

Environmental Impact Assessment

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Bhutan: Amochhu Land Development and Township Project

Draft Report (Appendixes 41-42)

Prepared by Construction Development Corporation Limited, Royal Government of Bhutan for the Asian Development Bank.

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EIA for Amochhu Land Development and Township Project

Environmental Impact Assessment (EIA) Report

For

Amochhu Land Development and Township Project

(ALDTP), Phuentsholing, Bhutan



MAY 2017

CONSTRUCTION DEVELOPMENT CORPORATION LIMITED, BHUTAN



Appendix 41: Social Impact Assessment



Table of Contents

1	<i>Introduction</i>	707
1.1	Project Background	707
1.2	Scope of work of Social Impact Assessment– SIA.....	709
1.3	Objectives of SIA	710
1.4	Methodology of data collection:	710
1.5	List of activities	711
2	<i>Understanding the Project</i>	712
2.1	Reconnaissance Visit	712
2.2	Defining the Impact Area	713
2.3	Review of Data	714
2.4	Demographic and Socio-economic Profile	716
2.5	Existing Conditions of Housing, Infrastructure and Services.....	721
2.6	Social Issues among Weaker Sections	730
2.7	Gross National Happiness Index of Bhutan	733
2.8	Alternative Analysis	733
3	<i>Conducting Screening of Social Impacts</i>	738
4	<i>Stakeholder Involvement</i>	740
4.1	Defining Stakeholders.....	740
4.2	Sensitizing people.....	740
4.3	Selection of respondents for primary data collection.....	742
4.4	Stakeholder consultations	753
5	<i>Carrying out Scoping of Social Impacts</i>	753
5.1	Primary data collection in the field.....	753
5.2	Glimpses of primary data collection on field:	755
6	<i>Profile of the respondents</i>	756
6.1	Urban local bodies	757
6.2	Government and Civil Society Organisations	761
6.3	Real Estate Developers	774
6.4	Indian day workers.....	776
6.5	People living in Phuentsholing.....	782
6.6	Bhutanese people living in Jaigaon	786
7	<i>Data Analysis</i>	788
7.1	Perception about ALDTP	790
7.2	People’s Preferences of Residential Units in Correlation to Socio-economic Status.....	808
7.3	Willingness and Affordability to Avail Housing In Project	817
7.4	Conclusion	825
8	<i>Identification of the Impacts</i>	827
8.1	Construction Phase Impacts.....	827
8.2	Post- construction Phase Impacts.....	828

SIA for Amochhu Land Development and Township Project



8.3	Impact on cross border town Jaigaon, West Bengal, India	830
8.4	Impact on Gross National Happiness Index:	831
9	<i>Mitigations and Suggestions</i>	833
9.1	Mitigations and suggestions for the Project.....	833
9.2	Grievance Redressal Cell:	848
9.3	Suggestions for Improvement in Quality Of Life in Phuentsholing Urban Area	848



List of Tables

Table: 1-1 Distance from Phuentsholing to Thimphu and major towns of India.....	709
Table: 2-1 Socio-economic indicators of Bhutan	717
Table: 2-2 Socio-economic indicators of Chukha Dzongkhag	718
Table: 2-3 Gewog/Thromde wise male-female Distribution:.....	718
Table: 2-4 Socio-economic indicators of Phuentsholing Urban Area	719
Table: 2-5 Popula	
Fig.2-1 Site appreciation visit with DHI-INFRA team (Source: HCP).....	712
tion of Phuentsholing Urban Area.....	720
Table: 2-6 Standards for Health Facilities in Bhutan.....	725
Table: 2-7 Employment Classification of the families living in cross border town Jaigaon.	731
Table: 2-8 Dzongkhag-wise rate of poverty	732
Table: 3-1 Screening parameters	738
Table: 4-1 List of Respondents for one to one interaction	743
Table: 4-2 List of Locations for conducting Focus Group Discussions	746
Table: 4-3 Parameters covered in various schedules	751
Table: 6-1 Distribution of respondents/participants	756
Table: 6-2 Profile of the respondents from Urban Local Bodies (arranged in alphabetical order):	758
Table: 6-3 Profile of the representatives from government and civil society organizations (arranged in alphabetical order):.....	761
Table: 6-4 Profile of the respondents in the category of Real Estate Developers (arranged in alphabetical order):.....	775
Table: 6-5 Duration of working in Bhutan.....	776
Table: 6-6 Place of work in Bhutan	776
Table: 6-7 Sector wise distribution of respondents	777
Table: 6-8 Type of work wise distribution of respondents	777
Table: 6-9 Average daily commute distance	777
Table: 6-10 Average daily expenditure on work related travel	778
Table: 6-11 Monthly Income of the respondents	778
Table: 6-12 Family size of the respondents.....	778
Table: 6-13 Average monthly family income of the respondents	779
Table: 6-14 Reasons for working in Bhutan	779
Table: 6-15 Challenges faced by Indian Day workers	779
Table: 6-16 Method of getting work in Bhutan	780
Table: 6-17 Whether respondents have to pay commission to get work.....	780
Table: 6-18 Reasons of preference to Indian workers than Bhutanese workers by employers	781
Table: 6-19 Discrimination is faced in employment	781
Table: 6-20 Social security coverage at work place	782
Table: 6-21 Gender of the respondents	782
Table: 6-22 Average family size of the respondents	782
Table: 6-23 Main occupations of males and females	783
Table: 6-24 Place of work	784
Table: 6-25 Daily commute distance to work	784
Table: 6-26 Daily expenditure for travel to work.....	784
Table: 6-27 Native of Phuentsholing or other Dzongkhags.....	785
Table: 6-28 Reasons for in-migration.....	785
Table: 6-29 Gender of the respondents	786
Table: 6-30 Average family size.....	786
Table: 6-31 Main occupations.....	786
Table: 6-32 Place of work	787
Table: 6-33 Daily commute distance	787



Table: 6-34 Daily expenditure for travel	787
Table: 6-35 Native Place	788
Table: 6-36 Reasons for out-migration to Jaigaon	788
Table: 7-1 Distribution of respondents	788
Table: 7-2 Awareness about the Project.....	790
Table: 7-3 Perception about the Project	790
Table: 7-4 Potential Benefits of the Project.....	791
Table: 7-5 Potential Hazards or Threats	795
Table: 7-6 Boost to economy	798
Table: 7-7 Factors that will boost the economy.....	799
Table: 7-8 Expectations from the Project	800
Table: 7-9 Suggestions for the Project	804
Table: 7-10 Monthly family income vs residential unit size in Phuentsholing	808
Table: 7-11 Monthly family income range vs residential unit size in Phuentsholing	809
Table: 7-12 Monthly Family income vs Unit size	810
Table: 7-13 Family income range vs the unit size of housing of Bhutanese living in Jaigaon.....	811
Table: 7-14 Family size vs the unit size of housing in Phuentsholing	812
Table: 7-15 Range of family size vs the unit size of housing in Phuentsholing	812
Table: 7-16 Family size vs the unit size of housing in Jaigaon.....	813
Table: 7-17 Family size vs the residential unit size of housing.....	813
Table: 7-18 Ownership vs unit size of housing in Phuentsholing	814
Table: 7-19 Ownership status vs unit size of housing in Phuentsholing.....	815
Table: 7-20 Ownership status vs residential unit size of Bhutanese living in Jaigaon	815
Table: 7-21 Rent amount vs ownership status of residential unit in Phuentsholing.....	816
Table: 7-22 Rent vs type of accommodation of Bhutanese living in Jaigaon	816
Table: 7-23 Willingness to obtain housing in new township amongst people in Phuentsholing	817
Table: 7-24 Affordability to purchase house amongst people in Phuentsholing.....	817
Table: 7-25 Affordability to pay rent amongst people in Phuentsholing	818
Table: 7-26 Source of fund to purchase new house.....	819
Table: 7-27 Awareness about availability of bank loan amongst people in Phuentsholing	819
Table: 7-28 Perception on adequacy of rate of interest on house loan	820
Table: 7-29 Issues in obtaining house loan.....	820
Table: 7-30 Willingness to obtain housing in new township in Bhutanese living in Jaigaon.....	821
Table: 7-31 Affordability to purchase house amongst Bhutanese living in Jaigaon	821
Table: 7-32 Affordability to pay rent amongst Bhutanese living in Jaigaon.....	822
Table: 7-33 Source of fund to purchase new house amongst Bhutanese living in Jaigaon.....	823
Table: 7-34 Availability of bank loan amongst Bhutanese living in Jaigaon	823
Table: 7-35 Adequacy of Rate of interest for house loan – Bhutanese living in Jaigaon	824
Table: 7-36 Issues in obtaining bank loan – Bhutanese living in Jaigaon.....	824
Table: 9-1 Mitigation and suggestions for the ALDTP	834



List of Graphs:

Bhutanese living in Jaigaon	
Graph 2-1. Gender distribution of Bhutanese people living in Jaigaon	730
Graph 2-2. Household Income distribution of Bhutanese people living in Jaigaon	730
Graph 2-3. Employment Classification of the People Living in Jaigaon	731
Indian Day Workers	
Graph 6-1. Challenges faced by Indian workers working in Bhutan	780
Graph 6-2. Whether respondents have to pay commission to get work	780
Graph 6-3. Reasons for preference to Indian workers	781
People in Phuentsholing	
Graph 6-4. Gender of the respondents	782
Graph 6-5. Average family size of the respondents	783
Graph 6-6. Native Place of the respondents.....	785
Graph 6-7. Reasons for in-migration.....	786
ALDT Project	
Graph 7-1. Distribution of Respondents.....	789
Graph 7-2. Awareness about the Project.....	790
Graph 7-3. Perception about the Project	791
Graph 7-4.Potential Benefits: Reduced burden on housing.....	792
Graph 7-5.Potential Benefits: Reduced burden on Infrastructure	792
Graph 7-6.Potential Benefits: Planned & systematic development & services	793
Graph 7-7.Potential Benefits: Access to new recreation, health and educational facilities	793
Graph 7-8. Potential Benefits: Employment Generation.....	793
Graph 7-9. Potential benefits: Business opportunities.....	794
Graph 7-10. Potential benefits: Skill development & training centers for new kind of employment	794
Graph 7-11. Potential benefits: Returning opportunity for Bhutanese living in Jaigaon	794
Graph 7-12. Potential benefits: Others	795
Graph 7-13. Potential threats: Increased population and traffic movements during construction phase	796
Graph 7-14. Potential threats: Increased pollution.....	796
Graph 7-15. Potential threats: Changes in air and water quality	797
Graph 7-16. Potential threats: Environment effects due to changed land use.....	797
Graph 7-17. Potential threats: Burden on existing infrastructure during construction phase.....	797
Graph 7-18. Potential threats: Cultural issues due to newer population	798
Graph 7-19. Potential threats: Others	798
Graph 7-20. Boost to economy	799
Graph 7-21. Factors that will boost the economy.....	800
Graph 7-22. Expectation: Reduced Traffic Problem	801
Graph 7-23. Expectation: LIG/MIG Housing	801
Graph 7-24. Expectation: Educational Institutes	802
Graph 7-25. Expectation: Recreational Facilities	802
Graph 7-26.Expectation: Environment Friendly	802
Graph 7-27. Expectation: Growth in tourism.....	803
Graph 7-28. Expectation: Airport/ Railways	803
Graph 7-29. Expectation: Basic Amenities.....	803
Graph 7-30. Expectation: Ensured safety.....	804
Graph 7-31. More income, business & new jobs	804
Graph 7-32. Suggestion: Strategy for reduction in traffic congestion	805
Graph 7-33. Suggestion: Low cost housing in terms of purchase and rent	806
Graph 7-34. Suggestion: Extending benefits of Business growth/ new jobs to local people...	806
Graph 7-35. Suggestion: Sufficient & good infrastructure & basic amenities	806



Graph 7-36. Suggestion: Nature conservation.....	807
Graph 7-37. Suggestion: Recreation	807
Graph 7-38. Suggestion: Others	807
Correlation between various variables	
Graph 7-39. Monthly family income vs residential unit size in Phuentsholing in percentage (%)	808
Graph 7-40. Monthly family income range vs residential unit size in Phuentsholing	809
Graph 7-41. Monthly Family income vs Unit size	810
Graph 7-42. Family income range vs the unit size of housing of Bhutanese living in Jaigaon	811
Willingness and affordability to avail housing in Project	
People in Phuentsholing	
Graph 7-43. Willingness to obtain housing in new township amongst people in Phuentsholing	817
Graph 7-44. Affordability to purchase house amongst people in Phuentsholing.....	818
Graph 7-45. Affordability to pay rent amongst people in Phuentsholing	818
Graph 7-46. Source of fund to purchase new house.....	819
Graph 7-47. Awareness about availability of bank loan amongst people in Phuentsholing ...	820
Graph 7-48. Perception on adequacy of rate of interest on house loan	820
Graph 7-49. Issues in obtaining house loan.....	821
Bhutanese living in Jaigaon	
Graph 7-50. Willingness to obtain housing in new township.....	821
Graph 7-51. Affordability to purchase house amongst Bhutanese living in Jaigaon	822
Graph 7-52. Affordability to pay rent.....	822
Graph 7-53. Source of fund to purchase new house amongst Bhutanese living in Jaigaon	823
Graph 7-54. Availability of bank loan amongst Bhutanese living in Jaigaon	823
Graph 7-55. Adequacy of rate of interest fort house loan – Bhutanese living in Jaigaon	824
Graph 7-56. Issues in obtaining bank loan – Bhutanese living in Jaigaon	824



List of Figures:

- Fig. 2.1 Project Team during reconnaissance visit (Source: HCP)
- Fig. 2.2 Site appreciation Visit (Source: HCP)
- Fig. 2.3 Site appreciation visit with DHI-INFRA team (Source: HCP)
- Fig. 2.4 Talking to people in project surrounding area Torsa tar during Reconnaissance visit (Source: HCP)
- Fig. 2.5 Construction work – Indian labours (Source: HCP)
- Fig. 2.6 Service Industry – employment for many (Source: HCP)
- Fig. 2.7 Automobile repair workshop near truck parking (Source: HCP)
- Fig. 2.8 Pasakha Industrial Area – manufacturing industries (www.tashigroup.bt)
- Fig. 2.9 Residences at Core (Source: HCP)
- Fig. 2.10 RICBL Housing Colony (Source: HCP)
- Fig. 2.11 Congestion at the City Centre (Source: HCP)
- Fig. 2.12 Urban Street (Source: HCP)
- Fig. 2.13 Sewage Treatment Plant (Source: HCP)
- Fig. 2.14 Storm Water Drainage (Source: HCP)
- Fig. 2.15 Solid Waste Collection (Source: HCP)
- Fig. 2.16 Phuentsholing General Hospital (Source: HCP)
- Fig. 2.17 Emergency Vehicles - Ambulance (Source: HCP)
- Fig. 2.18 Lower School (Source: HCP)
- Fig. 2.19 Phuentsholing Higher Secondary School (Source: HCP)
- Fig. 2.20 Vegetable Market (Source: HCP)
- Fig. 2.21 Shops (Source: HCP)
- Fig. 2.22 Central Park (Source: HCP)
- Fig. 2.23 Indoor Sports Facility (Source: HCP)
- Fig. 2.24 Playground of Phuentsholing Sports Association (Source: HCP)
- Fig. 2.25 Prayer Wheels – Manidungkhor (Source: HCP)
- Fig. 2.26 Prayer Wheels – Manidungkhor (Source: HCP)
- Fig. 2.27 Monastery at Kharbandi (Source: www.destinationbhutan.com)
- Fig. 2.28 Transportation (Source: HCP)
- Fig. 2.29 Transportation (Source: HCP)
- Fig. 2.30 Taxi stand (Source: HCP)
- Fig. 2.31 Taxi stand (Source: HCP)
- Fig. 2.32 Bus Service (Source: HCP)
- Fig. 2.33 Bus Service (Source: HCP)
- Fig. 2.34 Roadside parking facilities (Source: HCP)
- Fig. 2.35 Roadside parking facilities (Source: HCP)
- Fig. 2.36 Alternative one of Master Plan
- Fig. 2.37 Alternative two of Master Plan
- Fig. 2.38 Alternative three of Master Plan
- Fig. 4.1
- Fig. 4.2
- Fig. 4.3 Bhutanese living in Jaigaon – Taxi driver (Source: HCP)
- Fig. 4.4 Forest Officer (Source: HCP)
- Fig. 4.5 Local people at Pashaka (Source: HCP)
- Fig. 4.6 Villagers at Samste (Source: HCP)
- Fig. 5.1 Project Coordinator: RIGSS (Source: HCP)
- Fig. 5.2 General Manager: Consumer Division, Tashi Commercial Corporation (Source: HCP)
- Fig. 5.3 Indian Day Worker: Trade License Holder, Phuentsholing Market (Source: HCP)
- Fig. 5.4 Bhutanese staying in Jaigaon: Service Industry, Hotel Damchen (Source: HCP)
- Fig. 5.5 Surrounding areas: Kabreytar (Source: HCP)
- Fig. 5.6 Truck Parking (Source: HCP)
- Fig. 5.7 Surrounding areas: Rinchening (Source: HCP)
- Fig. 5.8 Chinese Lane (Source: HCP)



Abbreviations

ADB	Asian Development Bank
ALDTP	Amochu Land Development & Township Project
BAOWE	Bhutan Association of Women Entrepreneurs
BFAL	Bhutan Ferro Alloys Limited
BHU	Basic Health Unit
BLSS	Bhutan Living Standard Survey
BPL	Below Poverty Line
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGI	Consulate General of India
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
CST	College of Science & Technology
DANIDA	Danish International Development Agency
DHI	Druk Holding & Investments
EWS	Economically Weaker Sections
FGD	Focus Group Discussion
GDCR	General Development Control Regulations
GNHC	Gross National Happiness Commission
GO	Government Organisation
HIV/AIDS	Human Immuno-deficiency Virus/ Acquired Immuno Deficiency Syndrome
LIG	Lower Income Group
MIG	Middle Income Group
MoLHR	Ministry of Labour & Human Resources
NGO	Non-government Organisation
NHDCL	National Housing Development Corporation Limited
NPPF	National Pension & Provident Fund
NSB	National Statistics Bureau
OPD	Out Patient Department
PHCB	Population & Housing Census of Bhutan
PPP	Public Private Partnership
PSP	Phuentsholing Structure Plan
PUA	Phuentsholing Urban Area
RENEW	Respect, Educate, Nurture & Empower Women
RICBL	Royal Insurance Corporation of Bhutan Limited
RIGSS	Royal Institute of Governance & Strategic Studies
RGoB	Royal Government of Bhutan
SIA	Social Impact Assessment
TCB	Tourism Council of Bhutan
ULB	Urban Local Body
UNDP	United Nations Development Programme
WB	World Bank



Definitions

Focus Group Discussion: A focus group is a group discussion on a particular topic organised for research purposes. This discussion is guided, monitored and recorded by a researcher (sometimes called a moderator or facilitator). **(Methods of data collection in qualitative research: interviews and focus groups by P. Gill, K. Steward. E. Treasure and B. Chadwick)**

Interview schedule: This is a set of prepared questions designed to be asked exactly as worded. Interview schedules have a standardized format which means the same questions are asked to each interviewee in the same order. **(simplypsychology.org)**

Project Impact: Project Impact is how a project affects the matters which it comes in contact with. The Project impacts are defined as both positive and negative effects the project is expected to produce upon environment, organization, community, people, etc. **(Taskmanagementguide.com)**

Respondent: A person who gives a response or answer to a question that is asked especially as part of a survey. **(Merriam-Webster dictionary)**

Social Impact Assessment: SIA can be defined in terms of efforts to assess or estimate, in advance, the social consequences that are likely to follow specific policy actions (including programs/ projects and the adoption of new policies), and specific government actions. It is a process that provides a framework for prioritizing, gathering, analyzing, and incorporating social information and participation into the design and delivery of developmental interventions. **(Rietbergen McCracken and Narayan 1998).**

Stakeholder: The term project stakeholder refers to, 'an individual, group, or organization, who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project' **(Project Management Institute, 2013).**



Executive Summary

The Social Impact Assessment (SIA) is an integral part of the Amochu Land Development & Township Project (ALDTP), earlier known as Amochu Land Reclamation & Township Project (ALRTP), referred henceforth in the document as Project. The SIA studies the various aspects pertaining to the social, cultural and to some extent economic aspects of the Project area and the affect and impact of the Project on the local population. The SIA firstly determines whether the Project will be beneficial to the people and secondly tries to assess the same by means of primary data collection which includes consultations and interactions with various stakeholders using tools of data collection i.e. the interview schedule to understand their views and perception about the Project. The SIA report then analyses data that is available through secondary sources and relates the same with data collected on field.

The SIA is divided broadly into following chapters:

1. **Introduction to Social Impact Assessment:** Project Background, Scope of Work, Objectives, Methodology and Flow chart of activities
2. **Understanding the project:** Reconnaissance Visit, Defining the Impact Area, Demographic and Socio-economic profile of the population, Social issues amongst weaker sections, Conducting Alternative analysis, Screening and Existing conditions of the infrastructure and services
3. **Review of data:** Review of various data collected through the government documents like reports, official websites of various departments, earlier studies etc
4. **Stakeholders participation:** Defining stakeholders, Sensitizing people, Selection of Respondents for primary data collection, Development of tools for interaction with respondents and Consultations with Stakeholders
5. **Carrying Out Scoping in the Field through Primary Data Collection:** Primary data collection in the field and Glimpses of primary data collection
6. **Profile of the respondents:** Urban local bodies, Government and Civil Society Organisations, Developers, Indian day workers working in Phuentsholing, People living in Phuentsholing, People living in Samtse and Bhutanese people living in Jaigaon
7. **Data analysis and identification of impacts:** People's perception about the ALDTP, Correlation between various variables, Willingness and affordability and Conclusion
8. **Identification of the Impacts:** Construction Phase Impacts and Post- construction Phase Impacts
9. **Mitigations and suggestions:** Mitigation and suggestions for the ALDTP and Suggestions for Phuentsholing Urban Area

Key benefits of Social Impact Assessment:

The purpose to conduct the SIA is to understand the existing social situation in any given project area and to gather views of the concerned stakeholders in context of the project. The key benefits that are attained due to SIA in the ALDTP are as follows:

- a) The study provides a socio-cultural and economic profile of the population surrounding the ALDTP Area and the Phuentsholing town.
- b) It identifies potential positive and negative socio-economic impacts of the proposed Project during various stages of ALDTP.
- c) It helps to understand the views of the stakeholders on the Project and integrate their feedback into the design and implementation of the Project.
- d) It identifies measures to enhance positive impacts and reduce or avoid negative impacts; and
- e) It provides recommendations of mitigation measures for potential adverse socio-economic impacts.

Key findings of Social Impact Assessment:



The SIA assesses the data to understand following three components:

- Perception about the project
- People's preferences of residential units in correlation to socio-economic status
- Willingness and affordability to avail house in the ALDTP.

Perception about the project:

People's perceptions about the project are:

- The Project would be beneficial for the Phuentsholing Urban Area and surrounding areas
- It will boost the economy of Phuentsholing Urban Area and surrounding areas
- There would be many benefits of the project such as reduction in housing scarcity, systematically planned township and infrastructure, well planned basic amenities, boost to the economy through increase in employment and business opportunities, returning opportunity for the Bhutanese people living in Jaigaon, tourism development, etc
- People expect the ALDTP to include affordable and small house, recreational and religious spaces, job opportunities to locals, skill development and capacity building for local to utilise the employment and business opportunities
- People suggested that the project should have barrier free environment, reduce housing scarcity by making different types of residential units in sufficient numbers, the project should include affordable and small houses. The areas should have mixed land use and within residential or resi-commercial area mixed-income scattered type of houses should be build.

People's Preferences of Residential Units in Correlation to Socio-economic Status:

- There is no direct correlation between income and residential unit size or family size and residential unit size.
- The people avail residential units on basis of availability.
- Families with low income have rented bigger units on a sharing basis.
- In some cases the family size is small but all members are working so affordability for availing a bigger house increases.
- Only 30% of the families have ownership of the residential units. Remaining 70% are staying either on rent, staff colony or government quarters.
- Families staying on rent avail residential size up to 2 bedroom + Living Room and kitchen or smaller.

Willingness and affordability to avail residential unit in the Project:

- Most of the respondent expressed the willingness to avail residential unit in Project preferably on rent. Very few said that they can afford to purchase a unit in the Project area.
- Majority of the people said that they don't have knowledge about the bank procedure to obtain housing loans.
- Few of the people said that the interest rates for home loan are very high hence they cannot go for purchasing the house,
- Few said they prefer rented house because they have own house at their place of origin.

Identification of the Impacts:

The SIA identifies the potential impacts in line the ADB safeguard policy 2009. During the Screening, the Safeguard issues such as impact on indigenous people, involuntary resettlement or land acquisition were ruled out, since no such issues are existing for the ALDTP.

Considering the long term impacts of the project it is very important to note that it will have many positive impacts on Phuentsholing Urban Area and the surrounding rural areas as well as the nation as a whole. However there are few temporary negative impacts which would need to be taken care of. For such negative impacts the SIA has suggested mitigation plans and for positive significant impacts SIA has given suggestions to enhance the same for the benefits of the Phuentsholing Urban Area.

The Social Impact is divided in two phases as follows:

Construction Phase:



Temporary negative impacts

During the construction phase there will be few temporary negative impacts like the increase in traffic of construction material and associated people which will create additional burden on city roads leading to project site, generation of noise, dust and exhaust fumes from the construction vehicles, spillage of petroleum products on road, increased pollution will impact drinking water quality, solid waste generation due to construction activities as well as large number of the workforce on site at any given time. The noise impact during construction may lead to noise-induced hearing loss and/or nuisance for the project workers. Also the involvement of large labour force will raise issues of labour safety on site.

The immigration of large number of labour force during construction phase will require temporary shelters which will generate labour colonies and unhygienic conditions around the project area. It may increase health issues like spread of HIV-AIDS.

Positive impacts during construction phase

During the construction stage a large number of jobs for skilled, semiskilled and unskilled workers will be generated which would give livelihood to a large number of families. However for availing these livelihood opportunities the capacity of local people will have to be built. During this phase business of providing earth filling material and trucks will also be generated which needs to be tapped by the local people.

Post- construction Phase Impacts

The post construction stage would mostly bring in positive impacts for the city and the nation in terms of housing, infrastructure, livelihood and revenue generation which would need to be grabbed and enhanced. There would be some social impacts which would need to be addressed carefully.

Beneficial impacts of the Project

The provisions of housing and other infrastructure and facilities will resolve the problem of housing and will provide systematically planned infrastructure and access to new recreation, health and education facilities. It will generate new employment and jobs, business opportunities for people of Phuentsholing and Bhutan. Respectable livelihood would be available for all. Having a provision for skill development and training centres would inculcate value of dignity of labour amongst young generation and generate need based skilled workers for the country.

Most importantly the housing facility in the ALDTP would provide returning opportunity for Bhutanese people living in Jaigaon.

Mixed impacts of the Project

The project would have few mixed impacts in terms of cultural issues due to returning of Bhutanese people living in Jaigaon and will also have some mixed issues in terms of nature conservation. These issues need to be managed carefully.

Mitigation and Suggestions:

The SIA suggests preventive and precautionary measures for the potential negative impacts during the construction phase. It also suggests the primary responsibility of various authorities for carrying out the mitigation measures. It also suggests establishment of "Grievance Redressal Cell" for issues of stakeholders, if any, at any stage of the project cycle. It also includes the suggestions for enhancing quality of life in Phuentsholing and surrounding areas.



1 Introduction

This Social Impact Assessment (SIA) is a study of the direct and indirect impacts and benefits of the proposed Amochu Land Development and Township Project (ALDTP) on the Phuentsholing Urban Area and its surrounding area. It includes the study of impacts on the society, economy and culture, and determining, characterizing and assessing the potential impacts therein, as well as developing and proposing appropriate mitigate measures.

This chapter provides a brief description of the impacts assessment system used for the SIA of the proposed ALDTP including the project background, scope of work, objectives, methodology and flow chart of the activities carried out for SIA.

1.1 Project Background

The Kingdom of Bhutan is a small, mountainous, landlocked country in South Asia, located in the eastern Himalayas, bordered by India and China. Bhutan is home to a population of about 740,000 spread over approximately 47,000 square kilometres, roughly the size of Switzerland, with about 70% of its land under forest cover. Much of the population lives in the central highlands, and almost two-thirds are classified as rural inhabitants. The terrain is mostly mountainous, with snow clad peaks and alpine slopes in the north and some sub-tropical foothills in the south. **(Source: World Bank Overview on Bhutan)**

The city of Phuentsholing under Chukha Dzongkhag is the second largest city and a gateway to Bhutan and has become the biggest commercial and Industrial hub of the country. It is located in the south-western foothills of the country bordering the Indian state of West Bengal.

Phuentsholing is situated on the banks of river Amochu, which is a quiet river during the winter season but can become volatile and change its course during other seasons. It has been flooding every alternate year during summer or monsoon season when the water flow increases as the snow melts. This has been causing damage to the town and its people in terms of material loss due to sedimentation and erosion resulting directly from uncontrolled flows of the Amochu River, which have been major contributors to the loss of valuable flat land along the western edge of the city of Phuentsholing. Frequent flooding causes damage to the property as well as gives rise to psychological issues like fear among people.

Besides floods, space is a major concern for Phuentsholing. Owing to increasing population and limited area, Phuentsholing is facing a serious shortage of land for development and expansion. The city is facing housing scarcity, pressure on basic infrastructure like water, drainage, roads, etc. and this has led to the problems like high cost of housing, traffic congestion, poor drainage, etc. Around 6,000 Bhutanese are currently living in the border town of India, Jaigaon as they cannot afford the housing in Phuentsholing.

DHI-INFRA Ltd., a subsidiary company of Druk Holding and Investments (DHI), is a public limited company formed in 2011 under the Companies Act of the Kingdom of Bhutan 2000 with its Head Office in Thimphu. DHI-INFRA was established with the primary objective to promote and develop the country's infrastructure projects to accelerate Socio-Economic developments. DHI-INFRA, in addition to other infrastructure projects, is overseeing the development of Amochu Land Development and Township Project in Phuentsholing and preparation of the Integrated Detailed Project Report (IDPR) for this Project has been awarded to HCPDPM, Ahmedabad.

The main objective of this Integrated Detailed Project Report (IDPR) is to prepare plans and designs for River Training, Land Reclamation, Master Planning of the township including Geotechnical, Environmental Impact Assessment, Social Impact Assessment, Hill Slope protection, Design of Bridge, Common Urban Infrastructure, Financial feasibility as well as prepare a project development model for the Amochu Land Development & Township Project (ALDTP).

Considering the need for housing for the people of Phuentsholing and Bhutanese living in Jaigaon, ALDTP is planning to include low cost affordable social housing for them.

The ALDTP site (henceforth referred as Project site) is located at Phuentsholing under Chukha Dzongkhag. The site is strategically located about 1 km from the main Phuentsholing town on the banks of River Amochu and is approached through a two lane road of about 5m carriage width.

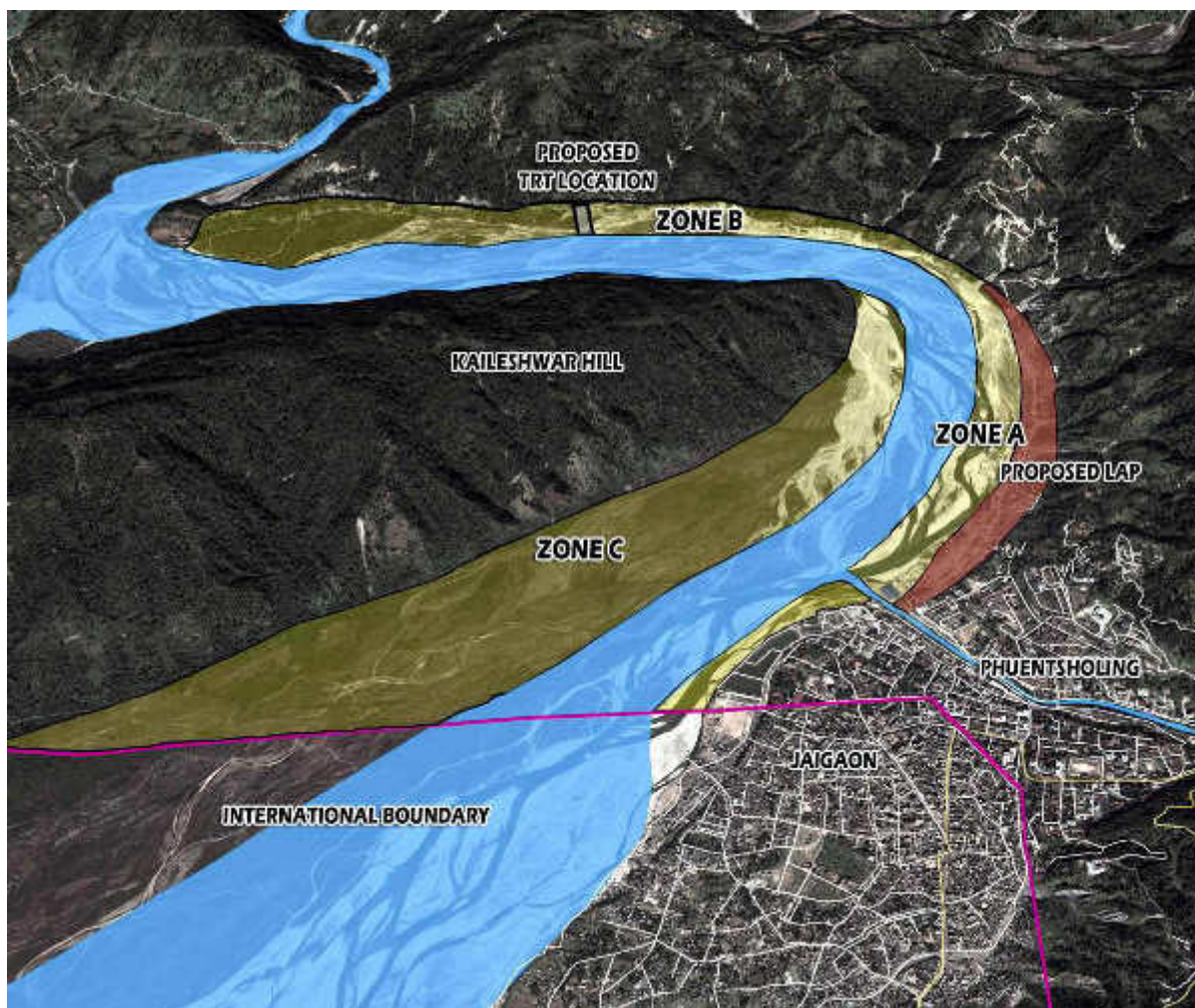


Fig. 1.1 Project Map showing land use plan (Source: HCP)

The Amochu Land Reclamation and Township Project is proposed to be developed by incorporating the attributes of “Smart City” design concepts wherever possible.

The suggested land use and infrastructure are divided into 4 zones:

- Zone A - Residential, Institutional and commercial
- Zone B - Institutional and recreational
- Zone C - Commercial and residential, recreational spaces
- Zone D - Evacuation refuge, high-end resorts, VVIP Guesthouse on Kaileshwar Hill

Besides the proposed project area, the influence zone for Phuentsholing covers the industrial town of Pasakha, administrative capital town Thimphu and Tourism and airport town of Paro in Bhutan. The influence area also includes Jalpaiguri, Siliguri, Darjeeling, Kalimpong and Gangtok in India. Phuentsholing, on account of its strategic location serves as a central point for tourist traffic and business activities.



Distance from Phuentsholing to the capital of Bhutan and some of the major towns in India are given below:

Table: 1-1 Distance from Phuentsholing to Thimphu and major towns of India

SI. No	Places	Distance (Km)	Approximate Driving Time (Hr.)
Bhutan			
1	Thimphu	174	06-08
India			
1	Bagdogra	165	4.5
2	Siliguri	155	4
3	Darjeeling	200	6
4	Kalimpong	185	5
5	Gangtok	220	7
6	Kolkata	746	12

Source: Interim cum Inception Report on ALRTP July 2012 by IL & FS

For all tourist traffic en route to Paro, Thimphu and other parts of Bhutan from West Bengal and India's North Eastern States, Phuentsholing is the default stop-over point.

Since the area is not yet developed, there is no provision of services and amenities within the site. The proposed Samtse Phuentsholing highway runs through the eastern boundary of the site clearly separating the Project Area from the Proposed Amochu Local Area Plan.

On the eastern and northern parts of the site there are some temporary structures and sheds of construction companies taken on lease from Phuentsholing Thromde whose lease periods will end before the start of the ALDTP. Except for these temporary structures there are no built structures within the Project area. Earlier there were 36 plots of private landholding in Zone B of the ALDTP. Due to constant threat of Amochhu flooding plots, Phuentsholing Thromde has already resettled them further up towards the base of the hill outside of ALDTP Zone A. A Local Area Plan (LAP) in a land area measuring 80 acres has already been prepared for these resettled plots which has been by the private landowners. This LAP is separated from the ALDTP area by the Phuentsholing - Samtse National Highway.

1.2 Scope of work of Social Impact Assessment– SIA

The SIA process is built on three elements:

- An assessment of the socio-economic conditions of the people, who are likely to be either positively or negatively affected, is done by studying various factors which include livelihood, average family income, prevailing cost of housing and housing rents, affordability to purchase residential unit, willingness to pay for better housing, etc.
- A detailed study of the impacts in terms of displacement, livelihoods, housing, infrastructure and services, cost and rent of housing units, concept of affordable housing and social housing, is conducted.
- A plan to mitigate these impacts is suggested.



1.3 Objectives of SIA

The goal of the SIA is to identify the social impacts, risks and opportunities of the Project and to identify mitigation measures to avoid or minimise the negative impacts, if any, and/or compensate for the negative impacts. The SIA provides suggestions for enhancement of benefits or positive impacts.

Key objectives of the SIA are:

- To develop a socio-cultural and economic profile of the population surrounding Amochu Land Development and Township Project Area including Phuentsholing town.
- To identify the potential positive and negative socio-economic impacts of the proposed Project during various stages of the Project.
- To collect representative views of stakeholders on the Project and identify their relevant feedback to integrate into the Project.
- To suggest ways of enhancing positive impacts and reduce or avoid negative impacts
- To recommend possible mitigation measures for adverse socio-economic impacts.

1.4 Methodology of data collection:

The methodology adopted for conducting SIA included initial site reconnaissance visit, discussion with local authorities, administrative heads of various departments, observations, desktop review of relevant reports and documentation pertaining to the Project area of influence, review of government publications, legislation, and previous social Project reports. It also involved repeated site visits, qualitative and quantitative data collection in field through discussions and consultations with various stakeholders, data analysis and reporting. The data collection methodology for social impacts is carried out as a two way process in three purposes:

- 1) To inform and sensitise the stakeholders or respondents about the Project.
- 2) To obtain their views about the Project.
- 3) To understand existing social conditions, availability of infrastructure and basic services on ground.

This requires rigorous methods to gather data and record views of all major stakeholder groups. The two data collection methods adopted includes various stakeholders as identified below:

1) One-to-one interactions with various stakeholders

These interactions included various stakeholder groups representing

- Local Urban Bodies
- Government / Civil Society Organisations
- Real Estate Developers
- Indian day workers
- Bhutanese people living in Jaigaon

2) Focus Group Discussions

These discussions were carried out with

- Public of Phuentsholing and surrounding areas including people of Tading Gewog (Samtse) and Phuentsholing Gewog
- Bhutanese people living in cross border town Jaigaon



1.5 List of activities

The following activities are carried out as part of the SIA. These activities are non-sequential and more than one activity has been carried out simultaneously in the field.

- 1) Understanding the Project
 - Defining Social Impact Area
 - Reconnaissance visit
 - Identifying Issues
- 2) Identifying Information/ Secondary Data requirement and their sources
- 3) Involvement of Stakeholders
 - Sensitization of all Stakeholders about the Project
 - Identification of stakeholders
 - Development of tools for
 - a. One to One Interactions
 - b. Focus Group Discussion
- 4) Conducting Screening
- 5) Conducting Scoping through Primary Data Collection
- 6) Data Analysis of Socio Economic Profile of Baseline condition
 - Inferences derived for -
 - a. Demographic –Population, Gender distribution
 - b. Socio Economic - Family size, Family Income, Housing Typology, Services, etc.
 - c. Other Social Issues (Non Safeguard issues)- Poverty, Gender, Labor, Vulnerable population
 - d. Awareness, perception, expectation and suggestion about ALDTP from the stakeholders
- 7) Identification and Assessment of Impact
- 8) Mitigation Plans

2 Understanding the Project

Understanding the Project is characterized from several perspectives mainly socio-geographical, socio-cultural and economic perspectives. Socio-geographical description defines the geographical attributes of the Project area and how those attributes define the social character of the population. Socio-cultural impacts refer to the consequences of the Project actions that alter the way in which the community live, work and relate to one another, meet their needs and generally live and cope as members of society. Economic impacts characterize the level and type of economic activities in the Project area as a direct result of the Project activities.

In order to understand the Project from the above perspectives the reconnaissance visit was carried out, which helped in defining the impact area. This was followed by preparation of demographic and socio-economic profile and understanding the existing ground conditions of housing, infrastructure and services.

2.1 Reconnaissance Visit

The reconnaissance visit was carried out between October 20-23, 2015 which helped in exploring the possible social impacts of the Project as well as in understanding the Project area. The basic socio-economic and cultural background of the region and infrastructural situations in Phuentsholing town and surrounding areas were also explored.



Fig. 2.1 Project Team during reconnaissance visit (Source: HCP)



Fig.2-2 Site appreciation Visit (Source: HCP)



Fig.2-1 Site appreciation visit with DHI-INFRA team (Source: HCP)



Fig.2-4 Talking to people in project surrounding area Toorsa Tar during Reconnaissance visit (Source: HCP)

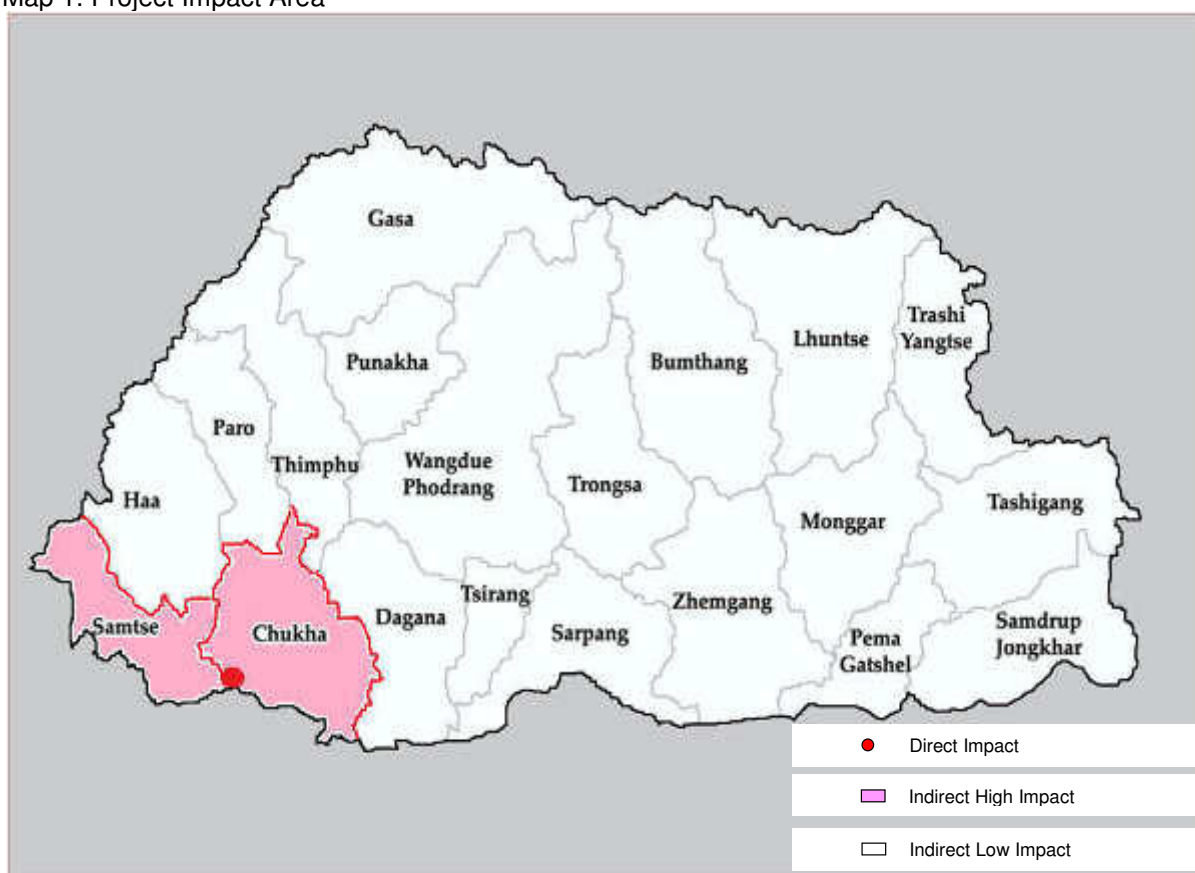


2.2 Defining the Impact Area

Defining the impact includes understanding and assessing the nature and extent of impact at individual, community, city and country level. As part of the Project, the SIA aims at providing a comprehensive understanding of the Project area with respect to the positive or negative impacts of the Project, number of Project Affected Families and Project Affected Persons, if any. It provides further understanding about socio-demographic profile of Project area and its surroundings i.e. Phuentsholing Urban Area and surrounding areas. It also assessed typology of housing, available infrastructure and services, economic activities etc.

The map given below shows the geographic reach of the project impact by its severity. The area marked in red shows the directly impacted areas i.e. the Project area and its immediate surroundings, which is going to have the maximum positive or negative impacts of the project; While the area marked in pink shows the area which will be indirectly impacted in terms of project benefits and negatives issues of the project. The rest of the areas will have minimum indirect impacts in terms of the benefits or responsibilities as a nation.

Map 1. Project Impact Area



Source: www.ugyen.net23.net (Modified)

The Chukha Dzongkhag is one of the 20 dzongkhags of Bhutan. The ALDTP project is located in Phuentsholing, which is the major town of Chukha Dzongkhag. Phuentsholing shares border with Indian town Jaigaon, West Bengal and is the gateway of Bhutan.

Samtse, near the Indian border town of **Chamurchi**, is a town in Samtse Dzongkhag, Bhutan. With an area of approximately 1500 sq. kilometers, Samtse District shares an international border with the Indian states of Sikkim to the west and West Bengal to the south, and internal borders with Haa and Chukha Districts. In order to have an access to Samtse, one has to travel through India as there is no convenient connectivity from Bhutan or Phuentsholing.

Jaigaon is a town in West Bengal, India that is located on the country's border with Bhutan. The main overland entrance to Bhutan is through Jaigaon and Bhutan Gate separates the two countries. Bhutan does not have domestic roads linking to all its towns, so Bhutan uses Indian roads passing through



Jaigaon to reach such destinations as Samtse, Gomtu and Samdrup Jongkhar. Bagdogra Airport (Siliguri) is the nearest airport from Jaigaon and Phuentsholing both, and Kolkata its nearest port, where goods to Bhutan are brought from. Hasimara is the nearest railway station. India offers a free flow of goods from Kolkata port to Bhutan. Jaigaon lies on the banks of the Torsa River.

The lifestyle of Jaigaon is influenced by the town's diverse population comprised of residents from throughout India and Bhutan. The demand of Bhutanese consumers from nearby Phuentsholing has led to the development of the service sector in various fields.

The diversity of Jaigaon can be seen in its food and clothing, which represents diverse segments of Indian culture. In addition, the town's proximity to Bhutan has led to the popularity of Tibetan-influenced cuisine such as momos. In addition, ghos and kiras, the Bhutanese national dress is produced in Jaigaon for Bhutanese consumers.

The ALDTP Site

The ALDTP site is located within 2 km from the city centre area. The ALDTP site is on the banks of river Amochu and can be approached through a road. The ALDTP will mainly have an impact on the Phuentsholing city, the Pasakha industrial area and other surrounding areas including Tithering Village in Tading Gewog of Samtse Dzongkhag, Phuentsholing village and other areas. It will also have indirect impact on the business and economic activities and tourism sector of Bhutan in General and Phuentsholing in particular. Phuentsholing is a gateway to Bhutan and is an entry and stop over destination to reach Thimphu by road.

Phuentsholing is a border town sharing its boundary with Indian Town of Jaigaon and thousands of Indian Day Workers come to Phuentsholing for work. The commercial activities and business between Jaigaon and Phuentsholing are one of the main sources of income generation. The project will therefore also have impact on the bordering town Jaigaon.

2.3 Review of Data

The reconnaissance visit and initial discussions with DHI-INFRA helped in identifying information / data requirements, their sources and method of collection of the same.

For the purpose of identifying information/data requirements and their sources, reviewing of existing data on likely impacts of the Project and checking if it could be used for assessment purposes, was done. It included studying the data according to administrative categories, existing social-physical infrastructure etc. and need for special category population such as Bhutanese families staying in Jaigaon, India.

This review also helped in identifying the need for collection of additional primary data through surveys and participatory methods. The secondary data requirement was established after the initial site visits. The data has been collected through the government documents like reports, official websites of various departments, websites of funding organizations like ADB, World Bank, earlier studies etc. Following documents were reviewed for SIA:

1. Population & Housing Census of Bhutan 2005
 - Population and Demographic data of people in Bhutan
 - Distribution of population in urban and rural areas
 - Health and Education statistics of 2005
 - Statistics of Labour in Bhutan

The Bhutan Population Census was conducted in 2005 and it provides a valuable benchmark data on a wide range of characteristics, a frame for statistical survey and data to compile a variety of social and economic indicators. It presents various types of data like Population and Demographic data of people in Bhutan, Distribution of population in urban and rural areas, Health and Education statistics of 2005, Statistics of Labor and employment in Bhutan, Migration, Household and Housing Characteristics, etc.

2. Development Plan of Phuentsholing Urban Area (PUA)
 - Population data for the PUA prepared by the Thromde for a planned vision of Phuentsholing by 2017
 - Infrastructure facilities available in the existing town



- Population projection

The Urban Development Plan (2002-2017), Phuentsholing, Bhutan, is considered to be a comprehensive document which analyses the existing facilities, issues and the needs of the Phuentsholing town. It lays down the vision for 2017 and requirements to reach the goals. It also provides population projection for Phuentsholing town and need for housing in the year 2017, as it takes into account the floating population and accordingly the growth rate of population at 3%.

3. Interim cum inception report on ALRTP July 2012 by Infrastructure Leasing & Financial Services Limited (IL&FS).
 - Location and condition of existing Infrastructure in Bhutan

The Interim cum Inception Report by I.L & F.S. on 'Amochu Land Reclamation Project' was prepared to assess the existing situation of land and infrastructure in Phuentsholing, the site on the banks of Amochu and the land use/ development plan has been suggested.

4. Housing Need Assessment Review Report (April 2015)
 - Socio-economic profile of Bhutanese living in Jaigaon

This study was conducted by National Housing & Development in collaboration with DHI-INFRA in Jaigaon in 2015. The socio-economic profile of Bhutanese living in Jaigaon was prepared and need for housing in Phuentsholing to accommodate the Bhutanese living in Jaigaon and meet the current need of people living in Phuentsholing was assessed. The population projection has also been done to meet the need for housing in future.

5. Bhutan Poverty Analysis 2012 and Bhutan Poverty Assessment 2014
 - Poverty in Bhutan

The above two reports talk about the issue of poverty in Bhutan and urban poor. The earlier report published in 2012 established the poverty line for Bhutan based on food and non-food allowance at Nu. 1704.84 Per person per month. Taking this line as the base, the study was conducted and the report assessed the poverty in Bhutan in 2014 which reports that poverty has considerably reduced over the past decade.

6. Eleventh Five Year Plan (Vol. I, II, III)
 - Planning and budget allocation

The Eleventh Five Year Plan gives detailed budget and resource allocation for various sectors of the country and specifically for Phuentsholing.

7. Phuentsholing Structure Plan (Final Vol. I)
 - Structure Plan of Phuentsholing Urban Area

Phuentsholing Structure Plan 2013-2028 is a document that provides strategic framework & policy guidelines and vision for the future planning and development of the town of Phuentsholing. This Structure Plan was developed in consultation with the residents, public and other stakeholders of Phuentsholing Thromde. The structure plan took into consideration the concerns raised by the public and balanced them within national plans and policies. The plan lays down the basic structure and guidelines for the future development of the town. It provides guidelines that need to be detailed out in the Local Area Plans for implementation.

