



NATIONAL REPORT

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Ministry of Works and Human Settlement

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1. Introduction

Bhutan, with an area of 38,394 square kilometers, is located in the eastern Himalayas and shares its boundaries with China to the north and India to the east, south and west. The elevation of the country ranges from 200 m in the south to 7000 m in the north resulting in diverse climatic conditions and biodiversity. Administratively the country is divided into 20 Districts comprising of 205 Blocks. The Population and Housing Census of Bhutan (PHCB) 2005 counted a population of 634,982 which had increased to 757,042 in 2015. The Population Perspective Plan 2010 projects that despite the low growth rate, the population of Bhutan is expected to increase till the end of the century, doubling itself from the 2005 figure by 2040.

Bhutan has undergone rapid urbanization in the last few decades. As per the PHCB 2005 over 30% of the total population lives in urban areas, compared to 15% 1999. It was observed that most of this rise in urban population is attributable to the high rate of rural-urban migration. This is corroborated by the fact that the natural growth rate for both urban and rural population has remained fairly constant. On the other hand, the number of vacant houses in rural areas, referred to as *gung-tong*, is increasing annually as does the shortage of farm labours. Such a trend creates excessive demand of the urban services while those provided in the rural areas are not optimally used. This is may be detrimental to Bhutan's development concept of promoting balanced socio-economic development, environmental conservation and cultural preservation through good governance.

The process of urbanization is inevitable. While it has brought in economic opportunities, it has also led to numerous issues and challenges. A major consequence has been developments occurring before urban planning leading to such issues as inadequate infrastructure, land speculation, unplanned and illegal development, housing deficit, exposure to disaster risks, etc. Further, statistics based on PHCB 2005 show that while 44% of the total population is concentrated in the western region constituting only 20% of the total land area, around 65% of the urban population is in the western region. In terms of the level of urbanization, the western region has 45% while the eastern region shows only 18%, compared to the national average of about 31% despite the latter's significant population size and higher growth rate in urban population. On a positive side this indicates a latent potential for urbanization.

The high rate of rural-urban migration, particularly to one or two regions and disparity in the level of urbanization is seen as unsustainable. Therefore, efforts are made to promote equitable and regionally balanced development both in the urban and rural sectors. A major step in this direction has been the declaration of 20 autonomous District Municipalities and 20 Satellite Municipalities. The National Human Settlement Policy has been drafted to provide the overall framework for the development of human settlements. Further, as recommended by the National Human Settlements Policy, the Spatial Planning Act and the Spatial Planning Standards have been formulated and the National Human Settlements Strategy is being prepared. These new initiatives together with the existing policies, strategies, legislation and guidelines aim to promote human settlements that are ***environmentally sustainable, culturally vibrant, economically strong and highly live-able.***

This report, Bhutan's Habitat III National Report, is divided into 4 sections. The first section provides background introduction. Section two documents the different phases and processes involved in the preparation of the report. The third section contains the main report organized under six key topics further divided into 30 different issues. Each issue consists of a general discussion, achievements since the Habitat II, the challenges experienced and lessons learnt and the future issues and challenges to be addressed by the New Urban Agenda. The fourth section has indicators for which relevant information were available.

2. Methodology for preparing the National Report

The preparation of the National Report involved the following methodology and phases:

Phase I: Formation of the National Habitat Committee with members from the following agencies and chaired by the Minister for Works and Human Settlement:

- i) Gross National Happiness Commission
- ii) National Land Commission Secretariat
- iii) National Commission for Women and Children
- iv) National Housing Development Corporation Limited.
- v) Department of Local Governance, Ministry of Home and Cultural Affairs
- vi) Department of Youth and Sports, Ministry of Education
- vii) Department of Human Settlement, Ministry of Works & Human Settlement
- viii) Policy and Planning Division, Ministry of Works & Human Settlement
- ix) Department of Engineering Services, Ministry of Works & Human Settlement
- x) Thimphu Municipality
- xi) Thimphu District

Other agencies who were consulted but could not depute members to the Committee were the Ministry of Agriculture and Forests, National Environment Commission, National Statistical Bureau, United Nations Development Program Bhutan. However, data and information sourced from and shared by some of these agencies have been extensively used in the report.

Phase II: Review of documents and secondary data collection from and related to different and relevant agencies, analyses of the data and formulation of the draft report framework.

Phase III: Conduct of workshop for the presentation and review of the draft report and its key issues by the National Habitat Committee.

Phase IV: Review and finalization of the National Report.

3. Habitat III National Report

3.1 Urban Demography: Issues and Challenges

Bhutan is a rapidly urbanizing nation. Since Habitat II Bhutan has seen a considerable increase in its urban population. The rate of urban population growth in 2005 was estimated at 7.3%, against the overall population growth of 1.3%. Bhutan National Urbanization Strategy 2008 (BNUS) projected that if this growth rate remained unchecked the urbanization level would reach 73% by 2020. Since the national population growth rate is comparatively low, it can be deduced that majority of the urban population growth is attributable to rural-urban migration. The BNUS 2008 observes that the three main reasons for migration are family move, employment and education. It also observes that if the country is divided into four regions from east to west as eastern, central eastern, central western and western, out-migration is maximum from the eastern to western regions. The latter accommodates 44% of the total population and 65% of the country's urban population, mainly congregating in the country's two largest cities of Thimphu and Phuntsholing. Similarly, a report by the Ministry of Agriculture and Forests published in 2013 indicated that rural-urban migrants constituted 18.2% and about 33% of the migrants moved towards the urban centres, especially Thimphu. Figure 1 below shows the projected trend in rural and urban population. Such a trend is detrimental to the policy of regionally balanced development that Bhutan promotes.

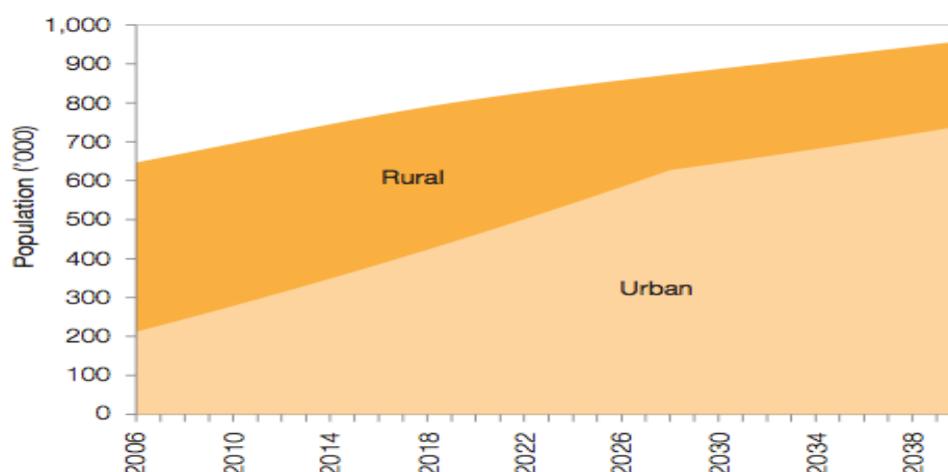


Figure 1: Projected trend in rural and urban population (SGNH 2010)

3.1.1 Managing rapid urbanization

Bhutan is rapidly urbanizing nation. The Population and Housing Census of Bhutan 2005 showed that almost 31% of the total population lived in urban areas compared to 15% in 1999, indicating that the urban population had more than doubled in just 15 years. Since the natural population growth rate of Bhutan is fairly constant and low at 1.3%, it could be deduced that most of the urban growth has been through rural-urban migration. This trend is a concern as a major population movement to urban centres is observed while on the other hand the towns and cities are already struggling to provide adequate services for their existing

population. Since upward trend of urbanization is expected to continue and cannot be stopped, it is advisable to prepare for it.

Achievements: A number of strategic and policy documents aimed to address the issues associated with urban demography were formulated and adopted. Bhutan 2020 sets out the overall visions including the need to promote regionally balanced development and establishment of regional growth centres, Bhutan National Urbanization Strategy 2008 identifies potential urban and growth centres and the Strategy for Gross National Happiness 2010 recommends encouraging national urban growth to stimulate economic development. Various sectors have undertaken a number of initiatives to manage rural-urban migration issues. Education and health infrastructure were taken closer to the rural population and rural connectivity was enhanced. Since employment and therefore, income generation was one of the major reasons for migration, efforts were made to modernize the agriculture sector. In terms of human settlement planning and development, Bhutan has declared an autonomous municipality and a satellite town in each of the twenty districts with the objective of promoting regionally balanced development. Development of two regional hubs in eastern Bhutan, specifically targeted to address issues of migration, has also been initiated.

Challenges experienced and lessons learnt: Absence of the human settlement policy and planning legislations resulted in difficulties in managing rapid urbanization, especially in terms of timely release of land and administering the planning process. Further, in the absence of a proper strategy, urbanization lacked coherence and direction. Town planning was often carried out depending on the requests from the local governments rather than the actual need. In preparing urban development plans, population projections were not accurate since Bhutan did not have an accurate historic population census figures. The first scientific population and housing census was conducted in 2005. But still it is a challenge as there is no historic data to compare with or to make realistic projections.

Future challenges and issues: The rapid increase in urban population is mostly attributable to the rural urban migration since the natural population growth rate of Bhutan is quite low. Such a trend results in shortage of housing in urban areas while there is a large number of vacant houses in the rural areas. Sudden increase in urban population overwhelms the urban infrastructure such as housing, water supply, waste management, etc. Developments in and around cities often precede proper planning leading to more unplanned development and poor levels of services and management. Further, related to migration, it is observed that it is generally men who migrate in search of work leaving behind the elderly and women.

3.1.2 Managing rural-urban linkages

As a mountainous country with difficult terrain, connectivity and linkages between settlements and towns have been and continue to be a big challenge. Even in the vicinity of towns, linkages between a town and its immediate surrounding have been difficult because of the distinct administrative delineation between urban and rural settlements. However, the benefit of rural-urban linkages, often referred to as 'rurbanization' is being promoted as it plays a crucial role in sustainable development. It not only serves as a linkage between 'remote production pockets with the urban markets' but also ensures efficient use of resources. Therefore it is important to treat urban and rural areas as partners and not as

competitors because they are inter-dependent. With the transition of the country from an agro-based to an urban economy, linkages between urban and rural areas are also being strengthened that has resulted in positive impacts for socio-economic development.

