

India and climate change

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Without a careful long-term strategy, climate change may undermine our development efforts, with adverse consequences, across the board, on our people's livelihood, the environment in which they live and work and their personal health and welfare. It is also a challenge which encompasses the interests of both present and future generations [...] Today, climate change, generated by the cumulative accumulation of greenhouse gas emissions in the atmosphere, through human economic activity, threatens our planet. There is a real possibility of catastrophic disruption of the fragile life-sustaining ecological system that holds this world together. Science is now unequivocal on this assessment.¹

(Manmohan Singh)

Introduction

Climate change is an all-encompassing issue that directly touches upon human development and people's livelihood. It has effects in combination with other major issues and such interaction is impacting the international order. For much of the past decade climate change has shaped and dominated the international agenda and will increasingly be a game-changer in the future.

The science of climate change, blunt in its observation, points to the fact that the planet's climate system is being pushed beyond its carrying capacity by dangerous anthropogenic interference. However, the science has not positively converged with political decisions. In fact, as scientific evidence becomes far more noticeable, the politics of climate change is becoming stubbornly intractable. The search for a global solution to climate change based on 'common but differentiated responsibilities', the position taken by India and other countries like the People's Republic of China, has thus resulted in a political impasse.² This indeed is an entrenched irony of the international system. While states are prime movers of issues, they, however, tend to determine actions by perception of sovereignty, national interest and security. The science of climate change may have awakened us but the politics of it remain perennially divided and contested.³ Characteristically, climate change has entered the realm of negotiations. Issues such as national action plans (rather than global binding commitments), leadership roles and

historical responsibilities are determining countries' positions and, to a large extent, defining their foreign policy agenda.

For states, climate change fundamentally remains a challenge and a dilemma. To overcome its natural inclination of being protectionist and to simultaneously frame stringent adaptation and mitigation policies to keep global warming below two degrees Celsius is difficult. The broad approach seems to imply a global emission 'peak' by 2015, followed by a low-carbon emission path that is expected to drop by 6% per year before reaching a desired '80% below 1990 levels' in 2050. This suggests that carbon dioxide (CO₂) concentrations would peak near 425 ppm. (parts per million) before they begin to decline. As global negotiations for the period beyond 2012 proceed—structured on the notable achievements in 1997 of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol—there is considerable uncertainty as to whether a 'Grand Deal', which failed in Copenhagen in December 2009, will ever come about, or what format a post-Kyoto regime will take beyond 2012.⁴ Nevertheless, while there is uncertainty over the structure and the mechanism, the science continues to forewarn that global warming is continuing unabated.

This chapter will examine India's perceptions on the problem of climate change and its negotiating position. It will also evaluate the policies and actions that India has initiated, particularly post-Copenhagen, to contain the challenges of climate change.

India and climate change: perceptions and positions

India's position on climate change has been articulated with a conviction and determination probably unmatched in recent years on any other issue. Indian negotiators are known for saying that they did not create the climate problem, emphasizing at every meeting the inequity and injustice of expecting India to cut down its carbon emissions. This underpins India's acceptance of the 1997 Kyoto Protocol. As its government ministers argue, 'India stands by the UN Framework Convention Treaty on Climate Change and the Kyoto Protocol. This mechanism recognizes the "common but differentiated responsibilities" of the countries in the matter of reduction of green house emissions. The Convention also recognizes that as developing countries grow, their emissions are bound to increase'.⁵

At the heart of India's climate change stand is the argument that it must be allowed to pollute on a 'per capita basis' equal to the advanced industrialized countries. India has thus been propounding the 'per capita emissions' line. The 'per capita emissions' are central to India's position on carbon emissions reduction. This has formed the basis of India's criticism of the UNDP *Human Development Report* in 2007, which stipulated an 80% reduction in CO₂ emissions by developed countries and 20% reduction by developing countries by 2050, while also noting that, 'emissions of CO₂ from India may have become a matter of global concern for climate security'.⁶ While it seems egalitarian, Montek Singh Ahluwalia, Deputy Chairman of the Planning Commission, thought that if 'per capita emissions' were considered then countries like India would still have to bear a bigger burden as per the UN Development Programme (UNDP) recommendation. Instead, he reasoned that developing countries should be allowed to increase their per capita emissions and the developed world should reduce them: 'you could say, for example, that the West has done most of the emissions for the last 140 years and the problem that we have is because of the total emissions that have been done in the last 140 years, so actually it shouldn't be per capita. We should be a little higher and they should be a little low because of all the damage that they have done'.⁷

