

CONSEQUENCES OF CLIMATE CHANGE IN INDIA & DISASTER MANAGEMENT LAWS

Dr. Shailesh N Hadli*

ABSTRACT

The solution to the global problem of climate change has been dominated by the concept of mitigation: reduction of the greenhouse gas emissions that cause global warming till recent times. The present debate in the global community now centers on how much change and when will this change occur. The focus on prevention in both academic research and practical application of climate change policy has resulted in the neglect of an alternative conception, that of adaptation. The issue of climate change raises difficult issues of science economics and justice. Climate change threatens food security, public health, property and the livelihoods and lives of members of effected communities.

This article attempt to discuss why adaptation has traditionally been neglected in the international discourse on climate change, and also why it has come to have greater prominence in more recent studies and policy initiatives and further analyses and breaks down the concept of adaptation into 'impacts-driven' and 'vulnerability- based' methods, to argue that only the latter truly takes account of the socio-economic determinants of climate vulnerability, and thus offers effective adaptive solutions to the challenges posed by climate change. An attempt is made to put forth the situation in India with regard to climate change in India. It is concluded that the adaptation approach needs to be mainstreamed into general socio-economic policies, in order to ensure that vulnerable populations are able to face up to the challenges of man-made climate change and everyday climatic hazards.

Keywords: climate change policy; mitigation; adaptation; anthropogenic emissions; climatic hazards; vulnerable populations; Indian Position; impacts-driven policy; vulnerability based policy.

* Principal, R N Patel Ipcowala School of Law & Justice, V V Nagar, Anand, Gujarat.

Climate volatility is one among the major issues that our planet is facing in present era.

Climate change and variability have become the primary environmental concern of the twenty-first century; the potential impacts and mitigation of climate change need to be analyzed within the context of sustainable development. Before couple of decades climate change was considered as an “Act of God” but this notion was removed with the first report of IPCC. Since climatic problems are interpreted in multiple contexts it is necessary to define certain basic terminologies associated with the climate change.

Climate change, an alteration in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period. Climate change means a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use¹. UNFCCC defines climate change “a change which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”². The term climate change and global warming are closely associated; Global Warming is a specific example of the broader term “Climate Change” and refers to the observed increase in the average temperature of the air near earth’s surface and oceans in recent decades³. Further climate and weather must not be considered as synonyms. The World Meteorological Organization (WMO) differentiates the terms in the following way: “*At the simplest level the weather is what is happening to the atmosphere at any given time. Climate in a narrow sense is usually defined as the ‘average weather,’ or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time*⁴”.

¹ IPCC, 2007a: Climate Change 2007: Synthesis Report. Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

² Article 1, United Nations Framework Convention on Climate Change.

³ India, Ministry of Environment and Forest, Annual Report, 2012-13, p. 349

⁴ WMO, 2010: *Understanding Climate*. www.wmo.int/pages/themes/climate/understanding_climate.php.

Disasters are defined as severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery⁵. Disaster management refers to social processes for designing, implementing, and evaluating strategies, policies, and measures that promote and improve disaster preparedness, response, and recovery practices at different organizational and societal levels⁶. Disaster management processes are enacted once the immediacy of the disaster event has become evident and resources and capacities are put in place with which to respond prior to and following impact. These include the activation of early warning systems, contingency planning, emergency response (immediate post-impact support to satisfy critical human needs under conditions of severe stress), and, eventually, recovery. Disaster management is required due to the existence of 'residual' disaster risk that ongoing disaster risk reduction processes have not mitigated or reduced sufficiently or eliminated or prevented completely⁷.

Impact and Adversities.

Climate change is most serious threat that world is facing today⁸. Climate change is not only threat to global economy⁹ but to entire human existence¹⁰. The magnitude of climatic problem is undoubtedly high to the extent of mass destruction. The recent climatic studies of IPCC show following results:

The effect of climate change is more serious in the developing countries as compared to developed countries. While climate change results from activities all over the globe (with rather unevenly spread contributions to it), it may lead to very different impacts in different countries, depending on local/regional environmental conditions and on differences in vulnerability to

⁵ Tobin, G.A. and B.E. Montz, 1997: *Natural Hazards: Explanation and Integration*. The Guildford Press, London, UK.

⁶ Alexander, D., 2000: *Confronting Catastrophe*. Oxford University Press, New York.

⁷ IDB, 2007: *Disaster Risk Management Policy*. GN-2354-5, Inter-American Development Bank, Washington, DC.