Achievements: To improve the physical connectivity, thousands of kilometers of roads have been constructed and telecommunication facilities have been installed. This has not only helped in connecting the settlements but also facilitated interflow of services and resources. Currently the total road network is 11,176 kms of which 2,478kms are national highways, 1,387kms district roads and 5,129 kms block level and farm roads. In terms of telecommunications, all 20 districts have been connected with fiber optics and 3G internet and 98% of villages are provided with mobile phone connectivity services. With regard to settlement planning, a holistic approach is adopted to manage rural-urban linkages. In contrast to the earlier practice of planning and managing towns and villages separately, now an integrated plan is being promoted through preparation of higher level plans at the regional, river basin and valley level. Policies are also being drafted to ensure that the semi-urban and peri-urban areas that often are the physical spaces of rural-urban linkages are being planned and managed as a part of an urban or municipal administration and management.

Challenges experienced and lessons learnt: High investment and maintenance cost incurred in developing physical infrastructures to connect rural to urban areas has been a big challenge. There are also conflict of interests between rural and urban communities, especially in accessing resources like water and managing wastes. These are further complicated by the jurisdictions and authorities of local governments especially at the municipal, block and sub-block levels.

Future challenges and issues: While improvements in technology such as telecommunications and information technology have brought in tremendous benefits, poor condition of roads, especially the farm roads in the villages, continues to be an issue mainly because of the physical terrain and, therefore, budgetary constraints. For a small country with small population, it would make immense economic sense to promote shared uses of infrastructure such as water supply, waste management, public transport, etc, across local government boundaries. However, the question of jurisdictions, local priorities, budgetary allocations and project implementations need to be addressed.

3.1.3 Addressing urban youth needs

Today youths are the most vulnerable section of the society, especially in urban areas. Youth related crimes like substance abuse and larceny are on the rise. Bhutan has always given special focus to education for the youths providing free education till secondary levels and scholarships for tertiary education. Continuous efforts have been also made towards achieving full employment for the youth.

Achievements: The Bhutan Youth Development Fund was launched in 1999, the National Youth Policy was formulated in 2011 and the National Youth Action Plan is being drafted to address youth related issues. The Department of Youth and Sports was formed under the Ministry of Education with the specific mandate of meeting the youth needs. Other youth related programs initiated, supported or facilitated by the government include the Youth

Participation and Child Protection Program, Young Volunteers in Action, Druk Adolescent's Initiative for Sexual Awareness Network, Y-PEER, Police-Youth Partnership, etc. Targeted programs initiated include the Guaranteed Employment Program, Youth Employment Scheme, Graduate Skill Program and Apprenticeship Training Program. More recently a multi-sector task force has been formed to work on immediate job creation. Further, non-government organizations, like the Loden Foundation and the Draktsho, have initiated youth empowerment and employment programs.

Challenges experienced and lessons learnt: Youth unemployment is a growing concern because even as job opportunities are created and skills development training are imparted, youth refuse to take up blue collar jobs. There is also mismatch between the jobs available and skills of the youths. Youth issues are cross-sectoral in nature and sometimes the inability of the different sectors to work with one another often leads to well-intentioned but isolated efforts which could be addressed through integrated and collaborated approach.

Future challenges and issues: Youth generally migrate to urban centres either for education or in search of employment opportunities. While efforts have been made to match job opportunities and the skills of the youth, lack of willingness to take up blue collar jobs continues to be an issue. Urban planning efforts have focused on provision of infrastructure facilities and land for development but not adequate attention has been given to creating employment or provision of urban amenities for youth engagement and recreational activities. Another issue that may be related to those discussed is the increasing rates of suicide amongst the youth which must be addressed with urgency.

3.1.4 Responding to the needs of the aged

As per the PHCB 2005, the population of the elderly people, defined as those 60 years old and above, was 29,745 which accounted for 4.7% of the total population. The Population Perspective Plan 2010 envisaged that this figure would reach 111,000 by 2045 with improved health facilities and declining rate of fertility, that is 11.2 % of the total population. Traditionally, the social safety net of communities was very robust that the aged were well taken care of and they had access to facilities for spiritual practice. However, now increasing proportion of the elderly, 53.9 % of the elderly population who constitute 14% of the total population, according to a survey by the Royal Society for Senior Citizens 2012, lived in urban areas. Therefore, there is a strong need to recognize and cater to the needs of the elderly in urban planning and development.

Achievements: The Kidu Foundation instituted by the Secretariat of His Majesty the King looks after the welfare and needs of elderly including granting of monthly allowances. At the local levels, initiation of Community Based Medical Care since 2009 has helped elderly people receive treatments and health advices. Specific deposit schemes aimed at providing the elderly, who are either retired or nearing retirement age, with comfortable and secure life have also been initiated by some financial institutions.

Challenges experienced and lessons learnt: Other than the welfare schemes, no specific programs have been initiated for the elderly especially in terms of urban planning and design. This in a way reflects the fact that traditionally the elderly were taken care of with respect

and affection by the family and community members. The concept of old age homes and care givers were not found necessary even to discuss. However, now with the change in society and life and working styles, such facilities are becoming increasingly relevant even though the society still generally feels that it is the responsibilities of the families. But number of elderly requiring help from outside, especially those who have moved to urban centres, are increasing over the years.

Future challenges and issues: Urban development plans must provide for facilities for the elderly. These facilities should include housing that are accessible to the elderly and places of spiritual practice, contemplation and socialization. The urban infrastructure and facilities also need to be made accessible including provision for ramps and wheelchairs for those who need assistance in personal movement and mobility.

3.1.5 Integrating gender in urban development

The position and status of women in Bhutan is much higher than many of the countries in the region. Traditionally women are the head of households and even today women form the major participants in consultation meetings where major development decisions are made. But at the global level Bhutan is ranked 120 out of 142 countries in the Gender Gap Index as per the Global Gender Gap Report, 2014 with Gender Inequality Index of 0.636. Some significant gender statistics are as shown in the Table 1 below. Bhutan recognizes gender as a key feature of its development initiatives. At the national level, Gender Friendly Environment for Women's Participation is being promoted a key national result area and the development programs promote inclusive development which seeks to strengthen governance through promotion of gender equality. All ministries and key agencies also have gender focal persons and group with the primary mandate to ensure that gender is mainstreamed into the sectoral plans and programs.

	Category	Male	Female
1	Unemployment rate (%)	3.4	11.9
2	Uneconomically active population in urban areas	1,776	28,175
3	Involved as family workers in agriculture	46,131	75,649
4	Parliament members	66	6
5	Youth literacy rate (%)	90	82
6	Adult literacy rate (%)	66	45

Table 1: Gender Statistics, 2015 (Gender Gap Report & MoE, 2015)

Achievements: Bhutan is signatory to the Convention on the Elimination of All Forms of Discrimination against Women and the National Commission of Women and Children (NCWC) has been established as the nodal agency for gender mainstreaming. Major interventions by NCWC include the formulation of i) Gender Mainstreaming Guidelines, ii) Bhutan Gender Equality Diagnostic of Selected Sectors and iii) National Plan of Action for Gender. Civil Society Organizations like Respect, Educate, Nurture and Empower Women, Tarayana Foundation, Bhutan Nuns Foundation, Bhutan Association of Women Entrepreneurs, Bhutan Network for Empowerment of Women, and National Women Association work to address issues of gender and provide economic and employment

opportunities. Bhutan has also initiated Gender Responsive Planning and Budgeting. Two major programs that are specifically targeted to address issues of urban women are i) making urban public transport safe for women and provision of designated seats for pregnant women and women with toddlers and ii) extension of maternity leave for mothers from three to six months.

Challenges experienced and lessons learnt: Gender disparity is considered to be negligible in Bhutan. But according to the Bhutan Gender Diagnostics of Selected Sectors (2014), 68 % of the women within the age group of 15- 49 and all education levels still condone domestic violence. This may be partly symptomatic of fact that the systems and programs introduced are not robust enough. Further, despite concerted, all-round efforts, women's participation at decision making level and in politics is still extremely low.

Future challenges and issues: Women and children are generally more vulnerable in times of disasters. Therefore more intervention is required for gender mainstreaming especially in areas like disaster management. Increased rate of domestic violence and its current level of acceptable could be a major challenge in future if appropriate interventions are not taken up. There is much that urban planning and design must do to make cities gender sensitive and safe, secure and accessible to all irrespective of gender, age or economic status. Women need to be empowered at home, at work and in politics.

3.2 Land and Urban Planning: Issues and Challenges

Bhutan's total land area is just over 38,000 square kilometers. Of this only a limited area is available for human settlements as it has many mountainous regions and more than 70 % of the country is under forest cover. Further, as a country prone to multiple disasters such as earthquakes, glacial lake outburst floods, flash flood and landslides, many areas are not suitable for development. With competing demands for land from other development projects, it is always a challenge to mobilize land for urban development. Therefore, it is of utmost importance that all and any land released for urban planning is used judiciously, efficiently, sustainably and to the optimum level.

3.2.1 Ensuring sustainable urban planning and design

Bhutan has always pursued sustainable development, even before the global recognition of the concept and its widespread acceptance. However, sustainability has many aspects. While Bhutan's achievements in environmental and cultural sustainability are exceptional, challenges remain in economic and financial sustainability of many of the development programs. As urbanization gained momentum, the concept of sustainability found natural progression into urban planning and development. Environmental and cultural sustainability took precedence over the economics of development. Now that these two important aspects are strongly established, efforts are made to ensure sustainability of all aspects of urban planning and design including financing, administration and management.

