

Book Reviews

Navroz K. Dubash, *India in a Warming World – Integrating Climate Change and Development* (New Delhi: Oxford University Press, 2019), ISBN: 978-0-19-949873-4, Price: Rs. 1,995.00, Pages: 576.

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It is undeniable as well as indisputable that climate change is a global concern. The debate now is about the climate actions taken by different countries all around the world. Managing climate threats necessarily requires global cooperation. In this book Navroz Dubash has brought to its readers various perspectives of different experts from the field of climate science and policy and created a comprehensive volume in order to understand Indian perspective on Climate Change. It is one such comprehensive and authentic compilation and also the first on this subject after the crucial Paris Agreement in 2015, comprising of different articles by various experts. Moreover, this edited volume is beyond scientific facts of climate change and comprises important angles of social, political and financial issues associated with global development in this domain. This book comprises of 29 articles in five sections *viz.* (i) Climate change impacts, (ii) International debates and negotiations (iii) Politics (iv) Policy and (v) Climate and development; focusing on climate change and India.

The editor in the introduction to India's evolving climate policy gives a clear understanding on journey of three decades since Rio Summit. It provides timeline on India's diplomatic stand to concerted policy decisions. Climate change is a complex subject and India is equally complex country as compared to any other peer nation. Pragmatically, India faces enormous challenges like mass poverty, access to health care, supply of water and energy to every citizen. At the same time aspirational requirements do not afford to neglect environmental concerns because development focusing actions are closely intervened with climate objectives. In this context India's choice of sustainable development is natural. Globally, India's contribution to the cumulative built-up of Greenhouse

Gases (GHGs) in the atmosphere is specifically little, but now it is the third largest GHG emitter after USA and China. India's per capita annual emission is 2.5 t CO₂, which is well below world average of 6.7 t CO₂. However, growth rate of India's GHG emission has been increasing in last few years.

In the impacts of climate change under India section, Srinivasan articulates about Indian Meteorological Department's weather data of 1000+ stations of past 120 years. These data derive that all India annual mean surface temperature has increased by 0.6°C during 1900-2010, most of which is observed in last 30 years. The change in mean temperature is primarily on account of a long term trend of increasing daily maximum temperature. It records increase in extreme rainfall events, which leads to urban flooding. In-line with global trends, there are clear evidences of increasing climate change impacts on India in the twentieth century and further acceleration in twenty-first century. The impact of climate change would be more on India because of higher population density, larger special and temporal variability of rain fall, high dependence on agriculture and vulnerable poverty ridden population. Achuta Rao et al. says anthropological causes have attributed change in temperature, humidity and ocean heat content thus, human actions are inevitable to control the climate change. Nagraj Adve in "Impacts of Global Warming in India" illustrates that climate change impacts are visible on the vulnerable strata of society. It highlights that understanding of equity and climate justice needs to take account of the vulnerable within the society, rather focusing on international framework which is divided between Global North and South.

The second section of the book deals on International Debates and Negotiations. Anil Agarwal and Sunita Narain's paper "Global Warming in an Unequal World: A case of Environmental Colonialism" is one of the highly quoted paper on this subject which framed India's stand on International negotiations in 1990's and 2000's. To address the equity issue in long-term mitigation, principle of "Common but Differentiated Responsibility and Respective Capabilities" is introduced. However, its operationalisation is not happening even after efforts since 1990s. Tejal Kanitkar et al. doubts that the end result of on-going negotiation process is not moving into positive direction, rather it is contributing to a situation which would lead to "Global Climate Emergency". Sandeep Sengupta's article on "India's Engagement in Global Climate Negotiations from Rio to Paris" has given details about India's stand from 1992 to 2015.