8. Website of Royal Government of Bhutan and various departments under the same were also referred.

9. Websites of ADB, World Bank and UNDP were referred for various data pertaining to Bhutan.

10. Some of the other documents referred were:
 - Review Report Social Housing Survey – 2015
 - Action Plan Population Perspective Plan
 - Bhutan Vision for Peace Prosperity Happiness2020_Vol1
 - Bhutan Vision for Peace Prosperity Happiness2020_Vol2
 - Gender Statistics Bhutan 2010

- National Health Policy
- National Education Policy
- Guidelines for Planning & Development of Human Settlement in urban & rural areas of Bhutan to minimize Environment Impact
- Job Prospecting Report 2015 Final
- Labour Force Survey Report 2014
- Study for Poverty Profiles Japan Report
- Bhutan Country Partnership Strategy: ADB Report

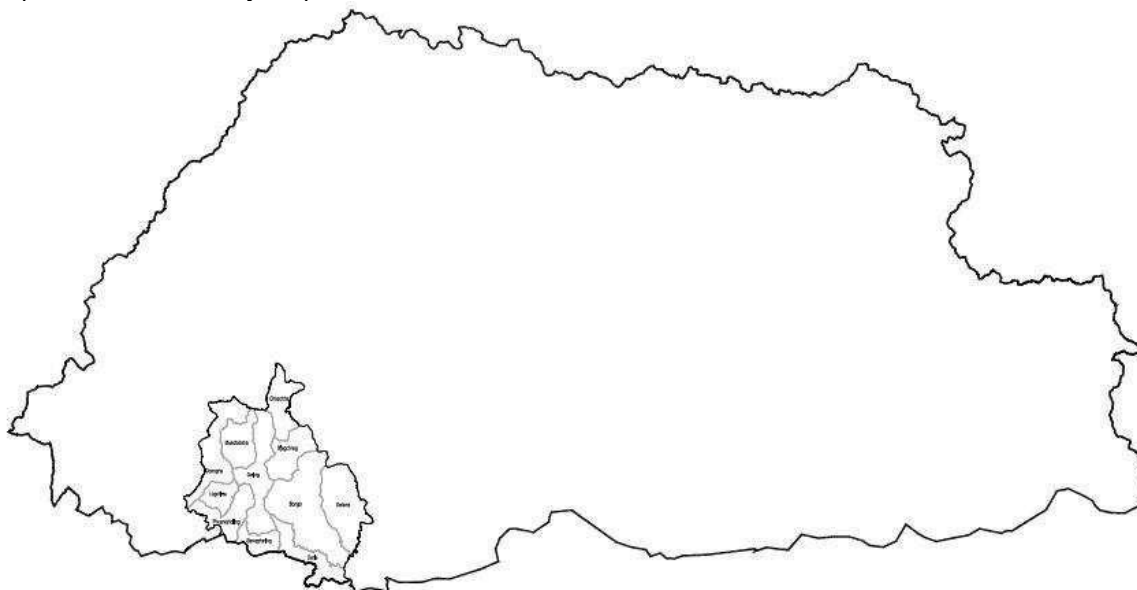
2.4 Demographic and Socio-economic Profile

This section of the report attempts to provide a detailed analysis of the demographics of Bhutan, Chukha Dzongkhag (district), and the study area i.e. Phuentsholing Urban area and surrounding areas. It primarily uses the data from secondary sources including Population and Housing Census of Bhutan 2005, Annual Dzongkhag Statistics 2010, Phuentsholing Structure Plan 2013-2028 etc. It enables the planners to understand the study area with respect to Chukha Dzongkhag (district) and Bhutan and to understand the importance of the Project as key milestones in the growth story of the area as a whole.

Demography is the study of human population with respect to size, composition, spatial distribution and changes in population that occurs over time. Socio-economic enrichment of any area is directly proportional to the population, its growth rate, its literacy levels etc. Any future growth scenario of an area is directly hinged on the population size, composition and distribution of the population in the area. The Population and Housing Census of Bhutan 2005 forms the mainstay of population analysis of this report. The existing population and Projections used in this report are based on the 2005 census as it is the latest decennial census carried out by Royal Government of Bhutan. The census provides a comprehensive source of information and demographic data.

2.4.1 National Profile of Bhutan

Map 2. Bhutan Country Map



Source: HCP

Bhutan is politically divided in 20 Dzongkhags. The total population of Bhutan is 672,425 out of which 37,443 are floating population. The actual resident population of Bhutan as per the definition of the Population and Housing Census of Bhutan 2005, enumerated on the census day is 634,982 persons, out of which 333,595 persons (52.5%) are males and 301,387 persons (47.5%) are females. The sex ratio of the resident population is 111 males per 100 females. The urban population consists of 196,111 persons (30.9 %) of the total population, while 438,871 (69.1%) are in the rural areas. During the twelve months prior to the census, there were a total of 12,538 live births and 4,498 deaths. This works out to the natural growth rate of 1.3%.

Table: 2-1 Socio-economic indicators of Bhutan

Indicator	Status*
Total Population	672,425
Floating Population	37,443
Net Population	634,982
Area in Sqkm	38,394
Density of population (per sqkm)	16.54
Average Family size	4.6
Number and percentage of Male	333,595 (52.5%)
Number of percentage of Female	301,387 (47.5%)
Population in the age group of (0-6yrs)	89,347
Population in the age group of (0-14yrs)	209,959
Sex ratio (Number of Male per 100 Female)	111
Literacy rate	59.5 %
Rural population	438,871
Urban Population	196,111
Economically active population (above age of 15yrs)	256,895 (60.44%)
Growth rate	1.3

(*Source: Population and Housing Census of Bhutan 2005)

As per the Population and Housing Census of Bhutan 2005, the most populated dzongkhag is Thimphu with 98,676 persons accounting for 15.5 percent of the total population followed by Chukha with 74,387 persons (11.7%) and Samtse with 60,100 persons (9.5%). These three most populous dzongkhags together, account for 36.7% of the total population. The least populated dzongkhag is Gasa with 3,116 persons (0.5%) followed by Haa with 11,648 persons (1.8%) and Pemagatshel with 13,864 persons (2.2%).

With a total national population of 558,522 persons of age 6 years and above, 332,194 are literate resulting to a national literacy rate of 59.5%. Among the male population, 69.1% are literate while the female literate population is 48.7%.

2.4.2 Profile of Chukha Dzongkhag

Map 3. Chukha Dzongkhag Map



Source: HCP

Chukha Dzongkhag is one of the 20 dzongkhags of Bhutan. The major town is Phuentsholing, where the ALDTP site is located. Phuentsholing is the gateway city along the sole road which connects India



to western Bhutan. Chukha is the commercial and the financial capital of Bhutan. With Bhutan's oldest hydropower plant, Chukha Hydel (completed in 1986-88), and Tala Hydroelectricity Project, the largest power plant of the country, Chukha is the dzongkhag which contributes the most to the GDP of the country.

The Chukha Dzongkhag is the second most populated dzongkhag of Bhutan. The total population of Chukha as per 2005 census was 74387 with density of 41.28 persons per sq.km.

Table: 2-2 Socio-economic indicators of Chukha Dzongkhag

Indicator	Status*
Total Population	74387
Area in Sq.km.	1802
Density of population (per sq.km.)	41.28
Average Family size	4.5
Number and percentage of Male	42298 (56.86%)
Number of percentage of Female	32089 (43.14%)
Population in the age group of 0-6yrs	9952
Population in the age group of 0-14yrs	22732
Sex ratio (Number of Male Per 100 Female)	131.8
Literacy rate	63 %
Rural population	41461 (55.7%)
Urban Population	32926 (44.3%)
Economically active population (above age of 15yrs)	31660 (61.3%)
Growth rate excluding floating population	1.3

*Source: Population and Housing Census of Bhutan 2005

The male population is 56.86% of the total and the female population is 43.14% of the total. The sex ratio is 131.8 i.e. per 100 females there are 131.8 males. This shows that percentage of females is less in comparison to the national scenario. The literacy rate in Chukha is 63% which is higher than the national literacy rate of 59.5%.

Only 61.3% population of above age of 15 years are economically active in Chukha.

The following table shows the gender distribution in Gewogs and Thromde of Chukha Dzongkhag.

Table: 2-3 Gewog/Thromde wise male-female Distribution:

Gewog or Town	Persons			Percent			Sex Ratio (males per 100 females)
	Male	Female	Total	Male	Female	Total	
Bhalujhora	4,380	2,930	7,310	10.4	9.1	9.8	149.5
Bjachho	2,550	1,033	3,583	6	3.2	4.8	246.9
Bongo	4,258	2,612	6,870	10.1	8.1	9.2	163
Chapcha	1,762	1,486	3,248	4.2	4.6	4.4	118.6
Dala	5,755	2,811	8,566	13.6	8.8	11.5	204.7
Dungna	375	356	731	0.9	1.1	1	105.3
Geling	957	899	1,856	2.3	2.8	2.5	106.5
Getna	456	447	903	1.1	1.4	1.2	102
Logchina	1,389	1,283	2,672	3.3	4	3.6	108.3
Metakha	246	293	539	0.6	0.9	0.7	84
Phuentsholing	2,593	2,590	5,183	6.1	8.1	7	100.1
Dala Town	862	790	1,652	2	2.5	2.2	109.1
Gedu Town	2,262	2,026	4,288	5.3	6.3	5.8	111.6
Phuentsholing Town	11,169	9,368	20,537	26.4	29.2	27.6	119.2



Tsimalakha Town	1,179	1,182	2,361	2.8	3.7	3.2	99.7
Tsimasham Town	715	518	1,233	1.7	1.6	1.7	138
Chukha Town	1,390	1,465	2,855	3.3	4.6	3.8	94.9
Chukha	42,298	32,089	74,387	100	100	100	131.8

*Source: Population and Housing Census of Bhutan 2005 & Annual Dzongkhag Statistic 2010

The above table shows that about 28% of the total population of Chukha Dzongkhag is residing in Phuentsholing town followed by Dalagewog where 11.5% population of Chukha Dzongkhag reside. The table also shows that Bjachhogewog has the highest sex ratio i. e. per 100 female there are 247 male in Bjachho. In Metakha there are 84 males per 100 female. The Phuentsholing town has 119 males per 100 female which shows that the percentage of female in Phuentsholing is higher compared to national ratio.

2.4.3 Profile of the Phuentsholing Urban Area and Surrounding Areas

The Proposed Project is assumed to affect the existing Phuentsholing urban area, surrounding rural areas and also the entire country in many aspects. Phuentsholing, meaning the land of prosperity, is conveniently and strategically located on the Indo-Bhutan border, has gained national recognition as the nerve centre of economic activities or as the Economic Capital of the Kingdom of Bhutan. It has a crucial role in the socio-economic development of the country. It is also the gateway to the Capital City, Thimphu, and to the western region. Due to its economic vitality and various economic activities, it also attracts traders and people from all parts of the country. Phuentsholing has been experiencing tremendous pressure on development due to rapid commercialization and industrialization, which has led to extended development up to Damdara, Pipaldara and Kabreytar in East and up to Rinchening in west. Also Pasakha industrial Area has seen a tremendous growth during last few years.

Table: 2-4 Socio-economic indicators of Phuentsholing Urban Area

Indicator	Status*
Total Population	20,537
Area in Sq. km.	428
Density of population (per sq.km.)	48
Average Family size	4.2
Number and percentage of Male	11,169 (54.38%)
Number of percentage of Female	9,368 (45.62%)
Population in the age group of (0-6yrs)	Data Not available
Population in the age group of (0-14yrs)	7,580
Sex ratio (Number of Male per 100 Female)	106
Literacy rate	68%
Rural population (In addition to total Population)	5,183
Urban Population	20,537
Economically active population (above age of 15yrs)	Data not available
Growth rate including floating population	3%

*Source: Population and Housing Census of Bhutan 2005

The above table shows that as compared to the national population density of 16.5 per sq.km. The Phuentsholing urban area is highly dense having population density of 48 persons per sq.km. The sex ratio shows the gender balance as there are 106 males per 100 females which are quite comparable.

The literacy rate 68% is higher than the national literacy rate 59% and Chukha's 63%.

The population growth rate of Phuentsholing Urban Area and surrounding areas is 3%, which is very high if compared to the national rate of 1.3%.

2.3.3.a Population and Housing Demand Projection

As mentioned in Urban Development Plan (2004) for Phuentsholing, the population of Phuentsholing Urban Area in 2002, excluding the Pasakha industrial area, was around 18,600. It was then projected to be around 54,280 by the year 2017, including Pasakha industrial area and the floating population of the city.

**Table: 2-5 Population of Phuentsholing Urban Area**

Year	Existing population of PUA	Estimated population of Pasakha	Total population of PUA	Floating population	Total population of PUA (Including floating population)
2002	18,600	-	-	-	-
2007	21,600	13,400	35,000	8,750	43,750
2012	25,100	15,500	40,600	8,120	48,720
2017	29,200	18,000	47,200	7,080	54,280

*Source: Development Plan - Phuentsholing Urban Area (PUA) -2004

The increase in population is one of the greatest threats to the urban environment in Phuentsholing. It has greatly burdened the existing facilities, which were not planned for such a heavy load of population. The surrounding forests, land and hills are getting converted into residential, commercial or other uses to accommodate the increasing population.

Considering 30 year horizon period for the project the population projections are made. The Project is planned to meet the Housing and infrastructure demand of Phuentsholing Urban Area for next 30m years i.e. up to year 2046.

As per the 1st Draft IDPR, the population of Phuentsholing Urban Area is projected to be 82,589 in the year 2046 leading to the additional population of 48,392 persons. Further to add to this population the Bhutanese people who live in Jaigaon will also increase in population which is projected to be 12,368 in the year 2046.

Hence it is indicated that in the year 2046 there will be an additional population of 60,760 in Phuentsholing Urban Area who will require houses and infrastructure. The Projected Housing demand by 2046 is estimated to be 13501 units of which 3955 would be required for BPL families.

As per a news report in the 'Kuensel' dated July 21, 2016, NHDCL has started construction of a total of 72 buildings with 500 flats which will be ready in next 18 months in Phuentsholing. These housing units would be made available at affordable rent to Bhutanese living in Jaigaon. This would help in reducing the demand for housing in the Project.

2.3.3.b Socio-economic Profile

The understanding about the existing socio-economic profile, housing, infrastructure and basic services has been developed on the basis of preliminary site visits, assessment of secondary data and discussions with officials and local people.

Social Characteristic: Being a border town and a gateway of Indo-Bhutan border, the city of Phuentsholing hosts people of various ethnicity and socioeconomic background living in it. Other than the natives, people of all ages and sex come to Phuentsholing in search of jobs, to stay with the working person of their family and young students come for vocational trainings. There are people who have settled here with their families for business purpose from other parts of Bhutan. Many people from Indian town Jaigaon come here for their livelihood as "Day workers". A sense of belonging or ownership is missing here because a large part of population is either migrant from other parts of the country or are day workers from India.

Major economic activities: Being the commercial hub of the country the city has crucial role in economic development of the country. With extended areas hosting Pasakha industrial estate and Chukha and Tala Hydro Power Projects it hosts a variety of economic activities including commercial, industrial and construction sectors and also administrative and institutional sectors, which have a greater role in growth of the city. The commercial sector has the activities like shops, hotels, bars, restaurants, truck repairing workshops and many more, the industrial sector has activities like agro and dairy-based industry, beverages and bottling plants, mining and allied, petrochemical industry. The construction sector is the largest sector in the city due to a large number of up-coming Projects. The administrative and institutional sectors host government offices, immigration office, College of Science and Technology, other vocational training institutes etc.



Fig. 2.5 Construction work – Indian labours (Source: HCP)



Fig. 2.6 Service Industry – employment for many (Source: HCP)



Fig. 2.7 Automobile repair workshop near truck parking (Source: HCP)



Fig. 2.8 Pasakha Industrial Area – manufacturing industries (Source: tashigroup.bt)

2.5 Existing Conditions of Housing, Infrastructure and Services

2.5.1 Housing Typology

Houses in Phuentsholing are of a permanent nature. They are constructed in RCC, stone, timber and other such robust materials. The layout of a typical apartment unit ranges from 1 to 4 bedrooms, a proportionate living room and a kitchen module. Recent buildings comply with the Bhutan Building Rules (2002) and display elements that are typical to Bhutanese Architecture. Certain other anachronous buildings lack the typical characteristics.

The residential buildings are 1 to 5 storied. Most of them have pitched roofs complying with the Attic Rules (2009). The roof is generally observed to be of metal sheets in corrugated profile. Few buildings are also observed to have flat roofs.

It is evident that the buildings are spaced very closely to each other. The interstitial spaces become inhabitable areas. They are then prone to garbage dumping, criminal and other inappropriate activities. The closely spaced buildings also face the danger of catastrophic damage in instance of an earthquake.

Due to the rapid growth in population in Phuentsholing the demand of housing has increased which has resulted in high price of housing. Due to high cost of housing units and high interest rate of housing loans from banks people prefer to stay in rented houses. The rates of rent are also very high. On an average a family spends 25-30 % of its income on housing rent.

The results of primary data collection also indicate that the availability of houses is less, the cost is high and the rent is also high. The old buildings are also not in very good condition.



Fig. 2.9 Residences at Core Areas (Source: HCP)



Fig. 2.10 RICBL Housing Colony (Source: HCP)

2.5.2 Infrastructure and services

2.3.2.a Streets and internal road:

The area of Phuentsholing has narrow vehicular roads and insufficient walkways which results in congestion and parking issues.



Fig. 2.11 Congestion at the City Centre (Source: HCP)



Fig. 2.12 Urban Street (Source: HCP)

Majority of the respondents in primary data collection conveyed that the condition of the roads vary from average to good. However the streets are narrow. Most of them also shared that the traffic is too much and this leads to traffic jams making the traffic situation at average level.

2.3.2.b Electricity:

The city gets sufficient and uninterrupted electric supply at low cost however some of the remote villages have to deal with power cuts due to improper supply infrastructure.

2.3.2.c Drinking water:

Entire city is covered under individual household level water supply. The frequency of water supply differs in urban and rural areas. Overall supply is sufficient in all area.

2.3.2.d Drainage system:

The sewer system functions at individual building and neighbourhood level. Due to overall steep lay of the land, it is difficult to establish and maintain a well-connected sewerage network. Hence local

solutions like septic tank and soak pits are set up. Areas where the terrain is relatively flat; there exists a functional drainage system maintained by the Phuentsholing Thromde (City Corporation).

The respondents also felt that keeping in mind the natural limitations, the management of drainage system is from average to good level.

2.3.2.e Sewage Treatment Plant:

The city has a sewage treatment plant located at the bank of Amochu.



Fig. 2.13 Sewage Treatment Plant (Source: HCP)

2.3.2.f Storm-water Drainage:

Open channels along roads take care of the storm-water drainage for Phuentsholing. However, in areas of high activity, public littering causes these channels to get clogged, thereby resulting in water-logging.



Fig. 2.14 Storm Water Drainage (Source: HCP)

Majority of the respondents shared that the storm water drainage is system of average condition as it is completely open leading to various other problems mentioned above.

2.3.2.g Solid waste collection:

The urban area has facility of solid waste collection at street level. As it is not on daily basis, in some areas burning of garbage is evident.



Fig. 2.15 Solid Waste Collection (Source: HCP)

2.3.2.h Health services:

The only hospital, Phuentsholing General Hospital completed in 2005 is a 40 bedded hospital with specialist services like General Surgery, Obstetrics and Gynaecology besides the general patient care. The hospital provides health care services to people residing in Phuentsholing and other sub-districts like Sampheling, Lochina and Dagana.

The average number of OPD patients per day is around 300 in winter and 500 in summer. The OPD has been recording an annual increase of 25% of patients visiting the hospital since last three years. In addition there are a large number of expatriate workers who visit for medical check-up and certificates as part of the procedure to obtain work permit. In order to decongest the routine, an after hour clinic service is started for people coming for medical certificate. Besides the general hospital there is a dispensary at BFAL colony in Pasakha and infirmary at the College of Science & Technology in Rinchending. As per the prevailing standards of Bhutan health service, the existing facility in Phuentsholing is insufficient to cater to its population.



Fig. 2.16 Phuentsholing General Hospital (Source: HCP)



Fig. 2.17 Emergency Vehicles - Ambulance (Source: HCP)

Table: 2-6 Standards for Health Facilities in Bhutan

Type of Facility	Population served	No. of beds	Personnel	Duties
Hospital	More than 15,000	10+	Doctor and Surgeon	Operation, minor surgery & general practice
Basic Health Unit (BHU)- Grade I	10,000-15,000	10	1 Doctor	Minor surgery & general practice
Basic Health Unit (BHU)- Grade II	Up to 10,000	None	1 Medical Assistant	Emergency treatment

Note: 1 Doctor and 1 ANM for every 5,000 people

Source: Urban Development Plan Phuentsholing (2002-2017) and Phuentsholing Structure Plan- 2013-2028 (Vol. 01) –PHUENTSHOLING: PRESENT SCENARIO

2.3.2.i Education Services:

The city has Middle Secondary, Lower Secondary as well as Higher Secondary Schools. However, the number of schools is insufficient to accommodate all the children and it is difficult to maintain the teacher student ratio. Also, the city has College of Science and Technology, located away from the main core of the city, providing education in the various fields of Engineering. The total number of educational institutes with number of teachers and students are given below:

Sr. No.	Name of the Educational Institute	Number of Teachers	Number of Students
1.	Phuentsholing Higher Secondary School	36	867
2.	Reldi Higher Secondary School (Pvt.)	17	460
3.	Phuentsholing Middle Secondary School	44	1120
4.	Phuentsholing Lower Secondary School	75	2106
5.	Wangdi Gatsel Community Primary School	9	318
6.	Chongaykha Community Primary School	8	336
7.	Pachu Community Primary School	1	66
8.	Phajoding Primary School	19	246
9.	College of Science & Technology	45	290



Fig 2.18 Lower School (Source: HCP)



Fig. 2.19 Phuentsholing Higher Secondary School (Source: HCP)

2.3.2.j Local Market:

The city also has a centrally located local vegetable market place and numerous provisional stores all over the core area.



Fig. 2.20 Vegetable Market (Source: HCP)



Fig. 2.21 Shops in main market (Source: HCP)

2.3.2.k Financial Institutions:

There are 8 financial Institutions which include 5 banks and 3 other financial institutes. (Source: Royal Monetary Authority of Bhutan)

The banks which provide various financial services like banking, loan, and insurance and investment facilities are:

- 1) Druk Punjab National Bank
- 2) Bank of Bhutan
- 3) Tashi Bank
- 4) Bhutan Development Bank
- 5) Bhutan National Bank

The other non-banking financial institutes which provide insurance and home loan facilities are:

- 1) National Pension and Provident Fund
- 2) Royal Insurance Corporation of Bhutan Ltd,
- 3) Bhutan Insurance Ltd.

2.3.2.l Communication:

Entire city is covered by mobile and internet networks however the quality of service is inadequate. The city also has postal services which also provides transport and transfer facilities.

2.3.2.m Recreational Facilities:

Until now the city had only one park for carrying out various recreational activities which is centrally located with a Goenpa (Monastery). It attracts people from different backgrounds and age groups during early morning to late evening hours. Recently two more parks and three open gyms have been inaugurated in the city to cater to the city's need and to encourage physical fitness. The city also has a walkway along the Amochu tributary Omchu which is used by the local people as a recreational place as well as a shorter route to reach certain areas. There are few public and private recreational places and facilities like swimming pool, basketball court, football ground, indoor games centres, crocodile-park, movie theatre etc.



Fig. 2.22 Central Park (Source: HCP)



Fig. 2.23 Indoor Sports Facility (Source: HCP)



Fig. 2.24 Playground of Phuentsholing Sports Association (Source: HCP)

2.3.2.n Religious Facilities:

The city has two Goenpa (Monastery) and three Manidungkor (Prayer Wheels) for carrying out various religious activities. Some are located centrally and some are relatively far from the core city to cater the public at remote areas.



Fig. 2.25 Prayer Wheels – Manidungkor (Source: HCP)



Fig. 2.26 Prayer Wheels – Manidungkor (Source: HCP)



Fig. 2.27 Monastery at Kharbandi (Source: www.destinationbhutan.com)

2.3.2.o Transportation:

The town of Phuentsholing is well connected to the capital of Bhutan, Thimphu as well as various tourist destinations through road network. Apart from private vehicles, the city people have access to private bus transport system and local taxis which not only connect the nearby areas, but also the distant towns. The city has a taxi stand, located at the core of the city, whereas the Bus Depot is located away from the core area to mitigate the traffic congestion.

The industrial area of the city is dependent on India for raw materials. The transportation of goods and raw materials from India to the industrial areas of Phuentsholing is done by trucks, lorries etc. which becomes expensive and time consuming in absence of railway connectivity. The nearest railway station is located at Hashimara in India which is about 18 km from the city.



Fig. 2.28 Transportation (Source: HCP)



Fig. 2.29 Transportation (Source: HCP)



Fig. 2.30 Taxi stand (Source: HCP)



Fig. 2.31 Taxi stand (Source: HCP)



Fig. 2.32 Bus Service (Source: HCP)



Fig. 2.33 Bus Service (Source: HCP)

The respondents of the primary data collection shared that public transport frequency is very poor. They have to wait for a long time or need to spend on taxi as the public conveyance is very limited.

2.3.2.p Air Connectivity:

The country has three domestic airports located at Yonphula, Bumthang and Gelepu, out of which only two (Bumthang and Gelepu) are functional at present, that too providing very limited flights. Hence the country does not have adequate domestic air connectivity. The only international airport in the country is located at Paro, which is 175 km from the Phuentsholing and takes 6 hours by road to reach there. The Bagdogra airport in West Bengal, India is at 165 km from Phuentsholing which also takes 5 hours by road.

2.3.2.q Parking facilities

There is heavy traffic in the city and usually during the day, parking is not easily available. There is paid parking facility available in certain parts of the city.



Fig. 2.34 Roadside parking facilities (Source: HCP)



Fig. 2.35 Roadside parking facilities (Source: HCP)



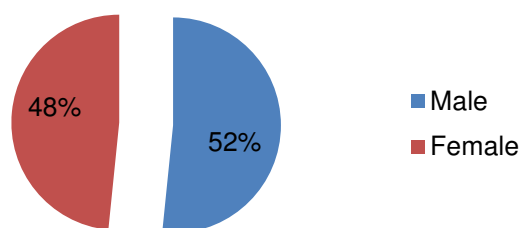
2.6 Social Issues among Weaker Sections

Understanding the project also includes understanding the issues of weaker sections or vulnerable population of the society. Vulnerable populations include the economically disadvantaged, racial and ethnic minorities, the uninsured, low-income groups, the children, the elderly, the homeless, those with human immunodeficiency virus (HIV), and those with other chronic health conditions, including severe mental illness. It may also include rural residents, who often encounter barriers to accessing healthcare services. The vulnerability of these individuals is enhanced by race, ethnicity, age, sex, and factors such as income, insurance coverage (or lack thereof), and absence of a usual source of care. Their standard of living and social problems intersect with social factors, including housing, poverty, and inadequate education. The study of these sections was carried out through referring secondary data such as Review Report Social Housing Survey 2015, Bhutan Living Standard Survey 2012, etc.

2.6.1 Bhutanese people living in Jaigaon

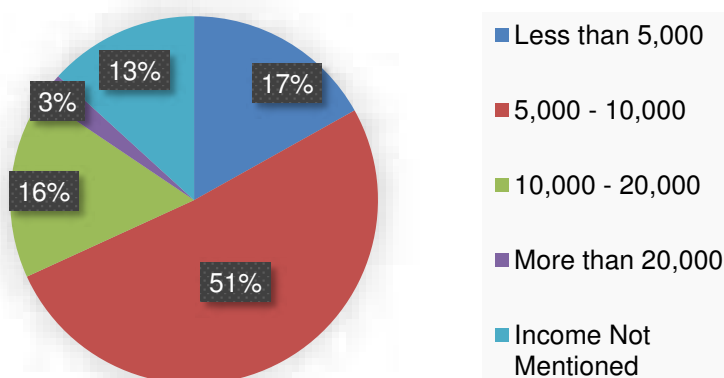
The country is facing a major issue with around 5681 of its citizens of low income group families, who are compelled to stay in cross border town Jaigaon, India due to non-affordability to pay high rents in Phuentsholing or other areas of Bhutan. Due to scarcity of housing and high cost of unit and high rents these families prefer to live in Jaigaon in inhuman conditions. These families live under constant fear of staying in another country. **(Source: Review Report Social Housing Survey – 2015.)**

The gender, income and occupation distribution of the Bhutanese people living in Jaigaon is discussed hereinafter. The details discussed below are sourced from **Review Report Social Housing Survey – 2015.**



Graph 2-1. Gender distribution of Bhutanese people living in Jaigaon

As illustrated in above graph, the total number of people living across the border in Jaigaon is 5,681 out of which 2,932 are male and 2,749 are female.



Graph 2-2. Household Income distribution of Bhutanese people living in Jaigaon

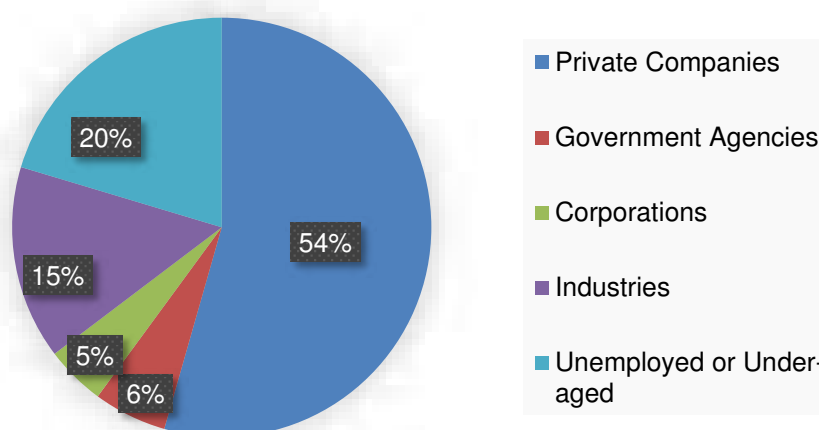
As illustrated in the above graph the income level of people living across the border in Jaigoan is comparatively low. Around 68% of the families have monthly income below Nu. 10,000 per month.



As per the survey, 16.89% of 1,754 households have income less than Nu. 5,000; 51.28% have income between Nu. 5,000 to Nu.10,000; 16.26% between Nu.10,000 to Nu. 20,000; 2.34% have income more than Nu. 20,000. 13.2% of the total 1754 families have not mentioned their income.

Table: 2-7 Employment Classification of the families living in cross border town Jaigaon.

Employment classification	No. of people	Percentage (%)
Private Companies	954	54.42
Government Agencies	99	5.65
Corporations	81	4.62
Industries	262	14.95
Unemployed or under-aged	358	20.36
Total	1,754	100



Graph 2-3. Employment Classification of the People Living in Jaigaon

As illustrated in the above graph the employment classification of the people living across the border in Jaigoan, 54% of these people work in private companies; 6% work in government agencies; 5% work in corporations; 15% work in industries whereas 20% are either unemployed or under-aged.

2.6.2 Women headed families

Household is the basic unit of enumeration in the Population and Housing Census of Bhutan 2005 (PHCB 2005). The term “household” is defined as “consisting one or more individuals irrespective of relationship but occupying the same living accommodation, have common arrangements for food and consume certain goods and services collectively”.

Most of the Asian countries have a patriarchal society wherein the households are headed by males, barring a few exceptions. Though there is no gender discrimination in Bhutan, majority of households are headed by males with a sizable number headed by females.

A total of 126,115 regular households have been recorded during the PHCB 2005. Therefore, with a population of 580,336 persons living in regular household, the national average household size is 4.6 persons per household. The distribution of these households between urban and rural is 30.4% and 69.6% respectively. The proportion of households that are headed by male is 71.8% while that of female is 28.2%.

According to **Bhutan Living Standards Survey 2012 Report by ADB**, twenty-nine percent (29%) of all households, 19% of urban households, and 34% of rural households are headed by women.

2.6.3 Poverty in Bhutan

Poverty is a social problem which is of great concern for any developing country. The same is true for Bhutan; however, according to the Royal Government of Bhutan and various studies by National



Statistics Bureau and the various donor agencies, the poverty in Bhutan has decreased over the past decade.

The Poverty Analysis Report 2012 established the total poverty line at Nu. 1,704.84 Per person per month. Overall rate of poverty for entire country is 12% (**Country Partnership Strategy: Bhutan, 2014–2018**) & (**Bhutan Poverty Assessment 2014**).

Total poverty line is the combination of: The food poverty line of Nu. 1154.74 and non-food allowance of Nu. 550.10. As per the criteria:

- Poverty in Rural area is 16.7%
- Poverty in Urban area is 1.8%.

Table: 2-8 Dzongkhag-wise rate of poverty

Dzongkhag	% of Below Poverty Line Population
Bumthang	3.4
Chukha	1.1
Dagana	25.1
Gasa	<0.5
Haa	6.4
Lhuentse	31.9
Mongar	10.5
Paro	<0.5
Pemagatshel	26.9
Punakha	10
SamdrupJongkhar	25
Samtse	22.2
Sarpang	4.2
Thimphu	0.5
Trashigang	11.5
Trashiyangtse	13.5
Trongsa	14.9
Tsirang	14.8
WangduePhodrang	10.9
Zhemgang	26.3

(Source: National Statistics Bureau, Bhutan-www.nsb.gov.bt)

The above table indicates that there are wide differences in poverty rates amongst Dzongkhags. The Lhuentse Dzongkhag has the maximum rate of poverty i.e. 31.9% followed by Pemagatshel, Zhemgang and Dagana having poverty rate of 26.9%, 26.3% and 25.1% respectively. On the other hand there are Dzongkhags having poverty rate of <0.5% which include Gasa and Paro, Thimphu having poverty rate of 0.5% followed by Chukha having poverty rate of 1.1%.

According to the Urban Development Plan Phuentsholing (2002-2017), the number of urban poor, who may be provisionally defined as a person living with monthly income of Nu.3,000.00 and below in squatter settlements in PUA is not very large but in order to stop the growth of squatter and slums, their housing needs must be addressed. There were 75 squatter units in the city in 1997 (ADB Housing survey). In spite of all efforts made by PCC, the survey done as part of **Urban Development Plan Phuentsholing (2002-2017)**, indicates as many as 125 squatters units in the city and it will continue to grow in future.

The ADB's socio-economic survey (1997) and study of **Urban Development Plan Phuentsholing (2002-2017)** indicates 43% of the households in Phuentsholing belong to the low-income group, and that the average length of residence in the hutment and labor camps is 14 years.



2.7 Gross National Happiness Index of Bhutan

Gross National Happiness (GNH) is a much richer objective than Gross Domestic Product or economic growth. In GNH, material well-being is important but it is also important to enjoy sufficient well-being in things like community, culture, governance, knowledge and wisdom, health, spirituality and psychological welfare, a balanced use of time, and harmony with the environment.

The four pillars of GNH philosophy are:

- 1) Sustainable development
- 2) Preservation and promotion of cultural values
- 3) Conservation of the natural environment, and
- 4) Establishment of good governance.

The GNH pillars are further distributed in the following nine domains:

- 1) Psychological Wellbeing
- 2) Standard of Living
- 3) Good Governance
- 4) Health
- 5) Education
- 6) Community Vitality
- 7) Cultural Diversity and Resilience
- 8) Time Use
- 9) Ecological Diversity and Resilience

The 2015 GNH Index was analysed on a purpose-built survey of 7153 Bhutanese in every Dzongkhag of Bhutan. (Source: www.grossnationalhappiness.com)

The analysis created a GNH profile for each person, showing their well-being across the 9 domains mentioned above. The national GNH Index draws on every person's portrait to give the national measure. Some of the highlights of the above study are:

- 91.2% of Bhutanese are narrowly, extensively, or deeply happy.
- 43.4% of Bhutanese are extensively or deeply happy, up from 40.9% in 2010.
- Across groups:
 - Men are happier than women
 - People living in urban areas are happier than rural residents
 - Single and married people are happier than widowed divorced, or separated
 - More educated people are happier
 - Farmers are less happy than other occupational groups.
- Across districts, GNH was highest in Gasa, Bumthang, Thimphu, and Paro, and lowest in Dagana, Mongar, Tashi Yangtse, and Trongsa.
- GNH increased significantly from 2010-2015 by 1.8%
- Increases were broadly equalizing, in that GNH increases among women, elders, those with no formal education, and farmers improved faster than others.
- GNH growth in urban areas outstripped rural improvements.
- Increases in GNH were driven by improved living standards and service delivery, better health, and participation in cultural festivals.

2.8 Alternative Analysis

The alternative analysis was taken up to find out various alternatives, the social impact associated with the options and the rationale for selecting the preferred alternative. The alternatives were analysed for "Build or No build Project" and "location of residential zone".

Activity 1 – Amochu Land Development and Township Project



Alternative one: “No Build”

Impact on Housing: Social Impact Assessment indicates that due to lack of space to build housing the housing scarcity has emerged and local people are forced to pay high rent or to live across the border in Indian town Jaigaon. As per population projections by 2046, Phuentsholing Urban Area would have additional population of about 48,392 who will require houses. At present around 5,681 Bhutanese people are staying in Jaigaon and they need to be brought back to Bhutan. In this scenario Phuentsholing will not be able to address the growing need of housing and infrastructure.

Economic Impact: The frequent flood, erosion and sedimentation cause damage to Phuentsholing town and its infrastructure. It causes loss of valuable flat land along the western limit of Phuentsholing Thromde. (Assessment Report on Flood at ALRTP on July 1, 2015 by DHI-INFRA).

It also impacts on Phuentsholing’s infrastructure and housing availability. The loss of valuable land impacts the overall real estate market negatively as there is no other area left for the town to expand.

Flood Impact: Phuentsholing Town is vulnerable to floods especially during summer and monsoon seasons when snow melts. On July 1, 2015 due to the uncontrolled river flow, seven families were left homeless, a brick factory, two excavators and three school buses were flooded. If ALDTP is not built, Phuentsholing Samtse highway will be left vulnerable to floods every year. (Assessment Report on Flood at ALRTP on July 1, 2015 by DHI-INFRA).

Alternative two: “Build the Project”

Impact on Housing: Social Impact Assessment indicates that the project would be beneficial to Phuentsholing town, its people and country as a whole. The systematically planned township would solve the housing problem and will provide better infrastructure and facilities. The township which is designed to house more than around 50,000 people will have varied zones like commercial zone, recreational, institutional, cultural, sports, resorts etc.

Impact on Economy: Apart from protecting the town from flood disasters and erosions, additional land will be available for building a new township. Based on urban planning projections, this township will be able to accommodate approximately 60,000 people including Bhutanese people living in Jaigaon.

Flood Impact: 50 year flood discharge levels have been considered for designing the embankment protection structures. This will make the township resilient to floods.

Conclusion: The alternative analysis shows that the alternative two i. e. “**Build the Project**” Amochu Land Development & Township Project will be preferred as it will not only solve the housing issues but also provide relief from the frequent flood problem.

Activity 2 – Location of Affordable and Social Housing

Alternative one: Within the ALDTP area

Proposed location of affordable housing component abuts existing Phuentsholing town, which makes it an extension of the existing town. By abutting Phuentsholing town, the affordable housing component is easily accessible to everyone using existing road networks. These units will be part of Phuentsholing Thromde’s affordable housing policy and as per housing needs assessment report, these new units will be priced at affordable rates. Since employment centres are proposed in the township, the transportation distance and cost for people living here would be minimized. As this project will be built on unencumbered land using the best possible construction and building technologies, the quality of housing and infrastructure would be of highest possible standard.

Alternative two: Within the Existing Phuentsholing town

Due to lack of space in existing Phuentsholing town, accommodating the additional units within it would lead to excessive loads on the infrastructure potentially leading to a disaster. If the units are accommodated within existing Phuentsholing town they would be easiest to access. Even though housing would be in existing Phuentsholing town, maintenance of the overloaded infrastructure would make living here expensive and unsustainable. The condition of water and drainage infrastructure of existing Phuentsholing town is already at capacity thus adding more units would potentially increase its vulnerability and worsening overall quality of housing for all.

Alternative three: Away from the ALDTP area

This would increase its proximity from existing town and negatively impact the socio-economic profiles of the city. As Phuentsholing is already built to capacity, the affordable housing units would have to be located further eastward of PUA making it hard to access for all. Even though housing provided could be affordable, the transportation costs would be high due to remoteness of the site. Since this project will be built on unencumbered land using the best possible construction and building technologies, the quality of housing and infrastructure would be of highest possible standard.

Conclusion:

It is beneficial for the affordable housing to be located within the site as it encourages equitable socio-economic development and enhances happiness in the region. It will also reduce hardship of the people of lower income group currently forced to live in Jaigaon due to economic conditions.

Activity 3 – Residential zone in Master plan

Alternative one:

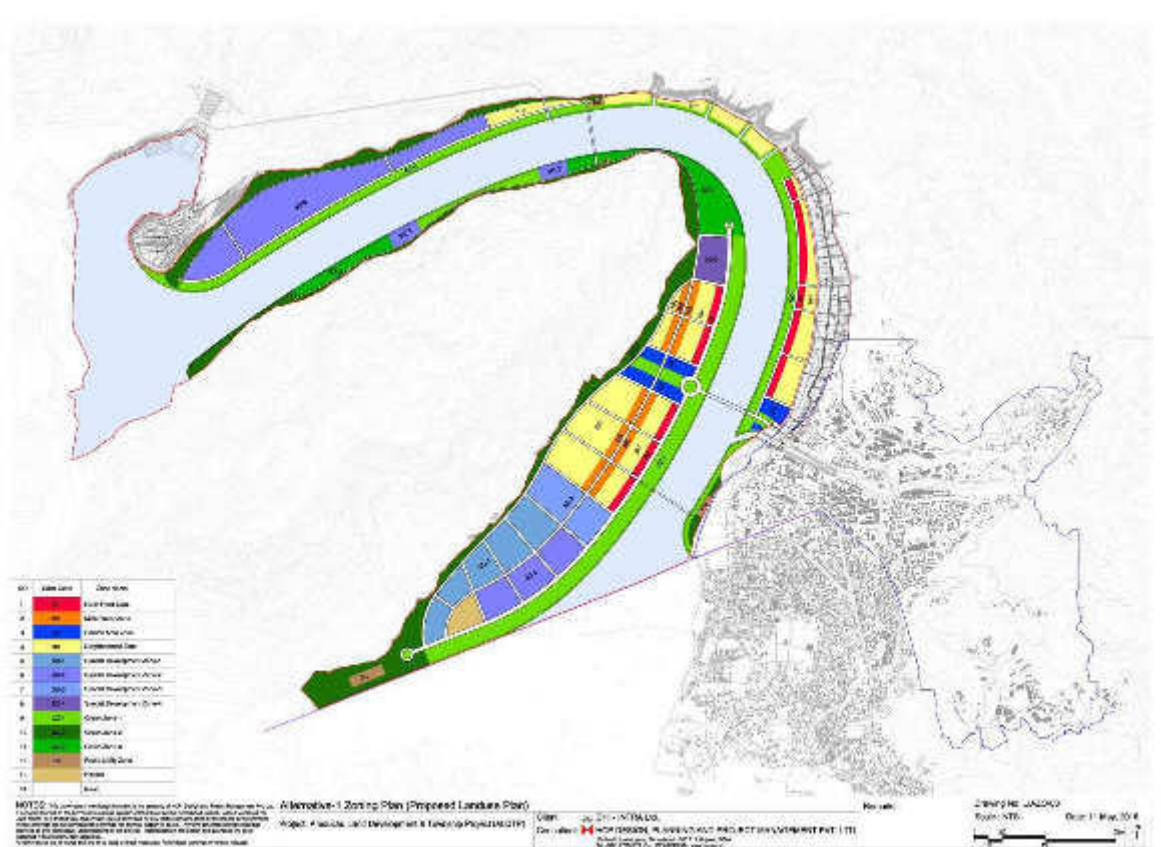


Fig. 2.36. Alternative one of master Plan

The residential zone marked in yellow as neighbourhood zone would be located in East-west direction parallel to the Central Area (commercial area) marked in blue. The Special Development zone (institutes like government offices, higher education institutes etc) would be located on the other side of the residential zone parallel to it. This would increase the proximity to the special development zone from the residential areas but at the same time the day to day services (school, basic health unit, ATM, market place, etc which are going to be the inbuilt areas within the core residential areas) would be located at a lesser distance.

Alternative two:



The residential zone marked in yellow as neighbourhood zone would be spread in North-South direction parallel to the River. The Special Development zone would be located on the other side of the residential zone parallel to it. As per this land use plan the distance to the special development zone from the residential areas will be less but at the same time the distance from day to day services (school, basic health unit, ATM, market place, etc which are going to be the inbuilt areas within the core residential areas) will be more.

Alternative three:

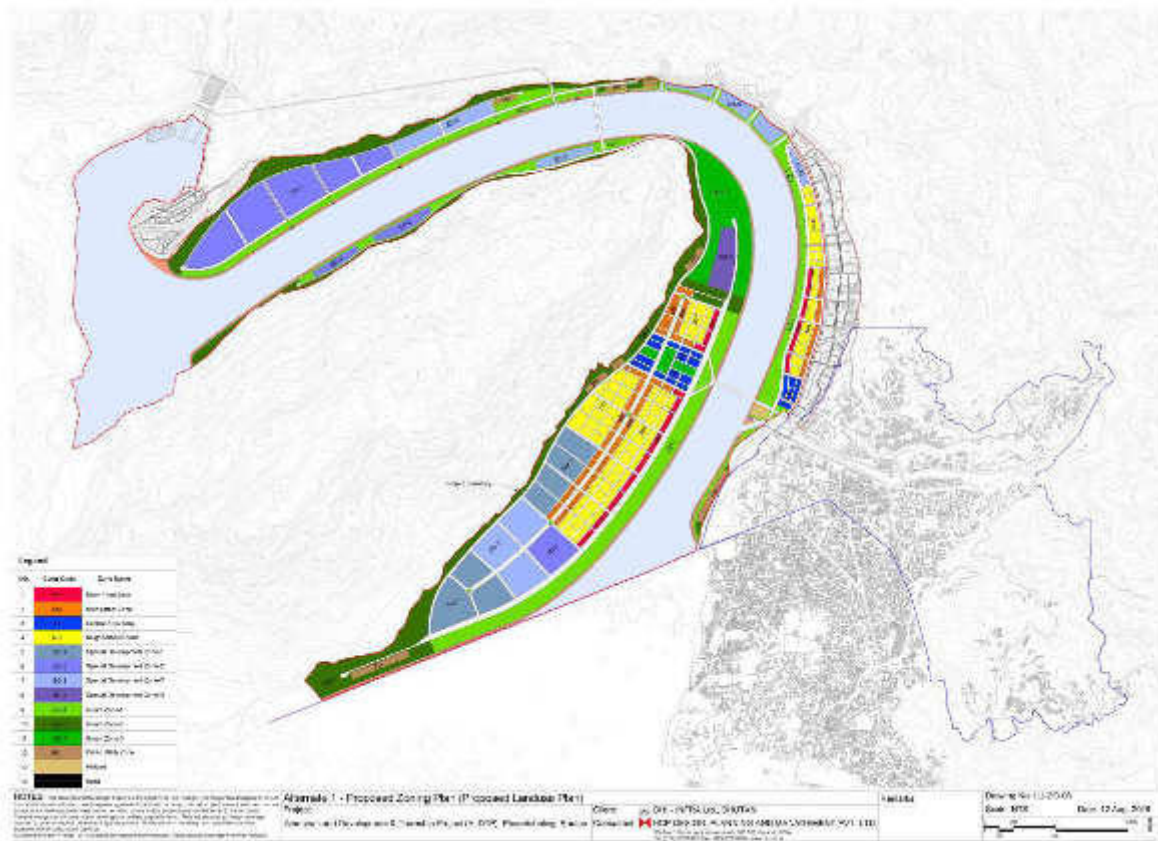


Fig. 2.38 Alternative two of Master Plan

The residential zone marked in yellow as neighbourhood zone would be located in East-west direction parallel to the Central Area (commercial area) marked in blue and Main Street Zone marked in orange. The Special Development zone (institutes like government offices, higher education institutes etc) would be located next to the residential zone. The day to day services (school, basic health unit, ATM, market place, etc which are going to be the inbuilt areas within the core residential areas) would be located at a lesser distance.

Conclusion:

Considering all three alternatives it can be concluded that first and second alternatives have both advantages and disadvantages. The third option is the most appropriate option as it is the combination of advantages of first and second options. It has been designed in a way that all the zones will be interconnected and easily accessible. This would save time and cost of travelling of people as well as will save resources.



3 Conducting Screening of Social Impacts

Screening is a preliminary evaluation to determine whether a proposed project is likely to pose any significant social issues, and whether an SIA is needed. Screening should be based on a complete description of project characteristics and potential impacts. Several factors should be considered when evaluating the need to perform a comprehensive SIA. These factors should be based on potential impacts due to project characteristics, potential environmental and social hazards, and community concerns.

Screenings was undertaken in the beginning of Project with the purpose of differentiating the “no significant impacts” from those with “significant impacts” and get a broader picture of the nature, scale and magnitude of the issues.

Screening is an initial assessment of:

- Safeguard issues like involuntary replacement, land acquisition and cultural and social impacts on indigenous people
- Non-safeguard issues like poverty, gender equality, labor standards and vulnerable groups
- It helps in developing basic understanding of the issues and possible impacted groups assumed to be affected at various stages of Project.

Table: 3-1 Screening parameters

Impact	Likely impact from the proposed development	Comments
	Yes/ No	
Demographic Change		
Significant population changes	Yes	Increase in Population, Bhutanese people living in Jaigaon would come back
Changing community needs	Yes	More need for better services
Changing community expectations	Yes	More expectations by the community as more people will be there
Safeguard issues		
Indigenous population	No	No indigenous population in the area
Land acquisition	No	No private plots are to be acquired for the Project
Involuntary relocation	No	No requirement for relocation as the Project area does not have any habitation.
Non-safeguard issues		
Poverty	Yes	Poverty to reduce due to more commercial activities and increased employment opportunities during construction phase and afterwards also.
Gender equality	Yes	Gender inequality is not prevailing; however, women’s needs to be looked into in the final township
Labour standards	Yes	To be followed strictly during construction phase
Vulnerable population	Yes	Needs of vulnerable population to be looked into in the final township
Neighborhood & community		



Neighbourhood safety	Yes	The increased population will raise safety concerns
Social and cultural identity	Yes	The sense of own social and cultural values will be higher in the people living in Jaigaon when they return back to their own country.
Impact on Accommodation & Housing		
Houses for different categories	Yes	Housing would be available for different categories in phase-wise development of the township
Affordable housing	Yes	Housing would be available at affordable cost which is at present very costly
Low income housing	Yes	Housing for low income group to be made available
Housing for urban poor	Yes	Social housing to be made available
Housing for Bhutanese living in Jaigaon	Yes	Number of houses to be planned to accommodate Bhutanese living in Jaigaon
Environment impacts during construction period		
Water Quality	Yes	Contamination of water during construction phase will lead to increase in water borne diseases
Air Quality	Yes	Dust during construction phase will lead to increase in air borne diseases
Health Impact due to large number of Labour Force during construction period		
Health and sanitation	Yes	Health and sanitation issues will increase due to labour colonies
HIV-AIDS	Yes	HIV-AIDS cases may increase due to labour colonies
Impact on the Infrastructure and services		
Government provided education facilities	Yes	Provision for additional facilities
Government provided health facilities	Yes	Provision for additional facilities
Community services, facilities and utilities	Yes	Electricity network, communication network, drainage network, drinking water, public facilities like public toilets, parks, recreational areas, informal markets etc. would be available as an integral part of the Project
Recreation facilities	Yes	Provision for additional facilities
Road network	Yes	Provision for additional systemic road network as an integral part of the Project



Economic issues		
Local employment generation	Yes	Positive impact as more employment opportunities will arise
Business development	Yes	Positive impact as more business opportunities will arise

The initial screening established that the project would not have any long term significant negative social impact such as Involuntary Relocation of people or shelters, Land Acquisition or Disturbance to indigenous people hence no mitigation plans are required. However there are certain long term beneficial social impacts which would require to be identified and enhanced. Also there are certain temporary negative impacts during construction period which need to be minimised. The project would need to assess and focus on many other social changes which will occur due to the project at different stages of the project.

4 Stakeholder Involvement

Involvement of all level stakeholders is an essential part of conducting SIA. Various people and groups of people have some or the other interest, opinion or stake in any kind of development projects. All the Stakeholders may or may not be directly impacted by the project however they may impact the project in some way.

4.1 Defining Stakeholders

The following questions help to ascertain the stakeholders:

- Who will be directly or indirectly and positively and negatively affected?
- Who are the most vulnerable groups?
- Who might have an interest or feel that they are affected?
- Who supports or opposes the changes that the Project will produce?
- Whose opposition could be detrimental to the success of the Project?
- Whose cooperation, expertise, or influence would be helpful to the success of the Project?

According to the [Project Management Institute](#) (PMI), the term **project** stakeholder refers to, ‘an individual, group, or organization, who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project’ (Project Management Institute, 2013).

The stakeholders needs to be kept aware and informed about the project activities. Their suggestions and knowledge about the local conditions can be helpful in project planning. If the project has significant impacts on local public and resources then their consent and opinion has a larger role in the project planning and implementation.

As part of the primary data collection One to one interaction and Focus Group Discussion with various level stakeholders had been planned for understanding the existing situation and obtaining stakeholder’s views about the proposed project using the various primary data collection tools mentioned in the previous section.

The stakeholders selected to be respondents for primary data collection were asked questions pertaining to the population, geographical coverage and number of persons covered, services offered by their department, whether any government aid is available, types of taxes, challenges faced, etc., to know of the prevailing conditions pertaining to a specific sector.

4.2 Sensitizing people

To disseminate information regarding the Project and to make the stakeholders aware about the Project, sensitization process was carried out at various stages of the Project cycle. This included public notifications in newspapers, public meetings, posters and discussions etc.

“A public notification was given in daily newspaper “KUENSEL” on November 14, 2015 to sensitize the public about the Project and to seek their cooperation in Project activities”



For sensitising general people, following storyline was developed and used:

DHI Infra has been granted the Amochhu Land Development & Township Project by Royal Government of Bhutan.

Phuentsholing town is on the banks of river Amochu, which is a quiet river during winters but has been flooding every alternate year during summers or monsoon season when the water flow increases as the snow melts; it also changes its course during these seasons. This has been causing damage to the town and its people both in terms of material loss and giving rise to psychological issues like fear.

The Amochu Land Development & Township Project (ALDTP) came up with the idea of mitigating the flooding in Amochu river by river training and channelizing its path, which would be about 300 meters wide, such that the river flows throughout the year in the same way. Based on the studies of last 100 years floods, which is measured to be 7100 cumecs, the proposed width of the river would be able to handle the highest flood level.

In order to take out the cost of river training and to fulfil the housing needs of people of Phuentsholing and those living in Jaigaon, Development of land on the banks of the river and building a township on it was thought about.