Achievements: Major reforms towards ensuring sustainable urban planning and design has been made in the planning process, contents and approach. There has been a shift in approach to promoting a more integrated and holistic planning that not only looks at the physical infrastructure and developable plots. Land suitability and stability studies are made

mandatory planning pre-requisites including Strategic Environmental Assessment and Environmental Impact Assessment studies particularly for larger projects. Disaster resilient features and risk mitigation measures are promoted. Other measures include focus on water sensitive urban design and energy efficient and eco-friendly infrastructure, transport and development practices. Further, local governments are encouraged to promote energy efficient designs and programs, for example LED lamps for street lighting, waste segregation and recycling.

Challenges experienced and lessons learnt: The high initial cost in adopting the sustainable features for urban planning and development has been a deterring factor, especially considering the limited budget and financing available for any kind of projects. Further, the scale of economies is also a challenge. For example, waste recovery and recycling often does not make economic sense as the volumes of waste are very small and the fact that they have to be transported long distances to recycling plants outside the country makes the business less profitable. The difficulty of creating public awareness and changing people's consumption habits and lifestyles continue to be challenge.

Future challenges and issues: As a rapidly urbanizing nation, developments often precede urban planning and design, that is private promoters develop faster than the local governments can provide serviced land. Such developments are impediment to the planned approach to sustainable urban management. In the absence of a plan, developments often take place in environmentally sensitive and disaster prone areas thereby making them vulnerable both to natural and man-made disasters. Such settlements lack access to balanced infrastructure and amenities for 'live, work and play' making later provision of such services either impossible or extremely costly. As much as this challenge results from lack of a coherent urban development strategy, it is also caused by narrow, sectoral rather than holistic, integrated approach to urban planning, design, development and management.

3.2.2 Improving urban land management including addressing urban sprawl

Bhutan is a land scarce country. As the Table 2 below shows most of the land is under forest cover and a very little area is available for human settlement. As the urban population and cities grow, expansions of existing towns or development of new ones will invariably encroach into either the cultivated agriculture area or the forest area. Though Bhutan's towns are generally compact and do not have what is commonly referred to as suburbs, 'leap-frog' developments often take place which show many characteristics of urban sprawl. Sometimes part of semi-urban and peri-urban areas are often included and released for urban development based on some building activities observed even when large parts of areas already included within the municipal boundary are not fully serviced or developed. This in many ways is symptomatic of the lack of proper system for urban land use planning and implementation. Land use administration is also hampered by lack of appropriate planning instruments other than the development control regulations.

	Land cover type	Area (km ²)	Area (%)
1	Forest area	27,052.91	70.46
2	Cultivated agriculture area	1,125.50	2.93
3	Built up area	61.56	0.16
4	Non-built up area	3.30	0.01
5	Bare area	1,229.53	3.2
6	Degraded area	206.45	0.54
7	Meadows	1,575.46	4.1
8	Shrubs	4,005.25	10.43
9	Marshy area	3	0.01
10	Snow cover area	2,845	7.43
11	Water bodies	276.55	0.72
	Total area	38,394	100

Table 2: Land cover of Bhutan (NLCS & MoAF)

Achievements: In term of legislations, the Land Act of Bhutan 2009 provides strong legal basis for the identification, release and change of land uses for urban planning. Under the Land Act the Land Rules and Regulations 2007, Land Lease Rules and Regulations 2009 and the Property Assessment and Valuation Agency 2009 have been adopted. A nationwide cadastral resurvey to update the land records have been completed. Further, some of the larger cities have completed update and digitization of their land and property records. These records will be useful for both urban land management and taxation purposes.

Challenges faced and lessons learnt: One of the biggest challenge in urban land management has been the inability to provide infrastructure services and therefore their development in a phased manner. This has meant that the limited resources are thinly spread and there are sporadic developments all over the area, without any focus. This is mainly prompted by the general perception, influenced by earlier practice, that a land is open for development as soon as it is included within the municipal boundary. Bhutan's pro-rural approach has had adverse impact for efficient urban land management. Properties in the peri-urban areas have often taken advantage of this preferential treatment while those within the urban boundary are limited by more stringent regulations. This has often led to unplanned sprawl and haphazard developments.

Future challenges and issues: Any development has to be informed by proper analyses based on accurate data and records. The current practice of a strict divide, in terms of land categorization, taxation, subsidies and incentives, based purely on whether an area falls within or outside the municipal boundary should be rectified. Such incentives and exactions must in fact be based on the land use designated and practiced and therefore, its real value and not its nomenclature. The dichotomy of rural and urban areas must be removed and must be seen and treated as a part of the larger, integrated system.

3.2.3 Enhancing urban and peri-urban food production

Enhancing urban and peri-urban food production is very much in line with principles of urban planning and development in Bhutan that seeks to preserve cultivated landscape both within

and outside municipal boundary for food production and preservation of the cultural landscape. This will also promote a mutually beneficial relationship between an urban centre and its surrounding areas. The city will not only look and work better because of balance with built and open spaces but also get its food fresh and relatively cheaper with not much transportation cost and wastes involved. The city's organic wastes could also be used as composted fertilizers. On the other hand, the farms will have easy and ready market.

Achievements: In urban areas, agriculture/food production is mostly carried out by schools and institutions under the School Agriculture Program. The Ministry of Agriculture and Forests also promotes a number of vegetable and horticulture development programs. Further, it has facilitated formation of farmers' groups which grow and supply vegetables to the schools in their respective communities. In urban planning, specific cultivated landscape areas, environmentally fragile areas, disaster prone areas and buffer areas are marked for preservation where agriculture is incentivized in these areas. The incentives include provision of subsidies available for rural farming and land and property taxes and utility charges also at rural rates.

Challenges experienced and lessons learnt: Urban and peri-urban food production is constrained by the limited land availability within and outside urban boundaries. Ensuring water for irrigation and managing farm labour shortages are other challenges. Further, the enormous difference in the value of urban and farm lands and the returns from farm produce and real estate development act as huge disincentives. This is further aggravated by the fact that the tax system fails to account for the difference in the value of land as taxes are currently based on the area and not the return value of the land.

Future challenges and issues: With increased rate of urbanization, more agricultural land may be used up for infrastructure development. The little land that may be reserved for urban and peri-urban food production and agriculture may be de-incentivized by inappropriate tax systems and competitive market forces. Urban and peri-urban food production must be enhanced, promoted and incentivized precisely for the reason that it is not profitable but adds great value to urban living, lifestyle and well-being.

3.2.4 Addressing urban-mobility challenges

While the cities and towns of Bhutan are small, mobility within and across cities can be complicated. Given the mountainous terrain and limited land, connectivity and coverage are the main challenges and focus seems to have been on private cars as the road alignment and gradients are more flexible. However with increase in urban population and spatial expansion, this model is proving unsustainable. Access to urban mobility and transport is also not equitable. Recent efforts to address the urban mobility challenges include introduction of city buses and bus stops in the capital city, introduction of cycling lanes and on-street and off-street footpaths. Still mobility remains a big challenge in all cities and towns of Bhutan but it is challenge that can and should be resolved.

Achievements: At the policy level Bhutan Transport 2040 Integrated Strategic Vision has been formulated in 2011. Specifically for Thimphu, the capital city, it seeks to develop a public transport spine within the main urban corridor to link the central area with the

expanding residential areas to the north and south. The main idea is to create a layout ideal for the development of a mass-transit corridor. Studies have been undertaken to promote eco-friendly and energy efficient transport system especially in the larger towns of Thimphu and Phuntsholing. These two towns have also come up with transport sector plans that promote public transportation system and enhancing connectivity through an integrated mobility networks within the city. Thimphu municipality has introduced city bus system and the public bus stops and shelters are also being piloted. Other initiatives in cities include introduction of dedicated bicycle lanes and pedestrian footpaths. New urban development plans also provide for public transport and pedestrianization of some main streets within the core areas.

Challenges experienced and lessons learnt: Given the small urban population and the space limitations, only minimal urban transportation infrastructure was provided. Further, no provision was made for public transport system. However, now with ever increasing urban population and consequently the number of private cars, Bhutan's towns are facing problems of congestions, shortage of parking spaces, traffic jam, pollutions and other resultant impacts. Because adequate provision has not been planned, even introduction of public transport systems are proving difficult. For example, it is always a challenge to plan public transport loops and bus stops because the city plan is not transit oriented. Bicycle lanes provided are also not very successful because they share the same space with cars and it is not entirely safe or secured.

Future challenges and issues: Cities and towns will be accessible to all sections of the society only if the urban-mobility issues are addressed. Mobility should not be just to provide roads and parking spaces for cars. Transit oriented development with provisions of multi-modal mobility options should be adopted. All city plans should provide for public transport system, dedicated cycling and non-motorized transport and pedestrians both on and off street. Transport and mobility infrastructure should also be planned as public spaces. It must, however, be recognized that getting people out of their cars is going to be a challenge as seen from experiences everywhere. But a combination of efforts such as enhancing the urban-mobility option with focus on eco-friendly public transport, premium on private car ownership and usage and review of parking space requirements rules for building constructions should be emphasized.

3.2.5 Improving technical capacity to plan and manage cities

Urban living and city planning in Bhutan began only in the last 50 years or so. Further, as a predominantly rural society the main development focus, rightly, has been on education, health, agriculture and infrastructure development. It is recognized now that Bhutan is rapidly urbanizing and that it must prepare itself as urbanization cannot be avoided. In a sense some level of urbanization is desired as it has the potential to promote socio-economic development and enhance public well-being. However, the urbanization efforts and process are severely constrained by lack of technical competence and experience and shortage of manpower. Consistent and sustained efforts are made to address this issue.

Achievements: Urbanization is recognized as inevitable and efforts are being made to prepare for it. Institutionally, the Department of Human Settlement has been formed at the national level under the Ministry of Works and Human Settlement the agency responsible for

urban planning and development. Human Settlement Sectors are also being instituted in the Districts. Autonomous municipalities are being established in all of the 20 districts and efforts are made to man these local governments with technical professionals for urban planning and management. In recognition of the specialized manpower requirements, the Royal Civil Service Commission of Bhutan has increased annual recruitment of professional urban planners and also increased scholarships for urban planners, designers and other professions related to urban planning and management. The Ministry of Works and Human Settlement, as the parent agency for municipal staff also offers regular short term and specialized training and refresher courses.

