BOOK REVIEWS

Can Political Ecology Comprehend Climate Change?

T. Jayaraman*

Marcus Taylor (2014), *The Political Ecology of Climate Change Adaptation: Livelihoods, Agrarian Change and the Conflicts of Development*, Routledge, Oxford and New York, 205 pages, $140.

The nature of the action that the world must undertake to deal with the problem of anthropogenic global warming is conventionally divided into two areas of concern. As commonly understood in climate change studies (Jayaraman 2013), the first is termed mitigation: this refers to the effort to limit, and eventually possibly eliminate, the continued emissions, as a consequence of human activity, of greenhouse gases (the ultimate cause of global warming) into the atmosphere. The second is termed adaptation, which refers to measures and initiatives that help human society's production systems cope with the consequences of global warming.

There are conceptual difficulties in understanding the import of the terms mitigation and adaptation. With mitigation, the desired outcome is eminently clear; less clear is the question of how the reduction of fossil fuel dependence is to be managed — in technological, economic, and, ultimately, political terms.

The issue of adaptation poses a greater challenge. The global adaptation agenda depends essentially on understanding the impact of global warming on sectors that directly depend on weather and climate, such as agriculture, forestry, and fisheries. Millions of people in developing countries depend on these sectors for their livelihoods and incomes: the issue of adaptation is therefore closely related to issues of development and the consequences of climate change for the well-being of these sections of the population.

The global South has consistently demanded that appropriate support from the global North for adaptation must be part of the effort to deal with climate change. Finance for adaptation is at present insignificant; nevertheless, the global development

* Centre for Climate Change and Sustainability Studies, School of Habitat Studies, Tata Institute of Social Sciences, Mumbai, tjayaraman@gmail.com.

discourse is steadily being refashioned such that adaptation is increasingly identified with development. This refashioning has come from a variety of players, including multilateral aid and financial institutions, the aid institutions of individual developed countries, and some major international non-governmental organisations and their Southern partners. In parallel, an increasing volume of academic literature has sought to theoretically and conceptually justify this subsuming of development into climate change adaptation. The literature has some diversity of perspective; nevertheless, institutions from the global North involved in development have tended to pick and impose on the South particular perspectives that privilege their political considerations. Typically, these perspectives involve the uncritical carry-over of concepts from ecology and ecosystems theory to the domain of human-nature interaction. These concepts are linked to a conceptualisation of economic issues drawn from the narrow vision of neoclassical (neoliberal in extreme cases) economic theory. Some of these formulations have been current for more than two decades in the academic literature but have entered the arena of what is referred to as climate-related "development practice" only recently.

The term "adaptation" as used in the literature on evolution is itself a key word of the adaptation discourse. Another such keyword is the term "resilience," drawn from the literature on ecology and ecosystems. Earlier entrants into the jargon, from the domain of poverty studies, are terms such as "vulnerability" and "coping." While livelihoods are studied in the framework of the "sustainable livelihoods approach" popular with many aid agencies,[1] some aid agencies use, in this context, the "five capitals" framework[2] (one even uses the "nine-square mandala").[3] These terms, with origins in the poverty studies literature and subsequently in environmental studies, have gained considerable momentum within the discussion on climate change adaptation. Some multilateral institutions with specific sectoral mandates, such as the Food and Agricultural Organisation (FAO), have been more circumspect, while others, such as the United Nations Environmental Programme (UNEP), have intensively promoted concepts such as the "green economy," a self-assumed mandate not backed by any international consensus, even among developed countries.

The academic literature, of course, contains some critical discussion of these concepts. But the literature generated by non-academic players — work that has not undergone peer-review and is referred to by the Intergovernmental Panel on Climate Change (IPCC) as "grey" literature — is far more widely circulated. This literature emphasises

[1] See Krantz (2001) for some variants of the term.

[2] See Scoones (1998) for an outline of the five capitals framework. See also Scoones (2009) for an account of the transition of the "sustainable livelihoods" concept from its progressive origins to a depoliticised aid agency tool.

[3] For an introduction to the nine-square mandala, see SDC (2007). The nine-square mandala is drawn with a sketch of a house at the centre. The document notes, "Inspired by interactions of the above type with farm communities in India, the RLS (Rural Livelihood System) project found a suitable answer in the interface of two powerful images useful for a holistic perception: the mandala as a cross-culturally accepted symbol for wholeness and a centred universe and the rural house as a metaphor for livelihood [*sic*.!]."

the uncritical choice of a specific perspective, which is then typically boiled down to a set of rules and "methodologies" for use by development "practitioners." Such perspectives are disseminated through project funding in less-developed countries, for example, through "capacity-building" or training exercises carried out by these agencies and their partners, often in collaboration with the host governments of less-developed countries. A pronounced emphasis on "problems" and "solutions" ignores differing perspectives and the long-term uncertainties associated with social and economic processes. The entire enterprise is framed by a rhetoric of urgency that counterposes action to the reflective consideration of issues.

