



## **National Position Paper on Horizon 2020 Societal Challenges**

Bhutan

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## 1. Executive Summary

### 1.1. Background

This national position paper is an output of the CASCADE project (Collaborative Action towards Societal Challenges through Awareness, Development, and Education) that aims to provide the foundation for a future International Cooperation Network programme targeting South Asian Countries, which will promote bi-regional coordination of Science and Technology cooperation.

This 18-month CASCADE project is led by the University of Salford from the UK but targets and has the participation of all seven South Asian countries specified in the call: Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka.

During the project, the team will:

1. compile a regional position paper that identifies global challenges and research priorities
2. map and develop an inventory of national and regional stakeholders related to global challenges
3. raise awareness on research & innovation priorities for fostering cooperation and towards building mutual understanding on how to address common global societal challenges

### 1.2. Methodology

A combination of methodologies was adopted for this study. The first was a content analysis approach on available policies that address issues relevant to the 07 societal challenges. Secondly, 15 semi-structured interviews were carried out with experts in each area of societal challenges. Finally 1 focus group discussion was conducted with several experts who have the knowledge and experiences in one or more areas of social challenges.

### 1.3. National priorities

This is a summary of the priorities for Bhutan against the Horizon 2020 societal challenges. It consists of 17 priorities for Bhutan. Detail of each challenge is in the relevant section of each challenge

#### **Health, demographic change and wellbeing**

- Priority 1: The rising health care cost is the emerging number one issue to be tackled under this challenge. This is specially as all health in the country is free and even the international referrals are paid by the government
- Priority 2: The rising non-communicable diseases related to life style like diabetes and hypertension.
- Priority 3: The aging index of 16.1 is a concern related to care and compassion.

#### **Food security, sustainable agricultures, marine and maritime research and the bio-based economy**

- Priority 1: Meeting the food needs of the nation as well as going 100% organic challenges the country to find innovative ways of meeting both of these objectives
- Priority 2: Over 70 % of the people depend on agriculture for their livelihood. The challenge is to develop the bio-based economy efficiently which will feed the other sectors.
- Priority 3: Marine research is close to nil because the country is landlocked. However, inland water and fresh water research could be valuable the nation

#### **Clean and efficient energy**

- Priority 1: Harness the hydropower resources without adverse effects to the society and use this cut down the high fossil fuel imports.
- Priority 2: Invest in alternate sources of energy like the solar, wind, bio-mass and even the gobar gas.
- Priority 3: Stabilize the hydropower generation capacity so that the climatic risks are minimized.

### **Smart, green and integrated transport**

- Priority 1: Explore the potential of clean and green transport like the electric vehicles but with better technology so that the used batteries are not environmental hazards.
- Priority 2: Explore the potential of mass rapid transportation system which is green, clean and integrated in the overall transport system.

### **Climate action, resource efficiency and raw materials**

- Priority 1: Development which takes care of its people without endangering the ecological balance. The main issue at present is the human-wild life conflict.
- Priority 2: Implementation of the “inclusive Green Socio-economic Development”.

### **A changing world: inclusive, innovative and reflective societies**

- Priority 1: The eroding culture and tradition presents a challenge to progress without breaking down the social fabric and the community vitality of the society.
- Priority 2: Redefining both education and development to ensure that moral fabric of the society does not break down and the society is fully imbued with positive values with changes.

### **Secure societies: protecting freedom and security of the country and its citizens**

- Priority 1: Mitigation measures of natural disasters like earthquakes, cyclone and outburst of glacial floods.
- Priority 2: The geographical location of the country between two big Asian giants poses a challenge to use soft power leverage the buffer status.

## **1.4. Opportunities of mutual interest for collaboration with the EU**

The most significant opportunities for future collaboration with Bhutan lies in re-examining the concept of holistic health to include both material and non material aspects and link to well being. Further the concept of development and the measurement associated with it would benefit from including the happiness component which has being explored internationally.

More specifically, the future collaboration potential exist in secure, clean and efficient energy as Bhutan is conscious of this challenge and has intention to invest in this area to ensure there is sustainable development. These would be exploring alternate sources of energy which are clean, green and safe. Organic food production and inland and fresh water research under challenge number 2 could present an opportunity for collaboration. The country’s emphasis on environment has driven its attempts to transform the transport system into clean, green and fully integrated is possible area of mutual interests. In the similar line is the challenge to make the socio-economic development both inclusive as well as green. The desire to redefine education and development so that society’s social and moral fabric is maintained and built up is of immense interest in Bhutan.

