



# NATURE'S PRESENT

a symposium on

understanding conflicts around

nature in contemporary India

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# The problem

THE theme of nature in the present is ubiquitous given the far reaching and perhaps even epochal transformations in the human environment that we are living through. Nature in contemporary India can hardly be viewed apart from the larger context of the planet we live in and are part of.

Here, the long- and short-term shifts in the global economy and environment are of importance for all. The term the 'Anthropocene' is often used to describe the era since the late 18th century when fossil fuel use first became prominent. Their use has only grown since and they now account for four-fifths of all energy consumed on the planet. The global picture of the long-term matters, and not only to historians. But of more direct relevance to us is the idea of the 'great acceleration' in economic growth and demographic expansion that took place worldwide after the end of the Second World War in 1945. The period from then till the early seventies was one of unprecedented levels of economic change. By then, not only did economic expansion begin to slow down on a global scale, but various currents of environmental concern had also matured to a point when they could mount a challenge to the dominant ethic of ceaseless expansion.<sup>1</sup>

In a broad sense, the Indian experience fits such a larger narrative, with the end of the sixties marking the coming to fore of many different, diverse, often contending, shades of green concern. The depletion of forest cover and water pollution, the endangerment of charismatic fauna and monuments, and the livelihood struggles of a variety of underclass groups – fishers and pastoralists, artisans and cultivators, especially Adivasis – were among those which helped shape the new environmentalism. By 1982, this pluralism was well represented in the first citizen's report on India's environment by the Centre for Science and Environment, a landmark document.

In retrospect, it is clear that the clash of and conversation between the popular and eminent domains shaped the public space in the 1980s. This was evident in well publicized and studied conflicts such as the dams in Silent Valley (on biodiversity), the Narmada (on displacement and social justice) and Bhopal (on relief and follow up). The ground level or popular move-

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modern eras as uniquely destructive of ecologies see Kathleen D. Morrison, *The Human Face of the Land: Why the Past Matters for India's Environmental Future*. Occasional Papers in History and Society, no. 13, Nehru Memorial Museum and Library, Delhi, 2013. On the importance of the uneven role in ecological impacts depending on socio-economic and political status see J. Guldi and D. Armitage, *The History Manifesto*. Cambridge University Press, Cambridge, 2014, pp. 70-71.

ments laid much emphasis on local empowerment and people's knowledge while rekindling Gandhian ideas of appropriate technology. These trends did not end with the decade of the eighties. Alternatives were exemplified in very original studies on village level biomass (*Towards Green Villages*) and potable drinking water supply (*Dying Wisdom*). Such ideas of grassroots level environmental regeneration gained support from a fresh crop of scholarly studies by social scientists who often traced the collapse of such systems that had combined renewal of resources with participation to the period of imperial rule.

It was in this context that the regulatory apparatus of forests and wildlife, air and water pollution, land and water use took shape. Rates of economic growth also declined from a heady 4% in the early years of planning to 3.5% (1965-80). There were larger debates in the polity on growth and redistribution of economic opportunity. Legislative and executive measures included a ban on tiger skin exports in 1969, to the enactments on wildlife, air and water pollution in 1972-74, all the way through to the Forest Conservation Act of 1980, the year that the Union government set up the Department of Environment. The 'eminent domain' was thus not immune to ground or intermediate level pressures; the adoption of Joint Forest Management was in part a response to the calls for curbing

if not dismantling 'rule by fiat' of the forest estate by the Forest Department. Similarly, there were changes in some legal enactments, most significantly the Environment Protection Act in 1986. India's political leaders, both at the Union and state level, did not abide by grassroots concerns but they did modify their stance to take account of them. This was true even in the Narmada case, where the Gujarat government reached out to a section of anti-dam protestors who were willing to engage with it on issues of resettlement.<sup>2</sup>

The picture has significantly changed over the last quarter century or so. For one, the pace of economic growth picked up, from 5% in the 1980s, to a high of 8.3 in the years 2003-11. Even if it has dropped since, the base of the economy as a whole is broader and more variegated than it was in the pre-1980 era. Levels of integration with the global marketplace are also far greater. While issues of economic disparity and job creation have held centre stage, the ecological consequences of the change may be more important than apparent at

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2. Anil Agarwal and Sunita Narian, *Towards Green Villages*. Centre for Science and Environment, Delhi, 1992 and *Dying Wisdom, The Rise Fall and Decline of India's Water Systems*. Centre for Science and Environment, Delhi, 1997. The shifts over time are examined in M. Rangarajan, *Nature and Nation: Essays on Environmental History*. Permanent Black, Ranikhet, 2015. For the earlier period, M. Gadgil and R. Guha, *Ecology and Equity: The Use and Abuse of Nature in Contemporary India*. Penguin, Delhi, 1995.

first sight. Greater rates of extraction of biomass, intensified demands on the biophysical environment (mining of coal or iron ore), or more extensive use of the ecological infrastructure (soil, water, air) or depletion of biological diversity (flora and fauna) or even whole biomes (mangrove, wetland, scrub jungle, savannah, estuary or forest): all these have become more prominent than ever before. From being the prime investor, the governments at both the federal and state level have moved to being facilitators of investment. These far-reaching changes have unleashed new pressures and pointed to a slow unravelling of the earlier systems of environmental renewal and public consultation.<sup>3</sup>

There was also a stepping back after a phase of instituting a flurry of rights based laws on land and forests. By 2014, decision makers had come to believe that green regulations were a drag on business, growth and development as they hampered rapid implementation of projects. This followed significant victories of environmentalists – mining in Niyamgiri and the eventual failure of the POSCO steel mill and port on the Odisha coastline. But these were small victories against the backdrop of larger defeats.<sup>4</sup> This was also clear in cities where floods (Mumbai, 2005 and Chennai, 2016) proved unavoidable as real estate development and settlements blocked water courses. In early 2016, Delhi too experienced a near state of atmospheric emergency due to a mix of factors that drove up levels of air pollution.<sup>5</sup> Long-term campaigns on air quality have had little coherent impact on policy. The recharge of groundwater and protection of the flood plain to help meet drinking water needs and lessen damage by floods gets more lip service than action in most Indian towns. The precautionary principle lost out and growth as good won out. While there was a renewal of hope of democratic pressure, laws and executive action, the media and courts (including the National Green Tribunal) helping rein in industry, both public and private, for the greater

3. A critical view of the changes is provided by Aseem Shrivastava and Ashish Kothari, *Churning the Earth: The Making of Global India*. Penguin India, Delhi, 2010. On China see Jonathan Watt, *When a Billion Chinese Jump: How China Will Destroy Mankind or Save it*. Faber and Faber, London, 2010.

4. On anti-dam movements see Sanjay Sangvai, *The River and Life: People's Struggle in the Narmada Valley*. Earthcare Books, Mumbai, 2000; Uma Maheshwari, *When Godavari Comes: People's History of a River – Journeys in the Zone of the Dispossessed*. Aakar Books, Delhi, 2014. On Niyamgiri, Felix Padel and Samarendra Das, *Out of This Earth: East India Adivasis and the Aluminium Cartel* (2011). Orient BlackSwan, Hyderabad, 2010.

5. A graphic and moving account on urban air pollution is Pallavi Aiyar, *Choked! Everything You Were Afraid to Know About Air Pollution*. Juggernaut, Delhi, 2016.

good, the routs and reverses turned out to be more important than the victories. A fresh sense of crisis is widely pervasive.

The same period since the early nineties also saw new kinds of fissures arising in the environmental movement, in turn leading to shifts within what were earlier largely hermetically sealed categories of state, market and community. Each had limitations that have become more, not less, obvious over time. To be fair, each had advocates whose practice was nuanced and whose own specific attitudes shifted over time. Nonetheless, a broad category-wise look may help to show why and how we came to the present impasse.

Statism had long enjoyed support, specially to protect forest wealth and imperilled wildlife, a legacy which goes back to princely and imperial initiatives in the early 20th century acquiring fresh currency due to a heightened sense of ecological patriotism and anxiety about desiccation in the seventies and thereafter. Faunal protection has since seen a divide between those who sought to sequester nature in strict reserves and other more inclusive modes of conservation. Even well policed parks such as Sariska, Rajasthan, were found bereft of tigers by 2005.<sup>6</sup> Ivory poaching had meanwhile brought down the male to female ratio in much of southern India to one to one hundred. Most seriously, as a result of a series of decisions under successive governments, parks and sanctuary land has been whittled away to make way for mines, roads, dams and townships. Its indisputable legacy of securing natural cover and populations of rare species on lands under protection notwithstanding, the statist model has clearly worn out its appeal. It is at its wits end especially when confronted with mobile animals (leopards or elephants), as its rigid models do not take account of the fluidities of nature and market alike.

By the end of the 1980s, market forces had won major ideological victories worldwide and thus it was only to be expected they would play a larger role in mediating our ties with nature in a post-reform India. Pricing forest lands via net potential value was seen by the courts as a way of extracting a price from companies and concerns that cleared woodlands. A higher price for forest products such as timber was also believed to be a deterrent to over use. Most recently, the Union government has imposed a cess on coal to discourage its use, while taxing greenhouse gas emissions. A slew of scholars, multilateral agencies and policy advocates

6. Ghazala Shahabuddin, *Conservation at the Crossroads: Science, Society, and the Future of India's Wildlife*. Orient BlackSwan, Ranikhet, 2010.

want to quantify ecosystem services to drive home the value of habitats such as wetland or forest. But the sad fact is that the payment of levies has not managed to deter those who want the land deforested, nor is there serious evidence that the funds so realized are used for serious ecological restoration. Quantification sounds a fine solution until one takes into account the market value of coal, gas, or oil that lies under the lands in question. It is worth noting how market friendly fishing has led to the depletion of fish stocks of a host of species along both the Coromandel and Malabar coasts. Even as the push for market friendly means by economists and revisionist conservationists alike is notable, but as of now, the major focus has been on where it falls short.<sup>7</sup>

Disenchantment with the market as much as with the centralized agencies of the government had led many to turn to the community. There is little doubt about not one but multiple cases of local water bodies, forest patches and groves being protected over long periods due to energetic local initiatives. The many forms of knowledge and skill involved, as in the case of water sources, require both deep study and appreciation. Interestingly, whereas gender issues had long been critical to ecological debate, caste based exclusion in both statist and community level resource protection initiatives is only now being openly questioned. Laws such as the landmark Forest Rights Act, 2006, did expand the penumbra of rights for forest users in the arena of individual land title but have done precious little to expand the scope of community control. Dalit claims have often faltered even as Adivasis, seen as more 'authentic' forest dwellers, have made some gains.<sup>8</sup>

7. H.S. Pabla, *Wildlife Conservation in India: Road to Nowhere*. Create Space Independent Publishing Platform, Bhopal, 2015. A senior forester and wildlife official advocates sport hunting to finance protection of fauna and flora. Tourism with local revenue sharing is advocated by Valmik Thapar, *Saving Wild India: A Blueprint for Change*. Aleph, Delhi, 2015; also, see Pawan Sukhdev, *Corporation 2020: Transforming Business for Tomorrows World*. Island Press, Washington and Penguin, Delhi, 2012. For a searing account of the collapse of regulation as market forces take over administration in key natural areas see J. Mazoomdaar, *The Age of Endlings: Explorations and Investigations into the Indian Wild*. Harper Collins, Delhi, 2016.

8. Dalit claims and movements have also, where strongly mobilized, tried to gain fresh ground under the terms of the act. The need to prove occupation for three generations (waived for Adivasis) makes their task more difficult. But it opens a door where earlier there was none. See Anand P. Vaidya, 'The Origin of the Forest, Private Property, and the State: The Political Life of India's Forest Rights Act', Unpublished PhD Thesis, Department of Anthropology, Harvard University, 9 April 2014. For a different view see Kamal Nayan Choubey, *The Forest Rights Act and the Politics of Marginal Society*, Occasional Papers in Development and Society, No. 31, Nehru Memorial Museum and Library, Delhi, 2014.

The caste and class blindness of many early environmentalisms is evident in the way internal hierarchies were lionized for resource renewal. There was far less acknowledgement not only of labour as resource, but that material and human dignity ought to be as critical as ecological repair. New work in various parts of India now shows more complex forms of collective assertion that foregrounds politics and reinvents ideas of association. Far from being a survival of yore, they draw on ideas of democracy and science to assert claims of those who work the shoreline or the forest.<sup>9</sup>

The pragmatic and cautious approach would be to draw on each of these dimensions where relevant but seek to fashion a situation or site specific response. This still leaves us with the question as to what the guiding principles can be or, at least, ought not to be. One way forward would be to see how new kinds of questions have arisen in the recent past. It would be naive and foolhardy to claim there are 'lessons' or 'answers', but it is the case that there can be fresh insights.

The picture then in 2017 is not one totally at odds with the past even as the challenges remain all too real. To think these through, both coherently and in depth, is even more vital than ever before. This hinges on how we define the present and where we draw the boundaries of what does or does not make up what we see as nature or the natural. Some concerns are not new: the obliteration or remaking of ecosystems, clashes over access to the bounty of nature or divisions on who will bear the burden of its despoliation. These are tropes that come to our present from the past. But the pace of change and the socio-political context has changed, often very markedly so.

Earlier, it was possible to draw on rural or local community cases as exemplars of resource stewardship, however imperfect, as a way to harmonize human aspirations and nature. It was also possible to look at the village or small town as alternatives to the growth of mega city agglomerations that invariably evolve to have large ecological footprints. But we are now in a world where not only information, capital or humans but animals, plants and materials also move across huge spaces in short spans of time. Nowhere is the intensity as clear as in the question of how to direct the growth

9. For different notions of community recast via socio political action in southwest and central India see Ajantha Subramanian, *Shore Lines: Space and Rights in South India* (2009). Yoda Press, Delhi, 2013. For work on the Chhattisgarh labour initiatives of the 1980s see Radhika Krishnan, 'Red in the Green: Forests, Farms, Factories and the Many Legacies of Shankar Guha Niyogi (1943-91)', *South Asia: Journal of South Asian Studies*, 2016, DOI: 10.1080/00856401.2016.1216243.

trajectory of mega urban agglomerations. Creating ten million jobs a year in sustainable ways is also a challenge in small towns, villages and forested areas.

Needless to add that the concerns on resource repair or renewal, on the need to retain key public goods like fresh water or air, or the retention of biotic wealth and critical habitats are all important. But the ways we think and act on them may need to engage more deeply and in newer ways with different institutions. Doing so will likely reopen older debates about whether incremental change is better than an all-out fresh model. We acknowledge such deep reflection, but the long journey begins from where we stand. To begin to change the present for the better and assure nature a more secure future, it is essential to ask how we got here. This may help illumine far better the way we ought to go.

Specific choices in the past often played a key role in shaping our present. Unlike some critics of the process, we do not see any way of rolling back the twin processes of globalization and liberalization, while recognizing the case to renegotiate some of their key features. Our journey in this issue of *Seminar* is through specific works that unpack three dimensions of the problem: the history, the current crisis and innovative ways to move forward. Most of the essays draw on long engagements with specific sites or issues and try to map the way keeping the larger challenges in mind.

The common element, if any, is a larger belief in the need to step more lightly on natural cycles and systems and in ways that expand, not contract, opportunity for the underclass. How can this be done in a democratic and knowledge sensitive way? Common lands even in a globalizing city such as Bengaluru, as much as in marine ecologies, need to survive intact not only for reasons of livelihood but because of their critical larger ecological functions. The coming century is a time to draw on history for insight, our understanding of the crisis to re-energise ourselves, and build on creative impulses to expand the spaces for collective and individual action. After all, a city such as Delhi has been a home of urban humans for well over a millennium and Bengaluru is close to the 500-year mark. How did these cities stay habitable and productive? What if any elements of those systems are still intact or can be reconfigured in new ways?

This may not always be the case viz., in the age of climate change, key cities along the coast that date to colonial times are especially vulnerable to rising sea levels.<sup>10</sup> But there may be ways to lessen negative impacts on citizens without turning the clock back in history. Recent crises have rightly led to questions about

how a new sense of community can be forged to meet the challenge.<sup>11</sup> The present crisis may be an opportunity to rethink our approaches and refashion a new 21st century environmentalism.

New kinds of alliances are the need of the hour. There have been very positive insights as in the case of trawler fishing off the Odisha coast, where advocacy of fisher rights has the combined effect of helping turtles and marine ecology and saving livelihoods.<sup>12</sup> Less central to the national imagination are issues of floods, flood plains and dams on the Brahmaputra. Here, the issues are deeply socio-political in nature as they entail who pays the price for large-scale engineering interventions in a fluid, shifting landscape where livelihoods are intertwined with water, silt, fisheries and access to land.<sup>13</sup> Similarly, science based interventions can do much to take the edge off human-animal conflict by securing livelihoods in a manner that saves rare species as well.

These may be critical in vast landscapes where production and conservation, certain human activities and wildlife presence cohabit the same space. This marks a widening of the canvas beyond refugia and holds out hope of wider networks to conciliate producers and nature.<sup>14</sup> At the same time, rethinking nature requires not only an acknowledgment of its resilience,

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10. Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable*. Penguin Allen Lane, Delhi 2016, pp. 50-78. Kolkata, Chennai and Mumbai were built in a time of global networks and paid scant attention to the dangers of climatic events on vulnerable sections of the coast. Yet as N. Jayaraman argues in this issue, the 19th century did see some wisdom in Chennai with drainage provisions. Today, these are being rapidly dismantled by real estate interests and government. For a more optimistic view of an older city and its environs see Harini Nagendra, *Nature in the Indian City: Bengaluru in the Past, Present, and Future*. Oxford University Press, Delhi, 2016.

11. T.M. Krishna, 'Moving on in Chennai', *The Indian Express*, 29 December 2015, argues for a common sense of citizenship overcoming social and economic divisions in the flood hit metropolis. In a vastly different setting on the cultural assertion in Arunachal against land take over for statist nature preservation see Ambika Aiyadurai, 'Tigers Are Our Brothers': Understanding Human-Nature Relations in the Mishmi Hills, Northeast India. Unpublished PhD thesis, NUS. Singapore University, July 2016.

12. This is examined in depth in Kartik Shanker, *From Soup to Superstar, The Story of Sea Turtle Conservation Along the Indian Coast*. Harper Collins, Delhi, 2015.

13. Sanjib Baruah, 'Hydropower, Mega Dams and the Politics of Risk', *Seminar* 640, December 2012. Himanshu Thakkar, 'India Facing its Worst Water Crisis Ever', *Business Standard*, interview with Aditi Phadnis, 14 May 2016.

14. For further discussion on these aspects see Gopi Sundar of the International Crane Foundation, Vidya Athreya's work on leopards in western Maharashtra (under aegis of the Wildlife Conservation Society India). See, Vidya Athreya et. al., 'Big Cats

but also of the vulnerability of certain key processes and species under both state *and* community stewardship.<sup>15</sup> There is, to put it simply, no silver bullet solution. At another level, in an increasingly urban society with large levels of waste, there are also dead and polluted landscapes that need urgent intervention. A new kind of alliance building may need new kinds of technique, of recycling and resource use. Are there ways forward? We have reason to believe there are steps possible in democratic ways; the generation of wealth in new ways can lessen, not just add to, the ecological burden.<sup>16</sup>

The Great Acceleration or the specific phase of it in India especially since around 1980 has indeed exerted new pressures but equally, the opportunities it opens up can be drawn upon. Rethinking nature's present also calls to rethink the idea of a pristine past. After all, humans have been around for millennia. Some challenges and pressures are new but we also have more nuanced ideas of nature and society to draw upon than we did some decades ago. Frankly, it is as yet

in Our Backyards: Persistence of Large Carnivores in a Human Dominated Landscape in India', *PLoS One* 8(3), e57872, March 2013. For another view see Joe Walston et al, 'Bringing the Tiger Back from the Brink – The Six Percent Solution', *PLoS*, 14 September 2010, <http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1000485>; The two decades long Nature Conservation Foundation and Snow Leopard Trust's work in the Himalayan states is notable. Charudutt Mishra, *The Partners Principles for Community-Based Conservation*. Seattle, Washington, The Snow Leopard Trust, 2016.

DOI: 10.1371/journal.pone.0057872 Source: PubMed. For a sympathetic but often critical look at such initiatives see Bahar Dutt, *Green Wars: Dispatches from a Vanishing World*. Harper Collins, Delhi, 2015. Also, see Umesh Srinivasan and Nandini Velho (ed.), *Conservation at the Margins, Stories from the Periphery of India's Conservation Landscape*. Forthcoming.

15. Rinki Sarkar, 'Sustainability of Endemic Chilgoza Pine Forests in the Western Himalayas: Habitat Threats and Conservation Exigencies', Unpublished Paper at workshop on, 'Wildlife Conservation in India: From Policy to Practice', New Delhi, under the aegis of The Centre for Advanced Studies of India, University of Pennsylvania, 4-5 November 2016.

16. For a thoughtful overview of the spaces afforded by legislation and how these can expand accountability and citizen participation see Madhav Gadgil, *Science, Ecology and Democracy in India*, Occasional Papers in Development and Society, No. 12, Nehru Memorial Museum and Library, Delhi 2013. For a grimmer view of present prospects see R. Guha, 'Day of the Locust', in C. Chandler and A. Zainulbhai (ed.), *Reimagining India: Unlocking the Potential of Asia's Next Superpower*. Simon and Schuster, Delhi, 2012, pp. 258-267. The growing gap emerges in the potential and the decline of public action is shown in two works separated by a few years. Meenakshi Kapoor, Kanchi Kohli and Manju Menon, *India's Notified Ecologically Sensitive Areas: The Story So Far*. Kalpavriksh, Pune, 2009; Kanchi Kohli and Manju Menon (ed.), *Business Interests and the Environmental Crisis*. Sage Publishing, Delhi, 2016.

unclear how the re-minted alliance of industry and government, intent on growth at all cost, will be tempered.

This shift, prefigured by key shifts in the previous ruling alliance in India, was consolidated and accelerated after 2014. There has been significant roll-back of some of the gains of the previous period such as rules and laws governing forests, water, and land use. We are likely to see a similar pattern emerging in the world's largest economy, the US. This leads us to wonder if environmental concerns only acquire purchase during periods of high growth and tend to wane when growth declines sharply. This was evident in the West when those economies boomed for thirty years after World War II. It was in that context that environmentalism was projected as a concern of the well-off – a point of view that Indian scholars rebutted, often citing community-led efforts in Third World countries. A resource frugal, technologically appropriate and collective approach seemed an antidote to the dominant modes of both the old West and the socialist East. These categories have themselves moved into history. India has become a key emerging economy. Its role in the Great Acceleration has become more not less central.

The challenge of our environmental present and future may or may not track those of the West. What will be the role of history and the past in helping us make our way ahead? If we do adopt key features of the West (high speed roadways and rail, large urban settlements, extensive ports on the coastline, larger formal industrialized sector), how will it reflect in environmental policy and politics? Green energy such as solar, wind and water have become key government and private sector driven programmes, each with major ecological and societal implications. How spaces for nature shrink or grow and how society-nature linkages evolve will be of central importance. We are too close to the changes to make coherent sense of them, but we are all involved in working out how to reshape them. Unlike China, India is a multi-party democracy with public spaces for debate and contestation, but the trials we face are serious. Democracy is good for liberty, but how will it measure up to the dilemmas of ecology? This is now our question of questions.

The debate on how, where and in what form ecological sanity and environmental justice will prevail is an active one. We make no grandiose claims. But ours is a journey of hope as much as an appeal to reason. Nature's present is an invitation to begin anew.

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# Nature and Assam's present

ARUPJYOTI SAIKIA

A quick glance at the newspapers published from Assam brings the reader's attention to the following phrases: river linking, hydropower, erosion, flood, embankment, sand deposition, demand to declare the flood of the Brahmaputra as a national calamity, and so on. These widely popular catchwords are worrying signs of a bigger crisis. Sometime they appear with an alarming tone, often mixed with powerful political slogans. Assam, the land of a hundred rivers, and the mighty Brahmaputra can be another example of human beings' present experience with the environment.

A mosaic of three distinct geographical spaces – hills, rivers and flood plains – has defined the environmental setting of India's northeast. A large number of rivers carry water, silt and strong undercurrents to the Bay of Bengal before watering the flood plains. Away from the rivers, there stand ranges of smaller hills to high mountains. In between the hills and rivers there are stretches of flat floodplain. These rivers, their sands, and waters constantly make and unmake the flood plain. Over the centuries, a complex environmental setting was domesticated by humans and non-humans alike. These distinct geographical spaces housed the rationale for livelihood activities. Environmental constraints ensured that the human domestication of spaces was confined to a limited area.

For instance, in the Brahmaputra valley, the Assamese peasants chose the fertile flood plain – away from the river bed – as best suited for settlement and agrarian activities. They rarely came close to the riverbanks, and did so only when compelled to seek arable land in times of distress. Control of

the flood plain was key to the survival of pre-19th century political kingdoms. Powerful medieval kingdoms would chase away the weaker tribal communities from the flood plain, forcing them to seek shelter deep inside the forested and hilly areas.

The pre-imperial era was the best witness to a careful selection of habitats. Riverine areas and river islands had to wait till the early 20th century for their complete reclamation. The flood plain dwellers, with access to advanced agrarian technology and techniques of warfare, often succeed in retaining control over the flood plain and also constantly push the boundaries of their habitats to the foothills. The distant hills and dense jungles were thus sparsely populated. Hills and flood plain dwellers were dependent on each other, and political and social mechanisms evolved for the sustenance of this relationship.

Of the two million population living in the Brahmaputra valley in 1881, most produced crops, collected fish and only a few lived on trade. Except for a few towns located on either bank of the rivers, their villages were located far away. Their fields spread over sandy alluvium, low lands, and slightly elevated fields. As these fields reach away from both the banks of the Brahmaputra, they usually escaped the whims of the river. During the monsoon, the Brahmaputra's tributaries flooded them or damaged the land by filling it with non-arable sand.

'The people of Assam can be said to be relatively happy. Their land does not require much cultivation. The flood waters of the rivers fertilize it so that the people are able to earn their livelihood with little labour' is what M.K. Gandhi famously wrote about

Assam's floods in the 1920s. Gandhi was not alone. A 1837 report described how 'the rainy season may be called the carnival of Assam; all the labours on the field are suspended; everyone seems happy and contented.' Indeed, the early British writers were usually caught between two views of the landscape of the valley. One view depicted a landscape full of extreme rain, unvarying floods and others depicted the general cheerfulness of the people in the rainy season. If some officials were agreeable to the idea of the fertilizing capacity of floodwater, others were equally pessimistic about the full impact of the floods.

In the 20th century, the flood was increasingly seen as the foremost enemy of the flood plain. The Brahmaputra came to be remembered, and criticized, more for its floods than for any other reason. There may be multiple reasons for this but I would like to emphasize a few. First, the rural peasantry could not manoeuvre the floods, which it had done with some success earlier. People would move out from vulnerable areas if floods threatened their survival. As the 19th century progressed, with sedentary agriculture becoming a norm, the land under tea plantations expanding, and the introduction of jute cultivation since the early 20th century, there was little space for this kind of manoeuvring. A wide range of governmental regulations restricted the free mobility of the peasants. With this, the peasants' freedom to move out to new and less flood prone areas (to overcome localized challenges of floods) came to an end, making them more vulnerable. Concern over loss of crops and floods as a destructive force began to gain currency.

Flood intensity increased especially after the earthquake of 1950, but scientists have thrown light on other dimensions of this increasing intensity.

After the news of tea, floods became the second reference point for Assam. Loss of human property and agriculture was now quantified. Flooding came to be seen as a danger to the well-being of humans.

As floods came to be viewed as a threat to the general well-being of Assam in the last century, governments were expected to regulate the river and adopt measures for flood control. Thus, embankments came to dot Assam's landscape, leading to a reconfiguration of the flood plain or rearrangement of human settlement patterns. This ensured a new form of relationship between the river and the people who lived around it.