Such a position immediately shifts the responsibility on to the shoulders of the developed countries to drastically cut emissions if the world is to meet the target of keeping global

warming within the generally agreed 'safe limit' of two degrees Celsius, as determined by the Intergovernmental Panel on Climate Change (IPCC). It also allows India the space and time to grow at a sustained pace and strengthen its poverty alleviation and developmental programmes. However, even more significant for India, particularly when it comes to the international forum, is the assurance that, 'despite our developmental imperatives, our per capita GHG [greenhouse gas] emissions will not exceed the per capita GHG emissions of the developed industrialized countries'.⁸ It reflects, on the one hand, a position of confidence and self belief in its economic policies and, on the other, a signal to the developed world that it will not be pressurized in the negotiations. This is carried forward in India's adaptation and mitigation policies, which state that, 'the most important adaptation measure is development itself'.⁹ On mitigation, the 11th Five Year Plan is unequivocal: 'with a share of just 14 per cent of global emissions, any amount of mitigation by India will not affect climate change'.¹⁰ The document calls for action by developed countries and a burden-sharing formula based on historic culpability, 'common but differentiated responsibilities' and the 'per capita emissions' principle.

The 'per capita emissions' argument has become a strong counter-response to the unsustainable consumption patterns of the rich industrialized nations and is in consonance with the UNFCCC, which recognizes the rights of developing countries to economic development and also the 'common but differentiated responsibilities' of different countries. Contrasting calculations have long been made. In 1991 it was the basic point made by Parikh that, 'only 25 per cent of the global population lives in the rich industrialised countries but they emit more than 70 per cent of the total global CO₂ emissions', and that 'Indian citizens emit less than 0.25 tonnes of carbon per year whereas a citizen of the USA, emits more than 5.5 tonnes'.¹¹ In the UNDP *Human Development Report 2007/2008*, India's CO₂ emissions per capita had gone up from a 1990 figure of 0.8 to 1.2, but still remained significantly below the figures for developed countries like the USA (20.6), Canada (20.0), Australia (16.2), Japan (9.9), and the Organisation for Economic Co-operation and Development (OECD) average of 11.5.¹² Such comparative figures add immediate legitimacy to the 'per capita emissions' stand, emphasizing the need for an equitable *and* efficient solution—equity in terms of equal allocation of global environmental space to all, and efficiency through a system of tradable emission quotas. This has framed India's long-standing argument that emissions by the poor who live on the margins of subsistence should be considered a basic human right and should not be counted when ascribing responsibilities for emissions reduction.

The tenets of India's argument and negotiations on climate change have consistently remained 'equity with social justice'—the right to develop and a need-based living. It draws inspiration from what Mahatma Gandhi, regarded as an apostle of human ecology, is widely cited as having said, that 'the earth provides enough for everyman's needs but not for everyman's greed'. The 'need' and 'greed' add contestation to the 'subsistence emissions' and 'lifestyle emissions' debate. Thus, the right to develop, right to utilize resources and not be penalized by international constraints is held by India. As Manmohan Singh put it:

Our people have a right to economic and social development and to discard the ignominy of widespread poverty. For this we need rapid economic growth. But I also believe that ecologically sustainable development need not be in contradiction to achieving our growth objectives. In fact, we must have a broader perspective on development. It must include the quality of life, not merely the quantitative accretion of goods and services. Our people want higher standards of living, but they also want clean water to drink, fresh air to breathe and a green earth to walk on.¹³

India clearly feels that it is owed an incalculable ecological, social and economic debt by the industrialized, developed countries. The ecological debt also includes the illegitimate appropriation of the atmosphere and the planet's absorption capacity by the industrialized countries. The climate change debate in India has brought in a new set of dynamics and narratives where on the one side there is the politics of blame and on the other recognition of a shared dilemma and a growing need for action.

