Climate Change: Why Should Bhutan Worry

by

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Your Majesty, the King of Bhutan, Her Majesty, Mr. Chewang Rinzin, Project Coordinator, respected Ministers, His Excellency the Ambassador of India, Shri V.P. Haran, distinguished participants, ladies and gentlemen.

I wish to thank the Royal Institute of Governance and Strategic Studies and in particular its patron, His Majesty the King of Bhutan, for inviting me to speak at the Institute as part of its prestigious leadership programme. I feel deeply honoured by your kind invitation.

The initiative to establish this important Institute as a Centre of Excellence reflects the importance His Majesty attaches to creating a forum where Bhutan's public officials, policy makers, opinion leaders, thinkers and intellectuals are enabled to engage

in a continual discourse on the challenges facing Bhutan in adapting to a rapidly transforming regional and global environment. We live in an increasingly inter-connected and interdependent world and we need to think of ourselves, Bhutan and India, not only as independent and sovereign nations but also as part of the larger family of nations. And, therefore, in addition to the national discourse that the Institute must promote and facilitate, it should also enable a mutually beneficial engagement with counterparts from other countries. I wish to compliment the Institute on the role it is playing in helping shape Bhutan's future both as a nation as well as a responsible member of the international community.

The emerging international landscape has two key characteristics.

(i) There is a steady diffusion of political and economic power, making global governance a complex and difficult exercise.

(ii) The salience of global, cross-cutting issues, which are not amenable to national or even regional solutions, is growing. The relative autonomy of decision making at the national level is eroding, precisely because external events impact on our domestic situation; equally events within national

borders may have significant impacts across borders. The dividing line between domestic and external is getting increasingly blurred.

Thus, just when it is becoming increasingly more necessary, indeed more urgent, to fashion collaborative responses to cross-cutting issues which affect us all, the international order itself is in flux, with existing institutions like the United Nations, lacking both credibility and authority and emerging fora such as the G-20, being neither fully representative nor commanding international legitimacy. Existing legal and regulatory regimes such as the W.T.O. for international trade or the Non-Proliferation Treaty for nuclear security are under challenge, while new domains such as Outer Space and Cyber remain ungoverned and anarchic. Furthermore, in negotiating global regimes, the general mindset of national representatives is to give as little as possible and extract as much as is possible, which leads to a least common denominator result. This is the inevitable result of the competitive framework within which most multilateral negotiations take place. However, most of the challenges we confront as humanity require maximal not minimal responses,

precisely because they are both urgent and compelling. And maximal responses are only possible through collaborative instead of competitive approaches.

Among the global, cross-cutting issues that I mentioned, one may include traditional political and security issues such as the threat from the proliferation of weapons of mass destruction, international terrorism, drugs, arms and human trafficking. Pandemics such as AIDS, avian flu and the resurgence of malaria and TB pose global health challenges. There are also new domains such as those relating to cyber security, the safety and security of assets in Outer Space and the new field of ecological security. In all these existing and new domains, the old rules of the game are being questioned even while in new areas, norm-setting is yet to make any progress. It is in the midst of this uncertain, changing and increasingly complex environment that we must deal with the challenge of global climate change.

The topic we are addressing this evening is Why Bhutan Must Worry about Climate Change. I think a more appropriate way of framing the question would be Why Bhutan Must Worry "More" about Climate Change, since Climate Change, being global, will

impact on all countries though its impact may be more or less damaging to a country, depending upon some other factors such as geographical location, level of development, demographic profile and capacity for adaptation.

Let me begin by explain why the challenge of Climate Change is global and the limits on purely national responses to this challenge.

Global climate is impacted by many variables, but here we are focusing on anthropogenic or man-made drivers. Since the dawn of the industrial age over two centuries ago, mankind has been burning fossil fuels on an ever larger scale in the process of energy-intensive industrialization. The burning of fossil fuels leads to carbon emissions, which accumulate in the earth's atmosphere and may remain as a stock of greenhouse gases for over a hundred years or more. While the scale of carbon emissions has been increasing, carbon sinks on earth which absorb increased carbon, have been diminishing. Terrestrial vegetation or forests are some of the most effective carbon sinks. So are our oceans. The continuing decimation and degradation of our forests have reduced their role as carbon sinks. Our ocean's capacity to absorb

increasing amount of greenhouse gases is also diminishing as their waters turn acidic. As a result, the concentration of carbon in the Earth's atmosphere has increased from about 280 parts per million (PPM) at the start of the industrial revolution to about 385 PPM currently. This has already resulted in a secular temperature increase of 1°C since the industrial revolution. Scientists believe that any temperature increase beyond 2°C, which is consistent with a concentration level of 485 PPM may lead to potentially catastrophic and possibly irreversible Climate Change. However, current trends are that the world may, in fact, not be able to avoid this ominous eventuality.