## 2. Introduction

This national position paper is a brief summary of Bhutan's policy and interests concerning the seven thematic societal challenges identified under the EU's Horizon 2020 research programme. The paper contains a clear statement of Bhutan's position on the topic and clear reasoning, also suggesting priorities for action concerning the issues under consideration.

## 3. Context of this position paper

### 3.1. CASCADE project

This national position paper is an output of the CASCADE project (Collaborative Action towards Societal Challenges through Awareness, Development, and Education) that aims to provide the foundation for a future International Cooperation Network programme targeting South Asian Countries, which will promote bi-regional coordination of Science and Technology cooperation.

The EU, whilst representing only 7% of the world's population, is responsible for 24% of world expenditure on research, 32% of high impact publications and 32% of patent applications, making it a world leader in research and innovation. However, over the past few decades, new key players have emerged within the international landscape shifting the previously dominant position held by the EU towards emerging economies.

The EU recognises a need to strengthen internationalisation through strategic policy action. The need for linkages with Asian countries has been highlighted given the region's rapidly growing research and innovation capacities and the urgency to address global challenges. South Asia in particular is home to more than 40% of the world's absolute poor, but will contribute nearly 40% of the growth in the world's working-age population in the coming decades.

CASCADE is an opportunity for raising awareness of the potential for EU-Southern Asia cooperation and stimulating regional and international participation. With the active contribution of South Asian countries, the endeavour will be to pave the way for more advanced, inclusive and innovative societies.

CASCADE is led by Professor Dilanthi Amaratunga at the Global Disaster Resilience Centre at the University of Huddersfield, UK. She can be contacted on [d.amaratunga@hud.ac.uk](mailto:d.amaratunga@hud.ac.uk) for more information on the CASCADE project. Further details on the project can also be obtained by visiting the project web site: <http://www.cascade-inconet.eu>

### 3.2. Horizon 2020

The project coincides with the launch of Horizon 2020, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. Running from 2014 to 2020 with a budget of just over €70 billion, the EU's new programme for research and innovation is part of the drive to tackle global societal challenges, and create new growth and jobs. International cooperation in research and innovation is an essential element for meeting the objectives of Europe 2020. Recognising the global nature of producing and using knowledge, Horizon 2020 builds on the success of international cooperation in previous framework programmes and is fully open to participation from third countries.

The 18-month CASCADE project is led by the University of Salford from the UK but targets and has the participation of all seven South Asian countries specified in the call: Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka.

As part of the project, the team will:

4. compile a regional position paper that identifies global challenges and research priorities
5. map and develop an inventory of national and regional stakeholders related to global challenges
6. raise awareness on research and innovation priorities for fostering cooperation and towards building mutual understanding on how to address common global societal challenges

### 3.3. Methodology

The work carried out as part of the development of this national paper was divided into two phases. Phase 1 consisted of a policy analysis and Phase 2 of the study was carried out using semi-structured interviews and focus groups. During phase 1, a content analysis approach was carried out to analyse available policies in each area of societal challenges (if any) to identify the current context, gaps and key informants. During the 2<sup>nd</sup> phase of the project, 15 semi-structured interviews were carried out with experts in each area of social challenges. In addition to that, 1 focus group was conducted with 23 experts from all 07 areas of societal challenges. All the interviews and focus group conducted were recorded and analysed to come up with the overall findings of the project. The experts chosen for the aforementioned approaches, i.e. interviews and focus groups, were either from academia, industry or from public organisations (e.g. policy maker or from local authority). To maintain consistency with the approaches adopted, guidelines and templates were used for all these approaches, i.e. policy analysis guidelines/template, interview guidelines/template and focus group guidelines/template.

## 4. Thematic societal challenges

This position paper identifies the thematic challenges societal that Bhutan is facing and would be faced for the 2020 in line with the 7 societal challenges of EU as outlined in Horizon 2020.

The country transitioned to democratic Constitutional Monarchy in 2008 and has held two national level elections so far. This has meant for the majority of the Bhutanese, their thinking has been dominated by the democracy and the changes that it has heralded. There are apprehensions that the new system of government may usher in unwanted influence in the society and dreams to overcome the ills of the society by the new system of governance.

