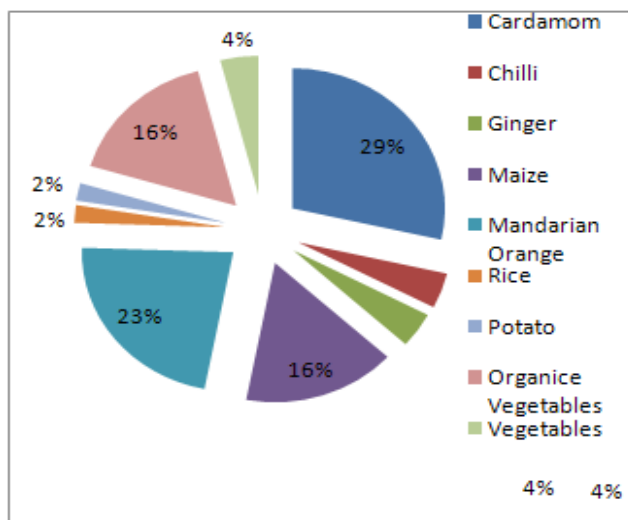
Figure 88: Highest potential crops by no of HH

15.8.2 Livestock

Survey findings revealed that about 86% of the household-respondents raise cattle followed by chicken (80%). 61% of the respondents keep rear pigs and about 14% do beekeeping. **Table 90** showcases the different livestock raised by percentage of households covered by the survey.

Live Stock Raised	Total HH
Cattle	42
Goats	6
Pigs	30
Horse/Donkeys	8
Chicken	39
Broiler	0
Fish	0
Sheep	1
Buffalo	2
Honey bees	7
Others	0

Table 90: Livestock raised by no. of HH
(Note: *some of the respondents gave more than one answer*)

Figure 89 shows the choice of livestock with the highest potential to increase their household income by the household-respondents. 57% of the household-respondents stated that cattle have the highest potential to increase their household income while 18% indicated that raising chickens could increase their household income. Another 16 % felt that rearing pigs also have the potential to increase their income.
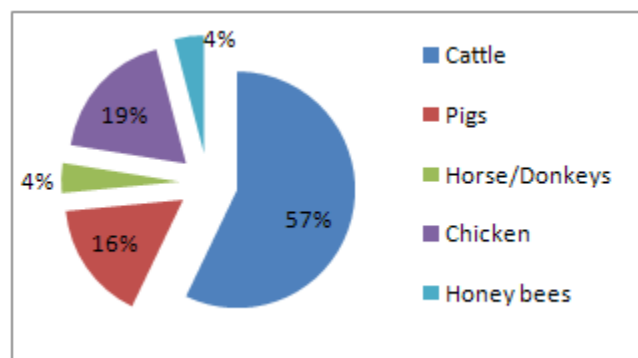
Figure 89: Highest potential livestock by HHs

15.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is average prevalence of skills to produce handicrafts within the households in Doongtoed Gewog. Out of the survey sample of 49 households, only 53% of the households have

some of their family members possessing skills in producing wood based products as illustrated in **Table 91**. About 14% of the households have mentioned that some of their family members have some skills in producing cane and bamboo products followed by Zorig Chhusum related handicrafts (12%).

Handicraft Skills	Total HH
Cane and Bamboo	7
Garments	2
Pottery	0
Religious Items	0
Wood Based	26
Copper and Iron Based	3
Zorig Chhusum	0
Daphne Paper	0
Incense	1

Table 91: Handicraft skills by no of HH
(Note: *One respondent has given more than one answer*)

In order to study the feasibility of establishing SHGs in the handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Doongtoed Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 90** depicts the choice of handicrafts by number of households. 45% rated wood based products to have the highest potential to increase their household income followed by cane and bamboo products (12%). Meanwhile 8% of the respondents felt that Zorig Chhusum related products could increase their income. On the contrary, 31% of the respondents felt that none of the handicrafts listed in the questionnaire would increase their household income.
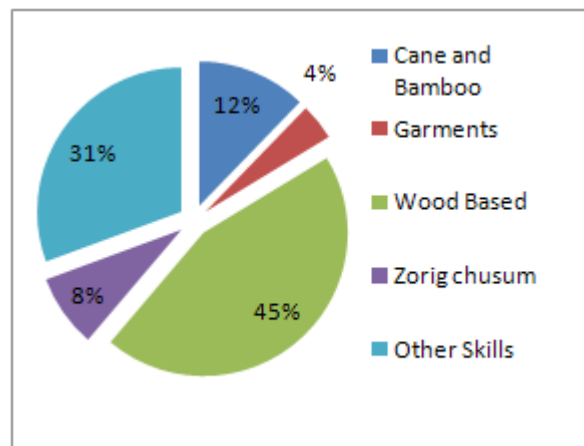
Figure 90: Highest potential handicraft product by No. of HHs

16 Namgaychholing Gewog

16.1 General Profile

Namgaychholing Gewog comprises 5 villages with 514 Households. It is located in the north west of the Samtse Dzongkhag. It has an approximate area of 128.49 square Kilometers. The Gewog is bordered by Norbugang and Doongtoed Gewogs to the east, Pemaling and Tendruk Gewogs to the west, Tashichholing and Sangngachholing Gewogs to the south and Haa Dzongkhag to the north. TheGewog experiences annual rainfall ranging from 1200mm to 3000mm.The Gewog has hot and humid summer, dry and cool winter with snow fall in the northern part of Gewog and falls in sub-tropical monsoon zone.
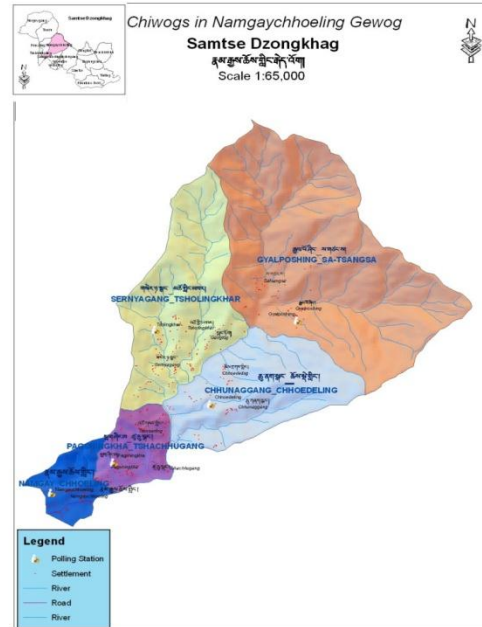
16.2 Infrastructure Profile

Namgaychholing Gewog Center is located in Pakshingkha-Tshachugang Chiwog. The following table shows the distance of Chiwogs from the nearest farm road:

SI. No	Name of Chiwog	Accessibility characteristics
1	Pagshingkha-Tshachhugang	Connected to farm road
2	Namgay-choling	Connected to farm road
3	Sernyagang-Tsholingkhar	3 hours walk from the Gewog center
4	Chunagang -Chodaling	4 hours walk from road end
5	Gyalposhing Sa-Tsangsa	6 hours walk

Table 92: Distance of Chiwog from nearest road

The table below showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	
2	Television service	Yes	
3	Post office	No	
4	Electricity	Yes	
5	Drinking water	Yes	
6	BHU	No	
7	ORC	Yes	
8	Irrigation	Yes	
9	School	Yes	
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	Existing SGH	None	

Table 93: Infrastructure/Facilities Profile

16.3 Demography and Household characteristics

The population of the Namgaychholing Gewog is 2915 with 1508 males and 1407 females (www.dzongkhag.gov.bt) Figure **91** shows age groups by and sex of the persons covered by the survey. The average family size is 6 persons with the highest of 12 persons and lowest of 2 persons per household.
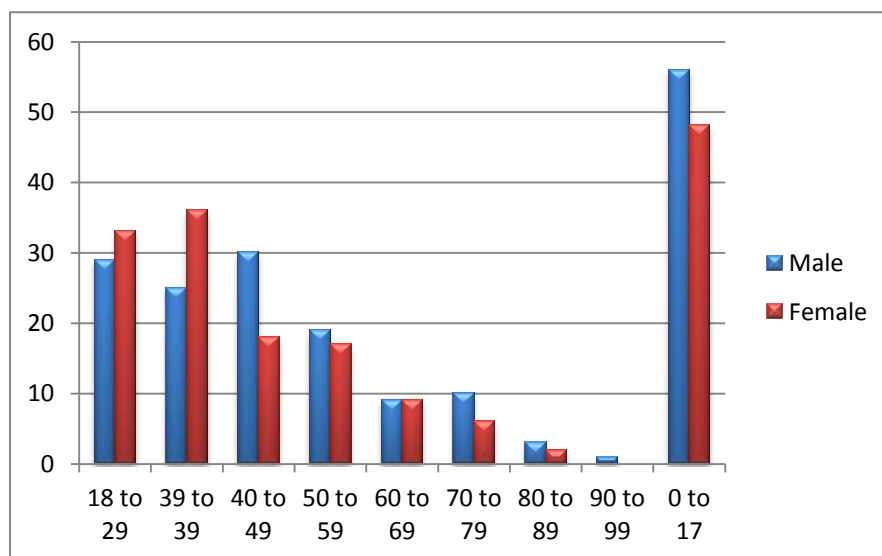
Figure 91: Age by Sex

	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
Age	M	F	M	F	M	F	M	F	M	F	M	F
Total	90	103	64	42	21	21	7	3	0	0	0	0
G. Total	193		106		42		10		0		0	
Percentage	55%		30%		12%		3%		0%		0%	
18 to 29	9	19	9	7	7	4	4	3	0	0	0	0
39 to 39	15	26	8	8	2	2	0	0	0	0	0	0
40 to 49	22	14	7	4	0	0	1	0	0	0	0	0
50 to 59	11	16	7	0	0	1	1	0	0	0	0	0
60 to 69	9	9	0	0	0	0	0	0	0	0	0	0
70 to 79	10	6	0	0	0	0	0	0	0	0	0	0
80 to 89	3	2	0	0	0	0	0	0	0	0	0	0
90 to 99	1	0	0	0	0	0	0	0	0	0	0	0
0 to 17	10	11	33	23	12	14	1	0	0	0	0	0

Table 94: Education profile based on Sex and age group

In terms of education level attained, **Table 94** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 55 % of persons covered by the survey have no formal education, while about 30% have completed primary education and 12% have studied up to lower secondary classes and 3% have completed higher secondary school.