⁸ Cubasch, U., D. Wuebbles, D. Chen, M.C. Facchini, D. Frame, N. Mahowald, and J.-G. Winther, 2013: Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

⁹ Nakicenovic, N. and R. Swart, Eds., 2000: *Special Report on Emissions Scenarios*. Cambridge University Press, Cambridge.

¹⁰ IPCC, 2012b: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*. Cambridge University Press, Cambridge, United Kingdom.

climate change— independent of the contributions to climate change of these countries¹¹. It is likely to undermine the sustainability of livelihoods as well as development. The worst impacts will fall on developing countries, in part because of their geographical location, in part because of weak coping capacities, and in part because of more vulnerable social, institutional, and physical infrastructures¹². Vulnerability is defined generically in this report as the propensity or predisposition to be adversely affected. Such predisposition constitutes an internal characteristic of the affected element. In the field of disaster risk, this includes the characteristics of a person or group and their situation that influences their capacity to anticipate, cope with, resist, and recover from the adverse effects of physical events¹³. Climate change is also considered as one of the major barriers of sustainable development¹⁴ and Millennium Development Goals.

India is one of the most vulnerable nations in context of climate change. It is recently found that climate change can adversely affect India's natural ecosystem which would certainly impair India's agriculture¹⁵, directly affecting 58% of population. Climate change can also have threatening effect on India's food security, water security, fundamental rights, trade and business¹⁶.

Genesis of Climate change: Not an Act of God.

Change in climate is a natural phenomenon¹⁷, conditioned to some certainty or predictability. Meanwhile, the present erratic climatic pattern is resulted due to human activities. The definition provided by UNFCCC leaves no uncertainty regarding the inception of the corresponding issue. Climate change is a serious and urgent issue. The Earth's climate is changing, and the scientific consensus is not only that human activities have contributed to it significantly, but that the

¹¹ For regional differences in vulnerability to climate change, see e.g. UNEP/Earthscan Global Environmental Outlook 2002.

¹² Bierbaum and others (2007). *Confronting Climate Change: Avoiding the Unmanageable and Managing the Unavoidable*, a new report prepared by the Scientific Expert Group Report on Climate Change and Sustainable Development for the United Nations Department of Economic and Social Affairs

¹³ Gaillard, J.C., 2010: Vulnerability, capacity, and resilience: Perspectives for climate and development policy. *Journal of International Development*.

¹⁴ IPCC, 2001a: *Climate Change 2001*: Eds., Cambridge University Press, Cambridge

¹⁵ World Bank, 2009: *World Development Report 2010: Development and Climate Change*. World Bank, Washington, DC.

¹⁶ India, Ministry of Finance, Economic Survey, 2012-13, pp. 256-57.

¹⁷ IPCC, 1990: *Climate Change: The IPCC Scientific Assessment*, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

change is far more rapid and dangerous than thought earlier¹⁸. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and observed over the last 50 years is attributable to human activities. Reconstructions of climate data for the past 1,000 years indicate this warming was unusual and is unlikely to be entirely natural in origin¹⁹. The recent literatures on relevant issue make the fact that present erratic changes in climate are due to human activities. Thus, climate change and outcome of such must not be considered as an “**Act of God**”. land use change, while those of methane and nitrous oxide are primarily due to agriculture²⁰. There is new and stronger evidence that most of the warming

Forming link between climatic law and Disaster Management.

The problem of climate change is multi-dimensional. Climate change is not the subject that can be addressed in isolation by one department; it requires active inter-departmental cooperation²¹. The climatic change is mainly responsible for most disasters. Further the geography of India is most susceptible to climate prone disasters. Floods, droughts, cyclones, earthquakes and landslides have been recurrent phenomena. Over 40 million hectares is prone to floods; about 8% of the total area is prone to cyclones and 68% of the area is susceptible to drought. In the decade 1990-2000, an average of about 4344 people lost their lives and about 30 million people were affected by disasters every year. Thus, climate change and disaster management should be dealt in a single box.

Climate change had received an unprecedented attention in recent times. The fundamental reason behind such transit can be series of climatic disasters that India had faced in recent couple of decades or International pressure to reduce carbon emission as a part of sustainable development. This part confers on India's present position regarding to climatic law.

State liability under the doctrine of *Parens Patriae*.

The concept of *parens patriae* is explained as “the right of the sovereign and imposes a duty on the sovereign, in public interest, to protect persons under disability who have no rightful

¹⁸Stern, N., and others (2006). http://www.hm.treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

¹⁹ IPCC , 2001: Climate Change 2001: Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

²⁰ IPCC , 2007: Climate Change 2007: Cambridge University Press.