Challenges experienced and lessons learnt: The limited number of professional planners in the country has impeded planned urban development, as developments often precede planning. In trying to make up for this gap, urban development plans have also been prepared through hiring of international consultancy services. However, given Bhutan's unique setting and development philosophy of promoting 'Gross National Happiness' with focus on conservation of environment and preservation of culture, plans prepared by international experts often fail to capture the full essence of the intended development objectives. Further, institutional experience and memory are important as Bhutan is an emerging urban economy and that almost everything that is done becomes a precedent. However, this opportunity of learning from the experience of actual 'doing' is lost when consultants are hired, mostly from outside the country.

Future challenges and issues: Urban planning and management are not only specialized jobs but also requires professionals from different backgrounds. Most staff members are either urban planners, designers or architects. Professionals from other specialized background such as infrastructure, investment, environment, demography, statistics, municipal finance and taxation, urban governance, property assessment and valuation, real estate management, etc. are required. Further, while desirable it would still be a challenge to develop the capacity in all local governments to plan and manage their own cities and towns. Therefore, the institutional arrangements and mechanism for working relationship between central and local governments particularly with regard to providing technical backstopping, monitoring and reporting have to be developed, including inter-agency relationships.

3.3 Environment and Urbanization: Issues and Challenges

Urbanization inevitably has impacts on the environment. In terms of the negative impacts, urbanization could spread over green fields, disturb ecological chains and balances, cause excessive resources extraction and pollution of air, water and land. It is also possible that urbanization process, particularly urban regeneration projects can restore environmental health of blighted urban areas. Grey and brown fields could be redeveloped, rivers and streams and their eco-systems disrupted by developments could be restored and air pollution could tackled through stringent regulations on polluting industries or promotion of eco-friendly and energy efficient public transport. But more interestingly and relevant to Bhutan, it is possible to plan and manage cities in such a way that both cities and the environment benefit from the process of urbanization.

3.3.1 Addressing climate change

Climate change is a major area of focus for Bhutan's development. While Bhutan does not contribute to climate change being not only carbon neutral but carbon negative at the moment, it is highly vulnerable to the impacts of climate change. Bhutan has many rivers which are snow fed and originating from glacial lakes. Climate change could lead to melting of glaciers which in turn would lead to Glacial Lakes Outburst Floods (GLOF) exposing the settlements downstream where most cities and towns are located and the hydropower plants, Bhutan's major economic backbone, to risks. Climate change would also impact the weather patterns and therefore the farming cycles, pests and tropical diseases, migratory shifts and water resources.

Achievements: Bhutan has always placed environmental conservation at the centre of its development programs of which climate change issues is an integral part and it has pledged itself to be carbon neutral. The Constitution of Bhutan mandates that 60% of its total land area be maintained under forest cover, which currently stands at over 71%, for all times to come and over 51% of Bhutan's are is under protected areas and wildlife sanctuaries. These national commitments gain particular significance in view of Bhutan's limited land area. Further other measures such as innovation in construction technology and local building materials and the shift towards electric vehicles are being promoted. At the global level, Bhutan is signatory to a number of declarations and agreements to combat climate change including Paris Agreement 2015, Nationally Appropriate Mitigation Actions under the United Nation Framework Convention on Climate Change, 2005, Kyoto Protocol, 2002, etc.

Challenges experienced and lessons learnt: Cost and benefit implications of the climate change adaptation measures are seen as inequitable and unfair. For example restrictions on use of forest resources affect the farmers and communities that are dependent on it directly while the overall benefit is accrued at the national level. Human wildlife conflicts arising mainly out of the strong environment and forest protection policies also affect the farmers disproportionately.

Future challenges and issues: The increasing rates of greenhouse gases emission is a major concern. The target to reduce import of fossil fuels substantially by 2020 seems a daunting task. Similarly, the other target to enhance the market share of electric vehicles (EV) substantially in 5 years and explore the possibilities of establishing local conversion, assembly and manufacturing of EVs is equally ambitious. Other challenging issues that need coordinated approach are the reduction of private cars and planning for and introduction and sustainable management of public transport system.

3.3.2 Disaster risk reduction

Bhutan lies in an environmentally sensitive area and is vulnerable to multiple disaster risks. Incidences of earthquakes, flashfloods, cyclones, windstorms and landslides in recent years have resulted in loss of lives and properties. GLOF is also another major disaster threat in the country. According to a report, out of the 2,674 lakes in the country, 25 are potentially dangerous. Fire incidences have been reported frequently too. Considerable area of forest cover has been destroyed by frequent forest fires. Similarly, a number of towns and houses in

villages have been destroyed by fire, Wamrong town in 2009, Wangduephodrang Dzong in 2012, Chamkhar town in 2010, Sarpang town in 2015, to name a few. Furthermore, outbreak of diseases like H1N1 Influenza, dengue, anthrax, bird flu and pests like army worm has also been reported in the recent years.

Achievements: Institutionally, the Department of Disaster Management was established in 2008. The Disaster Management Act was enacted in 2013 and in 2014 the Disaster Management Rules and Regulations and the Disaster Management Planning Guidelines were formulated. The National Disaster Management Authority, headed by the Prime Minister, has been established as the highest decision making body on disaster management and the District and Block Disaster Management Committees have also been formed. Under the Royal initiative, the Desuung program that trains and coordinates volunteers for rescue and recovery in times of disasters has been started. Now geo-technical studies and hazard mapping that study ground stability and identifies disaster prone areas are made mandatory part of all settlement planning projects. Early warning systems have been installed in a number of river valleys and a major project was undertaken to artificially lower the level of a glacial lake that posed high GLOF risks.

Challenges experienced and lessons learnt: The difficult and often inaccessible terrain and the dispersed nature of settlements often make it difficult to effectively respond to events of disasters. Further, efforts have tended to focus on disaster response and recovery, rather than preparedness. For example, it has been a challenge to obtain annual budget for the geo-technical studies and hazard mapping projects for settlements. Even when programs are implemented, for example where early warning systems have been installed, the community ownerships of such facilities have been quite weak.

Future challenges and issues: Despite concerted efforts and interventions in the area of disaster management there still remain challenges and issues. Women and children will continue to be more vulnerable to events of disasters. Therefore, adequate interventions in terms of accessing services and protection should be provided for them. The current practice of hazard mapping for specific settlements in a piecemeal manner should be replaced by a comprehensive hazard mapping for the entire country. The national focus should also gradually shift from disaster response and recovery to disaster prevention and preparedness.

3.3.3 Reducing traffic congestion

Traffic congestion is one of the major issues especially in the two largest cities of Thimphu and Phuntsholing with vehicle registration share of 52.9% and 36.2% respectively (2014). Data with the Road Safety and Transport Authority indicates that the average annual growth rate of vehicles from 2001 to 2014 was 11% as shown in Figure 2 and at least 80% of the traffic consists of private vehicles and taxis. This increase could be attributed to the purchasing power of people, status symbol and lack of efficient public transportation. Various measures have been exercised to address the issues of traffic congestions as it not only disrupts daily activities but also results in related issues such as air and noise pollution and traffic related fatalities.

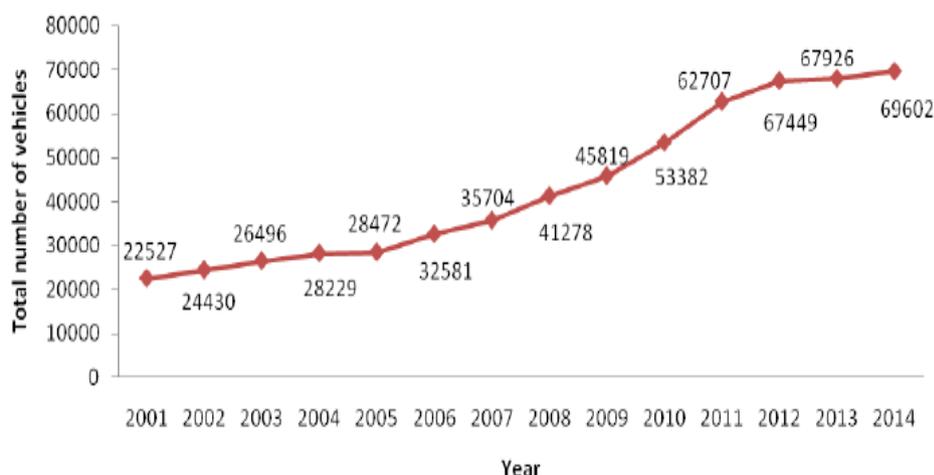


Figure 2: Average annual growth rate of vehicles from 2001 to 2014 (RSTA)

Achievements: Various initiatives have been undertaken to reduce traffic congestions. These include physical measures like widening of roads and expansion of parking spaces to other measures such as ban on import of vehicles to increase in vehicle related taxes. The duties on import of vehicles have been increased and the levy of green taxes was introduced. Restrictions have also been placed on the introduction of new taxis in the two largest cities of Thimphu and Phuntsholing. The effort has been complemented with the introduction of public transportation within these urban areas.

Challenges experienced and lessons learnt: It has been observed that widening the roads and increase in parking spaces within the urban areas, may address the issues of traffic congestion temporarily, it is not the solution. Sustained efforts have to be made to promote alternate modes of transport, particularly the public transport system and proper physical planning that promotes transit oriented development.

Future challenges and issues: Given Bhutan's topography connectivity and transport network coverage will continue to be a challenge. Consequently, the number and volume of private cars is expected to continue to increase as well. Therefore, efforts should be made to promote transit oriented development, improve the public transport network and efficiency. These efforts must be combined with the fiscal measures to make them effective.

3.3.4 Air pollution

The primary sources of air pollution in Bhutan include vehicular emissions, pollution from industries and construction sites, smoke from wood stove, forest fires, and pollutants carried by wind. Presently, air quality monitoring is limited to frequent monitoring of particulate matter (PM10) while monitoring SO_x and NO_x are carried out periodically. Reports indicate that air quality generally range from 'good to excellent' in most places. However, the results are not as positive in areas with high vehicular concentration and industries. Figure 3 below shows the sector wise GHG emission trends from 2000 to 2009.