Energy challenges and climate change

For a rising economic power like India, the interplay between energy, environment and development policy is complex and challenging. There are issues of eradication of poverty and economic growth, on the one hand, and the sustainability of natural resources and energy choices on the other. India's development path with a projected growth rate of 8%–9% is inextricably dependent upon external fossil fuel supply and, in the absence of sufficient domestic oil resources, its quest for energy security is paramount.¹⁴ While global mitigation strategies are still being deliberated, India's domestic strategy sets forth an approach towards a low-carbon economy, principally to reduce its dependency on fossil fuels without compromising its steady growth rate.

India's energy scenario in the coming decades will largely depend on the energy use choices. However, at any reduced level, fossil fuels will remain the dominant source of energy in any conceivable scenario up to 2030 and in all probability beyond. According to projections by the IPCC, India will experience dramatic increases in energy and greenhouse gas emissions in the world *if* it sustains an 8% annual economic growth rate or more, since its primary energy demand will then multiply at least three- to four-times its present levels. There is now a clear recognition that business-as-usual is no longer tenable.

India's Integrated Energy Policy, adopted in 2006, is a response to managing the energy agenda through various measures. Such measures include:¹⁵

- Promoting energy efficiency in all sectors
- Need for mass transport
- Encouraging renewables
- Accelerating nuclear and hydro-electric power as clean energy
- Research and development in clean energy technologies
- Reforming energy markets to ensure price competition

The Integrated Energy Policy is bolstered by other relevant legislation, including the New and Renewable Energy Policy (2005), the Rural Electrification Policy (2006), the National Environment Policy (2006) and the Environment Impact Assessment (2006). However, the 11th Five Year Plan suggestion for faster and more inclusive growth, targeting 9%–10% from 2007–12, seems far too ambitious. Calculations suggest that India needs about 500 MW of power each week for the next 25 years to sustain the present growth rate of 8%. India's current installed power capacity is close to 145 GW, of which the overwhelming majority, 52%, comes from coal-based generation (76,299 MW), and with renewables, including hydro-electricity, accounting for 34%.¹⁶

For a country of India's size and energy requirements, 145 GW is not sufficient. The growth rate will be undermined and compromised by the lack of available power. Increasing the installed power capacity to 225 GW by 2012 and then to 800 GW by 2030, along with the corresponding expansion of the energy infrastructure, would come at a huge cost. For India, finance for development is crucial and, therefore, it needs to be positively engaged in the

multilateral forum. Such an expansion also implies a high CO₂ emissions rise, since much of it will continue to come from fossil fuel-based energy. The dilemma pertains to which energy pathways to take. The Planning Commission in its 2006 study noted that the projected CO₂ emissions from various different scenarios ranging from coal-dominant to low-carbon ones found a difference of nearly 35% between the best-case scenario and the worst. In the business-as-usual scenario emissions will rise from the present 1.2 Gt per capita per year, to 5.5 Gt per capita per year by 2031–32. In the best-case scenario, or low-emissions scenario, the rise would be 3.9 Gt per capita per year.¹⁷

The emphasis for India needs to be on pursuing carbon abatement policies that minimize energy consumption and reduce dependency on oil imports. Not surprisingly the 11th Five Year Plan commits the country to reducing energy intensity per unit of GHGs by 20% from the period 2007–17. India's energy intensity level of 0.16 is below the world average of 0.21 and the US figure of 0.22, with Indian ministers like R. Shahi arguing that, 'lowering the energy intensity of GDP [gross domestic product] growth through higher energy efficiency is important for meeting India's energy challenge and ensuring its energy security [...] there is room to improve and energy intensity can be brought down significantly in India with current commercially available technologies'.¹⁸ It was significant in his exposition on energy policy that Shahi brought out the basic tensions surrounding climate change and India's position:

However, it is important to keep the perspective in view. Per capita emission of carbon dioxide are the highest in high income countries [...] Development process will necessitate consumption of higher levels of energy. While discussing the concerns on issues like climate change and global warming, it will not be equitable to put together countries with comparatively low per capita emissions and whose large population are yet to see the fruits of development and respectable standard of living with countries which are already developed and have very high per capita income and still have ever growing energy consumption. Efforts should be to achieve a unit of human welfare with least possible energy consumption.¹⁹