The second strong issue that most of the interviewees mentioned was the state of the economy. More specifically, Bhutanese have realised that the economy will have to be strengthened to ensure the external shocks and influences does not derail the long achieved fruits of development. Of recent the Indian Rupees crunch was felt as a result of the unfavourable balance of trade and also balance of payment problem. This has been an issue to be tackled on an urgent basis and is often discussed in many forums of national importance

### 4.1. Health, demographic change and wellbeing

#### Background

The Constitution of Bhutan spells out the broad policy intent of Health in Bhutan. Specifically, it mentions the role of the State as to "...provide free access to basic public health services in both modern and traditional medicines. The State shall endeavour to provide security in the event of sickness and disability or lack of adequate means of livelihood for reasons beyond one's control."<sup>1</sup> The development philosophy of Gross National Happiness (GNH) enunciated by the 4<sup>th</sup> King in the 70s emphasizes the well being of people encompassing the physical health as well as the psychological well being. This is an important part of the Royal Government's vision of health and wellbeing.

Bhutan has skilfully integrated the traditional medicine and health care with the modern approach. The traditional medicine exists as an institution in a well organised system within the Ministry of Health. With the starting of the first school in 1914, the graduates of this school went on to pursue medical study (Dorji et al, 2012)<sup>2</sup>. Health and well being is taken seriously by the government which can be ascertained by the percentage increase in the budget outlay in the health sector over the successive plans. This has been 14% over the 1996/97 to 2005/06 which works out to be about 9% average increase in real terms.

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<sup>1</sup> Royal Government of Bhutan, 2008, The Constitution of the Kingdom of Bhutan, Bhutan

<sup>2</sup> Dorji, Dr Tandin and Melgarrd, Bjorn, 2012, Medical History of Bhutan, Centre for Research Initiatives, Thimphu, Bhutan



The government’s innovative approach to development has brought a new dimension to health and wellbeing. This has prompted WHO to remark “Bhutan has brought health and well-being to centre stage of development”. This was with reference to Bhutan’s success of bring happiness in the UN agenda through resolution and even holding a High level meeting in 2011. While the government wants to improve the GNH of its citizen, the policies and measurements associated with this is still undergoing refinement. A first major survey of the state of affairs was conducted in 2010 and the results were released only in mid 2012. While the methodology and the measurement metrics are being improved, the results look not too promising to claim the country as the happiness country.

The government has a long way to go to achieve a society which is happy all round so that the country which has originated the innovative development measurement index can claim to be a happy country. The statistics used in the following section is based on the annual health statistics published by the ministry of health.

### Current position<sup>3</sup>

|              | 2008  | 2009  | 2010  | 2011  | 2012  |
|--------------|-------|-------|-------|-------|-------|
| Diabetes     | 2541  | 2605  | 3275  | 3740  | 4097  |
| Hypertension | 20347 | 21177 | 23853 | 23051 | 27023 |

The unemployment rate of 2.1 % may appear to be not much of a concern in comparison to the region. However, the youth unemployment rate of 7.1% is a matter of concern especially its political sensitivity as 56% of the population is people under the age of 24. As a result the previous government had mentioned that it would have one more minister under the ministry to specially handle this issue.

While the indicators show a great progress, there are genuine concerns on the sustainability of health care due to rising costs. The rising costs of health care are a major concern for sustainability. For example the total expenditure on health per capita was about US \$ 22-24 in 1996/97 which rose to US\$ 50 in 2007/08 and as high as US \$ 70 in 2008/09 because of high capital expenditure. The recurrent expenditure has been also rising from US \$20 per capita in 2004/05 to US \$ 35 in 2008/09. A large portion of the budget is spent on referring patients to outside the country. In 1995/96, the cost of referral was 18m which increased to 65 m in 2005/06. One of the respondents commented that “we see longer lives but unhealthy trends of living” referring to the new emerging life style. This is mostly due to life style diseases like diabetes and hypertension resulting in kidney failure, stroke and heart problems. The non-communicable diseases are a concern together with road traffic and workplace injuries, alarming mental health issues and substance abuse and alcohol consumption.

The increasing trend of non-communicable and life style diseases is a matter of concern for the society.

The other issue is of Rural –Urban migration. One sixth of the population (111770 persons) has migrated to urban areas in the past year putting undue pressure on the urban facilities and challenging the sustainability of rural communities. The adult literacy rate is 55.3%, the aging index is 16.3 and 3.4% of the people is differently-abled. There are other challenges in the health front. These are emerging infectious diseases like H1N1 and H5N, climate change and the resultant new diseases in higher altitudes and the eco-development and the zeal for privatization. These and the former factors together form the double burden on the health and demography of the country.