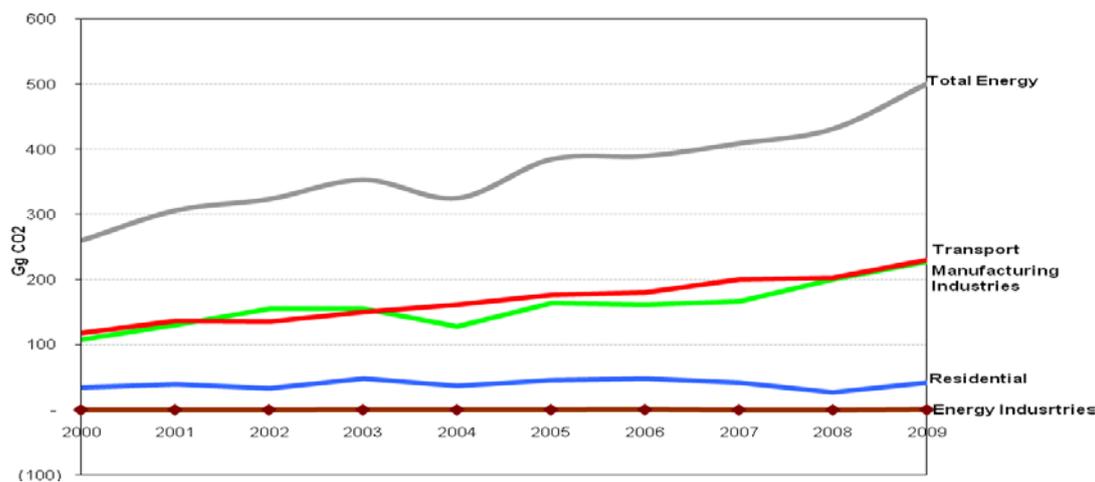


Figure 3: Sector wise GNG emissions from 2000 to 2009 (SNC, 2011)

Achievements: Bhutan has enacted a number of laws such as the National Environmental Act, 2007 and the Waste Reduction and Management Act, 2012 etc. that incentivize waste reduction and therefore, air pollution. There are also regulations that restrict burning of wastes and unauthorized open fires in urban centres. All vehicles are required to undergo annual emission tests to ensure the emissions are within acceptable limits. Further, the recent promotion of electric vehicles and promotion of public transport services also aim to reduce air pollution. Other measures include promotion of smokeless stoves and subsidized electricity, especially for domestic consumption.

Challenges experienced and lessons learnt: While there are strong laws and policies, their implementation has been a challenge. For example though the Environmental Assessment Act, 2000 states that new industries should use modern technologies, it lacks provisions for established industries that pollute. Indiscriminate dumping of waste, littering and open burning still continue. Further despite its potential to reduce air pollution, promotion of electric vehicles face difficulty because of its high initial costs and maintenance issues for lack of facilities within the country.

Future challenges and issues: Bhutan has rich forest cover and there are no major, and does not allow, heavy polluting industries. But a study has shown that Bhutan lies within the ‘Asian Brown Cloud’ or the ‘Atmospheric Brown Cloud’ and it is a victim of huge quantities of pollution generated by the neighboring countries. However, air pollution especially in urban centres and mostly for automobiles will emerge as a major challenge. Therefore, efforts will have to be made to introduce and promote public transport and non-motorized transports and reduce use of private cars.

3.4 Urban Governance and Legislation: Issues and Challenges

Bhutan considers good governance and rule of law as the foundation of peace, prosperity and happiness, its ultimate development objective. Beginning in the 1960s, the urban sector, like all others, has undergone various stages of development and transformation. Though the Constitution of Bhutan provides for the systems of governance and legislation, the urban

sector additionally has a number of sector specific policies, strategies and legislations. These documents together provide the overall framework for urban governance and legislation.

3.4.1 Improving urban legislation

Similar to the process of urbanization itself, Bhutan's urban legislation had a very humble but appropriate beginning. It started with the regulations on buildings, Bhutan Building Rules 1987 and other related regulations such as the Water and Sanitation Rules, Taxation Policy 1992, Land Compensation Rate, etc. Autonomous municipalities began with the issue of the Royal Charter in 1999. A number of Acts have been enacted starting with the Municipal Act of 1999 which was repealed by the Municipal Act of 2004 and subsequently by the Local Government Act of 2009. Each successive enactment of legislation has been an improvement over the previous one. Further, a number of rules and regulations have been adopted to strengthen and improve urban planning, development and management.

Achievements: All autonomous municipalities, as local government entities are now governed by a specific act, the Local Government (Amendment) Act 2014. There are also specific regulations, Bhutan Building Rules 2002, Land Pooling Rules 2009, Property Assessment and Valuation Agency Rates 2009, Municipal Regulations 2012, etc. that guide municipal management. In 2008 Bhutan Urbanization Strategy that provided the road map for urbanization in Bhutan was adopted. The Municipal Finance Policy as adopted in 2009. The draft National Human Settlements Policy was formulated in 2014 and the Spatial Planning Act and the Spatial Planning Standards were drafted in 2015. The National Human Settlements Strategy, which is an update of the Bhutan National Urbanization Strategy, is being currently being formulated.

Challenges faced and lessons learnt: Lack of clear policies on urbanization and urban specific legislation were issues which are now being addressed through drafting of the National Human Settlement Policy, Spatial Planning Act and Spatial Planning Standards and National Human Settlements Strategy. Lack of adequate knowledge and experiences on formulation and implementation of urban legislations has been a major challenge. Coordination across sectors has also been a challenge which has often resulted in delays in the endorsement and therefore implementation of urban development plans and programs.

Future challenges and issues: Coordination with different sectors and participation of relevant stakeholders continue to be a challenge. As an emerging urban economy, there are issues with the interpretation and understanding of various provisions in urban related legislations, especially when there are issues of conflicts with provisions of other laws which need to be addressed. There are also many areas and aspects of urbanization where more appropriate legislations and clarity is required, for example in categorization of municipalities and their management, municipal finance, urban taxation, etc. Even as more legislation may be required, implementation of the existing ones is also a concern for which public awareness and capacity building at the local government and municipality levels are necessary.

3.4.2 Decentralization and strengthening of local authorities

Concerted efforts have been made to decentralize powers and functions and to strengthen local authorities. Urbanization is a relatively new phenomenon in Bhutan. To start with all

urban planning, development and management functions were executed centrally. However, these functions have been decentralized gradually with the objectives of improving the decision making process and to ensure that the local residents participate in deciding what is appropriate for their localities. However, given the small size, low population and revenue base, the process of decentralization and strengthening of local authorities face both resource and operational challenges. But these are works in progress with potential to learn from its own experiences and from those of other countries.

Achievements: Prior to 2010, only two of the twenty districts had municipalities with their own administrative setup and mayors appointed by the government. In 2010 the Parliament of Bhutan declared 4 autonomous municipalities and in early 2012 mayors and the municipal council members were elected. With the constitution of the municipal councils with elected members, the full decision making powers were decentralized to these four municipalities. In an attempt towards further decentralization, 16 more autonomous municipalities were declared by the Parliament in 2015, thereby making at least one autonomous municipality in every district. The elections of mayors and council members are scheduled for second half of 2016. Together with these municipalities, 20 satellite towns were also declared, 1 in each district. This declaration of municipalities is aimed towards decentralization of decision making and implementation of plans and programs with dedicated budget heads, as opposed to the earlier practice of having to route them through the line ministries.

Challenges experienced and lessons learnt: Administrative powers have been decentralized but the capacity of the local governments, both in terms of technical and management functions have been a challenge. Strengthening of some local governments, especially the smaller municipalities, may not be feasible or economical given their small size and limited functions. Their limited tax and revenue base also limits their autonomy. The status of municipalities as new administrative entities also poses difficulties in terms of coordination, reporting and monitoring. The current system where they are administratively accountable to the Ministry of Home and Cultural Affairs and to the Ministry of Works and Human Settlement for technical matters also creates procedural complications.

Future challenges and issues: The local governments, particularly the municipalities are dependent on the central agencies both in terms of human resource expertise and financial sustenance. Currently it is a challenge to staff even the larger municipalities with adequate manpower. However, in most cases it may be not feasible for every municipality to have their own team of technical professional given their small size and low volume of work. Further, because of their low tax base, their revenue generation will not be adequate to sustain its management. Therefore, it is a challenge to work out a balance, provide technical backstopping and hand holding support from the central government while decentralizing their powers and functions and holding them accountable too.

3.4.3 Improving participation and human rights in urban development

One of the main reasons for declaration of autonomous municipalities and satellite towns has been to promote public participation in urban planning, development and management. Public participation not only creates awareness of the urban development programs but also enhances the sense of ownership and therefore, increases the chances of its successful

implementation. Public consultation in the urban planning process in Bhutan which started as a good practice has now been mandated by law even specifying the minimum number of public consultation meetings required and the minimum percentage of stakeholders who must support a proposed plan before it is endorsed for implementation.

Achievements: Public consultations and stakeholder meetings have been made mandatory part of the planning process both for overall strategic plans such as the regional spatial plans and the regulatory plans such as the valley or structure plans or the local area plans. The Local Government (Amendment) Act 2014, draft Spatial Planning Act and the Land Pooling Rules 2009 require conduct of public consultation meetings in the urban planning process. The standard Plan Preparation Procedure released by the Ministry of Works and Human Settlement also requires public notification and consultation meetings. These regulations and standards also specify the procedure and mode, place, frequency and duration to guide such public notifications and meetings. Further, public consultation meetings and endorsements are also required in the formulation of any policy, strategy, regulations or guidelines.

Challenges experienced and lessons learnt: While public notifications are given and public response has been good, consultation meetings have often not resulted in substantial value addition to the plans. It is often observed that the proposals are generally seen to be good if they do not affect individual properties adversely. Implementation of plans often runs into hurdles even when they are endorsed and approved through public meetings.

Future challenges and issues: Coverage and reach of the notifications and call for public consultation meetings are challenges that would continue in future. The public hearings and the endorsements thereof must be given more legal strength. Failing to do this would severely affect public image and confidence in the planning system, especially if publicly agreed plans and programs are altered later on to adjust the views of those who failed to participate in the meetings or to accommodate issues that were not deliberated in the public meetings.