Certainly there exists a large potential for energy saving. For example, one-third of total energy is used for domestic cooking purposes, thus efficient cooking processes are a high priority. Also the Bureau of Energy Efficiency (BEE) started an energy labelling programme for appliances in 2006, which is expected to lead to significant savings in electricity annually. While many of the measures are directed towards greater energy efficiency, price reforms and removal of subsidies to encourage a more carbon-friendly market, the crux of the problem lies in reducing fossil fuel energy or, in other words, focusing on clean energy options.

The National Action Plan on Climate Change (NAPCC), released by the Prime Minister in June 2008, is a plan of action and sets out key initiatives on energy and climate connect. The Prime Minister noted: 'our vision is to make India's economic development energy efficient. Over a period of time we must pioneer a graduated shift from economic activity based on fossil fuels to one based on non-fossil fuels and from reliance on non-renewable and depleting sources of energy to renewable sources'.²⁰ The NAPCC has eight 'missions':

- National solar mission
- National mission for enhanced energy efficiency
- National water mission
- National mission on sustainable habitat
- National mission for sustaining the Himalayan ecosystem

- National mission for green India
- National mission for sustainable agriculture
- National mission on strategic knowledge for climate change

The NAPCC identifies measures and mechanisms that link development objectives to addressing climate change effectively, with a clear focus on renewable energies that are scalable and sustainable. There is now traction in India's initiatives and investments on clean energy. India has the fourth largest installed wind energy capacity and is the second largest biogas producer. Under the 11th Five Year Plan a target of 14 GW–20 GW of additional renewable capacity are planned. Further, India actively supports the Clean Development Mechanism (CDM) under the UNFCCC and has effectively employed it.

India's vulnerability to climate change

In spite of the controversies questioning the credibility of the IPCC, especially over 'alarmist' projections and science concerning the extent of Himalayan glacier melt, the Indian Government regards the IPCC as an important scientific body, albeit not sacrosanct.²¹ In spite of the head of the IPCC being an Indian, Rajendra Pachauri, apprehensions have always existed and more often than not been perceived on the basis of the IPCC being driven and dominated by the concerns of the industrialized world. The current leadership effort has been to build a network of scientific institutions in order to develop 'domestic' research capacities on climate issues, especially on glacial studies.

Nevertheless, there is growing recognition in India of the need for 'precautionary principles' based on the vulnerability and risks that climate change poses, and in this regard the IPCC findings have been instructive. According to the Ministry of Environment and Forests (MoEF) report of October 2007, India is already spending over 2% of its GDP on measures to adapt to the impact of climate variability. The costs are high, with some estimates that India could suffer a loss of 9%–13% of its GDP in real terms by 2100 in a no-change scenario, and the precautionary principles, therefore, gain much credence.²²

The IPCC *2001 Report* projected for India a 2.7–4.3 degrees Celsius rise by 2080 and further predicted a sea-level rise up to 88 cm by 2100 in the Indian subcontinent. The report stated: 'Rising sea levels could threaten coastal mangrove and wetland systems, and increase the flood risk faced by a quarter of India's coast dwelling population'.²³ In its *2007 Report* some of the IPCC projections for South Asia and India included the following:²⁴

- Glacier melt in the Himalayas projected to increase flooding and then followed by decreased river flows as the glaciers recede.
- Freshwater availability, particularly in large river basins, projected to decrease, which along with population growth and increasing demand could adversely affect more than 1,000m. people by 2050.
- Coastal areas, especially heavily populated mega-delta regions, will be vulnerable to increased flooding from the sea and rivers.
- Crop yields could decrease by up to 30% in South Asia by the middle of the 21st century, with the risk of hunger projected to be very high.

The above projections and findings underscore India's vulnerability to climate change that could severely test its governance and institutional resilience. It could, if not comprehensively dealt with, become a political challenge difficult to overcome.