The township area would be 3 times the current size of Phuentsholing town and will be able to overcome the current shortage of space, housing and infrastructure facilities being faced by the town. The township would offer social housing for lower income group besides housing for people in middle income group and those in higher income groups. It would also have various zones for education, business, recreation, etc. It may also develop as a tourist spot and be the commercial hub for the country of Bhutan.

Also presentations to the Dzongda, all Gups and Heads of all departments of Samtse Dzongkhag, Project Coordinators of Royal Institute of Governance and Strategic Studies – RIGSS, Gross National Happiness Commission, Executive Director of Tourism Council of Bhutan and Consul General of India were done by CEO, DHI-INFRA. This helped build their confidence in the Project and mainly to obtain their feedback and concerns about the Project.

Note: Figures 4.1 and 4.2 will be available in request basis



Fig. 4.3 Bhutanese living in Jaigaon –Taxi driver
(Source: HCP)



Fig. 4.4 Forest Officer (Source: HCP)



Fig. 4.5 Local people at Pashaka (Source: HCP)



Fig. 4.6 Villagers at Samste (Source: HCP)

4.3 Selection of respondents for primary data collection

The primary data collection is an essential activity of SIA which helps understand the ground realities and to assess the social impact of the Project. For assessment of the social impact of the Project the interaction with respondents was either “one to one” or through “Focus Group Discussion”. This puts focus on confirmation of the socio-economic and cultural profile of the area and to get stakeholder’s opinion about the Project including their perception about the Project, existing conditions in the town, their needs, their expectations from the Project and their suggestions about the Project. Representatives of people, groups and various government/ civil society organisations are selected as respondents for interaction.

The criteria for selection of respondents for two methods of data collection are discussed below:

4.3.1 One-to-one interaction

Stakeholders who represent different groups of people were selected as respondents of primary data collection to collect their views and opinion about the Project. Out of all the possible groups of stakeholder a few stakeholders and representative of various groups of stakeholders were identified for



consultation for primary data collection and for obtaining their views about the Project thereby ensuring people’s participation.

The selection of respondents was done in such a manner that they are either affected by the Project or their inputs are valuable for the Project. This also included people from the groups who were likely to be positively or negatively impacted by the Project and/ or who were in such a position that they could influence the Project at any stage. It included the local people, government officials, persons in private service, representatives of business communities, private land owners, families living in Jaigaon, day workers working in Phuentsholing, etc.

Few of the stakeholders who represent a larger group of people or have influence on larger population were sensitized through a detailed presentation about the Project. All other respondents were given an understanding about the Project through the usage of maps.

List of respondents and locations for interventions with general public were finalized on the basis of primary field visits and review of census reports, Phuentsholing Development Plan and other relevant documents. Care was taken to involve all possible categories/ levels of stakeholders who are likely to be affected either positively or negatively by the Project or who would have/ could influence the Project at all stages.

The following 59 Respondents representing various strata of society, community groups, government, civil society, women groups, civil society organizations, working women, housewives etc. were identified, after careful understanding of the context and the involvement of individuals in Project, for one to one interactions.

Table: 4-1 List of Respondents for one to one interaction

Sr. No.	Designation	Department / Institution	Place	Date of interaction
Urban Local Body				
1	Dzongda (Samtse)	Samtse Dzongkhag Administration (Ministry of Home and Cultural Affairs)	Samtse	Feb. 16, 2016
2	Dungpa	Phuentsholing Drungkhag Administration Office (Ministry of Home and Cultural Affairs)	Phuentsholing	Nov. 20, 2015
3	Thrompon	Phuentsholing Thromde (City Corporation)	Phuentsholing	Nov. 19, 2015
4	Chief Urban Planner	Phuentsholing Thromde (City Corporation)	Phuentsholing	Nov. 19, 2015
5	Gup	Phuentsholing Gewog	Phuentsholing	Mar. 11, 2016
6	Gewog Administrative Officer	Phuentsholing Gewog	Phuentsholing	Mar. 11, 2016
7	Tshogpa	Tithering, Tading Gewog	Samtse	Mar. 11, 2016



Government Organizations				
8	Regional Director	Department of Labour (Ministry of Labour and Human Resources)	Phuentsholing	Jan 19, 2016
9	Principal	Department of School Education of Higher Secondary School (Ministry of Education)	Phuentsholing	Feb. 17, 2016
10	Principal	Middle Secondary School (Ministry of Education)	Phuentsholing	Feb. 17, 2016
11	Ex. Engineer	Department of Roads (Ministry of Works & Human Settlement)	Phuentsholing	Jan 19, 2016
12	Regional Director	Regional Revenue and Customs Office (Ministry of Finance)	Phuentsholing	Jan 20, 2016
13	Regional Director	Regional trade and Industry office (Ministry of Economic Affairs)	Phuentsholing	Jan 19, 2016
14	Administration Officer	Phuentsholing General Hospital (Ministry of Health)	Phuentsholing	Nov. 19, 2015
15	Medical Officer I/n	Phuentsholing General Hospital (Ministry of Health)	Phuentsholing	Jan 19, 2016
16	Officiating Director	Royal University of Bhutan, College of Science and Technology	Phuentsholing	Jan 26, 2016
17	In Charge	National Pension & Provident Fund, Chukha	Phuentsholing	Jan 26, 2016
18	General Manager	Royal Insurance Corporation of Bhutan, Phuentsholing, Chukha	Phuentsholing	Jan 28, 2016
19	General Secretary	Phuentsholing Sports Association	Phuentsholing	Jan 20, 2016
20	Chief Planning Officer Chief Research officer	Gross National Happiness Commission, Thimphu	Thimphu	Mar. 17, 2016
21	Project Coordinator	RIGSS (Royal Institute of Governance and Strategic Studies)	Phuentsholing	Jan 27, 2016
22	Regional Director	Road Safety Transport Authority	Phuentsholing	Jan 29, 2016
23	Assistant Immigration Officer	Immigration	Phuentsholing	Feb. 18, 2016
24	Liaison Officer	National Housing Development Corporation Ltd.	Phuentsholing	Feb. 17, 2016
25	Unit Manager	Natural Resources Development Corporation Limited	Phuentsholing	Feb. 19, 2016
26	Range Officer	Ministry of Agriculture and Forest, Dept. of Forests	Phuentsholing	Feb. 19, 2016
27	Regional Director	Tourism Council of Bhutan	Thimphu	Mar. 18, 2016
Diplomatic Mission				
28	Consul General of India	Consulate General of India	Phuentsholing	Jan 27, 2016



Civil Society Organizations				
29	Regional Secretary	Bhutan Chamber of Commerce and Industry, Phuentsholing	Phuentsholing	Jan 20, 2016
30	General Secretary	Association of Bhutanese Industries	Phuentsholing	Jan 19, 2016
31	General Secretary	Bhutan Exporters Association	Phuentsholing	Jan 26, 2016
32	Volunteer	Respect, Educate, Nurture & Empower Women – RENEW	Phuentsholing	Feb. 18, 2016
33	Sr. Programme Officer, Offg. Secretary General	Tarayana Centre, Tarayana Foundation	Thimphu	Mar. 15, 2016
34	Executive Director	Respect, Educate, Nurture & Empower Women – RENEW	Thimphu	Mar. 15, 2016
35	Chief Executive Officer	Bhutan Association of Women Entrepreneurs	Thimphu	Mar. 15, 2016
Business Listings				
36	Gen. Manager	Tashi Commercial Corporation - Consumer division	Phuentsholing	Jan 21, 2016
37	Representative of PLO	Private Land Owners (LAP)	Phuentsholing	Nov. 19, 2015
38	General Manager	Hotel Damchen	Phuentsholing	Jan 21, 2016
39	Foreign Workers Recruitment Agent	Private / Government employee	Phuentsholing	Jan 21, 2016
40	Officiating G M	Bank of Bhutan	Phuentsholing	Jan 26, 2016
41	President	Jaigaon Merchants Association	Jaigaon	Jan 28, 2016
Representatives of Day workers from India				
42	Representative	Day workers from India (Indians in Phuentsholing) - Trade license holder	Phuentsholing	Jan 24, 2016
43	Representative	Day workers from India (Indians in Phuentsholing) –Transport labour	Phuentsholing	Jan 22, 2016
44	Representative	Day workers from India (Indians in Phuentsholing) - Construction Labour subcontractor	Phuentsholing	Jan 21, 2016
45	Representative	Day workers from India (Indians in Phuentsholing) - Service industry	Phuentsholing	Jan 24, 2016
46	Representative	Day workers from India (Indians in Phuentsholing) - Pvt office Staff	Phuentsholing	Jan 24, 2016
Representatives of Bhutanese in Jaigaon				
47	Representative	Bhutanese in Jaigaon - Housewife	Jaigaon	Jan 20, 2016
48	Representative	Bhutanese in Jaigaon - Housewife	Jaigaon	Jan 22, 2016
49	Representative	Bhutanese in Jaigaon - Housewife	Jaigaon	Jan 22, 2016
50	Representative	Bhutanese in Jaigaon - Housewife	Jaigaon	Jan 22, 2016
51	Representative	Bhutanese in Jaigaon - Working woman	Jaigaon	Jan 21, 2016
52	Representative	Bhutanese in Jaigaon - Service industry	Jaigaon	Jan 21, 2016



53	Representative	Bhutanese in Jaigaon - Taxi driver	Jaigaon	Jan 24, 2016
54	Representative	Bhutanese in Jaigaon - Labour contractor	Jaigaon	Jan 22, 2016
55	Representative	Bhutanese in Jaigaon - Pvt office staff	Jaigaon	Jan 24, 2016
56	Representative	Bhutanese in Jaigaon - Lady Shopkeeper	Jaigaon	Jan 20, 2016
57	Representative	Bhutanese in Jaigaon - Taxi Driver	Jaigaon	Jan 27, 2016
Real Estate Developers				
58	Estate Manager	Tashi Real Estate Pvt. Ltd.	Phuentsholing	Jan 27, 2016
59	G M Finance	Tashi Commercial Corporation	Phuentsholing	Jan 27, 2016

4.3.2 Focus Group Discussions:

Local people residing around Project area, who were likely to be impacted (positively or negatively) were contacted as respondents in small groups to sensitize them about the Project and to obtain their views about the Project. Focus group Discussion is a method where the facilitator helps the group members to discuss an idea around a focus point. This gives qualitative results for the study.

The Focus Group Discussions were carried out at 27 strategically selected locations. Care had been taken to include people of all settlements in Phuentsholingurbanarea and surrounding areas and also four locations in the cross border town Jaigaon where the Bhutanese people are residing. The sensitization of stakeholders about the Project, confirmation of secondary data and to obtain the stakeholders' view and inputs about the Project were three basic purposes of these discussions. The locations where Focus Group Discussions were carried out are given below:

Table: 4-2 List of Locations for conducting Focus Group Discussions

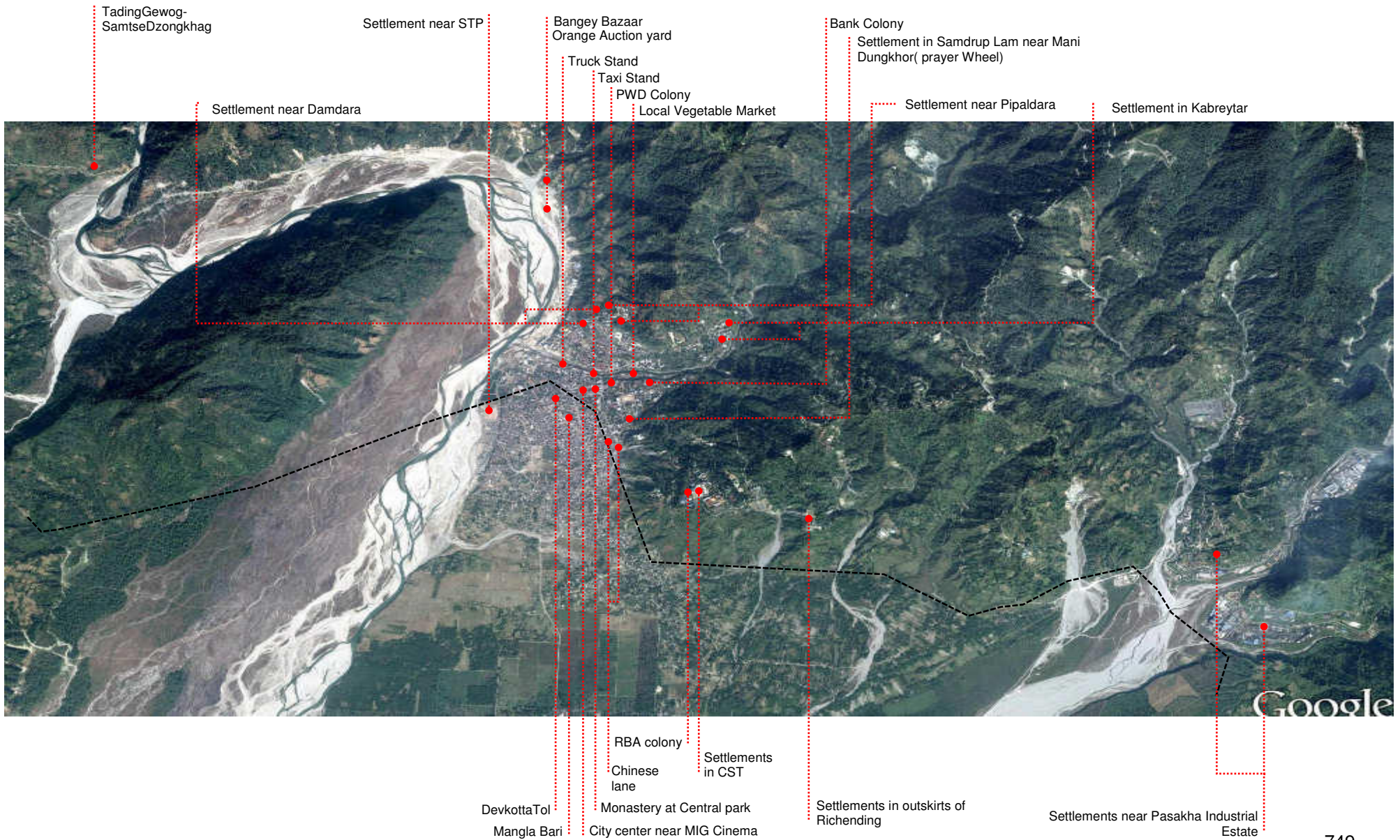
Sr. No.	Locations at Phuentsholing and surrounding areas	Date of Interaction
1	Monastery at Central Park (Mani Dungkhor)	Nov. 18, 2015
2	Taxi Stand at the bank of Om Chu River	Nov. 18, 2015
3	City Centre (Opposite to Cinema Hall)	Nov. 19, 2015
4	Samdrup Lam (Near Mother Day Care)	Nov. 19, 2015
5	Damdara (Outside at Street)	Nov. 22, 2015
6	Damdara (Near a Residence)	Nov. 22, 2015
7	Pipaldara (Outside at Street)	Nov. 23, 2015
8	Kabreytar (Residence of a High School Teacher)	Nov. 23, 2015
9	Truck Stand near Om Chu	Jan. 22, 2016
10	Local Vegetable Market	Jan. 22, 2016
11	Residences at Core Area - PWD colony	Jan. 21, 2016
12	Residences at Core Area - Bank colony	Jan. 23, 2016
13	Pipaldara	Jan. 27, 2016
14	Kabreytar	Jan. 27, 2016
15	Near College of Science and Technology, Pling	Jan. 26, 2016
16	Settlement in Rinchending	Jan. 23, 2016
17	Settlement in Pasakha Industrial Estate	Jan. 23, 2016
18	Settlement in Pasakha Industrial Estate	Jan. 23, 2016
19	Remote Villages lying under SamtseDzongkhag	Jan. 23, 2016
20	Orange Auction Yard	Jan. 23, 2016
21	Orange Auction Yard - Bangey Bazaar	Jan. 23, 2016

SIA for Amochhu Land Development and Township Project



22	Settlements near Sewage Treatment Plant	Jan. 22, 2016
23	Royal Bhutan Army Colony, Self Employed Women Group (Weavers)	Feb. 19, 2016
24	Mangalabarey , Jaigaon	Jan. 22, 2016
25	Devkotta toll Jaigaon	Jan. 22, 2016
26	Chinese Lane, Jaigaon	Jan. 20, 2016
27	Chinese Lane, Jaigaon	Jan. 20, 2016

Map 4.: The locations of the 27 Focus Group Discussions



Development of specific tools for interaction with respondents

Overall five different schedules for one-to-one interaction and two schedules for focus group discussion were developed as data collection tools.

The five schedules for One-to-one interaction with respondents were developed for the following categories:

- Government and civil society organizations,
- Urban local body,
- Indian Day workers,
- Bhutanese in Jaigaon and
- Real estate developers

The two schedules for Focus Group Discussion with respondents were developed for the following groups of people living in various locations:

- Phuentsholing town and surrounding areas
- Areas in cross border town Jaigaon where Bhutanese people live

The primary data collection interview schedule included parameters related to each sector to help develop sector specific understanding and collect sector specific information.

For some sectors, questions pertaining to housing typology, size of the house, income of the family, cost of commuting, rent of the house, willingness and affordability of buying a house, issues faced in Phuentsholing or Jaigaon, etc. were included.

The following are the major parameters covered:

Table: 4-3 Parameters covered in various schedules

Sr. No.	Representative	Common parameters for all sectors	Sector specific parameters
1.	Urban Local Body	Awareness about the Project Perception about the proposed development : Beneficial / Harmful Possible benefits Possible hazards Impact on economy of Phuentsholing Planning Area and surrounding area and the nation. How? Expectations from the project Suggestions about the Project.	General information about the urban local body/non-govt. agency / organization etc. <ul style="list-style-type: none"> • Its area of work / influence • Socio-economic understanding of the population • Housing typology • Prevalent schemes and source of funding • Prevalent health and education facilities • Future plan and challenges faced
2.	Government agencies/ Other stakeholders or representatives of organizations		General information about the institution <ul style="list-style-type: none"> • Number of persons / population / beneficiaries under the institution • Details about the service provided • Prevalent schemes and source of funding • Challenges faced under the current situation
3.	Real Estate Developers		General information about the institution <ul style="list-style-type: none"> • Number of persons under the institution • Details about the service provided • Prevalent schemes and source of funding • Challenges faced under the current situation • Preferred Development (Residential and commercial) Typology • Mode of reach • Challenges
4.	Indian Day Worker in Phuentsholing		General information about the person <ul style="list-style-type: none"> • Since how long working in Bhutan • Place of work in Bhutan & sector of work • Type of work • Whether family is staying along or staying elsewhere. • Daily Commute Distance & daily expenditure for travel • Monthly Income • Family size • Reasons of working in Bhutan rather than in India • Challenges faced as an outsider Existing work situation in Phuentsholing with reference to availability salary & discrimination



5.	Bhutanese living in Jaigaon		<ul style="list-style-type: none"> • General information about the person • Average Duration of stay and reasons for staying in Jaigaon • Number of Bhutanese families staying in the area • Total families / population in the area • Average family size • Main Occupations of Male and female • Place of work • Daily Commute Distance • Daily expenditure for travel • Average Family Income • Housing, typology and Services • Proximity to services & institutions • Cost & rent of housing • Existing challenges in Phuentsholing pertaining to housing and infrastructure • Reasons for migration to Jaigaon & challenges faced as an outsider
6.	People living in Phuentsholing		<ul style="list-style-type: none"> • Socio economic • Occupation of male and females • Family Income • Family size • Housing and infrastructure • Housing typology • Access to basic social infrastructure • Ownership of house • Cost of housing • Prevailing housing rents • Willingness to avail better housing • Willingness to pay higher rent or purchase cost for better housing and infrastructure • Affordability to purchase or rent new house • Range of cost of purchase or rent for better housing in percentage • Source of fund for purchasing new house • Sensitization of all Stakeholders about the Project • Identification of stakeholders • Developing tools for • Reasons for migration to Phuentsholing from their native Dzongkhags
7.	Focus Group Discussions with Bhutanese living in Jaigaon		<p>Additional variables besides those for focus group discussion for people in Phuentsholing, covered for Bhutanese families living in Jaigaon</p> <ul style="list-style-type: none"> • Reasons for residing in Jaigaon & problems faced as an outsider

4.4 Stakeholder consultations

The initial consultation with stakeholders was done on December 25, 2015 to ensure that the proposed design at the inception stage is approved by stakeholders of various sectors such that they do not feel threatened about the changes that would take place due to the Project.

The meeting was organized by DHI-INFRA and there was representation of stakeholders from various government, corporate and private sector. The details of the Project were shared and its importance for the town and residents of Phuentsholing were laid out. The Project would bring in benefits which include job opportunities, commercial enterprises and increase in land value, to name a few.

The briefing of the Project was followed by presentation on the inception report for the IDPR of the Project. The question and answer session later helped the stakeholders to share their concerns and opinions for which, justifications were provided by DHI-INFRA and HCPDPM. The major issues raised were pertaining to housing needs at Phuentsholing and Bhutanese living in Jaigaon, security concerns as the town of Phuentsholing shares its border with India, soil bearing capacity since the Project area falls under high seismic zone, requirement for a thorough geo-technical study and material to be used for land filling, etc.

The stakeholders were assured of addressing their concerns and incorporating their suggestions in the IDPR.

Once the Draft Integrated Detailed Project Report - Draft IDPR is prepared, the consultation will be carried out with the people of surrounding area to seek their feedback and opinion about the design. The consultation will also develop an understanding about the availability of sufficient land and other resources to sustain additional population during the construction stage. And also to see that this influx does not put pressure on local resources that the host population may resent. The other important thing to see is that the people coming to reside in new development and the hosts are socially from a similar socio-cultural background. The similarity in background helps greatly reduce social/ethnic frictions.

5 Carrying out Scoping of Social Impacts

This chapter describes the process of Scoping carried out in the field. The CEQ regulations (40 CFR 1501.7) defines scoping as any early & open process for determining the scope of the issues to be addressed & for identifying significant issues related to a proposed action. Scoping is part of the public involvement plan & is an important part of providing information to the public, as well as getting information from them. Scoping is carried out in consultation with people and through public participation process.

The Scoping involved repeated visits to the project site and consultation with stakeholders. It was important to confirm people's understanding of key issues. The local/ indigenous knowledge is invaluable in finding alternatives that help avoid or at least reduce the magnitude and severity of adverse impacts, if any. It helped in identifying all the issues and affected groups to get 'all the cards on the table'.

Scoping helped in deciding the scope of the Project i.e. to identify the possibility of impact in consultation with various stakeholders. Primary data collection methods adopted for this Project were Focus Group Discussions with general public and One-to-one interventions with various stakeholders including individuals representing various groups of people for confirming their understanding about the key issues involved in Project development.

Along with the scoping through primary data, secondary data collection and analysis is done to draw inferences about demographic and economic conditions of society.

5.1 Primary data collection in the field

The primary data collection was carried out through:

- 1) One to one interactions with identified stakeholders including individuals representing various groups of people and
- 2) Focus Group Discussions with general public in Phuentsholing and Jaigaon.

The reference period for the Primary data collection was November 2015 to March 2016. During November 2015 few sample one to one interventions and Focus Group Discussions were carried out



as part of the inception report which served as pilot study for the Social Impact Assessment. The pilot study helped in verification of the data collection tool in the field. After the pilot study, the interview schedule used for the same was revised and few more specific schedules were developed for various categories of the stakeholders.

Appointments were taken with the stakeholders with the help of DHI-INFRA, for one-to-one interactions. The reference period for data collection got delayed than planned, as some of the respondents were not available during the planned period.

The focus group discussions were conducted with groups from Phuentsholing and Jaigaon and at times it was difficult to gather people for discussion as during day-time, people usually go for work.

While making list of respondents for the primary data collection, care was taken to get representation from all the fields and people relevant to the project.

Since the primary data collection began with the sensitization of stakeholders, they could express their opinion about the project and their perception of the same, which is important in the context to check the viability of the project and getting support from the stakeholders.

Other than the formal methods of data collection the SIA team visited Changjiji Housing colony at Thimphu, in order to understand the existing situation pertaining to social housing and rules for human settlement. The details of visit as under:

Visit to Changjiji Housing Colony

Changjiji Housing Colony was built by NHDCL for people from Low Income Group as part of Social Housing with the first phase of the Project completion in the year 2002. A total of 676 apartments in the housing complex were built at the cost of Nu. 470 million and fully occupied by the year 2006.

A total of three focus group discussions were conducted in the area on March 15, 2016 to understand the socio-economic conditions of the people living there. Two focus group discussions were conducted with the residents of the colony. The following emerged from the discussions and observations:

- The housing colony houses people working in different government departments, mostly working in lower grades. Their average salary ranges between Nu. 10,000/- to Nu. 15,000/- and Nu. 15,000/- to Nu. 20,000/- based on their seniority.
- Most of the people in the housing colony are living there since last 10-13 years.
- The housing typology is Ground + 1 floor having 8 residential units and Ground + 2 floors having 12 residential units.
- Each house has 2 bedroom+1 living room + 1 kitchen + 1 toilet bathroom and 1 balcony. However, there are two different sizes of the rooms. The rent for the smaller size unit is around Nu. 2,500-3,000 and the bigger unit is Nu. 3,500.
- The housing colony has good amount of open space, recreational ground, religious place, parking area, daily needs shops in the vicinity.
- The school and the basic health unit are also close by.
- The thromde has waste collection facility three times a week wherein non-degradable waste is collected once a week and degradable waste is collected twice a week.
- Nu. 100/- is deducted from each allottee's salary living in the colony and contributed towards the sweeping and cleaning of the roads in the colony.
- The 3 R's of waste management 'Reduce, Reuse and Recycle' are operational in the colony.
- The new regulation is that people living in the quarters in the colony since last 10 years or more should vacate their houses and move somewhere else; however, it has not been implemented so far.
- There is limited water supply in the colony. The water comes every alternate day for 1 hour only. There are issues of hygiene and sanitation in the area as there is no proper sewage drainage system. Frequent cases of theft are there.

Another focus group discussion was conducted with the residents of the neighbouring colony. They discussed the following:

- They were born and brought up in the area, so were living there since more than 30 years.
- Some of the land in the area belonged to them and as the government bought the land for the housing colony, the price they got was really less.

- As the residents of the colony are all from lower income group few incidences of theft have taken place in near past which was not reported in police.

The SIA team also had a meeting with Chief Urban Planner (Officiating Director), Department of Human Settlement, Ministry of Works & Human Settlement, Thimphu on March 16, 2016.

The following points / issues were discussed during the meeting:
Briefing the **chief urban planner** (Offg. Director) Department of Human settlement, about the Project and the various studies that are being carried out to ensure the feasibility of the Project.

The suggestions which emerged from the discussions included that the master plan for the proposed township Project shall adhere to the following policies and documents. If needed special provisions or amendments can be made in the policies or acts to fulfil the purpose of the Project.

- Human Settlement Policy
- Planning Standards
- Development Control Regulations
- Road Master Plan
- Though not applicable in this case as the land belongs to the government, but Land Pooling Rules 2009.

With reference to the Social housing, the provision for the formal/informal settlements made by the government in Thimphu, wherein the class IV workers like sweepers are allowed to build shelter on the land provided by the government and are provided with facilities for drainage, water, electricity, etc. was shared by the chief urban planner (Offg. Director) Department of Human settlement.

5.2 Glimpses of primary data collection on field: One-to-one interactions:



Fig. 5.1 Project Coordinator: RIGSS (Source: HCP)



Fig. 5.2 General Manager: Consumer Division, Tashi Commercial Corporation (Source: HCP)



Fig. 5.3 Indian Day Worker: Trade License Holder, Phuentsholing Market (Source: HCP)



Fig. 5.4 Bhutanese staying in Jaigaon: Service Industry, Hotel Damchen (Source: HCP)

Focus Group Discussion



Fig. 5.5 Surrounding areas: Kabreytar (Source: HCP)



Fig. 5.6 Truck Parking (Source: HCP)



Fig. 5.7 Surrounding areas: Rinchending (Source: HCP)



Fig. 5.8 Chinese Lane (Source: HCP)

6 Profile of the respondents

This chapter gives an overview about the profile of the respondents who had been intervened for the primary data collection through One to One Interactions and Focus Group Discussions. The respondents have been distributed in to six different categories for the purpose of data analysis. The distribution of respondents / participants is given in table below:

Table: 6-1 Distribution of respondents/participants

Category	Urban Local Body	GO/NGO	Developers	Indian Day Worker	People of Pling	Bhutanese in Jaigaon	Total
No of respondents	7	34	2	5	143	28	219

Out of the 59 respondents of one to one interaction 7 represent Urban Local Bodies, 34 represent Government or Civil Society Organisations (21 Government and 13 Civil Society), 2 represent Real Estate Developers and 5 represent Indian Day workers. The remaining 11 represent the Bhutanese people living in Jaigaon.

Out of 27 focus group discussions 23 are done in Phuentsholing and surrounding area while 4 are done with Bhutanese citizens residing in cross border town Jaigaon.

The total number of participants in the focus group discussions done in Phuentsholing is 143 which have been considered for the purpose of the analysis.



In the same manner the number of participants of focus group discussions done in Jaigaon is 17 which combined with the 11 individuals covered through one to one interaction has been considered for the purpose of the preparation of profile and analysis.

The section below discusses the socio-economic profile of various respondents.

6.1 Urban local bodies

Urban local bodies comprise of the authorities in the local administration. These include the Dzongda, Dungpa, Thrompon, Gup, Gewog Administrative Officer, Tshogpa and Urban Planner of the Dzongkhags of Samtse and Chukha (Phuentsholing Town and Rural Area). The opinion and views of these representatives of the administration are valuable for the Project as they are aware of the local issues and situation and can give important information and data pertaining to social impact assessment.

Table: 6-2 Profile of the respondents from Urban Local Bodies (arranged in alphabetical order):

Urban Local Body									
Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographical Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
1	Chief Urban Planner	Phuentsholing Thromde (City Corporation)	Phuentsholing	Basic Services, General Health, Reproductive & Child Health, Agriculture Promotion, etc.	Phuentsholing	3,0000 population	Road, sanitation, water supply, solid waste, education, etc.	NA	NA
2	Dungpa	Pling Drungkhag Administration Office (Ministry of Home and Cultural Affairs)	Phuentsholing	Basic Services, General Health, Reproductive & Child Health, Agriculture Promotion, etc.	Phuentsholing	3,0000 + 15,000 floating population	Insurance, land records, education, etc.	NA	NA
3	Dzongda (Samtse)	Samtse Dzongkhag Administration (Ministry of Home and Cultural Affairs)	Samtse	Basic Services, General Health, Reproductive & Child Health, Agriculture Promotion, etc.	Samtse	62,000 population	Provision of basic and developmental activities.	Financial constraints for implementing plan works.	NA
4	Gewog Administrative Officer	Phuentsholing Gewog	Phuentsholing	Basic Services, General Health, Reproductive & Child Health, Agriculture Promotion, etc.	Phuentsholing rural area	7136 population	Provision of water, electricity, education, health, road connectivity, agriculture, livestock, forestry, seed, etc.	Funds and manpower	NA
5	Gup	Phuentsholing Gewog	Phuentsholing	Basic Services, General Health, Reproductive & Child Health,	Phuentsholing rural area	7135 population	Provision of water, electricity, education, health, road connectivity,	Funds and manpower	NA



Urban Local Body									
Sr. No	Designation	Department / Institution	Place	Area of Work	Geographical Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
				Agriculture Promotion, etc.			agriculture, livestock, forestry, seed, etc.		
6	Thrompon	Phuentsholing Thromde (City Corporation)	Phuentsholing	Basic Services, General Health, Reproductive & Child Health, Agriculture Promotion, etc.	Phuentsholing	3,0000 population	Road, sanitation, water supply, solid waste, education, etc.	NA	NA
7	Tshogpa	Tithering, Tading Gewog	Phuentsholing	Basic Services, General Health, Reproductive & Child Health, Agriculture Promotion, etc.	Samtse	7,000 population	Provision of water, electricity, education, health, road connectivity, agriculture, livestock, forestry, seed, etc.	Funds	NA

6.2 Government and Civil Society Organisations

Representatives from various government and civil society organizations were taken as respondents to understand their views and perception about the project. Interaction with them also helped in knowing their sector-wise issues and needs for bringing improvement in their sector. Some of their suggestions could also be incorporated in the Project design.

Table: 6-3 Profile of the representatives from government and civil society organizations (arranged in alphabetical order):

Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographic Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
1	Administration Officer	Phuentsholing General Hospital (Ministry of Health)	Phuentsholing	General health	Chukha and nearby districts/dzongkhags	10,000 & more people covered	General medicine, dental, physiotherapy, gynaecology treatment	Specialists are not available, beds are less, requirements of 3 times more doctors than available in Bhutan	More doctors and specialists are needed.
2	Assistant Immigration Officer	Immigration	Phuentsholing	Immigration	Phuentsholing; permit for Paro & Thimphu	1,000 plus inflow every day during summers and 400 plus in winters. 60974 short term and 56882 work permit during 2015.	Visa clearance, entry permit free for Indians, day worker permit, tourist permit, business permit & work permit issuance.	Currently space & manpower is less but after renovation of office, it would be fine. Scarcity of finance, equipment, staff and difficulty in identifying genuine Indian tourists.	NA

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographical Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
3	Chief Executive Officer	Bhutan Association of Women Entrepreneurs	Thimphu	Women entrepreneur's association	Bhutan	1200 beneficiaries, 70 entrepreneurs in Thimphu	Women micro-entrepreneurs at village level are provided funds & training to start business. Credit cooperative society giving loan. Facilitate in marketing products through stalls.	Funds are scarce, changing mind-set of people is difficult, social mobilization, and some activities are geographically not feasible.	NA
4	Commissioner	Gross National Happiness Commission, Thimphu	Thimphu	Commission on Gross National Happiness (GNH)	Bhutan	NA	Planning agency which aids to mainstreaming of principles of GNH, allocation of resources based on 5 year plans and programmes, indicators of GNH are integrated in various plans and policies are screened to make them GNH friendly. At present there are 40 policies.	Difficult to pursue the goals with changing times.	NA

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographic Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
5	Consul General Of India	Consulate General of India	Phuentsholing	Indian Consulate	Chukha, Samtse and Dagana	NA	Help Indians for passports, registrations, etc. Try to sort out issues of permits for Indians in Phuentsholing. Identifying illegal immigrants and people doing anti-social activities. Issuing letter to Bhutanese if needed.	Hard to trace & maintain database of exact day labour. Verifying nationality with fake IDs is difficult.	NA
6	Ex. Engineer	Department of Road Works & Human Settlement)	Phuentsholing	Road construction and maintenance	Chukha and Samtse: 600 km.	NA	Acquiring land for up-gradation of all the national highways; building roads and highways; completion & Maintenance of Inter-Dzongkhag Connectivity roads; Construct and Maintain Dzongkhag roads to desired level of Serviceability; shorten the highways to reduce Travel Time & Vehicle	Budget restrictions, land is limited, raw material of good quality is not available.	Better road connectivity, more funds to finish projects, better drainage system, and flyovers needed.

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographic Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
							Operating Costs; etc.		
7	Executive Director	Respect, Educate, Nurture, Empower Women - RENEW	Thimphu	Women empowerment services in finance, art & handicraft promotion & protection.	Bhutan except two gewogs where there are no volunteers	Helped 10,000 women so far	Counselling, legal aid, micro-finance for agriculture, school fees, etc. Scholarship from Australia. Domestic violence & gender equality, capacity building for volunteers.	Funds are scarce	Shelter being prepared in Pasakha, space for handicraft and manufacturing unit.
8	Foreign Workers Recruitment Agent	Private / Government employee	Phuentsholing	Recruitment agency	Phuentsholing	3,000-4,000 annually	Supply labour to contractors and facilitation in getting work permit like medical tests, hospital checking, immigration office, etc.	Doctors' available time is limited for work permit clearance, no association to represent to the government, net connectivity.	One doctor should be designated for whole day for immigration or work permit cases.
9	Gen. Manager	Tashi Commercial Corporation - Consumer division	Phuentsholing	FMCG Trading	Overall 6 in Bhutan	Catering to entire Bhutan through 6 branches	FMCG trading-distribution of products imported from India across Bhutan. Have godown of size 3,0000 sq. ft.	Competition in market, qualified manpower and space.	Need space for free movement.

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographical Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
10	General Manager	Royal Insurance Corporation of Bhutan, Phuentsholing, Chukha	Phuentsholing	Insurance	Bhutan	70% people take general insurance	Insurance and credit policies, insurance for fire, earthquake, floods, health and life. Loans against mortgage for housing and renovation.	Market is saturated, sustainability issues. People do not save but spend more on automobiles.	Have land near project area and are eager that the wall is built to prevent flooding.
11	General Manager	Hotel Damchen	Phuentsholing	Hotel: Hospitality industry	Phuentsholing	NA	21 rooms, bar, restaurant	Manpower, data of quality manpower is missing, starting salary is good but growth is not there.	Better quality manpower.
12	General Secretary	Phuentsholing Sports Association	Phuentsholing	Sports association	Phuentsholing	NA	Open to all for different competitions, coaching for various sports, coaching for youth in vacations.	Infrastructure and space, hilly area, funds, trained coaches.	Sports activities in evenings will help in reducing addiction, etc.
13	General Secretary	Association of Bhutanese Industries	Phuentsholing	Civil Society Organization for Industries	Bhutan	53 members from various industries	Liaison between government and industries, advocacy to government for industrialists.	Inconsistent policies, power tariff, labour, transport, etc.	Solve constraints through communication, revise economic development policy.

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographical Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
14	General Secretary	Bhutan Exporters Association	Phuentsholing	Export	Bhutan	120 members	All kinds of exports, food items, minerals, cash crops, herbs and spices. Bridging the gap between government and exporters. Security provided at night at orange auction yard.	Electricity rate is too high, mining policy is restricted, agricultural produce is going down, fire hazard at the yard is a possibility, students do not work full time but have to pay them for entire month.	Networking with international market, favourable government policy, cold storage facility is a necessity.
15	In Charge	National Pension & Provident Fund, Chukha	Phuentsholing	Pension & provident fund	Chukha and Samtse	4300 for two districts	Social security system for old age, loan on PF for housing or education.	Delay in contributions from different sectors. Only one company in population of 7 lakhs	NA
16	Liaison Officer	National Housing Development Corporation Ltd.	Phuentsholing	Housing	Phuentsholing	Houses given on rent to the government servants on first-cum-first-serve basis. Tender is given to Bhutanese contractors for construction.	Construction of houses in Phuentsholing and have a goal to bring Bhutanese living in Jaigaon back. Construction is done for various classes of government employees. Rent is collected and maintenance is done by the	Demand is more, budget is less and land is scarce	Dignity of labour to be taught to Bhutanese people to have more job opportunities and vocations especially in construction sector.

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographical Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
							company NHDCL.		
17	Medical Officer I/n	Phuentsholing General Hospital (Ministry of Health)	Phuentsholing	General health	Chukha and nearby districts/dzongkhags	10,000& more people covered	General medicine, dental, physiotherapy, gynaecology treatment	Specialists are not available, beds are less, requirements of 3 times more doctors than available in Bhutan	More doctors and specialists are needed.
18	Officiating Director	Royal University of Bhutan, College of Science and Technology	Phuentsholing	Engineering college	Students from whole of Bhutan	821 students	Education in civil, electrical, electronics and communication, information technology and architecture branches is available. Government sponsorship for meritorious students. Hostel facility.	Good faculty, space for expansion.	Need space for expanding the institute.
19	Officiating GM	Bank of Bhutan	Phuentsholing	Banking	Phuentsholing	NA	Savings, loan, internet banking, ATM, etc.	Saving pattern is low	Policy level decisions for housing loans, 5 banks for 7 lakh people so no marketing services.

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographic Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
20	President	Jaigaon Merchant's Association	Jaigaon	Merchants Association	Jaigaon	600 members & 500-600 unregistered members	Information about taxation, registration & system. Also help traders in Phuentsholing on humanitarian grounds. Advocacy with government.	Labour problem as wages are more in Phuentsholing. Only Bhutanese can do business in Phuentsholing.	Would like to invest in the project area if there is an open invitation.
21	Principal	Department of School Education of Higher Secondary School (Ministry of Education)	Phuentsholing	Higher Secondary Education	Phuentsholing, Pasakha and Jaigaon	1100 students	Education, cultural activities, games, subject clubs, etc.	Space constraints and teachers at higher level.	More schools to enrol all the children
22	Principal	Middle Secondary School (Ministry of Education)	Phuentsholing	Middle Level/ Secondary Education	Phuentsholing, Pipaldara and nearby areas. Also Jaigaon	1040 students	Education, vocation/ skill clubs, sports, meditation and yoga activities, etc.	Space constraints especially for sports activities and teachers with specialization, budget for multi-purpose hall, more classrooms and toilets needed.	More schools. Good separate primary school with all facilities.
23	Project Coordinator	RIGSS (Royal Institute of Governance)	Phuentsholing	Educational Institute for Government Staff	Bhutan	Admissions are open and there are eligibility criteria for	Training programmes- it is a Leadership Development Institute:	Dependence on State by public/civil servants- sense of complacency,	Merit to be the criteria for promotion, awareness for holistic

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographic Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
		and Strategic Studies)				scholarships . Army too nominates their staff.	Governance & Strategic Studies for intelligent governance. Programmes are designed to promote a common national vision. Short term courses, policy re-thinking, promoting economy and values, etc.	performance is not the criteria for promotion, youth unemployment.	approach needed, policy decision to solve unemployment problem and change the mind-set of youth by discussion between government and business.
24	Range Officer	Ministry of Agriculture and Forest, Dept. of Forests	Phuentsholing	Nature conservation	Tala, Phuentsholing, Samtse & Samtheling	NA	Wild life & nature conservation- flora & fauna, biological corridor made to help free movement of animals protected under act.	Encroachment, killing of animals, cutting trees etc. is there but managed well due to good network & punishment given as scheduled in Act. Lack of awareness.	Need to educate & expose local people for conservation of nature & forests/ wildlife. Incentives can be given, new plantation can be done.
25	Regional Director	Department of Labour (Ministry of Labour and Human Resources)	Phuentsholing	Labour problems & employment	Samtse & Chukha	30% Bhutanese and 70% Indians in blue collar jobs.	Creating awareness about laws amongst employees, training, grievance redressal, job portal.	Bhutanese not willing to do blue collar jobs, need own office, net connectivity, infrastructure, response from people for jobs advertised.	Give new job trainings, skill upgradation, modules need to be revised & revived, good linkage with industries.

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographic Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
26	Regional Director	Regional Revenue and Customs (Ministry of Finance)	Phuentsholing	Tax and customs	Chukha district	6,000-7,000 tax payers	Collection of direct & indirect taxes, goods routed through the department, have a network of informers to verify tax payers and importers.	Less space for trucks, connectivity is an issue as the office is away from the gate, less staff and no holidays hence people have to work in shifts.	NA
27	Regional Director	Regional trade and Industry office (Ministry of Economic Affairs)	Phuentsholing	Trade industry &	Phuentsholing, Samtse and Pasakha	NA	Issuance, renewal and cancellation of license, advocacy, advisory, workshops for business firms, facilitate for land agreement, monitoring & regulation of business, revenue collection.	Understaffed, monitoring is difficult especially in other districts like Samtse.	Good database system needed, government to citizen system, net connectivity and research & development.
28	Regional Director	Road Safety & Transport Authority	Phuentsholing	Traffic Department	Chukha & Samtse Dzongkhags	30-40 thousand vehicles	It is a regulating body; buses are run by private company, Registration of vehicles, licenses, route planning & road safety. Awareness programme,	Traffic jams, no space to expand, problem of old vehicles.	Multi-level car parking

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographical Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
							campaigns refresher trainings for drivers-commercial & private, routes fares, safety, and frequency is monitored.		
29	Regional Director	Tourism Council of Bhutan	Thimphu	Tourism	Bhutan	11 members on board chaired by the Prime Minister and 100 people as staff members.	Setting policies, promoting destinations, plans & policies for tourism. Infrastructure development of public conveniences, camp sites, etc. on Bhutanese theme.	Funds, manpower is outsourced.	Domestic tourism to be encouraged, Promote MICE (Meeting, Incentive, Convention & Event) tourism. Strengthening office in Phuentsholing & working with immigration office to ease policies & regulations.
30	Regional Secretary	Bhutan Chamber of Commerce and Industry, Phuentsholing	Phuentsholing	Representation, advocacy for private sector	Chukha & Samtse Dzongkhags	1,000 paid members	Advocacy with the government, loan given to private sector in liaison with the bank, networking and catering services to all the sectors.	Approvals take a lot of time, power tariffs are too high.	NA

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographic Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
31	Representative of PLO	Private Land Owners (LAP)	Phuentsholing	Association for Private Land Owners	NA	NA	Facilitate interaction between business holders and corporation/chamber, work on policy intervention.	Space availability, housing crunch, land prices are going high.	NA
32	Sr. Programme Officer, Offg. Secretary General	Tarayana Centre, Tarayana Foundation	Thimphu	Women empowerment services in finance, art & handicraft promotion & nature & heritage conservation.	301 villages in 15 districts	25,000-3,0000 beneficiaries	Improved housing, Self-help group for economic activities, savings, ECCD for children, green technologies, scholarship programme for girls for university education, micro-finance credit, surgery, advocacy, awareness for health, handicrafts, etc.	Capacity building of young staff, funds and resources	NA

SIA for Amochhu Land Development and Township Project



Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographic Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
33	Unit Manager	Natural Resources Development Corporation Limited	Phuentsholing	Natural Resources	Chukha, Samtse and Dagana	2-3 contractors collect 300 trucks of sand per month.	Natural resources like sand, boulders, timber, etc. are supplied to people for construction at affordable cost-surface collection (nothing is dug up). Pricing committee decides the price. Liaisoning with all offices & headquarter.	Supply is less than demand, illegal sand collectors are a problem	NA
34	Volunteer	Respect, Educate, Nurture Empower Women RENEW	Phuentsholing	Women empowerment services in finance, art & handicraft promotion & protection.	Volunteers across Bhutan	100 members	Helping women facing domestic violence, couple and family counselling, help also provided through women & child protection cell in police, sensitization done, help in sectors of health, legal aid. Shelter for women in planning phase.	Threat to life, no special office space for volunteers to work	Awareness programmes are being done, which should be there on continuous basis.

6.3 Real Estate Developers

Representatives of Real Estate Developers were selected as respondents to understand their views and perception about the project. Interaction with them also helped in knowing the market demand in terms of unit size and cost.

Table: 6-4 Profile of the respondents in the category of Real Estate Developers (arranged in alphabetical order):

Sr. No.	Designation	Department / Institution	Place	Area of Work	Geographical Coverage	Number of People Covered	Details of Services	Challenges	Suggestions for improvement
Real Estate Developers									
1.	Estate Manager	Tashi Real Estate Pvt Ltd.	Phuentsholing	Real Estate Developer	Bhutan	NA	Land given for building of hotels, shopping malls, commercial complexes, etc. Land use survey, license clearance is done & given to developers.	Boundary problems during land use survey. Long procedure to process land acquisition, permission required from all adult family members for buying land.	Ready for developing residential township only if land can be purchased.
2.	GM Finance	Tashi Commercial Corporation	Phuentsholing	Real Estate Developer	Bhutan	NA	Shopping mall project at Thimphu, housing in Phuentsholing only for their own staff.	Law permits buying of property but people prefer to take houses on rent	NA

6.4 Indian day workers

The profile of the representatives of the Indian day workers is as follows:

- Number of one to one interactions: 5

A large number of Indian people approximately 5,000 come to Phuentsholing on daily basis for work. Indian day workers form a major part of floating population at Phuentsholing. It is important to take their views into consideration since they contribute to the economy.

They mostly work in construction sector, service and hospitality sector, clerical and technical work in private offices. As they play a major role in Bhutan's economy and growth, they have been included as stakeholders for the purpose of this study. The profile of the respondents covered under this category is discussed in following tables:

6.4.1 Duration of working in Bhutan:

This section analyses the duration of working in Bhutan as reported by the respondent.

Table: 6-5 Duration of working in Bhutan

Duration of working in Bhutan		
	Frequency	Percentage
Less than 10 years	0	0
10 -20 years	3	60
21-30 years	0	0
31-40 years	0	0
41-50 years	1	20
51 years & above	1	20
Total	5	100

The above table shows that majority i.e. 60% of the respondents are working in Bhutan since last 10-20 years followed by 20% each who are working since last 41-50 years and 51 years and above. This shows that Indian workers are either working or doing business in Bhutan and even their ancestors were doing the same.

6.4.2 Place of work in Bhutan

This section shows the place where the Indian workers work.

Table: 6-6 Place of work in Bhutan

Place of work in Bhutan		
Place of work	Frequency	Percentage
Phuentsholing	4	80
Whole of Bhutan	1	20
Total	5	100

The above table shows that majority i.e. 80% of the respondents work in the area of Phuentsholing whereas rest 20% work in whole of Bhutan.



6.4.3 Work area or sector of work

This section shows the sectors where the Indian workers work.

Table: 6-7 Sector wise distribution of respondents

Work area (sector)		
Work area (sector)	Frequency	Percentage
Business	1	20
Labour	1	20
Contract	1	20
Private Office	1	20
Service Industry	1	20
Total	5	100

The above table shows that respondents were selected from different sectors to get views from people working in different sector. The equal number of respondents i.e. 20% each work in business, labour, contract work, private office and service industry sector.

6.4.4 Type of work

This section shows the type of work in which the respondents are engaged.

Table: 6-8 Type of work wise distribution of respondents

Type of work		
Type of work	Frequency	Percentage
Shop	1	20
Labour	1	20
Service	1	20
Technical	1	20
Any Other	1	20
Total	5	100

The above table shows that while selecting respondents from different sectors, care was taken to select respondents doing different category of work. Equal number of respondents i.e. 20% each own a shop, work as labourer, do contract work, work as a technician in private office and in hotel i.e. service industry sector.

6.4.5 Daily commute distance

This section gives information about the average commuting distance the respondents travel for work.

Table: 6-9 Average daily commute distance

Daily commute distance		
Daily Commute Distance	Frequency	Percentage
Nil	1	20
Upto 2 Km	1	20
3-6 Km	2	40
7 Km and more	1	20
Total	5	100

The above table shows that the daily commute distance for work for majority of respondents i.e. 40% is from 3-6 km. There are 20% each of respondents who travel less than 3 km. who commute for more than 7 km. and who walk down to work.



6.4.6 Daily Expenditure for travelling to work

This section gives information about average expenditure on travelling for work by an Indian day worker working in Bhutan.

Table: 6-10 Average daily expenditure on work related travel

Daily expenditure for travel		
Daily expenditure for travel in INR	Frequency	Percentage
Nil	1	20
5-10	3	60
11-15	0	0
16 and more	1	20
Total	5	100

The above table shows that majority of the respondents i.e. 60% spend Rs. 5-10 towards their daily expenditure for travel followed by 20% each who spend Rs. 16 & more or Nil towards their daily expenditure for travel.

6.4.7 Monthly income of the respondents

This section gives the understanding about the monthly income of Indian day workers working in Bhutan.

Table: 6-11 Monthly Income of the respondents

Monthly income of the respondents		
Monthly Income	Frequency	Percentage
Upto 10,000	2	40
10,001-20,000	2	40
20,001 & more	1	20
Total	5	100

The above table shows that majority of the respondents i.e. 40% each earn up to Nu. 10,000 and between Nu. 10,001-20,000 followed by 20% earning Nu. 20,001 & more.

6.4.8 Family size of the respondents

This section gives the understanding of the family size of Indian day workers working in Bhutan.

Table: 6-12 Family size of the respondents

Family size of the respondents		
Family size	Frequency	Percentage
1-2 Members	0	0
3-4 Members	3	60
5-6 Members	2	40
6 and more	0	0
Total	5	100

The above table shows that majority of the respondents i.e. 60% have family size of 3-4 members followed by 40% who have a family size of 5-6 members.



6.4.9 Average monthly family income of the respondents

This section gives the understanding of the monthly family income of Indian day workers working in Bhutan.

Table: 6-13 Average monthly family income of the respondents

Average monthly family income of the respondents		
Average Family Income	Frequency	Percentage
Upto 10,000	1	20
10,001-20,000	3	60
20,001& more	1	20
Total	5	100

The above table shows that majority of the respondents i.e. 60% have an average family income from Nu. 10,001-20,000 followed by 20% each who have a family income up to Nu. 10,000 and Nu. 20,001& more.

6.4.10 Reasons for working in Bhutan rather than in India

This section gives the reasons for the respondents to work in Bhutan.

Table: 6-14 Reasons for working in Bhutan

Reasons for working in Bhutan rather than in India		
Reasons	Frequency	Percentage
Remuneration	0	0
Availability of work	4	67
Any other	2	33
Total	6	100

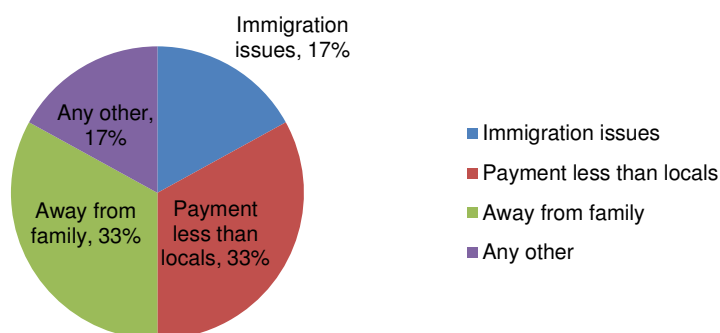
The above table shows that majority i.e. 67% of the respondents work in Bhutan only because there is availability of work followed by other reasons which include family business and avoiding relocation.

6.4.11 Challenges faced as an outsider

This section gives an understanding about the challenges the Indian day workers have to face while working in Bhutan.