<sup>3</sup> Ministry of Health, 2014, Annual Health Bulletin, Ministry of Health, Thimphu



### **Actions taken by the Government**

- The government has initiated Health Trust Fund to raise funds and contribute towards the sustainability of health care financing. In the long run the efficiency and effectiveness of the system would be challenged. Therefore, there are already efforts to improve the in-country facilities to reduce the outside referral costs.

### **Recommendations**

Health should be viewed in a broader term and should encompass the well being aspect. Conventional concept of development and by implication the concept of development should be revisited to include the development of the whole being both material and non-material aspect of life. More innovative way of sustainable health care financing needs to be explored which challenges the existing paradigm and usher in sustainable health care.

## **4.2. Food security, sustainable agricultures, marine and maritime research and the bio-based economy**

### **Background**

The country is highly subsistence economy and the commercialization is a later phenomenon. The society was a close knit and trade was less as there would be community support for each other. If there was trade, it would be more in barter system and monetary basis took off only in the late 60s. The market economy and its implications are being understood being a reality in the recent years.

Only 3% of the total area of the country is arable because of the mandatory forest cover and the high mountains. Even this would mean about 3 acres for every Bhutanese. Agriculture contributes to about 16.8% of the total GDP, employs about 59.4%<sup>4</sup> of the total population and accounts for 4.3% of total exports as mentioned in the National Statistics Year Book of 2012 published by National Statistics Bureau in the country.

### **Current position**

The development of infrastructure has meant influx of expatriate labour as the domestic labour force is small because of the small base of population. This has resulted in import of a high level of food items more than it exports. This is also necessitated because of the cost of food production in the country is high and it is cheaper to import. Food imports have been rising over the years while the exports have seen only an insignificant rise. On the other hand the government has proclaimed that the country would be 100% organic. There is a concern that the food supply would be greatly affected as a result. In the past year, the food imports were of the value of Nu. 3336.00 million and the export was only Nu 1351.00 million. This is major ground for concern. However, this arable land is enough to feed 5 times the population of Bhutan if managed well.

Food security issues in Bhutan revolve around the coping system of the people, the production base and the system and the dietary preferences of the people. The people have general perception that rice is preferred to bread, potato, buck wheat and maize. This has increased the pressure on the rice producing areas and has necessitated the import of huge of rice.

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<sup>4</sup> Ministry of Labour and Human Resource, 2012, National Labour Force Survey, Thimphu



The marine research in the country is nil as the country is landlocked and this has not been seen an issue of importance till now. However, inland and fresh water resources could be an idea whose time has come.

### **Actions taken by the Government**

On the organic farming front, the government has made public statement of its intention to go 100% organic. There has been a division established within the agriculture ministry specifically dedicated in promoting and supporting organic farming and to push this agenda ahead. The challenge for the country is meet the food needs of the country within this mandate. Food security is an important priority for the government especially as the country's topography does not lend itself to mechanisation so easily. The range of the climatic conditions from 1000 ft to over 12000 ft makes research and investment in these areas very expensive. However, there are research centres established for each regions and support for the farmers are provided.

One of the national key result area in the 11<sup>th</sup> FYP is Food Secure and Sustained which is in itself a major move so that the 11 FYP would ensure and move towards this key result area.

### **Recommendations**

In order to increase the production, steps need to be taken to encourage farmers to produce by assisting them to market, promoting agriculture as an acceptable and feasible means of livelihood for young people. Inland water research could lead to some forms of aquaculture in Bhutan though there would be some inhibitions from the religious principles. A bio economy extending beyond the traditional and standard products may have a place in the Bhutan's economy.

## **4.3. Clean and efficient energy**

### **Background**

Bhutan's GNH philosophy of development drives the country to go for clean and secure energy. Bhutan has a high potential to generate clean energy from hydropower. The general principle under which this is pursued is that every Bhutanese should have access to energy to meet their needs and these should be affordable. Though the major portion of the energy generation is clean through hydropower (99%), however the country has to go a long way to ensure that the clean and efficient energy is there in practice and the reliance on the other sources of energy is reduced. The renewable energy target is 20 MW which is a long way to achieve. Energy sector is important as it accounts for 18% of the total revenue and 20% of the GDP.<sup>5</sup>

### **Current position**

Even at the present stage it exports about 40% of its hydropower energy but imports Nu 7770.35 million worth of POL products which are not clean and harmful to the environment. There is small potential to harness gobar gas, solar and wind energy. However, this has not generated a lot of interest as there is enough energy available even for exports. Of recent, there is a drive to generate the gobar gas in the villages so that the pressure on the forests would go down.