²¹ Boer J D, Wardekar J A, and Sluijs J P V. 2010. Frame-based guide to situated decision making on climate change. *Global Environment Change* 20:502–510.

protector.²²” The doctrine of *parens patriae* is the inherent power and authority of a legislature to provide protection to the person and property of persons and property non *sui juris*, such as minor, insane and incompetent persons. The courts in India have applied this doctrine in several cases. Therefore it is submitted that, under the doctrine of *parens patriae* also, the state is obliged to provide adequate relief and rehabilitation to the victims of climatic disaster²³.

Rights of Indigenous People.

It is the prime duty of the state to protect fundamental rights of citizens. Meanwhile, after Uttarakhand tragedy the main question raised by general public was “*How far India can protect rights of people during disasters?*”²⁴ Under Indian constitution India is declared as “welfare state” and therefore it is mandatory for India to interpret legislations in context of welfare of citizens. After the Maneka Gandhi Case (1978), courts have expanded the scope of ‘life’ and ‘personal liberty’ under Article 21. The Supreme Court has also interpreted the words ‘procedure established by law’ to include both the procedural and substantive legal requirements of fairness, justness and reasonableness. Article 21, which guarantees the protection of life and personal liberty, is the repository of all important human rights. From this, the Supreme Court has deduced an affirmative obligation on the part of the state to preserve and protect human life.

Disaster risk adaptation in context of India.

Disaster risk adaption is one of the main climate mitigating factors²⁵. Adaptations vary according to the system in which they occur, who undertakes them, the climatic stimuli that prompts them, and their timing, functions, forms, and effects. This chapter focuses on adaptations consciously undertaken by humans, including those in economic sectors, managed ecosystems, resource use systems, settlements, communities, and regions. In human systems, adaptation is undertaken by private decision makers and by public agencies or governments. Meanwhile, developing nations face technology major problems regarding adaptation due to scarcity of resources and technology. Individual cultivator response to climate risk in India has long relied on a diverse mix of strategies, from land use to outside employment (sometimes requiring temporary

²² West’s Encyclopedia of American Law, edition 2.

²³ Jacob P. Alex. *Disaster Management towards a legal framework* (2006).

²⁴ The Hindu, a Himalayan Tragedy. Updated on Jan 2, 2014.

²⁵ IPCC, 2001b: *Climate Change 2001: Impacts, Adaptation and Vulnerability*. J.J. McCarthy, O.F. Canziani, N.A. Leary, D.J. Dokken and K.S. White, Eds., Cambridge University Press, Cambridge.

migration) to reciprocal obligations for support; many of these strategies have been undermined by changes such as population pressure and government policy, without being fully replaced by others—illustrating the oft-remarked vulnerability of regions and populations in transition²⁶.

India's response to climatic.

India's carbon emission is very less in comparison to developed nations. India's carbon dioxide emission is about 4% of earth's total CO₂ emission. Meanwhile the growing awareness regarding climatic change in India can be viewed from recent national activities²⁷. At international level India was prepared to voluntarily "reduce the emissions intensity of [its] growth by 20 to 25 per cent in 2020 as compared to 2005"²⁸. Commentators within India deplored India's leaving the camp of developing countries and making concessions without asking for reciprocity²⁹. At national level various governmental bodies were formed to deal with climatic problems. National Environment Policy, 2006 outlines essential elements of India's response to Climate Change³⁰. The National Action Plan on Climate Change (NAPCC) coordinated by the Ministry of Environment and Forests is being implemented through the nodal Ministries in specific sectors/areas. The plan "identifies measures that promote our development objectives while also yielding co-benefits for addressing Climate Change effectively". Climate Change Action Programme (CCAP) includes National Carbonaceous Aerosols Programme (NCAP), Long Term Ecological Observatories (LTEO), and Coordinated Studies on Climate Change for North East region (CSCCNE). The NCAP is a major activity involving multi-institutional and multi-agency study. Further many scientific and economical policies were also made in respective context.

Judicial interpretations.

Climatic justice is the question of fundamental rights. Climatic law is not codified by Indian legislative system but the corresponding problem can be interpreted in terms of Article 21 of Indian constitution and Disaster Management Act. In the *B.J. Diwan case*, the Gujarat High

²⁶ Gadgil, S., A.K.S. Huda, N.S. Johda, R.P. Singh, and S.M. Virmani, 1988: J. Kluwer Academic Publishers, Dordrecht, The Netherlands.

²⁷ op.cit, Annual Report, p. 349.