3.4.4 Enhancing urban safety and security

As per the 2014 Global Peace Index, Bhutan ranks 16th among the world's most peaceful and stable societies. However, urban safety is becoming a concern. As shown in the Figure 4 below the highest incidences of crimes in 2014 were against 'property' followed by those against 'person'. Most crimes are associated with youths who are either unemployed or victims of substance abuse. But with the concerted efforts of both the central and local governments and better policing, crime rates have been coming down in the recent years. For example, between 2013 and 2014 registration of crimes decreased from 2,926 to 2,046 cases, a drop by 19% over a span of just one year.



Figure 4: Incidences of crimes in 2014 (RBP and SYB, 2015)

Achievements: Tremendous progress has been made in public awareness of urban crime and safety issues. The police has started a number of initiatives in partnership with the public and the youth. Some of the major programs are Friends of Police, Police-Youth Partnership Program, Police-Out-of School Youth Partnership Program, Little Police Partners, etc. Urban security has also been enhanced through introduction of mixed use planning, improved urban design and infrastructure development such as public spaces and street lighting.

Challenges faced and lessons learnt: Urban safety is often left to the police alone whose resources are already stretched given the wide city areas. Urban residents are also beginning to show sign of indifference, unless they are personally affected. But it has also proven that if all stakeholders put their efforts together, urban crimes can be reduced and its safety and security can be enhanced.

Future challenges and issues: Urban safety and security measures must be incorporated into the urban development plans and programs including passive public surveillance through appropriate urban design. While formal policing must be enhanced, efforts must be made to strengthen community policing and participation of the general public. The local governments must also be encouraged to improve urban safety and security not only in their respective jurisdictions but in collaboration with the adjoining and neighboring local governments as well.

3.4.5 Improving social inclusion and equity

With the objective of creating an enabling environment for the pursuit of happiness, Bhutan has adopted a balanced and inclusive approach to development. Efforts have also been made to ensure equitable and regionally balanced development. However, with rapid urbanization and increasing rate of rural-urban migration, people from diverse background would migrate to cities and consequently social inclusion and equity could become an issue. Even when efforts are made to ensure equitable development, it is not possible to provide the same level of development given Bhutan's varied topography and landforms. However, no group or community should be left behind or excluded from development programs. Fair access to education, adequate employment opportunities and basic services are crucial to improve social inclusion and equity.

Achievements: A number of legislation and strategies have been or are being formulated to improve social inclusion and equity. Some of these documents include Child Care and

Protection Act 2011, Child Adoption Act of Bhutan 2012, Domestic Violence Prevention Act 2013, Labour and Employment Act 2007, National Plans of Actions for Gender and Child Protection and draft policies on Disability, Social Protection Policy for Workers in Bhutan, etc. Efforts to promote equitable and regionally balanced development include the development of regional hubs whose locations were identified based mainly on the rate of migration and poverty, opening of regional offices, widening and improvement of the lateral national highway, development of domestic airports, etc. Urban planning and public building design standards also require provision of disabled friendly facilities and services.

Challenges experienced and lessons learnt: Currently programs and policies are formulated at the national level and implemented by local governments. Though the local governments are involved, their participation is not continuous. Therefore, there has been gaps in the actual needs to be addressed and policy interventions. Implementation itself has also been difficult. Further, civil society and non-governmental organizations have not been able to address issues related to social inclusion and equity adequately.

Future challenges and issues: Public consultation meetings in urban planning process are important means of ensuring social inclusion where the voices of all parties are heard and considered. However, currently only registered land and property owners and representatives from public and other stakeholder agencies are invited in such meetings. Participation in public consultation meetings should be broadened and the voices of all interest groups should be heard. Further, the role of the media in urban planning and development process must be strengthened to raise public awareness, debate and contribution.

3.5 Urban Economy: Issues and Challenges

Cities are referred to as the engines of growth and they do have the potential to trigger the growth of any economy. While generally true, the situation in Bhutan has been slightly different. As a predominantly rural society, cities and towns first started as public service centres in the early 1960s. Given the small size and therefore its small economic base, Bhutan's urban economy is highly reliant on resource allocation by the national government. However, it is recognized that such a dependence on a single source stream is not sustainable. All round coordinated efforts are made to diversify the urban economy and to ensure that they in fact become the catalyst for economic development. It is also recognized that urban economy, like any other, should encompass both the formal and the informal sector.

3.5.1 Improving municipal/local finance

Urbanization in Bhutan began as a public service in the 1960s to provide retail and related services to the newly started civil service. Consequently it generally began around the administrative centres of the respective districts. As a service centre most urban services and facilities were either provided free or at subsidized costs. Therefore, the municipalities depended fully on the central government for their finances. In the recent decades efforts have been made to improve municipal finance including some degree of financial autonomy, for example the local governments can now retain the fees and charges they collect. Other means of improving the municipal finance are improving the tax bases, proper inventory of assets and their valuation. Outsourcing of high cost services, such as solid waste

management, and introduction of planning mechanisms, such as the land readjustment schemes, have the potential to improve municipal finances.

Achievements: The Taxation Policy 1992 and the Local Government (Amendment) Act 2014 provides for raising municipal finances through land, property, property transfer and vacant land taxes. The Municipal Finance Policy formulated in 2009 provides for a 3-year rolling budgeting for better planning and financial management, allows municipalities to set tax rates, charges and fees and introduction of a value based taxation system. The Project for Strengthening of the Municipal Finance and Management has piloted inventory of assets and properties and double entry accounting system in Bhutan's two largest cities of Thimphu and Phuntsholing. The central government has also allowed local governments to retain of their revenue as a means to promote local revenue generation. Local governments have considered a number of measures including collection of parking fees and privatization of solid waste management.

Challenges faced and lessons learnt: Not only are the tax and revenue bases of municipalities very small, the tax rates, fees and charges are also very low especially when compared with the investment costs. Further, no new tax has been introduced nor has the rates been revised. Even for the established taxes, fees and charges, the database on landownership and property are neither accurate nor up to date. In such a scenario, it is naturally difficult, if not impossible, to improve municipal finances.

Future challenges and issues: Public investment in municipal infrastructure services increases the values of urban property considerably. However, it has been a challenge to capture or redistribute this value appreciation. Reforms need to be initiated to introduce such concepts the capital gains tax and inheritance tax. Local governments and municipalities should also be enabled to explore ways and means of raising revenue and deciding on opportunities for investment and expenditure to make them financially sustainable.

3.5.2 Strengthening and improving access to housing finance

Traditionally housing shortage was not an issue in Bhutan. But with the shift towards non-farming occupation and migration towards cities, severe housing shortage arose. Even then the main intervention has been to provide government housing to public servants. Further initiatives were taken to facilitate construction of houses by the private sector through provision of serviced land and building loans. However, accessibility to loans is limited as the loans are provided only against the mortgage of landed properties whose value is substantial only in the larger towns.

Achievements: Though the interest rates are high, housing finance is available. In addition to the 5 financial institutions operating in the country, other agencies like the National Pension and Provident Fund, the Royal Insurance Corporations of Bhutan Limited and the Bhutan Insurance Limited also finances housing loans. Additionally to enable access to affordable housing, the public servants are given a 30% housing allowances.

Challenges faced and lessons learnt: Since the housing finance is available only from commercial banks, the interest rates are high. Further, even the other institutions that provide building loans follow the same rates. While access to housing is being promoted with pilot

project in home ownership, there has not be much progress or attempt in promoting access to housing finance. The lack of access to housing finance coupled with high land cost could be the reasons for low home ownership and high rental charges.

Future challenges and issues: The National Housing Policy of Bhutan 2002 has a vision to achieve adequate shelter for all. However, this is constrained by amongst others, access to housing finance. Initiatives should be taken to establish special housing development banks and make subsidized housing finance available especially to middle and lower income groups.

3.5.3 Supporting local economic development

Local economic development has the potential to promote growth and development. It can also contribute to sustainable development, particularly for Bhutan where the cost of transportation of goods and services is very high. Some of the main support that can be provided are proper land use planning and provision, access to financing and raw materials, and marketing. Other initiatives include avenues for the local governments to increase their tax base, improve their revenue generation and promote savings from the expenditure. Where it exists, the unique selling points of specific local governments should be promoted and marketed.

Achievements: A number of programs have been initiated to support local economic development. The establishment of an IT Park in the capital city has been an initiative to promote a green and self-reliant economy sustained by an IT-enabled knowledge society. The Business Opportunity and Information Center was also established to support funding of schemes and small, cottage and rural commercial activities. In the construction industry, locally produced construction materials are being promoted.

3.5.4 Creating decent jobs and livelihood

One of the main reasons for migration, particularly the rural urban migration cited in the Population and Housing Census 2005 is employment, which basically is the economic opportunity. Therefore, it is critical to invest in programs that lead to employment generation. Bhutan faces the problem of unemployment on hand and shortage of manpower for a long time on the other in almost all sectors, particularly in the construction sector.

Achievements: The Economic Development Policy 2010 and Bhutan's Eleventh (current) Five Year Plan aim to achieve full employment by 2020. Strategic programs, like the Rapid Investments in Selected Enterprise, have been adopted to provide employment opportunities. The Labour and Employment Act 2007 provides for the promotion of employment and working conditions in the country.

Future challenges and issues: Availability of job opportunities is not a major issue. The main problem is the mismatch between the skills and the job requirements and the attitude and willingness of those unemployed to take up these jobs. Further, a reason for the lack of interest in some jobs is the low wages and lack of labour protection.

3.5.5 Integration of the urban economy into national development policy

All development projects in Bhutan, be it at the national or local levels, are guided by the Five Year Plans according to which the Annual Plans are prepared at the central agency and local governments levels. While plans are prepared by individual agencies or local governments based on their priority needs, their harmonization at the national level are done by the Gross National Happiness Commission, Bhutan's Planning Commission and the Ministry of Finance. Budget allocation and financing are then done based on this harmonization and prioritization at the national level. Further, as a small country, no city is able to sustain on its own and therefore, its economy must be integrated, aligned with and supported by the national development policies.