16.4 Livelihood and Economic Characteristics

Namgaychholing Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 92**.
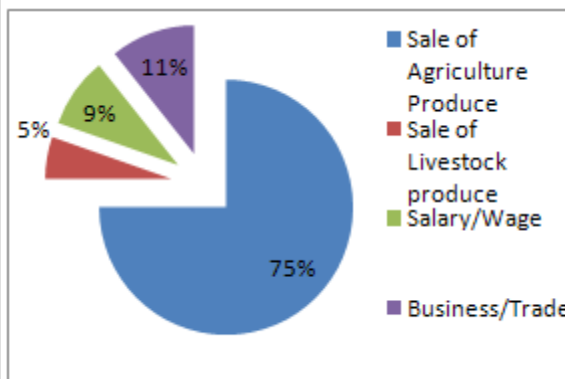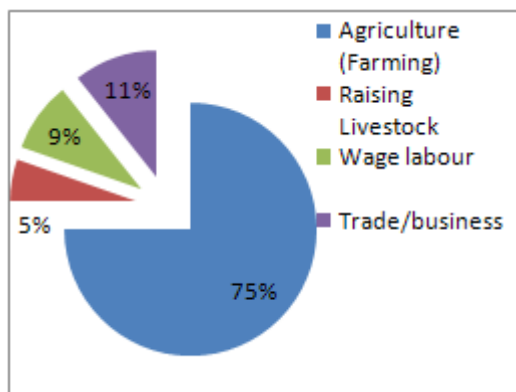
Figure 92: Main activity by No. of HHs

Figure 93: Primary source of income by No. of HHs

Consequentially, survey results shows that majority of the respondents generate their household income from wage labour in farming. **Figure 93** Indicate that about 75% of respondents secure their main household income through sale of agricultural products. 11% of the household-respondents stated that their main source of income was from business/trade followed closely by salary/wages. A minute 5% secured their household income sale of livestock produce.

The annual household income ranges between Nu.1000 to Nu. 200,000 **Table 95** showcases the number of households in different income brackets.

Household Income	Total
Total	**56**
0 to 4999	8
5000 to 9999	9
10000 to 19999	12
20000 to 29999	14
30000 to 39999	5
40000 to 49999	0
50000 to 59999	1
60000 to 69999	0
70000 to 79999	0
80000 to 89999	2
90000 to 99999	1
100000 to 149999	2
150000 to 200000	2

Table 95: Income by No. of HHs

16.5 Landholding and Land Use

Survey results indicate that there is no variation in characteristics of land holdings of the household-respondents. All the household-respondents covered by the survey stated that they own less than 50 decimal of land.

In terms of land use, all of the households use their land for agriculture farming while few households mentioned that some portion of their land is kept barren due to irrigation and other land related problems. There are also few households who do sharecropping and some portion of their land holdings are used as pasture. **Figure 94** showcases the categorization of land use by the number of households.

Land Holding	Total HH
Total	**56**
1 to 49 decimal	56
50 to 99 decimal	0
100 to 149 decimal	0
150 to 199 decimal	0
200 to 249 decimal	0
250 to 299 decimal	0
300 to 349 decimal	0
350 to 399 decimal	0
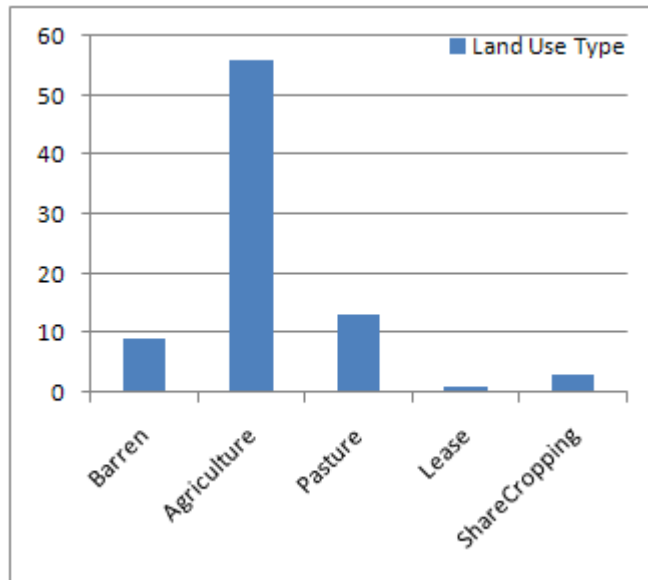
Figure 94: Type of land use
(Some of the respondents gave more than one response)

Table 96: Land Holdings by No. of HHs

16.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that there are no existing SHGs in the Gewog. **Figure 95** shows the percentage of respondents interested to join new SHGs. majority (95%) of the Household-respondents said that they were interested to join SHGs against only 5 % who expressed their lack of interest to joining any kind of SHGs. Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
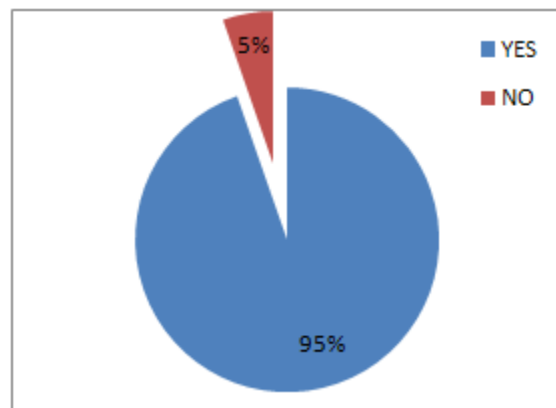
Figure 95: Interest to join SHG

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16.7 Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 97** shows skills by number of persons. 298 out of 351 persons don't possess any skills. 17 of them have weaving skills followed by 13 persons with carpentry skills and 12 with Zorig Chhusum skills. Smaller number of persons has skills in masonry, electrical, and plumbing. A closer examination of prevalence of skills through a gender lens indicates there are fairly lesser skills among female compared to male. However, all the persons with weaving skills are females.

Existing Skills	Sex		
	Total	MALE	FEMALE
Total	351	182	169
None	298	147	151
Carpentry	13	13	0
Masonry	5	5	0
Electrical	4	3	1
Plumbing	2	2	0
Hair Dressing	0	0	0
Tailoring	0	0	0
Weaving	17	0	17
Traditional Arts and Crafts	12	12	0

Table 97: Existing Skills by Sex

The choice of trade by households to increase income appears fairly distributed. **Figure 96** illustrates the choice of skills with the highest potential to increase household income.
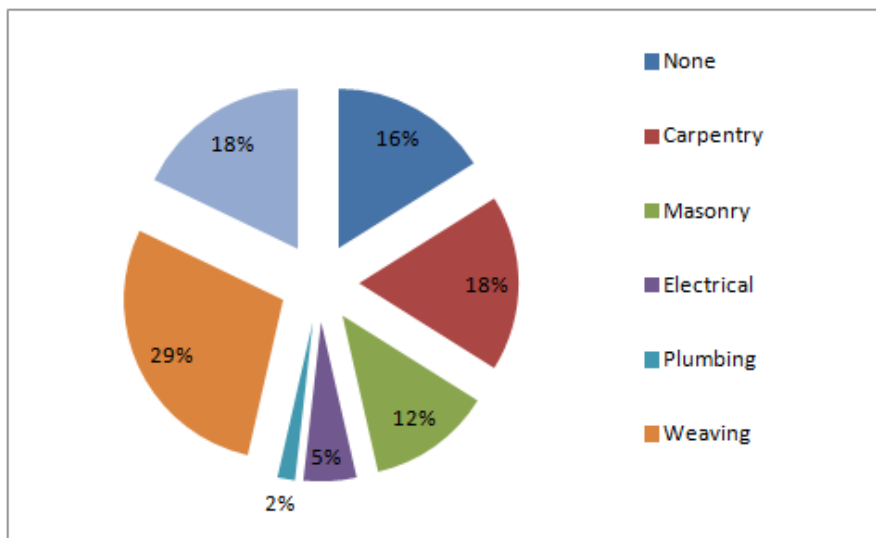
Figure 96: Highest Potential Skills by No. of HHs

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The proportion of participants opting for different trades ranges from 2 % to 29%. None of the respondents felt that hairdressing and tailoring trades have the potential to increase their household income. Meanwhile 29% chose weaving followed by carpentry (18 %). On the contrary, 16 % of the household did not choose any of the trades. As evident from the analysis above, weaving and carpentry training has a significant demand in Namgaychholing Gewog.

16.8 Product/Services Survey

16.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households   have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Namgaychholing Gewog. Results in **Table 98** present various crops grown by the survey sample. It is clear from table that majority of farmers grow rice (89%), organic vegetables (89%), ginger (82%) and maize (75%) followed by chili (61%), acre nut (38%), orange (35%) and mustard (32%). Households covered by the survey in Namgaychholing Gewog also grow large varieties of crops like potatoes and peas.