It is important to understand that global Climate Change is taking place not as a result of current carbon emissions, but due to the stock of greenhouse gases already embedded in our planetary atmosphere. One must distinguish between stock and flow. The latter adds incrementally to the stock, but it is the accumulated stock which is the driver of Climate Change. There are important implications that follow from this reality:

(i) As the carbon stock in the atmosphere endures for a very long period of time, even if incremental emissions become

zero tomorrow, climate change will continue to take place for a considerable length of time; this stock will diminish only slowly. Therefore, the need to adapt to both current and prospective Climate Change will be an urgent and, therefore, a continuing priority for some time to come. For countries like India and Bhutan, this is an important policy insight.

(ii) In our global efforts, such as in the multilateral negotiations currently underway which the UN Framework Convention on Climate Change, we must take a balanced view of the stock versus flow phenomenon which is intrinsic to Climate Change. It is true that our efforts must seek to limit the incremental increase in carbon emissions, but we cannot ignore the stock dimension of the problem. If we wish to limit the concentration of carbon in the earth's atmosphere to 485 ppm, and we are already at a level of 397, then only a limited carbon budget of 88 ppm is available to be shared globally. Those who have already used up the carbon space earlier in their process of industrialization cannot claim additional entitlement, while

> denying even limited entitlement to others who are late comers to the industrialization phase. This is like arguing that I get to keep what I have because I got here first, but you stay where you are, because you are a late comer. The planetary atmosphere is a classic "global commons", no country has sovereignty or jurisdiction over any part of this resource. There must be equitable access to this space for all the inhabitants of the world. This is what the principle of equity demands. Countries like India are not demanding the right to spew as much carbon as they like into the atmosphere in pursuit of economic and social development. What they are advocating is an equitable sharing of the Earth's atmospheric space, a principle that is embedded in the UNFCCC, to which India and Bhutan are parties.

It is important for our friends in Bhutan to understand the positions that India adopts in Climate Change negotiations because there may be misperceptions in this respect. There may be arguments, encouraged by Western industrialized countries, that it is the rising emissions of emerging countries like India and China which are contributing most to global

warming, conveniently ignoring their own much larger contribution in terms of the accumulated carbon stocks in the Earth's atmosphere. While India is and will do everything it can, within the limits of its own modest resources, to undertake Climate Change action, it cannot accept that those most responsible escape the solemn commitments they have undertaken in consensus legal undertakings such as the UNFCCC and Kyoto Protocol. Our position at the negotiations is that all parties should fulfill the solemn commitments they have undertaken in these legal instruments. Surely, India and Bhutan, as parties to these treaties, must join hands together and insist on that.

Since Climate change is a global phenomenon, its impacts respect no national or regional boundaries. In terms of reducing carbon emissions and greenhouse gases worldwide, all countries must contribute to Mitigation, but there is no direct co-relation between cost incurred and benefit received. For example, India may reduce its carbon emissions to zero, yet being only 4% of global emissions, this will have virtually no impact on mitigation of global climate change. Furthermore, the impacts

will be seen only over a considerable period of time. Therefore, it becomes necessary to construct a global regime where costs and benefits could be socialized. For a community of independent, sovereign nations, it is only on the basis of equity and fairness that such a regime would be effective.

Since global Climate Change is the consequence of a pattern of economic activity based on hydrocarbon sources of energy, the long term answer is to bring about a strategic shift to a renewable and clean energy based global economy. In the interim period there will need to be a focus on energy efficiency and conservation. This strategic shift will impose costs on developed and developing countries alike but the UNFCCC acknowledged the historic responsibility of the former in shouldering the major part of this burden through drastic and absolute reductions in their own emissions. At the same time they committed themselves to enable developing countries to undertake Climate Change action, both mitigation and adaptation through extending both financial and technological support. The UNFCCC and its subsequent Kyoto Protocol, sought precisely to evolve an equitable burden-sharing arrangement,

but since 2007, the effort on the part of Western countries has been to eviscerate these legal instrument and shift the burden of dealing with Climate Change on to developing countries instead.

The impact of Climate Change is global, just as its sources are, but tend to be asymmetrical depending upon geographical and demographic factors as well as the levels of economic and social development. Thus some countries will be more seriously affected than others; some parts of a country may be more impacted than others. For example, small island nations, our own island territories and low lying coastal plans will suffer if sea-levels rise due to the melting of polar ice-caps and the thermal expansion of the world's oceans. There may be no alternative for affected populations but to move to higher ground or to migrate to other less affected countries. Such internall and cross-border migration may take place on a very large scale and over a very short period time, imposing huge economic and logistic burdens on affected states. For inland mountainous countries like Bhutan and our own Himalayan mountain zone, the impacts may be of a different kind. The

accelerated melting of glaciers are already creating large numbers of high altitude glacial lakes, with weak and unstable banks made up of moraine and other debris, which can be breached at any time, leading to landslides, avalanches and what have come to be known as GLOFs or Glacial Lake Outburst Floods. I believe Bhutan has already suffered two serious GLOFs one in 1994 and the other in 2004. There is a growing danger of move GLOFs in the future as Bhutan has nearly 3000 glacial lakes in its high mountains.