Table: 6-15 Challenges faced by Indian Day workers

Challenges faced as an outsider		
Challenges faced	Frequency	Percentage
Immigration issues	1	17
Payment less than locals	2	33
Away from family	2	33
Any other	1	17
Total	6	100





Graph 6-1. Challenges faced by Indian workers working in Bhutan

The above table and graph show that majority i.e. 33% each of the respondents shared that the challenges they face are that they are paid less amount than the local people and they have to stay away from their families for their work. This is followed by 17% each facing immigration issues and

6.4.12 Method of getting work

This section gives understanding about how the Indian workers get work in Bhutan.

Table: 6-16 Method of getting work in Bhutan

Method of getting work		
Method to get work	Frequency	Percentage
Contractors	0	0
Agents	0	0
Direct	5	100
Total	5	100

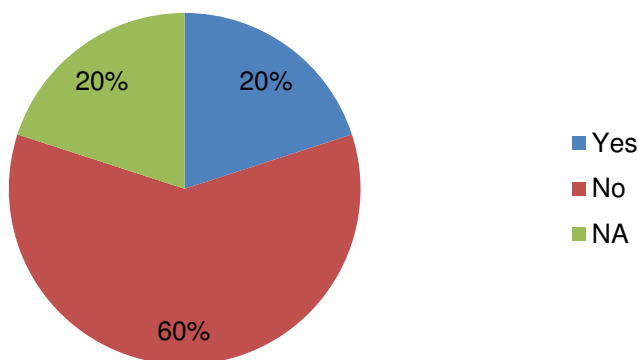
The above table shows that all 100% of the respondents get work directly and there are no contractors or agents involved.

6.4.13 Whether respondents have to pay commission to get work

This section gives an understanding if the Indian workers have to pay commission to get work.

Table: 6-17 Whether respondents have to pay commission to get work

Whether respondents have to pay commission to get work		
Whether pay commission	Frequency	Percentage
Yes	1	20
No	3	60
NA	1	20
Total	5	100



Graph 6-2. Whether respondents have to pay commission to get work

The above table and graph show that majority i.e. 60% of the respondents do not have to pay commission to get work followed by 20% each who have to pay commission and to whom the question does not apply.

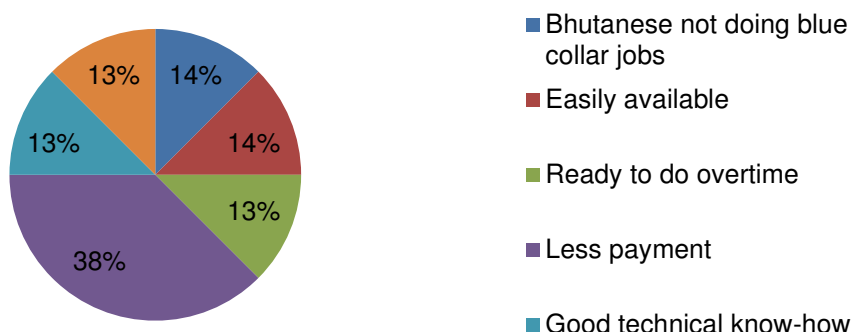


6.4.14 Reasons of preference to Indian workers than Bhutanese workers by employers

This section gives an understanding of reasons of preference to Indian workers than Bhutanese workers by the employers in Bhutan.

Table: 6-18 Reasons of preference to Indian workers than Bhutanese workers by employers

Reasons of preference to Indian workers than Bhutanese workers by employers		
Reasons for preference Indian workers	Frequency	Percentage
Bhutanese not doing blue collar jobs	1	12.5%
Easily available	1	12.5%
Ready to do overtime	1	12.5%
Less payment	3	37.5%
Good technical know-how	1	12.5%
NA	1	12.5%
Total	8	100



Graph 6-3. Reasons for preference to Indian workers

The above multiple response table and graph show that 38% of the respondents informed that the Bhutanese employers prefer Indian employees as they have to pay them less. The next four reasons given by the 12 % of the respondents for each reason for the preference given to Indian workers were Bhutanese people do not prefer doing blue collar jobs, Indian people are easily available, Indian workers are ready to do overtime and they have good technical know-how. The question was not applicable to 13% of the respondents.

6.4.15 If any kind of discrimination is faced in employment

This section gives and understanding if the Indian workers face any kind of discrimination at work

Table: 6-19 Discrimination is faced in employment

If any kind of discrimination is faced		
Discrimination faced	Frequency	Percentage
Yes	5	83
No	0	0
NA	1	17
Total	6	100

The above multiple response table shows that 83% of the responses where the respondents face discrimination at work. The question was not applicable to 17% of the respondents.

6.4.16 If they are covered under social security and other legislations at work place

This section gives an understanding if the Indian workers are covered under any social security legislations at work place



Table: 6-20 Social security coverage at work place

If the respondents are covered under social security and other legislations at work place		
Covered under social security	Frequency	Percentage
Yes	0	0
No	5	100
Total	5	100

The above table shows that all the 100% respondents reported that they are not covered under any social security or other legislations at workplace.

6.5 People living in Phuentsholing

Number of Focus Group discussions – 23

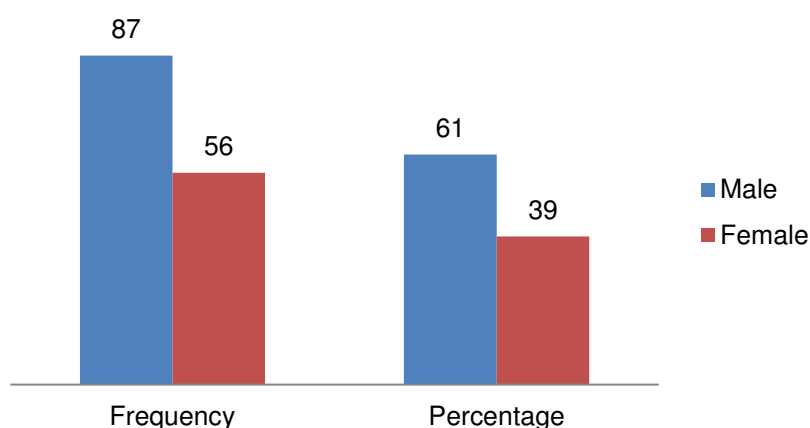
Respondents participated in FGDs – 143

6.5.1 Gender

This section gives the distribution of gender of the respondents.

Table: 6-21 Gender of the respondents

Gender of the respondents		
Gender	Frequency	Percentage
Male	87	61
Female	56	39
Total	143	100



Graph 6-4. Gender of the respondents

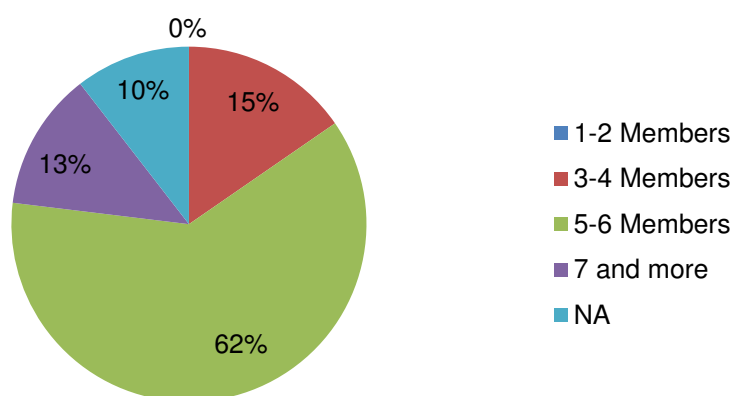
The above table and graph show that majority i.e. 61% of the respondents were males and 39% respondents were females. Most of the groups in focus group discussion were mixed groups having representation from both the genders.

6.5.2 Average family size

This section shows the average family size of the respondents living in Phuentsholing.

Table: 6-22 Average family size of the respondents

Average family size		
No. of family members	Frequency	Percentage
1-2 Members	0	0
3-4 Members	22	15
5-6 Members	88	62
7 and more	18	13
NA	15	10
Total	143	100



Graph 6-5. Average family size of the respondents

The above table and graph show that majority i.e. 62% of the respondents have family size of 5-6 members followed by 15% having a family size of 3-4 members and 13% having a family size of 7 and more members. 10% of the respondents did not respond to the question.

6.5.3 Main occupations

This section gives an understanding about the main occupations of males and females.

Table: 6-23 Main occupations of males and females

Main Occupations	Male		Female		Total	
	No.	%	No.	%	No.	%
Business/ Shop	10	33.33	10	30.30	20	31.75
Job	18	60.00	12	36.36	30	47.62
Farming	2	6.67	0	0.00	2	3.17
Housewife	0	0	10	30.30	10	15.87
NA	0	0	1	3.03	1	1.59
Multiple Response	30	100	33	100	63	100.00

The above table depicts multiple responses which shows that the majority of the male population that is 60% is doing jobs and about 33% is doing business including driving taxis or running shops. Only about 7% are involved in farming as it is urban area.

It also shows that amongst females, approximately 37% is doing jobs, while 30% each is either housewives or in business mainly running small shops.

In total approximately 48% of the population is engaged in jobs and about 32% is engaged in business or running shops.

6.5.4 Place of work

This section gives an understanding about the place of work of the respondents.

Table: 6-24 Place of work

Place of work		
Place of work	Frequency	Percentage
Bhutan	143	100
India	0	0
Total	143	100

The above table shows that all the respondents work in Bhutan and mostly in Phuentsholing.

6.5.5 Daily commute distance

This section gives an understanding about the daily commute distance to work by the respondents.

Table: 6-25 Daily commute distance to work

Daily commute distance		
Daily Commute Distance	Frequency	Percentage
Nil	60	40
Upto 3 Km	40	27
3-6 Km	36	24
7 Km and more	13	9
Multiple Response	149	100

The above table is a multiple response table which shows that the daily commute distance for work for majority of respondents i.e. 40% is nil as many people also walk down to work. 27% of the respondents commute less than 3 km followed by 24% who commute between 3-6 km. There are only 9% respondents who commute for more than 7 km in a day.

6.5.6 Daily expenditure for travel

This section gives an understanding of the expenditure incurred for commutation to work by the respondents.

Table: 6-26 Daily expenditure for travel to work

Daily expenditure for travel		
Daily expenditure for travel (in Nu. / Rs.)	Frequency	Percentage
Nil	130	91
5-10	3	2
10-15	2	1
15 and more	8	6
Total	143	100

The above table and graph show that majority of the respondents i.e. 91% do not have to incur any expenses for travel; they usually walk down to work as they live close-by. 6% of the respondents have to spend Nu. 15 and more. 2% and 1% of the respondents spend Nu. 5-10 and 10-15 respectively.

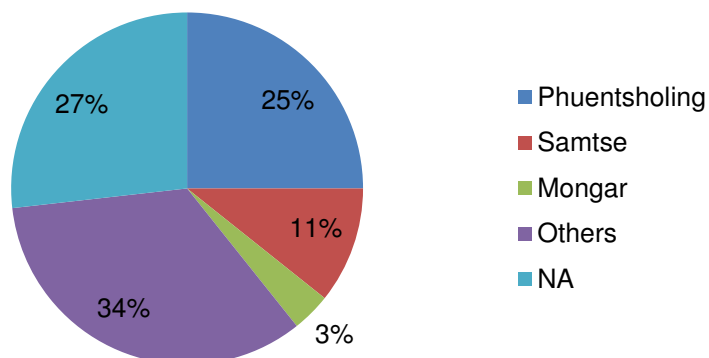
6.5.1 Native of Phuentsholing or other Dzongkhags

This section gives an understanding if the respondents are native of Phuentsholing or other Dzongkhags.



Table: 6-27 Native of Phuentsholing or other Dzongkhags

Native of Phuentsholing or other Dzongkhags		
Native Place	Frequency	Percentage
Phuentsholing	42	25
Samtse	18	11
Mongar	6	4
Others	57	34
NA	45	27
Multiple Response	168	100



Graph 6-6. Native Place of the respondents

The above table and graph show that majority of the respondents i.e. 34% belonged to various other districts of Bhutan followed by 27% who did not share about their native place. However, 25% of the respondents are local people who belong to Phuentsholing and 11% to the neighbouring Samtse.

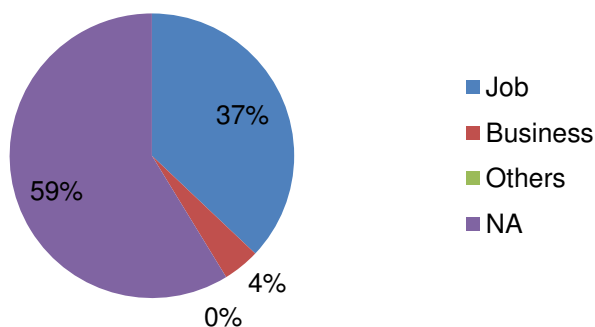
6.5.7 Reasons of in-migration

This section shows the reasons for in-migration to Phuentsholing by the respondents.

Table: 6-28 Reasons for in-migration

Reasons of in-migration		
Reasons	Frequency	Percentage
Job	53	37
Business	6	4
Others	0	0
NA	84	59
Total	143	100

Reasons of in-migration





Graph 6-7. Reasons for in-migration

The above table and graph show that though majority i.e. 59% of the respondents did not respond to the question, 37% had migrated due to their jobs followed by 4% for business.

6.6 Bhutanese people living in Jaigaon

Number of Focus Group discussions – 4
 Number of one to one interactions- 11
 Respondents participated in FGDs – 17

6.6.1 Gender of the respondents

This section shows the gender distribution of respondents.

Table: 6-29 Gender of the respondents

Gender of the respondents		
Gender	Frequency	Percentage
Male	18	64
Female	10	36
Total	28	100

The above table and graph show that majority of the respondents i.e. 64% were males and 36% were females. Representation was taken from both the genders while doing one to one interaction and focus group discussion.

6.6.2 Average family size

This section gives an understanding about the average family size of the respondents.

Table: 6-30 Average family size

Average family size		
Average family size	Frequency	Percentage
1-2 Members	0	0
3-4 Members	12	43
5-6 Members	16	57
7 and more	0	0
NA	0	0
Total	28	100

The above table and graph show that majority i.e. 57% of the respondents have an average family size of 5-6 members followed by 43% having 3-4 members.

6.6.3 Main occupations

This section shows main occupation of the Bhutanese males and females living in Jaigaon.

Table: 6-31 Main occupations

Main Occupation	Male		Female		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Business/ Shop	16	35	7	16	23	22
Job	30	65	12	28	58	55
Housewife	0	0	24	56	24	23



Multiple Response	46	100	43	100	105	100
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The above table and graph show that majority of the respondents i.e. 55% (65% males and 28% females) are doing jobs followed by 22% (35% males and 16% females) doing their own business or owning a shop and 23% (56% of females) respondents are housewives.

6.6.4 Place of work

This section gives an understanding of the place of work of the respondents.

Table: 6-32 Place of work

Place of work		
Place of work	Frequency	Percentage
Bhutan	24	71
India	10	29
Total	34	100

The above table shows that majority of the respondents i.e. 71% work in Bhutan but stay in Jaigaon. However, there are 29% of the respondents who are housewives and therefore work in India.

6.6.5 Daily commute distance

This section gives an understanding about the distance for commutation to work.

Table: 6-33 Daily commute distance

Daily commute distance		
Daily Commute Distance	Frequency	Percentage
Nil	15	6
Up to 3 Km	4	10
3-6 Km	17	40
7 Km and more	6	14
Multiple Response	42	100

The above table and graph shows that majority i.e. 40% of the respondents have to commute between 3-6 km, followed by 14% of the respondents who have to commute for more than 7 km. 10% of the respondents commute for up to 3 km whereas 6% do not commute which includes the category of housewives who work from home.

The above table also shows that in order to reduce the expense on rent, the respondents take houses on rent at distant places in Jaigaon, which increased their distance of commutation to work in Bhutan or Phuentsholing.

6.6.6 Daily expenditure for travel

This section shows the daily expenditure for travel to work

Table: 6-34 Daily expenditure for travel

Daily expenditure for travel		
Daily expenditure for travel (in Nu. / Rs.)	Frequency	Percentage
Nil	35	56
5-10	10	16
11-15	6	10
16 and more	11	18
Multiple Response	62	100



The above table and graph show that majority of the respondents i.e. 56% do not have to incur any expenses for travel; they either work at home or walk down to work. 18% of the respondents spend Rs. /Nu. 16 and more for travel followed by 16% spending Rs. /Nu. 5-10 and 10% spending Rs. / Nu. 11-15.

The multiple responses show that the expenditure for people on daily commutation varies according to the area.

6.6.7 Native of Phuentsholing or other Dzongkhags

This section shows if the respondents are native of Phuentsholing or other dzongkhags

Table: 6-35 Native Place

Native of Phuentsholing or other Dzongkhags		
Native Place	Frequency	Percentage
Phuentsholing	18	64
Samtse	4	14
Mongar	2	7
Others	4	14
Total	28	100

The above table shows that majority of the respondents i.e. 64% belong to Phuentsholing followed by 14% each belonging to Samtse and other parts of Bhutan. 7% of the respondents are native of Mongar.

This shows that though the respondents belong to Phuentsholing, due to scarcity of housing and costly rent, they have to live in Jaigaon.

6.6.8 Reasons of out-migration

This section gives an understanding of the reasons for out-migration to Jaigaon by the respondents

Table: 6-36 Reasons for out-migration to Jaigaon

Reasons of out-migration		
Reasons of out-migration to Jaigaon	Frequency	Percentage
Job	1	3
Business	1	3
Housing (Less rent and availability)	28	93
Multiple Response	30	100

The above table and graph show that majority of the respondents i.e. 93% stay in Jaigaon as housing is available and the rent is less there followed by 3% each who have moved due to job and business.

7 Data Analysis

This chapter gives basic idea about the stakeholder’s perception and views about the proposed Project. The analysis is based only on stakeholder’s perception and is not guiding rules. The perception of the respondents combined with the understanding of existing situation and ground realities will help in assessing the impact and in developing the mitigations for negative impacts, if any. It will also help the planners to develop proposals for enhancement of positive impacts of the Project.

The chapter also gives an idea about the correlation between income levels, unit size, family size, ownership status, type of accommodation and rent of housing etc.

As part of the Social Impact Assessment, total 59 one to one interactions and 27 focus group discussions were carried out.

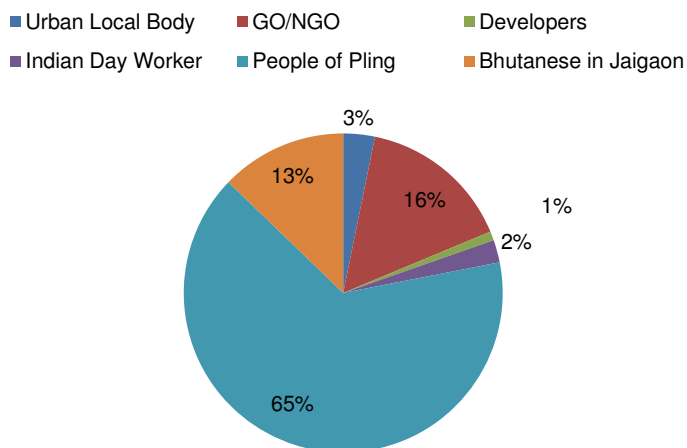
The distribution of respondents / participants is given below:

Table: 7-1 Distribution of respondents



Category	Urban Local Body	GO/NGO	Developers	Indian Day Worker	People of Pling	Bhutanese in Jaigaon	Total
No of respondents	7	34	2	5	143	28	219

Distribution of Respondents



Graph 7-1. Distribution of Respondents

Out of the 59 respondents of one to one interaction 43 are various institutions representatives, 5 are Indian day workers and 11 are Bhutanese citizens residing in cross border town Jaigaon. Out of 27 focus group discussions 23 are done in Phuentsholing and surrounding area while 4 are done with Bhutanese citizens residing in cross border town Jaigaon. The total number of participants in the focus group discussions done in Phuentsholing is 143, which have been considered for the purpose of the analysis. In the same manner the number of participants of focus group discussions done in Jaigaon is 17 which combined with the 11 individuals covered through one to one interaction has been considered for the purpose of the analysis.



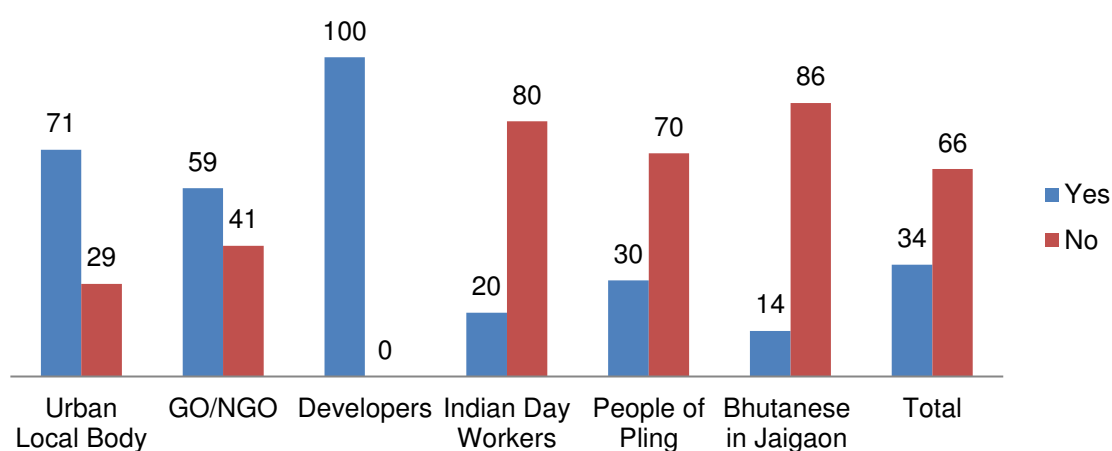
7.1 Perception about ALDTP

7.1.1 Knowledge about the Project

The following study depicts the stakeholder’s knowledge about the Project:

Table: 7-2 Awareness about the Project

Awareness of the Project														
Awareness of the Project	Urban Local Body (7)		GO/NGO (34)		Developers (2)		Indian Day Workers (5)		People of Pling (143)		Bhutanese in Jaigaon (28)		Total (219)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	5	71	20	59	2	100	1	20	43	30	4	24	75	34
No	2	29	14	41	0	0	4	80	100	70	24	141	144	66



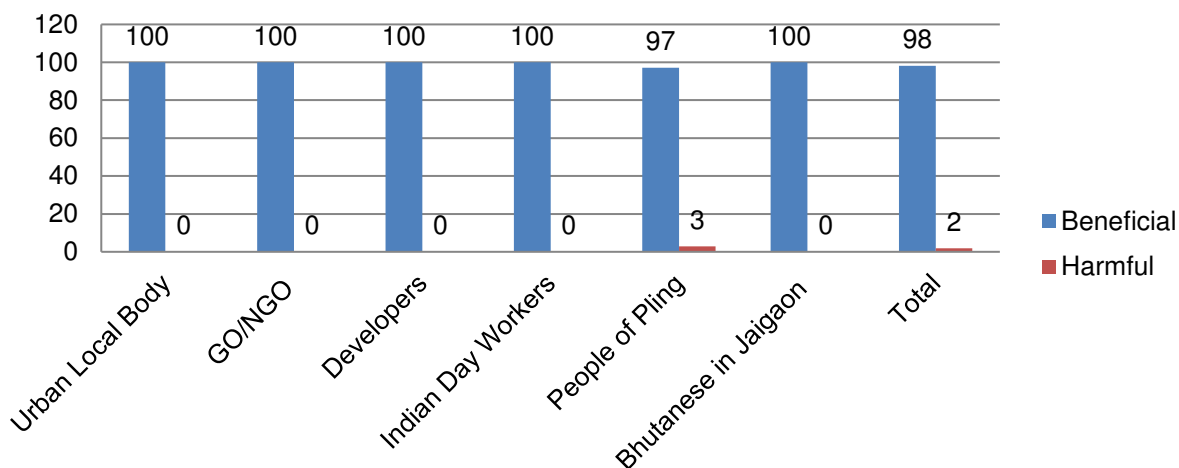
Graph 7-2. Awareness about the Project

The above table shows that only 34% of the total respondents were aware about the Project. The maximum awareness was recorded amongst the developers, i.e.100%, followed by urban local bodies and government and civil society organisations i.e. 71% and 59% respectively. The Bhutanese people living in Jaigaon have the minimum knowledge about the Project.

7.1.2 Perception about the Project:

Table: 7-3 Perception about the Project

Perception about the Project														
Perception about the Project	Urban Local Body (7)		GO/NGO (34)		Developers (2)		Indian Day Workers (5)		People of Pling (143)		Bhutanese in Jaigaon (28)		Total (219)	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Beneficial	7	100	34	100	2	100	5	100	139	97	28	100	215	98
Harmful	0	0	0	0	0	0	0	0	4	3	0	0	4	2



Graph 7-3. Perception about the Project

The above analysis shows that 98% of the respondents perceive the Project to be beneficial. Only 2% of the respondents perceive that the Project may create some challenges or threats for the Phuentsholing city.

Amongst the various groups of people only local people of Phuentsholing felt that the Project may create some threats to the city.

7.1.3 Potential benefits of the Project as perceived by the respondents:

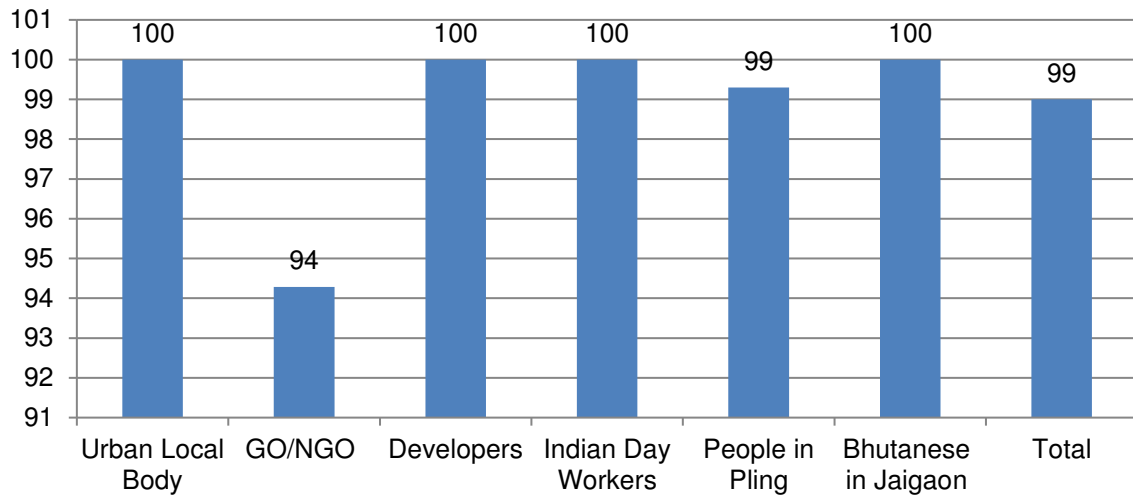
The stakeholders, who were interviewed through Focus Group Discussions, perceive the Project to be beneficial for Phuentsholing as a city as well as for Bhutan as a country. The various benefits of the Project perceived by the stakeholders are listed in following study analysis:

Table: 7-4 Potential Benefits of the Project

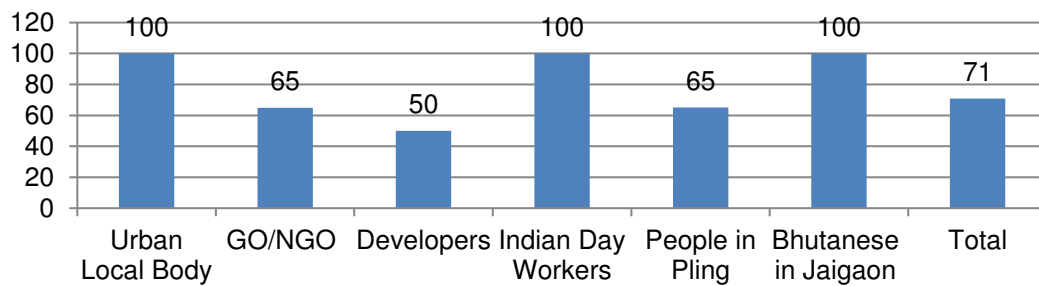
Potential Benefits														
Potential Benefits	Urban Local Body (7)		GO/NGO (34)		Developers (2)		Indian Day Workers (5)		People in Piling (143)		Bhutanese in Jaigaon (28)		Total (219)	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Reduced burden on Housing	7	100	32	94	2	100	5	100	142	99	28	100	216	98
Reduced burden on Infrastructure	7	100	22	66	1	50	5	100	93	65	28	100	156	71
Planned and systematic development and services	3	43	22	63	0	0	0	0	24	17	6	21	55	25
Access to new recreation, health and educational facilities	0	0	14	43	1	50	1	20	44	31	9	32	69	32
Employment Generation	2	29	16	49	1	50	3	60	76	53	12	43	110	50
Business Opportunities	6	86	20	60	1	50	2	40	71	50	6	21	106	48



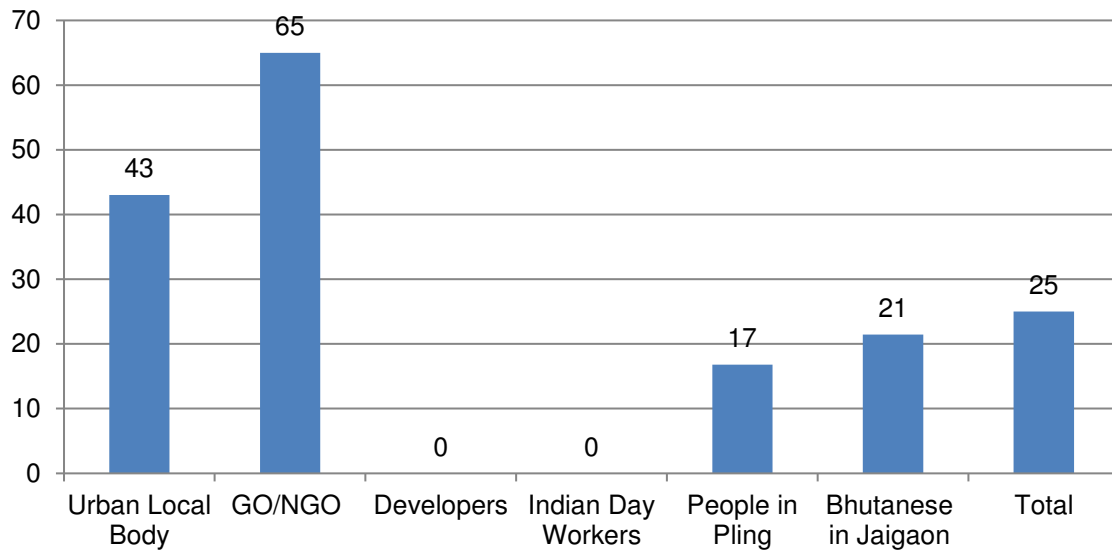
Skill Development and Training Centres for new kind of employment	2	29	5	17	0	0	0	0	22	15	6	21	35	16
Returning opportunity for Bhutanese people living in Jaigaon	2	29	19	54	2	100	3	60	53	37	22	79	101	46
Others	2	29	3	9	0	0	0	0	0	0	0	0	5	2



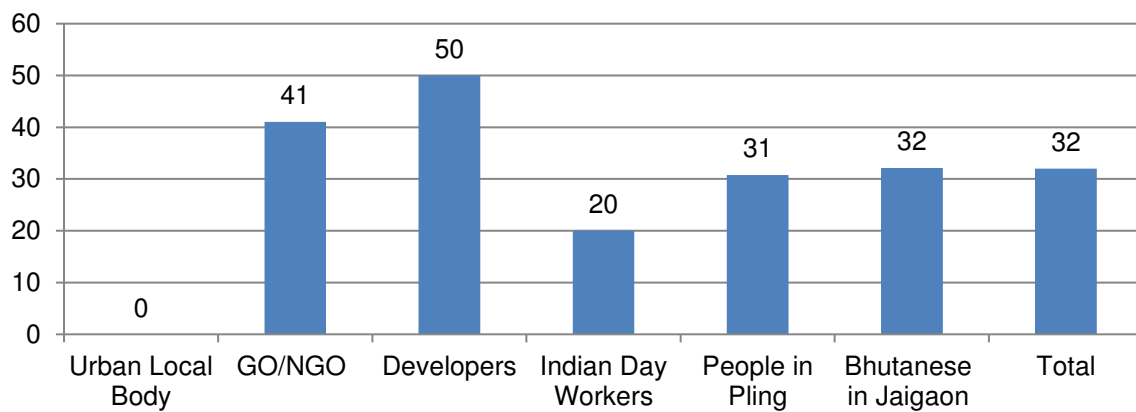
Graph 7-4.Potential Benefits: Reduced burden on housing



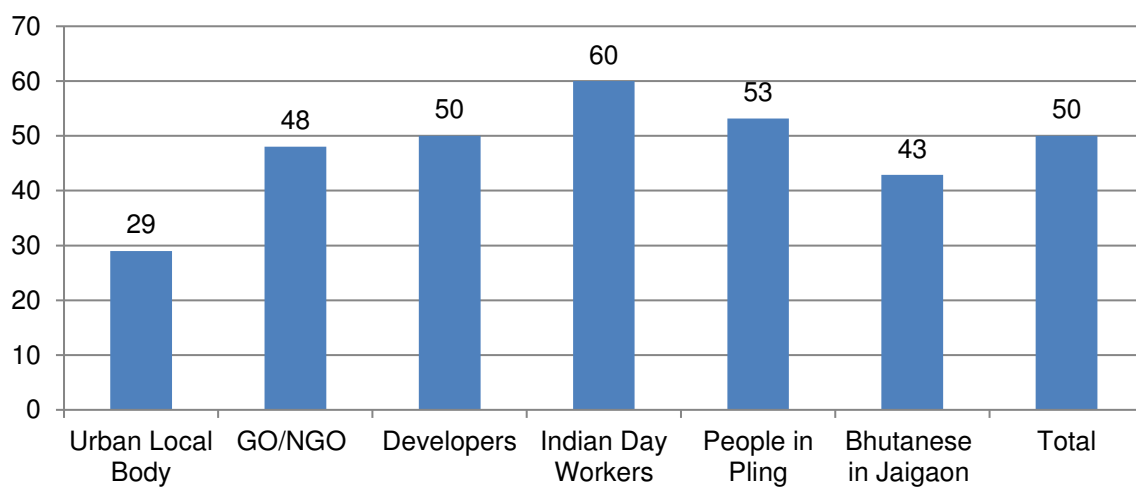
Graph 7-5.Potential Benefits: Reduced burden on Infrastructure



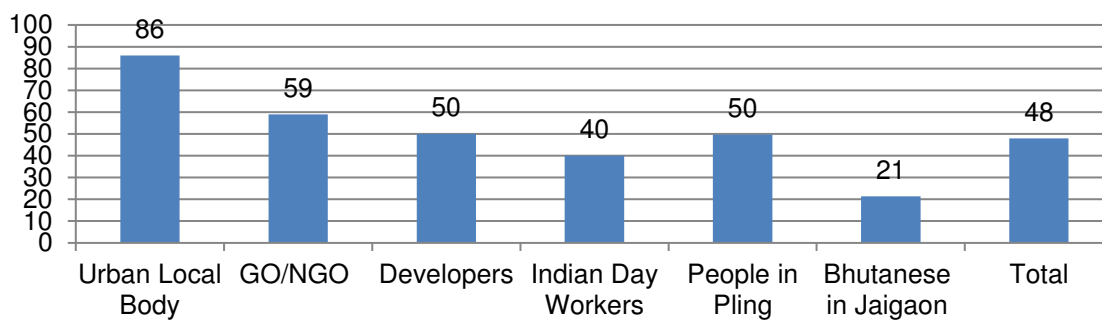
Graph 7-6. Potential Benefits: Planned & systematic development & services



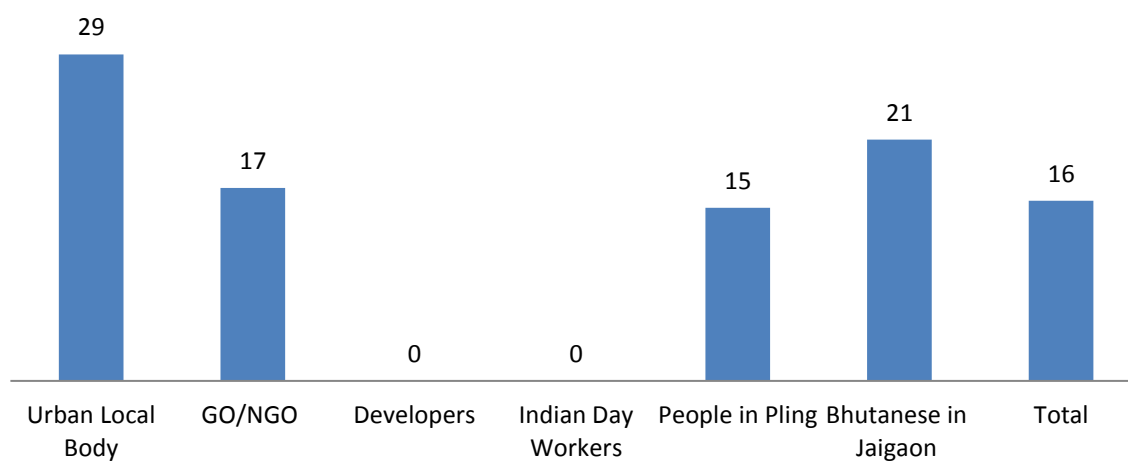
Graph 7-7. Potential Benefits: Access to new recreation, health and educational facilities



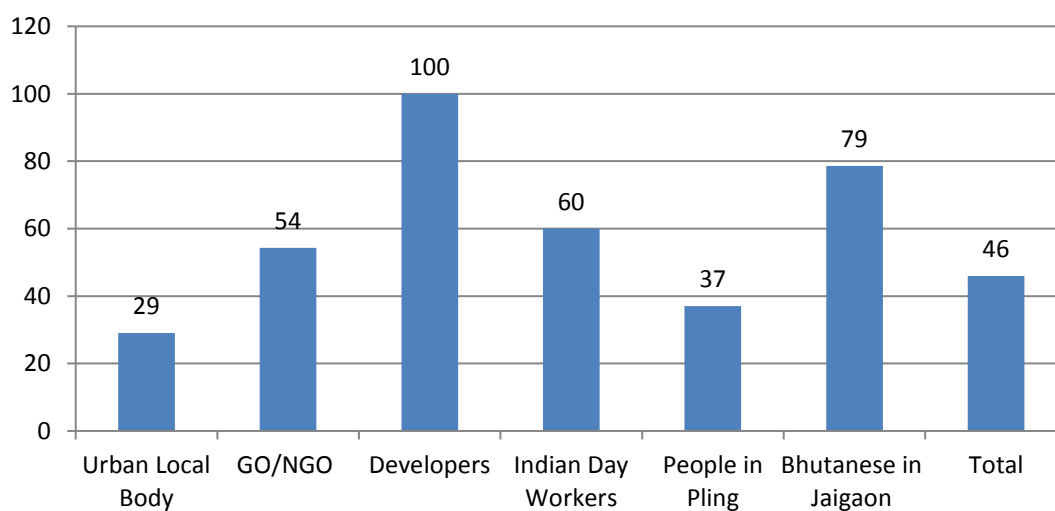
Graph 7-8. Potential Benefits: Employment Generation



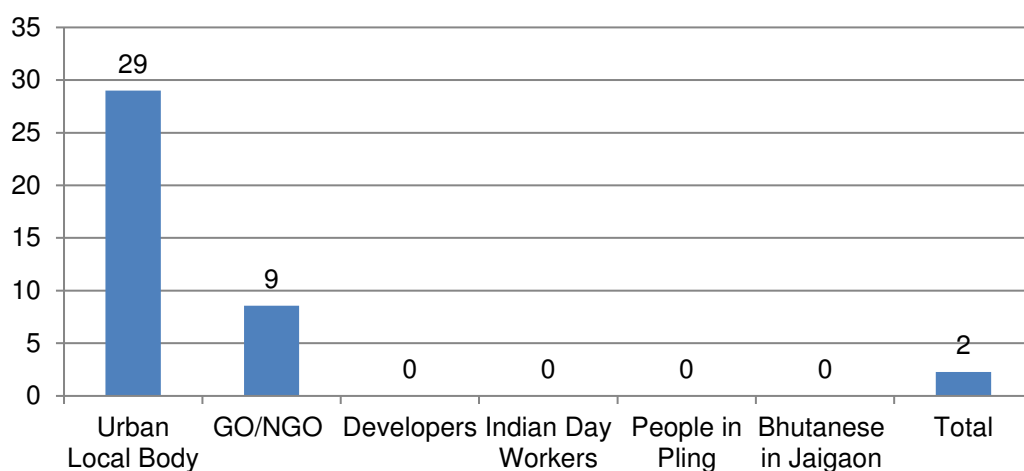
Graph 7-9. Potential benefits: Business opportunities



Graph 7-10. Potential benefits: Skill development & training centers for new kind of employment



Graph 7-11. Potential benefits: Returning opportunity for Bhutanese living in Jaigaon



Graph 7-12. Potential benefits: Others

The above study analysis shows that the stakeholders perceive the Project to have various positive impacts on the Phuentsholing city and country. The highest number i.e. 99% of the respondents perceive that the Project would reduce burden on existing housing. 71% of the respondents think that the Project would also reduce the burden on infrastructure facilities. 50% and 49% of the respondents feel that the Project would also create employment and new business opportunities respectively. The 2% in 'others' category includes responses such as "the new township would be bigger than the existing and would be well planned so it will be a better place to live in."

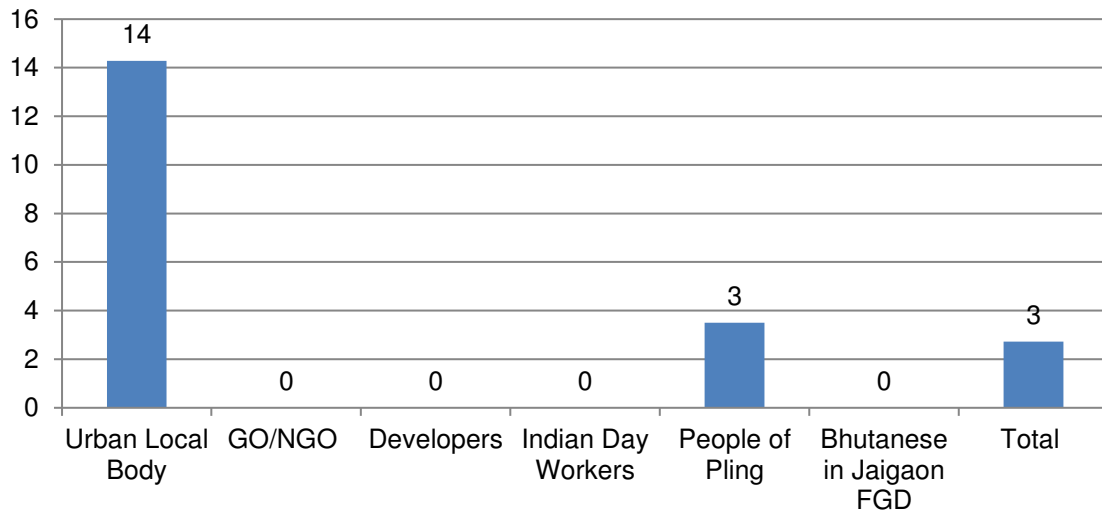
7.1.4 Potential threats of the Project as perceived by the stakeholders:

Table: 7-5 Potential Hazards or Threats

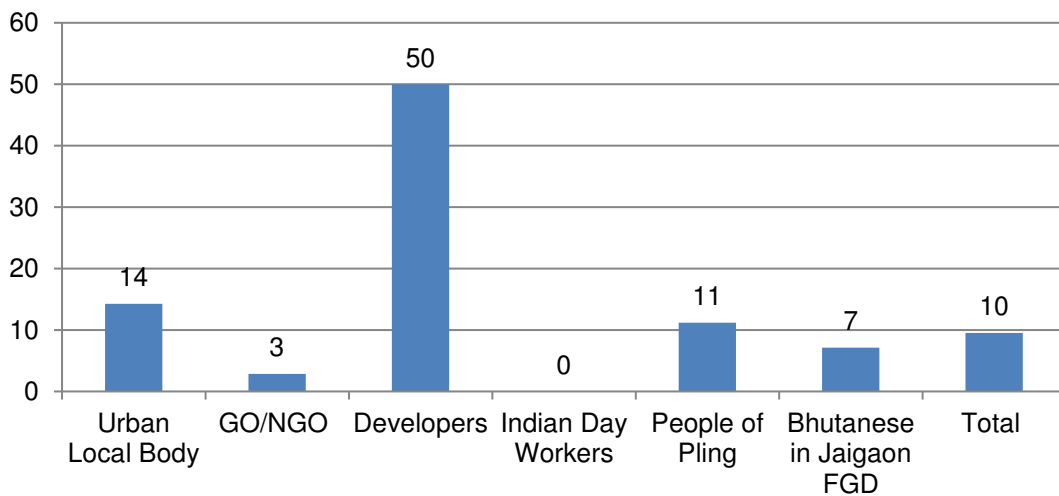
Potential Hazards or Threats														
Potential Hazards or Threats	Urban Local Body (7)		GO/NGO (34)		Developers (2)		Indian Day Workers (5)		People of Pling (143)		Bhutanese in Jaigaon FGD (28)		Total (219)	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Increased population and traffic movements during construction phase	1	14	0	0	0	0	0	0	5	3	0	0	6	3
Increased Pollution	1	14	1	3	1	50	0	0	16	11	2	7	21	10
Changes in air and water quality	1	14	2	6	0	0	0	0	5	3	0	0	8	4
Environment effects due to changed land use	1	14	5	14	1	50	0	0	2	1	0	0	9	4
Burden on existing infrastructure during construction phase	0	0	4	11	0	0	0	0	15	10	0	0	19	9



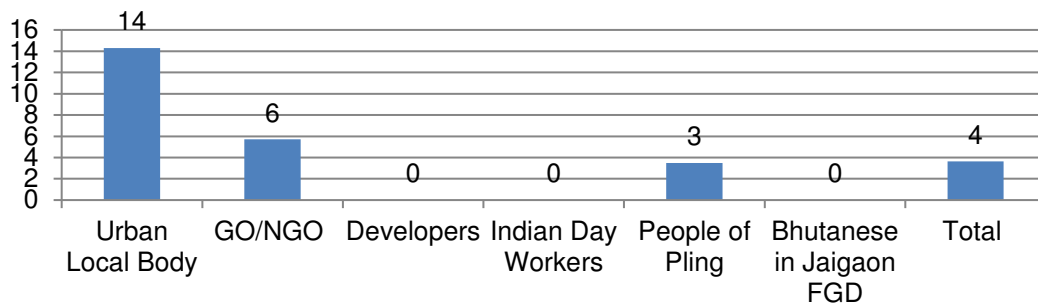
Cultural issues due to newer population	0	0	0	0	0	0	0	0	5	3	0	0	5	2
Others	3	4 3	6	17	0	0	0	0	0	0	0	0	9	4



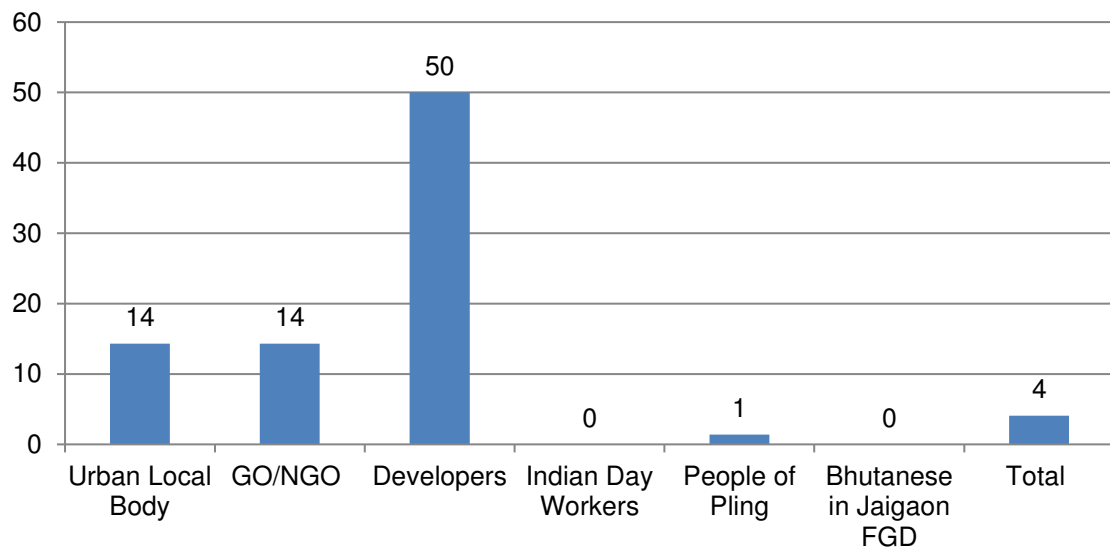
Graph 7-13. Potential threats: Increased population and traffic movements during construction phase



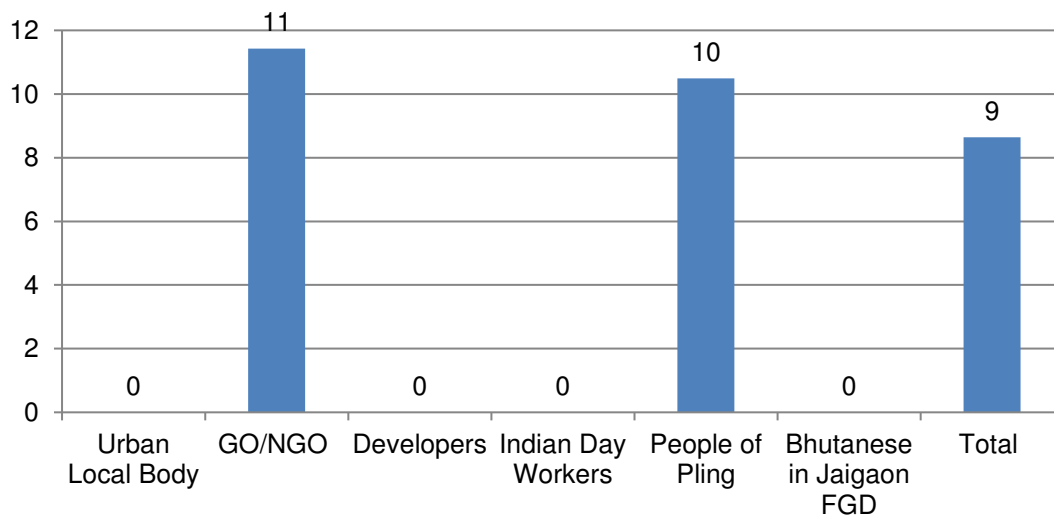
Graph 7-14. Potential threats: Increased pollution



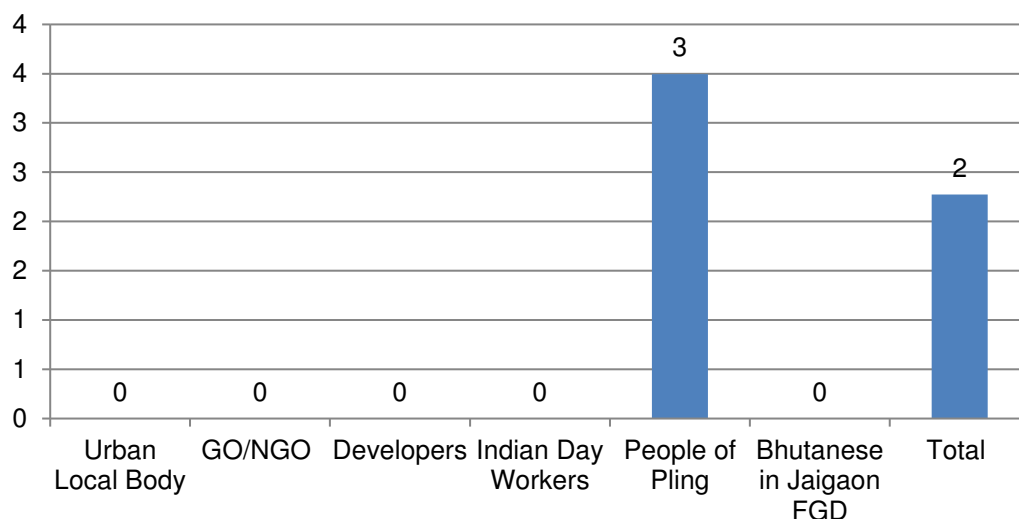
Graph 7-15. Potential threats: Changes in air and water quality



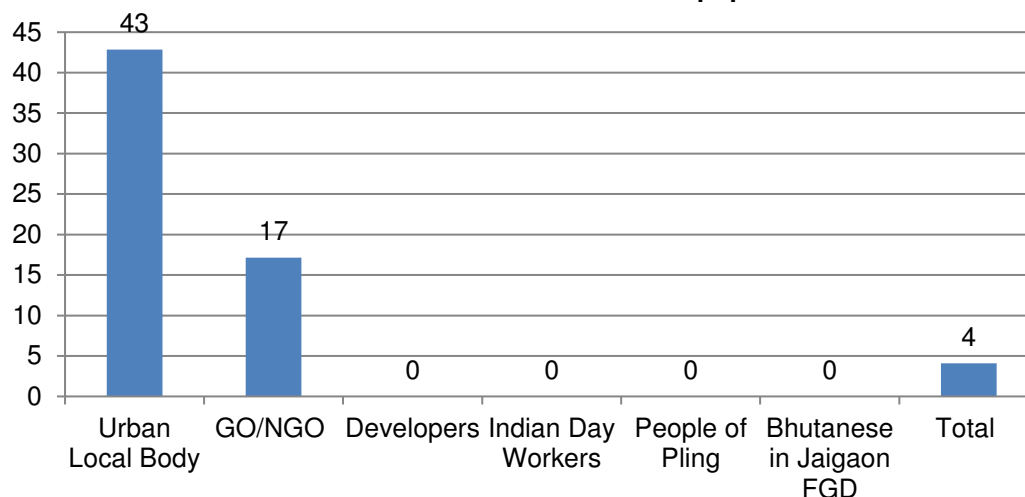
Graph 7-16. Potential threats: Environment effects due to changed land use



Graph 7-17. Potential threats: Burden on existing infrastructure during construction phase



Graph 7-18. Potential threats: Cultural issues due to newer population



Graph 7-19. Potential threats: Others

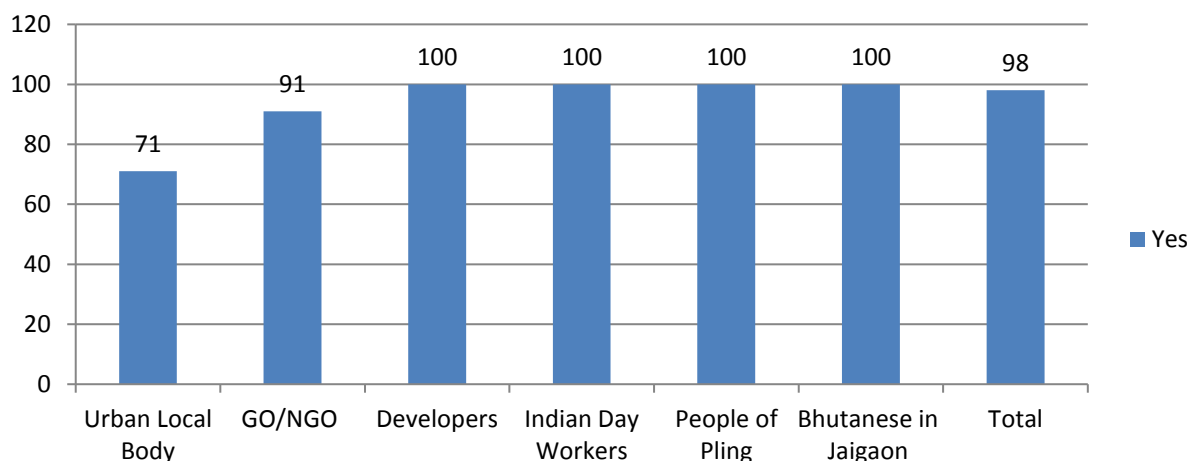
The above analysis shows that various stakeholders perceive the Project differently. The general public perceive that there would be some negative impacts on the Phuentsholing city and country, while other stakeholders from various backgrounds do not foresee any negative impacts. The percentages or magnitudes of threats or issues perceived by the people are lower than the positive impacts of the Project. 15% of the stakeholders perceive that the Project would increase the cost of infrastructure and housing in the proposed township. 10% of the intervened population perceived that the Project would increase load on existing town during construction. Only 2% of stakeholders perceive the Project to be harmful to nature.