Achievements: Bhutan has a number of clearly defined national development policies and strategies that set the path of development based on Bhutan's potential and opportunities. Therefore, it is fairly convenient for the local governments to pick up development programs that are most suitable for its unique situation, if that's not already programmed. The political and administrative set up also makes it amenable to integrate urban economy into the national development policy. Policies, such as the Economic Development Policy 2010, also provide for specific sectors and programs for development in line with the Bhutan's overall development strategies.

Challenges experienced and lessons learnt: The national development programs are rather strong on environmental conservation and cultural preservation. Therefore, most of the procedural requirements for development proposal such as the need for Strategic Environmental Assessment, Environmental Impact Assessment, geo-technical assessments, etc. and the remedial measures required are expectedly stringent. Consequently, these processes are often seen as hindrances.

Future challenges and issues: The biggest challenge in Bhutan's economy, even at the national level, is that of scale. The urban economies, excepting few, are too small. A common feature is the high import of commodity goods. Therefore, it is necessary to localize national economic development programs such as the promotion of locally sourced and environment friendly building materials and promotion of farm and food produce. Other sectors of economy that are desirable are service oriented development such as tourism, hospitality, wellness, etc. rather than heavy manufacturing.

3.6 Housing and Basic Services: Issues and Challenges

Shelter is a basic human necessity and an important aspect of human settlement, be it urban or rural. The housing sector has always been accorded priority in Bhutan in terms of legislation, institutional arrangements and actual development programs. The Land Act of Bhutan 2007 gives primacy to housing and its even permits conversion of protected paddy land to residential uses if the landowner does not own any other land for construction of house. The National Housing Policy, one of the first policies to be adopted aims to provide affordable housing for all. In any town planning project the maximum amount of land is always earmarked for residential development. Further, the draft National Human Settlements Policy promotes access to affordable housing, home ownership, and housing stock and

market. The policy also requires provision of the basic infrastructure services of water supply, sanitation, access roads and electricity at the minimum.

3.6.1 Slum upgrading and prevention

Though Bhutan does have informal settlements, especially in and around towns and cities, there are no slums as such. These informal settlements are mainly habited by municipal workers and labourers and those engaged in the informal sector. These areas generally have water supply and electricity services. While these settlements are not serious issues currently, it is observed that if adequate and timely precautions are not taken, it would not be long before the informal and temporary settlements become slums.

Achievements: The area and location of most informal settlements in the country are documented. While some are squatting on state or government reserve forest land, others are settlements earmarked by municipalities for their support staff and labourers. Most of these settlements are serviced with basic infrastructure services.

Challenges experienced and lessons learnt: Even though the extent and numbers are small, clearing of informal settlements or resettling the residents is challenging. But allowing such settlements is not a desirable option for all parties concerned - for disaster, comfort of living and aesthetics of dwelling units, self-esteem of the residents, cultural landscape, etc.

Future challenges and issues: Shelter is a basic human need and everybody would like to live in a good house. Most people living in informal settlements do so because they cannot find affordable housing elsewhere in the town. Therefore, it is a challenge to ensure access to affordable housing for all sections of the society, including subsidized public housing for the lowest income groups. Since housing shortage is also caused by increased demands often resulting from rapid urbanization and rural-urban migration, the policy of equitable and regionally balanced development should be pursued as well.

3.6.2 Improving access to adequate housing

According to the Bhutan Living Standards Survey 2012, only one in six urban households own the place they live in (17%) and the majority (62%) live in rented places while in rural areas eight in ten households own their dwellings (85 %). Table 3 and Table 4 show the distribution of households by type of dwellings and distribution of households by type of ownership respectively. As seen from the tables below home ownership is considerably low in urban areas. Besides, the shortage of housing in urban areas leads to increased rents, overcrowding and occupation of sub-standard houses.

Type of Dwelling	Urban	Rural	Bhutan
House	26.3	85.2	65.1
Part of house	25.9	7.4	13.7
Separate apartment	39.3	4.7	16.5
Shared apartment	8.0	1.9	4.0
Other	0.5	0.8	0.7
Total households (number)	43,515	84,427	127,942

Table 3: Distribution of Households by Type of Dwelling (BLSS, 2012)

Area	Owned	Rent-free	Renting From				
			Govt.	P/Corp.	Employer	Pvt. Person	Others
Urban	16.60	20.60	14.00	4.00	1.00	42.60	1.20
Rural	82.90	7.20	2.50	0.60	0.10	6.50	0.20
Bhutan	60.30	11.80	6.40	1.80	0.40	18.80	0.50

Table 4: Distribution of Households by Type of Ownership (BLSS, 2012)

Achievements: The National Housing Policy 2002 was formulated with the objective to provide framework for the provision of safe and affordable shelter to all, particularly to those in middle and low income groups. Accordingly the National Housing Development Corporation was established in 2003. The Corporation currently constructs and manages housing for civil servants. Till date it has constructed 1,134 housing units and also initiated a pilot housing of 32 units on 'hire purchase' basis for the lowest income bracket of civil servants. Institutions like the National Pension and Provident Fund are also allowed to venture into housing. It has initiated the Home Ownership Program and the Home Ownership Policy. Further, the draft National Human Settlements Policy includes provisions for enhancing accessibility to affordable housing and promotion of home ownership.

Challenges experienced and lessons learnt: Rental charges of private houses have always been at the discretion of the house owners and the Tenancy Act has not been able to control the ever increasing rents. In the absence of either a policy or program for land and finance for housing, the rental charges continue to rise often forcing people into inadequate and sub-standard housing. Private house constructions are also observed to be targeted to one or two income groups, thereby forcing many others out of the housing market. Further, even where residential buildings are constructed, they are often converted to office or commercial uses putting pressure on the limited housing stock.

Future challenges and issues: Making housing stock affordable, particularly for the low and middle income groups may continue to be a challenge, mainly due to lack of financing as well as availability of land. Therefore, appropriate legislations, institutions and mechanisms need to be put in place to provide housing finance, land for housing and regulation of housing market, stock and the rental costs. Further the National Housing Policy 2002 needs to be reviewed and updated to include and address the emerging issues related to housing. The change of land and building uses also need to be considered systematically.

3.6.3 Ensuring sustainable access to safe drinking water

In recognition of its importance as a basic human need, efforts have been made to ensure access to safe drinking water. According to the Bhutan Living Standard Survey 2012, the national water supply coverage currently stands at 98.10 %, covering 97.5 % of the rural population and 100% of the urban centres as shown in Table 5. Though Bhutan has one of the world's highest per capita availability of water at 100,000 m³ per person, it is beginning to face seasonal and localized water shortages.

Sources of Drinking Water	Urban	Rural	Bhutan
Improved water sources (%)	99.3	97.5	98.1
Piped water into dwelling compound	87.0	73.3	78.0
Neighbour's pipe	5.7	8.0	7.3
Public outdoor tap	6.2	14.7	11.8
Protected well	0.1	0.5	0.4
Protected spring	0.2	0.8	0.6
Bottled water	0.1	0.0	0.0
Rainwater collection	0.0	0.1	0.1
Unimproved water sources	0.7	2.5	1.9
Unprotected well	0.0	0.3	0.2
Unprotected spring	0.1	0.6	0.4
Tanker truck	0.2	0.1	0.1
Cart with small tank/drum	0.1	0.1	0.1
Surface water	0.1	1.1	0.8
Other sources	0.2	0.2	0.2

Table 5: Water Supply Coverage in Bhutan (BLSS 2012)

Achievements: Recognizing the importance of water, Bhutan has formulated and adopted Water Policy 2003, Water Act of Bhutan 2011 and Water Vision 2025. Bhutan has also achieved the Millennium Development Goal of reducing the population without access to safe drinking by half way before the targeted year of 2015. A specific Division has been created under the Ministry of Works and Human Settlement with the mandate to provide access to safe and affordable water to every Bhutanese. The Division has prepared water master plans for many towns and few more are currently being prepared. Further, the Ministry has adopted Guidelines for Planning and Development of Human Settlements in Urban and Rural areas of Bhutan which provides guidance for sustainable water management through water sensitive urban designs, water monitoring, audits and metering.

Challenges experienced and lessons learnt: While most towns have piped water supply system, a persistent challenge has been that of water sources drying up or shrinking. There are also issue of water conflicts between different users such as for drinking and farming. While the Water Act of Bhutan accords priority to drinking water, practical challenges arise when water sources traditionally used for farming, with recognized water rights, have to be diverted, sometimes even leading to discontinuance of farming practices. With rapid urbanization, planned water supply infrastructures are also not able to keep up with the ever expanding urban population. Most of water supply problems are also caused by lack of coordination and inadequate management practices.

Future challenges and issues: More than 50 % of the urban population has intermittent water supply ranging from 6-12 hours per day. Consequently, ensuring 24 hours water supply of acceptable quality in every town is a challenge. Currently water supply is heavily subsidized. Most town residents pay only a nominal water charges and water is metered only in a few towns. Therefore, sustainability of water supply infrastructure will be a challenge unless the water tariff is revised. This, in a way, would also help to improve the water supply system. Options must be explored to provide an integrated water supply network for all

settlements that can be served by a single supply line for efficiency and long term sustainability.

3.6.4 Ensuring sustainable access to basic sanitation and drainage

Sanitation, like drinking water supply, has been accorded top priority throughout Bhutan's development history. In all of Bhutan's Five Year Plans, sanitation has figured prominently together with health and education. All buildings are required to provide adequate toilets and sanitation facilities. In towns with common sewerage treatment plants, all houses are required to connect their toilets to the municipal network. Where there are no sewerage treatment plants or where connection is not possible, all houses are required to be connected with onsite septic tank and soak pit system. Similarly, all drains from houses are required to be connected to the municipal system which are generally constructed as a part of the road network.