Another vulnerability for Bhutan is its dependence on hydropower for a large part of revenue, roughly 40% at present. Currently, the 3 major projects of Chukha, Tala and Kurichu have a overall capacity over 1400 MWs of power, which generate Indian Rupees 1000 crores annually for the country. There are 3 more projects under construction – Punasang Chu I and II and Mangdechu – which will add 2440 MW of additional power capacity by 2018. Further down the line, there may additional projects on a public/private basis, which may generate 2120 MW by 2020. All these projects are expected to provide Bhutan with a substantial annual revenue of Rs. 4000

crores by that time. Therefore, anything which affect the viability of these projects due to altered water flows or expose than to greater hazards as a result of climate change related phenomenon, must be a matter of serious concern to Bhutan and India.

Bhutanese experts have pointed to other adverse consequences of Climate Change. These include the increase in the breeding of tropical pests and malaria strains in higher altitudes due to rise in temperatures. The incidence of heavier precipitation in shorter spells has affected agriculture but has also led to serious land erosion in some parts of the country. All these impacts are beyond the control of national authority, since their source is global. The burden must, therefore, fall on national adaptation measures.

In this respect, Bhutan's record has been quite impressive and a model for others to follow. To begin with, 2 of the 4 pillars of the concept of Gross National Happiness are:

(i) Sustainable and Equitable Socio-Economic Development

(ii) Conservation of the Environment.

These are closely related to Climate Change action.

Bhutan is a net and positive carbon sink, thanks to its forest cover of 72.5%, in excess of the constitutionally mandated 60%. The country has set up a network of 24 weather stations to monitor weather patterns. An early warning system is being put in place to give advance notice of flash floods. A National Adaptation Plan has been completed and about 45 key adaptation activities have been identified for implementation.

In India, as part of the country's National Action Plan on Climate Change (NAPCC) adopted in 2008 there is a separate National Mission on Sustaining the Himalayan Ecosystem. According to the Mission document the focus will be on the following areas:

(i) Himalayan glaciers and the associated hydrological consequences;

(ii) Biodiversity conservation and protection

(iii) Wildlife conservation and protection

(iv) Traditional knowledge societies and their livelihood, and

(v) Planning for Sustaining the Himalayan Ecosystem.

As will be apparent, each of these areas could be of interest to Bhutan and could generate new opportunities for bilateral cooperation. As part of the Mission, India is undertaking regular satellite surveys of the Himalayan glaciers and these satellite images could be made available to Bhutan on a regular and continuing basis. The experience we have gained in other areas and the data and research which are being generated as part of the Mission, could be shared with Bhutan. We should hold a series of workshops and seminars on these themes sharing experience and working on joint projects.

In any view, it is particularly important to work very closely together on ensuring the ecological integrity of both existing and planned hydropower projects. We need objective and careful assessment of the impact of Climate Change on our rivers and consequently on the projects sited on those rivers. There is no need to

reject such projects out of unsubstantiated fears. However, concerns and anxieties cannot be dismissed off-hand, particularly in our democratic societies. We need to weigh the risks and benefits of such projects and take our people into confidence through outreach programmes. This will only strengthen the trust and confidence that our two countries happily enjoy.

India has a very well-resourced Insitute of Glaciology in Dehradun, which has been engaged in extensive studies of Himalayan glaciers. It has well-trained experts in this field. I would recommend that a suitable partner organization in Bhutan should establish an institutional level linkage with this Institute. We could also learn from the work being done by our friends in Bhutan.

Your Majesty, ladies and gentlemen, India and Bhutan are close and friendly neighbours with shared history and culture and with the added affinity of being vibrant democracies. This is an excellent basis on which we could join hands together to preserve the fragile ecology of the magnificent Himalayan mountains we

share. The livelihood of our people, whether residing in the mountain zone or in the plains, fed by rivers originating in the Himalayas, depend upon the health of the snow-capped mountains. If India and Bhutan are able to put in place well-considered plans to sustain the Himalayan eco-system, such cooperation could then be extended to other countries which share the mountain range, including Pakistan, Nepal and Myanmar and China to the north. It is only through concerted cooperation among all the stakeholders would it be possible to prevent the further degradation of this extremely sensitive and delicately balanced eco-system. I would hope that Bhutan will take the initiative in this regard given its excellent record and its international credibility as a champion of ecological integrity. I have no doubt that India would fully support Bhutan's efforts.

To conclude, Climate Change is a global challenge that demands global and collaborative responses. To be effective, such responses must be based on the

principle of equity and equitable burden sharing enshrined in the UNFCCC. For developing countries, there must be greater emphasis on adaptation since Climate Change will continue to have an impact for a long time even with significant mitigation action. We should aim for a robust climate change regime with significant targets for absolute reductions in carbon emissions of developed countries and with extension of both financial and technological resources to developing countries to enable them to undertake both mitigation and adaptation measures, beyond what is possible within the limits of their own resources. At the bilateral and regional level, the are several promising areas for cooperation among countries of South Asia. As friendly countries enjoying a high degree of mutual trust and confidence, India and Bhutan are uniquely placed to pioneer region-wide cooperation particularly in sustaining the fragile eco-system of the Himalayas. His Majesty's guidance and leadership in this regard would be invaluable and I do hope that this prestigious Institute will put Climate Change on its agenda.

I thank you for your attention.