Sl.#	Crops Grown	Total HH	Sl.#	Crops Grown	Total HH
1	Apple	0	17	Passion Fruit	1
2	Areca nut	21	18	Potato	11
3	Asparagus	1	19	Sugar Cane	0
4	Cardamom	2	20	Organic Vegetables	56
5	Chilli	34	21	Vegetables	14
6	Ginger	46	22	Walnut	2
7	Groundnut	4	23	Coffee	0
8	Maize	42	24	Hazelnut	0
9	Mandarin Orange	19	25	Broom Grass	1
10	Mango	1	26	Lemon Grass oil	3
11	Mung Bean	16	27	Medicinal and aromatic Plants	0
12	Mushroom	18	28	Spices	0
13	Mustard	8	29	Wild Vegetables	0
14	Peas	11	30	Buck Wheat	11
15	Rajma Beans	1	31	Millet	2
16	Rice	50			

Table 98: Different crops grown by number of household.
(Note: Some of the respondents gave more than one response)

Considering their farming experience in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. There is a huge variation in the choice of crops. **Figure 97** shows the choice of crops by the households. About 34% of the Household-respondents felt that rice has the highest potential to increase their household income followed by acre nut (23%). Another 18% of the household respondents stated that mandarin orange has the highest potential to increase their household income.
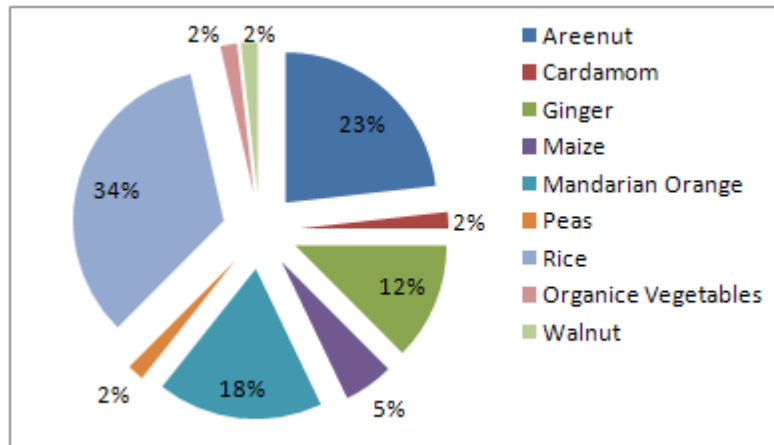
Figure 97: Highest potential crops by no of HH

16.8.2 Livestock

Survey findings revealed that about 88% of the household-respondents raise cattle followed by chicken (75%). 61% of the respondents keep rear goats and about 9% do beekeeping. **Table 99** showcases the different livestock raised by percentage of households covered by the survey.

Live Stock Raised	Total HH
Cattle	49
Goats	34
Pigs	4
Horse/Donkeys	1
Chicken	42
Broiler	2
Fish	0
Buffalo	3
Honey bees	5
Sheep	13
Others	1

Table 99: Livestock raised by no. of HH
(Note: *some of the respondents gave more than one answer*)

Figure 98 shows the choice of livestock with the highest potential to increase their household income by the household-respondents. 64% of the household-respondents stated that cattle have the highest potential to increase their household income while 16% indicated that raising goats could increase their household income. Another 12 % felt that poultry farming also have the potential to increase their income.
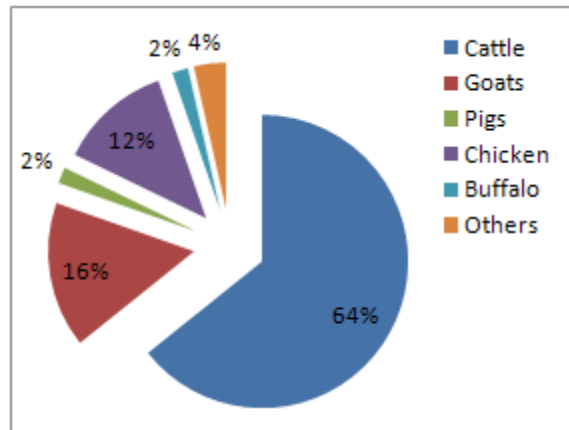
Figure 98: Highest potential livestock by HHs

16.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is average prevalence of skills to produce handicrafts within the households in Namgaychholing Gewog. Out of the survey sample of 56 households, only 29% of the households have some of their family members possessing skills in producing wood based products as illustrated in **Table 100**. About 21% of the households have mentioned that some of their family members have some skills in producing garment products followed by copper and iron based handicrafts (16%) and cane and bamboo products (13%). This is the only Gewog in Samtse wherein there are 2 households with pottery skills

Handicraft Skills	Total HH
Cane and Bamboo	7
Garments	12
Pottery	2
Religious Items	1
Wood Based	16
Copper and Iron Based	9
Zorig Chhusum	1
Daphne Paper	1
Incense	1

Table 100: Handicraft skills by no of HH
(Note: *some of the respondents gave more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Namgaychholing Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 99** depicts the choice of handicrafts by number of households. 37% rated wood based products to have the highest potential to increase their household income followed by garments (27%). Meanwhile 18% of the respondents felt that cane and bamboo products could increase their income. On the contrary, 16% of the respondents felt that none of the handicrafts listed in the questionnaire would increase their household income.
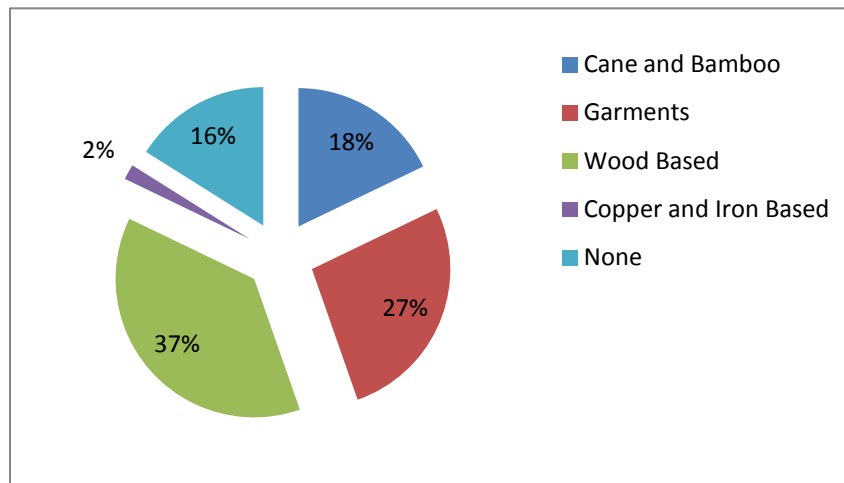
Figure 99: Highest potential handicraft product by No. of HHs

17 Tading Gewog

17.1 General Profile

Tading Gewog comprises 5 villages with 824 Households. It is located to the east of Samtse Dzongkhag and lies near Phuntsholing. The Gewog covers an approximate area of 108.27 square Kilometers. The Gewog is bordered by is bordered by Dophuchen and Denchukha Gewog to the north and Chukka Dzongkhag to the east. The Gewog experiences sub-tropical type of climate with annual rainfall ranging from 1500 mm to 400 mm.
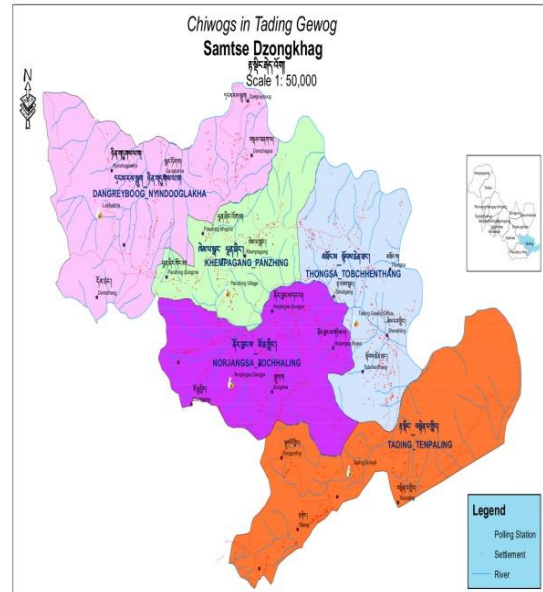
17.2 Infrastructure Profile

Tading Gewog Center is located in Thongsa Sherabling Chiwog. The Gewog center will be connected to Phuntsholing once the bridge over Toorsa River is completed. Right now, there is road access via Dorokha junction from Samtse Dzongkhag.

The following table shows the distance of Chiwogs from the nearest farm road:

Sl. No	Name of Chiwog	Accessibility characteristics
1	Thongsa-Tobchhenthang	Connected to farm road
2	TadingTenpaling	2 hours walk.
3	Norjangsa-Zochhaling	3 hours walk
4	Khempagang-Panzhing	5 hours walk
5	Dangrayboog-Nyindooglakha	3 hours walk

Table 101: Distance of Chiwog from nearest road

As evident from **Table 101**, most of the major Chiwogs are not connected by roads, which have diverse impacts on the livelihood of the people in the Chiwogs primarily in terms of marketing their surplus products. Also, the input cost of their farming as well as livestock rearing tends to be higher compared to other Gewogs, which are accessible, by road. This is mainly owing to the cost of transportation related to agriculture seeds, fertilizers and livestock feed. Another major implication of the inaccessibility is poor

progress in mechanization of the farming works. However, the connectivity problem could be solved once the bridge across Ammochu river is completed.