In the second half of the 20th century, the river systems came to be encircled with thousands of kilometres of embankments. The scale and impact of this encirclement was much higher than the pre-19th century human experience of rivers. The results became evident quite early. In the wake of the anger expressed by the rural peasantry against embankments, the Assam government, as early as 1957, constituted a committee to look into the effectiveness of such human intervention on the rivers. Bijoy Chandra Bhagawati, a veteran Congress leader, chaired the committee. The Bhagawati Committee mostly encountered an angry crowd who reprimanded the government for its wrongdoings. The charge was that embankments had led to the loss of the land's fertility and caused the disappearance of fish from their fields.

Notwithstanding such serious concerns voiced by the floodplain dwellers, embankments became an integral part of the landscape. Technocrat-contractors-politicians, apart from a section of the rural peasantry, collectively pushed for the expansion of embankments. The latter slowly heaped new-found confidence on millions of

rural peasantry to move closer to the rivers. Areas under agriculture multiplied. But at the same time the undernourishment of fields became more visible. Embankments remained a defence against the penetrating floodwaters for a few years but eventually it was of little effect. Embankments helped in creating confidence among the people, food production increased and human settlements spread out to wider areas. The poor and the vulnerable reached out to the low-lying areas presuming defence from the floods.

Bank erosion had been a factor earlier too but this natural geological process is slowly becoming a threat to humans living along the riverbank. At least until the 19th century, human settlement along the Brahmaputra was rare. The local communities were aware of those places where the riverbank had stability. Guwahati and Tezpur are two towns where urban settlements grew for this reason. But in the 20th century, several factors changed the character of the settlement pattern. This was largely a result of the influx of population into the valley that settled down in the rural landscape.

Within the 20th century, according to Indian census reports, there was a nine times increase in the valley's population, creating a new burden on the flood plain. Most of the incoming population struggled in search of cultivable land. By the end of the 20th century, the valley's population had exhausted its agrarian capacity. Human settlement has now spread all along the highly vulnerable river banks. This has exposed an increased number of the population, mostly belonging to the poorer sections, to the threats of river bank erosion. News of houses and agricultural fields being eaten up by the rivers are now regularly reported. Most rivers on the north bank are under the grip of river bank erosion,

carrying millions of tons of sand (there is no available data). Some rivers quickly spill out the waters into the fields along the river.

In recent months, deforestation in the city of Guwahati has become the talk of the town. A good percentage of people who have squatted on government owned hilly forest lands and wetlands, have identified themselves as ecological refugees from Assam's north bank districts. A good example of such 'violence of nature' is the Dhemaji district. Considered as the rice bowl of Assam, the agricultural fields have now been transformed into a virtual desert due to post-flood sand deposition.<sup>1</sup> A 2006 report reveals that one-sixth of the district's total cultivable land has been rendered unproductive by sand deposition.<sup>2</sup> Consequently, the soil texture has undergone significant transformation.

A study reporting the findings of a soil test carried out during 2009-2010 found that of 346 agriculture plots in 148 sample households comprised 54% sand and 36% silt. Also, the net sown area of the district during 1992 to 2005 had reduced by approximately one-tenth of the total cultivable area. An equal area was reported as fallow and uncultivated land. This is a matter of serious concern.

Essentially, as the rivers push the sands out to the fields, with an increasing amount getting deposited, the land is fast becoming uncultivable. Erstwhile cultivated fields becoming untenable in many places of the northern

bank is a common story. The deposition of sand to a depth of up to 6-7 feet has been reported. Overall, flood-induced sand deposition has changed the soil texture of the district to a significant extent. Removal of this sand is a daunting task for the farmers. Not all of them have sought refuge in urban employment, some are also creatively trying to harness the obstacles, for instance, by changing cropping patterns. Near irreversible damage to the paddy fields and poor agricultural outcomes from the partially degraded lands is forcing people to look for other income and livelihood alternatives outside the district.

The Brahmaputra also regularly gives birth to new lands. These newly born lands, known as *chapor* or *char*, are fertile and rich in nutrients. They do not require a long gestation period to be productive. Given the speedily shrinking ratio of land vis-à-vis population, everyone's eyes are on reclaiming such newly-born lands. When opposing claimants belong to different religious communities, for instance, Hindus and Muslims in this case, such claims over land often manifest as communal riots.

Fish continues to be an integral part of Assamese cuisine. A large floodplain geography of eastern India is bound by a common culinary practice centred around fishes. Fish is still found everywhere and contributed to the nutritional well-being of millions of people for centuries. The Assamese farmer returning home after work, with fish in hand caught on the way, was a typical image. Despite their poverty, millions cherished cuisines prepared from fish. A 19th century scholar thought that 'the Assamese of all classes eat fish, and the consumption is, therefore, very great... the River Brahmaputra appears to be sufficient to keep up an ample supply for the numerous streams which communicate with it.'

Yes, the vast flood plain or the watery land of the Brahmaputra valley offers space for a great range of aquatic life, especially fish. One knows that glacial water and long duration of rainfall kept the rivers dynamic for most of the year. Water's own dynamics, flood-plus dynamics, in the language of river ecologists, ensured a regular renewal of the connection between scattered water space and fishes. The latter obviously turned out to be a crucial and easily available component of the people's nutrition intake. The dead fish left behind crucial calcium from their bones to replenish the floodplain. The increasing complaints about non-availability of fish (only to be replaced by commercially produced fish from states like Andhra Pradesh or Uttar Pradesh) is essentially an anxiety about the life and times of embankment-encircled rivers of Assam.

Aquatic scientists now see the long stretch of embankments across the rivers which prevent the inundation of the flood plain as standing against the biological process of the spawning of various fish species. The result is evident: most Assamese households now complain about a lack of fish from the local rivers thus depriving millions of an important source of nutrition. A dynamic floodplain is crucial for the survival of a culinary culture as well as human well-being.

Technocrats or policymakers view the river and its flood plain differently from the way Assam's rural population looks at it. The dominant view is that the waters of the Brahmaputra are a waste. This enormous gift of nature must be harnessed for the well-being of mankind. Many from the valley agree with this opinion. The idea of the construction of hydropower in the river basin of the Brahmaputra has been around since the 1920s but it was dif-

1. Kalyan Das, 'Economic Manifestations of Changed Landscapes: Resources, Regulations, and Livelihood in an Upper Brahmaputra Valley'. Unpublished paper presented at NMMML conference, 2012.

2. NRMF, Study of Siltation of Rivers, its Nature, Extent and Magnitude of Problems and their Remedial Measures in the Upper Catchment of Brahmaputra River in Assam. Unpublished Report, National Resource Management Foundation, Guwahati, 2006, quoted in Kalyan Das, *ibid*.

difficult to realize this dream. When the Indian government pushed for a dam upstream of the Brahmaputra immediately after India's independence, the 1950 earthquake came as a natural warning. However, towards the latter decades of the 20th century, the need for human control of the rivers came to be advocated by people of the state.

A few also argue that the waters of the Brahmaputra have hardly been put to use, making China a powerful claimant in case of any international dispute around user rights. Such arguments are not only naïve but also miss the complex story of human as well as non-human dependency on the flood plain. Unfortunately, such views have gained wide popularity to lobby for hydropower projects in the Brahmaputra river basin.

The idea that the waters of the Brahmaputra were being wasted became a powerful argument in the latter decades of the 20th century. Given a general water scarcity in India's South and other regions, the waters of the Brahmaputra were seen as a solution. River linking remained a powerful idea and was publicly articulated. It was in 1992 that the Government of India began 'toying with the lofty idea of transferring Brahmaputra water all the way from the heights of the Himalayas down to the southern river systems' which would augment 'on the way the flow of the Hooghly river for the maintenance of the Calcutta port.' This was part of a grandiose plan to create a 'national water grid to carry surplus water available in some regions to water deficit areas.'

The proposal was to construct a gravity canal linking the Brahmaputra's two tributaries, i.e. Manas and Sankosh with the Ganga and other peninsular rivers. The Indian planners envisaged intercepting the flows of these two

along with small tributaries of the Brahmaputra through a 473 km long canal starting from Manas and dropping into the Ganga upstream of Farakka. A proposal was mooted to construct water storages on the Manas and Sankosh to be released during the dry season.

Protests against the Indian government's river linking project, which would drain away water from a few rivers flowing through the west of the valley, was an immediate response to this proposal. Parallel to this, anti-hydropower protests gripped Assam since the last few years. This forced the Indian government to temporarily stop work on the Lower Subansiri hydropower project.

The Brahmaputra and its flood plain (watery lands of Assam) of the present offer a unique example of a creative space for both humans and non-humans. The Kaziranga National Park is an example where, despite odds, non-humans have created a very supportive environmental space. The idea of floodplains is crucial to the very survival of the Kaziranga National Park. The Brahmaputra and its tributaries, silently or often visibly, contribute to the making and recreation of the flood plain. This is contrary to the technocratic view of the river and its flood plain. Despite nature's own challenges, humans also creatively adjusted in the dynamic flood plain.

By the early 21st century India has slowly emerged as a global economic power. Along with it has come a never ending appetite for the appropriation of natural wealth for the consolidation of this economic strength. The country, during this ambitious voyage scaling the great heights of an economic power, considers Assam's rivers and her rural landscape, characterized by the flood plain, as an anticlimax of India's new found economic power.

How to make an indolent floodplain and its rivers a partner in India's new economic *avatar*? Technocrats and Indian policymakers convincingly argue that the production of hydropower is the only possible answer. This bold technocratic affirmation nevertheless comes without any promise of recreating prospects for coexistence of the rural peasantry and the floodplain. Floodplain dwellers, already facing nature's wrath, are clearly not enthusiastic with this answer. They insist that their organic relationship with the floodplain not be disturbed.

The human experience of rivers and flood plain in Assam is undergoing rapid changes. In the last century, few could have imagined such a dramatic transformation. For instance, floods now come with great intensity. Erosion now hits a greater number of families. On the other hand, human efforts to regulate floods no more holds true. The government investment in such works of regulation has significantly declined, as it increasingly expresses its unwillingness to see such works as a public good. The human-nature equilibrium, centred around its flood plain and created over several centuries, looks like reaching a saturation point in the near future. However, the crisis has yet to enter the imagination of a wider population, except for those who have personally experienced it.

One cannot foresee what will happen next, but the flood plain and rivers will inevitably continue to be a companion to the human journey. The humans (and also the non-humans) will continue to brave the ferocity of nature. But it is also time for a deep reflection to comprehend this complex human journey in nature's pasts. It is also a time to creatively nourish this man and nature relationship by learning from the environmental pasts.

# Can a coffee company save forests?

ARSHIYA BOSE

A few years after I completed my doctoral research on markets for biodiversity conservation, I started a private limited company in an attempt to conserve forests in the Western Ghats. While this may at first seem like a logical trajectory, the backstory is that my research was critical of market based ideas. Both narratives – the academic inquiry into markets as well as the more entrepreneurial journey – are forays in an attempt to understand one of the most complex, unpredictable and yet relevant networks of our times.

The idea that markets can be used to drive social and environmental change is not new but clearly uncommon in the nature conservation space in India. In the recent past, normative benchmarks for social and environmental justice were scripted by governments, labour unions and religious institutions. However, in the current scenario of globalizing economies, ideas and cultures, where social and environmental issues can be transnational rather than national, norms about

what is and is not acceptable are increasingly being vocalized by a new set of actors – NGOs, businesses and public-private partnerships. These norms can take the form of ‘naming and shaming’ bad practices or creating market based incentives to follow good ones.

Outside the nature conservation space, examples of market based tools include certifications like the Fair Trade label that attests to a particular commodity being bought and sold via equitable trading conditions. So as a conscious consumer, I can purchase a guilt-free or feel-good shirt because the clothing label carries an additional Fair Trade or Fair Wear or Direct Trade label or has stitched on it some information about the factory’s working conditions (e.g. ‘American Apparel is sweatshop free’).<sup>1</sup> Similarly, if I want a more ethically crafted shampoo, I might opt to buy a brand that is labelled ‘Cruelty Free’ or ‘Against Animal Testing’.

1. <http://www.americanapparel.net/aboutus/verticalint/workers/>

In fact, the US based B-Lab now certifies businesses as B-Corporations if they meet the highest standards of social and environmental performance. Their tagline is 'using business as a force for good' and amongst the 1200+ certified B-Corporations, some of the more well known companies include Patagonia Inc (sells outdoor apparel and tools), Alter Eco (sells Fair Trade chocolate and quinoa), Roshan (Afghanistan's largest telecom provider), Natura (Brazil's largest cosmetics company), Etsy (an online marketplace connecting small creative businesses with buyers) and Ben and Jerry's (an ice cream company and subsidiary of Unilever that promotes responsible practices across its supply chain). Some businesses operate by carrying labels from third party certifications (e.g. Fair Trade) and others have their own internal monitoring systems (e.g. Starbucks has a C.A.F.E. practices standard which it follows whilst sourcing coffee beans).

In India, the proliferation of impact oriented businesses has created an active social entrepreneurship ecosystem. Spend five minutes on platforms like Your Story or The Better India and you will encounter numerous stories of entrepreneurs leaving behind corporate careers to build technologies for communication, education, financial inclusion, health care and agricultural services for under-served communities in India. A well known example is that of Ramon Magsaysay awardee, Harish Hande, who started his for-profit business SELCO twenty years ago with the purpose of making solar power technology and smokeless cook stoves available to over 2,00,000 homes across Karnataka. Of course, many entrepreneurs also claim that Bharti Airtel is amongst the largest social enterprises in the country with 84 million of its 188 million subscribers

coming from areas with otherwise poor mobile telephony (but debates on what constitutes a social enterprise is the subject of an altogether different article).

The point here is that whatever shape and form market based tools might take, they operate on one key premise: that there is a demand (often at a premium price) for those particular goods and services being traded. Yvon Chouinard who founded Patagonia surely started his company with the strongly held belief that consumers care and are therefore willing to pay a premium for the additional investments that Patagonia would need to make towards using recycled materials and switching to organic cotton, not to mention bearing the higher costs for obtaining Fair Trade certification.

As a conservation entrepreneur and academic, I am confounded about the nature and fate of market based tools for conservation and, in particular, need to ask two questions: (a) Do good conservation decisions also make good business decisions? (b) Is there a market for biodiversity related goods and services? My disclaimer is that my love for the subject of geography and, in turn, its love for place-based analysis allows me to explore these questions within a fairly narrow canvas of what I know best – promoting sustainable coffee production through eco-certification labels!

In the nature conservation space, labelling has been used to distinguish a range of products in the timber and agrifoods industry. For example, the Forest Stewardship Council (FSC) accredits timber harvested from forests managed according to FSC's environmental standards. Similarly, the Marine Stewardship Council (MSC) recognizes and rewards sustainable fishing and provides 'eco-labels' on seafood that can be traced back through

its supply chain to fisheries that have been certified by the council.

The coffee industry has been one of the most active spaces for labelling. Walk down the aisle of a supermarket in North America and Europe and you will encounter a diversity of coffee packets, each imprinted with a label or illustration symbolic of the production story: resplendent tropical birds, faces of farmers and geographic origins and a certification stamp that says Fair Trade, Organic, Bird-Friendly, UTZ Certified or Rainforest Alliance. Incidentally, the closest one would get to drinking certified coffee in India (other than Organic certified coffee) is either at a Costa Coffee outlet that serves Rainforest Alliance certified coffee or if one directly buys coffee beans from a plantation that was Rainforest Alliance or UTZ Certified.

Contrary to the apparent scarcity of accessing certified coffee in India, a fair number of coffee farms are actually Rainforest Alliance certified. My own doctoral research covered over 150 farms in Kodagu district alone but certification agencies claim more than 300 farms are certified across just the two states of Karnataka and Kerala. The Rainforest Alliance certification constitutes a set of environmental and social standards that are aimed at protecting biodiversity. The explicit push is to incentivize producers through a price premium to discard damaging practices like spraying of toxic chemical pesticides, hunting of wildlife or indiscriminate conversion of forest land to plantation. Once a farm is audited by an external agency and found to qualify, its produce is eligible for a price premium in the market. Buyers (mostly exporters) typically purchase coffee at a premium of between Rs 1-2 per kilogram. These buyers can then also label this coffee as Rainforest Alliance certified, as in turn their buyers can and

so the beans travel up along the value chain.

However, at the farm level my research threw up some counter-intuitive findings. Researching the environmental and social impacts of Rainforest Alliance certification, the question I asked was whether certified farms operated differently as a result of having taken on board the certification standards. Interestingly enough, I found that certified farms were no different from conventional farms and this was true across a range of different environmental and social parameters. For example, both certified and conventional farms typically had comparable use of chemical pesticides (Rainforest Alliance only prohibits chemicals banned by the EU), waste management facilities, labour practices and working conditions. With regards to biodiversity, I observed that both certified and conventional farms had the same abundance and composition of shade trees.<sup>2</sup>

Here I take a slight diversion to describe the importance of what I have just referred to as shade trees. Coffee is a plant that has a somewhat lukewarm relationship with other trees that might coexist on a farm. The canopies of these trees shade the coffee bush from excess sunlight, thereby regulating the temperature and humidity, especially during prolonged periods of drought. At the same time, the number of fruits formed per coffee plant decreases when shade cover is more than 48%,<sup>3</sup> which means that often the quickest way to ramp up coffee yield is to remove shade trees or heavily modify the branches to reduce the spread of their canopy. This is a

trend observed in Indian coffee from the 1970s.

A study by the French Institute of Pondicherry showed a significant loss of tree cover in coffee producing districts like Kodagu between 1997 and 2007 owing to the removal of shade trees from privately owned farms.<sup>4</sup> Similar observations were made about the impact of this transition from shade to sun farming on biodiversity. Shaded coffee plantations provide refuge for plants, insects and other arthropods, birds and mammals and, though fewer research projects have studied them, reptiles and amphibians. The role of such shade coffee farms is especially important in regions with increasing fragmentation of forest like in much of the Western Ghats.<sup>5</sup> So thinning shade trees from coffee farms impacts the abundance and diversity of a range of species (although we cannot be sure about the time frame in which this negative impact can be seen).

At the end of my PhD work, all my observations about certification were pointing to the conclusion that except for a few minor modifications (e.g. certified farms followed somewhat more systematic documentation of farm management processes), eco-certification for coffee in Kodagu promoted business as usual. I also had

3. L. Soto-Pinto, I. Perfecto, J. Castillo-Hernandez and J. Caballero-Nieto, 'Shade Effect on Coffee Production at the Northern Tzeltal Zone of the State of Chiapas, Mexico', *Agriculture, Ecosystems and Environment* 80(1-2), 2000, pp. 61-69.

4. C. Garcia, S. Bhagwat, J. Ghazoul, C.D. Nath, K.M. Nanaya, C.G. Kushalappa, Y. Raghuramulu, R. Nasi and P. Vaast, 'Biodiversity Conservation in Agricultural Landscapes: Challenges and Opportunities of Coffee Agroforests in the Western Ghats, India', *Conservation Biology* 24(2), 2009, pp. 479-488.

5. I. Perfecto, R.A. Rice, R. Greenberg and M.E. v.d. Voort, 'Shade Coffee: a Disappearing Refuge for Biodiversity', *BioScience* 46(8), 1996, pp. 598-608.

good reason to believe, through a number of interviews with Rainforest Alliance staff in the U.K., that the environmental and social standards in India were not about to change too dramatically anytime soon. Rainforest Alliance was not keen to strengthen their standards beyond the 'lowest common denominator'.

For example, there was little willingness to add-on mandatory criterion that specified a minimum abundance or diversity of shade trees or discourage chemical pesticides altogether. From a social standpoint too, I encountered smallholder growers who lacked market channels, access to production costs and inputs and agronomic support. In the BR Hills, Karnataka (where we currently source coffee from), growers receive 20-30% less than the market price on any particular day. This concerned me as a conservationist. It was clear that social and environmental problems were aplenty but the current model of certification (indeed this market tool) did not do enough.

The explanation of whether certifications are implicitly designed to achieve little is relevant. The consequences of a certification standard that fundamentally altered the structure and governance of global coffee value chains in favour of a more equitable and environmentally sound practice would be mammoth-like. My thesis explored this as well and what I found left me quite jaded about global blueprint solutions and the role of academic research in bringing about a meaningful impact.

I started Black Baza Coffee Co. with the aim of taking my learning from eco-certification, deconstructing the environmental and social standards to make them more site specific and create a more farmer friendly process. Because certification does not always

2. A. Bose, C. Garcia and B. Vira, 'Does Eco-certification in Coffee Promote "Business as Usual"? A Case Study from the Western Ghats, India', *Ambio*, 2016. Available online at: DOI: 10.1007/s13280-016-0796-3

guarantee a buyer, I quickly realized that we would not only have to set and monitor farming guidelines but also be an active buyer of coffee. Today, coffee growers who are willing to join our programme sign an agreement to maintain a certain abundance and diversity of indigenous trees on their farms. Our agreement also restricts the use of chemical pesticides and reduces chemical fertilizers to 1.5 kgs per plant for the first year, with the aim of transitioning to zero. In turn, we guarantee a buy-back of coffee at a 15% market premium and help build capacity to improve the quality of coffee.

Each packet of coffee sold under our label can be traced right back to the farm from which the beans were harvested so that the coffee drinker knows that the coffee comes from Pallakere Estate in Kodagu or from Achukkegowda's half acre farm in BR Hills. A number of our coffees are also single-estate. We use only the best quality grade beans from the farm, especially since we garble beans ourselves (none of our beans are pest or fungus infested). We can guarantee our online customers that coffee will be delivered to their doorstep within three days of roasting.

We custom grind coffee beans depending on whether our customers brew coffee in a french press, aero press, espresso machine, moka pot, pour-over or a classic steel filter coffee set. Our quality check, roasting and custom grinding sets us apart from many coffee players in the regular market and positions us as a specialty coffee brand. Within two business years, we have been able to work with over 180 growers in the BR Hills and Kodagu, manage approximately 200 acres (we are still under mapping) under shade grown farming and retail our coffee across the country. We have

also discussed raising funds through impact investments and are being incubated at IIM Bangalore's entrepreneurship cell. However, the subject of this article is not our achievements and milestones but what this journey into mainstream market tells us about market based conservation, however young our company might be.

The entrepreneurial journey, like the academic journey (particularly in Human Geography) has been non-linear and puzzling with many contradictory truths. One of the most important questions (both business-wise and philosophically) has been about what we are selling. In a project like this, does one sell coffee or biodiversity or a bit of both? It is critical we answer this soon because that will determine our trajectory into what activities we invest time and funds.

We currently label our coffees '100% Biodiversity-Friendly' and all of our different blends are tributes to some iconic species from the Western Ghats. For example, our pure Arabica is called the 'Wanderoo' after the lion-tailed macaque. We have a Luna Roast, Black Baza Roast, Otter, Ficus and The Whistling Schoolboy Blends. The packaging has a ton of information about our project – our vision for shade-grown coffee, the farming philosophy, local history of the farm and finally a table showing our impact metrics: 180 farms, 200 acres, 2000 trees protected, 150 native tree species, 25 rare tree species and 988 people directly impacted. The question is, has sharing (or selling) our story worked? My opinion is a resounding no.

Contrary to my impressions, a recent Stanford based study found that labels like Fair Trade could add a competitive advantage to differentiate the same products on a supermarket shelf. Another study of coffee buyers

in Belgium found that people were willing to pay as much as 27% more for Fair Trade certified coffee but only 10% of the 808 respondents were willing to do so.<sup>6</sup> Yet another study showed that all other features being equal (price, quality and packaging), consumers are more likely to buy a certified product. It appears that how consumer demand and markets respond to the non-physical features of a product is a grey area. Second, and more important for our work, is that selling the biodiversity feature may be far more challenging than we had initially thought.

Our coffee has sold not only for its symbolic but also the physical characteristics: roasting profile and freshness, flavour notes and diversity of blends to suit varied customer preferences. The most frequent (almost embarrassingly so) feedback from customers is that we have too much information on biodiversity and not enough on the coffee flavour itself. We organize numerous coffee events in Bangalore city as a way to connect consumers to growers and to do social advocacy on 'what goes into your cappuccino' though an overwhelming majority of questions from participants are about different coffees (Costa Rican Tarrazu, Jamaican Blue Mountain, Ethiopian Sidamo) and ways to brew them.

In fact, the advice from every marketing expert (and we have met dozens) has been to let go of the feel-good biodiversity story; at most keep it as a byline. Apparently few coffee drinkers, discerning or otherwise, care about the impact of coffee farming on endemic and endangered wildlife of the Western Ghats or that 200 years of shade grown farming in India is

6. P. De Pelsmacker, L. Driesen and G. Rayp, 'Do Consumers Care About Ethics? Willingness to Pay for Fair-Trade Coffee', *Journal of Consumer Affairs* 39, 2005, pp. 363-385.

now being lost. We were told that we could squeeze the smallholder angle to some extent but even that would lose its stickiness with consumers. There appears to be no demand for biodiversity friendly coffee.

The implications of this are that if we want to continue with conservation work, our efforts have to be equally if not more heavily invested in coffee, marketing and technology. Our coffee experience has to surpass that of any other specialty coffee company – biodiversity friendly or otherwise. Would this strategy compromise our conservation work? If the aim is to be a good business, it would. We would have to procure coffee from only those plantations whose coffee beans are pulped, dried and processed with utmost precision in state-of-the-art facilities (e.g. in drying racks above the ground to prevent the slightest chance of excess moisture). We would determine our price premiums based on quality factors rather than the number of shade trees. We might even limit the number of farms and regions we work in, proposing that fewer farms with higher yields would make the most business sense. In doing so, we would most likely have to exclude smallholder farms that are often located in forest fringes or corridors between fragments. No doubt this would be both a poor conservation strategy as well as a socially exclusionary one.

On the farm side of this market, the question is whether financial incentives work as catalysts of land use change. While my research on Rainforest Alliance showed that certification price premiums were not a catalyst, I find that with Black Baza Coffee Co. the picture is considerably different. Our structure wherein we guarantee a buy-back, develop trust and goodwill, prove that we want to associate with farms for the long-term,

help with quality improvement, give growers visibility through single-estate labelling and, over and above this, also provide a 15% price premium, seems to be an agreeable partnership. In our case, the market incentive for farmers – in this case a price premium – albeit important, is only one of a suite of different catalysts. If we did not present the entire set of benefits, would a price premium be adequate? I believe so but some growers may prefer much higher premiums (one grower proposed 25%), especially if the decreased coffee yields from high shade-cover turn out to be significant. Re-loop these premiums into our hypothesis of demand for biodiversity-friendly coffee and we clearly face an uphill challenge.

This is what happens when geographer-conservationists step into the real world; they attempt to solve far too many problems all at one go – in our case, the conservation-livelihood-farming problem and the market. Despite the odds, there is a solution(s) here somewhere that will emerge once we have tried various market permutations. In an interview, Yvon Chouinard said, ‘We have very environmentally aware customers, but I would guess that maybe 10% care that our cotton is grown organically in Turkey. Organic farming is growing around 30% a year, but that’s mostly because you can taste the difference, and there’s an obvious health value. There’s a selfish motive for eating organic foods. But when we’re telling customers to care about how cotton is grown in Turkey, that’s still a stretch for them.’<sup>7</sup>

So one case for optimism is to rejoice that we are not alone; the second is, what a good friend and colleague once pointed out, that if we can’t do conservation with coffee, then most other crops don’t stand a chance.

7. <http://insights.som.yale.edu/insights/does-sustainability-matter-consumers>

# Disaster by design

NITYANAND JAYARAMAN

A cataclysmic natural event does not qualify as a disaster unless human lives and property are affected. The very framing of an event as a ‘natural’ disaster pre-concludes at least a partial culpability of nature’s actions over peoples. But living as we do in the Anthropocene – a period where human actions are the dominant influence on geology, climate and the environment – it is debatable whether at all there is anything left that is natural about nature.