However, while India is exposed to climate change risks, it has not yet ascertained how vulnerable it is to climate change. Risk is the probability of the event happening. Vulnerability is expressed by the negative effects of climate change and taken as an extreme form. India is vulnerable to the consequences of climate change like food shortages, droughts, flooding, disease outbreaks, alteration in maritime ecosystems, increased frequency of natural disasters, melting of glaciers, degradation of coastal areas, migration leading to demographic shifts, etc. Agriculture will become increasingly sensitive to climate change, while concerns over emissions could lead to protectionism in international trade. As for the 700m. people in rural India who are dependent on the most climate change-sensitive sectors for their livelihoods—agriculture, forests and fisheries—the future will bring declining crop yields, degraded land, water shortages and ill health. The unexpected and extreme weather conditions accompanied by climate change will also render traditional weather knowledge useless.

Climate change and its impact on water resources are likely to emerge as a critical issue in India's relations with its neighbours. Seven of the world's major rivers originate in the Himalayan and Tibetan plateaux and are a source for about 40% of humanity living in China, India, Nepal, Bhutan, Myanmar, Bangladesh, Pakistan and other South-East Asian countries like Laos, Cambodia and Viet Nam. In the Indian neighbourhood, water relations (or water security) will be high on the political agenda. In Pakistan, anti-India propaganda routinely highlights how India is bent upon diverting the Indus waters and converting Pakistan into a desert. Bangladesh has also been critical of India on water-related issues. India's neighbourhood is unstable; fragile states will come under considerable stress and strain due to climate change. Tensions between India and Pakistan are likely to arise over water issues due to reduced flows in the Indus River Basin. Over-fishing could become an issue between India and Sri Lanka. India could face climate refugee inflows from neighbouring countries, particularly Bangladesh and the Maldives. Water issues are likely to assume greater salience in Sino-Indian relations as well, particularly in the context of reports that China is planning to divert the waters of Yarlung-Tsangpo, which originates from Tibet and flows into India as the Brahmaputra, to its northern territories.

Climate change will also have an impact on the war-fighting capabilities of the Indian military. Changing weather patterns will have to be factored into mission planning. The melting of snows and the accompanying flash floods could undermine the military's mobility, its communication facilities, stock levels and logistics. Simultaneously, the armed forces will be required to prepare new missions geared towards relief and rescue. The increasing frequency of natural disasters will require the armed forces to gear adequately to meet these disasters and they will also have to focus on immediate and long-term planning to meet the consequences of natural disasters.

The key ministry traditionally leading on domestic policy-making has been the Ministry of Environment and Forests, while the Ministry of External Affairs leads on international negotiations such as those under the UNFCCC. Over the years, other ministries with a mandate to help frame India's climate change policy have emerged. This has also led to overlapping objectives, particularly with ministries mandated with energy-related portfolios such as coal, power, petroleum and natural gas, and new and renewable resources. Interestingly, the Ministry of New and Renewable Energy (MNRE) is the first such in the world and draws its antecedence from the Commission for Additional Sources of Energy (CASE), which came about in the backdrop of the oil shocks of the 1970s. In order to create policy co-ordination and coherence, in June 2007 the Council on Climate Change was constituted under the direct chairmanship of the Prime Minister, to 'coordinate national action plans for assessment, adaptation and mitigation of climate change and to advise the Government on proactive measures that can be taken by India to deal with the challenge of climate change'. The military has also

been closely involved in the protection and management of ecology. An ecological cell was established in the Army headquarters under the Quartermaster General Branch in the early 1990s, since which time the Indian Army has established eight Ecological Task Force (ETF) units and is probably the only army in the world with troops dedicated to greening arid deserts and barren mountains. The National Disaster Management Authority (NDMA), under the chairmanship of the Prime Minister, came into existence under the Disaster Management Act of 2005 and is the nodal agency for effective disaster management.

India as an emerging power

At the 1972 UN Conference on Human Environment in Stockholm, regarded as a prototype for the numerous other UN-sponsored global meets on environmental issues and which helped to establish the United Nations Environmental Programme (UNEP), Prime Minister Indira Gandhi lent credence to the 'South' developing countries' point of view by stressing the poverty of the developing countries as the single greatest contributor to environmental degradation. The Stockholm Conference also signalled India's formal entry into the global debate on environmental issues and a torch-bearer of the developing countries' right to develop. In the 1992 Rio Conference 'per capita equity' was the bedrock of India's international stance.