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<sup>5</sup> Gross National Happiness Commission, 2013, Eleventh Five Year Plan – Main Document Volume 1, Royal Government of Bhutan.



The hydropower based electricity generated is 6823.7 mw of which 4924.0 mw is exported. The contribution to the national revenue of hydropower is 45% making it an important revenue generation sector. The country has a potential of 30,000 mw of hydropower generation.

The glacial are melting and the weather conditions make generation of hydro power unstable with late monsoon and bad monsoon. For example, this year the hydropower sector recorded a loss of Nu 426 m because of less water and decreased power generation by 222.29 Mu compared to the same period last year.

#### **Actions taken by the Government**

The government has invested in hydropower generation through grants and loans. However, these projects take longer time to complete and start functioning. There have been drives to explore the alternate sources of energy to make it accessible to the rural community. Some of these are in gobar gas in rural communities where each household interested are supported by the government to install gobar gas plants.

#### **Recommendations**

Speed up the harnessing of hydropower resources without adverse effects to the society and use this to cut down the high imports of fossil fuel. The alternate sources of energy like wind, solar, bio-mass could be explored and tapped to contribute to the energy needs of the country.

### **4.4. Smart, green and integrated transport**

#### **Background**

The country emerged from its isolation only in the early 60s. The first motorable road was constructed around this time. The society has had a tradition of environmental friendly and slow transportation system of horses and yaks. This had to give way to speed by introduction of the vehicles in the 60s. The development drive with the introduction of the first Five year Plan in the early 60s meant that the country made a deliberate decision to end its self imposed policy of isolation and link to the outside world more formally. The first motorable roads were constructed only in the early 60s.

Over the years the number of vehicles has increased at 11% from 2001 to 2011.<sup>6</sup> Even with the ban on vehicle imports since March 2012, there was an increase of 7.6% which comprises of government, international agencies etc imports. With the the lifting of the ban, vehicles import in Bhutan is bound to increase.

#### **Current position**

From the existence of no roads in the early 60s, there are 10578.3 kms of roads. The increasing number of vehicles (67926 in 2013) and 986139 of passenger flow in the previous fiscal year is a concern for the small nation of 650000 people<sup>7</sup>. Based on the 2013 statistics, we have 6.4 vehicles for every km of road making the congestion in the urban towns inevitable.

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<sup>6</sup> Ministry of Information and Communication, 5<sup>th</sup> edition, 2014, Annual InfoComm and Transport Statistical Bulletin, Royal Government of Bhutan

<sup>7</sup> Ministry of Information and Communication, 5<sup>th</sup> edition, 2014, Annual InfoComm and Transport Statistical Bulletin, Royal Government of Bhutan



There is no specific transport policy but there is a document on Integrated Transport Master Plan Vision which is being updated. On the integrated transport, the country relies on land transport and has only one international and 3 domestic airport. There are only two airlines operating in the country because the market is small.

#### **Actions taken by the Government**

The government is hard-pressed to look for more progressive ways of managing the transport issues. It has announced that the capital would have green taxis operated on fully electricity. This is a big and a major challenge as the taxis are private and imposing such policy would be hard to implement concerning the costs involved. This is backed by the tax structure passed in July by the parliament whereby the electric vehicles would be duty free import. A major departure from the standard rule of the government which banned the import of second hand cars, second hand electric vehicles are exempted from this rule. There has been apprehension some section of the society on the feasibility of such a move even though the intention is good. Firstly, the initial costs of such vehicles are very high and the support services for such transportation need to be built up. Secondly, the issue of disposing off the used batteries is seen to be environmental problems which countries like Norway have stepped back from going all electric in view of these problems.

If we take the government announcement to be the direction of the policy, there is a gap which would be challenged to be implemented. However, the government has already taken the step of going green and encouraging greener ways and one of these moves amongst others is the levying of green tax on vehicles based on their engine capacities ranging from 5% to 25%.