7.1.5 Boost to economy:

This section shows if the Project would boost the economy of Phuentsholing/ Bhutan

Table: 7-6 Boost to economy

Boost to economy														
Boosting to Economy	Urban Local Body (7)		GO/NGO (34)		Developers (2)		Indian Day Workers (5)		People of Pling (143)		Bhutanese in Jaigaon (28)		Total (219)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	5	71	33	94	2	100	5	100	143	100	28	100	216	98



Graph 7-20. Boost to economy

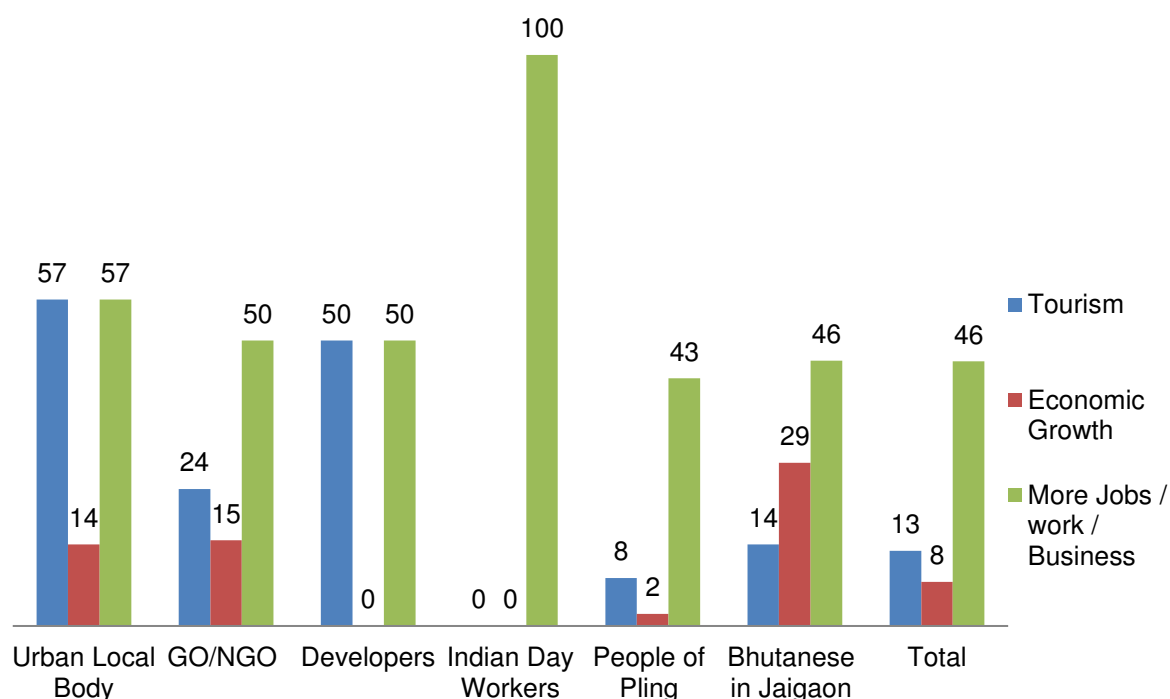
The above table and graph shows that 98% of the respondents perceive that the Project would boost the economy of the country.

7.1.6 Factors that will boost the local economy

This section gives an understanding about the factors that would boost the local economy

Table: 7-7 Factors that will boost the economy

Factors that will boost the economy														
Factors	Urban Local Body		GO/NGO		Developers		Indian Day Workers		People of Pling		Bhutanese in Jaigaon		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Tourism	4	57	8	23	1	50	0	0	12	8	4	14	29	13
Economic Growth	1	14	5	14	0	0	0	0	3	2	8	29	17	8
More Jobs / work / Business	4	57	17	49	1	50	5	100	62	43	13	46	102	46
NA	0	0	12	34	0	0	0	0	66	46	1	4	79	36



Graph 7-21. Factors that will boost the economy

The above table and graph show the factors that will boost the economy which includes 46% of the respondents who consider more jobs/ work/ business as a factor, followed by 13% considering tourism as a factor and 8% who consider that economic growth is a factor that will boost the economy.

7.1.7 Expectations from the Project

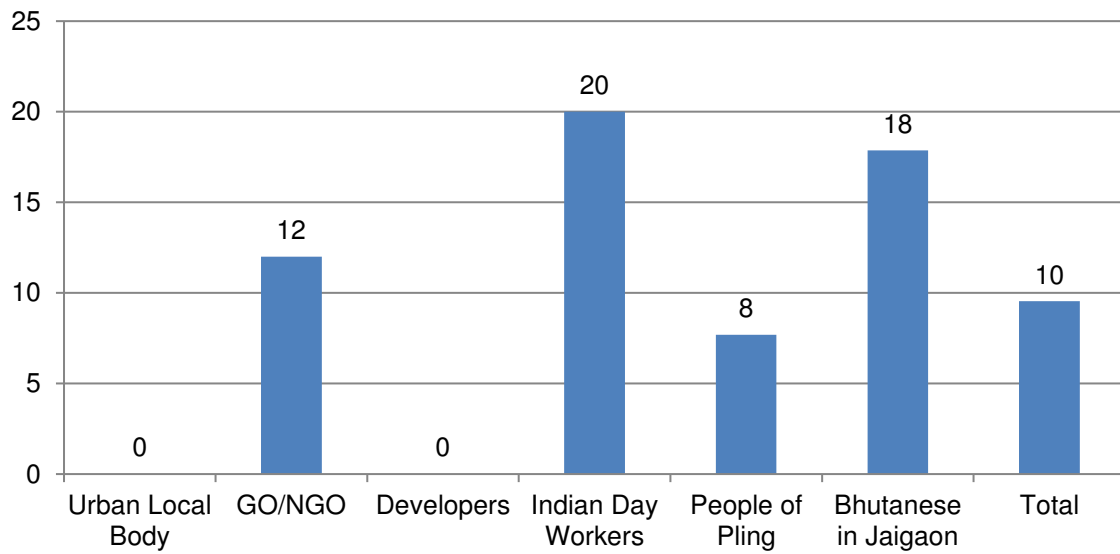
This section gives an understanding about the expectations of the stakeholders from the Project

Table: 7-8 Expectations from the Project

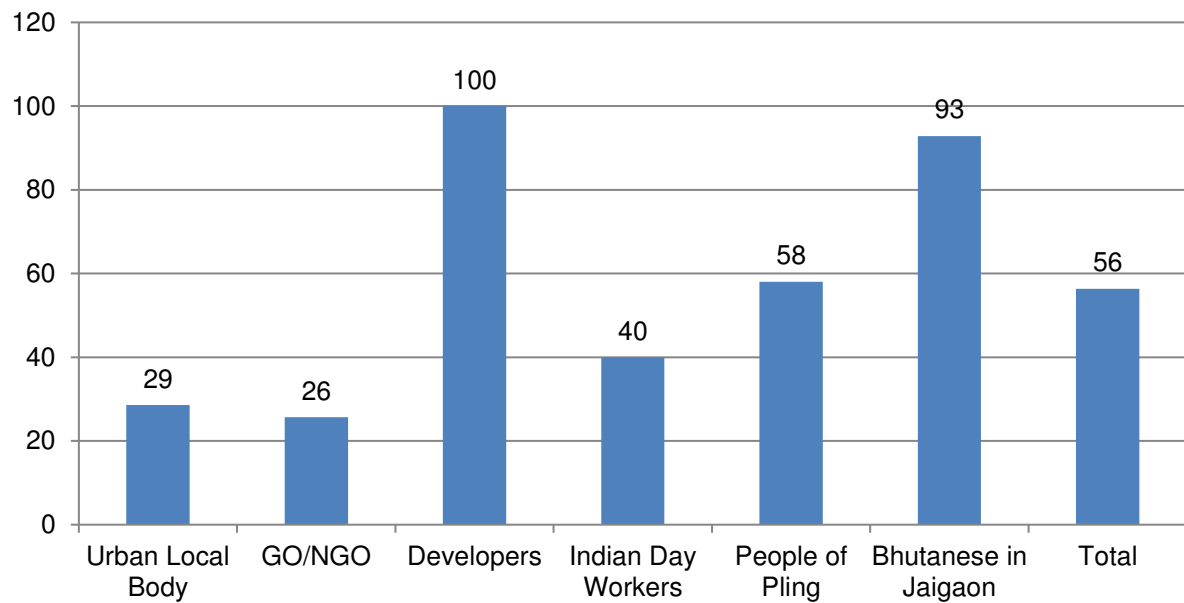
Expectations from the Project														
Expectations from the Project	Urban Local Body		GO/NGO		Developers		Indian Day Worker		People of Pling		Bhutanese in Jaigaon		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Reduced Traffic problem	0	0	4	11	0	0	1	20	11	8	5	18	21	10
LIG/MIG Housing	2	29	9	26	2	100	2	40	83	58	26	93	124	56
Schools	0	0	3	9	0	0	0	0	7	5	0	0	10	5
Recreational facilities	0	0	14	40	0	0	1	20	36	25	0	0	51	23
Environment friendly	0	0	3	9	1	50	0	0	8	6	0	0	12	5
Tourism	2	29	2	6	1	50	0	0	5	3	0	0	10	5
Airport/ Railways	0	0	1	3	0	0	1	20	17	12	0	0	19	9
Basic Amenities	1	14	7	20	1	50	0	0	6	4	8	29	23	10
Ensured safety	0	0	2	6	0	0	0	0	10	7	1	4	13	6
More Income; Business; New Jobs	1	14	9	26	0	0	2	40	52	36	12	43	76	35



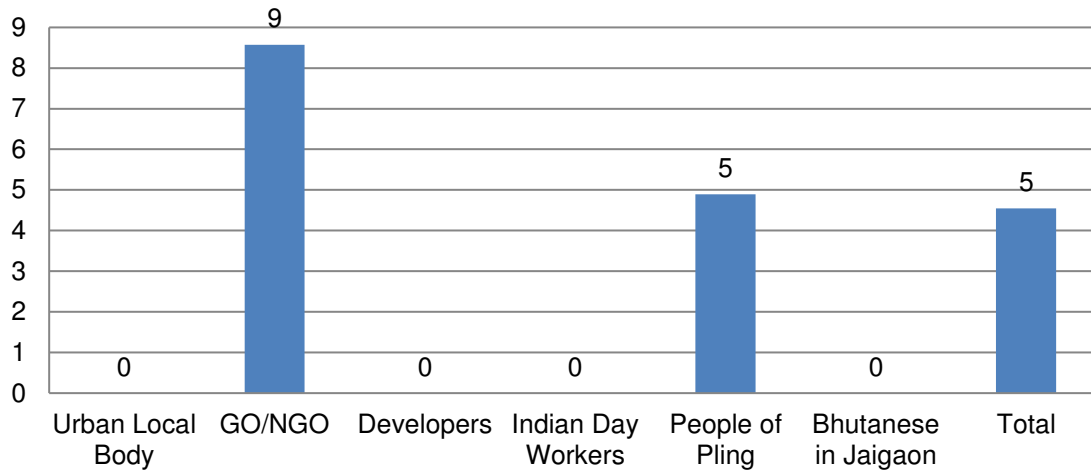
Others	3	43	21	60	0	0	0	0	11	8	1	4	36	16
Total respondents	7	100	35	100	2	100	5	100	143	100	28	100	220	100



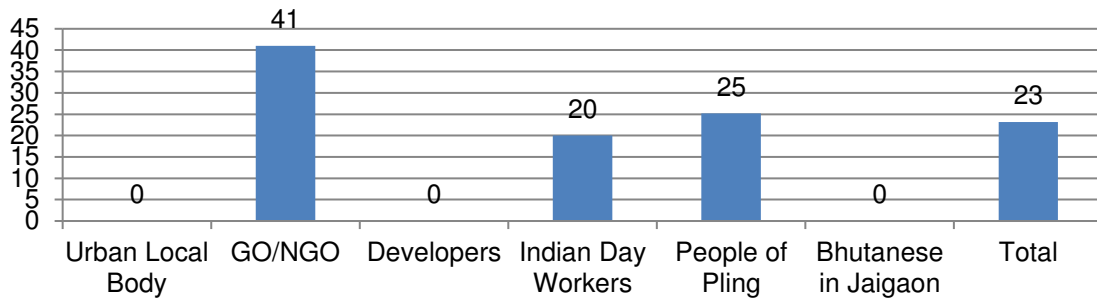
Graph 7-22. Expectation: Reduced Traffic Problem



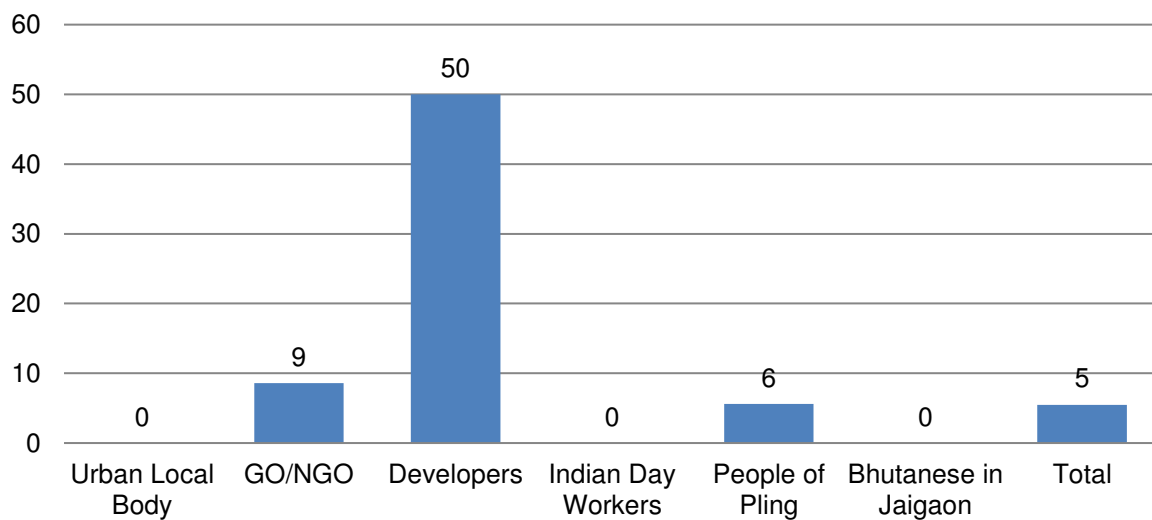
Graph 7-23. Expectation: LIG/MIG Housing



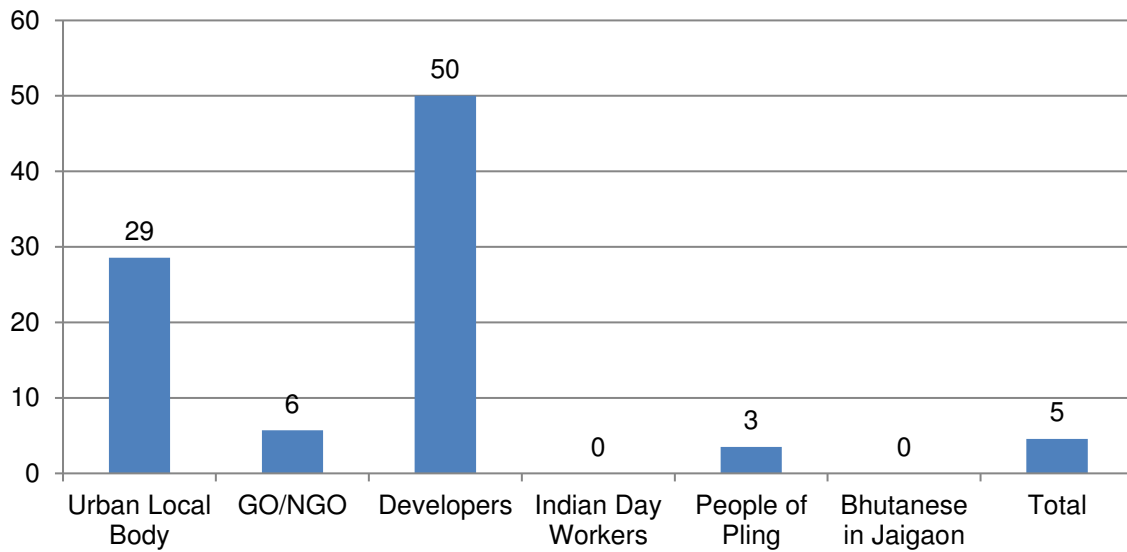
Graph 7-24. Expectation: Educational Institutes



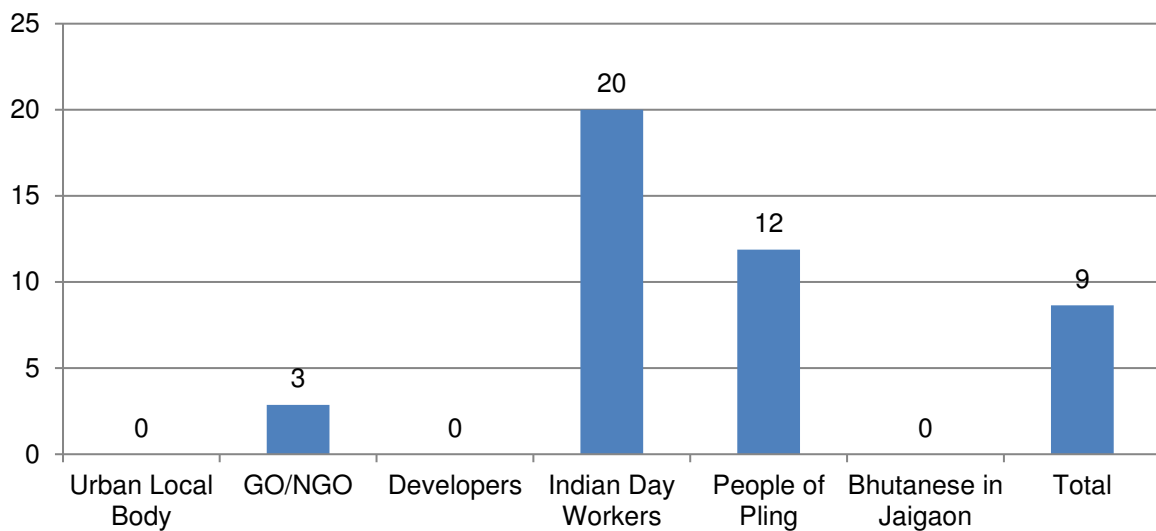
Graph 7-25. Expectation: Recreational Facilities



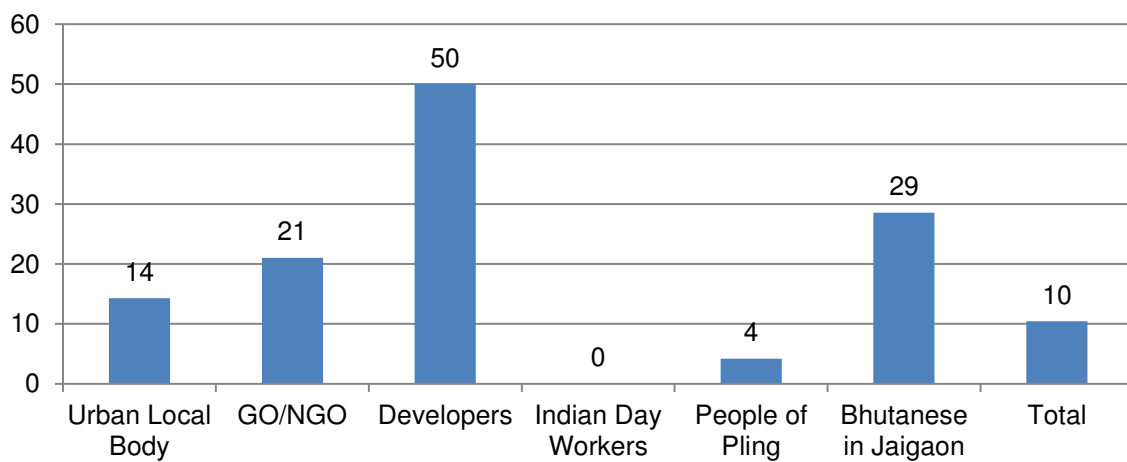
Graph 7-26. Expectation: Environment Friendly



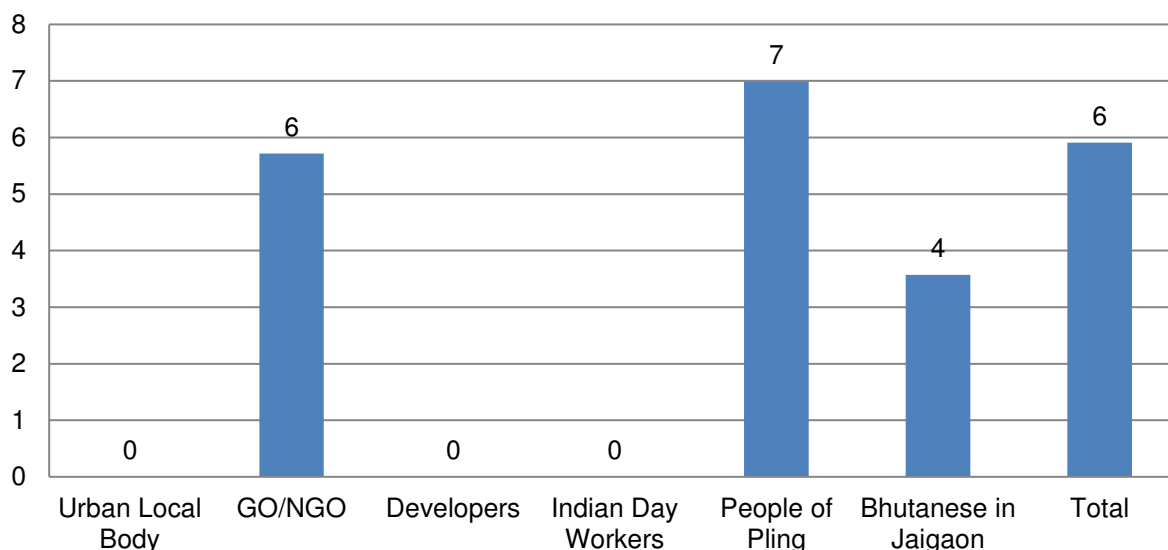
Graph 7-27. Expectation: Growth in tourism



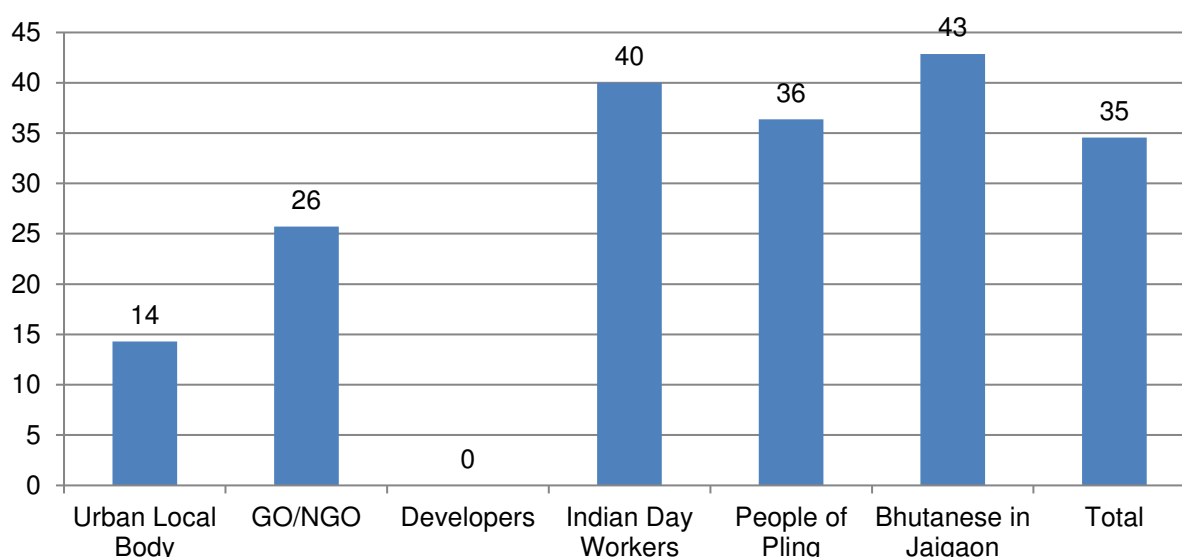
Graph 7-28. Expectation: Airport/ Railways



Graph 7-29. Expectation: Basic Amenities



Graph 7-30. Expectation: Ensured safety



Graph 7-31. More income, business & new jobs

The above table and graph show that majority i.e. 56% of the respondents expect that there would be sufficient facility for housing for people from low and middle income group in the Project. 35% of the respondents expect that there would be more jobs, work and business opportunities. 23% of the respondents expected to have better recreational facilities. 16% of the respondents expect certain facilities like cold storage, hospital, technical training institutes, special schools, sports complex, business retreat, convention centres, housing for single women with shops to sell their products, crèche for single mothers, banks, multi-level parking, water sports, theme parks, bio-diversity park, etc.

7.1.8 Suggestions of the stakeholders for the Project:

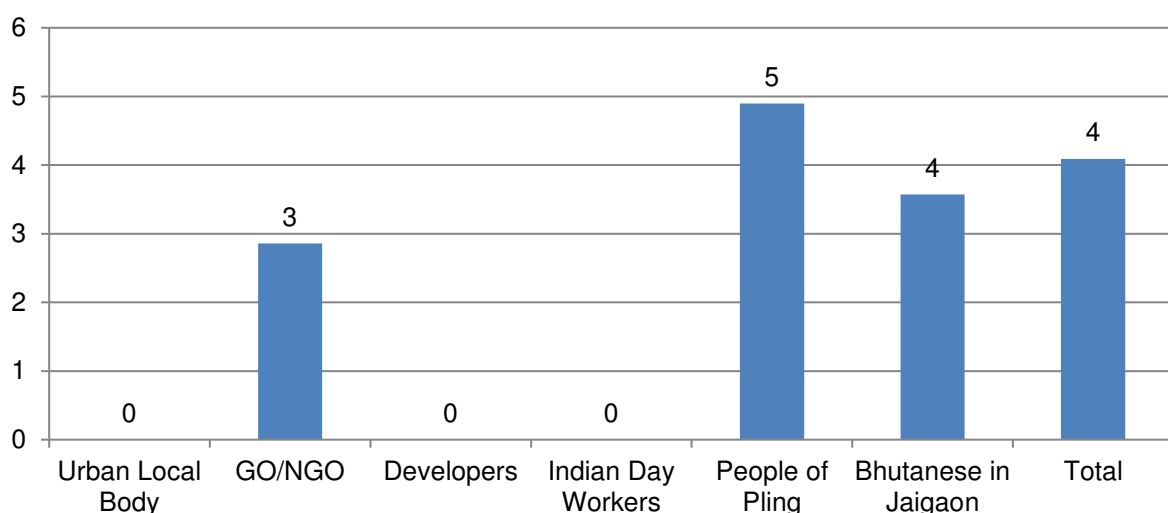
The stakeholders suggested provisions of the following infrastructure in the Project.

Table: 7-9 Suggestions for the Project

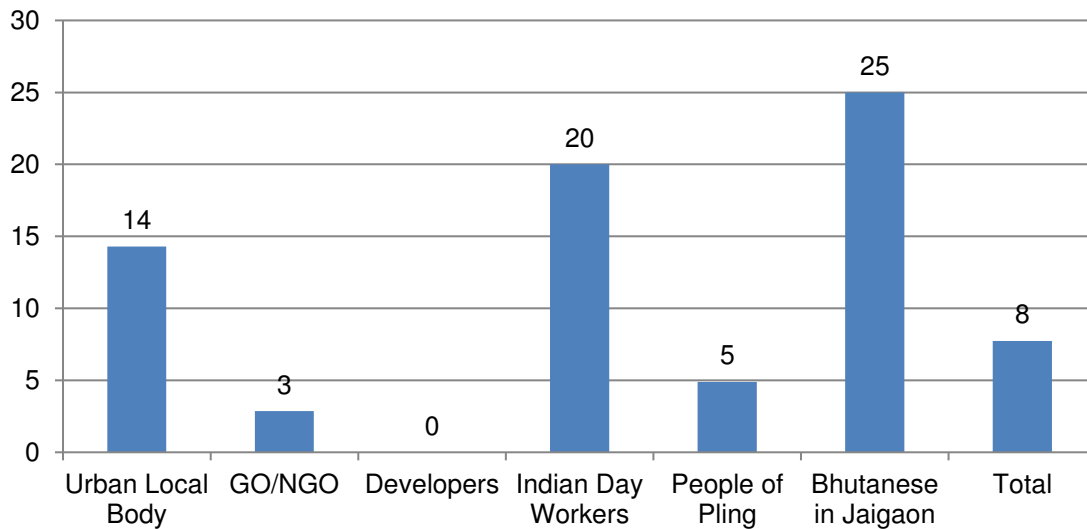
Suggestions	Urban Local Body		GO/NGO		Developers		Indian Day Workers		People of Pling		Bhutanese in Jaigaon		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%



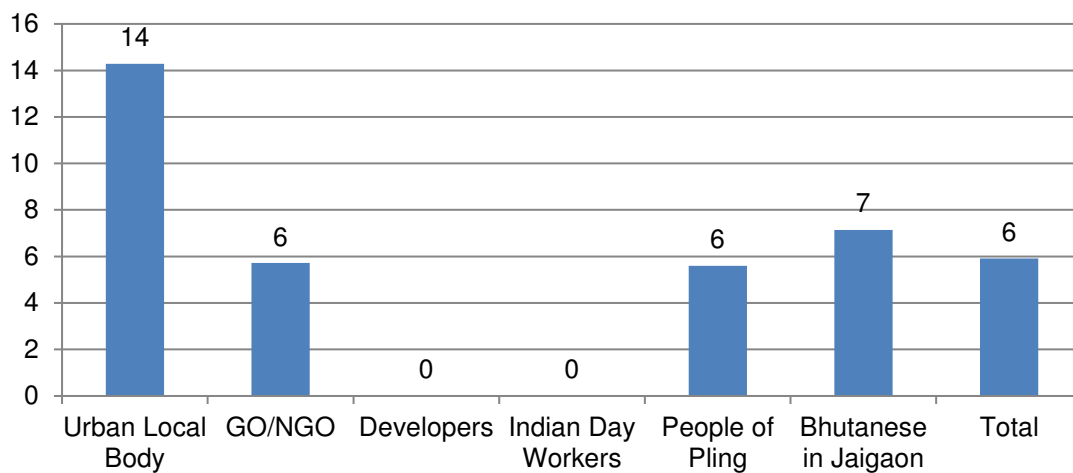
Strategy for reduction in traffic congestion	0	0	1	3	0	0	0	0	7	5	1	4	9	4
Low cost housing in terms of purchase and rent	1	14	1	3	0	0	1	20	7	5	7	25	17	8
Extending benefits of Business growth/ New jobs to local people	1	14	2	6	0	0	0	0	8	6	2	7	13	6
Sufficient and good infrastructure & basic amenities	0	0	2	6	0	0	0	0	22	15	5	18	29	13
Nature conservation	2	29	3	9	0	0	0	0	3	2	0	0	8	4
Recreation	0	0	5	14	0	0	0	0	0	0	0	0	5	2
Others	1	14	20	57	1	50	0	0	0	0	0	0	22	10
Total	7	100	35	100	2	100	5	100	143	100	28	100	220	100



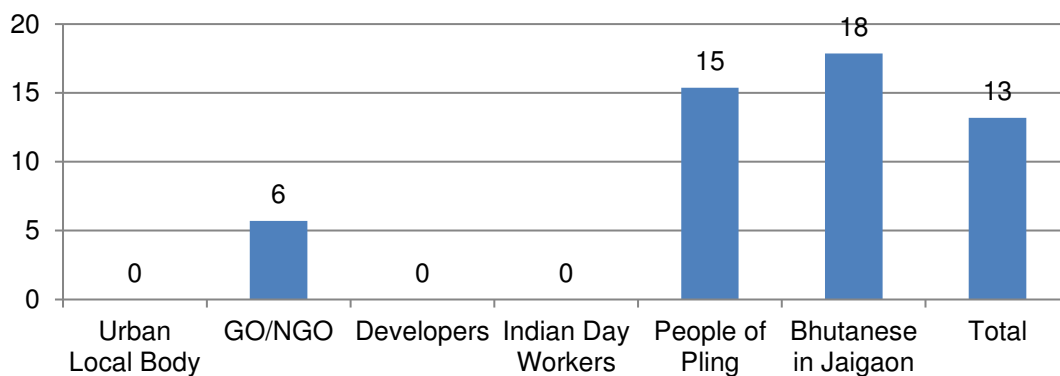
Graph 7-32. Suggestion: Strategy for reduction in traffic congestion



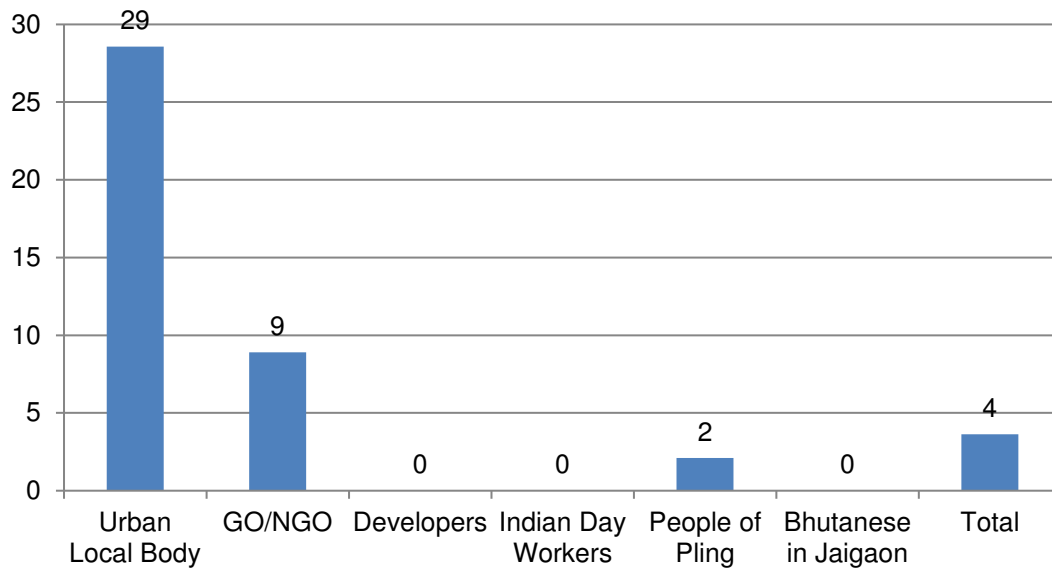
Graph 7-33. Suggestion: Low cost housing in terms of purchase and rent



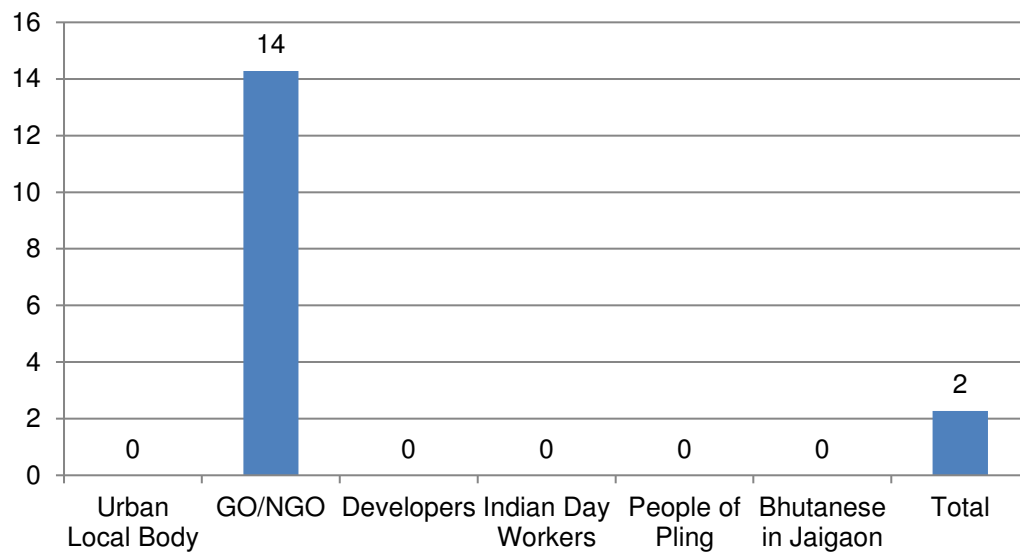
Graph 7-34. Suggestion: Extending benefits of Business growth/ new jobs to local people



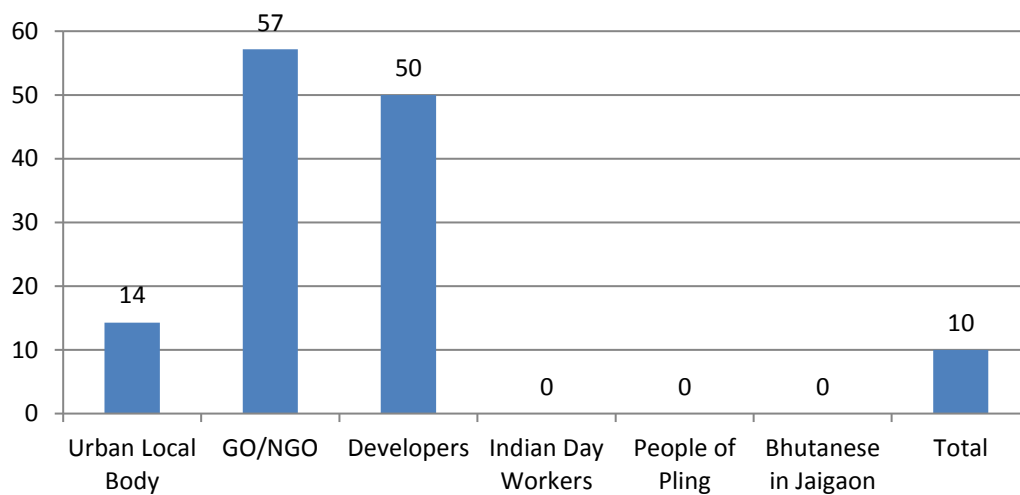
Graph 7-35. Suggestion: Sufficient & good infrastructure & basic amenities



Graph 7-36. Suggestion: Nature conservation



Graph 7-37. Suggestion: Recreation



Graph 7-38. Suggestion: Others



The above analysis shows that majority of the respondents i.e. 13% suggested to have sufficient and good infrastructure & basic amenities. 10% of the respondents in 'Others' suggested to have mental health care facilities, flyovers (if required toll bridges), multi-level parking, housing with subsidy plan in 12th Five Year Plan, beautiful location, youth training for construction, lake/ water park surrounded by mall, landscape unique to Bhutan, tourism, counselling centre for youth, social welfare centre, etc. 8% of the respondents suggested about having low-cost housing.

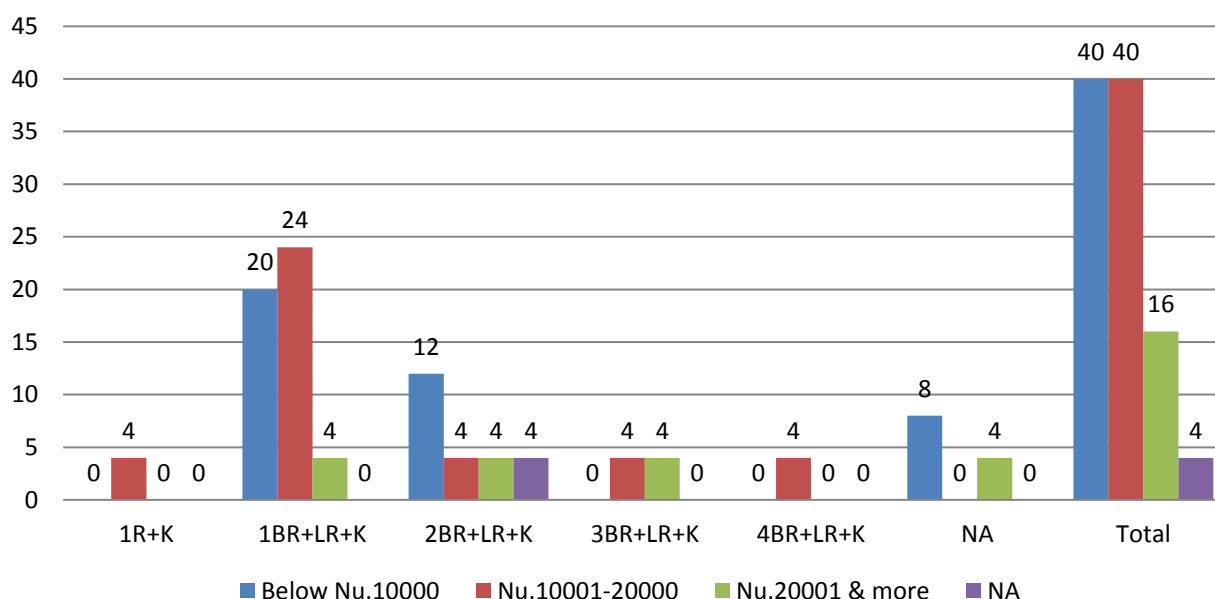
7.2 People’s Preferences of Residential Units in Correlation to Socio-economic Status

7.2.1 Correlation between Income and present Residential Unit Size in Phuentsholing:

The following table shows the correlation between family income and present residential unit size.

Table: 7-10 Monthly family income vs residential unit size in Phuentsholing

Monthly family income vs residential unit size in Phuentsholing (No. of FGDs -23, Number of responses -25)														
Monthly Family income in Nu. / No. of rooms	1R+K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		Not Answered		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Below Nu.10,000	0	0	5	20	3	12	0	0	0	0	2	8	10	40
Nu.10,001-20,000	1	4	6	24	1	4	1	4	1	4	0	0	10	40
Nu.20,001& more	0	0	1	4	1	4	1	4	0	0	1	4	4	16
NA	0	0	0	0	1	4	0	0	0	0	0	0	1	4
Total Families	1	4	12	48	6	24	2	8	1	4	3	12	25	100



Graph 7-39. Monthly family income vs residential unit size in Phuentsholing in percentage (%)

The above table shows that majority of the respondents i.e. 40% have monthly family income of less than Nu. 10,000/- and 40% have income between Nu. 10,001-20,000 per month.

The table also shows that majority of the respondents i.e. 48% live in a house having 1 bedroom+ 1 living room + kitchen followed by 24% living in 2 bedroom+ 1 living room + kitchen.



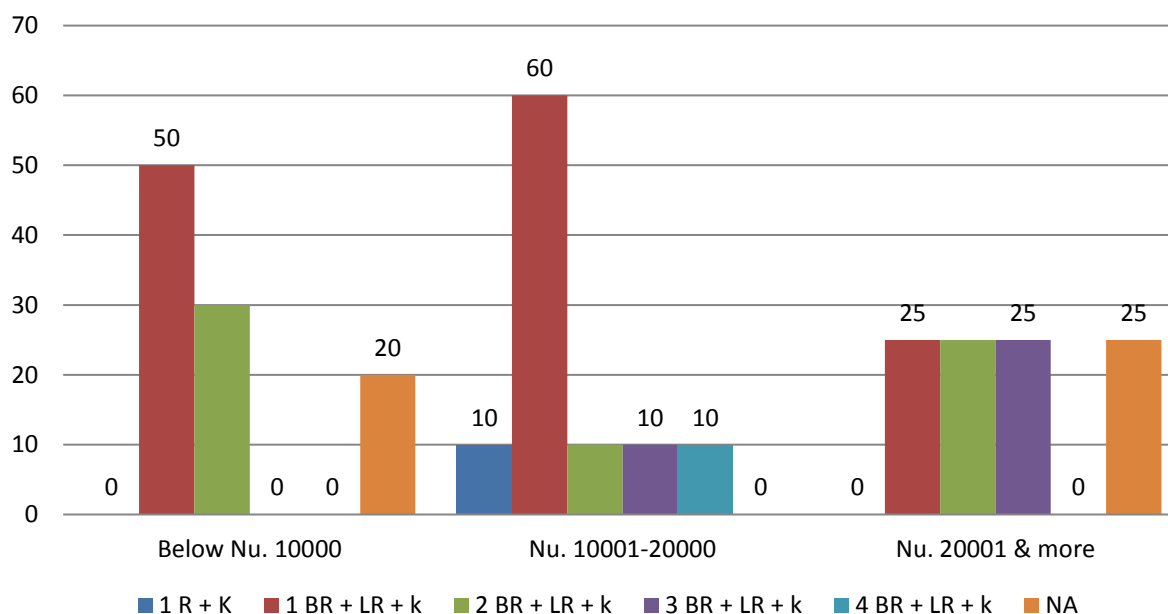
This shows that affordability and willingness to pay for a big house is less due to limited income of families.

7.2.2 Monthly Family Income Range vs present Residential Unit Size in Phuentsholing

This section discusses Monthly family income range vs present residential unit size in Phuentsholing

Table: 7-11 Monthly family income range vs residential unit size in Phuentsholing

Monthly family income range vs Unit size (No. of FGDs – 23, number of responses -25)														
Monthly Family income in Nu. / No. of rooms	1 R + K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		NA		Total	
	No	%	No	%	No	%	No.	%	No	%	No	%	No	%
Below Nu. 10,000	0	0	5	50	3	30	0	0	0	0	2	20	10	100
Nu. 10,001-20,000	1	10	6	60	1	10	1	10	1	10	0	0	10	100
Nu. 20,001 & more	0	0	1	25	1	25	1	25	0	0	1	25	4	100
NA	0	0	0	0	1	100	0	0	0	0	0	0	1	100
Total Families	1	4	12	48	6	24	2	8	1	4	3	12	25	100



Graph 7-40. Monthly family income range vs residential unit size in Phuentsholing

The above table shows that majority of respondents i.e. 50% having family income below Nu.10,000 and 60% having family income of Nu.10,001-20,000 live in houses having 1 bedroom+ 1 living room + kitchen. 25% of the families having income more than Nu.20,000 and above also live in houses having 1 bedroom+ 1 living room + kitchen. Out of total respondents total 48% live in houses having 1 bedroom+ 1 living room + kitchen.

The table also shows that 30% having family income below Nu.10,000 and 25% having family income above Nu.20,000 live in houses having 2 bedroom+ 1 living room + kitchen. 10% of the families having income between Nu.10,001-20,000 also live in houses having 2 bedroom+ 1 living room + kitchen. Out of total respondents total 24% live in houses having 2 bedroom+ 1 living room + kitchen.



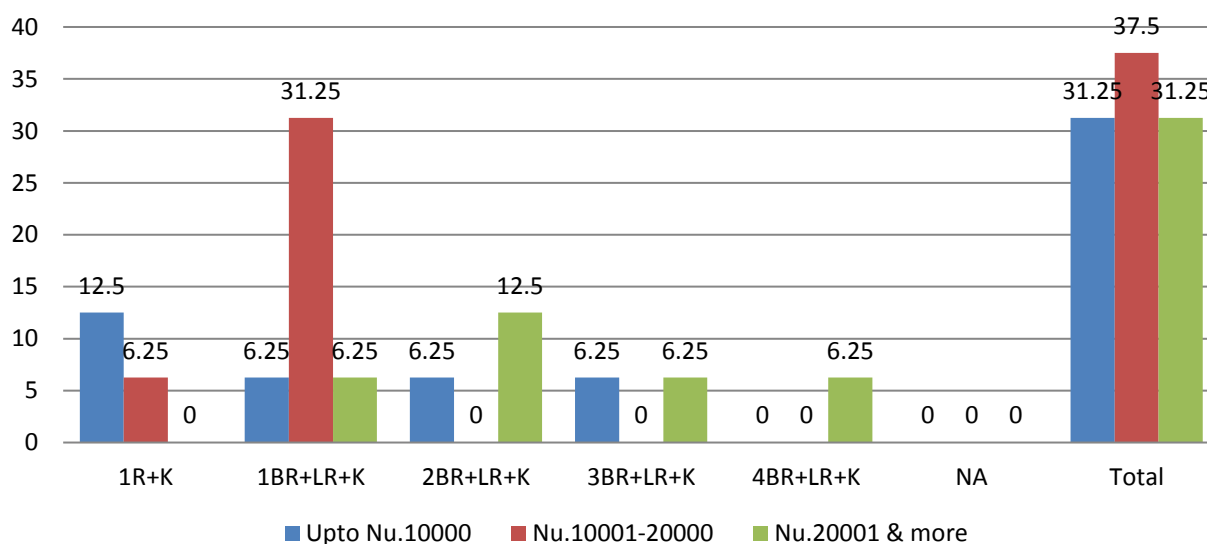
It is significant to note that out of the respondents having monthly family income of above Nu.20,000, no respondent is living in 4 bedroom+ 1 living room + kitchen. However 10% of the respondents having monthly family income between Nu.10,001-20,000 are living in 4 bedroom+ 1 living room + kitchen. During few of the focus group discussions, it was shared by the respondents that at times more than one family share accommodation with each other due to non-availability of small houses and non-affordability for big houses.

7.2.3 Monthly Family Income vs present Residential Unit Size of Bhutanese Living in Jaigaon

This section shows the correlation between monthly family income vs present residential unit size of Bhutanese living in Jaigaon.

Table: 7-12 Monthly Family income vs Unit size

Monthly Family income vs Unit size (No. of FGDs – 4 and no. of one to one interactions -11, total responses - 16)														
Monthly Family income in NU. / No. of rooms	1R+K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		NA		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Upto Nu.10,000	2	12.50	1	6.25	1	6.25	1	6.25	0	0	0	0	5	31.25
Nu.10,001-20,000	1	6.25	5	31.25	0	0	0	0	0	0	0	0	6	37.50
Nu.20,001 & more	0	0	1	6.25	2	12.50	1	6.25	1	6.25	0	0	5	31.25
NA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total families	3	18.75	7	43.75	3	18.75	2	12.50	1	6.25	0	0	16	100



Graph 7-41. Monthly Family income vs Unit size

The above table shows that majority of the respondents i.e. approximately 38% of the families earn between Nu. 10,001-20,000 followed by approximately 31% families having monthly income of below Nu.10,000 and 31% having monthly income of more than Nu.20,000.

The table also shows that majority of the respondents i.e. approximately 44% live in houses having 1 bedroom + 1 living room + kitchen followed by 27% who live in 2 bedroom + 1 living room + kitchen.



This shows that affordability and willingness to pay for a big house is less due to limited income of families.

Hence, it is evident from the data collected both from Phuentsholing and Jaigaon that majority of people have limited income and that they can afford to stay in a house having 1 bedroom+ 1 living room + kitchen followed by a house having 2 bedroom+ 1 living room + kitchen.