At the Copenhagen Summit in 2009 India, along with Brazil, South Africa and China (BASIC), emerged as key players in the negotiating process. Though fragmented in outlook, these leading developing countries share a common set of concerns around the developmental impact of climate change itself and, concurrently, a suspicion that the evolving regime on climate change is aimed at shifting an unfair burden of accountability for it onto them. Post-Copenhagen the growing gap between perspectives held by industrialized and emerging economies will increase, raising the spectre of a new North-South divide over climate change. While the emerging geopolitical alliance between the four large developing BASIC countries will seek to shape the future contours of negotiations on emission reductions, a counter-response can be equally expected, particularly on China and India as global culprits for CO₂ emissions. In fact, the European Union (EU) refers to the two as 'advanced developing countries', trying to make a distinction that India and China should not take refuge in the developing world indices, but should have a new set of parameters to evaluate their particular responsibilities. Calculated backlashes from the industrialized countries, such as the use of environmental regulations as barriers to trade, will be likely and the imposition of such penalties could undermine vital developmental gains for the emerging economies.

India, as in the 1970s, will be central in recasting the relationship between the older industrialized and newer industrializing worlds. The prevailing approach to global governance, symbolized by the ad hoc inclusion of these countries through the G8 plus mechanism, has already given way to an institutionalized engagement in the form of the broadened membership of the G20. As Manmohan Singh told the G8 Summit, 'the quicker you reduce your emissions, the greater the incentive for us to follow [...] If we are to honestly address the climate change challenge, it is important that we recognize the right to equal sustainable development and historical responsibility'.²⁵ India, through the grouping, will echo its long-standing position on non-binding commitment on emissions cuts and call for the industrialized countries to adopt quantifiable targets commensurate with their historical impact on the global climate.

With a not-so-substantive Copenhagen Accord and a general inertia setting in, thinking beyond the Kyoto framework and exploring other multilateral arrangements is a likely outcome. The Asia-Pacific Partnership for Clean Development and Climate (APP), formed in

2005 with member countries including Australia, China, India, Japan, the Republic of Korea (South Korea) and the USA, will draw considerable attention. A transregional grouping like IBSA (India, Brazil and South Africa) along with other developing countries like China could coalesce around carbon emissions and articulate a multilateral arrangement on 'restricting' emissions rather than 'reducing' them. In fact, IBSA + China constitutes the BASIC countries. Climate change was the subject of the BASIC summit in June 2010, in which suggestions to sideline the 'historic responsibility' obligations of existing developed Western countries were rejected.²⁶ Moreover, they are increasingly looking to less-developed areas of the world (and in some cases developed resource countries like Canada and Australia), to address their energy needs, especially through state-supported oil and coal exploration and commercial development of bio-fuels. Whether their complementary positions on climate change can help bridge their contrasting interpretation of global politics, however, will have to be seen.

Climate change debate post-Copenhagen

As the most populated democratic country, India has found the 'per capita equity' argument always appealing. Not only with the climate change debate, but on many other occasions, whether on financial contributions to the UN or seeking a Permanent Seat on the UN Security Council, India has projected its high population and unbridled growth convincingly. Such a position has been a matter of convenience and justification for not taking action that does not suit India's interests. However, the 'per capita emissions' stance, particularly in the post-Copenhagen period, has domestically generated a great deal of introspection, with frequent argument that a new and confident India needs to go beyond its narrow confinements and grandstanding and take the lead in climate change action. Others take a far more conservative view, arguing that the 'principle of equity' based on an 'equal per capita approach' is not only a principled position but has national consensus cutting across party lines. India's negotiators, having invested considerable diplomatic and lobbying effort, are sensitive to any counter views that they feel compromise the foreign policy of India.