To ensure that the transport system is fast and efficient, there have been explorations of the feasibility of tunnel and electric trains. The train could be a challenge for the trains and costs involved in these ventures could be too high because of the terrain and the topography.

#### **Recommendations**

The major recommendation that seem to come forward from all response collected is that the public transport system needs to be improved to solve these and related problems. These improvements could be starting of rapid mass transportation system and even reducing the travel distance through tunnels.

### **4.5. Climate action, resource efficiency and raw materials**

#### **Background**



Bhutan and its people have been living in harmony with the environment. Harmony is an important principle in Buddhism and is cherished and practiced in the country. The tradition and culture has devised a system by which the people respect and revere the environment. For example for every new construction, there is an elaborate ceremony to request the permission of the local deities to use the space. Trees, hills and mountains and waterways have special significance and are linked with deities. This has meant that there is fear and respect for the environment at large and any intervention is done with caution and care. The country's development philosophy of Gross National Happiness has environment as one of the four important pillars. The constitution has specifically mentioned that the country needs to maintain 60 % forest coverage for all times.<sup>8</sup> The policy formulation process has a specific protocol which includes screening the proposed by the Policy Screening Tools which has about 22 variables<sup>9</sup>. All policies are screened through this process to ensure that important national values and principles are preserved and are not sacrificed for “development”.

### **Current position**

Environment is an important issue in the development of the Bhutanese nation as it is one of the four pillars of GNH philosophy of development. The country has pursued a cautious policy in this direction and has deliberately made conscious decisions not to sacrifice its environment on the altar of revenue or GDP. The country has made a voluntary international commitment to remain carbon neutral for all times to come and the constitution mandates that the country should maintain 60% forest coverage for all time. The present forest coverage is more than what the constitution prescribes (70%) and the protected area is 51.32%.

In addition to this the eleventh Five Year Plan of the country which started in July 2013 has its objective of “Self –reliance and Inclusive Green Socio-Economic Development” and has come out very clearly with guidelines to mainstream gender, environment, climate change, disaster risk management and poverty both for the central level agencies and local governments. Hence there is a deliberate move to integrate these cross cutting issues in the overall planning and development.

The country is net carbon sink and is carbon neutral. The green house emission is 1559.56 gg. The country has done very well on environment front, though the statistics in detail is hard to find. There is a general trend to value environment in all aspects of development. There is a need to obtain environment clearances for all development activities. However, these have lent to increasing levels of human- wildlife conflicts in the rural area.

### **Actions taken by the Government**

The main thrust of the ongoing 11 FYP is “Self-reliance and Inclusive Green Socio-economic Development”. This is the level of the government commitment. This is further strengthened through the national development philosophy has Conservation and Sustainable Utilization and Management of environment as one of the four pillars. This is taken further by the 11FYP by identifying the following as the national key result areas with specific performance indicators; carbon neutral/green and climate resilient development, sustainable utilization and management of natural resources and water security.

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<sup>8</sup> Royal Government of Bhutan, 2008, The Constitution of the Kingdom of Bhutan, Bhutan

<sup>9</sup> Gross National Happiness Commission, 2013, Eleventh Five Year Plan – Main Document Volume 1, Royal Government of Bhutan.



The government has met its international obligations under the Montreal Protocol to phase out 100 % of chlorofluorocarbons (SCFs) and other ozone depleting substances by 2010. There is a definite political will of the government of the past and the present. Small symbolic actions of “pedestrian day” once a month by the previous government and once a year by the present government whereby the urban towns are vehicle free is an indication of seriousness of this sector placed by the government.

## **Recommendations**

The main issue under this challenge is to re-define development with people at the centre but at the same time without endangering the ecological balance and hence solving the human-wildlife conflict. The “Self-reliance and Inclusive Green Socio-economic Development” has to be translated in reality. The green component in this is defined as ensuring carbon neutral at all times. Implement this practically.

### **4.6. A changing world -inclusive, innovative and reflective societies**

#### **Background**

This is one the four important pillars of GNH and is pursued vigorously as it is an important attraction to the country and makes Bhutan unique. The sovereignty and identity of the nation is linked to culture and tradition. Throughout the FYPs of the country, culture has featured as one of the main thrust areas recognizing that Bhutan exists between two Asian giants.

Culture is an important aspect of the development in the country in line with the GNH philosophy. Community vitality is one of the 9 domains of the GNH philosophy of development. The statistics available would border on religious and social aspects unique to Bhutan.