Every flood, cyclone, heat wave, drought or earthquake brings in its wake boringly trite debates on whether nature’s fury or human folly was to blame for the disaster. Even before the dust settles on these conversations, an equally banal question, ‘So, what is the solution?’ is posed, sometimes as a query, but more often as a challenge.

Not much time is devoted to exploring what it is that we are seeking an alternative to, whether or not the formulation of the problematique is robust, and if a solution can at all be given within the self-imposed restrictions of political and financial viability.

The December 2015 floods in Chennai resulted in the predictably ritualistic soul-searching that follows every natural disaster. A litany of usual suspects was invoked – unprecedented rainfall, inadequate drainage, poor urban planning, ill-maintained stormwater drains, encroachments in waterbodies, lack of infrastructure, corrupt politicians, unscrupulous builders – along with a not-so-usual suspect, namely, climate change.

The city and state administration blamed the flooding on unprecedented rains. A report in NDTV quotes

Tamil Nadu Chief Minister, the late J. Jayalalithaa as saying, ‘Losses are unavoidable when there’s very heavy rain. Swift rescue and relief alone are indicators of a good government.’ Made in mid-November 2015, when the worst was still to come, the statement was intended to normalize a human-made disaster, and gloss over the pathology of urban development under successive administrations.

There is no basis to claim that the rains were unprecedented, considering that the city has unbroken rain records only from two monitoring stations and for only less than 250 years. That duration is a poor sample to predict the behaviour of nature that has evolved over four billion years. Also, in the climate uncertain times that we currently live in, the unprecedented may become an annual phenomenon.

Addressing Chennai’s flooding problem is fraught with dilemmas that arise from building a city on a flood plain. Chennai is not alone, though. Tokyo, Srinagar, Mexico City, Bangkok, Baghdad and Paris are just a few of the many cities that are at risk from

flooding because of their location. Some cities are better prepared than others, but none is risk-free.

Consider the case of Tokyo. If engineering interventions were the answer, one would expect this technologically sophisticated Japanese city to be well equipped to deal with floods. The floods of September 2015, which struck the Kanto region, northeast of Tokyo, were triggered by torrential rains that swelled the Kinugawa river that flooded Kanto. An article in *Japan Times* warned that, ‘It’s just a matter of time before Tokyo is struck by the same magnitude of flooding... and should the capital remain unprepared it will most likely be ‘annihilated’.<sup>1</sup> The article quoted Noboyuki Tsuchiya, a civil engineer and author of *Shuto Suibotsu* (The Capital Submerged) who said that if similar rains fell over Tokyo and swelled the Arakawa or Tone rivers, ‘the flooding would lead to unprecedented fatalities and an economic catastrophe that would send shock waves around the world.’

A post-mortem of Chennai’s floods raises a number of difficult

questions: Can Chennai continue to grow without eroding its resilience to natural shocks? Can flood mitigation measures be carried out without exposing Chennai to other natural extremes such as storms, heat waves and water scarcity? Can hard and potentially unpopular decisions, such as removal of encroachments from sensitive areas, be taken in a political system where the government changes every five years? Can the city go about business as usual and still hope to cope with extreme weather events that will increase in frequency and intensity in the years to come?

Chennai is naturally flood prone as it was built on the flood plains of three rivers – Adyar, Cooum and Kosasthalaiyar. But its location on the high energy Coromandel coast and its tropical hot climate make the city prone to a lot more than merely a flooding risk. May and June are the heat shock season. Cyclones and storm surges visit between October and December, bringing with them gale force winds, tidal surges and copious rainfall. Despite the substantial rainfall – which averages 140 cm annually – Chennai is perennially insecure about drinking water. In November 2015, before the spate of disastrous rains began, only 535 million litres of water was being supplied daily as against a requirement of more than 800 million litres a day.

The city is not without its defences, though. The city is bound on the south and north by the Kovalam and Ennore creeks, and to the east by the Bay of Bengal. Low-flung hills dot the western edges of the city. Along



Survey of India, 1970.

1. ‘Tokyo at High Risk of Devastating Floods, Experts Say’, *Tokyo Times*, 21 September 2015. <http://www.japantimes.co.jp/news/2015/09/21/national/tokyo-high-risk-devastating-floods-experts-say/#.V3NGg5fPFyQ> Downloaded on 29.06.2016.

the city's southern edges lie the Pallikaranai marshlands—once sprawling, but now reduced to less than a tenth of its original size as garbage dumps, glass and steel buildings housing IT companies, and infrastructure and housing to service these industries have sprouted within the wetland.

Sandy beaches and dunes carpeted with vegetation like screw pine and palmyra retard violent storms, soak up fresh water and keep the sea from intruding too far into the groundwater. Mangrove-studded estuaries and salt marshes are biological marvels that also serve as shock absorbers during the monsoon by buffering flood waters and regulating their exit to sea.

In the pre-industrial era, the areas that now make up Chennai were settled as temple towns and agricultural villages either around naturally occurring wetlands like the Pallikaranai or by carving out irrigation tanks (called *eri* in Tamil) in the gently undulating flood plain. Eris mitigate floods and improve water security by storing rainwater and recharging groundwater. A 2011 article in *The Hindu* cites a IIT Madras research project that found approximately 650 waterbodies existed in the Chennai region.<sup>2</sup>

The region's humid tropical climate is conducive for vegetation which is characterized by scrub, grasslands and patches of tropical dry evergreen forests. Large trees were only found in pockets and usually where residents planted them to make the area more habitable. Tree cover is vital in regulating microclimate and temperatures.

If the wind, water, fire combination of factors is taken seriously,

Chennai would find itself severely restricted in its mission to expand its urban footprint and grow by developing its manufacturing, commercial and service industries. The fact that modern Chennai is less prepared and more exposed than pre-modern Chennai to floods, cyclones and heat indicates that administrators and planners have gone about their jobs without regard to the region's vulnerabilities.

From an unassimilated scattering of agrarian villages and seaside fishing hamlets, Chennai's transformation as an urban cluster with thriving trade and industry began with the arrival of the British East India Company in 1639. The prevailing Tamil land use at the time focused on ordering life around the *eri*. Habitations were located up gradient of the *eri*'s waterspread, and farmlands and grazing areas (*meikal*) below. The *meikal* and farm plots were designed to be flooded as the water brought with it nourishing silt.

Dating back to the Chola times, land in Tamil villages were classified as *warapet* (taxable and assessed wet lands), *tirwapet* (assessed dry lands), *tarisu* (waste—recently uncultivated or historically uncultivated lands) and *poromboke*. *Poromboke* denoted unassessed lands reserved for communal and public use, including commons such as cremation or burial grounds, roads, lakes, tanks, rivers, forests, grasslands, grazing grounds and the margins of roads, waterbodies and the sea.

Barring the *natham* *porombokes* where dwelling units were permitted, the commons were left to remain open to the skies. No construction was permitted on it, and there were prohibitions and strict regulations discouraging the diversion of *poromboke* for any other land use. This categorization has survived with some modifications in the current revenue classification as

handed down by the British with the Ryotwari system.

Keeping wetlands and other communal use *porombokes* off limits for construction was sensible from a hydrological perspective. Rainwater run-off is greater in built up areas than in open spaces with or without vegetation. For the same quantum of rainfall then, watercourses and waterbodies down gradient of built up areas will reach their carrying capacities far quicker than they would if the catchment were left open. It is a fact that the *poromboke* is the backbone of our economy.

Over the years, in colloquial Tamil and common usage, the word *poromboke* has come to be used as a pejorative to refer to people or places that are worthless. Not surprisingly, the etymological corruption of the word has closely mirrored the physical degradation of the commons. A large share of the blame for the 2015 floods can be laid squarely on the wanton desecration of the *poromboke*. In its bid to become a world-class investment destination, Chennai—like many other cities—has foolishly opted to replace the natural infrastructure of survival that the *poromboke* provides with the infrastructure for international commerce.

Since the 1940s, successive committees set up to look into the causes of floods have pointed to the encroachment of watercourses and waterbodies as a key contributor to urban flooding. Concerned citizens and NGOs have filed several Public Interest Litigations (PILs) seeking to remedy the situation. But the PIL is not a magic bullet. Courts of law are not equipped to undo the damage caused by encroachments into waterbodies. Only unlicensed structures are encroachments as defined by law. Under law, a license is all important; the location of the structure does not matter.

2. A. Srivathsan and K. Lakshmi, 'Chennai's Vanishing Waterbodies', 6 June 2011. <http://www.thehindu.com/news/cities/chennai/chennai-vanishing-waterbodies/article2099315.ece>. Downloaded 30.06.2016.

The 35 km Mumbai Coastal Freeway is proposed to run through the sea, requiring the conversion of sea space into land. From the perspective of the sea and nature, the road is an encroachment. Mumbai's fisherfolk too may see that as an encroachment. The Coastal Regulation Zone Notification, 2011, too prohibited such reclamation. But that changed last December when the then Environment Minister Javadekar amended the CRZ Notification legalizing the proposed reclamation for Mumbai's sealink road.<sup>3</sup> Human law can be amended to make exceptions. Nature's law grants no exemptions and cannot be changed by the offer of a bribe or compelling arguments. As far as nature is concerned, the license, even one endorsed by the highest court of law, does not matter if the location is wrong.

In Chennai, government is one of the biggest wetland encroachers. They and many elite institutions and buildings have licenses to encroach. The poor, on the other hand, are pushed by an unequal and unwelcoming society to build their huts on the margins of the sea, roads, rivers and lakes. The dwellings of the marginalized are mostly unlicensed – insecure of tenure and vulnerable to the vagaries of nature.

The survival encroachments of Chennai's poor are a threat to themselves more than they are a threat to flooding the rest of the city. Unless they occupy entire waterscapes, the thatch and ramshackle constructions built on the margins of seas, watercourses and waterbodies lack the structural tenacity to block or divert waterflow. Elite encroachments, on

the other hand, are more robust – Chennai Metropolitan Development Authority (CMDA)-approved layouts, National and State Highways, IT Special Economic Zones, and state of the art transport corridors may have legal sanction but come rainy season, they endanger themselves and others by blocking and diverting floodwaters.

The issue of 'illegal' encroachments and its removal is imbued with a class bias against the poor. After every flood, cyclone or tsunami, the judiciary and the government renew their resolve to rid the city's waterbodies or the coast of encroachments by making lofty declarations to that effect. The actual action on the ground is restricted to police assisted evictions of the poor from their dwellings on the banks of the Adyar or the Cooum or another waterbody. In December 2015, the city government announced that it would remove hutments from river and canal banks and relocate oustees in Tamil Nadu Slum Clearance Board tenements in Perumbakkam and Ezhil Nagar. Both sites are located in low-lying flood prone areas. Cyclone Vardah, which visited Chennai in December 2016, left a trail of destruction in its wake, caused mostly by high-velocity winds. At 203 mm over a 24 hour period, the rains were heavy but nowhere near the downpour of December 2015; Chennai for most part escaped flooding. Perumbakkam, however, was instantly flooded and remained underwater for four days.

Flood mitigation is merely one of the pretexts to clear hutments from waterways. At various times, and sometimes simultaneously, the state and city governments have justified slum clearance citing a need for infrastructure development, eco-restoration or city beautification. Sifting through the maze of factors that contribute to flooding or the degraded state of the

city's waterbodies, successive governments unerringly hone on 'slum eviction as an achievable first step.'<sup>4</sup>

In 2009, the DMK government announced a Rs 1200 crore plan to restore Chennai's rivers, particularly the Cooum, by focusing on one aspect – 'removing encroachments in the city limits and developing the areas retrieved into parks.' Though touted as a 'river restoration' project, this effort was merely a questionable exercise in beautification. The insincerity of the government's claims to care for the river were exposed when the same government simultaneously announced the 19 km Elevated Expressway project between Chennai port and National Highway 45. Rejecting a shorter, straighter connection, the alignment of the proposed expressway followed the curving path of the Cooum.

As justification, the project document claimed that, 'Construction of such project road will result in the evacuation of slum areas present along the riverbank.'<sup>5</sup> In the government's scheme of things, the obvious hydrological impact of running a road on the Cooum riverbed was a justified risk when weighed against the twin benefits of freight transport and slum eviction.

The last two decades have witnessed a rash of projects that pursued this calculus of prioritizing short-term commercial considerations over the ecological services offered by wetlands. Politically and financially, building on wetlands is an attractive

4. Karen Coelho and Nithya Raman, 'Salvaging and Scapegoating: Slum Evictions on Chennai's Waterways', *Economic and Political Weekly* XLV(21), 22 May 2010. <http://www.environmentportal.in/files/Salvaging%20and%20scapegoating.pdf> Downloaded 29.06.2016.

5. 'Final Feasibility Report for 4-lane Elevated Expressway from Chennai Port to Maduravoyal on NH-4', Wilbur Smith Associates for NHAI, New Delhi, 2008.

proposition: land acquisition costs are reduced as the poromboke lands are vested with the government; and politically fraught negotiations with private land owners can be averted. That is why most of the state assisted projects like roads, rail corridors, SEZs and industrial estates have come up wherever poromboke lands, usually waterbodies, were available.

The 337 acre ELCOT IT SEZ in Sholinganallur housing Wipro, Tech Mahindra, Satyam and Cognizant was carved out of the Pallikaranai marsh and sits at the point where waters from the north, west and south of the marsh exits into the Okkiyam Maduvu canal. The Siruseri IT SEZ set up by state owned SIPCOT is likewise located at a point where waters from three directions converge to exit to the Buckingham canal and Kovalam creek. The Mass Rapid Transit System's elevated rail corridor extended to serve the newly developed IT corridor runs along the Buckingham canal before veering west through the Pallikaranai marshland. An extension to the second runway at the Chennai International Airport was built almost entirely over the riverbed of the Adyar – exposing both the airport and the surrounding areas to flood risk.

High-speed, multi-lane roads, including the East Coast Road and the Old Mahabalipuram Road (IT Corridor), have been laid with no regard to water flow. Raised several feet above the level of surrounding areas, these roads are veritable dams that block east-flowing waters.

To accommodate the population boom that followed the IT explosion, the government reclassified lakes, grazing and marshland porombokes in the city's south as sites for residential layouts and gated communities. The case of Velachery (see maps) is telling. Located at the southern edge

of the Chennai Metropolitan Area (CMA), Velachery is bound on the northern side by the Velachery eri (tank) and on the west by the Adambakkam eris. A 1970 Survey of India topographical map identifies the areas to the northwest and west of Velachery and Adambakkam lakes respectively as settled habitations (natham), and the areas to the east and south of the two lakes as a grazing or meikal poromboke.

In a matter of decades, the Velachery lake has shrunk to a quarter of its original water spread of 108 hectares. The Adambakkam eris and the vast low-lying meikal plains below the Velachery tank are now buried under a maze of buildings.

The demand for land hungry infrastructure did not just happen. It was intentionally designed. Between 1991 and 2001, CMA's population increased from 5.8 million to 7.04 million.<sup>6</sup> Rather than check the growing urban population, the central and state governments worked out schemes to increase it even further. In 2005, the UPA government announced the Jawaharlal Nehru National Urban Renewal Mission, which noted almost ruefully that only 28 per cent of the India's 1027 million

population (2001 census) lived in urban areas.

According to a Mission Overview document published by the Government of India, '...the liberalization policies adopted by the Government of India is expected to increase the share of the urban population... to about 40 per cent of total population by the year 2021. It is estimated that by the year 2011, urban areas would contribute about 65 per cent of gross domestic product (GDP). However, this higher productivity is contingent upon the availability and quality of infrastructure services.'<sup>7</sup>

Prepared in 2007, Chennai's Second Master Plan 2026 projected the population in CMA to increase to 8.9 million by 2011 and 12.5 million by 2026. Much of this growth is designed to happen through horizontal expansion in new areas, and not through vertical densification.

Master plans are meant to be about wise land use planning that facilitates the city's growth without compromising its environmental resilience. Land use conversions, particularly of farmlands, forests and wetlands to built forms would therefore require to be disclosed, discussed and justified



Velachery Eri (Tank), 2015. © Google Earth.

in the plan document. But the Chennai master plan's chapter on 'Land Use Planning and Strategy' makes no mention of the intent to convert land use. The devil, in this case, is not in the detail. Rather, tucked away in two tables listing existing land use in 2006 and proposed land use in 2026, are entries that hint at the impending flooding woes of North Chennai.

From 6563 hectares in 2006, industrial area in the CMA is set to increase to 10690.41 hectares by 2026. Simultaneously, agricultural area is slotted to decrease from 12470 hectares to 7295.81 hectares, and lands under the Others (vacant, forest, hills, low-lying and waterbodies) category shrinks from 56507 hectares to 28147 hectares.

The hydrological ramifications of this re-zoning are dealt with in greater detail in another article I wrote recently about the Ennore creek area in Chennai's north.<sup>8</sup> Of the 3416.08 hectares allocated to 'Special and Hazardous Industries' in the CMA outside Chennai, a little less than 1000 hectares (2341 acres) falls just within three creekside villages of Athipattu, Vallur and Ennore. Wetlands, including 1500 acres of salt pans, 212 acres of fish farms and 317 acres of tidal waterbody, constitute nearly 90 per cent of the above area reserved for S&H industries. Even more land is sought to be

freed up by the curiously named 'river straightening project.' The Kamarajar Port Ltd, a mini-*navaratna* Government of India company, is a key beneficiary of the proposed conversion of water to land.

Conventional interventions for dealing with rain involve flood control technologies and sundry hare-brained end-of-pipe measures that will do anything to avert disturbing the status quo. Take the case of the ELCOT IT SEZ in Sholinganallur. The massive and hydrologically disruptive software park is located inside the marshland at the mouth of a drain to a 250 square kilometre catchment. ELCOT is the perpetrator, not a victim of floods. But the government has proposed a Rs 22 crore project to construct a storm-water channel to drain the ELCOT area directly into the Kovalam creek. The area sought to be drained is a marsh. It is meant to retain water. Draining that water quickly may secure ELCOT from floods, but it will leave the larger region more vulnerable to water scarcity and salinity intrusion.

Countries like the Netherlands have learnt the hard way that in dealing with nature, humility is wisdom. Rather than flood control, they are talking of controlled flooding. In the place of flood-inducing river straightening projects, the Dutch have launched a multi-decade \$3 billion

'Room for the River' programme that returns to the river what was its to begin with.<sup>9</sup> This is not a cop-out. Rather it is an acknowledgement of the inevitability of rising sea levels and the inexorable push that water is capable of exerting.

At the very least, the city should not convert any more wetlands. It would be even better if it begins to undo some of the damage. If hutments are to be removed, they need to be relocated on dry land within the city, not expelled to the margins. More important from a floods perspective is the removal of elite encroachers and the freeing up of the marshland in the south, and the Ennore creek to the north.

Politically this may be far more challenging than handing out engineering contracts for construction of storm water drains. But fighting nature is not an option. One way or the other, nature will prevail. It is all well to talk about a balance between environment and development. But regardless of our development needs, the environment will do no balancing.

6. Census of India data, cited in S.P. Sekar and S. Kanchanamala, 'An Analysis of Growth Dynamics in Chennai Metropolitan Area', *Institute of Town Planners, India Journal* 8-4, October-December 2011. [http://www.itpi.org.in/files/oct3\\_11.pdf](http://www.itpi.org.in/files/oct3_11.pdf) Downloaded 30.06.2016.

7. 'Jawaharlal Nehru National Urban Renewal Mission: Overview.' Ministry of Urban Development and Ministry of Urban Employment & Poverty Alleviation, Government of India. Undated. <http://jnnurm.nic.in/wp-content/uploads/2011/01/PMSpeechOverviewE.pdf> Downloaded 29.06.2016.

8. Nityanand Jayaraman, 'Chennai May Just Be Masterminding its Next Flooding Disaster', *The Wire*, 21 June 2016. <http://thewire.in/44393/chennai-may-just-be-masterminding-its-next-flooding-disaster/> Downloaded 01.07.2016.

9. Michael Kimmelman, 'Going with the Flow', *The New York Times*, 13 February 2013. [http://www.nytimes.com/2013/02/17/arts/design/flood-control-in-the-netherlands-now-allows-sea-water-in.html?\\_r=0](http://www.nytimes.com/2013/02/17/arts/design/flood-control-in-the-netherlands-now-allows-sea-water-in.html?_r=0) Downloaded on 28.06.2016.

Land Use Zone	2006 (Existing at the time) ha	2026 (Proposed) ha
Residential (primary + mixed)	22877 (21.87%)	31090 (31.68%) 13503 (13.84%)
Industrial	6563 (6.28%)	7274.33 (7.18%) 3416.08 (3.38%) – special and hazardous industries
Agricultural	12470 (11.92%)	7295.81 (7.20%)
Others (vacant, forest, hills, low-lying, waterbodies)	56507 (54.03%)	28147 (27.79%)

Source: 'Landuse Planning & Strategy.' 2nd Master Plan, Vol III, Chapter 14. Chennai Metropolitan Development Authority. [http://www.cmdachennai.gov.in/Volume3\\_English\\_PDF/Vol3\\_Chapter14\\_Landuse%20Planning%20and%20Strategy.pdf](http://www.cmdachennai.gov.in/Volume3_English_PDF/Vol3_Chapter14_Landuse%20Planning%20and%20Strategy.pdf)

# Managing fisheries from a migrant perspective

DIVYA KARNAD

A characteristic feature of nature in the present is change. From coastlines to urban green spaces, our conception of nature is in flux, as is the technology that we use to interact with nature. Nowhere is that more obvious than in the marine realm. As sea levels rise, waters warm and acidify, so mobility, flexibility and adaptability become key characteristics of survival. The survival of charismatic marine species, or people who traditionally depend on marine fishing, is seen as being threatened by ecological and economic transformations. In an era of environmental and economic change, my approach to understanding nature emerges

from the ways in which fisherfolk adapt to changes in the natural resources on which they depend. Examining the processes and impacts of their adaptation strategies allows us to see the complex ways in which nature is transformed.

It was January 2011 in Mandapam, Ramnathapuram district, Tamil Nadu, when I came across George. A fisherman from Kanyakumari district, George was on his annual trip up the coast to follow the fish. Along with his group from Kanyakumari, George operates a wooden boat powered by an outboard motor, which he uses to catch mackerel, seerfish and mainly

sharks. George claims that he spends six months of the year migrating as far North as the Pudukottai district (a distance of over 400 km each way), staying with relatives, in-laws and others with whom his group has made 'traditional' arrangements.

These 'traditional' arrangements are only a few decades old, dating back to the 1980s.<sup>1</sup> Given the background of conflicts among fishermen regarding territoriality, particularly who could fish in which waters, and the self-distinction of fishing communities from 'outsiders', such arrangements with temporary migrant fishermen seem surprising. In stark contrast is the experience related to me by Ramulu in 2013. A fisherman from the Sri-kakulam district of Andhra Pradesh, Ramulu regularly migrates to the Sindhudurg district of Maharashtra to work in the purse seine fishery. His group is treated with suspicion by local artisanal fishermen, who maintain fishing territories in which the purse-seine boats are not allowed to operate. Further, he is not allowed to stay or access the fish market in the artisanal fishing village.

Migration is thus a key process in shaping the discourse of fishing communities across India. A history of migration has meant that fishing villages and societies, just like the activity of fishing, cannot be viewed in isolation and must necessarily function in relation to other places, people and activities.

The relational aspect of marine fisheries is best demonstrated in the form of the conflicts and contestations that define most fishing communities and fishing operations in India. Con-

flicts over access to fish resources, use of technology and sustainable resource use have been described across India, in the states of Tamil Nadu,<sup>2</sup> Kerala,<sup>3</sup> Goa, Andhra Pradesh and Gujarat.<sup>4</sup> Many of these conflicts involve a spatial dimension, i.e. conflicts over the movement of people into a fishery, either on land or at sea.

Conflict on land has been described in many cases to have a basis in caste politics. Single castes dominate many fishing villages and the immigration of fishermen from a different caste, with or without fishing backgrounds, could create conflict.<sup>5</sup> Conflict at sea has much more to do with equitable access to resources and ecological sustainability. My focus in this essay is on conflict at sea in the face of different types of migration.

The impact of migration on the environment is not straightforward. Both immigration and the use of fishing areas by migrant fishermen could have a significant impact on the marine ecosystem. For instance, immigration into the fishery in the Ramnathapuram district of Tamil Nadu has led to over-capitalization and resource degradation due to an absence of checks by

2. M. Bavinck, *Marine Resource Management: Conflict and Regulation in the Fisheries of the Coromandel Coast*. Sage Publications, Delhi, 2001.

3. J. Kurien and A.J. Vijayan, 'Income Spreading Mechanisms in Common Property Resource: Karanila System in Kerala's Fishery', *Economic and Political Weekly*, 1995, pp. 1780-1785; A. Paul, 'Rise, Fall, and Persistence in Kadakkodi: An Enquiry into the Evolution of a Community Institution for Fishery Management in Kerala, India', *Environment and Development Economics* 10(1), 2005, pp. 33-51.

4. M. Bavinck, D. Johnson, O. Amarasinghe, J. Rubinoff, S. Southwold and K.T. Thomson, 'From Indifference to Mutual Support: A Comparative Analysis of Legal Pluralism in the Governing of South Asian Fisheries', *European Journal of Development Research* 25(4), 2013, pp. 621-640.

5. Ibid.

the state.<sup>6</sup> In fact, several aspects of national legislation (such as Article 19-1g and 19-1e of the Constitution) promote the idea of open access to fishing as an occupation.<sup>7</sup> Constraints on migration are more likely to emerge from customary rule making bodies of fishing communities. These bodies base many of their arguments on preventing the community and 'outsiders' from indulging in practices that reduce opportunities for others to access fish, as well as on ecological principles to sustain the fishery. These bodies also react differently to different types of migrants. Salagrama identifies that the threat posed by mechanized fishing vessels from Andhra Pradesh, fishing in Orissa waters, resulted in the strengthening of artisanal fishing management regimes in Orissa.<sup>8</sup>

Among fishing communities, migration is common within areas of similar environmental and social conditions, i.e. access to the sea, and ability to use traditional skills and knowledge.<sup>9</sup> Migrants from other fishing castes are more readily accepted by locals, provided that they use artisanal (non-mechanized) fishing technology<sup>10</sup> and have an acceptable reason for migration. George's group in Mandapam is seen as acceptable because of their use of artisanal fishing gear and the

6. A. Menon, M. Bavinck, J. Stephen and R. Manimohan, 'The Political Ecology of Palk Bay Fisheries: Geographies of Capital, Fisher Conflict, Ethnicity and Nation-State', *Antipode* 48(2), 2016, pp. 393-411.

7. M. Bavinck, 'Wealth, Poverty, and Immigration: The Role of Institutions in the Fisheries of Tamil Nadu, India', in *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries*. Springer Netherlands, 2011, pp. 173-191.

8. V. Salagrama, Trends in Poverty and Livelihoods in Coastal Fishing Communities of Orissa State, India (No. 490). Food and Agriculture Organization, United Nations, 2006.

9. V. Salagrama, 2006, op. cit., fn. 6.

10. M. Bavinck, 2001. op. cit., fn 2

1. M. Bavinck and K. Karunaharan, Legal Pluralism in the Marine Fisheries of Ramnad District, Tamil Nadu, India. Report to the Indian Council of Social Science Research (ICSSR), 2006.

devastation wreaked on the Kanyakumari coast (his origin) by the 2004 tsunami. Migrant labour, on the other hand, is not deemed acceptable because it is associated with technological change. Such labour is usually required to man mechanized fishing vessels, which are seen as a threat to ecology and equity.