Such negotiators believe that this consensus is being challenged by the Minister of Environment, Jairam Ramesh, who has often indicated that India should abandon the 'per capita approach'. According to Ramesh, 'this common but differentiated responsibilities argument can be given but the political economy in today's world being what it is [...] if we have superpower ambitions and superpower visions then that should taken on superpower responsibilities, and superpower responsibilities include greater awareness on the international dimensions'.²⁷ It is a perceptive interpretation of the geopolitical reality. It is unlikely that India and China will be exempted from the CO₂ emissions reduction requirements in the post-2012 scenario, and likely that India will be called upon to make some modest reductions. This is instructive. India has not been an historic emitter and has thus justified its position on emissions cuts, but it will be a large future emitter, a fact that it cannot negate. For example, during the period 1990–2000 emissions in the USA grew by 16%, while in India they grew by 51%. The future will see a larger carbon footprint. What is at stake here for the critics of the Minister's approach is the damage to India's credibility in the negotiations and the importance of a national consensus on a major policy reversal that is approved by parliament.

The whole debate demonstrates the reviewing, revamping and re-examination of policies, arguments and strategies on climate change. This is vital, as interests change with a changing world. Many questions emerge: whether the 'per capita emissions' principle is a defensive stance today with a changing balance of power. How does India balance its domestic interests and yet contribute to its aspirations of a global emerging power? Does the 'per capita equity' need to be

measured with India's own population, since the rich in India are as high in their consumption and carbon footprint as the average person in the industrialized world? Are 'per capita emissions' a justification of India's failure to deal effectively with climate change and a protective mechanism for the rich and affluent? Does looking away from the 'per capita' perspective herald a new thinking and put India at the forefront of contemporary states searching for solutions and breaking deadlocks on complex issues?

Conclusions

Climate change presents unprecedented challenges and opportunities for India. In the 1970s India's position was based on ideological preconception and linked to development and poverty. It was articulated with unmatched conviction. Since the 1990s the climate debate has been about projection, posturing and grandstanding. In recent times, particularly post-Copenhagen, there seems to be a rethink and re-evaluation that suggests that Indian policy-makers, along with business and industry, are responding to both the energy challenge and climate change challenge. India's 'per capita emissions' position has been heatedly discussed, and with increasing intensity domestically. Stressing emissions rights is one thing, but stressing other larger objectives of a climate-responsible development agenda is equally important both in operative and functional terms. India needs a new narrative that is bold and forward-looking and not trapped in regressive approaches.

Emissions rights cannot be situated outside the framework of equitable human development. India's argument on emissions rights is valuable to the extent of being allowed the space and time to develop, but it cannot be an excuse for not taking effective action to curb the dangers of climate change. India needs to ensure a conducive global environment for furthering its economic interests, enhanced trade and investment inflows, technology transfers and energy security. Politically, as the international system transitions to real multipolarity, existing power-holders may seek to freeze this move, to continue the existing inequities in the international order. To break such exclusivity, India needs to balance its stance on external climate change negotiations with its internal action plan. India should be seen as the change. Taking unilateral steps in mitigating emissions and setting voluntary targets for energy efficiency should convey the message that it is not a deal-breaker but a game-changer. The critical choice that India will have to make is when to join the emissions-reduction process, first on a voluntary basis and later with legally binding targets. For India, it will not be an either/or situation any more. It will necessitate a major shift of approach, strategy and, more importantly, a *mindset*.

Notes

- 1 M. Singh, 'Prime Minister's Speech on Release of Climate Change Action Plan', 30 June 2008, pmindia.nic.in. See also U. Sinha, 'Climate Change: Issues and Divides', *Strategic Analysis*, Vol. 33, No. 2, 2009, for general India-related analysis.
- 2 'It is very important that the provisions and principles of the Convention, especially common but differentiated responsibilities and respective capabilities, are respected in these negotiations and their outcomes in letter and spirit', quoted from M. Singh, 'Intervention at Major Economies Meeting on Climate Change', G-8 Summit, 9 July 2008, pmindia.nic.in.
- 3 For an interesting account of the science and politics of climate change, see A. Dessler and E. Parson, *The Science and Politics of Global Climate Change*, Cambridge: Cambridge University Press, 2006, pp. 34–37.
- 4 The Copenhagen Accord adopted on 18 December 2009 laid down that: a) CO₂ emissions would be kept below two degrees Celsius, with efforts to 'peak' them as early as possible. No binding emission cuts were proposed; and b) developed countries commit to a goal of mobilizing jointly US \$100,000m