The issue of inclusive society would need to take into consideration gender equality. In Bhutan, there are no laws which discriminate between male and female. For example the Loan Act of 1981 provides women with independent access to loans and other forms of credit. Inheritance is available to both women and men. There is a pride in the country that on the issue of gender that the country is well ahead of the neighbours in the region. However, the fact is that in the actual practice, women are still behind. Inheritance is goes to more men, the parliament has less than 7 % of its members women. This has meant the country has been already discussing the different options available to encourage to participate more actively in public life. One of these issues is the quota system being discussed and debated openly in the media.

#### **Actions taken by the Government**

The Eleventh Five Year Plan of the country mentions “inclusive” as part of its objective. It has identified national key result areas linked to this challenge. These are strengthened Bhutanese identity, social cohesion and harmony. There is a conscious effort made to make its development inclusive. There is a department of culture under the Ministry of Home and Cultural Affairs and every district has a cultural officer.

The government has initiated the discussions on different options to enhance the participation of women. Amongst these is voluntary quota system which could be used by the political parties to enhance the participation of women in the public life



There have been attempts made to improve the governance system of the country through various efforts. Some of these measures are implementation of Government Performance Management System, National Anti-corruption Strategy and improving public service delivery through G2C, G2B, and G2G services.<sup>10</sup> at the general

## **Recommendations**

The eroding culture and tradition presents a challenge to progress without breaking down the social fabric and the community vitality of the society. This could be pursued by including value education in schools and increased number of opportunities for social interactions by government to make this conducive. The deeper issue with this is the concept of education and development to be re-defined to ensure that the social fabric of the society remains strong and does not break down and the society is fully imbued with positive values.

Gender equality strategies could be pursued with an open mind to consider the options of quota in political representations in parliament and even in the local level for the short term measures.

### **4.7. Secure societies - protecting freedom and security of the country and its citizens**

#### **Background**

Bhutan was unified under one king in the beginning of the 20<sup>th</sup> century. This was further consolidated and strengthened under the second and the third kings. Civil wars existed in the previous century and its was overcome through the consolidation under the monarchy system. Except for small incidents of the 60s and the late 80s and early 90s, there has not been a major challenge in the system of governance. The last incident of 90s where a significant number of people left the country stayed in refugee camps in Nepal was a major challenge for the country in terms of accusations on human rights violation and bad publicity.

On the other aspect of opening to the outside world, it existed in isolation even without TV and internet till 1999. Therefore, the globalisation forces have touched Bhutan late but impacts have been great.

On the disaster front, the country has become more aware of the risks involved in these of both manmade and the natural phenomenon.

#### **Current position**

Bhutan is generally described as last shangrila depicting its peaceful existence in the world stage. Therefore, fighting crimes, illegal trafficking and terrorism are not major problems in the country at present to be paid a lot of attention specifically. The cyber crime is also not an issue at this stage. Notwithstanding the above good situation, there is a general feeling that this need to be looked into in a proactive manner before it becomes an issue.

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<sup>10</sup> Gross National Happiness Commission, 2013, Eleventh Five Year Plan – Main Document Volume 1, Royal Government of Bhutan.





The resilience and safe development is given importance as the country has felt that the nature can be let loose and can wreak havoc to infrastructure and the people. The country faced a flash flood in the 90s. This highlighted the possibilities of glacial lake outburst floods (GLOFs). Ever since, there have been specific programmes to tackle the potential problems of GLOFs. There has been artificial lowering down of the water levels of these floods to ensure safety by preventive measure.

Two earthquakes that shocked the country in the 2000s highlight the need to ensure that our construction is safe and avoids these kinds of danger. The 2009 cyclone Aila and the 6.2 Richter scale earthquakes in the same year damaged the resources to the tune of US \$ 117 million and 52 million respectively. The country is in a high hazard zone.

### **Actions taken by the Government**

One of the national key result areas of the 11 FYP is improved disaster resilience and management mainstreamed and a department dedicated to disaster management is established under the Ministry of Home and Cultural Affairs. There have been efforts made to mainstream disaster resilience and management. Hazard maps are being developed and Standard Operating Procedures are being developed by the department.

### **Recommendations**

The mainstreaming of disaster resilience and management would have to be done practical to ensure that the programmes put up bear results. The mitigation measures of natural disasters like earthquakes, cyclones and glacial lake outbursts needs to be done. Bhutan needs to leverage on its soft power to make the best of the strategic geographical location.