The table below showcases the profile of facilities and infrastructure within the Gewog:

Sl. No	Infrastructure/Facilities	Accessibility Yes /No	Remarks
1	Telephone service	Yes	
2	Television service	Yes	Dish TV only
3	Post office	No	
4	Electricity	Yes	
5	Drinking water	Yes	
6	BHU	Yes	
7	ORC	Yes	
8	Irrigation	No	
9	School	Yes	
10	Agriculture Extension Office	Yes	
11	Livestock Extension Office	Yes	
12	Forestry Extension office	Yes	
13	Existing SHG	Yes	Community Forest and Diary farm.

Table 102: Infrastructure/Facilities Profile

17.3 Demography and Household Characteristics

The population of the Tading Gewog is 3973 with 2060 males and 1913 females (www.dzongkhag.gov.bt). **Figure 100** shows age groups by and sex of the persons covered by the survey. The average family size is 5 persons with the highest of 12 persons and lowest of 2 persons per household.
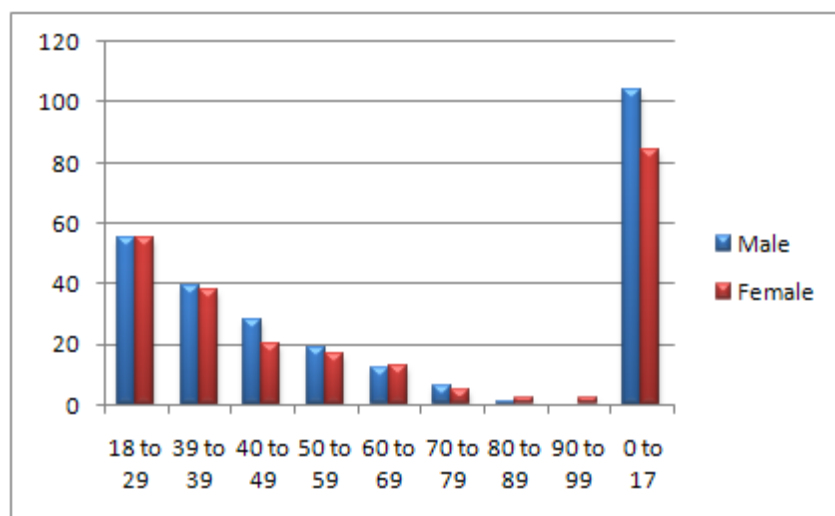
Figure 100: Age by Sex

	None		Primary (class VI)		Lower Secondary (Class X)		Higher Secondary (class XII)		University Degree		Monastic Education	
	Sex		Sex		Sex		Sex		Sex		Sex	
Age	M	F	M	F	M	F	M	F	M	F	M	F
Total	170	170	87	58	7	8	0	0	0	0	0	0
G Total	340		145		15		0		0		0	
Percentage	68%		29%		3%		0%		0%		0%	
18 to 29	34	44	15	8	6	3	0	0	0	0	0	0
39 to 39	33	36	6	2	0	0	0	0	0	0	0	0
40 to 49	23	20	5	0	0	0	0	0	0	0	0	0
50 to 59	17	17	2	0	0	0	0	0	0	0	0	0
60 to 69	11	13	1	0	0	0	0	0	0	0	0	0
70 to 79	6	5	0	0	0	0	0	0	0	0	0	0
80 to 89	1	2	0	0	0	0	0	0	0	0	0	0
90 to 99	0	2	0	0	0	0	0	0	0	0	0	0
0 to 17	45	31	58	48	1	5	0	0	0	0	0	0

Table 103: Education profile based on Sex and age group

In terms of education level attained, **Table 103** presents sex disaggregated data for level of education of the persons covered by the survey. According to the table, 68 % of persons covered by the survey have no formal education, while about 29% have completed primary education and 3% have studied up to lower secondary classes.

17.4 Livelihood and Economic Characteristics

Tading Gewog is predominately an agrarian society with majority of the household engaged in agriculture works. Survey results indicate that majority of the respondents listed agriculture as their main activity for the past one year as evident from **Figure 101**.

Consequentially, survey results shows that majority of the respondents generate their household income from sale of agriculture products. **Figure 102** shows that about 77% of respondents secure their main household income through sale of agricultural products. 14% of the household-respondents stated that their main source of income was from salary/wages followed by business/trade (7%). A minute 5% secured their household income sale of livestock produce.
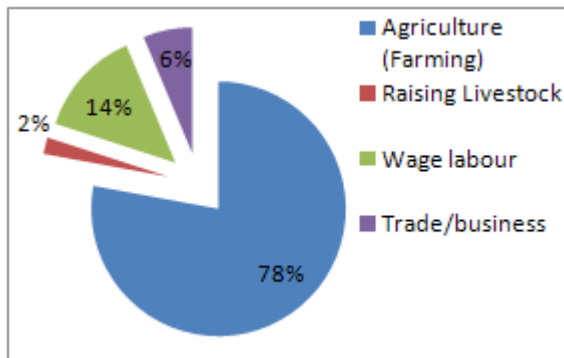
Figure 101: Main activity by No. of HHs   Figure 102: Primary source of income by No. of HHs
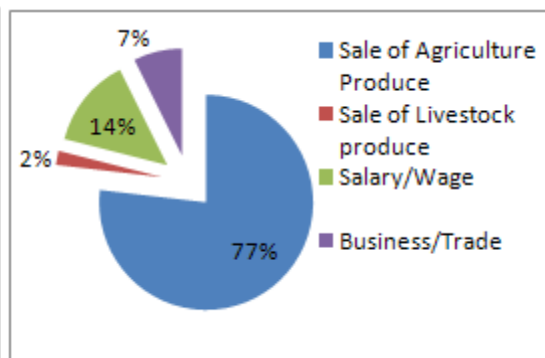
Household Income	Total
Total	**95**
0 to 4999	22
5000 to 9999	23
10000 to 19999	23
20000 to 29999	10
30000 to 39999	5
40000 to 49999	5
50000 to 59999	2
60000 to 69999	3
70000 to 79999	0
80000 to 89999	1
90000 to 99999	0
100000 to 149999	1

Table 104: Income by No. of HHs

The annual household income ranges between Nu.1000 to Nu. 147,000. **Table 104** showcases the number of households in different income brackets.

17.5 Landholding and Land Use

Survey results indicate that there is no variation in characteristics of land holdings of the household-respondents. All the household-respondents covered by the survey stated that they own less than 50 decimal of land.

Land Holding	Total HH
Total	**95**
1 to 49 decimal	95
50 to 99 decimal	0
100 to 149 decimal	0
150 to 199 decimal	0
200 to 249 decimal	0

Table 105: Land Holdings by No. of HHs
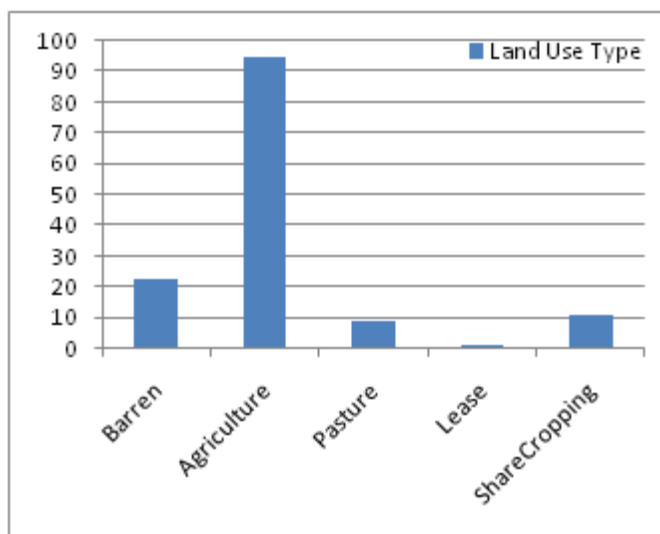
Figure 103: Type of land use
(Some of the respondents gave more than one response)

In terms of land use, All of the households use their land for agriculture farming while some portion of their land are kept barren due to irrigation and other land related problems like high gradient terrains and infertility. There are also few households who do sharecropping and some portion of their land holdings are used as pasture. There are also few households who lease out their land. **Figure 105** showcases the categorization of land use by the number of households.

17.6 Prospective SHG Membership

Results of the Focused Group Discussion with the Gewog officials indicate that there are few SHGs established in dairy farming. However, the respondents feel that the reach of the SHGs is limited and with the success and advantages of SHGs, most respondents feel that there should be more SHGs to increase household income of the Gewog. **Figure 104** Shows the percentage of respondents interested to join new SHGs. majority (98%) of the Household-respondents said that they were interested to join SHGs against only 2 % who expressed their lack of interest to join any kind of SHGs. Sex disaggregated data has not been collected for this analysis as the study wanted to gauge the household interest level to join SHGs.
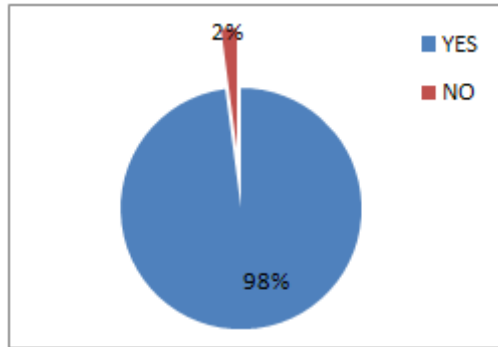
Figure 104: Interest to join SHG

17.7 Skills Assessment

Generally, there is less prevalence of skills amongst the villagers covered in the survey. **Table 106** Shows skills by number of persons. 442 out of 500 persons don't possess any skills. 19 of them have carpentry skills followed by 13 persons with masonry skills and 10 with Zorig Chhusum skills. A smaller number (7%) of people have weaving skills. A closer examination of prevalence of skills through a gender lens indicates there are fairly lesser skills among female compared to male. However, all the persons with weaving and tailoring skills are females.