When climate change adaptation stands in for development itself, any discussion of agrarian transformation, particularly land reform and the progressive restructuring of rural economic and social institutions, is obviated. Poverty, inequality, and other forms of economic and social deprivation are acknowledged, but they appear to have little or nothing to do with political power, social and economic hegemony, or the power of specific classes. Differentiation, particularly in rural society, is not acknowledged — the neutral, homogenising word "community" is the preferred term. Increasingly, especially in the 2000s, the role of the state has begun to be de-emphasised in the name of restoring the agency of the poor, though "agency" here rarely refers to the political mobilisation of the rural population in the pursuit of the goal of radical social transformation.

Marcus Taylor's study of climate adaptation, examined specifically in the context of "agrarian environments," marks a radical departure from much mainstream work in climate adaptation, and takes aim squarely at what he considers problematic about such work. Three aspects of this departure are notable. First, as Taylor makes clear in the preface, climate change adaptation must be examined not as a "self-evident analytical framework and a normative goal but as an array of discursive coordinates and institutional analyses that themselves form the object of analysis." Thus the full meaning of the term climate change adaptation has to be critically viewed and not taken as self-evident. Secondly, climate change adaptation, he emphasises, "is intrinsically a political process, despite its pretensions otherwise." In the case of agrarian environments, this emphasis demands that adaptation be situated "within the broader terrain of agrarian transformation." Thus, both the language and practice of climate change are political in character, marked by different normative visions of agrarian environments. Climate change adaptation cannot be separated from "power and production," and must be examined in relation to property relations in the countryside, the nature of capital, the role of the state, technological change, and so on. Thirdly, adaptation cannot be an end in itself, but must be part of a larger political project with wider redistributive goals relating to land and water rights, credit policies, and subsidies.

What does not arouse this reviewer's enthusiasm, however, is what the author clearly views as the critical aspect of his study, namely, the elaboration of the relationship

between climate and society, drawing from the framework of political ecology. Even here, Taylor clearly has a valid point to make in his suggestion that climate, as it impinges upon society, is more than a mere recitation of the brute facts of climate in the form of temperature increases, rainfall variability, and the behaviour of other climate variables. However, in the end, Taylor's conception of the relation between the *objective* constraint of climate and society's *subjective* capacity to deal with it is not as convincing as is his critique of the main discourse of climate adaptation.

Taylor is at his best in his analysis of where adaptation figures in the agenda of agencies such as the World Bank, and the conceptual framework with which they seek to develop a sense of urgency about the climate threat in order to justify the conflation of all development with adaptation. In the wider debate on adaptation, Taylor is careful to note that these different viewpoints do not necessarily converge on many issues, for example, in their varied reading of the relationship between poverty and vulnerability to climate change. But the point is that despite these differences, all the viewpoints present in this debate orbit around the same conceptual foci, the triad that Taylor amusingly refers to as the "holy trinity": vulnerability, resilience, and adaptive capacity. These notions are on occasion subject to some scrutiny, if not in the world of development "practice," then certainly in the realm of academic scholarship.

However, Taylor emphasises that all these different perspectives share a common notion of adaptation as a "natural" necessity (the terminology derives its seeming obviousness by drawing on the terminology of Darwinian evolution). But then, adaptation and associated notions like adaptive capacity are stretched to "refer more broadly to encompass a variety of social phenomena, including institutions, economies, households, and individuals, all of which are seen to possess a relative degree of such capacity to adjust." As a result, adaptation can also end up referring to the ability to "adjust" about anything, including the global trade regime or the domination of global capital. A telling example of what Taylor criticises,[4] an example that should assure the reader that he does not exaggerate, is a paper that unselfconsciously produces map overlays of "vulnerability" to both climate change and globalisation, as if both constituted similar processes to which populations, regions, and nations had to "adjust".[5] This work is not an intellectual outlier, but is widely cited in the literature.