Curran distinguishes at least five forms of migration – return, repeat, circular, permanent and temporary, which could have different impacts on origin and destination sites.<sup>11</sup> Depending on the social composition of migrants, each of these forms could produce different outcomes in destination sites. Some temporary migrants have been linked to declines in resource sustainability, through mechanisms such as disruption of the social bonds that sustain collective action.<sup>12</sup> For instance, the *kadakkodi* (sea-court) system in Kerala, was associated with users of artisanal fishing vessels and gear. Paul attributes its decline to technological change, such as motorization and mechanization, influx of migrant labour and subsequent politicization of the fishing community.<sup>13</sup>

Other temporary migrants have been linked to the creation of management regimes by locals, as a response to the threat that migrants pose to the resource.<sup>14</sup> Trawl owner groups have managed to set up financial arrangements with the leaders of some fishing villages in Tamil Nadu in order to

temporarily fish and land their catch in those villages.<sup>15</sup> In Ramnathapuram district, trawl owners gave weekly or monthly payments to village leaders in exchange for landing their catch on the village beach.

While several studies have attempted to theorize the relationship between migration and the environment, no broad theory has emerged that can be extended to explain the impact of migration on marine resource use. One approach to building a theory is to look not only at the processes by which migrants participate in their occupation at the destination, but also the relationships and networks that they build there. Curran attributes the diversity in outcomes to the varied ways in which migrants embed themselves in the social relations that govern ecosystem use at the destination.<sup>16</sup> The degree of embeddedness is the key to positive or negative outcomes.<sup>17</sup> I shall attempt to demonstrate the ways in which embedding in social relations affect fisheries management using examples from my own research in the fisheries of Maharashtra.

The Ratnagiri and Sindhudurg districts of Maharashtra, where I focused my research, have a mix of different fishing communities and technologies. The fisheries of these districts are relatively disconnected from the main markets due to a lack of well developed transport infrastructure. The main roadways connecting the fish landing sites to markets are the National Highway 17, which runs quite a bit inland, and state highway MSH 04, which is generally in poor condition after damage wrought

annually by the monsoon. As a result, marine exports, other than from large ports like Ratnagiri and Mirkarwada, are not well organized and occur at a smaller scale than in other parts of coastal Maharashtra. Ratnagiri's fishing society consists mainly of people from the Kharvi fishing caste, with some Kolis and several migrant communities including the Memons from Gujarat and fisherfolk from Andhra Pradesh.<sup>18</sup> It is this last group that is relevant to my discussion of migration.

Migrants from Andhra Pradesh (AP) in Maharashtra hail mainly from the Srikakulam district, an area renowned for its fisherfolk migrations.<sup>19</sup> The fisheries of the Srikakulam district are notorious for poor catches and difficult sailing, earning these fishermen a reputation for being extremely skilled. In the days before mechanization, their skill was in high demand in Gujarat and Maharashtra. Most of the fishermen from AP who moved to Ratnagiri district migrated there in the 1980s. They have subsequently settled down as permanent migrants and integrated themselves into the local society to the extent of setting up businesses and standing for election in the local panchayats. Nevertheless, they continue to be viewed as a distinct group, and sometimes as outsiders. This is reinforced by factors, such as the spatial clustering of their homes at one end of a village, relatively low rates of intermarriage with the Marathi fishing communities, and the rhetoric used by their political opponents during panchayat elections.

Their push factors from Srikakulam were uncertainties related to mar-

11. S. Curran, 'Migration, Social Capital, and the Environment: Considering Migrant Selectivity and Networks in Relation to Coastal Ecosystems', *Population and Development Review* 28, 2002, pp. 89-125.

12. E.G. Katz, 'Social Capital and Natural Capital: A Comparative Analysis of Land Tenure and Natural Resource Management in Guatemala', *Land Economics*, 2000, pp. 114-132.

13. M. Bavinck, et. al., 2013, op. cit., fn. 4.

14. Ibid.

15. M. Bavinck, 2011, op. cit. fn. 8.

16. Ibid.

17. B.J. McCay and S. Jentoft, 'From the Bottom up: Participatory Issues in Fisheries Management', *Society and Natural Resources* 9(3), 1996, pp. 237-250.

18. Government of India, 2010; [http://eprints.cmfri.org.in/9007/1/MH\\_report\\_full.pdf](http://eprints.cmfri.org.in/9007/1/MH_report_full.pdf)

19. S.B. Sarma and V. Salagrama, Migration of Fishermen From Srikakulam District in Andhra Pradesh. Report of South Indian Federation of Fishermen's Societies, 2007.

keting, regular failures of the fishing season, combined with famines caused by poor agricultural produce from the arid hinterland of the district. Pull factors in Ratnagiri were the richer fishery which offered greater opportunities to trade, particularly with large export markets such as Mumbai. Many of these fishermen left Srikakulam during the prawn boom in Andhra Pradesh, and having been exposed to the technology and skills required to catch this export oriented seafood, brought these innovations to the Ratnagiri coast. Thus they were at an advantage in being able to supply this high commercial value item to fish traders in Mumbai at a time when prawn fishing had just been introduced in the Ratnagiri district. These migrants were able to quickly accumulate capital and in some cases began to own small fleets of trawl net operating vessels, or trawlers.

Characteristics such as capital accumulation and pursuing trawl fishing appear to mark these fishermen out as economically self-interested and capitalist. Nevertheless, several of them participate in community activities that sometimes appear to work against a profit motive. For instance, in one village in northern Ratnagiri district, the fishing community had decided to take a stand against the use of purse seines (a type of mechanized fishing net). The trawl owners association, consisting of Marathi and AP residents, joined this movement despite the fact that they had the capital to invest in purse seines.

Purse seine operations promised high rewards, and these seine were being used by fishermen from Ratnagiri town. However, the village projected a united front, preventing outsiders from using purse seines within their fishing territory and banning community members from purchasing the

nets. In this case the migrants had not acted as disruptors, but instead had participated in collective action. Further evidence of the embeddedness of the migrants comes from the rituals that they performed with the locals, such as observing the traditional monsoon fishing ban, participating in the religious rites surrounding the start of the fishing season and so on.

The migrants that I came across in the Sindhudurg district fit a different profile. The Sindhudurg district has a relatively more homogenous fishing caste distribution, with the fishing society primarily consisting of the Gabit caste, with a few Catholics who migrated from Goa, as well as some Muslim fisherfolk. Migrants from the Srikakulam district are temporary or repeat migrants, who travel to Sindhudurg and northern Goa every year during the fishing season on the West coast. They come to fill the requirement for labour aboard trawl and purse seine vessels, as well as to mend nets.

The local Gabit fishermen often do not participate in trawl or purse seine operations because many of their communities have taken a decision to ban these technologies for reasons of ecology and equity. They believe that usage of this gear results in excessively large fish catches and capital accumulation in the hands of a single trawl or purse seine boat owner at the cost of hundreds of artisanal fishermen whose catches have been accordingly diminished. They also mention how trawl nets dredge up the sea bed and purse seines trap the young fish due to their small mesh size, resulting in fewer fish for the future.

Migrant labour fills the vacuum created by the non-involvement of locals. The push factors for the Srikakulam fishermen include low fish catches in Srikakulam, combined with

increased competition from trawlers that originate in Vishakhapatnam and Orissa. They report a declining availability of natural resources, even on land, and a lack of fisheries infrastructure. The increasing production costs in the fisheries of Srikakulam is creating growing indebtedness amongst fisherfolk. However, they lack access to alternatives.

Srikakulam is the least developed district among the nine coastal districts of Andhra,<sup>20</sup> and rainfed agriculture has failed. The government has invested in some infrastructure projects, such as the building of cyclone shelters, but there has been little investment in developing social capital.<sup>21</sup> Women from the Srikakulam fishing community also have their reasons for sending their male counterparts away to work. A liquor shop at the gate of the Vishakhapatnam fishing harbour ensures that most of the fishermen's income is drunk away before it reaches the family.

Wives of migrant labourers claim that being forced to live on board fishing vessels prevents their husbands from drinking away their earnings, resulting in greater remittances to the family, which can be used for education and economic mobility. They also claim an overall decline in alcoholism among the migrant fishermen. A second reason given by the women is that labour on Vishakhapatnam trawlers receive daily wages, which are very low, supplemented by a share of the profits. This means that income is extremely variable, depending on the profit reported by the boat owner after each fishing trip.

What attracts the temporary and repeat migrants from Srikakulam to Sindhudurg is the prospect of getting

20. Government of India, 2010, op. cit., fn. 18.

21. Ibid.

a fixed monthly income (although it is often paid as a lump sum at the end of the fishing season). There is some prestige associated with working on large mechanized vessels in Srikakulam. Mechanized vessels are considered easier to operate than traditional ones and therefore safer. Fishermen working on mechanized vessels often demand higher rates of dowry.<sup>22</sup> However, conditions of employment in Maharashtra are often not labour friendly.

Unlike the migrant labour systems that take Srikakulam fishermen to Gujarat, boat owners in Maharashtra do not offer the migrants any advance payments. There is no health insurance or health cover provided by the boat owners. Migrants often bear the brunt of local hostility towards trawl and purse seine vessels. The migrants are often unaware about local rules regarding fishing territories and ban on mechanized vessels, and are caught or held hostage by the locals when they venture into these territories. Locals also do not allow the migrants to live in their villages, forcing them to stay onboard the vessel. As a result migrants have limited access to fresh water for bathing or laundry and are forced to use seawater for this purpose.

In this case migrants act as disruptors to common property regimes by taking jobs that locals consider ecologically and economically unsustainable, disregarding or being ignorant about fishing territories and rules. They do not contribute to the local economy because most of their remittances are sent back to their place of origin. Being outcast by locals, they are prevented from participating in local markets. Such a migrant labourer's situation is ripe for exploitation. Employed without a written contract, not well con-

22. S.B. Sarma and V. Salagrama, 2007, op. cit., fn. 19.

nected to locals who might be able to pressurize the boat owner into providing fairer wages and working hours, the migrant seems powerless. It is this very powerlessness that makes him an exploiter of marine life. Unable to make decisions about where to fish or how long to fish, a migrant's goal is to catch as much as he can for the boat owner, irrespective of the ecological consequences. Being the exploited makes him an exploiter.

The current picture of nature in the marine realm is one of decline, where every intervention by fisherfolk is seen as a threat. However, understanding the multiple pathways through which change operates, reveals a reason for hope. In order to build a resilient fishery management regime, whether by the government or local fishing communities, the fact of change, including migration, has to be taken into consideration.

These examples from my research indicate that the single phenomenon of migration can have multiple impacts on the marine ecosystem, depending on how people engage or integrate with social networks, culture and relations at their destination. In one case, migration is a disruptor exacerbating conflicts at sea in an already contentious fishery. In the other case, even though the migrants may be involved in conflicts on land, it does not seem to hamper their participation in collective action and common property regimes. The resilience of natural systems of resource use, such as fishing, could emerge from surprising factors, which in conjunction with existing social systems may work to conserve fisheries. Our understanding of nature in the present needs to move away from a dependence on standard tropes of change as a threat in order to leave room for these surprises.

# Fallow soil: bringing political economy into conservation

SHASHANK KELA

THIS essay aims to bring together things that are usually studied separately—environmental history, political economy and conservation practice. Given constraints of length, the treatment must of necessity be schematic, but I hope to show that a fruitful convergence is possible, a convergence capable of casting fresh light upon contemporary ecological problems including species extinction, habitat loss, and some of the other consequences of that ever growing, ever more ominous shadow the human race casts over the planet as a whole.

Ecologists and conservationists tend, not unnaturally, to focus upon the present and the future. The past is usually demarcated in terms of a specific problem—like the catastrophic impact of organo-chlorine pesticides on raptor populations in Europe and North America, starkly visible by the 1970s, or the consequences of diclofenac use on vulture populations in India (visible

by the 1990s).<sup>1</sup> However, as soon as we come to the realm of solutions, it begins to intrude more insistently, if only because, as Gramsci remarked, we interpret the past by the very fact of acting in the present.<sup>2</sup>

An important question in the Indian context involves projecting the roots of environmental degradation back in time. This is of obvious interest to historians, but I believe that it has implications for conservation practice as well. A small body of work has developed around this problem, beginning with Ramachandra Guha and Madhav Gadgil's formulation that the pre-colonial period was marked, on the whole, by ecological harmony, a balance between resource use and pres-

1. An anti-inflammatory drug widely used to treat livestock (and humans). Vultures eating cattle carcasses rapidly acquire toxic levels, leading to renal failure and death.

2. Antonio Gramsci, *Further Selections from the Prison Notebooks*. Lawrence and Wishart, London, 1995, p. 383.

ervation, mediated largely through the caste system.<sup>3</sup>

This idealized view, conflating different periods and state structures, was sharply challenged by subsequent scholars. There is evidence to show that wild grass for fodder had already become a contested resource in parts of the Deccan by the 18th century, liable to engrossment by powerful military and landowning groups.<sup>4</sup> Other examples include the steady reduction of the range of the one-horned rhinoceros, found as far west as Gujarat in Harappan times;<sup>5</sup> and the over-hunting of cheetahs in the Mughal period.<sup>6</sup> There are doubtless many other instances of landscape modification, range reductions and local extinctions before the advent of colonialism awaiting excavation and exegesis. Meanwhile, a more nuanced view of *colonial* transformations was subsequently set forth by Mahesh Rangarajan.<sup>7</sup>

More recently, Kathleen Morrison has suggested the polar opposite of Gadgil and Guha's original thesis: in her view, since environmental degradation has occurred throughout the whole sweep of South Asian history, and the very concept of climax vegeta-

tion is inherently unsustainable and ahistorical, it makes no sense to regard the colonial period as being exceptional in this regard.<sup>8</sup> I believe that her specific examples can be critiqued on other grounds: for example, the restricted nature of the evidence used to argue that forests in the Western Ghats show evidence of anthropogenic disturbance from very early on.<sup>9</sup> Besides, disturbance is a relative term: how would we describe their state now? More importantly, I believe that her argument misreads the *nature* of ecological change before the advent of colonialism.

Although it is true that human beings have modified wild landscapes ever since their appearance upon the evolutionary stage, there remained sharp limits to the kind of change that could be brought about. It is perfectly possible to convert a forest landscape into savannah through cyclical burning (as happened in Australia and East Africa); or manage woodlands so intensively for timber as to make them essentially anthropogenic (as happened in England).<sup>10</sup> Yet, for the most part, what this involved was the replacement of one kind of vegetation, and the faunal assemblages associated with it, by another.

This argument can be extended, albeit to a much smaller extent, to certain types of *cultivated* landscapes. Pre-modern agriculture in South Asia

was carried out at very variable levels of intensity: cultivation could be broken up by wild grasses, canebrakes, shifting riverbeds and seasonal lakes – like the frontier region between Delhi and Lahore described by Jos Gommans.<sup>11</sup> These interstitial spaces provided shelter for wild animals and enabled alternate forms of resource use like nomadism. Agriculture incorporated fallows; the frontier of cultivation fluctuated – scrub forest could take over abandoned fields. In other words, the agricultural landscape under certain ecological conditions (that were far from uncommon) constituted a *mosaic*, one which wild animals like elephants, wolves, lions, deer could pass over in their peregrinations. Deltas were another example, where rivers reconfigured the landscape annually, to which humans had to adapt.<sup>12</sup>

The final limiting factor was demography, which has been calculated at 35 human beings to a square kilometre for Mughal India in the mid-17th century<sup>13</sup> in contrast to 434 today. This staggering contrast can only be comprehended against the background of far-reaching transformations set in train by colonialism. By destroying large swathes of pre-modern industry, it forced more and more people back upon the land – an effect to which grandiose projects of land reclamation (Punjab, southern Tamil Nadu) and the general disarming of rural groups contributed.<sup>14</sup> It inaugurated a process of

3. Madhav Gadgil and Ramachandra Guha, *This Fissured Land: An Ecological History of India*. Oxford University Press, Delhi, 1992.

4. Sumit Guha, 'Claims on the Commons: Political Power and Natural Resources in Precolonial India', in Mahesh Rangarajan and K. Sivaramakrishnan (eds.), *India's Environmental History, Vol. 1: From Ancient Times to the Colonial Period*. Permanent Black, Ranikhet, 2011.

5. Shibani Bose, 'From Eminence to Near Extinction: The Journey of the Great One-Horned Rhino', in Mahesh Rangarajan and K. Sivaramakrishnan (eds.), *Shifting Ground: People, Animals, and Mobility in India's Environmental History*. Oxford University Press, New Delhi, 2014, pp. 65-87.

6. Divyabhanusinh, 'Lions, Cheetahs, and Others in the Mughal Landscape', in *Shifting Ground*, pp. 88-108.

7. Mahesh Rangarajan, *Fencing the Forest: Conservation and Ecological Change in India's Central Provinces, 1860-1914*. Oxford University Press, New Delhi, 1996.

8. Kathleen D. Morrison, 'Conceiving Ecology and Stopping the Clock: Narratives of Balance, Loss, and Degradation', *Shifting Ground*, pp. 39-64.

9. Kathleen D. Morrison, 'Environmental History, the Spice Trade, and the State in South India', in M. Rangarajan and K. Sivaramakrishnan (eds.), *IEH*, Vol. 1, pp. 296-326.

10. For a classic statement of the latter, see Oliver Rackham, *Woodlands*. Collins, London, 2006.

11. Jos Gommans, 'The Silent Frontier of South Asia, c. 1100-1800 CE', *IEH*, Vol. 1, pp. 217-244.

12. See Rohan D'Souza, *Drowned and Dammed: Colonial Capitalism and Flood Control in Eastern India*, Oxford University Press, Delhi, 2006, for a reconstruction of the traditional system of flood plain agriculture in the delta of the Mahanadi.

13. See the introduction to *IEH*, Vol. 2: *Colonialism, Modernity and the Nation*. Permanent Black, Ranikhet, 2013, p. 7.

demographic expansion *despite* regular setbacks caused by famines (whose effects it exacerbated). It introduced new crops and methods of cultivation (such as tea and coffee). The net result of all these developments was agrarian expansion on a massive scale throughout the 19th and much of the 20th century – probably the biggest single factor contributing to habitat loss.

One of the most obvious gaps in the historiography of environmental change is the absence of studies straddling the dividing line of independence. If we accept that the colonial period did constitute a watershed (albeit not of the kind of envisaged by Gadgil and Guha), and recognize its essential continuity with developmental processes after 1947, it might be possible to take a more self-critical view of current problems. For only a nuanced understanding of ecological change at different times in the past, under different technological frameworks, can help us to arrive at a fair judgment on the effects of subsistence use upon natural landscapes *today*.

The argument that human beings have always modified nature does not distinguish between different intensities of resource use by different societies, or help us determine under what circumstances patterns of subsistence use become ecologically unviable. It is theoretically possible for the technology and practices of a small group to remain unchanged and yet become environmentally wasteful (or much more wasteful) thanks to increasing intensity of resource use by *adjoining* societies. This probably happened in the Western Ghats once tea and coffee were introduced in the 19th century, leaving a shrinking remnant

of forests unable to support subsistence use as they had once done. This does not, of course, alter the essential problem or make solutions easier to find, but it does allow us to apportion the blame more equitably.

A nuanced understanding of environmental histories might help conservation practice reach out more effectively to poor and marginalized communities. Much like history, political economy remains absent from conservation debates. Most ecologists would doubtless argue that economic and social questions (except under narrow and restricted definitions) fall outside the remit of the discipline. Even if this was once true, the rapidity of climate change should force us to think anew: a thoughtful debate about the ideology of indefinite economic expansion is one to which ecology could contribute much more than it now does. However, in the Indian case at least, I would argue that there are narrower, more immediately relevant questions of political economy that conservationists have ignored so far, and at some cost.

Both are structural in nature, and have to do with systemic flaws in *governance*. The first is an administrative framework that actively alienates adivasi communities from natural resources and landscapes, and in so doing makes conservation goals much more difficult to achieve. Adivasi or tribal communities are not, of course, the only ones living in or close to forests but they form a significant proportion of this category. In the Northeast, most live in regions governed under the Sixth Schedule of the Constitution; in peninsular India, the Fifth.

The history of the sixth schedule is contradictory and open to interpretation in different ways. The powers granted under it to autonomous district councils or ADCs are wide ranging in

theory – though undercut in practice by the financial control exercised by state governments.<sup>15</sup> From the 1950s, dissatisfaction with Assamese hegemony provoked demands for full statehood in a growing number of councils; the fear of Naga secessionism becoming a template finally forced the central government to act. By the early 1970s, most ADCs had been subsumed into new states and union territories carved out of undivided Assam – Meghalaya, Arunachal Pradesh, Mizoram. But this merely shifted the problem to a new institutional terrain as political competition coalesced around the electoral framework whereby state governments are formed and power exercised. ADCs remained a secondary arena, almost as subservient financially and politically as before, though the new social composition of power meant that crossing over from one to the other – from a position in the ADC to one in the state government – became easy.

The sixth schedule does grant a measure of control over natural resources to ADCs. This is partly an artifact of forest governance – over much of the Northeast the forest department is a much smaller presence than elsewhere. In Arunachal Pradesh, roughly 62 per cent of forests in 1990-91 were under community ownership and designated as unclassified state forests; only 37 per cent were reserve forests, managed by the forest department.<sup>16</sup> This gives local communities much greater control over a key resource

15. See David Stuligross, 'Autonomous Councils in Northeast India: Theory and Practice', *Alternatives: Global, Local, Political* 24(4), Oct-Dec 1999, pp. 504-5, for a useful summary.

16. Amitava Mitra, 'Environment and Sustainable Development in the Hilly Regions of North-East India: A Study in Arunachal Pradesh', *International Journal of Social Economics* 25(2/3/4), 1998, p. 198.

14. Some of the relevant evidence is marshalled in Shashank Kela, *A Rogue and Peasant Slave: Adivasi Resistance 1800-2000*. Navayana, New Delhi, 2012, pp. 41-45, 255-265.

than would otherwise have been the case. However, other social and economic developments ensure that this stewardship is not necessarily benign. In Meghalaya, forest and mineral royalties provided as much as 40 per cent of the budget of the Khasi Autonomous District Council in the 1990s. Illegal logging on a massive scale was routine and a great deal of forest land has also been destroyed by limestone quarrying and coal mining.<sup>17</sup>

In Arunachal Pradesh, the state government's eighth plan outlay (1992-97) budgeted less than Rs 300 crore for conservation and protection, but almost Rs 674 crore for extractive forestry (plantations, logging and the like).<sup>18</sup> More recently, it has signed dozens of MOUs with private corporations for hydroelectric projects, unmindful of their environmental impacts on the fragile ecology of the eastern Himalayas. A recent study from Mizoram shows the very significant impacts on biodiversity of the state government's drive to discourage traditional jhum or shifting cultivation in favour of oil palm and teak plantations.<sup>19</sup> These governments are composed of members of indigenous groups who have internalized the conventional rhetoric of development to the point where the ecological problem of the Northeast is shifting from the familiar phenomenon of empty forests (denuded of wildlife by over-hunting) to the integrity of the physical landscape itself.

The experience of the fifth schedule points to a very different lesson – the danger of depriving local communities of every vestige of control

17. David Stuligross, pp. 513, 509-10, op. cit., fn. 15.

18. Amitava Mitra, p. 201, op. cit, fn. 16.

19. Jaydev Mandal and T.R. Shankar Raman, 'Shifting Agriculture Supports More Tropical Forest Birds than Oil Palm or Teak Plantations in Mizoram, Northeast India', *The Condor* 118, 2016, pp. 345-359.

over natural resources. Essentially it grants the governor of each state vague and theoretically unlimited authority to protect the interests of inhabitants of schedule five regions (an authority never exercised). In every other respect they are subject to the authority of state legislatures, central laws, and the forest department. Unlike the sixth schedule, these regions possess no separate apparatus of governance. However, the day to day lives of their inhabitants are also influenced by the forest department, in whose jurisdiction most communities happen to fall: in that case all other laws and institutions become secondary.

The problems are familiar, beginning, in many cases, with the lack of formal title to land. In addition, every aspect of forest use – grazing, firewood collection, foraging – is technically forbidden. Meanwhile the state strips the resources communities are prevented from using. The practice of auctioning bits of reserve forests for wood and charcoal (coupe cutting) continued until the 1980s. Concessions were, and are, freely granted to industry – it took a Supreme Court judgment to halt logging in the Northeast. Huge swathes of forest continue to be destroyed by dams, mining and infrastructure projects, quite apart from illegal felling by the so-called timber mafia with the active connivance of forest staff.

All this has the inevitable consequence of spurring popular hostility to conservation, which tends to be regarded as an instrument of exclusion on other grounds. This feeling is exacerbated by forcible displacement from protected areas (or the denial of rudimentary services with the aim of forcing communities out). These are familiar tropes that require little discussion. What is more interesting is that every attempt at reform has run up

against familiar obstacles. Joint forest management embodied the first recognition of the problem in early '90s. Its chequered history and ultimate failure demonstrate the forest department's obdurate refusal to surrender any authority over its domain.

More recently, the Forest Rights Act of 2006 was hailed as a potentially transformative law. However, its utility in obtaining land titles is limited since relatively few individuals can muster the necessary proof. Its most radical provision – community forest rights or CFRs that enable local communities (in theory at least) to manage forests with the agreement of the department – has either been ignored or subverted. The Panchayati Raj Extension to Scheduled Areas Act of 1996 is even less effective, for the gram sabha (to which extensive powers are devolved on paper) must rely upon the existing machinery of state to carry out its decisions. This effectively leaves local representatives of the executive branch free to ignore it. As far as its negative powers – such as withholding assent to land acquisition – are concerned, the state either refuses to accept their exercise or whittles them away by providing for exceptions.

It is striking that every attempt to reform forest governance by legislation, leaving institutions and institutional processes untouched, has failed. Which brings me to my most crucial point – it is the *institutional structure* of the forest department that alienates communities and renders conservation goals very difficult to achieve. This has two aspects. The first is a very long colonial and post-colonial history of preserving forests in order to exploit them commercially, embodied in extensive forestry operations to change their floristic composition by planting commercially valuable spe-

cies. Tellingly, very little research has been done on the subject and even now it is impossible to determine whether these operations have ceased completely. It is only in the 1980s that this orientation haltingly begins to change – but the structure of the forest department remains unchanged, and it is this structure that fosters both ineptitude and authoritarianism.

The problems begin with a recruitment process that is rife with corruption at lower levels and marked by lack of accountability and specialized knowledge higher up. Conditions of work and housing for field staff remain abysmally poor, and a great deal of arbitrary corruption is condoned, if not actively encouraged. Budgets are geared towards spending money so as to allow skim-offs (such as in construction contracts): long-term planning and scientific expertise (whether independent or in-house) are conspicuous by their absence. There is no mechanism to impart effective training to the forest guard or ranger, and no system to hold him accountable for abuses of power.

These fault lines – lack of ecological knowledge and lack of accountability – run all the way to the top, for the department is organized as a closed caste of bureaucrats (rather than experts in conservation, ecology, anthropology etc.), answerable only to their superiors. The result is an authoritarian administrative machine designed to process money in order to (ineffectively) preserve a handful of species, and extend what is nebulously called tree cover.

The concept of participatory conservation represents a salutary corrective to earlier paradigms based on exclusion and punishment (what has been described as the fences and fines approach).<sup>20</sup> It seems eminently sensible to suggest that we should look

beyond protected areas, if for no other reason than that many species consistently overflow their boundaries. Tigers, leopards, elephants and wolves move across cultivated landscapes; in riverine and marine environments, the very notion of a physical boundary becomes absurd. If conservation is to move beyond a few flagship species, human use must be reconciled and reoriented towards conservation goals to a greater or smaller extent.

However, I do not believe that it is, by itself, enough. The aim of this essay is to argue for a politically sharpened view of conservation, one that takes structural problems of governance into account. Without tackling institutional processes and discussing institutional reform, I do not believe that participatory conservation can be scaled up or be successful in more than a few isolated cases. The problem of conceptualizing more democratic and equitable arrangements that give local communities a voice in resource management (with adequate safeguards), and of reforming the structure of the forest department to make it more accountable and less opaque (to communities *and* scientific expertise) should be regarded as integral to the success of conservation outcomes.