Existing Skills	Sex		
	Total	**MALE**	**FEMALE**
Total	**500**	**264**	**236**
None	442	220	222
Carpentry	19	18	1
Masonry	14	14	0
Electrical	3	3	0
Plumbing	0	0	0
Hair Dressing	0	0	0
Tailoring	4	0	4
Weaving	7	1	7
Traditional Arts and Crafts	10	8	2

Table 106: Existing Skills by Sex

The choice of trade by households to increase income does not appear well distributed. **Figure 105** illustrates the choice of skills with the highest potential to increase household income. The proportion of participants opting for different trades ranges from 1 % to 38%. None of the respondents felt that hairdressing and plumbing trades have the

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potential to increase their household income. Meanwhile 10% chose carpentry followed by Zorig Chhusum (5 %). On the contrary, a huge 38 % of the household feels that acquiring skills in none of the trades has the potential to increase their household income, which is the highest in Samtse Dzongkhag. As evident from the analysis above, there won't be much of takers for any training programs. However, as the highest number of households chose carpentry, training in this trade will be well received by the Gewog.
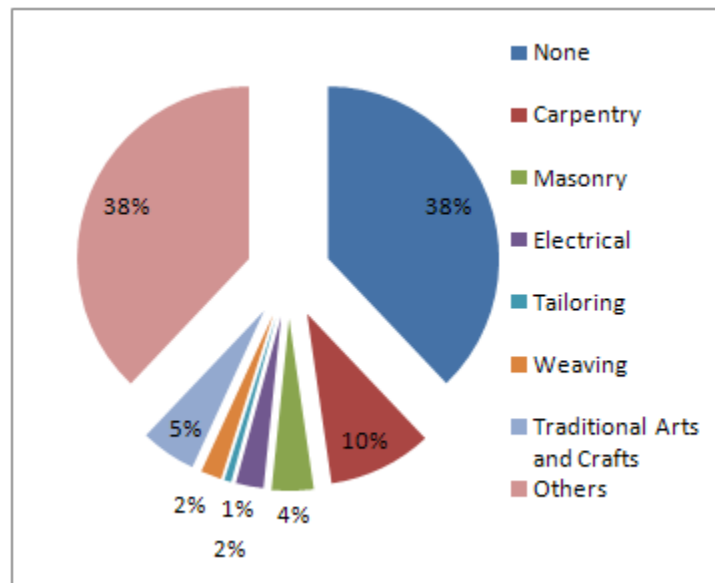
Figure 105: Highest Potential Skills by No. of HHs

17.8 Product/Services Survey

17.8.1 Agriculture Crops

In view of the importance of farming experience especially for formation of SHGs, the survey has tackled this issue through collecting information relating to this variable. Results obtained from respondent's state that majority of households   have been involved in general farming for more than 10 years. In order to assess the viability of products related to crops mainly as raw materials, the study attempted to list down the kind of crops already grown by the farmers in Tading Gewog. Results in **Table 107** present various crops grown by the survey sample. It is clear from table that majority of farmers grow maize (89%), organic vegetables (84%), ginger (72%), and cardamom (63%) followed by chili (55%), orange (35%) and areca nut (31%), smaller number of households covered by the survey in Tading Gewog also grow large varieties of crops like potatoes, peas, Mung bean, Rajma beans, mustard.

Sl.#	Crops Grown	Total HH		Sl.#	Crops Grown	Total HH
1	Apple	0		17	Passion Fruit	0
2	Areca nut	29		18	Potato	21
3	Asparagus	1		19	Sugar Cane	5
4	Cardamom	60		20	Organic Vegetables	5
5	Chilli	52		21	Vegetables	3
6	Ginger	68		22	Walnut	0
7	Groundnut	1		23	Coffee	0
8	Maize	85		24	Hazelnut	1
9	Mandarin Orange	34		25	Broom Grass	2
10	Mango	2		26	Lemon Grass oil	0
11	Mung Bean	16		27	Medicinal and aromatic Plants	0
12	Mushroom	12		28	Spices	7
13	Mustard	3		29	Wild Vegetables	0
14	Peas	14		30	Buck Wheat	4
15	Rajma Beans	1		31	Millet	13
16	Rice	25				

Table 107: Different crops grown by number of household.
(Note: Some of the respondents gave more than one response)

Looking at the farming experience of the respondents in the survey area, this study analyses the farmers take on the potential of different crops to increase their household income. There is a huge variation in the choice of crops. **Figure 106** shows the choice of crops by the households. About 29% of the Household-respondents felt that maize has the highest potential to increase their household income followed by cardamom (27%). Another 11% of the household respondents stated that Areca Nut has the highest potential to increase their household income.
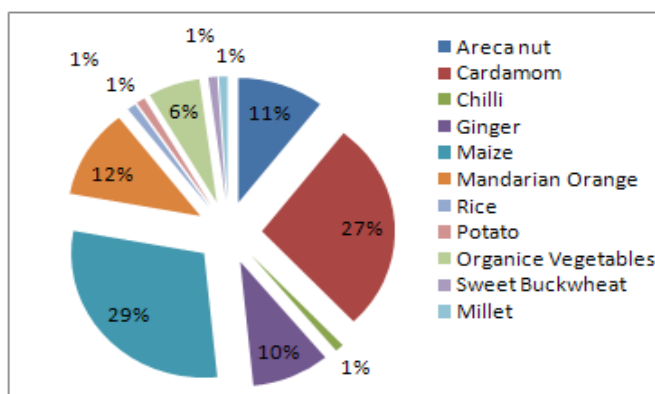
Figure 106: Highest potential crops by no of HH

17.8.2 Livestock

Survey findings revealed that about 85% of the household-respondents raise cattle followed by chicken (82%). 68% of the respondents keep rear goats and about 57% rear pigs. **Table 108** showcases the different livestock raised by percentage of households covered by the survey.

Live Stock Raised	Total HH
Cattle	81
Goats	65
Pigs	55
Horse/Donkeys	3
Chicken	78
Broiler	2
Fish	0
Sheep	0
Buffalo	0
Honey bees	3
Sheep	2
Others	0

Table 108: Livestock raised by no. of HH
(Note: some *respondent gave more than one answer*)

Figure 107 shows the choice of livestock with the highest potential to increase their household income by the household-respondents. 47% of the household-respondents stated that cattle have the highest potential to increase their household income while 32% indicated that raising goats could increase their household income. Another 13 % felt that poultry farming also have the potential to increase their income.
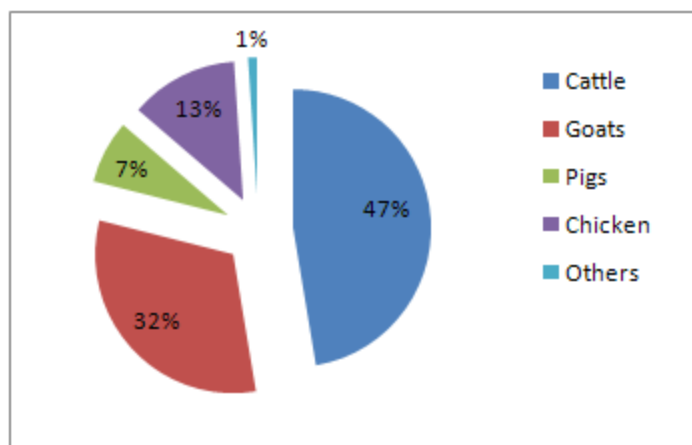
Figure 107: Highest potential livestock by HHs

17.8.3 Handicrafts

A cursory of households with skills to produce handicraft products reveals that there is little prevalence of skills to produce handicrafts within the households in Tading Gewog. Out of the survey sample of 56 households, only 16% of the households have some of their family members possessing skills in producing wood based products as illustrated in **Table 109**. About 10% of the households have mentioned that some of their family members have some skills in producing cane and bamboo products followed by garments (8%).

Handicraft Skills	Total HH
Cane and Bamboo	10
Garments	8
Pottery	1
Religious Items	0
Wood Based	15
Copper and Iron Based	2
Zorig Chhusum	4
Daphne Paper	0
Incense	1

Table 109: Handicraft skills by no of HH
(Note: *some of the respondents gave more than one answer*)

In order to study the feasibility of establishing SHGs in the Handicrafts sector, the survey attempted to evaluate the household-respondent's choice of handicrafts in Tading Gewog. The respondents were asked to rate the products, which has the highest potential to increase their household income. **Figure 108** depicts the choice of handicrafts by number of households. 32% rated wood based products to have the highest potential to increase their household income followed by garments (17%). Meanwhile 15% of the respondents felt that cane and bamboo products could increase their income. On the contrary, 23% of the respondents felt that none of the handicrafts listed in the questionnaire would increase their household income. Analysis of the results from existing skills table and figure potential handicrafts, there is a clear indication that choosing handicraft product for formation of SHG in the Gewog is no practicable for the implementing NGOs.
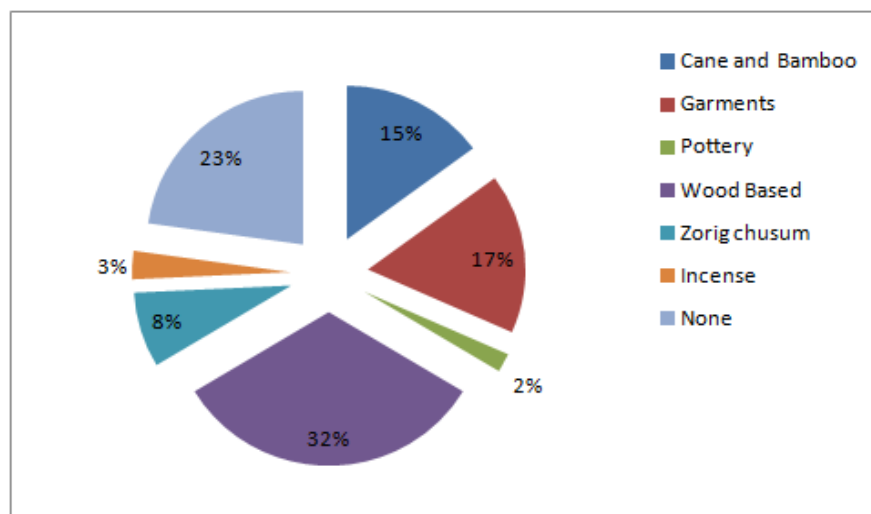
Figure 108: Highest potential handicraft product by No. of HHs