India is an active player since the beginning of climate negotiation but was playing a defensive role initially which has now changed to a strong commitment

to environmental sustainability even when India's developmental aspiration is high as against loose commitments by other big countries like USA and China. Chandrashekhar Dasgupta has attempted to explain the genesis and working of the UNFCCC in "Present at the Creation: the making of the framework convention on climate change". Whereas Shyam Saran has explained the Copenhagen Summit of 2010 as turning point of Global Climate Negotiations. Ashok Lavasa in "Reaching Agreement in Paris" gives insider's view of the negotiations of COP 21 of 2015. D. Raghunanadan has summarised Indian stand during 1992 upto present "India in International Climate Negotiations". Articles on Paris Agreement by Lavanya Rajmani and Ajay Mathur clearly indicates India's changing role and leadership in global climate governance.

The third section on Politics starts with "Climate Change, Civil Society and Social Movement in India" by Pradip Swarnakar, which focuses on increasing role of non-state actors in directing climate debates. Shanakar Venkateswaran et al. explains the role of business and private sectors. Indian companies are increasing their responsibility towards environmental concerns and at the same time identifying economic opportunities in it. Ashim Roy et al. in "Energy and Climate Change – a just transition for Indian Labor" have explained about revised renewable energy targets by India and its implication on employment opportunities. Anu Jogesh in "Looking Out, Looking In – the shifting discourse on Climate Change in the Indian Print Media" provides details of coverage of climate issues in print media in order to track the sector and approaches.

In the fourth section, "National Climate Policies and Institutions" by the editor briefs on instruments like National Action Plan on Climate Change (NAPCC); sectoral approaches in energy supply, energy efficiency, infrastructure, water, agriculture, renewable energy etc. and provides information on Prime Minister's Council on Climate Change, Inter-Ministerial Coordination, actions at sub-national level. In another deliberation on State Climate Change planning by editor provides views on State level actions in India with specific case studies of States like Himachal Pradesh, Karnataka, Madhya Pradesh, Odisha and Sikkim. The State Action Plans provides institutional platform to mainstream development planning aligning the climate targets, presently which is viewed as beginning of the complex process. In another paper on State Climate Change planning, Elizabeth Gogoi highlights issues like importance of local factors, political ownership, convergence, institutional capacity as bottleneck for desired results of such initiatives. Koyel Kumar has attempted to explain Climate Finance in Indian context. Merits and demerits of India's initiative like National Adaptation Fund for Climate Change; International Green Climate Fund;

bilateral funding like German Cooperation, UK Aid, UNDP's multilateral funding are interesting. Paper on "Managing the Climate Technology Transition" by Ambuj Sagar provides details of a key clause of Technology Transfer and its present status. Use of technology is the key to Sustainable Development, however, it is impenetrable to manage technology transition under climate accords.

The fifth section on Climate and Development starts with "Aligning Energy, Development, and Mitigation" by Ashok Sreenivas, it discusses India's GHG emission contribution by energy sector, evolving energy policy, increasing focus on renewable energy, energy efficiency measures, performance of energy distribution companies etc. Presently universal energy access is being promoted in India and at the same time focus on renewable energy is increasing, which has motivating consequences on GHG emission and per capita emission growth. Radhika Khosla et al. in their paper "Urban India and Climate Change" have dealt with climate related consequences of Urban Development in Indian context as cities are considered to be the major source of GHG emissions. K.S. Kavi et al. enlightens on mainstreaming climate adaptation in agriculture, where awareness of stakeholder is imperative. In order to achieve objectives of action plans, it is required to provide scientific understanding of climate change to farmers. In India, majority of vulnerability and poverty are associated with agriculture, hence, it is important to normalise climate adaptation in this sector. Rohan Arthur explains the defies associated with 6400 km long coastlines and hundreds of islands in India. Population congregate thickly within 100 km of the coasts. The impacts of climate change on coastal areas can be reduced through strategies like ecological solutions, disaster management.

This is a useful compendium for everybody dealing in policy, finance, governance related to climate change in Indian scenario. The book is effective in establishing that climate change is no longer an environmental issue or the mechanism of greenhouse gas emissions. But, it is an existential challenge for humanity and its acceleration is due to aspiration for development. However, India's commitments and climate actions in progressive direction is getting global recognition.