In a subsequent chapter, Taylor explores the concept of resilience, a term borrowed from the ecology and ecosystems literature, and transposed quite illegitimately

[4] Taylor himself does not refer to this example, though he is aware of related writing by the same authors.
[5] O'Brien *et al.* (2004). The original idea is from O'Brien and Leichenko (2000). The first few sentences of the abstract of this paper read: "This paper considers synergisms between the impacts of two global processes, climate change and economic globalisation. Both processes entail long-term changes that will have differential impacts throughout the world. Despite widespread recognition that there will be 'winners and losers' with both climate change and globalisation, the two issues are rarely examined together."

into the technological, economic, and social domains.[6] Thus transposed, resilience becomes a variant of a functionalist perspective on the "stability" of social and economic systems, with all its attendant negative implications *vis-à-vis* social and economic transformation. As Taylor observes, what is resilience for one section of society may be quite the opposite for another:

> Resilience might maintain a set of socio-ecological relations relatively stable but at significant costs for specific social groups. In short, one person's resilience may well be another's subjugation, and what is termed resilience might be part of the problem, not its solution (p. 79).

Taylor's book also notes that the concept of human security represents a considerable advance over the limitations of the adaptation perspective. But, as he elaborates, it is an advance with limitations. While the concept of human security acknowledges inequality and the need to reduce inequality through appropriate social policies, it does little to help in understanding the sources of inequality in social and economic relations. As Taylor remarks, the human security paradigm appears to have caught a tiger by its tail, but does not know what to do with it.

In this unsparing critique of the prevailing paradigms of climate change adaptation, the author's focus is firmly fixed on the significance of power and hierarchical social and economic relations, and the manner in which this key issue is absent — not only in the discussions of climate change adaptation, but also in the larger context of development. Climate change adaptation, as a consequence, becomes the latest tool in an effort (ongoing but with a long history) to shape the development discourse in a manner free of any reference to the need for radical social and economic transformation. Such transformation is, of course, a necessary condition for both environmental sustainability and a more just and equitable economic and social order. Even the attempt to isolate mitigation and adaptation into separate compartments, is, in the final analysis, an attempt to obscure the fundamental reality of the nature of contemporary capitalism, which is at the root of the difficulties in limiting global warming and in dealing with its consequences for the world.

For this reviewer, the most unsatisfying and limiting aspect of the book is its theoretical underpinning of political ecology and the notion of the co-production of environmental reality with which the author begins and which he elaborates in the context of climate. It is to the merit of political ecology that it emerged early on

[6] The concept of resilience in ecosystems theory itself is known to have considerable limitations, as Taylor rightly notes. The term ecosystem itself has a strong mechanistic flavour. For instance, the classic textbook *Fundamentals of Ecology* by Eugene Odum defines an ecosystem as "a unit including all organisms interacting with the physical environment, so that a flow of energy leads to clearly defined biotic structures and cycling of materials between living and non-living components." A brilliant critique of the mechanistic origins and the application of the ecosystems concept itself is provided in the documentary by Adam Curtis, *All Watched Over by Machines of Loving Grace: The Use and Abuse of Vegetational Concepts*. The documentary can be viewed at vimeo.com/73536828.

as a response to the general tendency of much environmental thought to ignore the role of the prevailing economic and political order in determining the origins and resolution of the environmental question. However, the persistent weakness of this approach has been to over-privilege the role of politics to the exclusion of the role of the nature of technology and the productive forces of society in the making of the environmental question. Thus, while environmental issues have both an objective and subjective dimension, political ecology tends to over-privilege the latter.

The problem does not cease here. It has long been the argument of political ecology, commencing with the work of Blaikie, which marks the origin of this genre of argument, that all human intervention in the environment is fundamentally political.[7] As a consequence, political ecology underplays — or ignores — any interplay of the objective developments of specific sciences and technologies with economic and political considerations. Thus, all schemes for the prevention of soil erosion, to take the specific issue that is the subject matter of Blaikie's book, are "political economic relations that find geographical expression at a specific location."[8]

Political ecology therefore shares the general tone of scepticism common to many strains of environmental thought with regard to the objective aspect of technology. As a consequence, human agency is virtually unlimited, not shaped or constrained by either scientific knowledge or geographical or technological limitations. Nor is there any room here to consider the possibility that scientific and technological knowledge have their own autonomous logic of development in both theory and practice, and have the potential to shape economic, social, and eventually political relations.

Taylor carries the argument even further. His starting point is the correct observation that global warming is indeed a problem created by human activity. From this, however, to consider climate as "co-produced" by society seems entirely unwarranted. In Taylor's argument, such "co-production" applies not only to the case of global warming *per se*, but indeed to the general impact of climate on human society.[9] On occasion, his argument refers to the "lived environment." With some qualifications, one may accept this second term. After all, beyond the facts of climate embodied in the specific values of climate variables, the specific technological, economic, and social aspects of society determine how society, its production systems, and the well-being of the population are affected by climate. Disasters today are not the same as disasters of the same physical magnitude of an earlier era. But the extension of these facts to the "co-production" of climate offers little by way of understanding or clarity for the rest of his argument.