18 Recommendations

18.1 SHG formation

FGDs with the Gewog Administration reveal that some of the established SHGs are not operational due to internal conflicts in terms of work contribution and lack of effective governance structure. The main issue in the governance structure is:

1. Lack of qualified and capable persons at the management levels

2. Mistrust between the members pertaining to SHG funds

3. Less frequency in conducting meetings amongst members

For formation of new SHGs, special attention and focus is recommended in establishing a self-propelling governance structure with initial hand holding interventions. Adequate By laws (Chathrim) with comprehensive details on operating the SHGs should be agreed on and endorsed by all the members in the beginning. The study recommends registering all the SHGs formed within the initial six months with the Department of Agricultural Marketing and Cooperatives, Ministry of Agriculture. This will provide avenues for complementarities in efforts from various sectors in ensuring the sustainability and ultimate success of the SHGs even when the project interventions are withdrawn.

Almost all Household-respondents in the 12 Gewogs who expressed their lack of interest to join SHGs are mostly households with higher level of household income. Also, few households with lesser number of family members (between 1-3) indicated that they did not want to join the SHGs. Given the number of SHGs to be established in the Gewogs vis- a -vis the existing SHGs and the number of Households, there is enough households interested to join the SHGs. However, the households who did not indicate their interest

to join could be considered at the consultation level to identify the neediest household beneficiaries of the project (poorest of the poor). Also, these households have lot of capital assets like trucks and farm machines. Therefore, they could assist the SHGs in transportation and other areas in value addition.

18.2 Product selection

From the findings presented above for all the Gewogs, the study recommends the following products for consideration of the Project Management Unit and the Implementing partners for establishment of SHGs. Further, suggested interventions are also presented which will be pivotal in ensuring the success of the SHGs if the products listed are selected by the implementing NGOs:

Gewog	Crops/livestock/Handicrafts	End Produce	Remarks
Chimung	Mandarin Orange	Orange pulp/ Bottled Juice,	Baseline Production: 16,430 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Maize	Popcorn/Tengma/corn flakes, Kharang	Baseline production in the Gewog: 435.09Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chicken	Eggs/ meat	Baseline production data not available
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline production data not available
	Garments	Kira, Gho, Kera, table mats, cushion covers, curtains	NA
Dungmin	Mandarin Orange	Orange pulp/ Bottled Juice	Baseline Production: 5881 tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chili	Chili powder, dried chili, chili seeds, Chili pickle.	Baseline production in the Gewog: 5 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chicken	Eggs, meat	Baseline egg production in the Gewog: 13,545 dozens in 2009:RNR Census 2009, Ministry of Agriculture
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 63,904 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Garments	Kira, Gho, Kera, table mats, cushion covers, curtains	NA
	Cane and Bamboo Products	Assorted Bamboo products	Number of households in 1 Community Forest Groups in 2010: 24: SFD, DOFS, MoAF

			Area of Community Forest: 28 Hectares
	As evident from the table depicting existing skills within the households, about 14% of the household-respondents have skills in producing Daphne paper; this product could be considered for 1 SHG. The product has a good market potential both within and outside the country.		
Lumang	Potatoes	Farm fresh potatoes, potato Chips	Baseline production in the Gewog: 13tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Rajma Beans	Fresh rajma beans and dried rajma	NA
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 109,540 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chicken	Eggs, meat	Baseline egg production in the Gewog: 6871 dozens in 2009:RNR Census 2009, Ministry of Agriculture Baseline chicken production in the Gewog: Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cane and Bamboo products	Assorted Bamboo products	Number of households in 2 Community Forest Groups in 2010: 132: SFD, DOFS, MoAF Area of Community Forestry: 347 hectares
Nangkhor	Maize	Popcorn, Tengma/cornflakes	Baseline production in the Gewog: 299.72 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Rice	Packaged and branded rice with Gewog brand	Baseline production in the Gewog: 303 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 79,962 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chicken	Eggs, meat	Baseline egg production in the Gewog: 3865 dozens in 2009:RNR Census 2009, Ministry of Agriculture Baseline chicken production in the Gewog: 74 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Incense	Incense sticks/sangdze	
Shingkhar	Maize	Popcorn/Tengma/corn flakes, Kharang	Baseline production in the Gewog: 137.501 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chilli	Chili powder, dried chili, chili seeds, Chili pickle.	Although 24% of the household respondents chose rice, commercial viability of rice is hindered due to lack

			of transportation.
			Baseline production in the Gewog: 32 Tonnes in 2009: RNR Census 2009, Ministry of Agriculture.
	Horses/ Donkeys	Pony services for developmental activities and travelers in the Gewog	Baseline Horse population in the Gewog in 2009: 286: RNR Census 2009, Ministry of Agriculture
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 39,646 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
Trong	Maize	Popcorn, Tengma/cornflakes	Baseline production in the Gewog: 253.6 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Orange	Orange pulp/ Bottled Juice	Baseline production: 6990 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 182,725 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chicken	Eggs/meat	Baseline egg production in the Gewog: 9480 dozens in 2009:RNR Census 2009, Ministry of Agriculture
			Baseline chicken production in the Gewog: 372 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Garments	Kira, Gho, Kera, table mats, cushion covers, curtains	NA
Phangkhar	Mandarin orange	Orange pulp/ Bottled Juice	Baseline production: 10,486 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Maize	Popcorn, Tengma/cornflakes	Baseline production in the Gewog: 305.880 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 49,093 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chicken	Eggs /meat	Baseline egg production in the Gewog: 2954 dozens in 2009:RNR Census 2009, Ministry of Agriculture
			Baseline chicken production in the Gewog: 841 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Wood based		Number of households in 2 Community Forest Groups in 2010:

	products		38: SFD, DOFS, MoAF
			Area of Community Forest: 74 hectares
Norgaygang (Bara)	Cardamom		Baseline production in the Gewog: 4 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline production in the Gewog: 35,268Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Goat		Baseline mutton production in the Gewog: 1099.5 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
Duenchukha	Rice	Packaged and branded rice with Gewog brand	Baseline production in the Gewog: 480.8 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cardamom		Baseline production in the Gewog: 3 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 28,647 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Bee Keeping	Bottled Honey	
Doongtoed	Cardamom		Baseline production in the Gewog: 4 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Mandarin Orange	Orange pulp/ Bottled Juice	Baseline production in the Gewog: 7609 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cattles	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline production in the Gewog: 738 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Chicken	Eggs /meat	Baseline egg production in the Gewog: 109 dozens in 2009:RNR Census 2009, Ministry of Agriculture
			Baseline chicken production in the Gewog: 365 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Wood based products		No community Forestry Groups as of 2010
Namgaychho ling	Rice	Packaged and branded rice with Gewog brand	Baseline production data not available
	Areca Nut		Baseline production data not available
	Mandarin orange	Orange pulp/ Bottled Juice	Baseline production in the Gewog: Tonnes in 2009:RNR Census 2009,

			Ministry of Agriculture
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 94,759 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Wood based products		Number of households in 1 Community Forest Groups in 2010: 31: SFD, DOFS, MoAF Area of Community Forest: 46 hectares
Tading	Maize	Popcorn/Tengma/corn flakes, Kharang	Baseline production in the Gewog: 1126.68 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Cardamom		Baseline production in the Gewog: 31 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Areca nut		Baseline production data not available
	Cattle	Pasteurized Fresh Cow Milk, Butter, Cheese, curd, yogurt	Baseline milk production in the Gewog: 417 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture
	Goat		Baseline mutton production in the Gewog: 5494 dozens in 2009:RNR Census 2009, Ministry of Agriculture
	Chicken	Eggs /meat	Baseline egg production in the Gewog: 1569 dozens in 2009:RNR Census 2009, Ministry of Agriculture Baseline chicken production in the Gewog: 9543 Tonnes in 2009:RNR Census 2009, Ministry of Agriculture

18.3 Eco-Tourism Potential

The tourism industry in Bhutan is a major service industry that contributes significantly to the national revenue and generates valuable foreign exchange. It also has the potential to boost employment among youths and alleviate poverty conditions in rural Bhutan. Tourism in Bhutan has enjoyed sustained growth levels since the sector was privatized in 1991. In 2010, 40873 tourists visited the country and the Royal Government intends to increase the arrival numbers to 100,000 within the 10th FYP through tourism initiatives including marketing, promotion and enhancement of services.