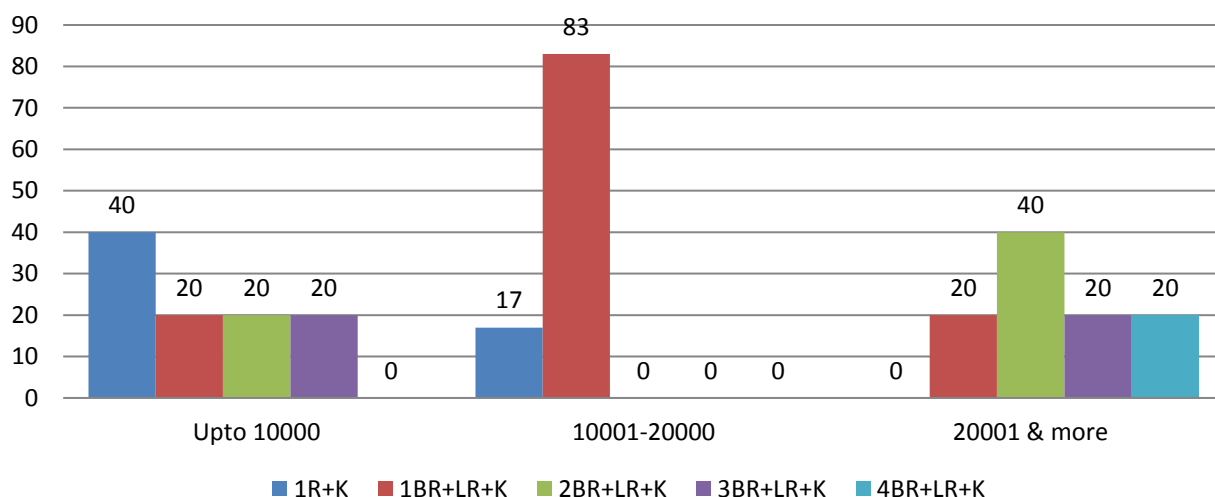
7.2.4 Family Income Range vs present Residential Unit Size of Housing of Bhutanese Living in Jaigaon

This section gives an understanding about the Family income range vs present unit size of housing of Bhutanese living in Jaigaon.

Table: 7-13 Family income range vs the unit size of housing of Bhutanese living in Jaigaon

Monthly Family income range vs Unit size (No. of FGDs – 4 and no. of one to one interactions -11, total responses - 16)

Monthly Family income in Nu. / No. of rooms	1R+K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		NA		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Upto 10,000	2	40	1	20	1	20	1	20	0	0	0	0	5	100
10,001-20,000	1	17	5	83	0	0	0	0	0	0	0	0	6	100
20,001 & more	0	0	1	20	2	40	1	20	1	20	0	0	5	100
Total families	3	18.75	7	43.75	3	18.75	2	12.5	1	6.25	0	0	16	100



Graph 7-42. Family income range vs the unit size of housing of Bhutanese living in Jaigaon

The above table shows that majority of respondents i.e. 40% having family income below Nu.10,000 and 17% having family income of Nu.10,001-20,000 live in 1 room+ kitchen house and 20% having family income below Nu.10,000, 83% having family income of Nu.10,001-20,000 live in a house having 1 bedroom+ 1 living room + kitchen. 40% of the families having income of more than Nu.20,000 and above live in 2 bedroom+ 1 living room + kitchen. 20% each of the families having income more than Nu.20,000 and above also live in 1 bedroom/ 3 bedroom/ 4 bedroom + 1 living room + kitchen.



Out of total respondents total approximately 63% live in either 1 bedroom+ 1 living room + kitchen or smaller than it.

7.2.5 Family Size vs present Residential Unit Size in Phuentsholing

This section shows the family size vs the unit size of housing in Phuentsholing

Table: 7-14 Family size vs the unit size of housing in Phuentsholing

Family size vs Unit Size (No. of FGD -23, Number of responses - 27)														
No. of Family members / No. of Rooms	1R+K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		NA		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-4	1	3.7	3	11.1	1	3.7	0	0	0	0	0	0	5	19
5-6	0	0	8	29.6	3	11.1	2	7.4	0	0	2	7.4	15	56
7 & more	0	0	1	3.7	2	7.4	0	0	1	3.7	1	3.7	5	19
NA	0	0	0	0	2	7.4	0	0	0	0	0	0	2	6
Total	1	3.7	12	44.4	8	29.7	2	7.4	1	3.7	3	11.1	27	100

The above table shows that majority of the respondents i.e. 56% have a family size of 5-6 members followed by 19% each having 3-4 members and 19% have 7 & more members in the family. The table also shows that majority of the respondents i.e. approximately 44% live in a house having 1 bedroom+ 1 living room + kitchen followed by approximately 30% living in 2 bedroom+ 1 living room + kitchen.

This shows that even though the family size of the respondents is more, they live in houses having small or medium unit size due to low income.

7.2.6 Range of Family Size vs present Residential Unit Size in Phuentsholing

This section gives an understanding about range of family size vs the unit size of housing in Phuentsholing.

Table: 7-15 Range of family size vs the unit size of housing in Phuentsholing

Range of family size vs Unit Size (No. of FGD -23, Number of responses - 27)															
No. Family members / No. of Rooms	1R+K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		NA		Total		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
3-4	1	20	3	60	1	20	0	0	0	0	0	0	5	100	
5-6	0	0	8	53.4	3	20	2	13.3	0	0	2	13.3	15	100	
7 & more	0	0	1	20	2	40	0	0	1	20	1	20	5	100	
NA	0	0	0	0	2	100	0	0	0	0	0	0	2	100	
Total	1	3.7	12	44.4	8	29.7	2	7.4	1	3.7	3	11.1	27	100	



The above table shows that majority of the respondents i.e. 60% having family size of 3-4 members, 53% having family size of 5-6 members and 20% having family size of 7 & more members live in a house having 1 bedroom+ 1 living room + kitchen.

The table also shows that 40% of the respondents having family size of 7 & more and 20% each of the families having family size of 3-4 & 5-6 members also live in a house with 2 bedroom + 1 living room + kitchen.

The above table shows that majority of the respondents i.e. approximately 78% live in 2 bedroom + 1 Living room + Kitchen or unit smaller than it.

7.2.7 Family Size vs present Residential Unit Size of Bhutanese Living in Jaigaon

This section discusses the family size vs the unit size of housing of Bhutanese living in Jaigaon.

Table: 7-16 Family size vs the unit size of housing in Jaigaon

Family size vs Unit Size (No. of FGDs – 4 and no. of one to one interactions -11, total responses - 16)														
No. of Family members / No. of Rooms	1R+K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		NA		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-4	1	6.25	3	18.75	1	6	2	13	0	0	0	0	7	44
5-6	2	12.5	4	25	2	13	0	0	1	6	0	0	9	56
7 & more	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	18.75	7	43.75	3	18.75	2	12.5	1	6.25	0	0	16	100

The above table shows that majority of the respondents i.e. 56% have a family size of 5-6 members followed by 44% having 3-4 members in the family.

The table also shows that majority of the respondents i.e. approximately 44% live in a house having 1 bedroom+ 1 living room + kitchen followed by 19% each living in 1 room+ kitchen and 2 bedroom+ 1 living room + kitchen.

This shows that even though the family size of the respondents is more, they live in houses having small or medium unit size.

Hence, it can be concluded from the data collected both from Phuentsholing and Jaigaon that majority of people have a family size of 5-6 members and that they are living in a house having 1 bedroom+ 1 living room + kitchen followed by a house having 2 bedroom+ 1 living room + kitchen or 1 room + kitchen, which means that though the family size is big, people stay in small or medium houses. Family size is not directly proportional to the size of a house.

7.2.8 Family Size vs present Residential Unit Size of Bhutanese Living in Jaigaon

This section gives an understanding about the family size vs the residential unit size of housing of Bhutanese living in Jaigaon.

Table: 7-17 Family size vs the residential unit size of housing

Family size vs Residential unit size of Bhutanese living in Jaigaon												
No. of Family members / No. of Rooms	1 R + K		1 BR + LR + K		2 BR + LR + K		3BR+LR+K		4BR+LR+K		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-2	0	0	0	0	0	0	0	0	0	0	0	0
3-4	1	6.25	3	18.75	1	6	2	13	0	0	7	44
5-6	2	12.5	4	25	2	13	0	0	1	6	9	56
7 & more	0	0	0	0	0	0	0	0	0	0	0	0
NA	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	18.75	7	43.75	3	18.75	2	12.5	1	6.25	16	100



3-4	1	14.28	3	42.86	1	14.29	2	28.57	0	0	7	100
5-6	2	22.22	4	44.44	2	22.22	0	0	1	11.11	9	100
Total families	3	18.75	7	43.75	3	18.75	2	12.5	1	6.25	16	100

The above table shows that majority of the respondents i.e. approximately 43-45% having family size of 3-4 & 5-6 members live in a house having 1 bedroom+ 1 living room + kitchen.

The above table also shows that above 81% of the respondents live in houses of 2 bedroom + 1 Living room + Kitchen or smaller than that.

It is important to note that bigger families having 5-6 members are also living in small houses except for 1 group living in 4 bedroom+ living room+ kitchen house.

7.2.9 Ownership vs present Residential Unit Size in Phuentsholing

This section shows the ownership vs unit size of housing in Phuentsholing

Table: 7-18 Ownership vs unit size of housing in Phuentsholing

Ownership vs Unit size (Phuentsholing FGD)															
Ownership/ No. of rooms	1R+K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		NA		Total		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Encroached	0	0	1	3.85	0	0	0	0	0	0	0	0	0	1	3.85
Rented	0	0	5	19.23	5	19.23	1	3.85	0	0	2	7.69	13	50.00	
Staff Quarters	1	3.85	2	7.69	0	0	0	0	0	0	0	0	3	11.53	
Owned	0	0	1	3.85	1	3.85	1	3.85	1	3.85	0	0	4	15.38	
Company Accommodation	2	7.69	1	3.85	0	0	0	0	0	0	0	0	3	11.53	
NA	0	0	0	0	1	3.85	0	0	0	0	1	3.85	2	7.7	
Total	3	11.53	10	38.47	7	26.92	2	7.7	1	3.85	3	11.53	26	100	

The above table shows that majority of the respondents i.e. 50% live in rented accommodation. Approximately 23% live either in government staff quarters or company staff quarters which are provided on comparatively low rent for their service duration in the city. Only 15% families live in owned house.

The table also shows that majority of the respondents i.e. approximately 38% live in a house having 1 bedroom + 1 living room + kitchen followed by approximately 27% living in 2 bedroom + 1 living room + kitchen. In total about 77% respondents live in either 2 bedroom + Living Room + Kitchen residential unit or unit smaller than it.

This indicates that the majority of the people in Phuentsholing have rented houses and they afford small houses.



7.2.10 Ownership Status vs present Residential Unit Size in Phuentsholing

This section gives an understanding of the Ownership status vs unit size of housing in Phuentsholing

Table: 7-19 Ownership status vs unit size of housing in Phuentsholing

Types of ownership vs. Unit size (Pling FGD)														
Ownership/ No. of rooms	1R+K		1BR+LR+K		2BR+LR+K		3BR+LR+K		4BR+LR+K		NA		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Encroached	0	0	1	100	0	0	0	0	0	0	0	0	1	100
Rented	0	0	5	38.46	5	38.46	1	7.7	0	0	2	15.38	13	100
Govt. Staff Quarters	1	33.33	2	66.67	0	0	0	0	0	0	0	0	3	100
Owned	0	0	1	25	1	25	1	25	1	25	0	0	4	100
Company Accommodation	2	66.67	1	33.33	0	0	0	0	0	0	0	0	3	100
NA	0	0	0	0	1	50	0	0	0	0	1	50	2	100
Total families	3	11.54	10	38.46	7	26.92	2	7.69	1	3.85	3	11.54	26	100

The above table shows that majority i.e. approximately 38% of the respondents in rented accommodation live in 1 bedroom + Living room + kitchen unit and another 38% live in 2 Bedroom + Living Room + Kitchen live in 2 bedroom + Living room + kitchen unit. Approximately 8% respondents live in 3 Bedroom + Living room + Kitchen unit. None of the respondents who are staying on rent are living in 1 room + kitchen or 4 Bedroom + Living room + kitchen unit.

The above table also indicates that 67% of the respondents living in government staff quarters are having a residential unit of 1 bedroom+ 1 living room + kitchen and 33% of them are having 1 room + kitchen.

The above table shows that equal number of respondents having own house i.e. 25% each are living in 1 bedroom/ 2 bedroom/ 3 bedroom and 4 bedroom + 1 living room + kitchen.

The above table shows that majority i.e. 67% of the respondents who are living in company accommodation have 1 room + Kitchen unit and 33% of them have 1 bedroom + living room + kitchen unit.

7.2.11 Ownership Status vs present Residential Unit Size of Bhutanese Living in Jaigaon

This section gives an understanding of the Ownership status vs residential unit size of Bhutanese living in Jaigaon.

Table: 7-20 Ownership status vs residential unit size of Bhutanese living in Jaigaon

Ownership vs Unit size (Jaigaon FGD & 1 to 1)														
Family income/ No. of rooms	1 R + K		1 BR + LR + k		2 BR + LR + k		3 BR + LR + k		4 BR + LR + k		NA		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Rented	3	19	7	44	3	19	2	13	1	6	0	0	16	100
Owned	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	19	7	44	3	19	2	13	1	6	0	0	16	100

The above table shows that 100% of the respondents who are staying in Jaigaon live in rented accommodation. The table also shows that majority of the respondents i.e. 44% live in a house having



1 bedroom+ 1 living room + kitchen followed by 19% each living in 1 room+ kitchen and 2 bedroom+ 1 living room + kitchen.

Bhutanese people living in Jaigaon live in rented homes, most of which are small in size.

The utmost need for social housing or rental housing for people living in Phuentsholing and Bhutanese living in Jaigaon can be inferred from the above two tables.

7.2.12 Rent Amount vs Ownership Status of Residential Unit in Phuentsholing

This section discusses Rent amount vs ownership status of residential unit in Phuentsholing.

Table: 7-21 Rent amount vs ownership status of residential unit in Phuentsholing

Rent vs Type of Accommodation (Phuentsholing)															
Type of ownership / Rent Amount in Nu.	Upto 2,500		2,501-5,000		5,001-8,000		8,001-10,000		10,001& more		NA		Total		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Rented	0	0.00	2	15.38	6	46.15	1	7.7	1	7.7	3	23.07	13	100	
Govt. Staff quarters	3	100	0	0	0	0	0	0	0	0	0	0	3	100	
Company accommodation	3	100	0	0	0	0	0	0	0	0	0	0	3	100	
Total	6	31.58	2	10.53	6	31.58	1	5.26	1	5.26	3	15.79	19	100	

The above table shows that amongst the families who stay in rented housing majority i.e. approximately 46% of the respondents pay rent between Nu. 5,001-8,000 followed by 15% who pay rent between 2,501 -5,000. Approximately 8% each are paying rent between Nu. 8,001-10,000 and above 10,001. None of the respondents staying in rented houses pay rent below Nu. 2,500 per month. 23% of the respondents did not answer this question as they were unaware about the rent.

Amongst the respondents who are staying either in government staff quarters or company accommodations 100% are paying rent of less than Nu. 2,500 per month.

From the above table the inference drawn is that the market rate is higher than the government rate of rent. The government quarters are only available for government servants and the remaining population is staying in rented house for which they are compelled to pay high rent amount.

7.2.13 Rent vs Type of Accommodation of Bhutanese Living in Jaigaon

This section gives an understanding of Rent vs type of accommodation of Bhutanese living in Jaigaon

Table: 7-22 Rent vs type of accommodation of Bhutanese living in Jaigaon

Rent vs type of accommodation of Bhutanese living in Jaigaon													
Type of ownership / Rent Amount in Rs.	Upto 2,500		2,501-5,000		5,001-8,000		8,001-10,000		10,001& more		Total		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Rented	4	25	9	56.25	3	18.75	0	0	0	0	16	100	

The above table shows that majority of the respondents i.e. approximately 56% pay rent between Rs. 2,501-5,000 followed by 25% who pay rent up to Rs. 2,500. Approximately only 18% pay rent between Rs. 5,001 -8,000. None of the respondents pay rent above Rs. 8,000 per month.

The conversion rate of Indian rupees and Ngultrum is same.



7.3 Willingness and Affordability to Avail Housing In Project

This section discusses the people’s willingness to avail the residential units in the project area. It also gives an idea about affordability of people to purchase or avail a unit on rent. It also discusses people’s attitude towards ownership status of houses.

7.3.1 People in Phuentsholing

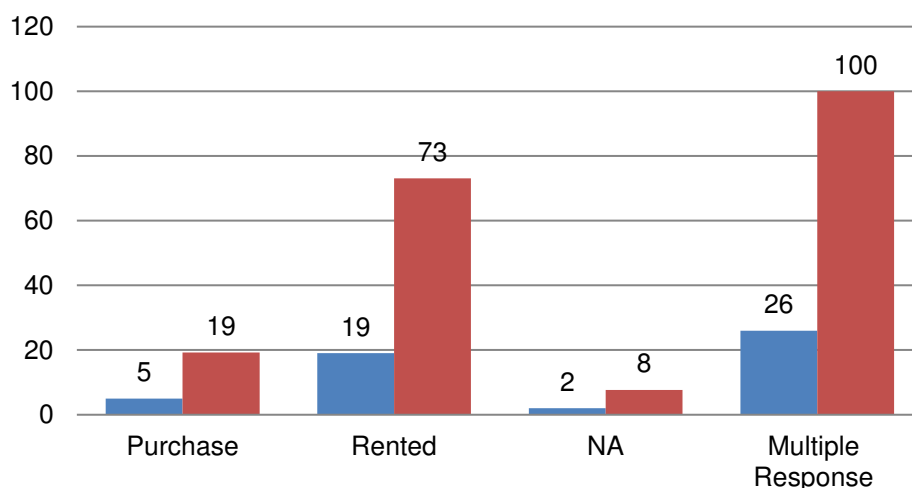
The following section shows the willingness and affordability amongst people of Phuentsholing to avail new house in Project area.

2.3.2.r Willingness to Obtain Housing in New Township

This section shows the willingness of people in Phuentsholing to obtain housing in the new township.

Table: 7-23 Willingness to obtain housing in new township amongst people in Phuentsholing

Willingness to obtain housing	Focus Group Discussion	
	Frequency	Percentage
Purchase	5	19
Rented	19	73
NA	2	8
Multiple Response	26	100



Graph 7-43. Willingness to obtain housing in new township amongst people in Phuentsholing

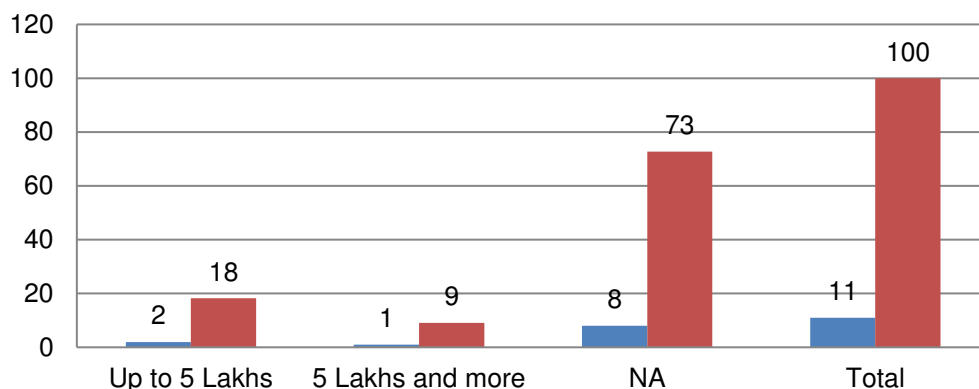
The above multiple response table and graph show that majority i.e. 73% of the respondents were willing to obtain housing but on rent followed by 19% who were ready to purchase. Some of them showed interest both in renting and purchasing a house. However, there were 8% respondents who were not sure about obtaining a house.

2.3.2.s Affordability to Purchase

This section shows the affordability of respondents to purchase a house.

Table: 7-24 Affordability to purchase house amongst people in Phuentsholing

Affordability	Focus Group Discussion	
	Frequency	Percentage
UPTO 5 Lakhs	2	18
5 Lakhs and more	1	9
NA	8	73
Total	11	100



Graph 7-44. Affordability to purchase house amongst people in Phuentsholing

The above table and graph show that majority i.e. 73% of the respondents were not sure about their affordability to purchase a house, whereas 18% of the respondents were willing to spend up to Nu. 5 lakhs followed by 9% willing to spend more than Nu. 5 Lakhs.

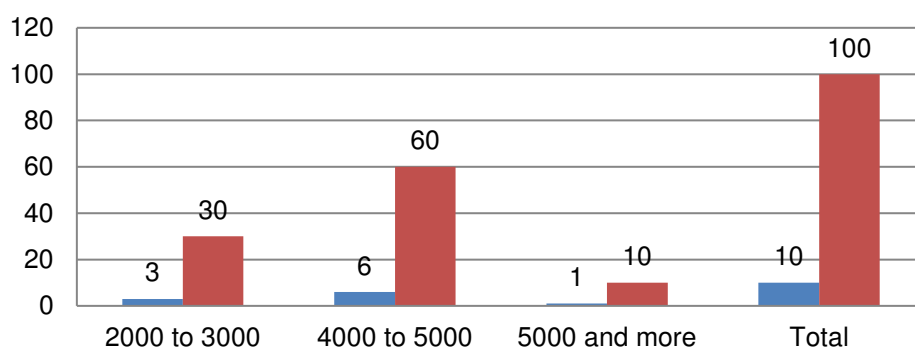
This shows that though there is willingness to have a house, affordability to buy a house is an issue.

2.3.2.t Affordability To Pay Rent

This section shows the affordability of the respondents to pay rent

Table: 7-25 Affordability to pay rent amongst people in Phuentsholing

Affordability	Focus Group Discussion	
	Frequency	Percentage
Nu. 2,000 to 3,000	3	30
Nu. 4,000 to 5,000	6	60
Nu. 5,000 and more	1	10
Total	10	100



Graph 7-45. Affordability to pay rent amongst people in Phuentsholing

The above table and graph show that majority i.e. 60% of the respondents can afford to pay rent between Nu. 4,000 to 5,000 followed by 30% having affordability to pay rent between Nu. 2,000-3,000. Only 10% of the respondents can afford to pay rent of Nu. 5,000 and more.

The affordability for paying rent also is quite limited thereby emphasizing the need for low cost housing.

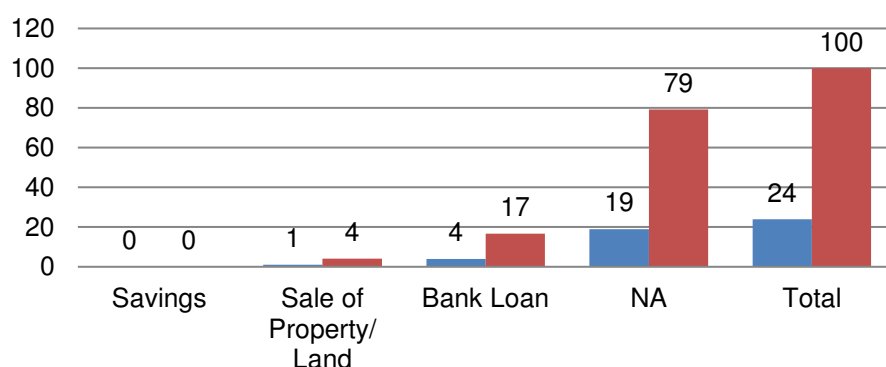


2.3.2.u Source of Fund to Purchase New House

This section shows the source of fund for the respondents to purchase new house.

Table: 7-26 Source of fund to purchase new house

Source of fund	Focus Group Discussion	
	Frequency	Percentage
Savings	0	0
Sale of Property/ Land	1	4
Bank Loan	4	17
NA	19	79
Total	24	100



Graph 7-46. Source of fund to purchase new house

The above table and graph show that majority i.e. 79% of the respondents were not sure about source of fund followed by 17% who thought of bank loan as a source of fund. 4% of the respondents shared that selling of property or land could be one of the sources of fund.

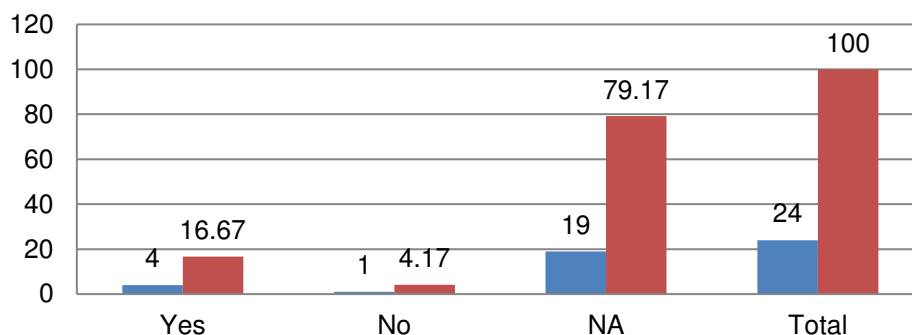
This data and the responses from banking sector both show that people are not aware and not willing to take loan for housing from the banks.

2.3.2.v Awareness about Availability of Loan

This section gives an idea about views of the respondents regarding availability of house loan from the bank.

Table: 7-27 Awareness about availability of bank loan amongst people in Phuentsholing

Availability of House Loan from bank	Focus Group Discussion	
	Frequency	Percentage
Easy	4	16.67
Difficult	1	4.17
Not Aware	19	79.17
Total	24	100



Graph 7-47. Awareness about availability of bank loan amongst people in Phuentsholing

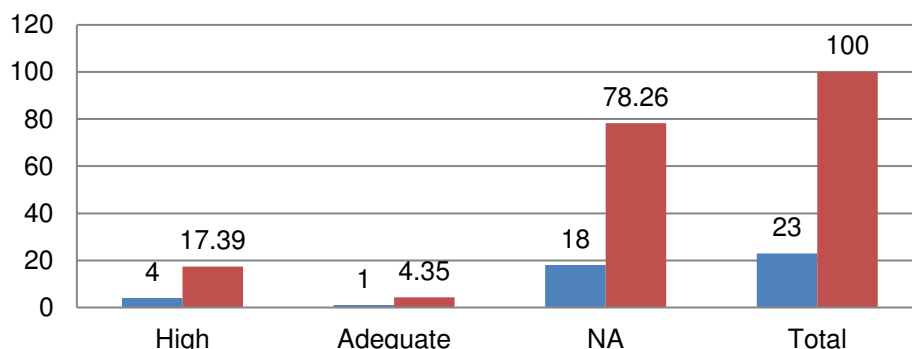
The above table and graph show that majority i.e. 79.17% of the respondents were not aware about the process of obtaining loan for housing from the bank. 16.67% of the respondents felt that the loans were easily available. Hence there is not much knowledge about taking loan for housing from bank.

2.3.2.w Perception on Adequacy of Rate of Interest

This section shows the perception of the respondents about the adequacy of rate of interest on house loan.

Table: 7-28 Perception on adequacy of rate of interest on house loan

Interest rate	Focus Group Discussion	
	Frequency	Percentage
High	4	17.39
Adequate	1	4.35
NA	18	78.26
Total	23	100



Graph 7-48. Perception on adequacy of rate of interest on house loan

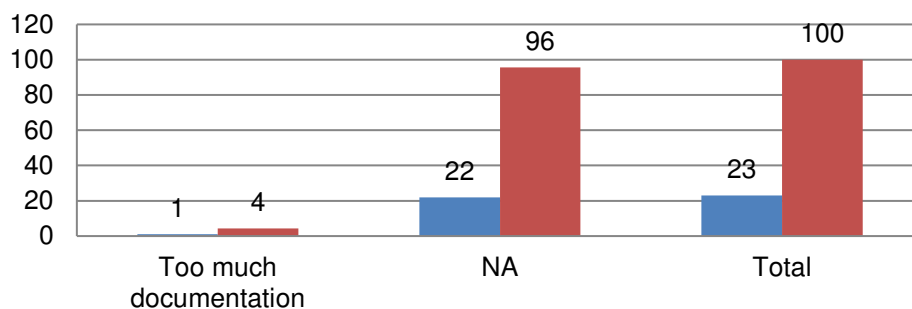
The above table and graph show that majority i.e. 78.26% of the respondents were not aware about the rate of interest for housing loan. 17.39% of the respondents felt that that the rate of interest for housing loan was very high.

2.3.2.x Issues in Obtaining Loan

This section shows the reasons for issues in obtaining house loan

Table: 7-29 Issues in obtaining house loan

Issues	Focus Group Discussion	
	Frequency	Percentage
Too much documentation	1	4
NA	22	96
Total	23	100



Graph 7-49. Issues in obtaining house loan

The above table and graph show that majority i.e. 96% of the respondents were not aware about the issues in getting the loan whereas 4% of the respondents felt that it involved too much documentation.

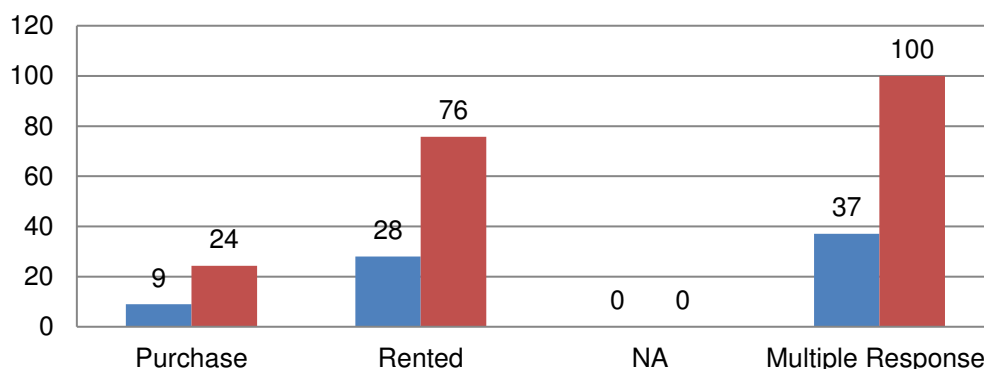
7.3.2 Bhutanese living in Jaigaon

2.3.3.j Willingness to obtain housing in new township

This section shows the willingness of Bhutanese living in Jaigaon to obtain house in new township.

Table: 7-30 Willingness to obtain housing in new township in Bhutanese living in Jaigaon

Willingness to obtain housing	Bhutanese in Jaigaon	
	Frequency	Percentage
Purchase	9	24
Rented	28	76
NA	0	0
Multiple Response	37	100



Graph 7-50. Willingness to obtain housing in new township

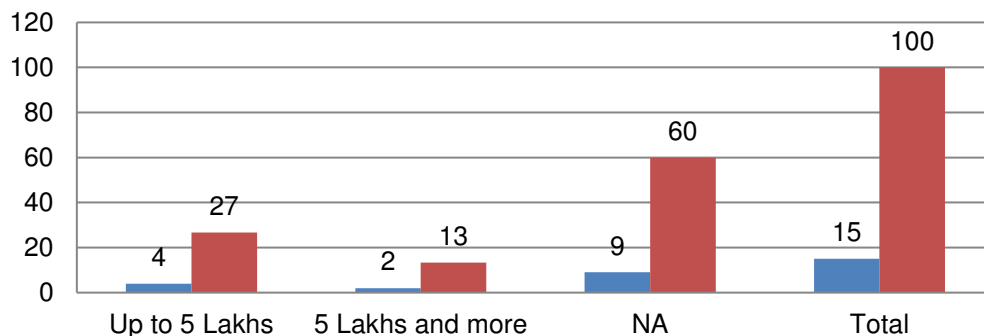
The above multiple response table and graph show that majority i.e. 76% of the respondents were willing to obtain housing but on rent, followed by 24% who were ready to purchase. Some of them gave multiple responses by showing interest both in renting and purchasing a house.

2.3.3.k Affordability to Purchase House

This section shows the affordability of the respondents to purchase a house.

Table: 7-31 Affordability to purchase house amongst Bhutanese living in Jaigaon

Affordability	Bhutanese in Jaigaon	
	Frequency	Percentage
Up to 5 Lakhs	4	27
5 Lakhs and more	2	13
NA	9	60
Total	15	100



Graph 7-51. Affordability to purchase house amongst Bhutanese living in Jaigaon

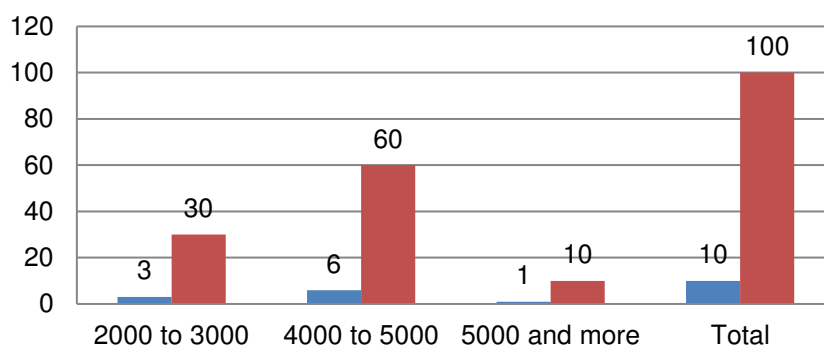
The above table and graph show that majority i.e. 60% of the respondents were not sure about their affordability to purchase a house followed by 27% who can afford to pay up to Nu. 5 lakhs and 13% who can pay Nu. 5 lakhs and more.

2.3.3.1 Affordability to Pay Rent

This section shows the affordability of the respondents to rent a house.

Table: 7-32 Affordability to pay rent amongst Bhutanese living in Jaigaon

Particulars	Bhutanese in Jaigaon	
	Frequency	Percentage
Nu. 2,000 to 3,000	4	24
Nu. 4,000 to 5,000	8	47
Nu. 5,000 and more	5	29
Total	17	100



Graph 7-52. Affordability to pay rent

The above table and graph show that majority i.e. 60% of the respondents can afford to pay rent between Nu. 4,000 to 5,000 followed by 30% who can afford to pay rent between Nu. 2,000-3,000. Only 10% of the respondents can afford to pay rent of Nu. 5,000 and more.

This data is same as that for people in Phuentsholing, which shows that affordability is same for people living in both the areas.

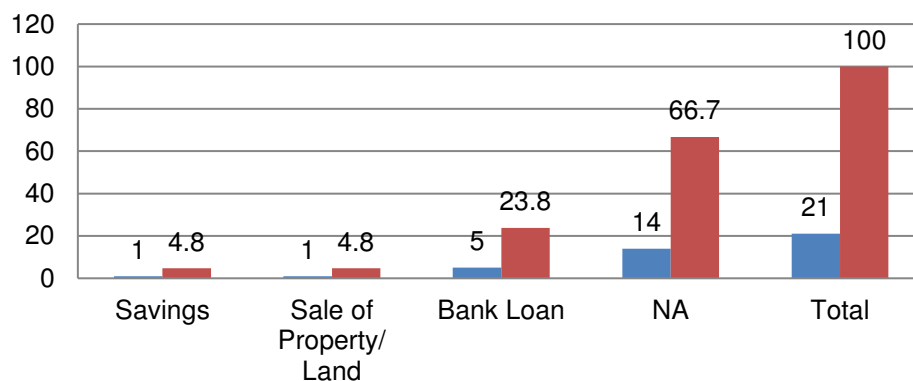
2.3.3.m Source of Fund to Purchase New House

This section gives an understanding about the various sources of fund that the respondents have, to purchase new house.



Table: 7-33 Source of fund to purchase new house amongst Bhutanese living in Jaigaon

Source of fund	Bhutanese in Jaigaon	
	Frequency	Percentage
Savings	1	4.8
Sale of Property/ Land	1	4.8
Bank Loan	5	23.8
NA	14	66.7
Total	21	100



Graph 7-53. Source of fund to purchase new house amongst Bhutanese living in Jaigaon

The above table and graph show that majority i.e. 66.7% of the respondents were not sure about source of fund followed by 23.8% who thought of bank loan as a source of fund. 4.8% each of the respondents shared that selling of property or land or savings could be one of the sources of fund.

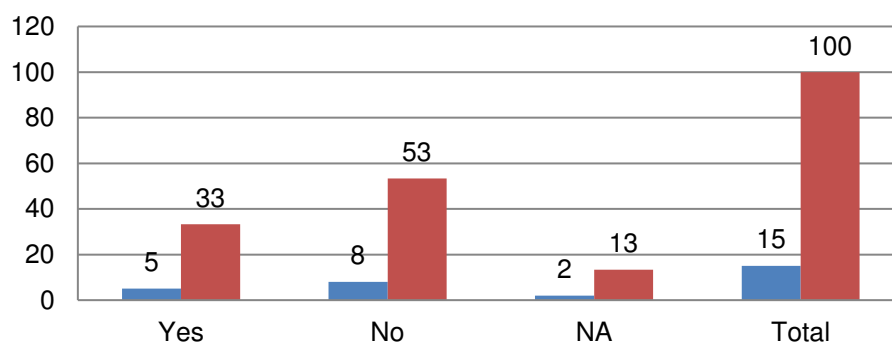
This data and the response from banking sector both show that people are not aware and not willing to take loan for housing from the banks. Further, saving is not a very popular practice.

2.3.3.n Availability of Bank Loan

This section gives an idea about views of the respondents regarding availability of house loan from the bank.

Table: 7-34 Availability of bank loan amongst Bhutanese living in Jaigaon

Availability of bank loan	Bhutanese in Jaigaon	
	Frequency	Percentage
Easy	5	33
Difficult	8	53
Not aware	2	13
Total	15	100



Graph 7-54. Availability of bank loan amongst Bhutanese living in Jaigaon



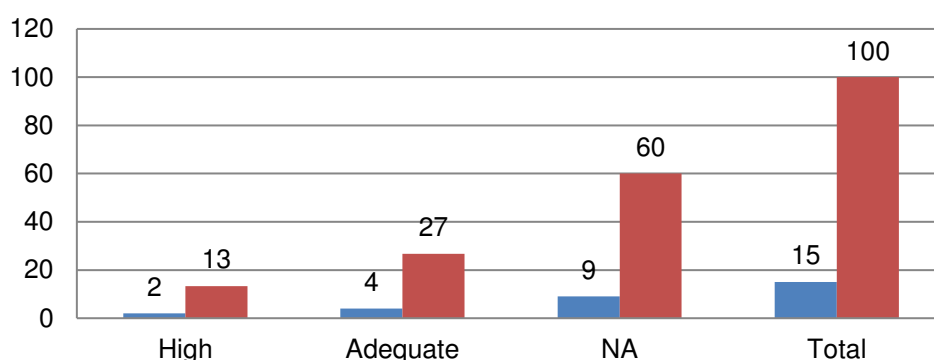
The above table and graph show that 53% of the respondents were not willing to obtain house loan from bank whereas 33% said that they could think of taking a house loan from bank. 13% of the respondents were not sure if it was a viable option for them.

2.3.3.o Adequacy of Rate of Interest

This section shows if the respondents think the rate of interest for house loan is adequate.

Table: 7-35 Adequacy of Rate of interest for house loan – Bhutanese living in Jaigaon

Interest rate	Bhutanese in Jaigaon	
	Frequency	Percentage
High	2	13
Adequate	4	27
NA	9	60
Total	15	100



Graph 7-55. Adequacy of rate of interest for house loan – Bhutanese living in Jaigaon

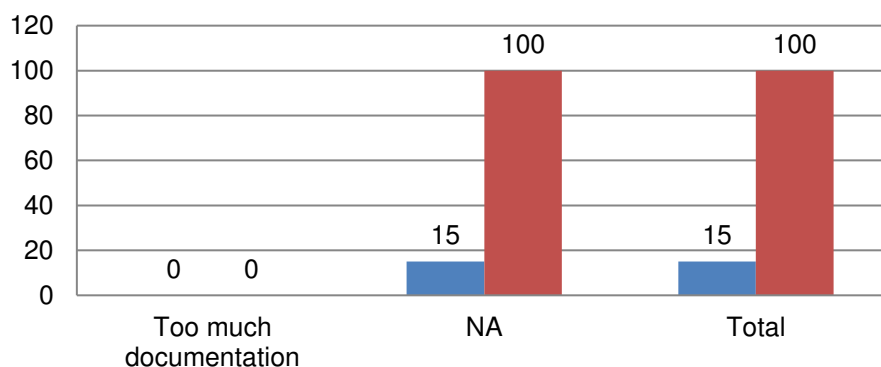
The above table and graph show that 60% of the respondents were not aware about the prevailing rate of interest followed by 27% who felt that it was adequate. 13% of the respondents felt that the rate of interest was high.

2.3.3.p Issues in Obtaining Bank Loan

This section shows the issues perceived by the respondents in obtaining bank loan.

Table: 7-36 Issues in obtaining bank loan – Bhutanese living in Jaigaon

Issues	Bhutanese in Jaigaon	
	Frequency	Percentage
Too much documentation	0	0
NA	15	100
Total	15	100



Graph 7-56. Issues in obtaining bank loan – Bhutanese living in Jaigaon



The above table and graph show that all the respondents were not aware about the issues in taking a loan. However, with reference to the table which shows data on obtaining loan from bank, majority were not willing for the same.

This shows that there is lack of awareness amongst people regarding bank loan as a medium to buy a house.

7.4 Conclusion

The following inferences are derived from the primary and secondary data analysis and field observations.

7.4.1 Housing

- 1) Housing is one of the major concerns for the people of Phuentsholing. The city is facing space crunch and housing is scarce as well as costly.
- 2) Most of the houses are big in size and the rent is too high. This forces the families to either share the house so that the rent is affordable or to live across the border in Jaigaon, India.
- 3) The most affordable or preferred residential unit size for rented house is 2 bedrooms, 1 living room and kitchen followed by 1 bedroom, 1 living room and kitchen.
- 4) It was observed that families with low income share big size residential units with other families. This clearly shows lack of supply of smaller units that can be afforded by Low Income Group families and can be concluded that the need of smaller size unit is more than the bigger size units.
- 5) The social housing with basic common facilities is the crucial need of the country to bring back the citizens living in Jaigaon.
- 6) At the same time many of people living in Jaigaon and other families living in Phuentsholing who fall below poverty line or middle income group families require affordable housing. Hence the houses should be available in different sizes to suit the needs and affordability of people.

7.4.2 Infrastructure and services

Streets and internal road: In order to meet the growing needs of the commercial hub of Bhutan, it is required to have better and spacious two-way streets and internal roads. The possibility of having flyovers and toll bridges needs to be explored. It will lead to better management of traffic and heavy commercial vehicles.

Parking: The insufficient parking area is also a crucial problem in core areas of Phuentsholing. The multi-level parking facility in different areas can be introduced.

Storm-water Drainage: The current open storm-water drainage system creates frequent water logging problems. It may lead to water borne diseases. The new township must have well planned and maintained storm water drainage system.

Solid waste collection: Proper and regular facility of solid waste collection in the town is required.

Health services: The General Hospital of Phuentsholing which caters to entire Chukha Dzongkhag and other surrounding areas has only 60 beds capacity. As per the criteria of National Health Policy of Bhutan, the same is insufficient. It also lacks in specialist doctors and paramedical staff. Considering the gaps in the facilities and additional population to come, the new township should have better health care services in terms of hospitals or clinics with increased number of beds and all the medical facilities and specialist doctors.

Education Services: The number of schools and teachers are insufficient in Phuentsholing. The facilities for higher education and technical or specialised education is missing. There are no vocational training courses in the schools. The playground space is insufficient in schools. There are no designated



counsellors in schools, but only some teachers who have been given brief training in counselling, provide counselling services to students. Considering the gaps in the facilities and additional population to come, the new township should have bigger space for education institutes and variety of streams of educations including vocational training centres, counselling centres, Engineering, Medical and Business Administration colleges, etc.

There is also a felt need for special schools for children with special needs.

Local Market: The present town requires designated and bigger space for market for catering to daily needs such as dairy products, groceries, vegetables, etc., which would be facilitating both the vendors and the consumers alike.

Traditional handicraft: A place for selling traditional handicraft items of Bhutan should also be there.

Financial services: There should be space for the banks in Phuentsholing to open a branch in the new township and the same should be facilitated.

Communication: Strong internet connectivity is suggested as that would aid the smooth functioning of various sectors.

Recreational Facilities: In order to fulfil the dearth of recreational facilities for children and adults, there are quite a few suggestions received from the respondents which include swimming pool, water sports, sports complex, parks, gyms, walkways and promenade along the river, movie theatre etc.

Transportation: The public transport system should be more systematic with increase in frequency and connectivity to different parts of the township and city.

Air Connectivity: Suggestion for mini airport/ airport will help in increasing the reach to Phuentsholing which will help in improving the business and economy of the entire country.



8 Identification of the Impacts

This chapter gives a detailed description of the possible social and economic impacts during various stages of the project i. e. construction and post-construction phases.

The identification of social impacts was in general guided by ADB safeguard policy 2009.

The ground level observations, people's participation, review of primary and secondary data, professional expertise of the SIA team combined with stakeholder's views, social-economic condition of the area and need of the people, helped in identification of the impacts. The primary data formed part of the assessment but it is not the only criteria to decide the impact. The expert's own understanding about the project and expertise in assessing the impacts also played an important role in identifying the impacts. After identifying the impacts of the project, their significance was ascertained. i.e. whether they are acceptable, require mitigation, or are unacceptable and whether they are positively significant or negatively significant.

As far as the safeguard issues such as impact on indigenous people, involuntary resettlement or land acquisition are concerned there are no negative impacts of the project. Considering the long term impacts of the project it is very important to note that it will have many positive impacts on Phuentsholing Urban Area and the surrounding rural areas as well as the nation as a whole. However there are few temporary negative impacts which would need to be taken care of. For such negative impacts the SIA has suggested mitigation plans and for positive significant impacts SIA has given suggestions to enhance the same for the benefits of the Phuentsholing Urban Area.

Since many impacts are not quantifiable, it is not possible to rank them objectively but they are listed below:

8.1 Construction Phase Impacts

8.1.1 Temporary Negative Impacts due to construction activities:

It is envisaged that the construction stage of the project will at least take 4-5 years (Refer Chapter 9 Main Report). During the first phase river training, embankment, bridge and common urban infrastructure work will be taken up and reclaimed land will be available for township development.

The potential negative impacts which can be mitigated if proper preventive measures are taken from the beginning are as follows:

Roads and Traffic: During the construction phase, traffic of transporting construction material and associated people will increase which will create additional burden on city roads leading to project site. The number of road accidents may increase due to increased traffic movements.

Air: It will also generate noise, some dust and exhaust fumes from the construction vehicles as they make their way from the city roads. The aggregated earth filling material which is to be borrowed from various borrow sites will also generate air and noise pollution and will require access roads to be maintained.

Hazardous Substances: There are chances of spillage of petroleum products on road due to the movements of the construction vehicles and other equipment on site.

Water: The increased pollution will also have an impact on drinking water quality.

Solid Waste Generation: During the construction period, solid waste will be generated from the actual construction activities as well as large number of the workforce on site at any given time. The problem can be significant if preventive measures are not made available.

Construction Noise pollution: The noise impact during construction is expected to be negative but short term. Sources of noise will be trucks and the off-road vehicles in transit. Impacts of noise include noise-induced hearing loss and/or nuisance for the project workers.

Labour safety issues: Involvement of large labour force will raise issues of labour safety on site. It will also increase incidences of occupational accidents.



8.1.2 Impacts due to increased population during construction phase

During the construction stage the project will attract new population in terms of labour force during the construction phase which will create the following social issues.

Housing: The large number of labour force and their family will require temporary shelters which will generate labour colonies and unhygienic conditions around the project area.

Health Issues: The large number of in migration of labour force may increase health issues like spread of HIV-AIDS.

8.1.3 Positive impacts during construction phase

The ALDTP Phase-I consists of the following four sequences:

- (i) River Training and Embankment: The river training and embankment work will help in mitigating the floods and thereby prevent flooding in Phuentsholing town.
- (ii) Reclamation and Cross Drainage Works: This consists of filling for the reclaimed land within the Project area which would help in providing usable land for township development. This would ensure safe construction of various facilities in the ALDTP. Cross drainage work will help in secure channelization of the river which would help in reclaiming the land and use the same for a variety of purposes.
- (iii) Bridge: Building a bridge would ensure a thorough fare and facilitate movement of traffic and people.
- (iv) Common Urban Infrastructure: The basic infrastructure facilities like roads, water supply, sewerage, storm water drainage, etc., are necessities for any population and these would be incorporated in ALDTP.

During the construction stage a large number of jobs for skilled, semiskilled and unskilled workers will be generated which would give livelihood to a large number of families. However for availing these livelihood opportunities the capacity of local people will have to be built. During this phase business of providing earth filling material and trucks will also be generated which needs to be taped by the local people.

8.2 Post- construction Phase Impacts

Once the river training work is over and the basic infrastructure is put in place, the land would be ready for lease and development to developers interested in township development and investors.

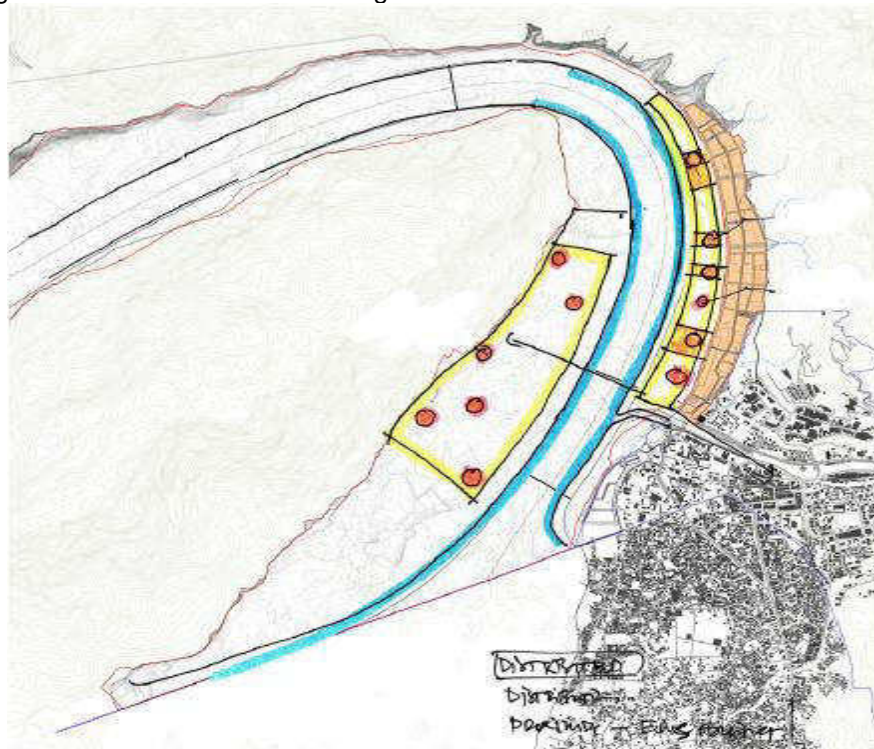
The post construction stage would mostly bring in positive impacts for the city and the nation in terms of housing, infrastructure, livelihood and revenue generation which would need to be grabbed and enhanced. There would be some social impacts which would need to be addressed carefully.

8.2.1 Beneficial Impacts of the Project

As the master plan suggests different zones would be developed within the project area such as residential, commercial, institutional, mixed use and special zones like helipad, resorts, green zone, cultural area, recreational, designated areas for sports and golf course etc. The project would also have essential areas such as embankment, buffer forest zone, roads, transportation, bridges etc. The overall plan of the project would be implemented in phases to meet the increasing need of the projected population. The provisions of housing and other infrastructure zones and facilities will be beneficial to the entire Phuentsholing and surrounding area.

Housing: The problem of housing crunch and high rents in Phuentsholing would be solved to a great extent as housing units of different sizes which are affordable would be available in the new township. This would help people to find their own space, without sharing it with anyone and satisfy one of the most basic needs of shelter.

Map 5: Suggested location for social housing



Source: HCP

Infrastructure: As the township would be a planned township, infrastructure facilities would be well thought of and incorporated which would overcome the negative of now haphazard development of Phuentsholing town. All the basic amenities like roads, water, drainage, etc. would be as per the requirement of the new township.

Systematic development and services: The development as mentioned in the previous point would be pre-planned and this would lead to making it systematic, phase-wise, equal to all. The services pertaining to the basic needs such as public transport, traffic, etc. would be planned as per the need of the residents of the township and will fulfil their needs without any discrimination.

Access to new recreational, health and educational facilities: The Township planning area has designated zones for creating new and well equipped recreational, health and educational facilities. As the SIA study and review of primary and secondary data suggests, there is either a dearth of these facilities or they are not satisfactorily equipped in terms of manpower or material resources. This would be taken care of in the upcoming township project.

Employment generation: This is one of the most important beneficial impacts as it will start during the construction phase and it would continue at all stages as new commercial activities in the township will create new employment opportunities and jobs for people of Phuentsholing and Bhutan. Respectable livelihood would be available for all.

Business opportunities: Development of various new commercial activities in the new township would lead to development of new or more business opportunities e.g. tourism, water sports, traditional handicrafts, hospitality industry, etc. As mentioned in the previous point, this in turn would lead to more employment generation. This in turn would generate more revenue for the country.

Skill development and training centres for new kind of employment: The review of the SIA suggests that there is lack of initiative for skill based work amongst urban youth. Having a provision for skill development and training centres would inculcate value of dignity of labour amongst young generation and generate need based skilled workers for the country.

Returning opportunity for Bhutanese people living in Jaigaon: A major issue of concern for the Bhutanese government has been that more than 5,000 Bhutanese people live in the cross-border town

of India, Jaigaon, due to lack of availability of affordable housing facility in Phuentsholing. The township would help in addressing this issue too. The Bhutanese living in Jaigaon will have an opportunity to come back and have an affordable house in their country.

8.2.2 Mixed impacts of the Project

Cultural issues due to newer population: As the Bhutanese people in Jaigaon have been living for years/ generations in India, they might have built cultural differences and initially that might create some adjustment issues with the present population in the new township. However, as such since both the countries are having similar value base, issues if any, will get resolved after a while.

Nature: There have been concerns shared about protection and preservation of nature. In the initial phase, it may feel like natural surroundings are being disturbed, but there is a provision for having a bio-diversity park and also preservation of local flora including reviving the endangered species, through landscaping.