[7] Blaikie (1985).

[8] Blaikie *op. cit.*

[9] One hopes that the author does not mean that climate always had an anthropogenic component. But then if he did not, the term "co-production" appears somewhat pointless.

Indeed, it appears to this reviewer that the confusion regarding the proper role of the scientific and experiential knowledge of climate undermines and weakens the undoubtedly progressive thrust of Taylor's intentions. While he correctly sees that climate change adaptation must begin with how climate affects agriculture and the agrarian environment in the present, he does not appear carefully to consider the distinction between climate change as an evolving phenomenon and its relation to the current state of climate. In the adaptation literature, current climate variability is frequently conflated with the consequences of climate change itself (which, of course, may exacerbate climate variability).[10] In the pursuit of "co-production" and "material climates," Taylor fails to notice that this confusion between current climate variability and its consequences — as opposed to climate change itself — is what underpins the air of scientific certainty projected by those who uncritically push the agenda of climate change adaptation. A careful consideration of the distinction between the two would, for instance, immediately expose the social and economic origins of the current vulnerability of the Indian peasantry — without denying the greater harm that they are likely to suffer with ongoing climate change.[11] The other dimension of the problem is the understatement or misrepresentation of the scientific uncertainties that are part of both the understanding of climate variability and climate change, especially with respect to their impact on agricultural production systems. With these uncertainties relegated to footnotes or excluded altogether, the argument for "adaptation now" (as Taylor rightly describes it) to supersede development can be made to sound even more compelling.

Unfortunately, it appears that this misplaced reading of the objective role of nature and the way in which we know and understand it also mar parts of the book's case studies, which are drawn from the Indus watershed in Pakistan, the semi-arid regions of Andhra Pradesh, and the grazing lands of Mongolia. All three case studies pay little attention to the objective dimensions of the environmental questions that the author raises.

The case studies themselves are unsatisfying. They suffer from a lack of attention to the details of how precisely environmental considerations enter into the working of different production systems and associated systems of economic and social relations; this lack of detail gives the accounts the effect of an aerial view of their subject matter. In the case of India, with which this reviewer has greater familiarity, the author also appears somewhat uncritical of his sources of information. The relationship between farmer suicides and agrarian distress has more nuance to it than the author notices, and the statement that small farmers show greater yield on their farms is certainly open to challenge.[12]

[10] See Jayaraman and Murari (2014), and references therein.
[11] The argument is made in some detail in the last section of Jayaraman and Murari (2014).
[12] See Nagaraj *et al.* (2014), Bakshi, Dixit, and Kumar (2014), Rawal (2014), and Ramachandran (2011).

Given his political insight and instinct, Taylor's decision to yoke his perspective to the bandwagon of political ecology and Foucaldian political theory is puzzling. Clearly Taylor's positive view of politics, in terms of radical mobilisation and a remaking of the economic and social order, globally and locally, is sharply at odds with the political pessimism of Blaikie's original version of political ecology.[13] In Blaikie's view, no radical change in the nature of the state or in the nature of the larger political order can help in arresting environmental degradation. All that is possible is limited local intervention, which in any case will be inadequate.[14] Subsequently, some strands in political ecology have taken a more positive and radical political stance, but this has become enmeshed in various versions of the "co-production" of society and nature.[15] Other versions of political ecology have taken up the notions of "governmentality" or its eco-variant, "environmentality." In these variants, in common with Foucauldian political theory, the underlying argument is that all forms of scientific and technological knowledge and their practice are ultimately about power and control. Citizens (not members of any particular class) are themselves complicit with the state in its exercise (as Foucault put it, "individuals are the vehicles of power, not the points of application of it.") The inability of such views to generate any philosophy of liberation, but, on the contrary, to promote political pessimism (including its post-structuralist and post-colonialist forms) is well known. The environmental version of such governmentality fares no better.[16] What these strains of political ecology have in common is the view that the fundamental flaw of capitalism is the unrestrained development of the productive forces of society and not the pursuit of profit, to which all other concerns are subordinate. Unsurprisingly, they find common cause with the view of science that is characteristic of Foucault's thought, despite the fact that such an approach contradicts their concern for environmental degradation. Such issues can be understood, and eventually dealt with, only through science.