- a year by 2020 to address the needs of developing countries, especially with regard to mitigation, adaptation, capacity building, technology development and transfer.
- 5 R. Shahi, 'India's Strategy Towards Energy Development and Energy Security', Board of International Energy Agency, 12 December 2006, p. 19, www.powermin.nic.in.
 - 6 UNDP, *Human Development Report 2007/2008. Fighting Climate Change: Human Solidarity in a Divided World*, New York: United Nations Development Programme, 2007, pp.7, 44.
 - 7 See Ahluwalia's interview, 'Everyone in the World Should Have an Equal Carbon Footprint. Pollution Per Person should be Equalised', *Indian Express*, 3 December 2009.
 - 8 M. Singh, 'Intervention at Major Economies Meeting on Climate Change', G-8 Summit, 9 July 2008.
 - 9 Statement by Kapil Sibal at the 95th Indian Science Congress, 2008.
 - 10 Government of India, *Eleventh Five Year Plan 2007–2012*, New Delhi: Planning Commission, June 2008, p.205.
 - 11 See K. Parikh, *Consumption Patterns: The Driving Force of Environmental Stress*, New Delhi: Indira Gandhi Institute of Development Research, 1991.
 - 12 UNDP, *Human Development Report 2007/2008*, op. cit., p.69.
 - 13 M. Singh, 'Prime Minister's Speech on Release of Climate Change Action Plan', 30 June 2008, pmindia.nic.in.
 - 14 The *Eleventh Five Year Plan (2007–2012)*, op. cit., sets a target of 9% growth in the five-year period, reaching 10% by the end of the Plan.
 - 15 Government of India, *Integrated Energy Policy: Report of the Expert Committee*, New Delhi: Planning Commission, 2006, pp.15–16.
 - 16 Government of India, *India's Installed Power Capacity*, New Delhi Ministry of New and Renewable Energy, 2008.
 - 17 Government of India, *Integrated Energy Policy*, op. cit., p.50.
 - 18 R. Shahi, 'India's Strategy Towards Energy Development and Energy Security', op. cit., pp.5–6. The figure, cited by Shahi, is in terms of kgOE / \$GDP PPP, i.e. kilograms of oil equivalent per dollar of GDP expressed in purchasing power parity terms.
 - 19 Ibid., p.19.
 - 20 M. Singh, 'Prime Minister's Speech on Release of Climate Change Action Plan', op. cit.
 - 21 In 2010 the relationship between India and the UN's IPCC hit rough weather, despite the fact that Rajendra Pachauri, head of the IPCC, had been nominated by the Government of India. India's environment minister, Jairam Ramesh, openly criticized the IPCC's projection of early disappearance of the Himalayan glaciers as 'not based on an iota of scientific evidence', and being scare tactics for which the Panel 'has to do a lot of answering'. See 'India Criticises UN Warning on Himalayan Glacier Melt', *BBC*, 19 January 2010, news.bbc.co.uk.
 - 22 Carbon Disclosure Project, *Report 2007. India*, p. 12, www.cdproject.net. Also, 'India More Vulnerable to Climate Change', *Times of India*, 3 September 2008.
 - 23 United Nations Intergovernmental Panel on Climate Change (UNFCCC), *Climate Change 2007: Synthesis Report. Summary for Policymakers – An Assessment of the Intergovernmental Panel on Climate Change*, New York: United Nations Intergovernmental Panel on Climate Change, 2007, p.13.
 - 24 Ibid.
 - 25 M. Singh, 'Intervention at Major Economies Meeting on Climate Change', op. cit.
 - 26 N. Sethi, 'BASIC Meet on Climate Equity in June', *Times of India*, 3 May 2010.
 - 27 M. Mehta, 'Per Capita Fig Leaves and Melting Glaciers – Will the Real Jairam Ramesh Please Stand Up?', 20 August 2009, www.climatechallengeindia.org.