Doing so would not automatically lead to sustainable use – as the experience of the sixth schedule shows. But it might alter the current incentive to use resources to depletion on the assumption that somebody else is bound to do so. Besides, it seems paradoxical to prevent communities from using resources – or, in the case of fisheries, actively encourage large-scale (industrial) over small-scale

20. The editors' introduction to Mahesh Rangarajan, M. D. Madhusudan and Ghazala Shahabuddin (eds.), *Nature Without Borders*, Orient Blackswan, New Delhi, 2014, contains the best paradigmatic description of the concept.

(artisanal) extraction – while providing no incentive at all for conserving them.

This is not to argue against protected areas (within which any resource use would have to be more vigilantly supervised in any case). It is merely to suggest that questions of governance and institutional reform need to be added to conservation discourse as a key area of discussion and concern. This would also involve moving beyond the traditional reluctance to address questions of economic policy even when their ecological relevance is obvious: the very questionable utility of big dams or industrial trawling, for example. Ecological critiques of both have been made, but they tend to remain narrowly conceived, avoiding any wider conclusion.<sup>21</sup> A process of sustained dialogue with other interest groups, such as adivasi movements, would be useful too, in order to convince them that subsistence use does not become environmentally benign simply because it is based upon traditional knowledge: there are wider social and economic forces at work too.

Funding and time impose obvious constraints, as does the necessity of concentrating upon urgent short-term problems – the imminent loss of this species or that habitat. Yet, in the long-term, a wider focus, the contours of which I've tried to delineate here, might conceivably help conservation science and conservation practice deal more effectively with their myriad challenges.

21. See Nachiket Kelkar and Jagdish Krishnaswamy, 'Restoring the Ganga for its Fauna and Fisheries', in *NWB*, pp. 58-80, and Aaron Savio Lobo and Rohan Arthur, 'Trawling the Shorelines: Fished Out and Squandered', also in *NWB*, pp. 41-57: the latter is exceptionally clear sighted on the effects of industrial fishing on the marine environment, yet refrains from any regulatory conclusion (apart from expanding Marine Protected Areas).

# Recycling end of life vehicles

N. S. MOHAN RAM

OUR perspective of the world, understanding of problems and approaches to solving them, are inevitably coloured by our background. Having worked as an engineer for nearly six decades, I naturally tend to perceive issues from an engineer's perspective.

For nearly five decades, my economic model was linear: using resources, materials and energy, applying engineering science to manufacture products and services for consumers, who would discard them at the end of their life as 'waste'. The impact of the manufacturing system on environment and nature was of little concern. This hands-offs attitude is characteristic of most in the engineering profession.

I have now started looking at the larger picture of the impact of technology on society, depleting resources and degradation of nature. Many engineers are beginning to devote attention to the challenge of producing goods and services in a sustainable manner, with concern for the environment.

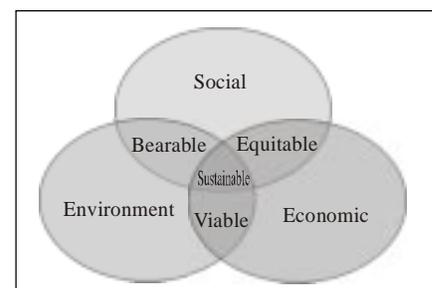
The problems confronting India's fast growing automobile industry in disposing of vehicles which have reached the end of their life, and the role of recycling in achieving it in an economically viable and environmentally sustainable manner, is the theme of this article. The automobile industry is a subset (albeit a major one) of manufacturing in India. Its success or failure in ensuring sustainability will majorly impact and influence other industries.

The United Nations defined sustainability, a part of the concept of sustainable development: 'sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.' Sustainability rests on three inter-linked pillars – society, environment and economics. The intercept of the three creates a socially acceptable, economically feasible and environmentally tolerable paradigm of sustainable development.

The description 'environmentally tolerable', concedes that 'tolerable' environmental degradation is the price to be paid for sustained economic development and improvement in the standard of living of people, especially in developing nations.

Is a truly circular economy feasible? The honest answer is a clear no. There is nothing one can do to fully return natural systems to their original state. The folly of mankind was in an acceleration of the adaptive change of natural systems by a mindless applica-

FIGURE 1



tion of technology. The best we can now do is to mitigate the situation and reduce the damage.

The second law of thermodynamics, a basic law of physics, states that the total entropy of an isolated system always increases over time. This increase is a measure of the irreversibility of natural processes, and the asymmetry between future and past. Without an external input of energy, there is no way one can return to the original state of a system. (The ultimate external energy machine for our earth is the sun!) A truly circular economy in which nature returns to its original state is a utopian dream; it is physically impossible.

Developing nations and the third world are striving to improve the quality of life and standard of life of their citizens. This quest is fraught with severe and adverse consequences for the global environment if they do not adopt sustainable practices. Their share of the world economy is showing an increasing trend. Global actions to mitigate environmental impact of economic growth will necessarily have to factor in their legitimate aspirations.

Advanced nations cannot expect the developing world to slam the brakes on their quest for a better quality of life for their citizens on grounds of sustainability. The world has to find a way of reconciling the needs of nations for improving their economies while working towards sustainability.

Developed nations passed through stages of urbanization, deforestation, growth of extractive industries like mining and mechanization before reaching their current stage of development. If they did not mine in their own countries, they accessed metals and energy from their colonies or through commerce. For instance, a blanket ban on mining of coal, iron ore

or strategic minerals is not a feasible option in India. Our per capita consumption of steel, aluminium and energy is very low and has to increase if we are to improve the living standards of our people. To achieve this India has to make trade-offs and hard choices. The bottom line is that production of any engineered product or service consumes energy and natural resources. It is not physically possible to make anything which uses up zero resources and is energy neutral. The best one can hope for is to minimize resource use and reduce waste.

Recycling of engineered products yields significant gains. Recycling conserves materials, reduces mining, reduces consumption of energy and results in large reduction in pollution, especially release of greenhouse gases. It can only reduce and not eliminate consumption of energy and resources.

The hierarchy of waste (Fig. 2) has three components—Avoidance: action taken to reduce amount of waste generated by households, industry and government; Resource recovery: reuse, recycling, reprocessing and energy recovery efficiently; and Disposal: in an environmentally responsible manner.

The hierarchy of recycling consists of the so-called three ‘R’s stages (i) Reuse, (ii) Recycle, and (iii) Recover energy.

Metals are recovered from end-of-life products by the physical process of melting as opposed to beneficiation of metals from ores which is the chemical process of smelting. Melting requires less consumption of energy, uses less natural resources and causes less environmental damage. The most resource and energy efficient approach is to reuse a part or component. If it is not feasible, the part can be recycled to separate basic materials like metals, plastics, rubber

etc. which can be further processed and used as feedstock for manufacture. Whatever is left over, to the extent possible, can be converted to provide energy. The residue left over is mostly dumped in refills.

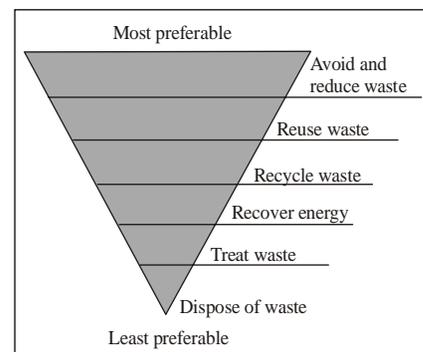
**Savings by Recovering Metal by Recycling Versus Mining Virgin Metal from Ores**

Metals	CO <sub>2</sub> Reduction	Energy Savings
Aluminum	> 92%	> 93%
Copper	> 65 %	> 65 %
Iron/Steel	> 58 %	> 74 %
Zinc	> 76 %	> 60 %
Lead	> 99 %	> 95 %

A proper regime of recycling of engineered day-to-day products like cars, bridges, aircraft, ships, refrigerators, washing machines, microwave ovens etc. in an environmentally friendly manner can greatly reduce energy consumption and release of greenhouse gases.

Designers are increasingly using engineered plastics to save weight and reduce costs. However, most of these long chain carbon molecule polymer plastics are virtually indestructible. There is an urgent need for research to develop biodegradable plastics. Rubber (used extensively in tires of cars and aircraft) also poses similar problems, especially development of non-toxic processes for recovery of useful components.

**FIGURE 2**  
**Hierarchy of Waste**



Recycling of means of transport, such as ships, aircraft and automobiles is easier than dismantling and recycling of static structures like power plants, bridges, and fixed offshore platforms. In nuclear power plants there is the added problem of disposal of radioactive waste. Ships which have reached their end of useful life are beached or dry docked to recover useful materials, mainly metals and steel and equipment like generators. Aircraft are increasingly being recycled in special facilities like the one at Tulsa, Oklahoma in USA. (<http://magazin.lufthansa.com/de/en/aviation-en/aircraft-recycling-new-life-in-the-desert/>)

By far the most ubiquitous transport vehicles are automobiles; two wheelers, three wheelers, cars and commercial vehicles. They consume huge resources at production stage and large quantities of fossil fuels and other depleting resources during their operating lives. They have great potential for recycling and saving energy and raw materials.

Automobile populations are growing. The world vehicle population topped one billion in 2012 (<http://wardsauto.com/news-analysis/world-vehicle-population-tops-1-billion-units>). The fastest growth is occurring in middle income countries like China and India. The growth is driven by higher prosperity levels, growing populations and more intense economic activity. Penetration levels of vehicles is low in developing nations as opposed to developed nations where vehicle populations are saturated.

The automobile industry was moribund in India till the early eighties. The advent of Maruti Udyog and Japanese bike makers in partnership with Indian partners, gave a fillip to the industry in the eighties. The industry took off after being delicensed in 1991. Today India has a vibrant automotive industry, growing at a frenetic pace. It

accounts for close to 7% of the national GDP and nearly 40% of the manufacturing GDP. It is by any standards a success story.

India has added over 174 million vehicles over the last twenty years (128 million, i.e. 73%, having been added in the last 10 years), with an estimated vehicle population in excess of 200 million. Over 75% of the population comprises of two wheelers. A growing middle class, demographic changes, increasing disposable incomes, higher aspirations of consumers and easy financing are creating a huge demand for four wheelers. The manufacturers are aggressively aiding this process through introduction of new models, low cost cars (to replace two wheelers), innovative financing models and buy back options, etc.

India is a two wheeler nation. More than 75% of the vehicles on the road are two wheelers. Cars are still beyond the reach of the vast majority. Poor public transport infrastructure, low/affordably priced two wheelers, higher mileage levels without sacrificing power and easy manoeuvrability have helped drive sales of two wheelers.

Three wheelers comprise both passenger and transport vehicles. Passenger carriers constitute 80% of the three wheeler market and have witnessed a rising demand thanks to their

being a cheap and convenient public conveyance. New permits and a rise in CNG filling infrastructure have further buoyed demand for three wheelers. Given this background, vehicle sales are expected to touch 35 million by 2020 (Feedback consultancy's estimates of 2014-2015 sales at 23 million were higher than projected!)

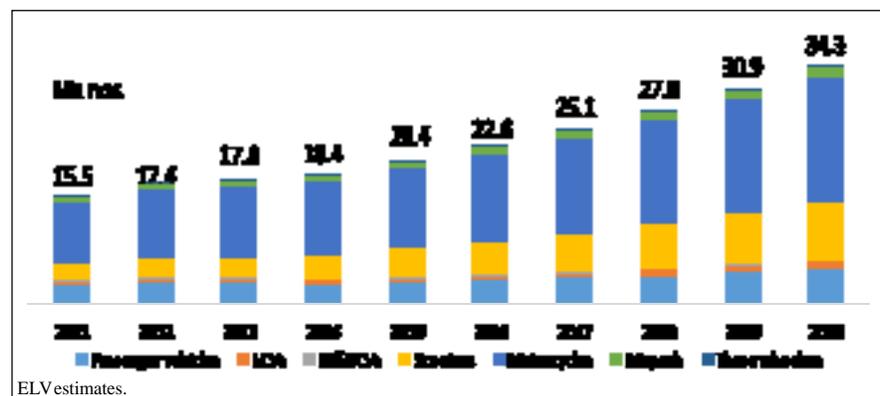
From market studies one can obtain information on the average life of different classes of vehicles before scrapping and estimate future scrapping volumes from past production. The figures will be approximate but are good enough for planning purposes.

Vehicle category	ELV age (years)
Passenger vehicles	18
<i>Commercial vehicles</i>	
LCVs	12
M & HCVs	10
<i>Two wheelers</i>	
Scooters	12
Bikes	12
Mopeds	12
Three wheelers	15

It is estimated that 8.7 million vehicles will reach their end of life by 2020 and 26.6 million by 2030 based on the current estimate of lifespan of vehicles.

Automobiles are among the most recyclable of products, consisting of metals over 75% and also recyclable

FIGURE 3  
Total Automobile Sales Forecasts



**TABLE 1**

Year	Passenger vehicles	Total commercial vehicles	LCV	M & HCV	Total two wheelers	Scooters	Bikes	Mopeds	Three wheelers	Total vehicles
2020	0.68	0.46	0.22	0.24	7.23	1.05	5.77	0.41	0.31	8.68
2021	0.71	0.52	0.20	0.32	7.41	1.15	5.83	0.43	0.53	9.17
2022	0.90	0.64	0.29	0.35	9.37	1.46	7.34	0.56	0.51	11.42
2023	1.06	0.63	0.36	0.27	11.77	2.06	9.01	0.70	0.54	14.00
2024	1.14	0.66	0.46	0.20	13.41	2.56	10.07	0.78	0.48	15.69
2025	1.38	0.73	0.52	0.21	13.80	2.92	10.09	0.79	0.44	16.35
2026	1.55	0.64	0.43	0.21	14.81	3.60	10.48	0.72	0.53	17.53
2027	1.55	0.72	0.50	0.21	16.42	4.15	11.49	0.79	0.56	19.25
2028	1.95	0.80	0.58	0.22	18.23	4.77	12.60	0.86	0.59	21.57
2029	2.50	0.90	0.67	0.22	20.24	5.49	13.82	0.93	0.62	24.26
2030	2.63	1.01	0.78	0.23	22.48	6.31	15.15	1.02	0.51	26.63

plastics and rubber. Europe and Japan using modern methods have achieved useful recovery of materials and energy in excess of 95% by weight of a car, minimizing the residues going into refills to less than 5%.

Broad brush estimates of material and energy savings and environmental impact can be made on the basis of the weight of the category of vehicle. A thumb rule for car equivalents is:

- 8 motorcycles = 1 car.
- 3 three wheelers = 1 car.
- 2 cars = 1 LCV.
- 5 cars = 1 HCV.

Using these ratios, potential gains from effective recycling of ELVs by 2020 is estimated to be: Material recovery 2.1 million tons of steel, 200,000 tons aluminum; Forex saving close to \$1 billion; Energy savings 2.95 million mwh from steel and 4.5 million mwh from aluminum. (One ton of recycled steel conserves 1.5 tons of iron ore, 0.6 tons of coke, 0.25 tons limestone; reduces slag by 0.3 tons and 2.5-3.5 tons of furnace gas containing 50kgs of dust.) Effective recycling of one typical car saves 1.6 tons of greenhouse gases in material recoveries. The potential for savings by 2020 is in

excess of five million tons. Due to an increase in ELV population @ about 10% year, the gains will also increase by 10% every year, more than trebling by 2030.

Despite an increase in ELVs, automobiles are recycled in India by the informal sector, which employs over 100,000 people all over the country. These units are located in crowded residential areas of cities and use crude methods resulting in poor hygiene, unsafe practices, and pollution of air and ground water and low yields. They need to be relocated away from residential areas. The labour has to be trained in modern techniques of recycling.

NATrIP under the Ministry of Heavy Industry, in cooperation with the automobile industry, has set up a demonstration centre near Chennai to develop improved methods to suit Indian conditions, recycling of two wheelers and training and upgrading labour in the informal sector. There is an urgent need to create and nurture an economically viable and environmentally friendly recycling industry using modern methods and techniques. The informal sector has to be relocated away from crowded areas in specially designated recycling parks with better hygiene.

Deteriorating air conditions in the cities are alarming with Delhi claiming the dubious distinction of being the most polluted metropolis in the world, overtaking Beijing. About a third of the atmospheric pollution is attributable to automobile exhaust. Many older vehicles built before emission norms were tightened are running on our roads. The courts have become active in regulating vehicles. The National Green Tribunal has banned older vehicles from Delhi and restricted diesel vehicles. The Ministry of Transport is also working out a proposal for fleet



Recycling area at Shivaji Nagar, Bangalore.



A recycling shop in Madurai.



Crude methods of breaking up a truck.

modernization and retiring older polluting stock.

This rare confluence of judicial activism and executive will promises action soon in banning older vehicles on the road. But the retired vehicles have to be recycled efficiently to get maximum benefit to society. There is an urgent need to create a modern recycling infrastructure and upgrading the informal sector.

A major constraint in creating a recycling infrastructure is the availability and high cost of land. Recycling units require hard paved impervious floor, water purification facilities, IT support and specialized equipment for neutralizing air bags and seat restraint systems which contain explosives. A practical approach is for state governments to acquire land away from the cities and provide common expensive facilities and relocate existing units from crowded areas. The area released can be converted into green parkland, providing much needed lung space for our cities. The park may also be provided with a large baling press which can be shared between the units.

Relocation of units will inevitably be opposed by current operators supported by interested political elements and NGOs. They cannot be allowed to operate in residential areas

and have to move. Similar problems were experienced when relocating other utilities like the vegetable market in Chennai which was moved to a more spacious market twenty kilometres away from the city centre.

The numbers of refrigerators, washing machines, microwave ovens and other domestic appliances coming for scrapping has also increased. Many of the technologies and techniques used for scrapping cars are applicable to these goods also. In some units abroad, white goods are scrapped along with automobiles.

After dismantling, the steel hulks of cars are shredded abroad. India is yet to get shredders. It is only a matter of time shredders become necessary and economic. Ferrous and non-ferrous elements are separated by magnetic and eddy current separators. Earlier the 15 to 20% residue after shredding and separation went into landfills. In Europe and Japan residue has been mandated to be less than 5% and post-shredding techniques have been implemented. The US with abundant land still uses landfills as the more economic option. Land usage in India is intense. Landfills for municipal waste are running short. It is therefore essential that India adopts post-shredding technologies from the beginning. A recent study

revealed that a similar situation prevailed in many developing countries, such as Indonesia, Malaysia, Vietnam, Laos, and Philippines etc. India's efforts at solving the problem can serve as a blueprint to other developing nations.

In conclusion, I would recommend the following: (i) The creation of a viable regime for recycling of ELVs should be taken up as a priority task by the central government along with the automobile industry in mission mode. (ii) Existing informal sector units operating in residential areas need to be relocated to recycling parks and upgraded and trained in modern methods. (iii) Tax breaks and duty concessions should be given for new units entering the business. (iv) Land should be made available for recycling parks at concessional rates. (v) Inspection and maintenance regime has to be strengthened; vehicles which are unfit should be scrapped. (vi) Recycling of end of life vehicles should form part of the curricula of automobile engineering courses. (vii) Centres of excellence should be set up to research efficient recycling of rubber, plastics and post shredder treatment. (viii) Recycling parks should be set up away from cities by governments with shared facilities for new and upgraded units.

# At nature's end

ROHIT NEGI

*'Can a set of ontological rights – such as breathing, actually challenge or even displace economic hegemony?'*<sup>1</sup>

IN her recent work, Tania Li shows how some villagers in the Indonesian uplands moved ever deeper into primary forests to survive enclosures wrought by the privatization of land, but after a point, with no more forests remaining, found themselves at 'land's end'.<sup>2</sup> In the immediate, there was no land left for them to colonize, and in the larger sense it was the end of a generational relationship with land as the basis of social reproduction. This intervention suggests that we are similarly at 'nature's end'; there is no pristine nature out there anymore, and nature as ontological comfort space is undermined by the proliferation of (tricky and scary) entities like global warming, plastics, super bugs and toxic air.

These 'hyperobjects', as eco-critic Timothy Morton calls them, are viscous (we can feel them) and non-local (they are at once here and elsewhere) phenomena that underline the continuities between humans and non-humans in a fundamental way.<sup>3</sup> During the recent episode of massive forest fires across the Western Hima-

layas, chir pine behaved as an hyper-object: a hybrid entity with intersecting biophysical, political and economic logics, extremely difficult to grasp intellectually, and even harder to 'control' in practice.

It is increasingly apparent that much of our theorizing is unable to keep up with the multiplication of such things. The Muir-Pinchot debate, which formed the background to environmental thought over the previous century is more or less redundant today, for neither are there any spaces left that are worth keeping away from humanity, nor is science able to model the world with enough confidence to 'save' it. Faced with entities that transcend the nature/society divide, we are left with two options: holding on to the warm and fuzzy but progressively useless ideas about saving nature, with their quasi-religious undertones; or, second, reorienting thought around actually existing phenomena, that is, viewing the present as the proliferation of things that do not have a 'prior' state that they may be returned to, that will be around for the long haul, and with whom we must learn to coexist. Developing this line of thought, in what follows, I comment on nature's present through a critical analysis of the current atmospheric crisis in India.

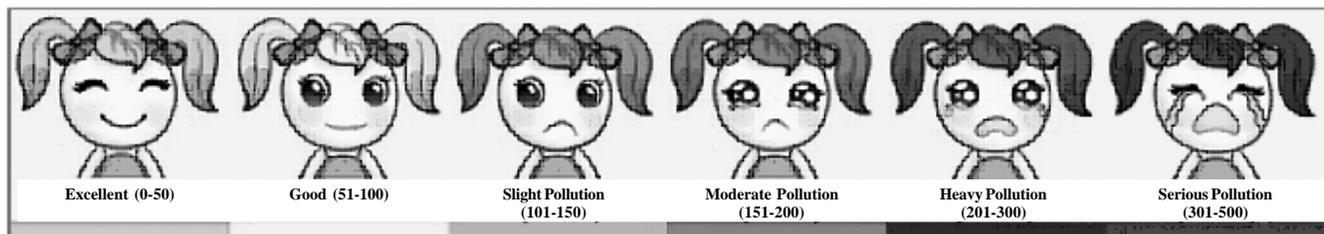
Since 2014, Delhi's – and to a somewhat lesser extent India's – air has been the object of debate, the contours of which provide a revealing vantage point on to the larger landscape of nature's present. Positions on the air debate diverge sharply, leading to the construction of what Kim Fortun calls 'enunciatory communities', or

1. Alber Pope quoted in Stephen Graham, 'Life Support: the Political Ecology of Urban Air', *City* 19(2-3), 2015, pp. 192-215.

2. Tania Li, *Land's End: Capitalist Relations on an Indigenous Frontier*. Yale University Press, New Haven, 2014.

3. Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World*. University of Minnesota Press, Minneapolis, 2013.

FIGURE 1  
Experiencing Air Through Representational Devices: AQI Graphic in China<sup>7</sup>



collectives that come together in specific circumstances not as ‘a matter of shared values, interests or even culture, but a response to a temporally specific paradox’.<sup>4</sup> Constituents in Delhi include environmental advocacy groups like the Centre for Science and Environment (CSE) and Greenpeace; scientists affiliated with the state, academic institutions and research groups; policy makers at various administrative scales; journalists who have taken up the issue as media activism; and several ‘air entrepreneurs’ looking to market new products like masks and purifiers.

One interesting feature of the debate has been its data-driven nature. In addition to official state data, private organizations have created their own, relatively inexpensive, air monitoring stations, while many (well-off) urban residents carry around handheld PM 2.5 devices imported from China. Others rely on the several competing apps and twitter handles that provide ‘real-time’ air quality data to interested users.

To the extent this is an environmental concern, can we think of air as ‘nature’ in the sense of being pristine and asocial? Hardly. To be sure, there may be places that replicate to a fair degree the pie chart of atmospheric gases that we’ve all seen in our primary school textbooks. But for many

4. Kim Fortun, *Advocacy after Bhopal: Environmentalism, Disaster, New Global Orders*. University of Chicago Press, Chicago, 2001, p. 11.

around the word, air may not be taken for granted. As Peter Sloterdijk notes, air stopped being the passive backdrop to life when, during the First World War, the German army poisoned the air with chlorine, causing hundreds of enemy casualties, whereupon the provisioning of gas masks became a common feature of warfare.

This ‘airquake’ marks a turning point for Sloterdijk: ‘If, in their history to date, humans could step out at will under any stretch of sky, in or out-of-doors, and take for granted the unquestioned idea of the possibility of breathing in the surrounding atmosphere... they enjoyed a privilege of naivety which was withdrawn.’<sup>5</sup> Those of us who live in Indian cities have had our privilege withdrawn for a while now, given that we experience air as a mixture of gases with significant human induced footprint, and moreover, which poses serious health risks.

Modern air may then be considered a hyperobject. We experience it daily and have built affective relations around our interactions, but it appears withdrawn from us: no one is fully sure they’ve captured its essence. As Morton writes, ‘We see signs everywhere, but not the hyperobject as such.’<sup>6</sup> In this scenario, our relations with air are mediated by things like laser eggs, masks, nebulizers and purifiers. We ‘view’ air through various representational devices like the Air

5. Peter Sloterdijk, *Terror from the Air*. Translated by Amy Patton and Steve Corcoran. Semiotext(e), Los Angeles, 2009, p. 48.

Quality Index (AQI), which boil a deeply complex phenomenon down to a number, and in one of its new *avatars*, an emotion on the face of a little girl (see Figure 1). In this manner, air seems to straddle the objective/subjective divide. As Gernot Böhme notes, atmospheres are ‘neither something objective, that is, qualities possessed by things, and yet they are something thing like... Nor are atmospheres something subjective, for example, determinations of a psychic state. And yet, they are subject like, belong to subjects in that they are sensed in bodily presence by human beings... Atmosphere is the common reality of the perceiver and the perceived.’<sup>8</sup>

The representational mediation of air was apparent at an event in Delhi organized by CSE where the Delhi Chief Minister, Arvind Kejriwal was to speak. As the packed arena awaited the CM’s arrival, an expatriate activist next to me exchanged greetings with a fellow traveller, who walked towards us, mobile phone in hand. He showed us a histogram with hourly AQI trends in Delhi. It had been building up since the morning, and had shot up to about 250 by that afternoon. Another individual, an adviser to the Delhi government, also joined in the conversation.

6. Timothy Morton, 2013, p. 152, op. cit., fn. 3.

7. <http://datadriven.yale.edu/files/2013/01/ShanghaiAQI2-21qacna.png>

8. Gernot Böhme, ‘Atmosphere as the Fundamental Concept of a New Aesthetics’, *Thesis Eleven* 36, 1993, p. 122.

The three of them speculated on the reasons for the spike in the reading. ‘Maybe they’ve set fire to crops around Delhi,’ said the expat activist, a conclusion that the adviser doubted. The discussion ended as the CM walked in, but the incident suggested not only the devise-mediated relationship with the object of concern, but also the simultaneity of consensus (on the readings) and disagreement (on the cause) in air activist spaces.

Air is moreover shot through by class and other social differences. The vast population of urban subalterns is more exposed to toxic air, while also having poorer access to quality health care. During the turn-of-century debate that led to actions like industrial relocation and CNG conversion in Delhi, social activists decried the entire chain of interventions as anti-poor. Scholarly critiques then gave birth to concepts like ‘bourgeois environmentalism’<sup>9</sup> that still find traction. Environmental collectives and activists have consequently been forced to engage with this criticism, and the language of social justice now permeates their work. And yet, any air related protest or action sees a motley group of expats, elite residents, and certain ‘star’ air experts gleefully interviewed by media personnel in attendance. *This* is the aporetic space activists must continually negotiate – the more they incorporate social justice into their discourse, greater the anxiety they feel about their own composition and about the marginalizing technical language they must adopt to reach other publics (the state, judiciary etc).