Despite these qualifications, Taylor's book will come as a welcome relief to those who have watched with some misgiving the increasing momentum of the bandwagon of climate change adaptation. The book's sharp critique will certainly weigh in on a side of the argument that has been underrepresented. But, as is always the case with the environmental question, the crux of the issue lies in grasping the true character of the relationship between human society and nature. Even if open to challenge, Taylor's views on the question underline the importance of understanding this relationship.

[13] Indeed the relevant section (section 3) in the last chapter of his book is titled, "Practical Pessimism."

[14] The last few words of the book read: "The final contradiction still remains. This book on soil conservation has been generally pessimistic about the future of the environment in lesser developed countries and the poorer people who use it. All it can realistically do is to call for a new intellectual approach and individual action - something which, by its own method, is deemed not to be enough."

[15] For a representative of this genre, see the introductory note in Heynen, Kaika, and Swyngedouw (2006).

[16] A version of this line of argument appears in the editors' introduction in Peet, Robbins, and Watts (2010). A particularly telling instance of this line of argument is their defence of the idea that the practice of recycling in urban neighbourhoods is a form of social control! Having expounded on governmentality in this fashion, they nevertheless bemoan the failure of the Copenhagen climate negotiations in 2009 (despite, as they put it, the urgent need for a global climate agreement), unmindful of the obvious contradictions.

References

Bakshi, Aparajita, Dixit, Aditi, and Kumar, Deepak (2014), "'On Agrarian Issues,' A Report on the Tenth Anniversary Conference of the Foundation for Agrarian Studies," *Review of Agrarian Studies*, vol. 4, no. 2, available at http://ras.org.in/on_agrarian_issues_a_report_on_the_tenth_anniversary_conference_of_the_foundation_for_agrarian_studies, viewed on December 19, 2014.

Blaikie, P. (1985), *The Political Economy of Soil Erosion in Developing Countries,* Longman, London and New York.

Heynen, N. C., Kaika, M., and Swyngedouw, E. (eds.), (2006). *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism,* Taylor & Francis, Oxford and New York.

Jayaraman, T. (2013), "Climate Change and Agriculture in the United States," *Review of Agrarian Studies*, vol. 3, no. 1, available at http://ras.org.in/climate_change_and_agriculture_in_the_united_states.

Jayaraman, T., and Murari, Kamal (2014), "Climate Change and Agriculture: Current and Future Trends, and Implications for India," *Review of Agrarian Studies*, vol. 4, no. 1, available at http://ras.org.in/climate_change_and_agriculture_83.

Krantz, Lasse (2001), *The Sustainable Livelihood Approach to Poverty Reduction: An Introduction*, Swedish International Development Cooperation Agency, Stockholm.

Nagaraj, K., Sainath, P., Rukmani, R., and Gopinath, R. (2014), "Farmers' Suicides in India: Magnitudes, Trends, and Spatial Patterns," *Review of Agrarian Studies*, vol. 4, no. 2, available at http://ras.org.in/farmers_suicides_in_india.

O'Brien, Karen, and Leichenko, Robin (2000), "Double Exposure: Assessing the Impacts of Climate Change within the Context of Economic Globalisation," *Global Environmental Change*, vol. 10, no. 3, pp. 221-32.

O'Brien, Karen, Leichenko, Robin, Kelkar, Ulka, Venema, Henry, Aandahl, Guro, Tompkins, Heather, Javed, Akram, Bhadwal, Suruchi, Barg, Stephan, Nygaard, Lynn, and West, Jennifer (2004), "Mapping Vulnerability to Multiple Stressors: Climate Change and Globalisation in India," *Global Environmental Change*, vol. 14, no. 4, pp. 303-13.

Peet, R., Robbins, P., and Watts, M. (eds.), (2010), *Global Political Ecology*, Taylor & Francis, Oxford and New York.

Ramachandran, V. K. (2011), "Notes on the State of Agrarian Relations in India Today," unpublished.

Rawal, V. (2014), "Cost of Cultivation and Farm Business Incomes in India," paper presented at the Tenth Anniversary Conference of the Foundation for Agrarian Studies, "On Agrarian Issues," Kochi, January 9-12.

Scoones, I. (1998), "Sustainable Rural Livelihoods: a Framework for Analysis," IDS Working Paper no. 72, Institute of Development Studies (IDS), Brighton.

Scoones, I. (2009), "Livelihoods Perspectives and Rural Development," *The Journal of Peasant Studies,* vol. 36, no. 1, pp. 171-96.

Swiss Development Cooperation (SDC) (2007), "Working with a Sustainable Livelihoods Approach," available at http://www.poverty-wellbeing.net/media/sla/sla.pdf.