8.3 Impact on cross border town Jaigaon, West Bengal, India

ALDTP would host various areas such as residential, commercial, and institutional; it will also have tourist attractions like resorts, bio-diversity park, cultural village, recreational areas, designated areas for sports and golf course etc. Jaigaon being the border town will also have impacts of ALDTP. Most of the Impacts would be positive and will boost the economy of Jaigaon as both the towns are interdependent on each other in terms of trade and commerce. The new development and additional population will be beneficial to Jaigaon in the following aspects:

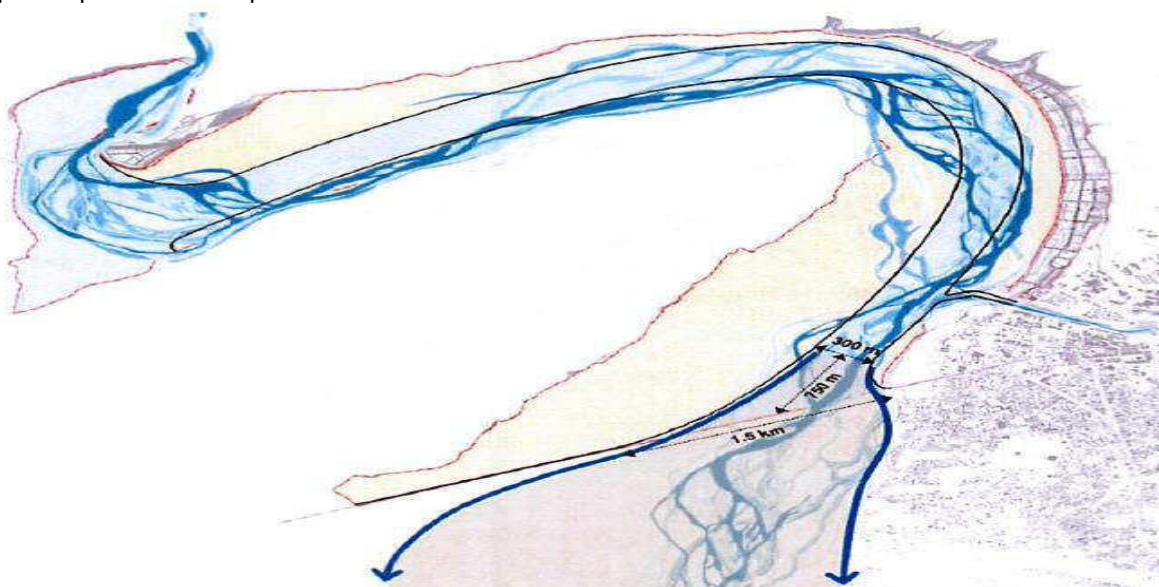
Employment generation: This is one of the most important beneficial impacts on both sides of the border. The project will generate a large number of jobs in construction sector during construction phase which will be beneficial for Indian Day Workers also.

Business opportunities: Development of various novel commercial activities in the proposed township would lead to development of new or more business opportunities e.g. tourism, water sports, traditional handicrafts, hospitality industry, etc. This would lead to more employment generation which will have beneficial impact on Jaigaon also, due to its interdependency with Phuentsholing.

Access to new tourist destination: The people of Jaigaon will have access to the new tourist destination.

Impact of ALDTP on flow/ speed of river on downstream: The ALDTP will have a positive impact of flood mitigation in Phuentsholing. However, the river training will not have any impact, positive or negative on the flow of water, downstream on the cross-border down of Jaigaon, India.

Map 6: Impact on flow/ speed of river on downstream



Source: HCP



The above figure shows that after the river training, the width of the river would be 300 m in the Project area, after which, the river would gush with force for around 150 m to 200 m. Whereas the area available in this case is 750 m till the Indian border, which would help in subsiding the flow and force of water to its natural course. Also there is no habitation in this area of 750 m.

Hence, the river training and embankment -work in Phuentsholing will not have any negative consequences on Jaigaon or India as the flow would be natural downstream on the Indian side.

Impact on normal and flood volume of water: No dam or dam like structures are being considered for the Project. The entire volume of water is expected to flow naturally. The highest flood recorded was in 1993 in Hashimara, India, which is located about 15 km downstream of the Project Area. The structures to be created for embankment will be able to sustain the highest level of flood recorded in last 100 years.

As far as meeting the requirement for fresh water is concerned, it is proposed to source the water from the river Amochu and the ground water source for the new township. This demand for fresh water is 0.2% of the fair weather flow of Amochu; hence even the additional demand for water, created in the new township will not affect the total volume of water flowing downstream of Indo-Bhutan border.

In addition to this, there would be a **Flood Warning System** which will alert settlements downstream in the event of a major flood in the Amochu catchment. The main flood risk to Phuentsholing and Jaigaon, India is from monsoon rainfall over the catchment in Bhutan, i.e. from the Indian border at Phuentsholing to the Chinese border upstream. Further upstream, the rainfall declines and the impact on flooding downstream will have limited significance.

The **Flood Warning System** would comprise of the following components:

- Rainfall and water level sensors at selected locations
- Data loggers for the rainfall and water level data
- Satellite based transmission of the rainfall and water level data
- Reception of the satellite transmissions at a central control
- A computer based system to monitor the status of the rainfall and water level, with a range of alert levels
- A procedure for warning dissemination via various media
- Procedures for action by the emergency services and the public

8.4 Impact on Gross National Happiness Index:

The impacts of the Project cover the main pillars of the GNH philosophy as well as the following domains of the GNH:

1. **Psychological Wellbeing:** The people of Phuentsholing and surrounding areas will be able to live in their own country and in decent affordable house. They would also have better jobs and earning. This will have an effect on their psychological wellbeing also.
2. **Standard of Living:** Due to more employment opportunities, getting good jobs with respectable salaries would be possible, which would raise their standard of living.
3. **Good Governance:** Good governance is one of the nine domains of Gross National Happiness (GNH) aimed towards enhancing the well-being of the Bhutanese people. Unlike other domains, governance cuts across all domains/sectors and therefore, its effect on the society at large arises from the cumulative efforts of all sectors. With a democratic Government established in Bhutan, greater efficiency, transparency and accountability are expected to improve overall governance and that of GNH. Provision of free health and education services, development of basic infrastructure, supply of clean drinking water, allotment of free timber to build houses, granting land, etc. have been Governance decisions aimed towards reducing misery and enhancing the welfare of the citizens and promote gross national happiness.

Taking up of this Project which encompasses all the needs of the people of Bhutan in general and Phuentsholing in particular itself shows that the government is concerned about the well-being of its people and is moving a step further towards achieving GNH.



4. Health: Well-equipped and staffed hospital and medical facilities have been suggested in the Project which in turn would be beneficial to the local people.
5. Education: More schools having qualified teachers with facilities for sports and counseling have been recommended. This will have a positive impact on quality of education for children.
6. Community Vitality: Specific dimensions of community vitality include giving and volunteering, social cohesion, safety, family, and duration of stay in the community. Since most of the people will be living together in mixed strata of society, the community vitality would be preserved in the new township.
7. Cultural Diversity and Resilience: The basic cultural elements can be explained as language; sense of identity; core values, change in values, beliefs, norms, and customs; and participation in various cultural activities, such as festivals, sports, and songs. Even the people who are residing in Jaigaon, India amongst people with diverse culture, will have a chance to come back to Bhutan due to housing availability in the Project Area and practice their culture. This is a perfect example of resilience.
8. Time Use: In addition to paid work, productive activities include a series of unpaid activities such as household work, childcare, care of the sick and old, and time allocated to various other activities for the upkeep of societies. In addition to activities done for oneself and members of one's household, productive activities also include voluntary activities carried out for members of the community or for people outside one's community. These activities are fundamental to the well-being of both those who provide and who receive such services. A true picture of well-being can be obtained only if these activities are taken into account. Time use studies are very useful for understanding the overall transformation or change experienced by societies. Such information is useful for designing comprehensive and balanced economic and social policies; the well-being of societies can only be improved by informed policy formulation. This includes policies for the elderly, children, etc. The SIA recommends special services for the vulnerable groups of population like women, elderly, people with disabilities and children. This would open up avenues for voluntary work so that time can be put to good value based productive work.
9. Ecological Diversity and Resilience: The natural flora of Bhutan would be included in the landscaping of the Project. The species that have become rare would be nurtured so that they are revived. 30% of the natural vegetation will be retained and enhanced as a part of the landscaping strategy of the project.



9 Mitigations and Suggestions

This chapter suggests the mitigations for the possible impacts identified through SIA. There are two components of the mitigation i.e. mitigation for negative impacts and suggestions for enhancing beneficial impacts or bridging the gaps.

Further the chapter gives mitigations and suggestions for identified impacts with the suggestion of which authority to take up the implementation of the mitigation or suggestion.

The mitigation plan firstly considers that if the negative impacts can be avoided, secondly that it can be minimized and thirdly to compensate for adverse impacts, if any. The major contribution of the SIA study is to help plan for, manage, and then mitigate any negative impacts (or enhance any positive ones) that may arise due to the proposed project.

9.1 Mitigations and suggestions for the Project

Based on the Social Impacts of the ALDTP identified in chapter 8, following mitigation measures are suggested to reduce or alleviate the negative impacts and to enhance the beneficial impacts.

Table: 9-1 Mitigation and suggestions for the ALDTP

Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
Impacts of ALDTP on Demography						
Due to availability of additional housing there will be a significant increase in population	Positive	Post Construction / Permanent	Due to the supply of housing by the project new population will come in. The Bhutanese people living Jaigaon will get an opportunity to come back to their own country.		Considering the current scenario the project should include: 1. Different types and categories of houses are to be provided as an essential part of the project. 2. Social housing to be provided considering the affordability of the Bhutanese population living in Jaigaon. 3. Affordable and small houses have to be part of the project. 4. Mixed-income residential areas to be developed.	1. DHI and HCPDPM to include the same while planning. 2. The variation of zoning proposed in IDPR shall be made mandatory by introducing the same in Development Control regulations.
Changing community needs	Positive	Post Construction / Permanent	With more housing stock and more population the community need of infrastructure and services will also increase.		By providing proper housing, infrastructure and service the project shall reduce the gaps in demand and supply of housing and infrastructure.	DHI

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
Impacts of ALDTP on Demography						
Changing community expectations	Mixed	Post Construction / Permanent	The people's expectation from the new township will be high in terms of infrastructure, services and technology.		While planning the basic infrastructure the project shall consider the population projected for next 30 years or more. The project should 1. Introduce new technology in combination with the cultural identity of Bhutanese houses 2. Be planned in the manner that it reduces the current problem of frequent flooding, traffic congestion, overflowing of drains etc.	DHI

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
Impact of ALDTP on Non-safeguard issues						
Poverty Reduction	Positive	Post Construction / Permanent	The project will create large number of jobs, employment and business opportunities. It will generate revenue for the nation and income for local people by increase in tourist flow.		The Phuentsholing City Corporation should take up the task of 1. Sensitization and creating awareness amongst the youths about dignity of all kind of work 2. Provide skill training of different trades like mason, welder, and machine operators; carpenter etc. so that the capacity of local youth can be raised to grab work opportunities created by the project.	Phuentsholing Thromde
Gender equality	Positive	Post Construction / Permanent	In Bhutan gender inequality is not prevailing; however, women's needs to be looked into in the final township		Special needs of women such as working women, single women, women headed families etc. is to be looked into by providing 1. Services like crèche, 2. counselling centre, 3. microfinance for handicraft industries, skill training institutes, 4. place for CSOs working for empowerment of women or against domestic violence etc.	1. DHI should plan designated spaces for Skill training institutes, Counselling centres, Crèche and other services. 2. Phuentsholing Thromde in collaboration with NGOs should take up the programs or service delivery. 3. The Industrial Houses located in PUA can adopt CSOs working in this field under their CSR activities.



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
Labour standards	Mixed	Construction / Temporary	A large number of labour forces are going to be engaged in the project during different stages of the project.	<ol style="list-style-type: none"> 1. It shall be made mandatory for contractors and sub-contractors to ensure workers' safety and reduce conditions leading to occupational hazards and accidents. 2. All the tender documents for contractors shall include the provision of insurance coverage of all workers. 	<p>The DHI should enforce</p> <ol style="list-style-type: none"> 1. The labour safety and social security terms in their tender documents for all kind of work contract related to the project. 2. At all stages of project either carried out by the DHI or by outsourced agency the safety of workforce on site, working conditions, medical facilities, working hours and other social security is to be strictly maintained. 	<ol style="list-style-type: none"> 1. DHI to enforce rules through its GDCR 2. Contractors to ensure high labour safeguard standards
Vulnerable population - Bhutanese people living in Jaigaon, women headed families, urban poor	Positive	Post Construction / Permanent	At present the services to meet the special needs of different vulnerable groups are totally missing in Phuentsholing.		<p>Project should make provisions to meet the needs of vulnerable groups such as</p> <ol style="list-style-type: none"> 1. Provide social housing for Bhutanese people living in Jaigaon 2. Affordable housing for middle income group people and urban poor 3. Counselling and skill development centres 4. vocational training centres for youth and women, 	<ol style="list-style-type: none"> 1. Phuentsholing Thromde to plan Social Housing 2. DHI to plan affordable and small housing 3. DHI to incorporate mixed income residential areas 4. DHI through its GDCR should make it mandatory that all buildings should be barrier free

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
					5. recreational and religious facilities for children and senior citizens 6. Barrier free spaces for people with special needs.	
Impact of ALDTP on Neighbourhood & Community						
Neighbourhood safety	Mixed	Construction / Temporary	The increase in population and strata of population will raise safety concerns.	To avoid safety concerns and to avoid creation of ghettos all types of houses should be spread across the residential areas.	The mixed land-use and mixed-income housing within the project will help keeping the harmony.	DHI
Social and cultural identity	Positive	Post Construction / Permanent	The sense of own social and cultural values will be higher in the people living in Jaigaon when they return back to their own country		1. Space for cultural centre or cultural village shall be provided in the township where various cultural programmes can be held or permanent exhibition of art and craft activities can be held which will help to boost the cultural values in people especially in the people who return from Jaigaon after long term influence of other culture. 2. Space should be allocated for religious places.	1.DHI can allocate the space in the Project 2.Phuentsholing Thromde can build the cultural centre or Multipurpose Auditorium through PPP model 3.The Industrial Houses located in PUA can give funds for this under their CSR activities.

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longevity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
Impact of ALDTP on Accommodation & Housing						
Houses for different categories	Positive	Post Construction / Permanent	Sufficient housing will be available		1. Housing is to be made available for different categories in phase-wise development of the township 2. The mixed income housing should be spread across the township to prevent ghettoism.	It is suggested that financial and development schemes should be floated, so that the developers are encouraged to invest in social housing.
Affordable housing	Positive	Post Construction / Permanent	Presently cost of housing in terms of purchase and rent is very high		Affordable housing should be made available	1.DHI 2.Phuentsholing Thromde 3.Ministry of Finance, RGoB to introduce home loans for BPL and LIG on concessional rates
Low income housing / small houses	Positive	Post Construction / Permanent	Small houses which low income groups can afford are only available for government employees.		Housing for low income group to be made available	
Housing for urban poor	Positive	Post Construction / Permanent	Social housing to be made available		Social housing should be integral part of the project	
Housing for Bhutanese living in Jaigaon	Positive	Post Construction / Permanent	Number of houses to be planned to accommodate Bhutanese living in Jaigaon		Social housing should be integral part of the project	
Impact of ALDTP on Environment during construction period						

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
Quality of water	Negative	Construction / Temporary	Contamination of water will lead to health problems during the construction stage	Measures to be suggested under Environment Impact Assessment		
Quality of air	Negative	Construction / Temporary	Dust and fumes during construction phase will lead to increase in air borne diseases	Measures to be suggested under Environment Impact Assessment		
Noise pollution	Negative	Construction / Temporary	Due to the vehicular movements during construction stage noise pollution will be increased	No horn areas to be introduced in Development rules. to		
Hazardous Substances	Negative	Construction / Temporary	Due to spillage of petroleum products on road due to the movements of construction vehicles	Measures to be suggested under Environment Impact Assessment		
Solid Waste Generation	Negative	Construction / Temporary	Due to construction activities and large number of labour force.	Measures to be suggested under Environment Impact Assessment		
Impact of ALDTP on Infrastructure and Services						
River training and embankment	Positive	Post Construction / Permanent	Flood mitigation		The structures to be created for embankment will be able to sustain the highest level of flood recorded in last 100 years.	
Promenades	Positive	Post Construction /	Open recreational spaces			

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
		Permanent				
Flood early warning system	Positive	Post Construction / Permanent	It would help in alerting about floods and help in preventing and mitigating the disaster of floods		<p>The Flood Warning System would comprise of the following components:</p> <ul style="list-style-type: none"> • Rainfall and water level sensors at selected locations • Data loggers for the rainfall and water level data • Satellite based transmission of the rainfall and water level data • Reception of the satellite transmissions at a central control • A computer based system to monitor the status of the rainfall and water level, with a range of alert levels • A procedure for warning dissemination via various media • Procedures for action by the emergency services and the public 	
Project Development Company (Special	Positive	Post Construction /	It will ease and expedite the procedure of leasing the land in a			

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
Purpose Vehicle)		Operational	non-bureaucratic manner			
Government provided education facilities	Positive	Post Construction / Permanent	The project will create additional educational facilities		Other than providing schools in residential areas <ul style="list-style-type: none"> • More technical schools, higher education centres and colleges having different streams and vocational training centres, career counselling centres to be planned. 	<ol style="list-style-type: none"> 1. Ministry of Education, Royal Government of Bhutan 2. Phuentsholing Thromde 3. CSOs – for vocation training centres and counselling centres 4. The Industrial Houses located in PUA can give funds for vocational and skill training under their CSR activities.
Government provided health facilities	Positive	Post Construction / Permanent	The project will create additional health facilities		Other than Basic Health Units and Diagnostic centres in residential areas <ul style="list-style-type: none"> • Multi-speciality hospital and medical college are to be planned. • Barrier free hospital building is to be designed. 	<ol style="list-style-type: none"> 1. Ministry of Health, Royal Government of Bhutan 2. DHI through its GDCR should make it mandatory that all buildings should be barrier free 3. The Industrial Houses located in PUA can give funds for various health campaigns under their CSR activities.
Community services, facilities and utilities	Positive	Post Construction / Permanent	Electricity network, communication network, drainage network, drinking water, public facilities like		The basic infrastructure and facilities are the essential part of the project and will be ready before the houses are built in	<ul style="list-style-type: none"> • DHI to establish mechanism for sustainability of community facilities and utilities

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
			public toilets, informal markets etc. would be available as an integral part of the project		any particular area however to maximise the benefits: <ul style="list-style-type: none"> Affordable and advanced technologies should be adopted. 	
Recreation facilities	Positive	Post Construction / Permanent	Presently the recreational facilities are insufficient		Other than small recreational spaces like parks, senior citizen gardens and open Gyms within the residential areas: <ul style="list-style-type: none"> Designated space for various recreational facilities are to be planned including sports complexes, play grounds, resorts, picnic spots, trekking trails, water sports, yoga Kendra or retreats etc. 	<ul style="list-style-type: none"> For development of such recreational facilities PPP model can be adopted The Industrial Houses located in PUA can give funds for this under their CSR activities.
Road network	Mixed	Both construction and post construction phases	Narrow roads, frequent traffic and parking problems, increased accidents etc.	A bypass road to avoid the traffic from core residential city area.	<ul style="list-style-type: none"> Provision for additional systemic road network as an integral part of the project. Multilevel parking area can be planned 	DHI
Impact of ALDTP on Health during Construction period						
Increase in HIV-AIDS cases and other diseases	Negative	Construction / Temporarily	The large number of turnover of labourers may be the reason of spread of HIV-AIDS.		Campaign to spread awareness about HIV-AIDS and prevention from it should be started with the NGO Involvement	1. Ministry of Health, Royal Government of Bhutan 2. Phuentsholing Thromde 3. DHI 4. NGOs 5. Compulsory for contractor to display

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
						boards for sensitising the workers
Impact of ALDTP on Livelihood						
Local employment generation	Positive	Both construction and post construction phases	A large number of jobs will be available in the project during different stages of the project.		To build local people's capacity to grab the livelihood opportunities <ul style="list-style-type: none"> • Capacity building and skill training for various skilled and semi-skilled jobs is to be done either as part of the project or by local urban body. • Attitude change programme (especially dignity for all kind of work) should be an integral part of the school and college education. 	<ul style="list-style-type: none"> • Ministry of Education, RGoB through schools and colleges and CSOs
Business development	Positive	Post Construction / Permanent	Positive impact as more business opportunities will arise		<ul style="list-style-type: none"> • To attract the investors the investment policies are to be revised. • Subsidized business loans to be introduced for women entrepreneurs and local people. 	<ul style="list-style-type: none"> • Ministry of Finance, RGoB • Royal Monetary Authority
Tourism Development	Positive	Post Construction / Permanent	More tourists would be coming in due to the various attractions like resorts, water sports, golf course, hotels, etc.			
Impact on cross border town Jaigaon, West Bengal, India						

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
Employment generation	Positive	Post Construction / Permanent	The project will generate a large number of jobs in construction sector during construction phase which will be beneficial for Indian Day Workers also.			
Business opportunities	Positive	Post Construction / Permanent	More business opportunities will arise		Development of various novel commercial activities in the proposed township would lead to development of new or more business opportunities e.g. tourism, water sports, traditional handicrafts, hospitality industry, etc. This would lead to more employment generation which will have beneficial impact on Jaigaon also, due to its interdependency with Phuentsholing.	
Access to new tourist destination	Positive	Post Construction / Permanent	The people of Jaigaon will have access to the new tourist destination.			
Impact of ALDTP on flow/ speed of	No Impact		The river training will not have any impact, positive or negative on the flow of water,			

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
river on downstream			downstream on the cross-border down of Jaigaon, India.			
Impact on normal and flood volume of water	No Impact		The structures to be created for embankment will be able to sustain the highest level of flood recorded in last 100 years. The additional demand for water, created in the new township will not affect the total volume of water flowing downstream of Indo-Bhutan border.			
Flood Warning System	Positive		Flood Warning System will alert settlements downstream in the event of a major flood in the Amochu catchment.		The Flood Warning System would comprise of the following components: <ul style="list-style-type: none"> • Rainfall and water level sesnors at selected locations • Data loggers for the rainfall and water level data • Satellite based transmission of the rainfall and water level data 	

SIA for Amochhu Land Development and Township Project



Impact	Positive / Negative Impact	Stage of Project and longitivity of Impact	Comments / Present conditions	Mitigation for negative Impact	Suggestion for enhancement of positive Impact	Agency Suggested for implementation of Mitigation / suggestion
					<ul style="list-style-type: none"> • Reception of the satellite transmissions at a central control • A computer based system to monitor the status of the rainfall and water level, with a range of alert levels • A procedure for warning dissemination via various media • Procedures for action by the emergency services and the public 	

9.2 Grievance Redressal Cell:

Though the mitigation plan has been suggested, in spite of the same, if any person has any complaints against the work that would be carried out under the Project, DHI shall establish a 'Grievance Redressal Cell' to address the queries and grievances of stakeholders.

The three tier grievance redressal mechanism shall be set up and shall function as suggested in the EIA report.

9.3 Suggestions for Improvement in Quality Of Life in Phuentsholing Urban Area

ALDTP aims to encompass a lot of things that are missing in the current Phuentsholing Urban Area which would enhance the economy and life-style of the Bhutanese. However, in the context of SIA, there are certain suggestions, which have not been a part of the Phuentsholing town so far, but inclusion of the same in the ALDTP Plan would lead to a better quality of life for the people of Phuentsholing and Bhutan. Inclusion of the following would also help in increasing the Gross National Happiness Index of the project area, the Chukha Dzongkhag and Bhutan.

For future of Phuentsholing and the Project, the following should be looked into:

- 1) Small size affordable houses should be made to make the social housing affordable.
- 2) Policy needs to be revised for Banking Sector to offer concessional rate loans for housing to People Below Poverty Line (BPL), Economically Weaker Sections (EWS) and Bhutanese people living in Jaigaon.
- 3) There is a need to coordinate between MoLHR, education sector teaching vocational courses and the employers. This would help in meeting the demands of the job sector.
- 4) The skilled workforce among Bhutanese people needs to be developed for which skill-development centers where relevant required skills are taught should be started. Space for the same to be provided in the Project.
- 5) There is a dire need to change the attitude of young persons who do not want to do blue collar jobs; importance of dignity of labour should be taught to them. The same can be inculcated in school education system.
- 6) There should be a system of bond signing/ contract with a penalty when a person is employed so that the employment is taken seriously.
- 7) Need for a space for social service in the Project for:
 - a. Women
 - b. Senior Citizen
 - c. Children and
 - d. People with special needs.
 - e. Residential facilities for people in distress.
- 8) Professional counseling services to be made available in Phuentsholing.
- 9) The Project to provide barrier-free environment.
- 10) Setting up a center for traditional handicrafts in the new township will help in preserving the culture and tradition of handicraft which is passed on only in families and also help in making women more self-reliant and feeling empowered to take their own decisions.



Appendix

1. Schedules for various categories

Interaction with Urban Local Body

Date: _____

Name of the Respondent: _____

General information about the local body	
Name of the Local Body	
Name of the village, Gewog	
Name: Thromde/ Dzongkhag	
Coverage of the local body	
Population under the local body / Village:	
Number of Total HHs	
Type of Houses (Number)	Temporary : _____, Permanent: _____
Housing Typology (Existing)	Apartment (Low Rise: up to G+2): Apartment (High Rise: Above G+2) Slums / Informal Development: Staff / Worker's Housing: Others:
Average size of residential unit : Number of rooms and/or area in sqft	5 room + sitting room + Kitchen 4 room + sitting room + Kitchen 3 room + sitting room + Kitchen 2 room + sitting room + Kitchen 1 room + sitting room + Kitchen 1 room + Kitchen
Urban poor HHs (Number)	
Ownership of Houses	Rented: _____, Owned: _____
Average family size	
Literacy rate in the area	
Main Occupations of Male	
Main Occupations of Female	
Average number of working persons in family	
Average Family Income	
Main economic / commercial activities in the area	
Number of in-migrated families for livelihood (from other areas of Bhutan)	
Number of families staying outside Bhutan (in border village Jaigaon, India) If any	
Number of persons coming to this area as "Day workers"	
Services offered by the local administrative body	
Annual Fund received by the Local Administrative Body	



Name and purpose of Schemes under which Fund is received	
Number and levels of educational institutes in the jurisdiction of Local administrative body	
Number and levels of Health institutes in the jurisdiction of Local administrative body	
Are there any NGOs working in this area?	
Future plan for development by Local Administrative Body	
Challenges faced by the local body, if any	
Awareness about the proposed ALRT Project	
Knowledge about the project (Yes/No)	
How do you envisage the proposed project?	<p>If Beneficial: Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> • Reduced burden on housing • Reduced burden on existing infrastructure • Planned and systematic development and services • Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of employments • Returning opportunity for Bhutanese people living in Jaigaon
	<p>If harmful: Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	
Expectations and Suggestions	
Expectations from the proposed project	
Suggestions for the project	



Interaction with various Government and Civil Society Organisations

Date: _____

Name of the respondent: _____

Contact Details: _____

Name of the Institution	
Contact person	
Address with contact numbers	
Registration year	
Registration no.	
Area of Work	<ol style="list-style-type: none"> 1. Basic services 2. Financial services (savings, loan, insurance etc.) 3. Art and Handicraft Promotion 4. General Health 5. Reproductive and Child Health 6. Dairy and animal husbandry 7. Agriculture promotion 8. Nature conservation 9. Agriculture and Food supply related 10. Developers (Real Estate) 11. Others
Geographical coverage (name of Area)	
Number of persons or population covered under this institution	
Details of Services	
Availability of govt. schemes or subsidies	
If yes, details of schemes or subsidies	
Details of Taxes you have to pay	
Help received from Govt. Local bodies/Chamber of Commerce/Export Promotion council, if any	
Challenges faced in your sector	
Suggestions for improvement in particular sector/service	
Awareness about the proposed ALRT Project	
Knowledge about the project (Yes/No)	



<p>How do you envisage the proposed project?</p>	<p>If Beneficial: Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> • Reduced burden on housing • Reduced burden on existing infrastructure • Planned and systematic development and services • Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of employments • Returning opportunity for Bhutanese people living in Jaigaon <p>If harmful: Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
<p>Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?</p>	
<p>Expectations and Suggestions</p>	
<p>Expectations from the proposed project</p>	
<p>Suggestions for the project</p>	



Interaction with Real Estate Developers

Date: _____

Name of the respondent: _____

Contact Details: _____

Name of the Institution	
Contact person	
Address with contact numbers	
Registration year	
Registration no.	
Area of Work	<ol style="list-style-type: none"> 1. Basic services 2. Financial services (savings, loan, insurance etc.) 3. Art and Handicraft Promotion 4. General Health 5. Reproductive and Child Health 6. Dairy and animal husbandry 7. Agriculture promotion 8. Nature conservation 9. Agriculture and Food supply related 10. Developers (Real Estate) 11. Others
Geographical coverage (name of Area)	
Number of persons or population covered under this institution	
Details of Services	
Availability of govt. schemes or subsidies	
If yes, details of schemes or subsidies	
Details of Taxes you have to pay	
Help received from Govt. Local bodies/Chamber of Commerce/Export Promotion council, if any	
Challenges faced in your sector	
Suggestions for improvement in particular sector/service	
Awareness about the proposed ALRT Project	



Knowledge about the project (Yes/No)	
How do you envisage the proposed project?	<p>If Beneficial: Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> • Reduced burden on housing • Reduced burden on existing infrastructure • Planned and systematic development and services • Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of employments • Returning opportunity for Bhutanese people living in Jaigaon
	<p>If harmful: Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	
Expectations and Suggestions	
Expectations from the proposed project	
Suggestions for the project	
Preferred Development (Residential) Typology	<p>Bungalow: Apartment (Low Rise: Ground + 4 floors): Apartment(High Rise: Ground + 5 floors to Ground + 9 floors): Slums / Informal Development: Worker's Housing (1Room, 1Kitchen): Others:</p>
Preferred Development (Commercial) Typology	<p>Offices</p> <p>Retail Development</p> <p>Others</p>
Mode of reach	
Challenges	



Interaction with Indian day workers working in Bhutan

Date: _____

Name of the Facilitator: _____

GeneralDetails:	
NativestateinIndia	
Since how long working in Bhutan	
Place of work in Bhutan	
Work area (sector)	
Type of work	
Where does your family stay?	
Daily Commute Distance	
Daily expenditure for travel	
Monthly Income	
Family size	
Average Family Income	
Reasons of working in Bhutan rather than in India	
Challenges faced as an outsider	
Existing work situation in Pling	
How do you get work (Through contractors / agents / direct)	
Do you have to pay commissions to get work?	
Why do Bhutanese employers prefer Indian employees?	
Do you face any discrimination in work or wage?	
Are you covered under social security and other legislations at work place	
Awareness about the proposed ALRT Project	
Knowledge about the project (Yes/No)	
How do you envisage the proposed project?	If Beneficial: Possible Benefits of the proposed development <ul style="list-style-type: none"> • Reduced burden on housing • Reduced burden on existing infrastructure • Planned and systematic development and services • Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of employments



	<ul style="list-style-type: none"> • Returning opportunity for Bhutanese people living in Jaigaon
	<p>If harmful: Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
<p>Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?</p>	
<p>Will the proposed project benefit the Indian day workers? How?</p>	
Expectations and Suggestions	
<p>Expectations from the proposed project</p>	
<p>Suggestions for the project</p>	

SIA for Amochhu Land Development and Township Project



Interaction with Bhutanese citizens residing in Jaigaon, India

Date: _____

Name of the Facilitator: _____

General Details:						
Name of the Area						
Average Duration of stay in Jaigaon						
Reasons of staying in Jaigaon						
Number of Bhutanese families staying in the area						
Total families / population in the area						
Average family size						
Main Occupations of Male						
Place of work						
Daily Commute Distance						
Daily expenditure for travel						
Main Occupations of Female						
Place of work						
Daily Commute Distance						
Daily expenditure for travel						
Average Family Income						
Housing and Services						
Type of Houses (Number)		Temporary : _____, Permanent: _____				
Housing Typology (Existing)		Apartment (Low Rise: uptoG+2): Apartment(High Rise: Above G+2) Slums / Informal Development: Staff / Worker's Housing: Others:				
Average size of residential unit : Number of rooms and/or area in sqft		5 room + sitting room + Kitchen 4 room + sitting room + Kitchen 3 room + sitting room + Kitchen 2 room + sitting room + Kitchen 1 room + sitting room + Kitchen 1 room + Kitchen				
HH Latrine or Public Latrine						
HH Drinking Water connection						
HH Electricity connection						
Proximity of Services and Institutions						
Service / Facility	Bhutan	India	Upto 1 km	1 – 3 km	3 – 5 km	Above 5 km
Health						
Education						
Bank						
Post office						
Daily Need Market						
Recreational						



Religious places						
NGO Tshogpa membership						
Cost and Rent of Housing						
Ownership of house - owned / rented						
If rented, average rent amount for different size and type of houses						
%age of income spent on house rent						
If rented, why preferred rented against owned						
Cost of purchase						
Comparison of rent in India and Bhutan						
Existing Challenges / issues in Pling						
Housing		Availability: Cost: Rent:				
Infrastructure		Poor	Average	Good		
	Road					
	Traffic					
	Drainage					
	Strom water drains					
Public Transport						
Migration Pattern						
Native of Pling or other Dzongkhags						
Reasons of out-migration to Jaigaon						
Difficulties / Issues / insecurities faced as an outsider in Jaigaon						
Awareness about the proposed ALRT Project						
Knowledge about the project (Yes/No)						
How do you envisage the proposed project?		If Beneficial: Possible Benefits of the proposed development <ul style="list-style-type: none"> • Reduced burden on housing • Reduced burden on existing infrastructure • Planned and systematic development and services • Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of employments • Returning opportunity for Bhutanese people living in Jaigaon 				
		If harmful: Possible hazards, issues and problems envisaged by the proposed development <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality 				



	<ul style="list-style-type: none"> • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	
Willingness and affordability of obtaining housing in new Township	
Willingness to obtain housing in new township	Purchase: Rented:
Affordability to obtain new housing (Amount)	Purchase: Rented:
Source of fund in case of willingness to purchase house in new township	Savings: Sale of property /land: Bank Loan: Other:
If plans to obtain House Loan from bank, is it easily available?	
If Yes, interest rate : High / Adequate	
If No, what are the issues?	
Expectations and Suggestions	
Expectations from the proposed project	
Suggestions for the project	

SIA for Amochhu Land Development and Township Project



Focus Group Discussion

Date: _____

Number of Participants:- _____ Male: _____ Female: _____

Name of the Facilitator: _____

General Details:						
Name of the Area						
Population of the Area						
Number of Total HHs						
Average family size						
Main Occupations of Male						
Place of work						
Daily Commute Distance						
Daily expenditure for travel						
Main Occupations of Female						
Place of work						
Daily Commute Distance						
Daily expenditure for travel						
Average Family Income						
Housing and Services						
Type of Houses (Number)		Temporary : _____, Permanent: _____				
Housing Typology (Existing)		Apartment (Low Rise: uptoG+2); Apartment(High Rise: Above G+2) Slums / Informal Development: Staff / Worker's Housing: Others:				
Average size of residential unit : Number of rooms and/or area in soft		5 room + sitting room + Kitchen 4 room + sitting room + Kitchen 3 room + sitting room + Kitchen 2 room + sitting room + Kitchen 1 room + sitting room + Kitchen 1 room + Kitchen				
HH Latrine or Public Latrine						
HH Drinking Water connection						
HH Electricity connection						
Proximity of Services and Institutions						
Service / Facility	Bhutan	India	Upto 1 km	1 – 3 km	3 – 5 km	Above 5 km
Health						
Education						
Bank						
Post office						
Daily Need Market						
Recreational						
Religious places						



NGO membership	Tshogpa						
Cost and Rent of Housing							
Ownership of house - owned / rented							
If rented, average rent amount for different size and type of houses							
%age of income spent on house rent							
If rented, why preferred rented against owned							
Cost of purchase							
Migration Pattern							
Native of Pling or other Dzongkhags							
If from other Dzongkhags , Reasons of in-migration							
Existing Challenges / issues in Pling							
Housing		Availability: Cost: Rent:					
Infrastructure		Poor	Average	Good			
	Road						
	Traffic						
	Drainage						
	Strom water drains						
	Public Transport						
Awareness about the proposed ALRT Project							
Knowledge about the project (Yes/No)							
How do you envisage the proposed project?		<p>If Beneficial: Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> • Reduced burden on housing • Reduced burden on existing infrastructure • Planned and systematic development and services • Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of employments • Returning opportunity for Bhutanese people living in Jaigaon <p>If harmful: Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality 					



	<ul style="list-style-type: none"> • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	
Willingness and affordability of obtaining housing in new Township	
Willingness to obtain housing in new township	Purchase: Rented:
Affordability to obtain new housing (Amount)	Purchase: Rented:
Source of fund in case of willingness to purchase house in new township	Savings: Sale of property /land: Bank Loan: Other:
If plans to obtain House Loan from bank, is it easily available?	
If Yes, interest rate : High / Adequate	
If No, what are the issues?	
Expectations and Suggestions	
Expectations from the proposed project	
Suggestions for the project	

SIA for Amochhu Land Development and Township Project



Focus Group Discussion

(Target Group : Bhutanese residing in Jaigaon,India)

Date: _____

Number of Participants:- _____ Male: _____, Female: _____

Name of the Facilitator: _____

General Details:	
Name of the Area	
Average Duration of stay in Jaigaon	
Reasons of staying in Jaigaon	
Number of Bhutanese families staying in the area	
Total families / population in the area	
Average family size	
Main Occupations of Male	
Place of work	
Daily Commute Distance	
Daily expenditure for travel	
Main Occupations of Female	
Place of work	
Daily Commute Distance	
Daily expenditure for travel	
Average Family Income	
Housing and Services	
Type of Houses (Number)	Temporary : _____, Permanent: _____
Housing Typology (Existing)	Apartment (Low Rise: uptoG+2): Apartment(High Rise: Above G+2) Slums / Informal Development: Staff / Worker's Housing: Others:
Average size of residential unit : Number of rooms and/or area in sqft	5 room + sitting room + Kitchen 4 room + sitting room + Kitchen 3 room + sitting room + Kitchen 2 room + sitting room + Kitchen 1 room + sitting room + Kitchen 1 room + Kitchen
HH Latrine or Public Latrine	
HH Drinking Water connection	
HH Electricity connection	
Proximity of Services and Institutions	



Service / Facility	Bhutan	India	Upto 1 km	1 – 3 km	3 – 5 km	Above 5 km
Health						
Education						
Bank						
Post office						
Daily Need Market						
Recreational						
Religious places						
NGO Tshogpa membership						
Cost and Rent of Housing						
Ownership of house - owned / rented						
If rented, average rent amount for different size and type of houses						
%age of income spent on house rent						
If rented, why preferred rented against owned						
Cost of purchase						
Comparison of rent in India and Bhutan						
Existing Challenges / issues in Pling						
Housing			Availability: Cost: Rent:			
Infrastructure			Poor	Average	Good	
	Road					
	Traffic					
	Drainage					
	Strom water drains					
Public Transport						
Migration Pattern						
Native of Pling or other Dzongkhags						
Reasons of out-migration to Jaigaon						
Difficulties / Issues / insecurities faced as an outsider in Jaigaon						
Awareness about the proposed ALRT Project						
Knowledge about the project (Yes/No)						
How do you envisage the proposed project?			If Beneficial: Possible Benefits of the proposed development <ul style="list-style-type: none"> • Reduced burden on housing • Reduced burden on existing infrastructure • Planned and systematic development and services 			



	<ul style="list-style-type: none"> • Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of employments • Returning opportunity for Bhutanese people living in Jaigaon <p>If harmful: Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
<p>Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?</p>	
Willingness and affordability of obtaining housing in new Township	
<p>Willingness to obtain housing in new township</p>	<p>Purchase:</p> <p>Rented:</p>
<p>Affordability to obtain new housing (Amount)</p>	<p>Purchase:</p> <p>Rented:</p>
<p>Source of fund in case of willingness to purchase house in new township</p>	<p>Savings:</p> <p>Sale of property /land:</p> <p>Bank Loan:</p> <p>Other:</p>
<p>If plans to obtain House Loan from bank, is it easily available?</p>	
<p>If Yes, interest rate : High / Adequate</p>	
<p>If No, what are the issues?</p>	
Expectations and Suggestions	
<p>Expectations from the proposed project</p>	
<p>Suggestions for the project</p>	

2. Samples of Filled in Interview Schedules
a. Urban local bodies

Questionnaire For Interaction with Urban Local Body	
Date:	16/02/2016
Name of the Respondent :	_____
General information about the local body	
Name of the Local Body	Dzongkhag Administration, Samtse
Name of the village, Gewog	-
Name: Thromde/ Dzongkhag ✓	Samtse
Coverage of the local body	
Population under the local body / Village:	62,000
Number of Total HHs	13,027.
Type of Houses (Number)	Temporary : _____, Permanent: _____
Housing Typology (Existing)	Apartment (Low Rise: upto G+2): ✓ Apartment (High Rise: Above G+2) ✓ Slums / Informal Development: ✓ Staff / Worker's Housing: ✓ Others:
Average size of residential unit : Number of rooms and/or area in sqft	5 room + sitting room + Kitchen 4 room + sitting room + Kitchen 3 room + sitting room + Kitchen 2 room + sitting room + Kitchen ✓ 1 room + sitting room + Kitchen ✓ 1 room + Kitchen ✓
Urban poor HHs (Number)	
Ownership of Houses	Rented: ✓, Owned: ✓
Average family size	5-7
Literacy rate in the area	
Main Occupations of Male	Civil servant, Co-operate and Private employee
Main Occupations of Female	Civil servant, day workers, co-operate and Private employee and mostly housewife.
Average number of working persons in family	2
Average Family Income	5000 - 7000
Main economic / commercial activities in the area	Cardamom plantation, mineral based factories, mining and agro-based factories.
Number of in-migrated families for livelihood (from other areas of Bhutan)	-
Number of families staying outside Bhutan (in border village Jaigaon, India) if any	-
Number of persons coming to this area as "Day workers"	540 per day.



Services offered by the local administrative body	Public services and developmental services
Annual Fundreceived by the Local Administrative Body	Dzongkhag - 266.280 M & Gewog - 135.2920 Total of Nu. 401.573 M in current financial year.
Name and purpose of Schemes under which Fund is received	Budget received from RGoB and SDP, GoI Project for the developmental activities.
Number and levels of educational institutes in the jurisdiction of Local administrative body	1 College, 3 HSS, 2 MSS, 7 LSS, 19 PS, 1CS and 21 ECRs) = 54 in total.
Number and levels of Health institutes in the jurisdiction of Local administrative body	3 hospitals, 13 BHUs and 42 ORCs. = 58 in total.
Are there any NGOs working in this area?	Nil.
Future plan for development by Local Administrative Body	Samtse Town planning and LAPs.
Challenges faced by the local body, if any	Financial constraints for implementing plans works.

Awareness about the proposed ALRT Project

Knowledge about the project (Yes/No)	Yes
How do you envisage the proposed project?	<p>If Beneficial:</p> <p>Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> • Reduced burden on housing ✓ • Reduced burden on existing infrastructure • Planned and systematic development and services ✓ • Access to new recreational, health and educational facilities. • Employment generation ✓ • Business opportunities ✓ • Skill development and training centres for new kind of employments • Returning opportunity for Bhutanese people living in Jaigaon <p>If harmful:</p> <p>Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase ✓ • Increased Pollution ✓ • Changes in air and water quality ✓ • Environment effects due to changed land use ✓ • Burden on existing infrastructure during construction phase • Cultural issues due to newer population

Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?
 Yes, because it can create employment opportunities and in turn, can increase the income level of the people and more people means more business opportunities.

Expectations and Suggestions
 Expectations from the proposed project
 Samtse Dzongkhag expects to have more employment opportunities, especially for the people of Tarding Gewog.

Suggestions for the project
 The project needs to consider all the environmental impacts including soil and air pollutions and try to address those issues.

b. Government and Civil Society organisations

Interaction with various Government and Non-government Organisation

Date: 17.2.16 12:30 to 1:15 pm

Name of the Respondant: DORJI TSHERING

Contact Details: 17678991 / 252876

Name of the Institution	Sonamgang Middle Secondary School
Contact person	School Principal
Address with contact numbers	
Registration year	2013
Registration no.	
Area of Work	<ol style="list-style-type: none"> 1. Basic services 2. Financial services (savings, loan, insurance etc.) 3. Art and Handicraft Promotion 4. General Health 5. Reproductive and Child Health 6. Dairy and animal husbandry 7. Agriculture promotion 8. Nature conservation 9. Agriculture and Food supply related 10. Developers (Real Estate) 11. Others ✓ Education
Geographical coverage (name of Area)	Pipaldara & nearby areas; 300 students come from Jaigaon.
Number of persons or population covered under this institution	1040 students; 30 classrooms. 1:29 Teacher: student ratio. 20-30 students having disability. 36 teachers & 6 non-teaching.
Details of Services	PP to 10 th std; Skills are imparted through clubs for vocations like mason, carpenter, etc. by teachers who have attended workshops, also doing counselling. 40-50 students take club activities. Sports activities, Meditation & Yoga activities.
Availability of govt. schemes or subsidies	Yes.
If yes, details of schemes or subsidies	Textbooks are provided by the govt. Free education
Details of Taxes you have to pay	—
Help received from Govt. Local bodies/Chamber of Commerce/Export Promotion council, if any	Govt. aided schools
Challenges faced in your sector	Space constraints esp. for sports activities; Teachers with specialization; budget not granted for multi-purpose hall. More classrooms & toilets are needed.
Suggestions for improvement in particular sector/service	More schools. Good primary school - separate with all facilities



Awareness about the proposed ALRT Project	
Knowledge about the project (Yes/No)	Yes.
How do you envisage the proposed project?	<p>If Beneficial: ✓ Townhall.</p> <p>Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> ✓ Reduced burden on housing ✓ Reduced burden on existing infrastructure / traffic. ✓ Planned and systematic development and services <ul style="list-style-type: none"> • Access to new recreational, health and educational facilities ✓ Employment generation ✓ Business opportunities <ul style="list-style-type: none"> • Skill development and training centres for new kind of employments ✓ Returning opportunity for Bhutanese people living in Jaigaon <p>If harmful:</p> <p>Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase ✓ Increased Pollution of the river. • Changes in air and water quality ✓ Environment effects due to changed land use <ul style="list-style-type: none"> • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	Yes. Commercial hub for Bhutan. dream project Gateway so tourism can develop.
Expectations and Suggestions	
Expectations from the proposed project	New schools; recreational facilities; stadium; housing investment; special schools; school centres;
Suggestions for the project	Congestion should be addressed; parking facilities at multi-level;



c. Real Estate Developer

Interaction with various Government and Non-government Organisation

Date: 27.1.16 12:40 to 1:05 pm.Name of the Respondent: Ms Sangay RinchingContact Details: 77711707

Name of the Institution	Tashi Real Estate Dev. Pvt. Ltd.
Contact person	Estate Manager
Address with contact numbers	Tashi Real Estate Dev. Pvt. Ltd. Central Park.
Registration year	1998
Registration no.	
Area of Work	<ol style="list-style-type: none"> 1. Basic services 2. Financial services (savings, loan, insurance etc.) 3. Art and Handicraft Promotion 4. General Health 5. Reproductive and Child Health 6. Dairy and animal husbandry 7. Agriculture promotion 8. Nature conservation 9. Agriculture and Food supply related 10. Developers (Real Estate) ✓ 11. Others
Geographical coverage (name of Area)	Bhutan.
Number of persons or population covered under this institution	
Details of Services	Hotels, shopping malls, commercial complexes are built on land by other developers. Land use survey, license clearance is done & given to developers.
Availability of govt. schemes or subsidies	
If yes, details of schemes or subsidies	
Details of Taxes you have to pay	30% Tax
Help received from Govt. Local bodies/Chamber of Commerce/Export Promotion council, if any	25 acres ^{land} ceilings for personal use; can have more land for business use.
Challenges faced in your sector	Boundary probes. during land use survey - Physical boundaries are diff. to distinguish. Long procedures to process land acquisition. Permission from all adult family members for selling land.
Suggestions for improvement in particular sector/service	Would be ready for developing residential township <u>only</u> if land can be purchased.