Achievements: According to the Bhutan Living Standard Survey 81% of households have access to improved sanitation facilities with 63% of households having access to a flush toilet and 14% with access to a pit latrine with slab. Statistics also show that the 96% of urban households have access to improved sanitation facilities as compared to 74% in the rural areas. Table 6 shows the statistics of sanitation facilities in the country and Figure 5 shows the improved sanitation coverage throughout the country as per the Bhutan Multiple Indicator Survey carried out in 2011. Comprehensive master plan for water and sanitation are being prepared for six towns and the Urban Sanitation Policy is in the process of being drafted.

Toilet Type	Extent of Sharing with other Households (%)				Total
	Not shared	Public facility	< 10 HH	> 10 HH	
Improved sanitation facility	71.8	1.0	7.4	0.8	81.0
Flush toilet to piped sewer system	17.8	0.2	1.5	0.2	19.8
Flush toilet to septic tank (without soak pit)	13.7	0.2	2.1	0.2	16.2
Flush toilet to septic tank (with soak pit)	11.3	0.2	1.6	0.0	13.2
Flush toilet to pit (latrine)	11.8	0.2	1.3	0.2	13.5
Flush toilet to unknown place/not sure/don't know	0.2	0.0	0.0	0.0	0.2
Ventilated improved pit	1.6	0.0	0.1	0.0	1.8
Pit latrine with slab	13.6	0.1	0.7	0.1	14.5
Composting toilet	1.8	0.0	0.0	0.0	1.8
Unimproved sanitation facility	16.0	0.1	1.0	0.2	19.0
Flush toilet to somewhere else	0.4	0.0	0.0	0.0	0.5
Pit latrine without slab (open pit)	11.0	0.1	0.8	0.1	11.9
Long-drop latrine	3.6	0.0	0.1	0.0	3.8
Bucket	1.0	0.0	0.1	0.0	1.1
No facility or bush or field defecation	0.0	0.0	0.0	0.0	1.7

Table 6: Toilet Type and Extent of Sharing with Sanitation Facilities (BLSS 2012)

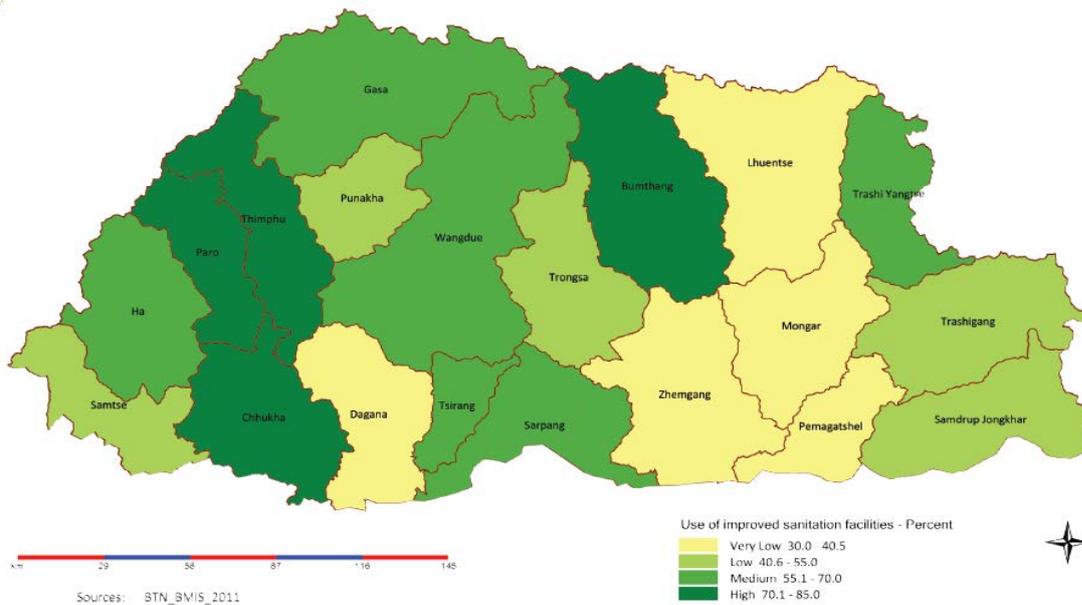


Figure 5: Sanitation Coverage in 20 Districts of Bhutan (BLSS 2012)

Challenges faced and lessons learnt: The mountainous topography, low population threshold, the scattered nature of settlements and the high cost involved are some of the major challenges faced in providing access to sanitation and drainage. The rapid rate of urbanization and the growth of population have resulted in increased pressure on the services. Faulty design and piecemeal approach to these infrastructure services have also led to less than satisfactory level of services.

Future challenges and issues: Service coverage and the associated cost are issues that must be addressed. Efforts are also needed to mobilize a coordinated approach for the provision of consolidated infrastructure services as in the case of water supply. This is to ensure that all areas that can be serviced by a particular system/ network is done so irrespective of the jurisdiction of the local governments.

3.6.5 Improving access to clean domestic energy

The main domestic energy consumption is for cooking and heating and the most common sources of energy in Bhutan are electricity, liquid petroleum gas and wood. Despite the abundance of forest and firewood, Bhutan has been promoting the use of electricity for domestic uses, incurring high cost on transmission line connecting all settlements. This is done not only because electricity is source of clean energy but Bhutan also has tremendous hydro-power potential. Of the total potential of 23,760MW only about 5% has been harnessed so far. In the recent years Bhutan has also been exploring alternative sources especially in the renewable energy sectors, such as solar, wind and bio-fuel.

Achievements: Bhutan has achieved 100% electrification of all urban houses. The use of wood for cooking in urban areas is almost nil. While liquid petroleum gas accounts for the most common energy source of cooking, electricity is gradually picking up both for cooking and heating purposes. In order to promote the use of electricity, subsidy is provided for

domestic consumption of electricity. In the recent years, solar energy has also gained popularity accounting for around 3% of the total energy consumption.

Challenges experienced and lessons learnt: Cheap availability of firewood and the subsidy on liquid petroleum gas used for cooking often impede wider usage of electricity. On the other hand given the fact that electricity transmission lines have to pass through thick jungles and difficult terrain, reliability of electricity throughout the year and in all seasons is a challenge. Further, in the winter season Bhutan requires more electricity than it produces. However, development of additional hydro-power plants is very cost intensive and has impacts for environment and the cultural landscape.

Future challenges and issues: Electricity is a clean source of energy Bhutan is blessed with. But its reliability in all weather conditions and all year round is a concern. Moreover, climate change impacts, over which Bhutan has very limited control, could adversely affect Bhutan's hydro-power plants further jeopardizing over reliance on electricity. Alternative sources of energy such as wind and solar power are being explored but the initial costs of installation are quite high and therefore, beyond the reach of common households.

3.6.6 Improving access to sustainable means of transport

As a land-bound, mountainous country, an efficient and sustainable surface transport system is crucial for Bhutan. It has an impressive network of over 11,200 kms of national highways, district roads, block centre roads, farm roads, urban roads and access roads. But given the mountainous terrain and scattered pattern of settlements, provision of sustainable means of transport is a challenge. However, as a country that has strong environmental ethics, commitment and regulations efforts have been made to promote public transport and more sustainable means of transport including improvement of accessibility.

Achievements: In terms of policies and legislations, the Road Sector Master Plan, Bhutan Transport 2040 Integrated Strategic Vision, Roads Safety and Transport Act 1999, Road Act of Bhutan 2013 provide the strategic framework for an efficient road network, safe public transport and integrated and sustainable transport system. The concept of 'Brand Bhutan' is to be expanded to include the active promotion of alternative technologies for powering motor vehicles, leading to the potential abolition of all petrol or diesel powered vehicles. Accordingly, relentless efforts are made to promote electric vehicles and the introduction and use of public transport. Specific initiatives include duty waiver on import of public transport buses and electric vehicles and expanding the coverage, improving the connectivity and keeping the public transport fare affordable.

Challenges experienced and lessons learnt: Poor coverage, network and frequency of public transport has been a challenge in providing a viable alternative to the use of private cars. Getting people to change their lifestyles and convincing them to use public transport is also a challenge. Introduction and promotion of more sustainable means of transport must also be supported by other ancillary facilities and services.

Future challenges and issues: Introduction of public transport which is both sustainable and accessible in the existing towns planned primarily for cars is a challenge. Even as efforts are

made on introduce public transport and other non-motorized transport systems, all new town planning projects must include provisions for public transport including the proposed mechanisms for making transport sustainable and accessible. The cross-sectoral nature of sustainable transport system must be recognized and therefore, coordinated and collaborative approach must be made. Further, given the topography and terrain, alternative modes of transport like the domestic air services and cable cars must be considered.

4. Indicators

	Indicators	1996	2006	2013	2015	Data Source
1	Percentage of people living in slums					
2	Percentage of urban population with access to adequate housing	data not available	30.09	34.01	Report not yet published	Bhutan Living Standard Survey, National Statistics Bureau (NSB)
3	Percentage of people residing in urban areas with access to safe drinking water		99.5	99.3		
4	Percentage of people residing in urban areas with access to adequate sanitation		98.9	96		
5	Percentage of people residing in urban areas with access to regular waste collection		18.19*	57.65*		
6	Percentage of people residing in urban areas with access to clean domestic energy		98.73	99.6		
7	Percentage of people residing in urban areas with access to public transport		100	100		
8	Level of effective decentralization for sustainable urban development measured by;					
	i) Percentage of policies and legislation on urban issues in whose formulation local and regional governments participated from 1996 to the present;	100	100	100	100	
	ii) Percentage share of both income and expenditure allocated to local and regional governments from the national budget;	4.85%	24.5	18.75	25.12	Statistical Year Book, NSB
	iii) Percentage share of local authorities' expenditure financed from local revenue					
9	Percentage of city, regional and national authorities that have implemented urban policies supportive of local economic development and creation of decent jobs and livelihoods					
10	Percentage of city and regional authorities that have adopted or implemented urban safety and security policies or strategies					
11	Percentage of city and regional authorities that have implemented plans and designs for sustainable and resilient cities that are inclusive and respond to urban population growth adequately					
12	Share of national gross domestic product (GDP) that is produced in urban areas	data not available	76.4 **	83.82**	83.23**	National Accounts Statistics, NSB

* Approximate figures provided by municipal engineers.

** Secondary and tertiary sector.