State responses to hyperobjects like air follow along predictable lines and are progressively off the mark.

The nodal state agency, i.e. the Ministry of Environment, Forests and Climate Change, draws its philosophical underpinnings from the same debates around protection that defined 20th century environmentalism. But what about things like air, nuclear waste and chir pine that render the ‘conserving nature’ imperative moot? These objects cannot be managed through the precautionary principle either, since they are *already* here. Rather than a Ministry of Environment, what we perhaps need is a Ministry of Tricky Things.

To Morton, the time of hyperobjects is marked by hypocrisy, weakness and lameness. Weakness is the simplest to recognize – confronted by objects like nuclear waste (half-life of thousands of years), we become acutely aware of limits to our knowledge and available actions. Hypocrisy in turn results from knowing fully well that our explanatory narratives are unable to grasp or articulate messy realities, but we keep up the pretence. This is as true of the state as it is of academia. The ‘safe distance’ of scholarship from what’s out there collapses in the time of toxic air – we breathe as we think and write! Lameness, as we will shortly see, marks the end of conviction.

A recent study by scientists at the Indian Institute of Tropical Meteorology (IITM) estimated that an average resident of Delhi loses over six years of his/her life due to air pollution, extrapolating from similar studies of health risks of PM 2.5 in Europe. A month or two earlier, a World Health Organization (WHO) report, based once again on particulate matter, had noted that thirty of the world’s most polluted cities were in India. The Environment Minister Prakash Javadekar’s response to the WHO document was that by focusing on India, such reports brought public attention,

and presumably shame, to the country rather than the ‘many cities in the western countries... which are suffering... in different categories and degrees.’<sup>10</sup> In response to the IITM study, Javadekar released a press statement, later retracted, where he argued that ‘the problem of pollution is being faced by cities across the world... The study focusing only on India and creating sensationalism is not creditworthy.’<sup>11</sup> Such a response might have passed for being thoughtful in a previous era, but now it simply suggests lameness. The minister’s statement is unconvincing and uninspiring in the way it aims to use comparison as a device for deflection. It moreover draws on a geopolitical imaginary of siege, which might be an extension of lameness to the modern nation state framework.

One must concede the minister consistency of stand: a year before these two reports were out, Javadekar had blamed ‘vested interests’ with connections to ‘forces that do not want India to progress’ for the supposed brouhaha over air, adding that ‘no media... no other NGOs raised the issue of Delhi air quality’ during the ten years of the previous regime.<sup>12</sup> Javadekar’s public positions may not be dismissed as uniquely reactionary. Even the popular environment minister during the previous regime, for all his well meaning rhetoric, presided over what observers have considered a business-as-usual phase of Indian environmental governance. This shows that there is something more at work here: the larger growth at all costs rhetoric has governance and thought

10. Asmita Sarkar, ‘WHO Report on Polluted Indian Cities Misleading: Govt’, *International Business Times*, 18 May 2016.

11. Statement by HMoEFCC, 7 June 2016.

12. Quoted in Liz Mathew and Amitabh Sinha, ‘Why Did no One Raise Air Pollution Issue for 10 Years... Vested Interests Doing it Now, says Javadekar’, *Indian Express*, 2 May 2015.

9. Amita Baviskar, ‘Between Violence and Desire: Space, Power, and Identity in the Making of Metropolitan Delhi’, *International Social Science Journal* 175, 2003, pp. 89-98.

in a vice-like grip, which tends to condition responses to entities like air.

Air is not simply a matter of pollution but raises questions about the nature of knowledge on the one hand, and the fragmentation of atmospheres in cities and regions on the other. In the 1990s, during an earlier wave of air related activism and court mediated action in Delhi, the city's public and para-transit fleet was converted to Compressed Natural Gas (CNG), which in the process went from a supposedly 'clean' fuel to an 'environmentally acceptable' one, presumably to keep the door open for alternate acceptable fuels like low-sulphur diesel.<sup>13</sup>

More recently, the precise role of vehicular emissions in comparison with roadside or construction dust has been hotly debated. One would expect more (or 'better') data to settle such epistemic contentions. On the contrary, as Timothy Choy notes in the case of an atmospheric controversy in Hong Kong, 'navigating layers upon layers of differently scaled data, yields a sensation of incomplete knowledge, a vertiginous sense that there is always something in excess of the explanation.'<sup>14</sup>

Uncertainty, then, marks our knowledge of hyperobjects. A single-minded and self-confident stand, for instance CSE's against diesel, is consequently open to criticism for its manufacturing of certainty and on the ground of hypocrisy, since the gap between knowledge and posturing is precisely what activists criticize corporations and the state for. But since hypocrisy is the very mode of being in the present, such stands must be con-

sidered with critical empathy as the pivots around which alliances are built and movements sustained.

The preceding discussion points to a crisis; how might we begin to approach it? Political economy comes to mind as a strong explanatory frame. David Harvey, for instance, views capitalist crisis as the forces behind dispossession, as well as imperial projects.<sup>15</sup> To Harvey neoliberalism, as a response to the so-called 'long downturn' since the 1970s, has generated a tendency to profit from the enclosures of commons and the privatization and commodification of nature. Drawing on a world history approach, Jason Moore calls for thinking through what he terms the 'Capitalocene', that is, the present epoch marked by the fusing of capitalist and ecological forces.<sup>16</sup> In this period, four *cheaps* have been central to the system's reproduction: labour power, food, energy and raw materials. The appropriation of these social-ecological cheaps, through patriarchy, colonialism and the unbounded extraction of fossil fuels, is immanent to capitalism. Crisis follows when bottlenecks in the supply of the cheaps begin to add significant cost to the system.

It seems to me that an atmospheric sensibility must be supplied to Harvey and Moore. Air escaped entering the balance sheets until the 1960s and thereabouts, when regulations tightened and technological shifts were made mandatory. Given the increased possibilities of mobility, capitalists used the uneven atmospheric and regulatory environments to move to regions where these costs could be externalized. In due course, however, air became a major biopolitical concern even in these places

and was made costlier by interventions like stricter emission norms, the deconcentration of industry, and restrictions on the sale and use of automobiles.<sup>17</sup> Moreover, the cost of labour power tends to rise too, given the increased social expenditure on respiratory ailments and allergies on the one hand, and highly skilled workers looking to move out of affected city-regions on the other. The end of cheap air in places like Delhi is then articulated with the global system, and contributes to its overall crisis. It is beyond pointless, in this scenario, to keep harping on the development/environment binary – the crisis is not economic, it emerges where growth encounters its own materiality.<sup>18</sup>

In sum, nature's present is also nature's end. We are face-to-face with objects that have proliferated through human interactions with the physical world. It is not possible to return them to a prior – natural – state. Instead, the correct move is to view them as neighbourly entities. The limits to our understanding and actions need not be considered a weakness to be hidden away, but the knowledge of limits is critical to a more meaningful engagement with the present.

The narrative of inexorable and teleologically defined development has simultaneously produced dispossession and environmental destruction. If there is one thing that has challenged the reign of the growth at any cost ideology in the recent past, it is air. As Albert Pope suggests in the opening quote, and to paraphrase Lenin, air may just be the weakest link in the discursive chain of development where the (ecological) revolution may strike.

17. Eg. lottery for new cars in Beijing; on/off or odd/even in both China and India; ban on sale of diesel SUVs in Delhi.

18. Rohit Negi, 'In the Time of Toxic Air', *Himal Southasian* 28(3), 2015; also available online at <http://himalmag.com/time-toxic-air>, accessed 7 July 2015.

13. Thanks to Prerna Srigan for this insight.

14. Timothy Choy, 'Air's Substantiations.' Paper for Berkeley Environmental Politics Colloquium, 2010, p. 4, <http://globetrotter.berkeley.edu/bwep/colloquium/papers/ChoyAirEP.pdf>

15. David Harvey, *The New Imperialism*. Oxford University Press, Oxford, 2003.

16. Jason Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. Verso, London, 2015.

# Friction along the fringe

MEERA ANNA OOMMEN

ANTAGONISTIC interactions between people and wildlife in India are by no means exclusive to the (recently coined) Anthropocene.<sup>1</sup> Longer-range histories of landscapes, people and animals dispel the notion of a pristine past, revealing shared spaces where close cohabitation entailed conflict and disharmony along several levels. Yet, in many of these engagements, non-lethal management and lethal control

of problem species went hand in hand with respect, reverence and propitiation of the offending crop raider, cattle lifter or maneater. Over the centuries, local communities have explored and evolved numerous strategies to overcome, cope and rationalize when confronted with marauding wildlife. This tension between conflict and coexistence has been a defining feature of human-wildlife entanglements in forested landscapes.

The cultural core of modern conservation in India, however, pays little attention to this diversity of worldviews, opting instead for a primarily exclusion centred, fortress conser-

1. Although there is no formally accepted start date, many scientists consider this proposed epoch roughly coincides with the start of the Industrial Revolution in the mid-19th century. P.J. Crutzen and E.F. Stoermer, 'The "Anthropocene",' *Global Change Newsletter* 41, 2000, pp. 17-18.

vation approach.<sup>2</sup> Under this dominant ideology, an adherence to Edenic philosophies<sup>3</sup> and animal rights orientations of conservationists intersect easily with the exclusionary byproducts of princely and colonial governance which also precipitated contemporary mechanisms of control. Here, context specific, situated knowledges embedded in local traditions, culture and experience (i.e., knowledges that are partial, local and embodied) are given short shrift and remain marginalized in favour of a privileged, disembodied, modern science, or of political interests masquerading as science.<sup>4</sup> Together, these factors have engendered a strong preservationist enterprise from whose standpoint differing ethical leanings and traditional use systems fall under the category of forbidden ‘third rail’ topics that dare not be spoken of. Hunting, culling and consumption of species are prime examples of such themes.

In the following paragraphs, highlighting the case of one of the most common mammalian crop raiders on the subcontinent, I address two related forms of conflict that have, for good measure, been confused with each other. The first relates to the direct conflict between people and animals which has a long, centuries-old history, whereas the second is a problem reflective of the contemporary situation – that of conservation linked conflict – between different groups of people holding contrasting viewpoints on

2. D. Brockington, *Fortress Conservation: The Preservation of the Mkomazi Game Reserve, Tanzania*. Indiana University Press, Bloomington, 2002.

3. P. Robbins and S.A. Moore, ‘Ecological Anxiety Disorder: Diagnosing the Politics of the Anthropocene’, *Cultural Geographies* 20(1), 2013, pp. 3-19.

4. D. Haraway, ‘Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective’, *Feminist Studies* 13(3), 1988, pp. 575-599.

how to manage problem species, land and resources.<sup>5</sup>

Although the first form of conflict has been researched *ad nauseum* by conservation biologists (albeit with a narrow lens), it is the results of a small number of recent studies working from the vantage point of ‘histories and perspectives from below’ that have begun to highlight the broad spectrum of socio-cultural and non-material elements relating to human-wildlife interactions.<sup>6</sup> These studies have interrogated political ecologies, multi-species ethnographies, animal geographies and longer-range histories of a number of large vertebrates involved in conflict, without falling prey to the moral extensionism that typically accompanies this form of conservation scholarship. The results from such explorations are critical in showcasing the complexities of local contexts and in linking them with the more challenging issue of contemporary conservation conflict.

Some of these studies also show that in many areas residents actively oppose extra-local influences imposed on their landscapes by the state as well as those by powerful conservation lobbies. The issue is particularly relevant as the latter are no longer underdogs, but active political agents capable of exerting pressure on marginalized groups to conform or to behave in ways

5. S. Redpath et. al., ‘Understanding and Managing Conservation Conflicts’, *TREE* 28(2), 2013, pp. 100-109.

6. Examples include, A.G. Gold and B.R. Gujar, *In the Time of Trees and Sorrows: Nature, Power and Memory in Rajasthan*. Duke University Press, Durham, 2002; S. Ghosal and D.J. Kjosavik, ‘Living With Leopards: Negotiating Morality and Modernity in Western India’, *Society and Natural Resources* 28, 2015, pp. 1092-1107; M. Barua, ‘Bio-Geo-Graphy: Landscape, Dwelling and the Political Ecology of Human-Elephant Relations’, *Environment and Planning D* 32, 2014, pp. 915-934.

that are incongruous with local practices. In this respect, conservationists have gained territory, playing the game from the top, while largely being unaffected by the day-to-day problems that local communities face. This situation of being out of range while being beneficial for short-term control has been increasingly problematic in contemporary India.

Top-down insertion of extra-local morality and authority changed the nature of conflict from one primarily between people and animals to that between different groups of people with contrasting viewpoints on how to coexist, manage and conserve. The divergence from the colonial practice of eliminating pestilent wildlife to that of enforced protection also entailed a shift in conservation perspectives whereby an urban conservation ethic increasingly imposed itself on local livelihoods. An exploration of these linkages shows that mainstream conservation approaches are likely to be problematic for modified landscapes on account of their tendency to generate and reinforce inequalities and power differentials. In those areas of the forest fringe where species spill over to cause conflict, protection accorded to wildlife is considered as a form of expanding territorialization by the state and environmentalists, and one which privileges animals over people.<sup>7</sup> Conservation in such spaces, therefore, needs a nuanced, context specific focus, a wider appreciation of ethics and the development of locally acceptable solutions.

In the following paragraphs, I attempt to outline a series of insights

7. N.L. Peluso, ‘The Politics of Specificity and Generalisation in Conservation Matters’, *Conservation and Society* 1(1), 2003, pp. 61-64; J. McGregor, ‘Crocodile Crimes: People Versus Wildlife and the Politics of Post-Colonial Conservation on Lake Kariba, Zimbabwe’, *Geoforum* 36, 2005, pp. 353-369.

from these lines of enquiry using the ubiquitous Indian wild boar as a case in point. I begin by providing a broad brush historical outline of the complex nature of human entanglements with the wild boar in India and their relevance for contemporary conservation. This is followed by a brief exploration of select case studies that explore the genesis of conservation conflict in which wild pigs are scapegoated as the main offenders, but the conflict is actually between different groups of people. I conclude by offering a few ideas towards taking the discussion forward in reconciling some of these issues in present day human modified landscapes.

A widely distributed species causing extensive damage to agriculture, the Indian wild boar (*Sus scrofa*) has been involved in complex entanglements with historical as well as contemporary local communities. In the oldest known artistic rendition from the Bhimbetka cave complex in central India, a mutant giant boar is depicted to be rapidly gaining ground on a tiny fleeing human. Stretching back several thousand years, this depiction perhaps belies the destructiveness of the boar and the helplessness of the human in the eyes of the primeval artist. This notion is reinforced in a number of regional mythologies (as is the case in several Old World cultures) where the legend of a ferocious giant boar ravaging crops is a frequent one.

In the Tamil Sangam bardic poetry at the turn of the Christian era, local people battled pigs that raided millet fields but their damages were also offset by the provision of delicious pork. Other representations too reiterate the problematic nature of conflict. Scattered throughout Karnataka, *veeragallu* or 'hero stones' commemorate important events and deeds of valour. A frequent theme of depiction

in this widely distributed practice has been the subjugation of crop raiding pigs by humans (and their hunting dogs) or *vice versa*. Even in the north-eastern part of India, where the species is one of the most valuable sources of meat, pestilence by pigs was still a problem for local farmers.

Conflict, however, has been only one aspect of these local relationships. In peninsular India, where the boar was a destroyer of agriculture, it simultaneously appears to have been incorporated into several other spheres of everyday existence and cultural networks. The wild boar appears on the Indus seals as an animal of some importance; pig bones appear in several post-Harappan sites signifying their use as food. In the Vedic pharmacology that considered the 'universe as a kitchen' and in the ancient Indian zoology that was a 'catalogue of meats', boars on account of their residence in *anupa* (marshy) lands were endowed with a 'heavy' meat that had powerful therapeutic values for strengthening the body.

In the iconography of mainstream Hinduism, Varaha, appears as a boar-headed (or zoomorphic) *avatar* of Vishnu (and Brahma) as well as several other forms.<sup>8</sup> Worshipped widely across the length and breadth of peninsular India, during the first ten centuries of the first millennium, Varaha was considered the saviour of the earth. His consort, the sow-headed Varahi appears as a complex deity with Vaishnava, Sakta and Tantric attributes in Hindu Dravidian and Buddhist mythologies.<sup>9</sup> Granting boons and offering protection, the goddess is

8. H. Rangarajan, *Varaha Images in Madhya Pradesh: An Iconographic Study*. Somaiya Publications, Bombay, 1997.

9. H. Rangarajan, *Images of Varahi: An Iconographic Study*. Sharada Publishing House, Delhi, 2004.

amalgamated into the several strands of religious iconographies of peninsular India. As a result, pigs figured in propitiation rituals and sacrifices seeking enhanced agricultural production and fertility, and protection from misfortunes. For numerous malevolent villages goddesses in southern India, sacrifices of domestic swine were integral to propitiation.

A long view of the past and a broader interrogation of human-animal relationships therefore provides evidence to a wide network of interactions that are far from purely antagonistic. It could be inferred that people and wildlife cohabiting in a region can be located within networks of relations, with each actor performing its own specific role typical of its species while at the same time accounting for reflexive and reciprocal interactions with others. The interpretations of these actions have been historically constituted, with local communities evolving a variety of practices and justifications to understand nature and to deal with adversity.

For example, hostility towards wildlife and propitiation are compatible and often go hand in hand. Direct attacks on people and livestock, or crop raiding, are often interpreted by communities in terms of punishment by the animals as response or reciprocity to socio-moral misdemeanours calling for propitiation measures and rituals as corrective initiatives. Reciprocity thus can be used to question as well as resolve immoral aspects of both human and animal behaviour.<sup>10</sup>

10. C. Scott, 'Science for the West, Myth for the Rest: the Case of James Bay Cree Knowledge Construction', in L. Nader (ed.), *Naked Science: Anthropological Inquiry into Boundaries, Power, and Knowledge*. Routledge, London, 1996, pp. 69-86; J. Knight (ed.), *Natural Enemies: People-Wildlife Conflicts in Anthropological Perspective*. Routledge, London, 2000.

Although in contemporary times, communities may not literally relate to punishment and propitiation, the relationships between people and pigs are definitely more complex than that of the species as just a problematic pest. In addition to their utility as food or draught animals, animals have been integral to various Indian cultures. The cultural importance accorded to them is by no means insignificant as nowhere else do animals acquire such extensive representation as they do in religious and mythological iconography of the Indian subcontinent.

The erosion of these underlying socio-cultural features either by way of gentrification, assimilation or coercion can lead to a simplified argument that just treats animals as problematic. Without the rich diversity of cultural backdrops, these could eventually affect tolerance and coexistence, and precipitate the ultimate separation of humans from nature. As opposed to industrialized societies of the West, the levels of tolerance for problem species are significantly higher in places such as India. The contrasts in responses to fatalities by wolves and other predators in North America and Europe to that of large cats and elephants in Africa and Asia are examples. This simplification also relates to conservationists' tendency to assume that peoples' problems with marauding wildlife will be assuaged by simple utilitarian benefits such as monetary rewards and compensation.

Across India, the disruption of traditional entanglements with species such as pigs have catalyzed a more pernicious form of conflict that typically pitches local communities against the state as well as against more powerful interest groups. Historically, these included practices such as colonial and princely hunting traditions such as pig-sticking which though partially

beneficial to local communities was also significantly problematic in some regions. While European colonialists revelled in pig-sticking, they prohibited local communities from hunting even crop raiding animals; additionally they also called for more protection in places where wild pig was believed to be on the decline.

In Rajputana, princely rulers practicing their own specific form of pig-sticking prohibited impoverished villagers from harming their pigs, even though the latter destroyed their crops.<sup>11</sup> As exclusionary policies related to colonial hunting practices segued into the post-independence conservation phase, conservation legislation and associated restrictions resulted in even more stringent preservationist measures.

In these situations, local human-animal relations are typically ignored as communities at the fringe are in many cases already disadvantaged groups with poor negotiating capabilities. Agrarian communities are the most affected in the face of wild boar depredations. For example, settler communities in the Western Ghats of Kerala (Travancoreans who migrated to farm the forest fringe during the war-induced famine of the 1940s) were already marginalized and impoverished on account of past trauma in their native villages and uncertain land tenure in their new settlements. While frequent raids by elephants in the initial years catalyzed a shift in crops and further clearing of the landscape (which reduced the frequency of elephant visitations), the new crops were conducive for wild boar. While boars

11. A.G. Gold and B.R. Gujar, 2002, op. cit, fn. 6; J. Hughes, 'Environmental Status and Wild Boars in Princely India', in M. Rangarajan and K. Sivaramakrishnan (eds.), *Shifting Ground: People, Animals and Mobility in India's Environmental History*. Oxford University Press, Delhi, 2014.

could initially be exterminated and served as a welcome supplement to impoverished settler diets, with the implementation of conservation laws, pigs thrived.

Due to cumulative hardships in the form of elephant raids and chronic wild boar depredation, settlers suffer significantly in terms of hidden impacts and psychological consequences. In these landscapes, while proposals to cull wild pigs have been mooted, it has been met with strong opposition from the animal rights and conservation lobbies.<sup>12</sup> Frequent skirmishes between settlers and state officials (pigs are seen as belonging to the government) have been observed in these landscapes. Retaliatory attacks on other species of conservation significance too have been precipitated as a result of local disenchantment against the Forest Department.

As pointed out by several others, the investigation of conservation conflict is often plagued by a poor understanding of local contexts and situations that bring about these conflicts.<sup>13</sup> Conservationists often tend to ignore local histories of marginalization and numerous other political ecological chains of explanation that bring about these situations. In the case of the Western Ghats, the political motivation for bringing migrants to the fringe was backgrounded by World War II, the Bengal famine and the cessation of rice imports from far away Burma, resulting in a desperate situation for Travancore. Recent recommendations for increasing ecological security in these landscapes<sup>14</sup> are seen as increa-

12. e.g. <http://www.fiapo.org/newsandevents/fiapo-unites-over-a-100-ngos-to-oppose-moefccs-move-to-unabatedly-kill-wildlife/>; <http://www.fiapo.org/our-campaigns/not-vermin/>

13. N.L. Peluso, 2003, op. cit., fn. 7, pp. 61-64; J. McGregor, 2005, op. cit., fn. 7.

sing territorialization by the government. Pigs play a central role in these contests between people and the state.

The prohibition of traditional practices such as hunting or that of culling of problem species are also brought about under the pretext of questioning the ecological sustainability of such practices. In the context of proposals for culling, there were fears that such a practice would lead to local extinctions and in the trade in wild meat.<sup>15</sup> In the politics of conservation, it is commonplace for animal rights activists and conservationists to use science as an excuse for pushing personal agendas without actually backing their claims with research. The entanglement of science, politics and ethical leanings needs to be further interrogated as successful conservation in any place is likely to result in a spillover of species outside protected areas, and bringing in its wake conflicts with local livelihoods.<sup>16</sup>

As one of the most fecund species of mammalian herbivores, the wild pig is quick to breed and multiply, and among the most unlikely species to go extinct in the face of population control measures. Moreover, pigs are clever animals and are known to outwit hunters. However, despite their huge impact on agrarian landscapes, wild pigs remains poorly studied, demonstrating the problematic aspects of asymmetrical research interest on charismatic species. While settler practices are difficult to formalize in terms of traditional rules for hunting,

some lessons can also be imbibed from traditional pig hunting communities in places such as the Andaman islands. In the Andamans, where traditional hunting by communities such as the Jarawa and the Ongee are outside the purview of the Wildlife Protection Act, pig hunting remains of paramount importance with strong rituals and practices that regulate consumption and ensure long-term availability of this key species.

As we have seen above, pigs and people share a complex relationship. A number of other studies such as those on leopards and elephants also show similar results. Both human-animal conflict and conservation conflict in India needs to be re-examined in the light of this complexity and diversity of relationships. A more nuanced interrogation of conflict calls for a renewed emphasis on multidisciplinary explorations towards avoiding recommendations solely based on single dimensional research (e.g. just compensation), and for a symmetrical evaluation of both people and wildlife in zones of contact.

On the ground, such an approach calls for the exploration of other aspects such as the hidden dimensions of conflict as well as the incorporation of multi-sectoral planning (e.g. health, education, environment) and dialogue. Multi-sectoral planning necessitates not only the integration of different components of conflict but also the treatment of conservation and development as linked enterprises in these areas. Negative perceptions of distributive justice which play a key role in catalyzing contemporary conflict are often backgrounded by uneven development and marginalization of local communities.

India's forest fringes are populated by a diverse constituency of local communities whose relationships with

wildlife are mediated by various religious, occupational and cultural affiliations. Political and historical exigencies have not only brought migrants into these marginalized landscapes, out migration too is a feature of the rural fringe. Simple labels of fringe dwellers as peasants, agriculturalists or tribals are insufficient to understand the engagements between people and wildlife in these dynamic landscapes. Context specific explorations, particularly those that look at local, historical and political ecological explorations, and result in the advancement of specific, contextually appropriate solutions, are required for resolving conflicts in these regions.

Recent scholarship has highlighted the existence of local practices and cultural attitudes that mediate relationships between people and wildlife in shared spaces.<sup>17</sup> Though derived from different ethical backgrounds, such traditional practices are nevertheless synergistic with conservation. Moreover, unlike fortress conservation, which creates and reinforces dualisms between people and nature, they offer more inclusive relationships with nature and are also advantageous on account of their legitimacy in local origins and lived experiences. To formalize some of these engagements, there is a need for shared decision making beginning with the democratization of knowledge and action.

While exploring nature's present, it is perhaps useful to look into the potential of older, more efficient local models that deal with conflict. Such a process not only entails the acceptance of diverse ethical perspectives, but also an openness to solutions, some of which may be unpalatable to diehard preservationists or might seem 'unscientific' to the foot soldiers of modern science.

17. e.g., S. Ghosal and D.J. Kjosavik, 2015, op. cit., fn. 6.

14. These include the reports of two high level committees headed by Madhav Gadgil and K. Kasturirangan.

15. <http://www.thehindu.com/news/national/kerala/order-on-wild-boar-shocks-conservationists/article6079714.ece>

16. See Jay Mazoomdaar, 10 June 2016, <http://indianexpress.com/article/explained/environment-ministry-culling-controversy-cant-take-away-the-farmers-right-to-life-and-livelihood-2845157/>

# Historicizing mutinies against nature

AARTHI SRIDHAR

THE urgency of halting the destruction of nature and the rational settlement of human conflict over natural resources has become a hallmark of contemporary discourse in the public sphere. Conservation problems appear as irrational mutinies against rational governance and scientific management, and its perpetrators' actions are often explained as self-interest or ignorance couched in discourses of identity, honour, tradition and entitlement. Does the future of conservation then simply demand an intensification of earlier efforts by secular environmentalists, either for better communication and education strategies, or does it call for strengthening conservation battles in courts or on the ground? Perhaps a reflection of contestations over nature in present times can expand our conception of the ambit of environmentalism in future.

This article attempts at such reflection, drawing from marine examples in the Gulf of Mannar and Palk Bay region along the south east coast of India. This is a region where nature's

elements drew the attention of naturalists and scientists in the 18th and 19th centuries and also the site where the first marine biological research station was established in 1914. This coastline bears many impressions of a much longer history of various communities' interactions with the sea – through enterprises such as boat and ship building, maritime trade, large-scale pearl and chank fisheries which, incidentally, finds mention in Sangam literature from 300 BCE.

A very brief sketch of four controversies that transpired over the last decade will illustrate how the present crisis is commonly perceived. I later identify the common narratives in such controversies that intensify struggles over nature in a markedly different way than before. I end with some ideas on how to perform such environmentalisms and the work it entails.