The Tourism Council of Bhutan in collaboration with the ABTO and other relevant agencies and Dzongkhags will initiate and undertake various activities to maximize the potentials of the tourism sector. These activities include new product development, zoning and innovative ideas to promote offset seasonality and regionally un-balanced development in the country (10th FYP). Accordingly, this study makes an attempt to list potential Gewogs under the purview of the survey which has potential to develop eco

tourism destinations based on local attractions in the Gewog especially through the concept of home stay. Home stay is a form of tourism that allows visitors to rent a room from a local family to better learn the local lifestyle as well as improve their language ability.

The following table provides a cursory of Gewogs with potential for eco-tourism

Sl. No	Gewog	Local Attractions
1	Shingkhar	• Trumshingla National park • Guru Nye • Taekha Nye • Kujey Nye • Dorji Drolo Nye • Festivals in every village
2	Nangkhor	• Pang Lakhang • Buli Menmo Lake (Tsho) • Annual Tsehchu
3	Trong	• Rich biodiversity (bird watching) • Dankhar Hot stone bath • Dumang Tsachu • Natural lake in every Gewog • Dangckhar Trekking route
4	Phankgkhar	• Existing Eco tourism SHG • Mangdechu river bank • Fishing/bird watching • Tshechu at Pangthnang Lakhang
5	Bara	• Lake Kubuk Pokhari in the North • Hindu temples

19 Overview of Marketing Tendencies and Potential

Results of the FGDs indicate that a considerable number of villagers do sale/market a percentage of their produce. Only some respondent confirmed that they do not sell/market his product apparently due to their small land holding or lack of surplus of

crop produce enough for marketing/sale. FGDs also indicate that most of the households do market their produce individually, while some sample members (members of existing SHGs) do the marketing collectively in-group. As evident from the results of the FGDs, although there exists collaborative group marketing, but it revealed the total absence of organizational marketing through cooperatives or groups. This could be either due to lack of such organizations in areas of selected farmers or their ineffectiveness, if ever in existence.

However, the tendency of respondents towards group marketing could be attributed to their interest in lowering marketing cost especially transport and/or to lessons learnt from previous experience regarding weaknesses of individual as compared to collective marketing.

In particular, this could hold true if respondents have ever observed advantages of collective negotiation and material benefits that could be accrued to them through collective marketing of produce. Therefore, Training Packages and market visitations in the area of group/collective marketing are recommended.

Studying market potential for the products identified is very essential as it determines the viability of the product and ensures sustainability of product sales and profit thereof. However, this study did not do a thorough market analysis due to time and resource constraints. Notwithstanding the constraints, the study attempts to provide a cursory of the market potential of the products which are guaranteed, as all the products from agriculture, livestock and handicrafts has been adapted from approved Government plans (EDP, 10th FYP-OGTP)

For instance, in the areas of agriculture and livestock, the OGTP of the 10th FYP (Ministry of Agriculture and Forests) clearly states that "OGTP approach is centered to market oriented production and products development in accordance to technical and agro-ecological potentials against various other implementation constraints of numerous commodities and products in cultivation or development under difficult terrains encompassed with varied agro-ecologies and remoteness, being mandated to one extension officer who generally looks after 150-450 h/holds". The commodity per se under the OGTP approach was assessed and analyzed for its potentials at each location. Products under the OGTP approach were listed through assessment of field data on production potentials & constraints: soil fertility, aspects, sunshine slopes, crop variety, inputs, agronomy, farmers' preference and marketing opportunities. The OGTP is a situation-based farming right of way targeted to cater to derive economic benefits and happiness to both producers and consumers through investment into the most potential commodities and product development in all potential production aspects for increased production and access to markets.

The study also presents price tendencies for products listed to enable the Implementing partners to evaluate profitability of all the products in consultation with the SHG members by determining the cost of production and transportation.

19.1 Price Tendencies in the Export and Domestic Market

19.1.1 Price list of products which has an export market

Sl. No	Commodity	Variety	Unit	Max. Price fetched in 2011	Min. price fetched in 2011
1	Mandarin Orange	Orange (Keel)	Pon	95	15
		Orange (Meel)	Pon	398	66
		Orange (salakha)	Pon	875	7.14
2	Red Potatoes	Graded	Kg	12.75	2.7
		Medium	kg	21.5	0.4
		Small	Kg	20.8	0.4
3	White Potatoes	Graded		8.5	3
		Medium		38	0.5
		Small		18.95	0.4
4	Local Potatoes (Red)			19	2.9
5	Rajma Beans	Rajma	Kg	40	10.2
6	Areca Nut		Kg	75	8
7	Green Chili		Kg	65	3
8	Cardamom		Kg	1000	900
Maximum and Minimum price has been deduced by taking into account auction yards prices for the year 2011, source: www.agrimarket.gov.bt					

19.1.2 Latest average retail prices of commodities for domestic market.

Sl. No	Crops/livestock/handicrafts	Commodity	Unit	Max. Price	Min. Price
1	Maize	Kharang	Kg	30	NA
		Flattened maize (Tengma)	Kg	250	45
2	Chicken	Eggs	Doz	180	NA
		Chicken	Kg	210	NA
3	Cattle	Butter	Kg	350	NA
		Cheese	Ball	40	20
		Fresh milk	Bottle	40	30
		Yogurt	Liters	30	15
4	Chilli	Fresh Chilli	Kg	80	60
		Dried Red Chili	Kg	1100	1000
		Chili Powder	Phita		
5	Rice	Red Rice	Kg	60	50
		Zau	Kg	160	45
6	Rajma Beans	Rajma beans Dried	Kg	120	70
		Rajma beans	Kg	60	NA
7	Areca Nut	Areca nut	pon	250	220
8	Potatoes	Red Potatoes	Kg	25	20
		White potatoes	Kg	25	NA
9	Honey Bees	Honey	Bottle	800	300
10	Incense	Incense sticks	Bundle	60	25
		Sangdze	Small Tin	85	60
The prices has been deduced by taking the retail prices of all markets in Bhutan from 1/01/2012 to 29/02/2012. Source: www.agrimarket.gov.bt and market survey in Thimphu					

20 Summary of suggested interventions from the project

20.1 Mandarin Range

Critical Areas	Problems/Constraints	Suggested Interventions
Increase productivity	- Pest and disease problems (Chinese Fruit Fly and the psyllid vector of Citrus Greening Disease.) - Poor orchard	- Showcasing best management practices on demonstration orchards - Training in pruning, pest and disease control strategies, irrigation, nutrition and crop management practices and harvesting techniques with assistance from

	management	Department of Agriculture
Value addition	- Wastage of export reject oranges - No proper sorting and grading	- Training Adequate cleaning, sorting and grading - Establishment of pulp extraction units.
Enhance marketing		- Organize Orange growers into groups/cooperatives so that they can assure a bulk supply of the required grade to buyers - Linking export reject mandarin fruits to processing plants within the country

20.2 Maize

Critical areas	Problems/Constraints	Suggested Interventions
Value addition	- Storage problems: prone to insects - Manual processing of Tengma	- Establishment of Storage units - Mechanization of process in producing Tengma - Proper packaging and branding
Enhance marketing	- Individual marketing leading to high cost in transportation	- Collective marketing in bigger markets like Thimphu.

20.3 Chilli

Critical areas	Problems/Constraints	Suggested Interventions
Value addition	- Excessive supply in the market in autumn season	- Establishment of drying units - Training Adequate cleaning, sorting and grading if sold as fresh chili. Proper packaging with emphasis on organic brand for processed products. - Capitalize on difference in returns by selling dried chilies
Enhance marketing	- Individual marketing leading to high cost in transportation.	- Collective marketing in bigger markets like Thimphu and Gelephu

20.4 Potato

Critical areas	Problems/Constraints	Suggested Interventions
Increase productivity	- Inadequate access to quality seeds, fertilizers and chemicals, - Attacks by PTM and late blight diseases, - Crop damage by wild pigs	- Extension services as well as inputs/service market need to be strengthened. - There is a strong need to build farmers' capacity of and enhance their access to certified potato seeds, fertilizers and technical advice. - Such capacity includes training and financially empowering farmers through credit facilities - SHGs invest in machinery to earn revenue from lease money - Popularize organic farming practices
Value addition		- Establishment of collection centers and cold storage. - Provide training to producers about the appropriate storage conditions, - Sorting and correct grading, requirements of buyers in terms of color, size and type (seed or table potatoes) during different months (when they should bring, what grade, at what time to send them to the auction yard).
Enhance marketing	- Value chain is under developed - In the domestic market, most potatoes are sold by growers directly to consumers - For the export market the potatoes generally flow from producers-through auction yards to Indian Traders.	- Organize potato growers into groups/cooperatives so that they can assure a bulk supply of the required grade to buyers. - Some incentives may be required to get registered transport companies and agro-trade houses involved in selling Bhutanese potatoes

20.5 Cardamom

Critical areas	Problems/Constraints	Suggested Interventions
Value addition	- Lesser price due to low quality sorting and grading- no packaging at all.	- Establishment of drying units especially solar drying units - Training Adequate cleaning, sorting and grading. Proper packaging with if exported to other countries. -
Enhance marketing	- Individual marketing leading to high cost in transportation. - Limited market (sold only in border towns of India)	- Collective marketing and exploration of market in other countries especially gulf countries

20.6 Cattle

Critical areas	Problems/Constraints	Suggested Interventions
Increase productivity	- Lack of adequate water and green fodder round the year. - Low productivity of cows. - Lack of good cross breeds cows.	- Ensuring availability of good quality cross bred cows.- - Promote Silage pits for storing green fodder. - Encourage cultivation of high quality/nutritious fodder in barren land - Ensure nutrition supplements - Regular training on best practices and exposure visits of SHG members - Encourage stall feeding
Value addition	- No proper branding and packaging resulting in low selling price	- Establish appropriate milk processing units - Impart training in proper storage, processing and packaging procedures. - Create Brand image for the Gewog.
Enhance marketing	- Underdeveloped and inefficient marketing network and mechanisms	- Trainings in marketing and awareness creation in advantages of collective marketing.