## **5. Summary**

Based on the above, the country faces the challenge of balancing the environment with development. One of these is going completely organic while meeting the food needs of its population. This is one of the major challenges and the country is interested to pursue this organic route and ensure that the food and nutrition security is achieved without negative impact on the environment.

Meeting the food needs of the nation as well as going 100% organic challenges the country to find innovative ways of meeting both of these objectives. Over 70 % of the people depend on agriculture for their livelihood. The challenge is to develop the bio-based economy efficiently which will feed the other sectors. Marine research is close to nil because the country is landlocked. However, inland water and fresh water research could be valuable to the nation and the Department of Livestock has initiated the general fishery as well as fresh water fishery programmes. Research in these areas would be useful

The rising health care costs pose a grave challenge to ensure that we have a sustainable health care financing. This is especially so as all health in the country is free and even the international referrals are paid by the government. The other issues are with societal challenge 1 on demography. The rising non-communicable and lifestyle diseases are being a burden on the economy. The aging index of 16.1 is a concern related to care and compassion

The country is intent on harnessing the hydropower resources without adverse effects to the society and using this to cut down the high fossil fuel imports. This could also mean investing in alternate sources of energy like the solar, wind and even the gobar gas which is estimated to have the potential of 30,000 MW. Within this background is the need to stabilize the hydropower generation capacity so that the climatic risks are minimized.

The Integrated, Smart and Green Transport has a long way to be developed. Therefore there is a need to explore the potential of clean and green transport like the electric vehicles but with better technology so that the used batteries are not environmental hazards. Hence exploring the potential of mass rapid transportation system which is green, clean and integrated in the overall transport system is important issue.

Development should take care of its people without endangering the ecological balance. The main issue at present is the human-wild life conflict and the implementation of the “inclusive Green Socio-economic Development”. The country has its unique philosophy of Gross National Happiness which is built on the concept of sustainable development in a broad sense. In this aspect, development is seen not only an increase in the GDP but also taking care of the culture, environment and good governance. The concept of being conscious of the society at large which in the modern sense is termed as social responsibility is very strong in the development philosophy of the country. This would mean challenging the mainstream development. In this regard, the country is pioneering a new development paradigm which challenges the conventional modes of development which rely solely on economy. A report titled, Defining a new Economic Paradigm<sup>11</sup> was submitted to the UN. The opportunity exists to research on this and operationalise these to bring meaning and happiness to society at large.

The eroding culture and tradition presents a challenge to progress without breaking down the social fabric and the community vitality of the society. Redefining both education and development to ensure that moral fabric of the society does not break down and the society is fully imbued with positive values. This could be seen with reference to the previous section on new development paradigm.

Of recent, the disasters related to earthquakes and floods has alerted the country to the dangers of disaster. In this direction, efforts have been made for preparedness and Mitigation measures of natural disasters like earthquakes and cyclones. Since the country relies heavily on hydropower for its energy needs and to earn revenue from exports of these, the melting of the glacial and outburst of glacial floods are a concern. Hence the country would very much like to pursue efforts in this direction.

The geographical location of the country between two big Asian giants poses a challenge to use soft power to leverage the buffer status. This is more of a diplomatic track.

The most significant opportunities for future collaboration with Bhutan lies in re-examining the concept of holistic health to include both material and non material aspects and link to well being. Further the concept of development and the measurement associated with it would benefit from including the happiness component which has being explored internationally.

More specifically, the future collaboration potential exist in secure, clean and efficient energy as Bhutan is conscious of this challenge and has intention to invest in this area to ensure there is sustainable development. These would be exploring alternate sources of energy which are clean, green and safe. Organic food production and inland and fresh water research under challenge number 2 could present an opportunity for collaboration. The country’s emphasis on environment has driven its attempts to transform the transport system into clean, green and fully integrated is possible area of mutual interests. In the similar line is the challenge to make the socio-economic development both inclusive as well as green. The desire to redefine education and development so that society’s social and moral fabric is maintained and built up is of immense interest in Bhutan

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<sup>11</sup> Royal Government of Bhutan, 2012. The Report of the High-Level Meeting on Wellbeing and Happiness: Defining a New Economic Paradigm, New York; The Permanent Mission of the Kingdom of Bhutan to the United Nations. Thimphu, Office of the Prime Minister