Illegal transboundary fishing and the politics of identity: The Palk Bay fishing conflict has dominated recent news reports about this region. The years following the bloody defeat of

the LTTE in 2009 witnessed serious conflict in these territories – the tensions centred around the charge of ‘illegal transboundary fishing’ placed on Indian trawlers transgressing into Sri Lankan waters. Here, ethnic identity and economic stakes collide with strong geopolitical posturing over the porosity of the International Boundary Line (IBL).

Several actors on both sides (including fisher leaders, scientists and activists) have denounced the technology of bottom trawling, whether in India or in Sri Lanka (where only gill nets are operated). Tamil trawl fishers from India on the other hand have not only stiffly countered these charges of ecological damage but importantly, that of illegitimacy. At times denying that transgressions occur at all, one of their dissenting arguments has been to claim that the waters and lands between the two nations have known longer histories of common use for the Tamil fisher community than the current separation of use enforced by the artificial boundary of the IBL. They point to a diversity of categories of ‘trawler owners’ stating that economic imperatives lock-in their fishing behaviour since indebtedness awaits them if they reduce the intensity of fishing.

Some trawler representatives will admit that technology has detrimental effects on the ecosystem, but complicate this narrow view by also pointing to the possibilities it has offered – where such activity has fed India’s export capabilities, sustains many local and regional seafood companies and employees and other chains of livelihoods in which coastal people are employed today. In the current debate around the banning of bottom trawling, they raise important questions about the silence of the state which actively led them into adopting this technology between the 1960s till the 1990s and the

‘integrity’ of government officials who look the other way when mega-sized trawlers are illegally given fishing licences.

Endangered species and traditional vocation: In 2001 the Indian Ministry of Environment and Forests (under the NDA coalition government headed by the Bharatiya Janata Party) introduced a ban on the collection and sale of all sea cucumbers and sea horses (all *Holothurians* and *Sygnathidians*) under the Wildlife Protection Act of 1972, presumably on account of worrying concerns about their depleting stocks. Since then, there have been regular instances of illegal catches of these items. In 2004, the confiscation of a Singapore bound container, with over two metric tonnes of dried seahorse, at the Chennai Port was widely reported in the press. In 2015, the online edition of the news network NDTV, reported that the Coastal Security Group (Marine Police) in Tamil Nadu found 600 kgs of processed sea cucumbers in a raid of godowns in Nagapattinam.

In 2014, 16 Sri Lankan fishermen were reportedly arrested by the Indian Coast Guard for catching sea cucumbers in Indian waters (the item is not banned in Sri Lanka). Further, following protests and petitions from various fisher representatives, 2016 saw not just the Tamil Nadu wing of the leftist All India Trade Union Congress openly support the sea cucumber fishers but also the former ally of the BJP in the NDA, the AIADMK Member of Parliament Anwar Raja argued publicly against the ban. In March that year, *The Hindu* reported that Anwar Raja had offered a wide range of reasons in support of lifting the ban – chiefly the impact on the livelihood of fishers but also the harassment by the Sri Lankan navy and the ‘age-old’ tradition of breath-hold diving for fishing.

In 2016, the Madras High Court took cognisance of a petition filed by the Nagai Seafood Catchers Association for lifting the WLPA imposed ban. Fishers engaged in breath-hold diving for the collection of sea cucumbers claim that it has been a traditional activity which they must be allowed to practice. They also lay the blame for depleting sea cucumber numbers on unregulated bottom trawling in this region.

Technological innovations as tradition: Over the last three years, a group of fishers from the Teresuram quarter of Thoothukudi city began using the controversial ‘hookah diving’ system to scrape the sea bottom and collect dead chank (*Turbinella pyrum*) shells. The fishers argue that diving and collecting shells is a traditional vocation practised by the Catholic Parivar and Kadaiyar castes but also by the Hindu Muthurayar caste and Muslim Labbai or Marakayar in this region. The use of this technology, their leaders argue, is merely a technological innovation, a mark of *naveenakaalam* or ‘the new times’ that they have to go along with, and that technological innovation is central to the practice of fishing.

The risk to life in the hookah system is considerable where, unlike with the scuba diving apparatus, hookah divers use long rubber pipes directly connected to compressors that pass on unfiltered air. Often working for a couple of hours at a stretch, the ‘compressor divers’ do not follow standard scuba diving protocols such as controlled descents or ascents, bottom time limits, making decompression stops or dive times. Reports of deaths resulting from decompression sickness have been noted but are not openly discussed. The practice of chank collection by this method has brought down the price of live caught shells which involve greater labour for cleaning and polishing aside

from the labour involved in breadth hold diving or free diving. Compressor divers and their leaders passionately argue that this is a risk they are willing to take in order to feed their families, somewhat akin to labour in foundries and mines.

In 2015, the Jayalalithaa government also announced a limited subsidy for the purchase of scuba diving equipment to carry on this work which soon turned unviable. Leaders of the divers' associations argue that they have obtained licenses from the fisheries departments (which does not specify technological limits in this case) and that the true source of the depletion of chank is bottom trawling introduced by the state in the first place.

**M**aritime infrastructure impacts and reviving maritime glory: Despite heavy criticism and protest from coastal communities, the Ministry of Environment and Forests awarded environmental clearance in 2006 to the Sethusamudram Ship Canal Project (SCCP), a dredging project to widen and deepen the shallow channels of the Gulf of Mannar, Palk Bay and Palk Strait between India and Sri Lanka. Technically, SSCP involved an annual dredging of the seabed for approximately 167 km to make a navigational channel about 300 metres wide and thereby support ships with a draft of about 10 metres. The channel route is only a few kilometres away from the Gulf of Mannar National Park and within a portion of the larger 10,500 sq km Gulf of Mannar Biosphere Reserve. It aims at bypassing transshipment at Colombo port and promoting coastal shipping in India.

The idea of a navigable canal in this region can be traced to James Rennell in the late 18th century and subsequently, multiple though aborted attempts were made to revive it, extending into the post-Independence period.

It was finally resurrected in the years of Dravida Munnetra Kazhagam (DMK) rule in Tamil Nadu when it was a coalition partner with the UPA-I government at the Centre (where DMK leader T.R. Baalu controlled the portfolio of the Ministry of Shipping, Road Transport and Highways). SSCP was introduced by Prime Minister Manmohan Singh in 2005 in Madurai city as a project that would bring glory to the Tamil Nadu state and economic benefits to the nation. Significant portions of his project inauguration speech were dedicated to the 'great and glorious maritime tradition' of Indian merchants, boats and trade, arguing that the SSCP would help revive this fading glory.

**A**n examination of these present-day controversies reveals a range of actors (scientists, environmentalists, fishermen, government officials and policy makers), each of whom contributes to at least three intersecting narratives – of nature, modernity and technology. But absent from most claims related to these narratives is their open historicization. Thus, they only allude to a past, but shy away from an active engagement with how power and injustice in the past may have contributed to the making of such claims.

Common to all these accounts is the discussion over nature – whether it is impacted or not impacted by a particular set of human interventions, whether the impacts are justified or not, and who bears culpability for crimes against nature. While some actors appear to speak in nature's terms (biological or oceanographic descriptions such as increased sedimentation from dredging, fishing down food webs, mesopredator release or the endangered status of marine species), others describe their relations with nature through non-science cultural categories where economic life, tradition,

honour and community feature prominently. Workshops, meetings and public hearings that debate the present controversies display very little insight into how each actor came to forge these ideas about nature.

Thus, meetings on tackling bottom trawling are not informed by an environmental, economic or social history of bottom trawling on this coast. Nor is there sufficient understanding of how each of the actors ('trawl owners', 'the maritime nation', 'illegal fishers') themselves emerged and the operation of power and injustice in aiding their emergence. Thus, despite multiple actors shaping current fisheries (either around key species, or techniques), its regulation is not discussed using legal principles that bring into play history, such as a Common But Differentiated Responsibility (CBDR). Precisely since ideas like CBDR require an acknowledgement of injustice and power differentials which are sometimes complicated to make, and because they broaden the number of actors who are complicit in forging a crisis, it is unpalatable to powerful actors as an acceptable legal principle.

Thus, public hearings or environmental clearance processes for the SSCP did not witness a debate on the meaning of, or the truth or social costs around, 'India's past maritime glory.' It also failed to mitigate the social and environmental costs arising from the project objective of remaking maritime glory in the present. In short, the historical operation of power in producing various actors and the historicized costs of their relations with nature is absent in environmental governance processes around marine issues.

**T**he second narrative that is common to all actors but not separate from the discourse of nature is that of moder-

nity. This modernity is articulated in multiple ways. Secular environmentalists claimed a modern understanding of nature when they argued that the SSCP had to be stopped because of ecological impacts of dredging and not on account of the putative destruction of the Rama Setu Bridge (which nationalist Hindutva affiliated groups claimed was a sacred site built by Lord Rama's army of monkeys over a million years ago). They also argued for a modern conception of equality and justice as constitutional rights, claiming that SSCP would jeopardize the livelihoods of hundreds of small-scale fishers.

On the other hand, the proponents of the SSCP argued for the modernization of the shipping industry in a double movement – a step away from economic backwardness but also a step towards a status of past glory. The hookah divers' claim that their use of high-risk compressor diving technologies was both traditional and modern 'innovation' for them, is a particular representation of modernity.

**E**nvironmental governance does not enquire into the full sets of effects of such claims (except that on nature), or why such claims arise in the first instance. A broader conception of justice in relation to nature, or a more political ecology, might ask in what way does the claim to a particular modernity privilege certain groups in the way they relate to nature? And do they choose particular representations or are there alternative states of being that these groups could equally have claimed? Could the hookah divers find alternative ways of expressing their modernity in a manner not just acceptable to an external community but also feasible in the context of over-fishing and social immobility? How do the other actors constrain or privilege each other's claims to modernity?

Once again a turn to a historicized view is inevitable if claims to modernity must be explored.

**A** final common narrative in the above sketches relates to technology. Not only is there a tendency among conservationists to speak of technology as neutral, but the assault on nature is seen as the 'misuse' of technology (of underwater diving gear, of bottom trawling technologies, of dredging equipment, of market information, use of mobile phones by sea cucumber poachers, and so on). However, seen in conjunction with the narrative of modernity and that of relations with nature, we come to appreciate the control that technology has over society.

All maritime enterprises today are replete with technological artefacts and materials. The introduction of technologies in the field of fisheries was closely enmeshed with the discourse of modernity. From fishing, to conservation, to dredging – all activities are mediated by multiple technologies. However, in adjudicating their impacts on nature, we will need to simultaneously examine possible effects on identity and the differential relations of people with technology through time.

Idealized versions of environmental governance and management of marine resources are structured around simple and ahistorical categories of actors and actions. However, in practice, a number of other logics surrounding cultural categories such as identity, ethnicity, or nationalism are put into play while negotiating nature based decisions. While self-interest and ignorance are not unlikely explanations of the multiple mutinies against nature, they are not generalizable as explanations for the cultural expressions regarding nature and its use. Cultural categories emerge from the representations of historical experiences.

Thus, 'India's past maritime glory' is as much a contemporary cultural expression that arises from a particular reading of historical accounts, but also from the omission of other accounts that qualify the meaning of the entity 'India', or those that highlight the intricate contingencies of social relations, maritime labour and status, technological engagements that shaped maritime trade in the past.

**C**ontemporary controversies over nature, argued through intertwined narratives of nature-modernity-technology, are therefore historically shaped. Thus, an environmentalism in the present will not only have to account for justice with regard to nature-culture relations in the present but also injustices in such relations in the past. A possible way at understanding injustices in the past is by (a) being attentive to the framing behind particular historical engagements with nature (e.g. the 'improvement' of fisheries through the introduction of trawlers) and (b) interpreting multiple historical sources to understand the distribution of the fruits and costs of such activity. Actively looking for omission and silences from historically weaker actors in contemporary accounts will illuminate where injustice in the present is likely to emerge. This double vision can help expand the idea of environmentalism to account for justice not just in nature but also in culture, over time.

This does not call for jettisoning nature altogether, but rather a revision of relations with nature based on the mediating effect that the attention to history can produce. Hopefully, this will lead to a more wholesome appreciation of how rights and wrongs are constituted in these relations and what shape justice should take. Such a maritime environmentalism that brings social relations and history to the fore is not diluted but goes deep.

# Urban commons in a globalizing city

HITA UNNIKRISHNAN, B. MANJUNATHA  
and HARINI NAGENDRA

HUMANITY is said to now live in the Anthropocene,<sup>1</sup> an epoch with a heavily pervasive human footprint. Landscapes are continuously transforming and processes of urbanization drive a large part of this transformation.<sup>2</sup> In fast growing countries such as India, the influence of urbanization is highly visible, particularly with respect to the distribution of urban centres that often grow by engulfing rural spaces into themselves. One such example is the rapidly globalizing south Indian city of Bengaluru, the country's second largest city in terms of area and third largest by population.<sup>3</sup>

Historically an agrarian landscape, Bengaluru has transformed drastically in the intervening years, being variously called a 'garden city' and India's 'Silicon Valley'. Most of the city's growth has been uncharted, unplanned, and with very minimal atten-

tion paid to urban nature and the ecosystem services it provides. At the same time, the city has expanded rapidly by engulfing peri-urban areas surrounding it – areas that even today retain agrarian lifestyles, heavily dependent upon urban ecosystem services.<sup>4</sup> However, unplanned urbanization leading to the acquiring, conversion, encroachment and pollution of many of these urban commons have transformed landscapes, drastically impacting the ecosystem services that may be derived from them.

In this context, this paper tries to understand the current scenario of urban dependence on ecosystem services derived from lake based commons, and link this to the scenarios of the past to understand the trajectories and processes that have shaped the change we observe today.

The landscapes in and around the present day boundaries of the city of Bengaluru have been occupied as far back as 6000 years ago as is evidenced by the presence of tools, implements and fossils dating back to that era.<sup>5</sup> Over time, this city with its naturally undulating terrain has seen the rise and fall of many dynasties including the Gangas, Cholas, Hoysalas

1. F. Biermann, K. Abbott, S. Andreson, K. Bäckstrand, S. Bernstein, M.M. Betsill, H. Bulkeley, B. Cashore, J. Clapp, C. Folke, J. Gupta, P.M. Haas, A. Jordan, N. Kanie, A. Kluvánková-Oravská, L. Lebel, D. Liverman, J. Meadowcroft, R.B. Mitchell, P. Newell, S. Oberthur, L. Olsson, P. Pattberg, R. Sánchez-Rodríguez, H. Schroeder, A. Underdal, C.S. Vieira, C. Vogel, O.R. Young, A. Brock and R. Zondervan, 'Navigating the Anthropocene: Improving Earth System Governance', *Science* 335, 2012, pp. 1306-1307.

2. N.B. Grimm, S.H. Faeth, N.E. Golubiewski, C.L. Redman, J. Wu, X. Bai and J.M. Briggs, 'Global Change and the Ecology of Cities', *Science* 319, 2008, pp. 756-760.

3. H.S. Sudhira, T.V. Ramachandra and M.V.B. Subrahmanya, 'Bangalore', *Cities* 24(5), 2007, pp. 379-390.

4. H. Nagendra, H. Unnikrishnan and S. Sen, 'Villages in the City: Spatial and Temporal Heterogeneity in Rurality and Urbanity in Bangalore, India', *Land* 3, 2014, pp. 1-18.

5. T.V. Annaswamy, *Bengaluru to Bangalore: Urban History of Bangalore from the Pre-historic Period to the End of the 18th Century*. Vengadam Press, Bangalore, 2003.

and the Vijayanagaras.<sup>6</sup> It was a strategic location in the Deccan and this importance is revealed through the many inscriptions that detail the battles fought for the control of this landscape. The foundations of the city were laid in 1536 AD by Kempe Gowda, a vassal of the Vijayanagara dynasty.<sup>7</sup>

This long history of occupation and mostly agrarian settlement is highly unusual for a semi-arid city such as Bengaluru that lies within the rain shadow of the Deccan hills, and which is distant from major rivers.<sup>8</sup> Early residents and rulers overcame this shortcoming by making use of the natural topographic gradient of the city to create a system of networked tanks or lakes, used for rainwater harvesting.<sup>9</sup>

In addition to these water bodies were other specialized land uses – village groves (*gundathopes*), cemeteries, ponds (*kuntas*), temple tanks (*kalyanis*), open wells, grazing lands (*gomalas*), and others. Together with the lakes, these structures were managed as common pool resources,<sup>10</sup> and were integral to sustaining the lifestyles of the agrarian communities who depended on them.<sup>11</sup> Village groves (*gundathopes*) acted as shelter for

livestock owners, as well as wandering nomadic communities. Grazing lands or *gomala* sacted as community pasture lands particularly to inhabitants of the surrounding villages, while temple tanks (*kalyanis*), open wells, and ponds (*kuntas*) served as secondary water sources used for a variety of domestic and occupational needs of the community. Communities were entirely responsible for the maintenance and upkeep of these structures and the undertaking of such activities was considered to provide spiritual merit.<sup>12</sup> Specific community roles were in place regarding the use of these commons, as well as their maintenance and upkeep.<sup>13</sup> Communities had a sense of connect with these urban commons as is evidenced by the continued presence of worship and bonding associated with these structures.

*'This lake belongs just to the villages of Dasarahalli and Rachenalli. We are the custodians of this lake. The boundaries of this lake touch each of our villages and therefore villagers in both villages are our own. This lake nurtures us.'*

*Community elder, Rachenahalli lake*

Our research has delved into the changing role of the urban commons within the city. We draw on multiple

11. S. Mundoli, B. Manjunath and H. Nagendra, 'Effects of Urbanization on the Use of Lakes as Commons in the Peri-urban Interface of Bengaluru, India', *International Journal of Urban Sustainable Development* 7(1), 2015, pp. 89-108.

12. B.L. Rice, *Epigraphia Carnatica* (Volume IX): *Inscriptions in the Bangalore District*. Mysore Government Central Press, Bangalore, 1905.

13. G.S. Dikshit, G.R. Kuppaswamy and S.K. Mohan, *op. cit.*, fn. 9; Specific roles such as the *neerganti* (village waterman), and the *Patel* (village headman) were designated to community members and whose roles revolved around the maintenance and upkeep of the resource. For instance, the *neerganti* was responsible for the release of sluice gates thereby ensuring adequate water for irrigation. The *Patel* acted as an overseer for all operations regarding the lake, gave directives for its maintenance and ensured that the directions are carried out diligently.

sources of information ranging from recorded and remembered (oral) histories, historical maps, and other secondary sources of information to construct a picture of change in the landscape, and in access and availability of ecosystem related benefits from the commons. Our research has shown that beginning roughly from the start of the long-term colonial occupation of the city (from the early 19th century), the distribution of these urban commons has seen a steady decline. For instance, the number of open wells which stood at 1499 in the city and cantonment in 1885, reduced to 500 in 1935, 150 in 1973, and 49 in 2014.<sup>14</sup> Several lakes, including Dharmambudhi and Sampangi lakes, were converted into public utilities such as bus terminals and sports stadiums during this period.<sup>15</sup> Similar changes were observed in other urban commons including grazing lands and village groves.<sup>16</sup>

Our archival research finds that the deterioration in urban lake commons began with the initiation of centralized piped water supply drawn from ever distant sources around the year 1893.<sup>17</sup> Lakes began to be seen as secondary sources of water, and neglected or polluted with sewage being let into them. Lands below the lakes were often inhabited by poorer sections of the society

14. H. Nagendra, *Nature in the City*, *op. cit.*, fn. 7, pp. 170-174.

15. H.S. Sudhira, T.V. Ramachandra and M.V.B. Subrahmanya, 'Bangalore', *op. cit.*, fn. 8, pp. 379-390.

16. H. Unnikrishnan, S. Mundoli, B. Manjunatha and H. Nagendra, 'Down the Drain: Tragedy of the Disappearing Urban Commons of Bengaluru', *South Asian Water Studies* 5(3), 2016, pp. 7-11.

17. H. Unnikrishnan, B. Manjunatha and H. Nagendra, 'Contested Urban Commons: Mapping the Transition of a Lake to a Sports Stadium in Bangalore', *International Journal of the Commons* 10(1), 2016, pp. 265-293; H. Nagendra, *Nature in the City*, *op. cit.*, 2016, pp. 170-174.

creating unsanitary conditions near the water bodies. This necessitated the draining of lakes such as the Miller's tank series, on grounds of sanitation and health related concerns. In other parts of the city, lakes were converted through a gradual process of elite reconceptualization of the utility of the water body. A case in point is that of the Sampangi lake,<sup>18</sup> where conflicts arose about the prioritization of livelihood uses such as agriculture over urban upper and middle class pursuits of aesthetic and recreational values. This led to bureaucratic reimagining of the resource as a space for morning walks, a scenic landscape for bungalows, a polo ground, and a carnival ground, eventually transforming into its present day form of a sports stadium, reflective of notions of aesthetic and recreational utility that held sway in the colonial past of the city.

Such changes also resulted in the displacement of entire communities from the landscape – communities that had strong livelihood and cultural ties to the commons. Traditional institutions responsible for the maintenance and upkeep of lakes too saw a decay beginning around this period in time. Lakes were managed by the state, with centralized decision making of a technical nature. Communities gradually became alienated from water bodies, with a weakening of the link to livelihoods derived from these commons, and the decay of cultural traditions associated with lake protection and worship.

How do urban lake commons particularly provide benefits to urban populations, especially to the urban poor who often live around them? In this context, we undertook field based studies around twenty lakes of the city,

18. H. Unnikrishnan, B. Manjunatha and H. Nagendra, 'Contested Urban Commons', op. cit., 2016, pp. 265-293.

which ranged in size and in exposure to urbanization. In field interviews, local residents state that by about 1985, many lakes had become highly polluted with sewage and agricultural run-off. Connectivity between lakes was lost due to encroachments and building over of the channels that connected various lakes. This ensured that the water, which was once associated with motion and flow, became stagnant and polluted. Uses of lakes that were dependent upon this seasonality too halted. Rapid urbanization that took place around most lakes within the urban and peri-urban landscapes of the city further reduced agricultural dependency upon lakes. The polluted status of lakes, especially from about 2000 to mid-2014 has discouraged fishing. Lakes no longer meet the drinking water needs of communities dependent upon them, except in some cases (such as in Kalkere lake) where pastoralists and their cattle still consume the heavily polluted water. Domestic uses such as bathing and washing vessels too ceased around most of these lakes. Pastoralism, brick making and commercial laundering of clothes, however, constitute traditional livelihood activities that persist even today, possibly because of the availability of the resource to meet these requirements.

*'Earlier, the lake was our own. Now it belongs to the governments. We are not important any more. We are not allowed to graze cattle or cut grass. They have fenced it so we cannot go there. Why should we go where we are not wanted? Why should we even care about it?'*

*Former agriculturist, Agara lake*

Village commons such as sacred groves (*gundathopes*) around the lakes too were converted into built up structures, further reducing user diversity around these water bodies. Around the early 2000s, certain lakes within the study area underwent differing processes of enclosure such as leasing out

for maintenance (Kelaginakere), creation of public parks with paid entry (Madivala lake) and Public Private Partnerships (Hebbal and Agara lakes).

Another way in which ecosystems have been enclosed is after state initiated rejuvenation (such as in Yelahanka lake) where restrictions in timing of entry, patrolling by home guards, and active discouragement of traditional activities were reported and observed. Along with these restrictions, the 'development' of the enclosed lakes proceeded, with an emphasis on promoting the aesthetic and recreational value of the water body.

These dominant perceptions inherently distanced traditional uses such as brick making and pastoralism, which were seen to be against the ethic of 'development'. Local residents of villages around these lakes narrated a strong disconnect from the water body, with formerly integral cultural practices including forms of worship<sup>19</sup> being discontinued. Many interviewees expressed a hesitation to go near rejuvenated lakes, while expressing a feeling of being powerless to effect any change.

*'We do not wish to go near the lake as it is now fenced and we and our cattle are kept away. It is the government's lake now, not ours. Earlier, we had the power to change our lake, keep it clean, graze our cattle, and see that its channels are free and flowing. Now the government makes those decisions for us... we are kept out, our cattle are unwanted. They just want to let well dressed people inside the lake. According to them, we make our own lakes dirty.'*

*Livestock owner, Kogilu lake*

This trend of distancing long-term village residents from their lakes has continued into the present day. However, while leasing out of lakes and Public Private Partnerships<sup>20</sup> have dis-

19. One example of such worship is the practice of *Gange Pooje*. After a day of festivities and offerings made to the deity of the lake,

continued mostly due to civic society protests and PILs, newer forms of enclosure continue to prevent traditional users from accessing benefits from these water bodies. Due to high pollution in many lakes (such as those at Rampura, Bellandur, and Varthur lakes for example), only provisioning services that make use of the lake banks and shallow water – pastoralism and the collection of fodder grass – are currently practised.

Over the last decade, there has been much discussion in the media of the deterioration of lakes within Bengaluru. Legal action has also been taken to clear lakes of unauthorized construction around water bodies. Keeping with this larger climate of attention to water bodies, the city has seen the rise of a number of lake protection groups comprising of middle to upper middle class urban residents living around lakes. In collaboration with the city government, a number of restored lakes have been earmarked for rejuvenation and subsequent maintenance by these groups. These include the Kogilu lake, Sawlkere, Rachenahalli lake, and the Jakkur lake, some of which have been landscaped to include parks and jogging tracks, while being fenced and patrolled by guards. In many lakes, restrictions on access are now imposed, with most timings of access between 5 am and 9 am in the morning, and between 4 pm and 7 pm in the evening, to encourage access for exercise and recreation. In several lakes, traditional occupations such as

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numerous lit oil lamps made of powdered rice were set afloat on the water body accompanied with a ritualistic sacrifice of a goat or hens. This was an annual affair, and versions of this may be found in and around some lakes in peri-urban Bengaluru.

66 20. H. Unnikrishnan and H. Nagendra, 'Privatizing the Commons: Impact on Ecosystem Services in Bangalore's Lakes', *Urban Ecosystems* 18, 2015, pp. 613-632.

commercial laundering and grazing cattle are prohibited within the fenced perimeter. However, our interviews indicate that arrangements have been made to allow entry for fodder collection. This has created implications for gendered relations with the water body. While grazing cattle has traditionally been a masculine domain, the cutting of fodder from lakes has been associated with women. This means that additional stress is placed upon women who not only have to contend with domestic chores but also have to provide fodder for their livestock.

These restrictions have further reduced the diversity of provisioning and cultural ecosystem services derived from lakes, while at the same time catering to the dominant ethic of enhancing recreational and aesthetic utility of the resource.

Our research has shown that while the diversity of ecosystem services obtained from lakes has reduced owing primarily to changed ecological conditions and forms of ecosystem enclosure, lakes, and other urban commons continue to be integral to supporting lives and livelihoods of people dependent upon them. They provide many important provisioning and cultural ecosystem services to communities living around and dependent on them.

Vegetables, fruits, herbs, fish, fuelwood, water and fodder provided by urban commons are important for both subsistence and livelihood appropriation by groups living around them. Livestock owners make use of water from lakes for washing and watering their animals. At the same time, vegetation growing along the lake's banks and on the water surface are used as fodder. Wetlands surrounding lakes support cultivation of ragi (*Eleusine coracana*), various types

of fodder grass, and paddy. In situations of drought and scarce resources, and when water levels in the Agara lake are low, women recall collecting Onagane soppu (*Alternanthera sessilis*), a local green. This was used both to supplement local diets as well as income through selling them. Fishing, once a traditional activity of the Bestharu community, is today tender based. It provides an important source of income to those dependent upon this resource. Water from the lake is integral in supporting the livelihoods of the *dhobhi* (washerfolk) community. In addition, mud and water from the lakes is used to manufacture bricks, another important livelihood based activity dependent on the urban commons.