²⁸ Ministry of External Affairs (2009b), *Prime Minister's Statement Prior to his Departure for Copenhagen*, online: <www.meaindia.nic.in/speech/2009/12/17ss01.htm>

²⁹ Jayaraman, T. (2009), Will It Be a US Endgame at Copenhagen?, in: *Economic and Political Weekly*, 44, 50, 13–15.

³⁰ Government of India (2007), *National Action Plan on Climate Change*, New Delhi.

Court rejected the government's argument that the court doesn't have jurisdiction to adjudicate upon a case, which claims the enforcement of relief and rehabilitation. The court went on to hold that the right to relief and rehabilitation is a guaranteed right under Article 21 of the Constitution and the state is duty bound to ensure the same³¹. Indian judiciary followed the same application in various climatic calamities to ensure justice. Supreme Court had intervened in a matter related to the allegation of death due to drought, famine and starvation in Orissa. The intervention of Bombay High Court in the aftermath of the Latur earthquake provided minimal relief. The Bombay High Court passed directions about temporary shelter, drinking water, sanitation facilities, health services, public distribution systems and compensation for the handicapped and the dependents of the deceased in the Latur earthquake.

Indian perspective on climatic and disaster management law.

The contemporary activities of various international organizations in terms of climate change brought a great transit in Indian approach towards corresponding issue. Thus, it is necessary to understand the roles of international bodies in enhancing India's view towards climatic law. This section of paper critically analyses International bodies on climatic jurisprudence and their impact on Indian policy making. Further this section evaluates loopholes in Indian laws regarding climate change and Disaster-management. This section suggests various modifications in present laws to suffice present trend and future needs.

International climatic law and India.

International climatic obligations are primarily defined under two binding international instruments:

UN Framework Convention on Climate Change (UNFCCC) adopted at Rio conference on Environment and Development, 1992.

Kyoto Protocol, 1997.

The objective of the Convention was to achieve stabilization of Green House Gasses concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level is to be achieved within a time frame sufficient to allow eco-systems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner. The UNFCCC recognizes the legitimate need of developing countries for sustained economic growth

³¹ *Diwan vs. State of Gujarat* (2001).

and poverty alleviation. Article 3.1 of the UNFCCC mentions that Parties to the Convention should protect the climate change system for the benefit of present and future generations of human kind on the basis of equity and in accordance with their “common but differentiated responsibilities” and respective capabilities. All major countries, including US, EU, India, China, have ratified the Convention³².

Kyoto protocol was adopted by the parties to the UNFCCC and is the most significant legally binding protocol. The Protocol provides for quantified emission limitation and reduction commitments for the developed countries, mechanisms to facilitate review of and compliance with these targets. The *Kyoto Protocol* also provides for three mechanisms that enable the developed countries with quantified emission limitation and reduction commitments to acquire greenhouse gas reduction credits from activities outside their own boundaries at relatively lesser costs. These are Joint Implementation, Clean Development Mechanism (CDM) and Emission Trading. Developing Countries can participate only in CDM operational since 2000³³.

The 15th session of the Conference of the Parties to the UNFCCC and the 5th session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol took place in Copenhagen, Denmark in 2009. The Copenhagen Accord contained several key elements on which there was strong convergence of the views of the Governments. This included the long-term goal of limiting the maximum global average temperature increase to no more than 2 degrees Celsius above pre-industrial levels, subject to a review in 2015.

At the 2012 UN Climate Change Conference in Doha, Qatar Governments consolidated the gains of the last three years of international Climate Change negotiations and opened a gateway to necessary greater ambition and action on all levels. This post Durban convention worked on following agendas:

Strengthened their resolve and set out a timetable to adopt a universal climate agreement by 2015, which will come into effect in 2020.

³² UNFCCC(1992):unfccc.int/resource/docs/convkp/conveng.pdf.

³³ Kyoto Protocol(1997): unfccc.int/resource/docs/convkp/kpeng.html

Streamlined the negotiations, completing the work under the Bali Action Plan to concentrate on the new work towards a 2015 agreement under a single negotiating stream in the Ad hoc Working Group on the Durban Platform for Enhanced Action (ADP).

Emphasized the need to increase their ambition to cut Green House Gases (GHGs) and to help vulnerable countries to adapt.

Made further progress towards establishing the financial and technology support and new institutions to enable clean energy investments and sustainable growth in developing countries³⁴.