Awareness about the proposed ALRT Project

Knowledge about the project (Yes/No)	Yes.
How do you envisage the proposed project?	<p>If Beneficial:</p> <p>Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Reduced burden on housing <input type="checkbox"/> Reduced burden on existing infrastructure <input type="checkbox"/> Planned and systematic development and services <input type="checkbox"/> Access to new recreational, health and educational facilities <input checked="" type="checkbox"/> Employment generation <input checked="" type="checkbox"/> Business opportunities <input type="checkbox"/> Skill development and training centres for new kind of employments <input checked="" type="checkbox"/> Returning opportunity for Bhutanese people living in Jaigaon <p>If harmful:</p> <p>Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> <input type="checkbox"/> Increased population and traffic movements during construction phase <input type="checkbox"/> Increased Pollution <input type="checkbox"/> Changes in air and water quality <input type="checkbox"/> Environment effects due to changed land use <input type="checkbox"/> Burden on existing infrastructure during construction phase <input type="checkbox"/> Cultural issues due to newer population
Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	Yes. Tourism for winter vacation; business dev.
Expectations and Suggestions	
Expectations from the proposed project	Low cost LICA housing.
Suggestions for the project	



Following two questions are to be asked only if the respondent is Real Estate developer:	
Preferred Development (Residential) Typology	Bungalow: Apartment (Low Rise: Ground + 4 floors): Apartment (High Rise: Ground + 5 floors to Ground + 9 floors): N.A. Slums / Informal Development: Worker's Housing (1Room, 1Kitchen): Others:
Preferred Development (Commercial) Typology	Offices ✓ Retail Development ✓ Others ✓ Shopping Malls.
Mode of reach	N.A.
Challenges	Land acquisition & processing.

d. Indian day workers working in Phuentsholing

Interaction with Indian day workers working in Bhutan

Date: 24.1.16 2:30 to 3:00 PmName of the Facilitator : Ms. Nilima Negi

General Details:	
Native state in India	Kalimpong, Sikkim.
Since how long working in Bhutan	43 years
Place of work in Bhutan	P.ling.
Work area (sector)	Service Industry
Type of work	Senior Steward.
Where does your family stay?	Mangalabari, Jaigaon
Daily Commute Distance	6-8 kms.
Daily expenditure for travel	30/-
Monthly Income	12000/-
Family size	4-6 members.
Average Family Income	12,000/-
Reasons of working in Bhutan rather than in India	No good service sector jobs available in Jaigaon.
Challenges faced as an outsider	less salary paid to Indian workers as compared to Bhutanese workers.
Existing work situation in Pling	
How do you get work (Through contractors / agents / direct)	Direct.
Do you have to pay commissions to get work?	No
Why do Bhutanese employers prefer Indian employees?	Easily available at low salary.
Do you face any discrimination in work or wage?	Yes in wage/salary.
Are you covered under social security and other legislations at work place	No.
Awareness about the proposed ALRT Project	
Knowledge about the project (Yes/No)	Yes.
How do you envisage the proposed project?	<p>If Beneficial:</p> <p>Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> ✓ Reduced burden on housing ✓ Reduced burden on existing infrastructure • Planned and systematic development and services ✓ Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of



	employments ✓ Returning opportunity for Bhutanese people living in Jaigaon
	If harmful: Possible hazards, issues and problems envisaged by the proposed development <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	Yes. More business opportunities
Will the proposed project benefit the Indian day workers? How?	Yes to some extent for better jobs.
Expectations and Suggestions	
Expectations from the proposed project	Children's park ; Low cost housing ; Traffic mgmt .
Suggestions for the project	—



e. Bhutanese people living in Jaigaon

Interaction with Bhutanese citizens residing in Jaigaon, India

Date: 21.1.16 11:35 am to 12:05 pmName of the Facilitator: Ms. Nulima Negi

General Details:						
Name of the Area	Baobazaar, Pradhan Bldg.					
Average Duration of stay in Jaigaon	5 years.					
Reasons of staying in Jaigaon	No houses available; very high rent.					
Number of Bhutanese families staying in the area	30 persons in 10 flats.					
Total families / population in the area	Not known.					
Average family size	2-4 persons.					
Main Occupations of Male	Industry Job.					
Place of work	Pling.					
Daily Commute Distance	3-5 kms.					
Daily expenditure for travel	5-10/-					
Main Occupations of Female	Part. Co., Service Ind., Housewife.					
Place of work	Pling.					
Daily Commute Distance	2 kms.					
Daily expenditure for travel	5/-					
Average Family Income	14000/-					
Housing and Services						
Type of Houses (Number)	Temporary: _____, Permanent: <input checked="" type="checkbox"/>					
Housing Typology (Existing)	Apartment (Low Rise: upto G+2): <input checked="" type="checkbox"/> Apartment (High Rise: Above G+2) <input checked="" type="checkbox"/> Slums / Informal Development: Staff / Worker's Housing: Others:					
Average size of residential unit : Number of rooms and/or area in sqft	5 room + sitting room + Kitchen 4 room + sitting room + Kitchen 3 room + sitting room + Kitchen 2 room + sitting room + Kitchen 1 room + sitting room + Kitchen <input checked="" type="checkbox"/> 300 sq. ft. 1 room + Kitchen					
HH Latrine or Public Latrine	<input checked="" type="checkbox"/> HH.					
HH Drinking Water connection	<input checked="" type="checkbox"/>					
HH Electricity connection	<input checked="" type="checkbox"/>					
Proximity of Services and Institutions						
Service / Facility	Bhutan	India	Upto 1 km	1 - 3 km	3 - 5 km	Above 5 km
Health	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
Education	<input checked="" type="checkbox"/>					



Blank	✓				✓
Post office	✓				✓
Daily Need Market		✓		✓	
Recreational	✓	✓			✓
Religious places		✓		✓	
NGO Tshogpa membership					
Cost and Rent of Housing					
Ownership of house - owned / rented	Owned Rented				
If rented, average rent amount for different size and type of houses	5500/-				
%age of income spent on house rent	40%				
If rented, why preferred rented against owned	Can't afford				
Cost of purchase	Max. 1 lakh.				
Comparison of rent in India and Bhutan	10000 - 12000/- in Bhutan				
Existing Challenges / issues in Pling					
Housing	Availability: ↓ Cost: ↑ Rent: ↑				
Infrastructure		Poor	Average	Good	
	Road			✓	
	Traffic		✓		
	Drainage		✓		
	Storm water drains		✓		
Public Transport	✓				
Migration Pattern					
Native of Pling or other Dzongkhags	Samtse.				
Reasons of out-migration to Jaigaon	Housing scarcity & high rent in Pling.				
Difficulties / Issues / insecurities faced as an outsider in Jaigaon	Insecurity of living in other country & travel during late nights.				
Awareness about the proposed ALRT Project					
Knowledge about the project (Yes/No)	Yes.				
How do you envisage the proposed project?	If Beneficial: Possible Benefits of the proposed development <input checked="" type="checkbox"/> Reduced burden on housing <input checked="" type="checkbox"/> Reduced burden on existing infrastructure <ul style="list-style-type: none"> • Planned and systematic development and services • Access to new recreational, health and educational facilities • Employment generation • Business opportunities • Skill development and training centres for new kind of employments <input checked="" type="checkbox"/> Returning opportunity for Bhutanese people living in Jaigaon				



	<p>If harmful: Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	Yes. More employment opportunities
Willingness and affordability of obtaining housing in new Township	
Willingness to obtain housing in new township	Purchase: ✓ Rented: ✓
Affordability to obtain new housing (Amount)	Purchase: 1 lakh Rented: 4000 - 5000
Source of fund in case of willingness to purchase house in new township	Savings: Sale of property /land: Bank Loan: ✓ Other:
If plans to obtain House Loan from bank, is it easily available?	Yes
If Yes, interest rate : High / Adequate	Adequate if same as rent.
If No, what are the issues?	NA
Expectations and Suggestions	
Expectations from the proposed project	Good living area; proper security industries.
Suggestions for the project	Affordable LIG Housing



- a. Focus Group discussions with
 - i. People living in Phuentsholing

Focus Group Discussion

(13)

Date: 20.1.16 9:45 to 10:15 am

Number of Participants:- 4 Male: 3 Female: 1

Name of the Facilitator : Ms. Nulema Negi

General Details:						
Name of the Area	BWD Staff Quarters, Peling.					
Population of the Area	20					
Number of Total HHs	5 @ this in the lane					
Average family size	4-6 members					
Main Occupations of Male	Govt. job, Pvt. job, Teacher in pvt. school.					
Place of work	Peling.					
Daily Commute Distance	4 kms					
Daily expenditure for travel	Nil.					
Main Occupations of Female	Housewife					
Place of work	NA					
Daily Commute Distance	NA					
Daily expenditure for travel	NA.					
Average Family Income	10,000/- to 15,000/-					
Housing and Services						
Type of Houses (Number)	Temporary: _____, Permanent: <input checked="" type="checkbox"/>					
Housing Typology (Existing)	Apartment (Low Rise: upto G+2): Apartment (High Rise: Above G+2) Slums / Informal Development: Staff / Worker's Housing: <input checked="" type="checkbox"/> Others:					
Average size of residential unit : Number of rooms and/or area in sqft	5 room + sitting room + Kitchen 4 room + sitting room + Kitchen 3 room + sitting room + Kitchen 2 room + sitting room + Kitchen 1 room + sitting room + Kitchen 1 room + Kitchen <input checked="" type="checkbox"/> 200 sq. ft.					
HH Latrine or Public Latrine	<input checked="" type="checkbox"/> In-house.					
HH Drinking Water connection	<input checked="" type="checkbox"/>					
HH Electricity connection	<input checked="" type="checkbox"/>					
Proximity of Services and Institutions						
Service / Facility	Bhutan	India	Upto 1 km	1 - 3 km	3 - 5 km	Above 5 km
Health	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
Education	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
Bank	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
Post office	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
Daily Need Market	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
Recreational	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
Religious places	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
NGO Tshogpa membership	-					



Cost and Rent of Housing																									
Ownership of house - owned / rented	Rented																								
If rented, average rent amount for different size and type of houses	1500/- as staff quarters.																								
%age of income spent on house rent	25%.																								
If rented, why preferred rented against owned	Costly otherwise																								
Cost of purchase	30 lakhs but not affordable.																								
Migration Pattern																									
Native of Pling or other Dzongkhags	Gedee.																								
If from other Dzongkhags, Reasons of immigration	For job.																								
Existing Challenges / issues in Pling																									
Housing	Availability: ↓ Cost: ↑ Rent: Affordable as staff quarters.																								
Infrastructure	<table border="1"> <thead> <tr> <th></th> <th>Poor</th> <th>Average</th> <th>Good</th> </tr> </thead> <tbody> <tr> <td>Road</td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Traffic</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Drainage</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Strom water drains</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Public Transport</td> <td>✓</td> <td></td> <td></td> </tr> </tbody> </table>		Poor	Average	Good	Road			✓	Traffic		✓		Drainage	✓			Strom water drains		✓		Public Transport	✓		
		Poor	Average	Good																					
	Road			✓																					
	Traffic		✓																						
	Drainage	✓																							
Strom water drains		✓																							
Public Transport	✓																								
Awareness about the proposed ALRT Project																									
Knowledge about the project (Yes/No)	No.																								
How do you envisage the proposed project?	<p>If Beneficial:</p> <p>Possible Benefits of the proposed development</p> <ul style="list-style-type: none"> ✓ Reduced burden on housing ✓ Reduced burden on existing infrastructure <ul style="list-style-type: none"> • Planned and systematic development and services • Access to new recreational, health and educational facilities ✓ Employment generation <ul style="list-style-type: none"> • Business opportunities ✓ Skill development and training centres for new kind of employments <ul style="list-style-type: none"> • Returning opportunity for Bhutanese people living in Jaigaon <p>If harmful:</p> <p>Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population 																								



Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?	Yes. Tourism will boost economy & job creation will be there. ✓
Willingness and affordability of obtaining housing in new Township	
Willingness to obtain housing in new township	Purchase: Rented: ✓
Affordability to obtain new housing (Amount)	Purchase: Rented: ✓ 1500-2000
Source of fund in case of willingness to purchase house in new township	Savings: Sale of property /land: N.A. Bank Loan: Other:
If plans to obtain House Loan from bank, is it easily available?	Available. Interest rate is too high.
If Yes, interest rate : High / Adequate	High.
If No, what are the issues?	—
Expectations and Suggestions	
Expectations from the proposed project	Better housing & income generation.
Suggestions for the project	Low cost LIG houses on rent should be available.

ii. Bhutanese people living in Jaigaon

(27)

Focus Group Discussion
(Target Group : Bhutanese residing in Jaigaon, India)

Date: 22.1.16

10 to 10:25 am

Number of Participants:- 3 Male: 3 Female: _____Name of the Facilitator : Ms. Nilima Negi

General Details:	
Name of the Area	Mangalabarey
Average Duration of stay in Jaigaon	2-10 years
Reasons of staying in Jaigaon	Cheaper rent; housing scarcity in Bhutan.
Number of Bhutanese families staying in the area	10-15 families
Total families / population in the area	45-50 families
Average family size	4 members
Main Occupations of Male	Business (Cloth & Coal), student, ret'd. from govt. service.
Place of work	Bhutan
Daily Commute Distance	8-10 kms
Daily expenditure for travel	10-20/-
Main Occupations of Female	Working in part. ca.; housewife
Place of work	Bhutan
Daily Commute Distance	8-10 kms
Daily expenditure for travel	10-20/-
Average Family Income	5000-15000/-
Housing and Services	
Type of Houses (Number)	Temporary: _____ Permanent: <input checked="" type="checkbox"/>
Housing Typology (Existing)	Apartment (Low Rise: upto G+2): <input checked="" type="checkbox"/> Apartment (High Rise: Above G+2) Slums / Informal Development: Staff / Worker's Housing: <input checked="" type="checkbox"/> Others:
Average size of residential unit: Number of rooms and/or area in sqft	5 room + sitting room + Kitchen 4 room + sitting room + Kitchen 3 room + sitting room + Kitchen <input checked="" type="checkbox"/> 2 room + sitting room + Kitchen 1 room + sitting room + Kitchen 1 room + Kitchen <input checked="" type="checkbox"/>
HH Latrine or Public Latrine	<input checked="" type="checkbox"/> In house
HH Drinking Water connection	<input checked="" type="checkbox"/>
HH Electricity connection	<input checked="" type="checkbox"/>



Proximity of Services and Institutions						
Service / Facility	Bhutan	India	Upto 1 km	1 - 3 km	3 - 5 km	Above 5 km
Health	✓					✓
Education	✓					✓
Bank	✓					✓
Post office	✓					✓
Daily Need Market		✓				✓
Recreational		✓				✓
Religious places	✓	✓				✓
NGO Tshogpa membership	-	-				
Cost and Rent of Housing						
Ownership of house - owned / rented	Rented					
If rented, average rent amount for different size and type of houses	2000 - 5000/-					
%age of income spent on house rent	30%.					
If rented, why preferred rented against owned	Can't afford to buy.					
Cost of purchase	2000,000/- If LIG.					
Comparison of rent in India and Bhutan	2-3 times in Bhutan.					
Existing Challenges / issues in Pling						
Housing			Availability: ↓ Cost: ↑ Rent: ↑			
Infrastructure	Poor		Average		Good	
	Road				✓	
	Traffic		✓			
	Drainage				✓	
	Strom water drains		✓			
Public Transport		None		✓		
Migration Pattern						
Native of Pling or other Dzongkhags			Chiang ; Tongsa.			
Reasons of out-migration to Jaigaon			Cheaper housing.			
Difficulties / Issues / insecurities faced as an outsider in Jaigaon			No ; only proximity to basic services is more.			
Awareness about the proposed ALRT Project						
Knowledge about the project (Yes/No)			No			
How do you envisage the proposed project?			If Beneficial: Possible Benefits of the proposed development ✓ Reduced burden on housing ✓ Reduced burden on existing infrastructure ✓ Planned and systematic development and services • Access to new recreational, health and educational facilities • Employment generation			



	<ul style="list-style-type: none"> ✓ Business opportunities <ul style="list-style-type: none"> • Skill development and training centres for new kind of employments ✓ Returning opportunity for Bhutanese people living in Jaigaon <p>If harmful: Possible hazards, issues and problems envisaged by the proposed development</p> <ul style="list-style-type: none"> • Increased population and traffic movements during construction phase • Increased Pollution • Changes in air and water quality • Environment effects due to changed land use • Burden on existing infrastructure during construction phase • Cultural issues due to newer population
<p>Will the proposed project boost the economy and livelihood of Phuentsholing and surrounding area? How?</p>	<p>Yes. Tourism & economy will develop.</p>
<p>Willingness and affordability of obtaining housing in new Township</p>	
<p>Willingness to obtain housing in new township</p>	<p>Purchase: ✓ Rented: ✓</p>
<p>Affordability to obtain new housing (Amount)</p>	<p>Purchase: 20,000/- Rented: 3000 - 5000/-</p>
<p>Source of fund in case of willingness to purchase house in new township</p>	<p>Savings: ✓ Sale of property /land: ✓ Bank Loan: ✓ Other:</p>
<p>If plans to obtain House Loan from bank, is it easily available?</p>	<p>Available.</p>
<p>If Yes, interest rate : High / Adequate</p>	<p>Adequate.</p>
<p>If No, what are the issues?</p>	<p>NA.</p>
<p>Expectations and Suggestions</p>	
<p>Expectations from the proposed project</p>	<p>L/A housing with water & electricity at a cheaper rate.</p>
<p>Suggestions for the project</p>	<p>Affordable housing with all basic amenities.</p>

3. Minutes of Stakeholders' Consultation Meeting with attendance sheet



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DHI-INFRA Ltd.



Minutes of the Stakeholders' Consultation Meeting and Presentation of Inception Report for Preparation of IDPR for Amochhu Land Reclamation and Township Project (ALRTP) in Phuentsholing

Date: 25th December, 2015
Venue: Hotel Migmar, Thimphu
Time: 10:00 AM - 1:00 PM

AGENDA

1. Presentation of Inception Report by M/s HCP DPMCPL
2. Question and Answers Session

DISCUSSION POINTS

CEO, DHI INFRA in his opening remarks welcomed and thanked the Chairman and the stakeholders from various Government, Corporate and Private Organizations who took a keen interest to attend the meeting. The lists of attendees are attached as Annexure 1.

He explained that the total cost of development for the project is estimated around Nu. 9 billion where the works are expected to commence by 2017. He informed that DHI is the project owner where the land will be registered in its name and DHI INFRA will be the developer. As the project owner, DHI will be investing in the project and it is likely to adopt financing ratio of 30:70 with 30 percent equity injection. The remaining 70 will be loaned from ADB, if ADB decides to fund the project. He informed the floor that ADB has shown a special interest on the project.

Meanwhile, he introduced M/s HCP DPMCPL, who is based in Ahmedabad, India as the consulting firm for carrying out the integrated Detailed Project Report (IDPR) for the Project. Further, he committed that DHI INFRA would do its utmost to realize the ALRTP as per the government's plans and policies. He informed that the ALRTP would bring unprecedented benefits to the people of Chukha and Samtse Dzongkhags. He also highlighted that some of the benefits would be in the form of job opportunities, commercial enterprises, increase in land values, etc.

With this, he highlighted that this stakeholder consultation meeting was organized with an intention to take into account stakeholders' right at the early planning stage from both public and private sectors. He then requested the participants to raise their concerns and feedbacks for the project in the Q&A session so that it is adequately incorporated from early stages while preparing IDPR.

Following CEO, DHI INFRA's speech, DHI INFRA's Board of Director, Mr. Gem Tshering, addressed the floor wherein he highlighted the importance of ALRTP project to the people of Chukha and Samtse Dzongkhags and the country as a whole. He emphasized that given the current congestion problem in Phuentsholing city, it is inevitable that the ALRTP project come up well structured and planned.



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He also informed the floor about the site visit of Prime Minister and the Cabinet Ministers to ALRTP site who had committed full support to the development of the Project. He stressed that the development of such project must be exemplary and one of a kind.

Lastly, he expressed his trust and confidence in the professionalism and commitment of DHI and DHI INFRA, and requested the stakeholders to provide full support to the project so that we can jointly realize full benefits from it. He encouraged everyone present to raise their concerns and provide their feedback on the project during the Q&A session.

This was followed by a presentation by Mr. Kunal Patel, M/s HCP DPMCPL on the inception report for the IDPR of ALRTP project. The details of the presentation are attached as Annexure 2.

After the above presentations, the Chairman thanked the presenter and highlighted on the following:

- a. Along with ALRTP, the Amochhu hydropower Project is also expected to come sooner or later for which a diversion tunnel would inevitably constructed. Therefore while preparing the IDPR the above concern should be taken into consideration seriously.
- b. He also highlighted the importance of environment, which is considered as one of the 4 pillars of Gross National Happiness where balanced sustainable development must be carried out.
- c. He informed that there are many other reclamation works such as Dhamdum IE in Samtse, Maukhola in Gelephu, Sarpang, Lhamozingkha (kalikhola) in Tsirang. Such important reclamation works are of national importance which upon success of the ALRTP project could be taken up by DHI INFRA in future.
- d. Also, he emphasized the Common Urban Infrastructures like road, electricity, water, and other amenities which will be developed for the ALRTP, must complement with current Phuentsholing town for the overall growth of the project.

After this, an opportunity was given to the participants to voice the opinion and concerns pertaining to the project in a Question & Answer session. The questions/concerns raised and their corresponding justifications are reproduced below:




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Sl	Question/Suggestion	Answer
1	<p>Private Land Representative: a. Although Bhutan has a good relation with the neighboring state of West Bengal & frequent instability border security concerns, it is imperative that the IDPR project must also consider cross-border security as one of the top priority for the development of the ALRTP project. Would DHI INFRA consider while formulating the IDPR? b. Is there any possibility in the ALRTP site for the development of new Airport to expedite the communication sector?</p>	<p>a. DHI INFRA acknowledged the cross border issue and agreed to implement accordingly in the IDPR. b. With regard to the possibility of having an airport, DHI INFRA explained that it is outside its purview and may not be in a position to provide substantive response. However such idea is highly appreciated</p>
3	<p>Department of Forest and Park Service The official mentioned that while developing the ALRTP project, DHI INFRA was requested to take note the Lease agreement signed between DoFPS & Katha Industry which is valid till 2019 and the DoFPS's approval to NRDCL to extract boulders and sand from the ALRTP site</p>	<p>DHI INFRA acknowledged both the issue and agreed to consider such ground reality while formulating the IDPR.</p>
4	<p>National Housing Development Corporation Ltd. The official suggested that it would be appropriate if the soil bearing capacity be conducted even after the land is reclaimed where a minimum and maximum capacity is determined and finalized for the construction. He also highlighted since the entire ALRTP site lies in a high seismic zone, a serious consideration must be undertaken while developing the IDPR. Also, since the Land is reclaimed, the type of materials used for the backfilling must be carefully considered and laid out.</p>	<p>DHI INFRA acknowledged the concerns raised and agreed to incorporate accordingly in the IDPR</p>
5	<p>Druk Holding and Investments The official informed that for the overall financial feasibility of ALRTP an overall economic impact should be calculated and worked upon. He mentioned that the project has full support from the government where various concessions on taxes, etc are committed. He explained that with the upcoming of the project for ALRTP, lot of land will be reclaimed and available for the development, hence he urged the entire relevant stakeholder to deliberate and inform their respective government agencies. He also</p>	<p>DHI INFRA acknowledged and agreed to the suggestions made.</p>








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6	<p>requested them to plan all their future activities at Phuentsholing in integration with ALRTP.</p> <p>Dungshag Administration Dasho questioned that the social housing requirement projected may not be enough given the increase in the population growth every year. Therefore, a proper study needs to be conducted. He added the social housing must be undertaken immediately by organizations like NHDCL given the current situation of Bhutanese living in Jaigaon.</p>	
7	<p>National Resource Development Corporation Ltd. The official thanked for inviting and involving them for the consultation meeting. However, he suggested that such consultation meeting should be carried out at different stages of IDPR so that all the relevant stakeholders are on board for their views and opinions.</p>	<p>DHI INFRA acknowledged the concern raised and submitted that the social housing requirement study carried out presently is in the inception stage and more studies will be carried out as to ascertain the cause and project the final requirement. With regard to housing being undertaken by NHDCL, it was clarified that the NHDCL housing scheme are made only available for income group working in Civil service whereas 69% of the low income Bhutanese living in Jaigaon are working for private sectors and industries. Hence, these would also be accommodated by the ALRTP social housing project.</p> <p>DHI INFRA acknowledged the concern raised and assured that such meeting would be conducted with relevant stakeholders at different level so as to take into account the stakeholder's right at all planning stages.</p>
8	<p>Department of Geology and Mines: He suggested that a detailed study on soil bearing capacity needs to be conducted to mitigate the scouring, siltation and landslides which occur frequently in the ALRTP site. Also a geo-technical study for the resistivity needs to be conducted. He also implied that the current drilling conducted for the geo-technical investigation may not be enough. He then highlighted that there is a constant flood in Purvey khola and requested to take note while preparing the IDPR.</p>	<p>DHI INFRA acknowledged the concerns raised and agreed to implement accordingly in the IDPR</p>



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Mr. Gem Tshering, Chairman, reiterated the importance of the project and reminded of the great benefit that ALRTP would bring to Phuentsholing town and the other Dzongkhag at large. He urged that everyone must support and cooperate towards realizing the ALRTP.

Mr. Tshering Dupchu, Offtg. General Manager, DHI INFRA thanked Mr. Gem Tshering for Chairing the stakeholder consultation meeting despite his busy schedule. He also thanked Dasho Dungpa of Phuentsholing Dungkhag for consenting to attend the meeting which in itself shows Dasho's concern and importance given to the project.

He also thanked all the relevant stakeholders, in particular the government officials from various government agencies and sought their full cooperation support in realizing this project.

Finally, he also thanked Mr. Kunal Patel for the presentation and informed that the preparation of IDPR is still at a very early stage and the inputs provided by all would go a long way in adding value to the quality of IDPR,

The Meeting was officially concluded at 1:00 PM followed by Lunch.


(Dorji Namgay)
Chief Executive Officer,
DHI INFRA Ltd


29/12/2015
(Mr. Gem Tshering)
Board of Director,
DHI INFRA Board

SIA for Amochhu Land Development and Township Project



Note: Attendance sheet will be available in request basis

Appendix 42:
ALDTP Running and Maintenance
Guidelines



Table of Contents

	Pg. no.
DEFINITIONS:	901
ABBREVIATIONS	901
CHAPTER I	896
PRELIMINARY	896
1. Introduction	896
2. Scope	896
3. Key Objectives	896
4. Overview	896
5. Periodic Evaluation	897
CHAPTER II	898
RUNNING AND MAINTENANCE RESPONSIBILITIES	898
6. R&M Obligations of CDCL	898
7. R&M Obligations of Independent Service Providers	899
8. R&M Obligations of Lessees	900
9. Project Office	900
CHAPTER III	903
RUNNING AND MAINTENANCE CHARGES	903
10. R&M Charges	903
11. Other Applicable Fees	903
CHAPTER IV	904
RUNNING AND MAINTENANCE	904
12. Infrastructure Maintenance	904
12.1 River Training	904
12.2 River Bed	904
12.3 Water Supply System	904
12.4 Sewerage System	904
12.5 Solid Waste Management	905
12.6 Storm Water Drainage	905
12.7 Roads and Bridges	905
12.8 Urban Elements	905
12.9 Hill Slope Stability	906
12.10 Electrical Infrastructure	906
12.11 Telecommunication	906
12.12 Fire Fighting	906
12.13 Flood Warning System	906
12.14 Landscaping	907
12.15 Security	907
12.16 Other Facilities	908
13. Urgent Maintenance	908
14. Emergency Maintenance	908
15. Insurance of Infrastructure and Facilities	908
16. Maintenance Manual	908
17. Maintenance Programme	909
18. Up gradation and Replacement	909
	899



19.	Excuse from Performance of Obligations	909
20.	De-Commissioning Due to Emergency	910
CHAPTER V		911
MONITORING OF R&M.....		911
21.	Quarterly Status Reports	911
22.	Inspection	911
23.	Tests	911
24.	Remedial Measures.....	911
25.	Reports of Unusual Occurrence	912
CHAPTER VI		913
SAFETY		913
26.	Safety Requirements	913
27.	Guiding Principles.....	913
28.	Expenditure on Safety Requirements.....	913
29.	Safety during Construction	914
30.	Safety during Operation.....	914
31.	Emergency Response and Preparedness.....	914
32.	Safety Management.....	914
33.	Safety Training.....	914

Amochhu Land Development and Township Project



DEFINITIONS:

Parties: All Service Providers and Lessees

Project: Amochhu Land Development and Township Project

Service Provider: CDCL, Independent Service Providers, National Service Providers (BPC, National Telecom Agencies, RBP, etc.) who are responsible for providing one or more services within the Project area and or carry out R&M of Infrastructure and Facilities related to their Services.

Independent Service Provider: Independent Agencies other than CDCL , BPC, National Telecom Agencies, RBP and other National Service Providers, to whom responsibility of providing certain services are outsourced to including the R&M of Infrastructure and Facilities pertaining to their area of service.

Lessees: A person/tenant who executes lease with CDCL for usage of land in the Project.

ABBREVIATIONS

BPC: Bhutan Power Corporation

CCTV: Closed Circuit Television

CDCL: Construction Development Corporation Ltd.

DCR: Development Control Regulations

DHI: Druk Holding and Investments

IDPR: Integrated Detailed Project Report

R&M: Running and Maintenance

OHSP: Occupational Health and Safety Plan

PPE: Personal Protective Equipment

RBP: Royal Bhutan Police

SDS: Safety Data Sheets

PREFACE



CHAPTER I PRELIMINARY

1. Introduction

Amochhu Land Development & Township Project, hereafter mentioned as Project, is being undertaken with Druk Holding and Investments (DHI) as the Project shareholder, and CDCL a subsidiary company of DHI, as the project developer.

This guideline has been prepared specifically for the Project, to provide general guidelines for its running and maintenance activities, security and safety. This has to be adopted and duly abided by all the Parties involved in the construction and operation activities inside the Project premises. This guideline must be interpreted/referred to in conjunction with the Project Maintenance Manual, Maintenance Programme and Occupational Health and Safety Plan.

2. Scope

This Guideline is specific to the Amochhu Land Development and Township Project (Project) located on the banks of Amochhu in Phuentsholing Bhutan owned by DHI and developed and operated by CDCL. All R&M of facilities within the premises and safety in operations within Project will be guided by this guideline.

3. Key Objectives

The key objective of this document is to provide guidelines to operate and maintain a high quality, reliable, and adequate Project Infrastructure and Facilities by:

- (a) prescribing the general obligations of relevant authorities and Lessee;
- (b) designating the authorities and describing its roles and responsibilities;
- (c) specifying the Infrastructure and Facilities to be operated and maintained;
- (d) providing general guidelines for safety; and
- (e) offering such other guidance as may be necessary for the effective implementation or administration of this Guideline.

4. Overview

Chapter I concerns the general matters followed by Chapter II focusing on the R&M roles and responsibilities. While Chapter III touches on matters relating to R&M charges, Chapter IV deals with



the R&M maintenance of the Project Infrastructure and Facilities, followed by Chapter V which talks about Monitoring of R&M activities. At the end, various aspects of safety is covered by Chapter VI.

5. Periodic Evaluation

This guideline may at any time be amended, altered or modified if, it is found necessary to do so and the amendment, alteration or modification will be binding on all Service Providers and Lessees under this guideline.



CHAPTER II RUNNING AND MAINTENANCE RESPONSIBILITIES

For efficient Running and Maintenance (R&M) of variety of Infrastructure and Facilities within the Project and for effective service delivery, some of the services such as water supply, solid waste management, sewerage system, landscaping, vehicle parking, etc, could be outsourced to one or more independent Service Providers either on conventional contracts or on Public Private Partnership (PPP) model. These Independent Service Providers will be responsible for all R&M operations related to their respective area of service. Each such Service Provider will charge the Lessees independently for their services used if applicable.

Infrastructure and Facilities related to electricity, telecommunication and firefighting will be operated and maintained by the Government authorized National Agencies in the country.

Any construction and R&M activities of the Lessee's Infrastructure and Facilities falling within the leased space will be the sole responsibility of the Lessee.

6. R&M Obligations of CDCL

- 6.1 During the operation period, CDCL will operate and maintain the Project either by itself, and/or outsource some part of it to any experienced Independent Service Provider and if required, modify, repair or otherwise make improvements to the Project to comply with the applicable laws and permits, and conform to the Project Development Control Regulation (DCR) and Good Industry Practice.
- 6.2 CDCL's obligations hereunder include:
 - (a) Developing the entire Project i.e. River training, Backfilling and Common Urban Infrastructure and Facilities except for the Lessees' Infrastructure and Facilities;
 - (b) Conducting all marketing and promotional activities with respect to the Project with the objective of attracting tenants and maximizing utilization of its Infrastructure and Facilities.
 - (c) Carrying out optimal Running and Maintenance of CUI Infrastructure and Facilities involving River Training, River Bed Alignment, Roads & Bridges, Urban Elements (street lights, parking areas, kiosks, canopies, street furniture, dustbins, public toilets, etc.), Storm Water drainage system, hill slope stability, Street lighting, CCTV, Firefighting Equipment, Flood warning system, etc., within the Project premises;
 - (d) Ensuring optimal delivery of services by other Independent Service Providers involved for the Project;



- (e) Collecting and appropriating the R&M charges in accordance with the provisions contained herein;
- (f) Ensuring or complying with the safety requirements;
- (g) Monitoring the R&M schedules and Safety practices of the independent Service Providers to ensure that they are as per the guidelines issued by CDCL;
- (h) Carrying out preventive maintenance of the Project Infrastructure and Facilities under its scope;
- (i) Carrying out periodic maintenance as required from time to time, including prompt repairs of the Project Infrastructure under its scope;
- (j) Preventing, with the assistance of concerned law enforcement agencies, any unauthorized use of the premises and assist the concerned law enforcement agencies to maintain law & order in the Project;
- (k) Preventing, with the assistance of the concerned law enforcement agencies, any encroachments on the Premises;
- (l) Protection of the environment and provision of equipment and materials so that the Project Infrastructure are in compliance with applicable permits including environmental clearance(s);
- (m) Running and maintenance of all communication, control and administrative systems falling under its scope for the efficient running of the Project Infrastructure and Facilities;
- (n) Ensuring that all developments within the Project conforms to the Development Control Regulations (DCR);
- (o) Establishing a Project Office to carry out all its functions in the Project;
- (p) Maintaining a public relations unit to interface with and attend to suggestions from the Lessees, government agencies, media and other agencies.

7. R&M Obligations of Independent Service Providers

7.1 For efficient service delivery the R&M of certain Infrastructure and Facilities such as Water supply, Sewerage system, Landscaping, Solid waste management and certain vehicle parking management could be outsourced to one or more competent independent Service Providers. These services could be outsourced either through conventional contracts or through Public Private Partnership (PPP) framework.

7.2 Independent Service Providers' obligations hereunder include:

- (a) Running and Maintenance of Infrastructure and Facilities outsourced to them;
- (b) Ensuring optimal Running and Maintenance of their designated Infrastructure and Facilities throughout the contract Period;
- (c) Adhering to the Project's R&M and Safety Manuals and programme in all operations;



- (d) Ensuring adequate, efficient and timely delivery of services within the Project;
- (e) Collecting and appropriating the R&M charges if applicable in accordance with the provisions contained herein;
- (f) Ensuring or complying with the safety requirements;
- (g) Carrying out preventive maintenance of their designated Infrastructure and Facilities as per the schedules provided by CDCL;
- (h) Carrying out periodic maintenance as required from time to time, including prompt repairs of their designated Infrastructure and Facilities as per the Project maintenance manual;
- (i) Protection of the environment and provision of equipment and materials so that their Infrastructure are in compliance with applicable laws and permits including environmental clearance(s);
- (j) Running and maintenance of all communication, control and administrative systems falling under their scope for the efficient running of the Project Infrastructure and Facilities;
- (k) Ensuring that all developments within their scope conforms to the Development Control Regulations (DCR).
- (l) Reporting to CDCL in all matters relating to their Operations;

8. R&M Obligations of Lessees

- 8.1 Lessee must promptly remove from the Project all surplus construction machinery and materials, waste materials (including hazardous materials and waste water), rubbish and other debris (including, without limitation, accident debris) and place it in a designated place and keep the Project in a clean, tidy and orderly condition, and in conformity with the applicable laws, permits, Project DCR and Good Industry Practice;
- 8.2 Lessee must adhere to the DCR and any other Project guidelines and standards and applicable rules and procedures for all constructions, operations and maintenances;
- 8.3 Lessees will have to carry out operation and maintenance of all Infrastructure and Facilities falling under their designated premises;
- 8.4 Lessee must not engage in activities other than the ones for which the premise has been leased;
- 8.5 Lessee must maintain their Premises regularly and if the Lessee fails to comply it, Project authority reserves the right to enforce the applicable charges;

9. Project Office

- 9.1 CDCL will set up a Project Office at Project site to oversee the development of the Project, carry out necessary Running and Maintenance of the Infrastructure and Facilities, ensure the



functionality of the Project and carry out all other CDCL obligations/responsibilities in the Project.

- 9.2 Generally, the Project Office will have the following responsibilities:
- (a) Developing the entire Project i.e. River training, Backfilling and Common Urban Infrastructure and Facilities except for the Lessees' Infrastructure and Facilities;
 - (b) Conducting all marketing and promotional activities with respect to the Project with the objective of attracting tenants and maximizing utilization of its Infrastructure and Facilities.
 - (c) Ensuring optimal delivery of services within the Project including those services provided by the independent Service Providers;
 - (d) Carrying out the Project R&M functions as follows:
 - optimal R&M of CUI Infrastructure and Facilities involving River Training, River Bed Alignment, Roads & Bridges, Urban Elements (street lights, parking areas, kiosks, canopies, street furniture, dustbins, public toilets, etc.), Storm Water drainage system, hill slope stability, Street lighting, CCTV, Firefighting Equipment, Flood warning system, etc., within the Project premises as per the Maintenance Manual and Programme;
 - collect and appropriate the R&M charges in accordance with the provisions contained herein;
 - monitor the R&M schedules and Safety practices of all independent Service Providers to ensure that they are as per the Maintenance Manual and Programme issued by CDCL;
 - Carry out routine inspections to ensure effective management and provision of all services within the Project;
 - Carry out preventive maintenance of the Project Infrastructure under its scope;
 - Carry out periodic maintenance as required from time to time, including prompt repairs of the Project Infrastructure under its scope.
 - (e) Ensuring or complying with the safety requirements;
 - (f) Collecting lease rental or other fees in accordance with relevant laws, policies and rules;
 - (g) Checking constantly with Lessees whether they follow all agreements properly and settle bills on time;
 - (h) Taking action against the defaulting Lessees who have not paid rents and other charges;
 - (i) Ensuring that all the facilities within the Project are properly utilized by Lessees;
 - (j) Preventing, with the assistance of concerned law enforcement agencies, any unauthorized use of the premises and assist the concerned law enforcement agencies to maintain law & order in the Project;
 - (k) Preventing, with the assistance of the concerned law enforcement agencies, any encroachments on the Premises;



- (l) Protection of the environment and provision of equipment and materials so that the Project Infrastructure are in compliance with applicable permits including environmental clearance(s);
 - (m) Running and maintenance of all communication, control and administrative systems falling under its scope for the efficient running of the Project Infrastructure;
 - (n) Ensuring that all developments within the Project conforms to the Development Control Regulations (DCR);
 - (o) Maintaining a public relations unit to interface with and attend to suggestions from the Lessees, government agencies, media and other agencies;
 - (p) Preparing of budgets to carry out all its operations and maintaining and managing of accounts;
 - (q) Carrying out all administrative functions required for its operations and for optimal delivery of services in the Project;
 - (r) Providing of following single window facilitation and processing services:
 - single point for information dissemination for all matters relating to the Project;
 - coordinate activities on allotment of the plots within the Project;
 - coordinate activities on execution of lease agreement with Lessees;
 - facilitate in processing of application and acquiring of clearances and approvals;
 - attend to queries and problem raised by Lessees;
 - serve as a single point of contact by Government and other agencies in all matters relating to Project.
 - (s) Reporting to CDCL quarterly or as necessary;
 - (t) Reporting to other Government Agencies/Authorities as and when necessary;
 - (u) Maintaining at all times a good working relation with the relevant stakeholders and other Service Providers in availing required facilities from them.
- 9.3 The organogram of the Project office will be as formulated in the Project Integrated Detailed Project Report (IDPR)



CHAPTER III RUNNING AND MAINTENANCE CHARGES

10. R&M Charges

- 10.1 Significant amount of costs will be incurred on the R&M of Project Infrastructure and Facilities by various service providers operating within the Project, which are payable by Lessees to the respective Service Provider. The R&M charges would accrue from the day the relevant Service Provider signs an agreement with Lessees or the use of Project Infrastructure and Facilities by Lessees, whichever is earlier and the R&M charges will be charged based on the arm's length basis.
- 10.2 The R&M charges for Infrastructure and Facilities that will be outsourced to Independent Service Providers will be worked out by CDCL and the independent Service Providers will be charged based on negotiated amounts. The R&M charges will be subject to revision from time to time on cost plus benefit basis.
- 10.3 The R&M charges for all activities carried out by CDCL such as River Training, River Bed Alignment, Roads & Bridges, Urban Elements (street lights, kiosks, canopies, street furniture, dustbins, public toilets, etc.), Storm Water drainage system, hill slope stability, Street lighting, CCTV, Firefighting Equipment, Flood warning system, landscaping , etc. will be built in the land lease rental rates on cost plus benefit basis.
- 10.4 The R&M charges will include the depreciation costs of the Infrastructure and Facilities for enabling the various Service Providers to finance the upgradation/replacement costs of the Infrastructure and Facilities.

11. Other Applicable Fees

- 11.1 Other applicable fees/charges that the Lessees will have to pay are but not limited to the following:
- (a) Land lease charges;
 - (b) Scrutiny and other applicable fees for approvals/clearances from Phuentsholing Thromde;
 - (c) Fees for processing and acquiring approvals/clearances for Business/commercial operations;
 - (d) Fees for processing and acquiring of Environment clearances if required;
 - (e) Business Income tax and any other taxes payable to various government agencies;
 - (f) Any other fee/charges payable for operations within Project.



CHAPTER IV RUNNING AND MAINTENANCE

12. Infrastructure Maintenance

CDCL and other Independent Service Providers will carry out preventive, periodic and annual maintenance of the Project Infrastructure in accordance with the maintenance schedules of the Project provided in the Maintenance Manual and Maintenance Programme which will be prepared separately. The various Infrastructure to be maintained are as follows:

12.1 River Training

All River training and embankment structures will be cleaned regularly and maintained to ensure that they are in good condition. All debris that are likely to be deposited by the frequent flooding will be removed periodically to maintain its functionality and aesthetics. Further, any damage to the river training structure will be restored at the earliest possible to ensure that the Project is protected from the flooding of Amochhu.

12.2 River Bed

Dredging activities will be carried out once every year after the end of monsoon or as and when felt necessary, to maintain the river bed to the Project specified levels. This is necessary to avoid piling of debris and to maintain the required river flow levels and velocity within the river channel, thereby avoiding any flooding risk to the township and consequential impacts downstream.

12.3 Water Supply System

Continuous and adequate water supply will be ensured within the Project by preventing disruption in the water supply scheme. Water supply will be a hybrid distribution- combination of gravity flow and pumping. Automation with the help of SCADA will be adopted for all components of the water supply system including metering at the Lessee premises.

Both preventive and periodic maintenance of the water supply system will be carried out in accordance with the Maintenance Manual.

Running and Maintenance of water supply system will be outsourced to a competent independent Service Provider.

12.4 Sewerage System

All sewerage main lines and trunk lines emitting from the leased premises till the sewerage treatment plants will be maintained to prevent blockages and leakages. Scheduled maintenance of Sewerage treatment plants (STPs) will be carried out to ensure its functionality. The Sewerage system will be



operated and monitored with the help of SCADA system. The waste water from the STPs will be tested periodically to check if it conforms to the National water discharge standards.

The R&M of sewerage systems will be outsourced to competent independent Service Provider for efficient service delivery.

12.5 Solid Waste Management

Solid Waste Management will be taken up in a planned manner to avoid littering and piling up of waste. Waste will be segregated at source by providing colour coded bins for separate disposal of organic and inorganic wastes. These wastes will then be collected on schedules and transferred to waste segregation yards. All the recyclable wastes will be handed over to recyclers, organic waste will be decomposed and used as manure for Project parks and Landscaping. Possibility of treating all inorganic waste with available technologies such as energy recovery etc. will be explored with landfilling as the last option.

Solid waste management will be outsourced to independent Service Provider whose operations will be supervised by CDCL.

12.6 Storm Water Drainage

The storm water drainage system includes storm water drainages, ground water recharge wells and, open and ducted channels for outfalls from the hill sides.

Cleaning maintenance of these facilities will be carried out on scheduled periods to prevent blockages and leakages and to ensure that the storm water is safely discharged to the ground water and the Amochhu to maintain the ground water levels.

12.7 Roads and Bridges

All Roads and Bridges within the Project boundary will be maintained as per the required standards by carrying out the periodic maintenances in accordance with the maintenance schedules.

These Infrastructure will be cleaned and inspected regularly to ensure that they are in good working conditions at all times.

12.8 Urban Elements

All Urban elements such as street lighting, vehicle parking, kiosks, canopies, street furniture, dustbins, public toilets, etc. are very important features for beautification and enhancing the quality



of life within the Project. Hence, they will be maintained clean and functional at all times by deploying of adequate workforce.

12.9 Hill Slope Stability

Stabilizing the hill slopes and taking care of outfalls from the hills surrounding the Project area is very critical for the overall safety, viability and functionality of the Project. Hence, various hill slope stabilizing technologies such as vegetation, construction of embankments, construction of check dams, etc. will be adopted as suited in various locations within the project area.

All these Infrastructure and Facilities will be maintained as per the schedules detailed in the Maintenance manual and programme.

12.10 Electrical Infrastructure

All Electrical Infrastructure till the energy meter point of Lessee premises will be handed over to Bhutan Power Corporation Ltd. (BPC) for R&M since they are the only Government agency in the country mandated for transmission and distribution of electricity.

Maintenance of Electrical Infrastructure will be carried out as per the maintenance schedule adopted by BPC.

12.11 Telecommunication

Similar to electrical Infrastructure, the R&M of telecommunication Infrastructure will be taken up by authorized telecom Service Providers in the country.

All telecom related maintenance will be carried out based on the telecom operators' schedules.

12.12 Fire Fighting

The firefighting system will play a very important role to stop the spread of fire breakouts in the project premises. Although it will operated during emergencies, it has to be well maintained to be functional at all times.

During Project construction, the firefighting will be implemented and maintained as per the CDCL's Occupational Health and Safety Guideline and the project Occupational Health and Safety Plan.

The firefighting system will be operated and maintained by authorized national agency based on their schedules during Project operation.

12.13 Flood Warning System

Due to threats posed by Amochhu, a flood warning system will be established for detecting threatening flooding events in advance. This will enable the public to be warned en masse so that



actions can be taken to reduce the adverse effects of the event. As such, the primary objective of a flood warning system is to reduce exposure to flooding of all the Project Infrastructure and residents.

The flood warning system will be monitored in a control room within the Project office and will be maintained as per specifications to keep it functioning at all times.

12.14 Landscaping

Landscaping strategy for Project has been developed based on ecology and environmental characteristics of the Project area and green spaces strategy of the Project master plan. This strategy covers landscaping for hill slope stability, green spaces and bio-diversity Park within the Project boundary recommending technologies and various plant species that could be used in these areas. To avoid invasion, most of these species are those which are locally available or those which are suited to the climatic conditions of Project area. To facilitate this, a nursery is proposed within the Project.

Since the Landscaping scope is huge and critical for Project beautification and aesthetics and it involves a lot of expertise, this will be implemented, operated and maintained with the help of independent Service Provider.

12.15 Security

Security will be made available to prevent any mishap or accident and ensure a good and secured environment to smoothen the daily running of the Project. Therefore, various police outposts will be provided within the Project for occupancy by the Royal Bhutan Police (RBP) to maintain law and order within the Project.

CDCL and other agencies will provide security within the Project premises by doing the following:

- (a) CDCL will install security system of CCTV coverage within the Project and personnel guards in some strategic locations such as entrance gates, sensitive CUI areas, etc. However, the security system for individual leased premises should be the responsibility of concerned Lessee;
- (b) RBP outposts will be located at various locations within the Project area for ensuring safety to the town residents. The CCTV system which will be operated and maintained by CDCL will be made accessible to RBP for safety purposes.
- (c) CDCL will levy Lessees nominal charge at such rate during such time for the security system provided; and
- (d) Vehicles entering the Project will be checked and scanned if necessary with the available technology to ensure the safety and security within the Project.



12.16 Other Facilities

Other facilities such as Police Outpost, Fire Fighting Units, BPC and Telecommunication offices will be operated and maintained by respective Service Providers in the country.

13. Urgent Maintenance

13.1 If the Project Infrastructure are required to be repaired or rectified within a time period of less than ten (10) days, it is considered as minor and urgent maintenance. If such Project Infrastructure are required to be repaired or rectified within a time period of more than ten (10) days, it is considered as major maintenance.

13.2 CDCL and the independent Service Providers will deliver the minor and urgent maintenance of the Project Infrastructure and Facilities in accordance with the maintenance schedules that will be detailed in the Maintenance Manual and Maintenance Programme.

14. Emergency Maintenance

CDCL and Independent Service Providers will carry out all necessary emergency maintenance of the Project Infrastructure and Facilities and public areas which directly affect the public's access to or use of the Infrastructure or Facilities, including, common spaces, walkways and other pedestrian areas.

15. Insurance of Infrastructure and Facilities

CDCL and independent Service Providers will insure all the Infrastructure and Facilities falling under their scope with reputed national insurance companies for being prepared with finances during emergencies.

16. Maintenance Manual

16.1 Not later than 180 (one hundred and eighty) days prior to the Scheduled Completion Date, CDCL will prepare an Running and Maintenance Manual for the periodic and preventive maintenance of the Project Infrastructure and Facilities in conformity with the Maintenance Requirements, Safety Requirements and Good Industry Practices. The Maintenance Manual shall be revised and updated once every 3 (three) years.

16.2 The Maintenance Manual shall also provide for life cycle maintenance, routine maintenance and reactive maintenance which may be reasonably necessary for maintenance and repair of the Project Infrastructure and Facilities including replacement.



17. Maintenance Programme

Not later than 45 (forty five) days prior to the beginning of each accounting year during the Project operation period, CDCL shall prepare its proposed annual programme of preventive, periodic, annual, urgent and other scheduled maintenance of the Project Infrastructure and Facilities to comply with the Maintenance Requirements, Maintenance Manual and Safety Requirements.

Such Maintenance Programme shall include:

- (a) preventive maintenance schedule;
- (b) arrangements and procedures for carrying out urgent repairs;
- (c) criteria to be adopted for deciding maintenance needs;
- (d) intervals and procedures for carrying out inspection of all elements of the Project;
- (e) intervals at which the periodic maintenances will be carried out;
- (f) annual maintenance schedules;
- (g) arrangements and procedures for carrying out safety related measures; and
- (h) intervals for major maintenance works and the scope thereof.

18. Up gradation and Replacement

In cases where up gradation/ replacement of the Infrastructure and Facilities are required or in case of major damage due to Force Majeure conditions, the cost of such up gradations/ replacements will be provided by the respective Service Providers.

19. Excuse from Performance of Obligations

19.1 CDCL and other Service Providers shall not be considered in breach of its R&M obligations if any part of the Project Infrastructure or Facilities is not available for use on account of any of the following for the duration thereof:

- (a) an event of Force Majeure; or
- (b) measures taken to ensure the safe use of the Project Infrastructure or Project except when unsafe conditions occurred because of failure of the Service Provider to perform its obligations; or
- (c) compliance with a request from the Project owner or the directions of any Government Agency/Authority, the effect of which is to close all or any part of the Project Infrastructure or Project Facilities.



19.2 Notwithstanding the above, the Service Providers shall keep available all unaffected parts of the Project Infrastructure and facilities provided they can be operated safely.

20. De-Commissioning Due to Emergency

20.1 If, in the reasonable opinion of the CDCL and other Service Providers, there exists an emergency which warrants de-commissioning and closure of the whole or any part of the Project Infrastructure and Facilities, the relevant Service Provider will de-commission and close the whole or any part of the Infrastructure/facilities to users for so long as such emergency and the consequences thereof warrant; provided that such de-commissioning and particulars thereof is notified to and discussed with the CDCL without any delay.

20.2 These Infrastructure/Facilities must be re-commissioned as quickly as practicable after the circumstances leading to its de-commissioning and closure have ceased to exist or have so abated as to enable the Service Provider to re-commission the Infrastructure/Facilities.

20.3 Any decommissioning or closure of any part of the Project Infrastructure/ Facilities and the re-commissioning thereof shall, as soon as practicable, be brought to the notice of the affected persons by means of public announcements/notice.



CHAPTER V MONITORING OF R&M

21. Quarterly Status Reports

During Project operation Period, the independent Service Providers, no later than 7 (seven) days after the close of a quarter, will furnish to CDCL a quarterly report stating in reasonable detail the condition of the Infrastructure and Facilities including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Programme and Safety Requirements, and shall promptly give such other relevant information as may be required by CDCL.

22. Inspection

CDCL Project Office on its own or by hiring an independent engineer will inspect the Project Infrastructure and Facilities at least once in a quarter if required. It shall make a report of such inspection (the “R&M Inspection Report”) stating in reasonable detail the defects or deficiencies, if any, with particular reference to the Maintenance Requirements, Maintenance Manual, the Maintenance Programme and Safety Requirements, and send a copy thereof to the various Service Providers within 10 (ten) days of such inspection.

23. Tests

For determining that the Project Infrastructure and Facilities conform to the Maintenance Requirements, all Service Providers will carry out tests as specified in the Maintenance manual and Maintenance programme and any other tests as demanded by regulatory authorities (such as NEC, DHI, etc.). The results of the same should be submitted to CDCL and relevant regulatory authorities. All such tests could be carried out by CDCL and other Service Providers on their own or outsourced on need basis.

24. Remedial Measures

All independent Service Providers will repair or rectify the defects or deficiencies, if any, set forth in the R&M Inspection Report or in the test results referred to in section 22 and 23 above and furnish a report in respect thereof to CDCL within 15 (fifteen) days of receiving the R&M inspection report or the test results, as the case may be; provided that where the remedying of such defects or deficiencies is likely to take more than 15 (fifteen) days, progress reports of the repair works will be submitted once every week until such works are completed.



25. Reports of Unusual Occurrence

- 25.1 Independent Service Providers will, prior to the end of each month, send to the CDCL, a report stating accidents and unusual occurrences on the Project Infrastructure and Facilities relating to the safety and security of the Lessees and that of Infrastructure and Facilities.
- 25.2 CDCL Project Office will maintain a record of all such unusual occurrences happening within the Project area.
- 25.3 Accidents and unusual occurrences on the Project Infrastructure and Facilities will include:
- (a) death or material injury to any person;
 - (b) damaged or dislodged fixed equipment;
 - (c) any obstruction on the Infrastructure or Facilities, which results in slow down of the services being provided;
 - (d) disablement of any equipment during operation;
 - (e) communication failure affecting the operation of the Infrastructure or Facilities;
 - (f) smoke or fire;
 - (g) any major natural disasters;
 - (h) all major accidents or crime; and



CHAPTER VI SAFETY

26. Safety Requirements

- 26.1 CDCL will develop, implement and administer a surveillance and safety programme for providing a safe environment in the Project Premises.
- 26.2 CDCL will establish a User safety information system including one way communication to users through a Public Announcement (PA) system comprising of dynamic visual displays and loudspeakers.
- 26.3 CDCL may on its own or by appointing an experienced Safety Consultant, carry out safety audit of the Project Infrastructure and Facilities in accordance with the Safety Requirements, and shall take all other actions necessary for securing compliance with the Safety Requirements.

27. Guiding Principles

- 27.1 Safety requirements aim to reduce injuries, loss of life and damage to property resulting from accidents within the Project, irrespective of the person at fault.
- 27.2 Safety requirements apply to all phases of construction, running and maintenance with emphasis on identification of factors associated with accidents, consideration of the same, and implementation of appropriate remedial measures.
- 27.3 All Parties must abide by the following in so far as they relate to safety of the Premises:
 - (a) Applicable laws and permits, including Occupational Health and Safety Standards;
 - (b) Fire safety norms as per Project DCR and Good Industry Practice;
 - (c) Provisions of this Guidelines;
 - (d) usage of earthquake resistant materials and designs in accordance with Good Industry Practice, in the event the Premises is prone to seismic activity;
 - (e) relevant Standards/Guidelines contained in internationally accepted codes;
 - (f) the Safety Guidelines; and
 - (g) Provisions of the Environmental Laws.
 - (h) DCR developed for Project

28. Expenditure on Safety Requirements

All costs and expenses arising out of or relating to Safety Requirements shall be borne by the CDCL and other respective Service Providers.



29. Safety during Construction

- 29.1 Lessee must make adequate arrangements during the construction period for the safety of workers in accordance with project safety guidelines and applicable laws and regulations for safety in construction zones, and notify CDCL about such arrangements. For safety of Infrastructure under construction, all Lessees will conform to the Project DCR provisions and adopt Good Industry Practice.
- 29.2 CDCL will develop an Occupational Health and Safety (OHS) Plan in compliance with CDCL's Occupational Health and Safety Guideline for ensuring safe environment for its employees and workers during construction period. All independent Service Providers and Lessees will have to abide by this Plan.
- 29.3 Proper and adequate signages and sign posts/ sign boards must be provided at constructions sites to increase hazard/risk awareness for workers and general public. All such signages and sign posts will be maintained to keep them visible and legible till the end of construction.

30. Safety during Operation

CDCL, Service Providers and Lessees wherever applicable must develop, implement and administer a surveillance and safety program, including correction of safety violations and deficiencies and all other actions necessary to provide a safe environment in accordance with this Guideline.

31. Emergency Response and Preparedness

CDCL and other Service Providers will formulate a set of emergency procedures to deal with different disasters and emergency situations and all staff will be trained to respond appropriately during emergency through periodic simulated exercises.

32. Safety Management

A safety statement must be prepared by concerned CDCL and other Service Providers once every quarter clearly bring about the system of management of checks and maintenance tolerances for various assets. The statement shall also bring out the nature and extent of, staff training and awareness in dealing with such checks and tolerances. Copies of statement shall be sent to CDCL within 15 (fifteen) days of the close of every quarter.

33. Safety Training

Training programs will be conducted for the construction and operational workforce regarding proper usage of Personal Protective Equipment (PPE), handling and storage of fuels and constructions materials.



Safety training programs for employees could be conducted through:

- Safety meetings
- Investigations of accidents and near miss accidents to determine cause and the necessary corrective actions.
- Safety training and refresher training.
- Use of proper work procedures, personal protective equipment, and mechanical guards.
- Maintenance of records of accidents and losses for contractor files.
- Provision of Safety Data Sheets (SDS) or equivalent data readily to exposed workers and employees.



REFERENCES

- *DHI-INFRA, 2012, Developing Bhutan Education City on a PPP Model; Concession Agreement*
- *DHI-INFRA, 2014, Operation and Maintenance Manual for Industrial Parks*
- *Kennedy Township, 2012, Operations and Maintenance Manual; Sanitary Sewer System*
- *RED FUNNEL, 2008, Contractors Standard Operating Procedures (SOPC)*