20.7 Wood Based Products

Critical areas	Problems/Constraints	Suggested Interventions
Sustainability of Raw materials	- Unsustainable extraction of raw materials	- Additional training programs from members of community forest groups on sustainable forestry management and extraction of raw materials
Enhance Skills	- Not much of skills amongst Villagers	- Groups trained in either Trashiyangtse institute of Zorig Chhusum/National Institute of Zorig Chhusum though the VSDP - Mechanization of works especially in wood turning
Enhance marketing	- Underdeveloped and inefficient marketing network and mechanisms	- Linking with Handicrafts market in Thimphu. (Outlet of Tarayana)

20.8 Cane and Bamboo Products

Critical areas	Problems/Constraints	Suggested Interventions
Sustainability of Raw materials	- Unsustainable extraction of raw materials	- Additional training programs from members of community forest groups on sustainable forestry management and extraction of raw materials
Enhance Skills	- Not much of skills amongst Villagers	- Groups trained in either Trashiyangtse institute of Zorig Chhusum/National Institute of Zorig Chhusum or though the VSDP
Enhance marketing	- Underdeveloped and inefficient marketing network and mechanisms	- Linking with Handicrafts market in Thimphu. (Outlet of Tarayana)

20.9 Garments

Critical areas	Problems/Constraints	Suggested Interventions
Enhance marketing	- Underdeveloped and inefficient marketing network and mechanisms	- Collective marketing through formation of SHGs - Linking with Handicrafts market in Thimphu. (Outlet of Tarayana

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22 Annexure 1: List of Persons met for FGD

22.1 Zhemgang Dzongkhag

22.1.1 Phangkhar Gewog

Sl. No	Name of the participant	Designation	Contact No.
1	Chojay Tenzin	GAO	17992206
2	Karma Tshomo	Livestock Extension Officer	17752645
3	Kencho Namgyel	Agriculture Extension Officer	17592373
4	Pema Zangpo	Forestry	17787338

22.1.2 Shingkhar Gewog

Sl. No	Name of the participant	Designation	Contact No.
1	Nidup	Gup	17866591
2	Younten Dorji	GAO	17689197
3	MB Mongar	Agriculture Extension Officer	17110121
4	Tashi Tobgay	Gaydrung	17529291
5	Sonam Dargay	Mangmi	17520250
6	Thinley Phuntsho	Tshogpa	17483924
7	Wangchuck Lhamu	Tshogpa	17427397

22.1.3 Nangkhor Gewog

Sl. No	Name of the participant	Designation	Contact No.
1	Yeshila	Livestock Extension Officer	17920964
2	Lhamo Gyaltshen	Mangmi	16934771
3	Dorji Leydra	Agriculture Extension Officer	77371277
4	Kuenzang	Chipoen	17539226
5	Kinley Wangchuck	Tshogpa	17577657

22.1.4 Trong Gewog

Sl. No	Name of the participant	Designation	Contact #
1	Dorji Wangchuck	Gup	17666621
2	Sangay	Mangmi	17611355
3	Karma Tenzin	GAO	17647827
4	Tshewang Thinley	Agriculture Extension Officer	17799395
5	Om Bahadur	Livestock Extension Officer	17704659

22.2 Samtse Dzongkhag

22.2.1 Doongtoed Gewog

Sl. No	Name of the participant	Designation	Contact #
1	Kamalshing Rai	Gup	17952100
2	Desi Rai	Tshogpa	17628862
3	Som Bahadur	Tshogpa	17952080

22.2.2 Tading Gewog

Sl. No	Name of the participant	Designation	Contact #
1	Ashok Tamang	Gup	77244681
2	Tashi Palden	GAO	77256442
3	Sarjaman Mongar	Agriculture Extension Officer	17667995
4	Vishnu Prasad Biswa	Livestock Extension Officer	17657982
5	Dago Dorji	Forestry	77633233
6	Sharman Ghaley	Mangmi	17936629
7	Jai Kumar Moktal	Tshogpa	17846015
8	Raja Tamang	Tshogpa	17402122
9	Hemraj Rai	Tshogpa	77382444
10	Amar Singh Galey	Tshogpa	17948127

22.2.3 Namgaychholing Gewog

Sl. No	Name of the participant	Designation	Contact #
1	Suraj Subbha	Gup	16541200/ 17694501
2	Lhachey	GAO	17709014
3	SB Chheteri	Agriculture Extension Officer	77685926
4	Wangda Gyeltshen	Livestock Extension Officer	17607440
5	Sangay Dorji	Forestry	17624115
6	Kashi Galey	Mangmi	17645395
7	Shiva Raj Galley	Gaydrung	17607457

22.2.4 Duenchukha Gewog

Sl. No	Name of the participant	Designation	Contact #
1	Hem Raj Limbu	Gup	17317460
2	Desang	GAO	17970785
3	Deki Tshomo	Agriculture Extension Officer	17693983
4	Om Nath Chakpagai	Tshogpa	17951248
5	Kota Drukpa	Tshogpa	77318771
6	Kharka Bdr. Tiwari	Tshogpa	17306998

22.2.5 Norgaygang Gewog

Sl. No	Name of the participant	Designation	Contact #
1	Shangkhar Gurung	Gup	17582653
2	Cheku	GAO	17896068
3	Kinley Wangmo	Agriculture Extension Officer	17770209
4	Sonam Tobgay	Livestock Extension Officer	17119513
6	Hari Prasad Gurung	Chipoen	17660593
7	Amar Singh Galey	Tshogpa	17948127

22.3 Trashigang Dzongkhag

22.3.1 Lumang Gewog

Sl. No	Name of the participant	Designation	Contact
1	Karma Wangdi	GAO	17378087
2	Gembo Namgyel	Agriculture Extension Officer	17660547
3	Sangay Phuntsho	Livestock Extension Officer	17734682
4	Pema Wangda	Forestry	17887271
5	Karma Yangzom	Tshogpa	17661941
6	Dorji Nyingpo	Tshogpa	17818665
7	Cheki Wangmo	Tshogpa	17727005

22.4 Pema Gatshel Dzongkhag

22.4.1 Chimong Gewog

Sl. No	Name of the participant	Designation	Contact #
1	Kesang Lhendup	GAO	17875721 77875721
2	Tshering Wangchuck	Agriculture Extension Officer	17551016
3	Namgay Wangda	Livestock Extension Officer	17840430
4	Bumchu Wangdi	Tshogpa	
5	Sangay Wangdi	Tshogpa	

22.4.2 Dungmin Gewog

Sl. No	Name of the participant	Designation	Contact #
1	SB Rai	Agriculture Extension Officer	17703246
2	Tharchen	Mangmi	17773991
3	Tenzin Phuntsho	Livestock Extension Officer	17827355
4	Bep Tshering	Forestry	17466450

23 Annexure II: Focused Group Discussions (FGD) Leading Questions

1. Does the Gewog have the following? Please check the appropriate column

Sl.No.	Infrastructure/Facilities	YES	NO	Remarks
1	Telephone (Mobile service)			
2	Television			
3	Post office			
4	Electricity			
5	Drinking Water			
6	BHU			
7	Irrigation cannels			
8	School			
9	Road			If NO, mention distance from the nearest road point……………………..
10	Mills			If yes, Mention Type:…………………………….
11	Agriculture Extension Office			
12	Livestock extension office			
13	Forestry extension office			
	shops			If yes, mention numbers :……………………………………..
11	Agricultural Cooperatives/SHGs			If yes, Mention Kind:………………………………………..
12	Livestock cooperatives/SHGs			If yes, Mention kind:………………………………………

- **Agriculture/farming**

2. What vegetables/fruits/crops do you grow in the Gewog? Which of these do you prefer to grow? What are your sources of vegetable seeds or planting materials? Do you avail any technical assistance?

3. Do you have soil-related problems in your farms? How do you address these problems?

4. Do you use fertilizers? What kinds of fertilizer do you use?

5. What are the most common insect pests and diseases that you consider to be seriously affecting your vegetable crops? How do you control these?

6. How do you market your produce? What are the preferences of buyers of your produce?

7. Who are the major market players in reaching your product to final consumers?

8. Costs and Price of the product

Product	Unit	Cost of production (per unit)	Cost of transportation to the nearest market	Selling Price

- **Livestock**

9. What kind of livestock do you rear in the Gewog? Which of these do you prefer to rear?

10. Do you have livestock related problems? How do you address these problems?

11. How do you market your produce? What are the preferences of buyers of your produce?

12. Who are the major market players in reaching your product to final consumers?

13. Cost and product of price

Product	Unit	Cost of production (per unit)	Cost of transportation to the nearest market	Selling Price

o **Handicrafts**

14. What kind of specialized arts and crafts skills do the people of your Gewog possess?

15. What kind of products do they like to produce?

16. Are there adequate natural resources to produce the handicraft products?

17. Do they have problems on producing handicrafts products? How do they address these problems?

18. How do they market their produce? What are the preferences of buyers of your produce?

19. Who are the major market players in reaching your product to final consumers?
20. Cost and price of product

Product	Unit	Cost of production (per unit)	Cost of transportation to the nearest market	Selling Price

o **Eco Tourism**

21. Do you think that groups of villagers in the Gewog might be interested in eco tourism?

22. What are the main attractions in the Gewog to make eco tourism viable in the Gewog?

23. Which villages will be suitable for establishment eco tourism destinations?

24 Annexure III : Survey Questionnaires