It is strongly argued that India is perceived as one of the most obdurate opponents of an effective global climate regime³⁵ that would also impose responsibilities for early mitigation efforts on emerging economies. In terms of legal obligation the United Nations Framework Convention on Climate Change and the related Kyoto Protocol do not require developing countries to commit to reducing GHG. Being a developing nation it is mandatory for India to focus on sustainable development. As “efforts to address climate change [...] should not take away resources from the core development needs and growth objectives of the developing countries³⁶”. Meanwhile, India in 2009 approved the Copenhagen Accord, which required all the major developing countries to implement nationally appropriate mitigation actions. India later even implicitly accepted “binding reduction commitments in appropriate form” monitored by joint bodies.

Need of Climatic Legislations

Climatic obligation on national and sub-national governing bodies requires following a specific modus operandi to for implementation. Unfortunately, there is no certain legislative instrument which exclusively deals with climate change and related issues. Mitigation of climate change provides reinforcement to sustainable development³⁷. In such context legal or regulatory requirements may have an effect. Many governments have adopted legislation aimed at encouraging the sustainable use of the natural environment, and some explicitly include

³⁴ CLIMATE CHANGE - INDIA'S PERSPECTIVE, No. 25 / RN / Ref. / August/ 2013. PARLIAMENT LIBRARY AND REFERENCE, RESEARCH, DOCUMENTATION AND INFORMATION SERVICE.

³⁵ Dubash, Navroz K. (2009a), *Toward a Progressive Indian and Global Climate Politics*, Working Paper, 1, New Delhi: Centre for Policy Research.

³⁶ Prasad, H. A. C., and J. S. Kochher (2009), *Climate Change and India – Some Major Issues and Policy Implications*, New Delhi: Government of India, Ministry of Finance.

³⁷ Clark, M.J., 2002: Dealing with uncertainty: adaptive approaches to sustainable river management. *Aquat. Conserv.*

reference to climate change. For example, Canada and some EU member states have begun to incorporate climate change in their environmental policies, particularly in the structures of required environmental impact assessments³⁸. Meanwhile, it is mandatory for India to enact climatic law to regulate Carbon Emission Trade. Thus considering above point it is highly recommended to have climatic law. Environmental regulations were not enforced strictly in India; of all the companies regulated by pollution boards, 50 percent did not comply with regulations³⁹. Indian courts are notoriously overburdened and therefore extremely slow to settle cases. Therefore, regulating bodies often preferred to do nothing. Further, bodies for monitoring environmental regulations are inadequately staffed and financed, their employees insufficiently trained and legally not well versed⁴⁰. Therefore, it is submitted that India must enact Climatic legislation for strong administration and better policy implementation.

Conclusion.

Climate change is no more a trivial issue. IPCC in their 3rd report specifically mentions that “Climate change will impede nations’ abilities to achieve sustainable development pathways as measured, for example, by long-term progress towards the Millennium Development Goals”. Over the next half-century, it is very likely that climate change will make it more difficult for nations to achieve the Millennium Development Goals for the middle of the century. It is very likely that climate change attributed with high confidence to anthropogenic sources, *per se*, will not be a significant extra impediment to nations reaching their 2015 Millennium Development Targets since many other obstacles with more immediate impacts stand in the way Climatic problem will not only damage our generation but it can render devastating effects on our future generation.

Although, our commitments are clear regarding the reduction of carbon emission, we cannot implement our policies until we have a certain framework regarding climatic problems. Such loophole would certainly create a rift which would impair our sustainable development and Disaster management. This would render worst effect on the weaker section of population

³⁸ EEA (European Environment Agency), 2006: Vulnerability and adaptation to climate change in Europe. Technical Report No. 7, European Environment Agency.

³⁹ World Bank (2008), *India. Strengthening Institutions for Sustainable Growth. Country Environmental analysis, South Asia Environment and Social Development Unit*, Washington, D.C.: World Bank.

⁴⁰ World Bank (2010), *World Development Report 2010. Development and Climate Change*, Washington, D.C.: World Bank.

leaving them helpless and broken. Uttarakhand incident not only showed that India don't have effective disaster risk management but also cleared the fact that international climatic laws is helpless without national efforts. In efforts to save our "Big Blue Marble" we must not forget to protect our main interest. The present disaster management law must protect human rights from every possible climatic disaster. Nation must enact climatic legislation which can provide edge to policy implementation, resource management, sustainable development, public health, insurance and many other corresponding subjects.

To conclude with I would mention that "*Mother nature can only suffice our needs, not our greed*". So it is our humble duty to make amendments for what we mangled up. Enacting climatic law and spreading awareness can do a great job to nature and likewise to humanity.