Lakes and village groves also form an important resource for many of the city's poorer migrants who set up temporary hutments near them. While lakes provide water for domestic activity, the vegetation on the banks of the lake, as well as the village forests, provide an important source of dried twigs used as fuelwood by these communities. Local children enjoy fruits from the village forests, while the grove itself functions as a temporary shelter for visiting nomadic communities.<sup>21</sup>

Many non-material benefits too are provided by urban commons. They provide a connection with nature through various aesthetic and recreational benefits. Walking, jogging, fishing, exercise are common activities to be observed around these spaces. However, aesthetics and recreation are not the only benefits provided by urban commons. They contribute to a sense of belonging to communities because of the many religious and cultural relationships that residents have forged over time and even generations,

21. S. Mundoli, B. Manjunath and H. Nagendra, op. cit., fn 11, pp. 89-108.

with the resource. For instance, every lake has a temple and a deity associated with it, most commonly a manifestation of Shakti,<sup>22</sup> to whom prayers are offered seeking protection from diseases or blessings such as prosperity, and an abundant supply of water. Ritual offerings to ancestors are commonly seen in many of the lakes along with the immersion of idols following religious festivals. Different occupational groups like pastoralists, fishermen, farmers and washermen also have their own spiritual relationship with lakes, linked to their livelihood needs. These are marked by specific ceremonies performed by each group for the preservation of their livelihoods.<sup>23</sup>

Lakes are and have been produced spaces – produced with the intention of supporting agrarian landscapes. Yet, today, the very people who helped shape this landscape have reported a strong disconnect from the resource. In other words, they have become alienated from their resource base. This alienation of communities is an ongoing process that is influenced by the degree of urbanization around lakes across the city. Long-term resident communities around the lakes attribute this phenomenon first to changing lake ecologies, and more recently to various manifestations of ecosystem enclosures. At the same time commu-

22. Shakti – a feminine spirit believed to be a protector from disease, misfortune, and ravages of nature. Around the lakes of Bengaluru, she is most commonly represented as a manifestation of one or all of seven sisters (known as Akkammanavaru, Akkandiru and Saptha Maathrikeyaru), worshipped together with their brother and protector, the God Muneeshwara. Representations of one or all of these deities are worshipped around every lake in the city as the lake deities.

23. Different occupational groups have different spiritual relations associated with the lake. For instance, we have learned through our interviews that the dhobhis or washerfolk perform a yearly dedication to a specific

nities living around lakes have reported a sense of powerlessness (the perceived inability to effect change), while at the same time feeling isolated (the feeling of being cut-off both from using the resource as well as the community structures that have evolved around it).<sup>24</sup>

Greater research on the urban commons is needed to provide inputs towards understanding how social relations and dependence on the urban commons has changed as a function of changing ecosystem quality and governance mechanisms. Our research lends voice to perceptions of change as experienced by the subaltern, while being useful in identifying actors vulnerable to exclusion. It demonstrates that the politically pervasive notions of aesthetics and recreational utility have operated upon and continue to do so in shaping the landscape of the present day. It emphasizes the importance of understanding historical dependencies on urban commons as well as trajectories of development followed by them over time in order to capture the range and diversity of ecosystem services they provide.

The alienation of communities from a resource base has grave implications for the notion of community stewardship of resources. Traditionally, while the state undertakes restoration and rejuvenation of urban commons such as lakes, the onus of maintaining

deity, Uppudyaavaru, invoking his protection both for the clothes entrusted to them as well as for their children who are often left unattended on the banks of the lake. Similarly, fishermen refuse to take their footwear into the coracle used for fishing as being symbolic of their respect for the water body that nurtures their livelihoods. Pastoralists and agriculturists too worship the seven sisters, but with different rituals characteristic to their specific occupational group.

24. V. Narain and S. Viji, 'Where Have All the Commons Gone?' *Geoforum* 68, 2016, pp. 21-24.

these rejuvenated commons rests deeply on community stewardship.<sup>25</sup> Community stewardship of social-ecological systems is also an important factor that enhances the resilience of the system to changes.

However, as this paper shows, the notion of community is a deeply heterogeneous one, with imbalances in power among the various stakeholders. Consequently, the 'community' which is responsible for the stewardship of the resource is not representative of the diversity of its dependents, and only represents those stakeholders who identify with dominant perceptions of the utility of the resource. This creates a situation wherein the resource begins to be identified only by the perceptions of those community members involved in its management. This identification with a certain worldview around a resource is reflected through exclusionary managerial regimes such as ecosystem enclosures. At the same time, it alienates stakeholders who have different relations with the resource (in this case, utilitarian as against recreation and aesthetics).

The question that is therefore clearly posed by this narrative is 'who are urban commons meant for?' It is clear that excluding and alienating certain actors from the resource base can have serious implications on the effectiveness of community stewardship of that resource, and therefore on the larger issue of social-ecological system resilience. It is also necessary to identify actors vulnerable to exclusion in order to construct inclusive policies governing the use and management of urban commons.<sup>26</sup>

25. H. Unnikrishnan and H. Nagendra, 2015, op. cit., fn. 20.

26. T. De Moor, 'What do we have in Common? A Comparative Framework for Old and New Literature on the Commons', *IRISH* 57, 2012, pp. 269-290.

# Woh jangal hamara hai

ANAND VAIDYA

ELITE imaginations of India's forests rarely leave much room for Dalits living in them – or for caste at all. A vocal group of hardline preservationist conservationists demand that people leave the forests altogether. More progressive critics of these hardliners often subscribe to what Paul Greenough has called 'the standard environmental narrative' of the Indian environment: the forests' inhabitants are – or should be – exclusively indigenous Adivasis living out of time and politics and in harmony with their surroundings. Conservation comes intuitively to Adivasis, this narrative holds, because they are as natural as the trees and hills around them.<sup>1</sup>

The assumption that Dalits don't live in forests isn't only a discursive problem. The assumption has had profound legal and political consequences, from the exclusion of members of Scheduled Castes from the protection and political rights provided by Schedules Five and Six of the Constitution, to the requirement that they prove three generations of residence in the forest

1. For work on the sociological and legal framing of Indian indigeneity, see Virginius Xaxa, 'Tribes as Indigenous People of India', *Economic and Political Weekly* 34(51), 1999, pp. 3589-3595. Bengt T. Karlsson and T.B. Subba (eds.), *Indigeneity in India*. Routledge, London, 2006.

to claim rights under the 2006 Forest Rights Act – rather than the residence since 2005 required for members of Scheduled Tribes. The result is that Dalits are especially vulnerable to the threat of dispossession faced by all forest dwellers.

Uncounted millions of Dalits live and work in India's forests.<sup>2</sup> Most of them, like most other forest dwellers, Adivasi and otherwise, did not see their property or use rights recognized as the Forest Department claimed some 23% of the country's land area from the late nineteenth to the late twentieth century.<sup>3</sup> How would forest politics look if we took these millions of people into account? How do the politics of forests look when viewed through a caste lens? What forms do Dalit forest politics take?

I am in no position to answer this question on behalf of the many Dalits who live in forests, but Dalit political movements are actively answering this question themselves every day. In this essay, I trace the contours of one

2. No complete survey exists of the number of people who live in India's forests and are eligible for rights under the Forest Rights Act, let alone the number of such people who are Dalits.

3. Madhu Sarin, 'Scheduled Tribes Bill 2005', *Economic and Political Weekly* 40(21), 2005, pp. 2131-2134.

such political project, a landless Dalit and Adivasi movement in southeastern Uttar Pradesh that seeks to reclaim forest land through the 2006 Forest Rights Act (FRA). What emerges from attention to their demands is a challenge to two taken-for-granted analytical distinctions: the movement challenges a separation of questions of land and political economy from questions of the environment, and it simultaneously challenges an assumed absolute distinction between Dalits and Adivasis, between Ambedkarite anti-caste politics and politics of indigenous sovereignty.

I did two years of research, from 2010 to 2012, with a movement of women and men struggling to claim rights to forest land in southeastern Uttar Pradesh, which I will call the *Sangathan*. I first met the activists associated with the Sangathan in 2009, at a forum held in Lucknow. The forum was being organized in association with the Bahujan Samaj Party (or the BSP) state government in order 'to begin a process of dialogue and interaction between levels of administration as well as people, to dispel lack of knowledge about the act, and ensure that those Dalit Adivasis who have been deprived of their rights for generations be granted these rights.' During the meeting, forest dwellers from across the state shared stories of their attempts to gain rights to their land through the FRA and the resistance they had to face, in the form of harassment and violence from higher castes and the Forest Department. BSP representatives pledged their support to the forest dwellers and their movement, and promised a number of measures to ease the process of applying for rights through the new law.

The invitation to the Lucknow forum was the first time that I had come across the phrase 'Dalit Adivasis', but

I would encounter it many times more over the following years – in official invitations and in conversations by the fireside with the women and men struggling for land in eastern Uttar Pradesh. The members of the movement belonged to a range of jatis that were classified as Scheduled Castes and Scheduled Tribes – Chamars, Gonds, Agarias, and others – but nearly all of them, whether SC or ST, would describe themselves as Dalit Adivasis.

Why was the distinction between Dalit and Adivasi not being maintained here? For one, in the 1950s, Govind Ballabh Pant's government did not classify any of Uttar Pradesh's communities as Scheduled Tribe, maintaining that the forms of absolute social and cultural difference that the category implied did not exist in a state that was framed as standing in for the nation. Communities that were classified as Scheduled Tribes in neighbouring Bihar and Madhya Pradesh, such as Gonds and Agarias, were thus assigned to the Scheduled Caste category.<sup>4</sup> It was not until 2002, as a bid to further incorporate them into the BSP's coalition politics, that Chief Minister Mayawati reclassified a number of Adivasi communities in eastern Uttar Pradesh as Scheduled Tribes.

Their incorporation into BSP-style Dalit politics did not end in 2002 however. Critical to the Sangathan's project is a politics of land that has deep continuities with a longer history of Dalit struggle, drawing on the BSP's projects as well as older, pan-Indian histories. But what happens when those struggles are transposed to the forest? What happens when a politics of land redistribution and caste abolition is brought to a domain whose poli-

4. H.S. Saksena and Chandra Sen, *Putting People Last: Tribal Displacement and Rehabilitation*. Inter-India Publications, New Delhi, 1999.

tics are consistently framed in terms of conservation and preservation?

The women and men of the Sangathan hold a monthly rally for forest rights in a nearby town, in which block-level government offices are located. I travelled with two activists to one such rally in 2010. We parked our jeep in the town centre and sat under an awning that stretched into the street. Residents of the forty villages in the area that had been organized by the Sangathan began to trickle in – first a few, then a dozen at a time, and finally hundreds. Most of the people arriving were women, talking excitedly. The mood was festive. Winter was arriving, but as the sun rose higher in the sky the temperature still climbed into the high 30s Celsius. These villages had all been established by landless Dalits and Adivasis who were seeking to claim rights to the forest under the 2006 Forest Rights Act, a historic law which recognizes the use and tenure rights of forest dwellers after more than a century of dispossession. In none of the forty villages had the attempt to claim rights gone smoothly, however, and each had faced obstruction from local higher castes and a hostile Forest Department.

Soon after we arrived, a large group of women came on to the road, marching towards us and chanting: '*Mahila shakti zindabad!*' (Long live womens' strength!), '*Inqilab zindabad!*' (Long live the revolution!), and a slogan carried from Dadasaheb Gaikwad's Dalit land occupations in Maharashtra in the 1950s through the BSP to the forests, '*Jo zameen sarkari hai, woh zameen hamari hai!*' (The government's land is ours!).

'Jo zameen sarkari hai, woh zameen hamari hai' has its origins in Gaikwad's push to extend the Ambedkarite Dalit movement into rural areas after Ambedkar's death.

The slogan is a critique of and a challenge to government administered *Bhoodan* redistribution—landlord land that had been ‘gifted’ to the landless, often to Dalits, but which in many cases was never transferred to its intended recipients. Land occupations, the slogan implied, were not a morally neutral matter of redistribution, but the claiming by the landless of what was theirs to begin with: a gift that had never arrived, held by a government that had not fulfilled its representative promise.<sup>5</sup>

The BSP picked up Gaikwad’s slogan and deployed it in rallies across Uttar Pradesh. As Kanshi Ram explained in 1993, in a booklet titled ‘Concept of Bahujan Samaj Party’, the party would simultaneously address social and economic inequality through two means: through land redistribution and by encouraging migration for work in industry. ‘BSP seeks to put the interest of the lowest of low, the landless peasant as high on its economic agenda as that of the farmers who are the victims of our prevented policies. A vast majority of these people will need to be helped to move away from a dependence on the land to primary industries and related business.’<sup>6</sup>

Kanshi Ram went on to explain the slogan, ‘Jo zameen sarkari hai, woh zameen hamari hai’, which the BSP had resurrected in order to encourage Dalits to occupy residential and agricultural land in Uttar Pradesh. ‘Baba Saheb Dr. Bhim Rao Ambedkar gave to every Indian, through our constitution, the fundamental right to property. [...] Four decades have passed, in spite of many land reform schemes, the vast

majority of the Bahujan Samaj [‘majority society’] is still without any property. BSP now refuses to tolerate the conspiracy which made our people who till the land to feed us are prevented from owning the land, our people who labour to build magnificent mansions in our cosmopolitan cities are not helped to own a roof over their own heads.’<sup>7</sup>

Lerche describes the role of the BSP, after coming to power, in supporting Dalit land occupation movements through the use of the state machinery.<sup>8</sup> The party never engaged in land redistribution itself, but backed independent and organized efforts to claim *Bhoodan* and other land. Jaoul has shown how the statues erected by the BSP government of Ambedkar and other Dalit leaders themselves were part of these struggles over urban public and agrarian space.<sup>9</sup> But how did these tactics and Gaikwad’s slogan arrive in the forest? And what happened to the tactics and to forest politics after they arrived? To answer these questions, let us return to the Sangathan’s rally in the town centre.

As the sun rose and the day grew warmer, we started marching, the women in front, and a group of three—a flag-bearer, a lone man, and a woman wearing all red and carrying a taut bow and arrow—walking abreast in the lead. The group grew to be thousands strong, and the chants echoed in the small trading town: A twist on the Gaikwad slogan appeared, ‘Jo jangal sarkari hai, woh jangal hamara hai!’ (The govern-

ment’s forest is ours). ‘*Van vibhag jangal chhode!*’ (Leave the jungle, Forest Department!) Other chants referenced the ongoing legal battles with the forest and police departments, which had filed cases against the villagers not only for occupying forest land, but also for gathering sticks and other forest produce: ‘*Farji muqadama wapas lo, wapas lo!*’ (Withdraw the false cases) and ‘*Police prasashan murdabad!*’ (Death to the Police Department).

A few onlookers in the market joined and, except for one moment when we marched pass a shop blaring loud pop music that overpowered the chants, the chants continued to grow louder. ‘*Adivasi ekta zindabad!*’ (Long live Adivasi unity), ‘*Dalit ekta zindabad!*’ (Long live Dalit unity!). ‘Dalit’ and ‘Adivasi’ both appeared in the chants, back to back.

The slogan had travelled to the forest, where *jangal* had replaced *zameen*. The politics that Lerche describes, of Dalit-led redistributions of land, sometimes organized by left organizations with critical backing from the BSP government, seemed to have been transposed. The government’s land and forests belonged to the landless here as they did in UP’s plains. Forest land is not *Bhoodan* land, though, and in travelling to the forest, the specific property relations and the configuration of state and movement actors had shifted in crucial ways. The land to be redistributed was no longer divided among a handful of large landlords and state agencies, but was held by one large landlord: the Forest Department. Land occupations here did not come at the expense of others trying to cultivate the land, but at the expense of a state agency.

This transposition of Dalit landless politics to the forest had an effect at the level of discourse as well. The

7. Kanshi Ram, *The Editorials of Kanshi Ram*. Bahujan Samaj Publications, Lucknow, 1993, pp. 158-163.

8. Jens Lerche, ‘Politics of the Poor: Agricultural Labourers and Political Transformations in Uttar Pradesh’, *Journal of Peasant Studies* 26(2-3), 1999, pp. 182-241.

9. Nicolas Jaoul, ‘Learning the Use of Symbolic Means: Dalits, Ambedkar Statues and the State in Uttar Pradesh’, *Contributions to Indian Sociology* 40(2) 2006, pp. 175-207.

5. R.S. Morkhandikar, ‘Dilemmas of Dalit Movement in Maharashtra: Unity Moves and After’, *Economic and Political Weekly* 25(12), 1990, pp. 586-590; Prahlad Gangaram Jogdand, *Dalit Movement in Maharashtra*. Kanak Publications, New Delhi, 1983.

6. Quoted in H.S. Saksena and Chandra Sen. 1999, op. cit., fn. 4, p. 159.

categories 'Dalit' and 'Adivasi' and the movements and political projects that have harnessed them have widely divergent histories and associations. The just future imagined in Niyamgiri by members of the Dongaria Kondh and Kutia communities is not the same as the future imagined by Dalit Panther poets in Mumbai in the 1970s—just as the analyses underpinning the two projects are broadly different. Intellectuals associated with the Ambedkarite Dalit movement have emphasized a modernizing, rationalist, future-oriented project, one that weighs tradition on the scale of social justice before deciding to adopt or discard it. Land redistribution has been critical to such movements, as in Gaikwad's campaign, the Kilivenmani land occupation in 1968, and others. Adivasi movements on the other hand, like indigenous movements in Latin America and elsewhere, have grounded their claims on an assertion of cultural difference, lost territorial sovereignty and, not infrequently, environmental stewardship.<sup>10</sup> The two traditions could be said to be working within different temporalities of justice, both demanding justice, but one in terms of the future and the other in terms of the past.<sup>11</sup>

Given these diverging temporalities, how can we understand the work done by the Sangathan to bridge the movements and the categories, Dalit and Adivasi? To answer this, let us return to southeastern Uttar Pradesh, to a conversation I had with a friend there who had been deeply involved in the struggle for rights for his village. He

10. Megan Moodie, *We Were Adivasis: Aspiration in an Indian Scheduled Tribe*. The University of Chicago Press, Chicago, 2015; Ronald Niezen, *The Origins of Indigenism: Human Rights and the Politics of Identity*. University of California Press, Berkeley, 2003.

11. This is of course a simplification. Ambedkar and Phule made claims to Dalit and non-Brahmin indigeneity themselves, but a

explained to me that the Forest Rights Act had in fact been written by Ambedkar, as part of India's original Constitution. The Forest Rights Act, he told me, said that the Dalit Adivasis were the original inhabitants of India, and that the *jal, jangal, aur jameen* belonged to them. Ambedkar was meant to be the first prime minister too, but then 'the brahmin Nehru' took the prime ministership from him and hid the true law, which would have restored Dalit Adivasi sovereignty over India. In the meantime, Dalit Adivasis were forced to work for foreigners, for the Forest Department and for higher castes who owned land in the area. Mayawati had found the FRA and given it to them, he told me, and now they were reclaiming the land that belonged to them, escaping caste oppression, and reclaiming their country.

My friend was drawing upon both discourses and both temporalities: a temporality of historic indigenous sovereignty as well as a future-oriented temporality of caste abolition through property redistribution. But the dispossession and redistribution of property here were tied, critically, to a once lost and now regained indigenous sovereignty. William Cronon has pointed out a property relation is a right that A has over B, recognized and enforced by a third element, C.<sup>12</sup> In other words, every property relation implies the existence of a sovereign which will recognize and enforce it. My friend's analysis brought both sovereignty and property into play: primitive accumulation had been enabled by the loss of the state, and the reclamation of the state and their property would proceed hand in hand.

reestablishment of lost indigenous sovereignty was never central to their political goals.

12. William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England*. Macmillan, New York, 1983.

Through the Sangathan, the temporalities and discourses of Adivasi and Dalit politics are available to be drawn upon, chosen between, and combined. The preamble to the Forest Rights Act frames the law in the terms of Greenough's standard ecological narrative: the preamble says that the law reverses the 'historic injustice' of the dispossession of India's forest dwellers, who have been responsible for the conservation of India's forests. The leaders of the Sangathan say that they, as the indigenous residents of the region's forests, are the victims of the historic injustice, or *itihāsik anyay*. They simultaneously frame their struggle, however, as one against caste oppression and capitalism. Dalit and Adivasi are not, for them, opposed or exclusive identities, but tools to understand their situation, to build alliances, and to work toward a more just future.

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# Reimagining aesthetics of the wild in Delhi

MAYANK VIKAS

THE imagery of urban spaces embodies a city's politics, economic functioning and social hierarchies. Identifiable features that constitute habitations also illustrate the aesthetic and spatial manifestation of power structures, and the hegemonies they uphold. The meaning of a cityscape is not limited to interpreting its lived spaces, but also interrogating the societal role of its open expanses. As historian Upinder Singh observes, people have developed deeply intimate relations with their landscapes over an inter-generational timescale.<sup>1</sup> Even though ecology and topography of an area may not be determining factors, they do contribute towards shaping entire regions, influencing what crops are grown, coalescing people culturally, and formalizing means of resource production and exchange.<sup>2</sup>

1. Upinder Singh, *Ancient Delhi*. 2nd ed. Oxford University Press, New Delhi, 2006, p. 114.

Since the environment is a dynamic actor with multiple constituents, it responds to anthropogenic and climatic changes in unpredictable manners that may produce unintended consequences. As ecologies respond to both natural and anthropogenic changes, the way in which people interact with landscapes also alters.<sup>3</sup> The ability of people to reinvent themselves per their varying environment is an important reason for the resilience of many communities and their ways of life.

Cities like Delhi boast of millennia old antiquity and an enduring geopolitical importance within the Indian subcontinent. As dynasties have come

2. David Ludden, *The New Cambridge History of India. IV. An Agrarian History of South Asia*. Cambridge University Press, 2011, p. 278.

3. Minoti Chakravarty-Kaul, 'Village Communities and "Publicness" in Northern India: Self-Governance of Common Property Resources and the Environment, 1803-2008', in Haruka Yanagisawa (ed.), *Community*,

and gone, myths and histories of the past have been accumulated in the collective consciousness of communities. These memories often create a mythic idyllic past, including a eulogized imagination of nature.

In recent years, there have been concerted attempts to restore vegetation in Delhi (and neighbouring Gurgaon) to its 'original state' through extensive afforestation.<sup>4</sup> However, representing Delhi's historical ecology accurately is a difficult endeavour.<sup>5</sup> To recreate Delhi's environment, it is important to not only gauge its historical contours from available material, but also analyze how afforestation policies are impacting local communities today.

Delhi's continued historical importance stems from both its strategic positioning in northern India and its own topographical features. India's capital is placed as a gateway between the Himalayas in the North, the Aravali range in the West with the Thar desert beyond, and the vast Indo-Gangetic plain to its East. Delhi's geography is primarily shaped by two natural features, the Aravali hills (commonly called ridge, *kohi* or *pahari*), and the Yamuna river. The ridge is part of the Mewat branch of the Aravali mountain range that extends over 800 kms from Gujarat, across Rajasthan and culminates in the city. The hills enter Delhi from its southern region contiguous with Haryana,<sup>6</sup> forming a 5 kilometre wide rocky tableland that extends

*Commons and Natural Resource Management in Asia*. NUS Press, Singapore, 2015, pp. 82-110.

4. Shubhra Gururani, 'When Nature Goes Green: The Story of Pastures and Parks in India's Urban Peripheries', paper presented at the Centre for South Asian Studies, University of Michigan, Ann Arbor, November 2012, p. 16.

5. Singh, 2006, op. cit.

6. Ashish Kothari, Aditya Arora, Pallava Bagla, Nandita Hazarika, Ranjit Lal, Subhadra

35 km into the city. Since the plains of Delhi are bound by the ridge from three sides and the Yamuna river from the fourth, it was favoured for habitation since it provided natural resources, good agricultural land in the flood plain and a natural protective boundary. Delhi's floral composition is diverse and includes many microhabitats,<sup>7</sup> with the ridge primarily categorized as semi-arid scrub forest (although the valleys can support dense vegetation).<sup>8</sup> The foliage in the thorny, secondary forests (*rakh*) of the hills is sparse, humus content is low, and very few areas can support agriculture. The ridge has uneven terrain, with numerous ravines and rocks interrupted by sandy soil (*bhur*) typical to desert/semi-desert regions that support growth of primarily grass, shrubs and stunted trees.<sup>9</sup>

The ridge was once crisscrossed by several streams, including six palaeochannels of the Yamuna that abandoned the hills 4000 years ago.<sup>10</sup> Maheshwari conjectures that the earlier ecology of Delhi may have been different from its current state, and that it gradually retrograded into a thorn scrub forest because of anthropogenic

Menon and Ghazala Shahabuddin, *The Delhi Ridge Forest: Decline and Conservation*. Kalpavriksh, New Delhi, 1991, p. 49.

7. Pradip Krishen, *Trees of Delhi: A Field Guide*. Dorling Kindersley, 2006, p. 360.

8. J.K. Maheshwari, *The Flora of Delhi*. Council of Scientific and Industrial Research, New Delhi, 1963, p. 447.

9. Unlike the subsidiary edaphic type of dry, tropical forests of the Aravalis in Rajasthan (sub-type E-6 *Anogeissus pendula*), Champion (1936) records Delhi with a few pockets of dry, temperate sub-type of *Anogeissus*. Parker (1920) holds that the natural forest cover of Delhi was primarily a scrubby forest of *Anogeissus pendula* and *Acacia senegal*. Since the tree is now only found in certain patches, it may be possible that human exploitation of the tree for wood and livestock feed has reduced the geographical extent of the tree. Maheshwari, 1963, *ibid*.

10. Singh, 2006, op. cit.

pressures.<sup>11</sup> Some purport that Delhi's original vegetation was composed of subtropical and deciduous trees, which was deforested during the Sultanate period<sup>12</sup> or towards the end of Mughal rule.<sup>13</sup> While it is difficult to conclusively confirm these claims, Delhi's forests are admittedly a result of centuries of manipulations, geo-climatic vicissitudes and anthropogenic influences. The changes include not only deforestation, but also significant afforestation measures since British colonization.

The most commonly found native trees are Babul (*Acacia nilotica*) and Kikar (*Acacia arabica*), thorny trees typical for dry climates. Other indigenous tree species like Rong (*Acacia leucophloea*) grow on hills and Dhau (*Anogeissus pendula*), which are found in some portions of the ridge in neighbouring Gurgaon.<sup>14</sup> Vilayati Kikar (*Prosopis juliflora*) is a common invasive tree that was first introduced in India in 1877 by the British and has proliferated since then.

Stone age settlements from the lower Palaeolithic period (roughly 100,000 years ago) and rich collection of microlithic artefacts have been found across the Aravalis, when the hills may have been steeper, more densely wooded, and with a different floral and faunal composition.<sup>15</sup> Late Harappan sites

11. Maheshwari, 1963, op. cit.

12. Jaweed Ashraf, 'Centralized and Decentralized Paradigms of Development: Case Study of Water Management in Medieval and Modern Delhi', in *Studies in Historical Ecology of India*. Sunrise Publications, New Delhi, 2004, pp. 201-40.

13. Varsha, 'Delhi Ridge', in G.N. Sinha (ed.), *An Introduction to the Delhi Ridge*. Department of Forests and Wildlife, GNCTD, New Delhi, 2014, p. 28. It may be noted that there are contrary reports as well claiming the ridge was accorded some protection during the later years of the Mughals. G.N. Sinha (ed.), 'Prologue', *ibid.*, 2014, p. 9.

14. Kothari, et al., 1991, op. cit.

have been discovered in Delhi; places like Bhorgarh showing continuous habitation from late Harappan time (second millennium BCE) right till medieval times spanning 2,500 years. The ancient history of Delhi is mired in local traditions, mythology, and complicated by political appropriation. The epic *Mahabharata*, oral traditions, and many people from the medieval era onward hold that the first city of Delhi was Indraprastha, identified with the present site of the Purana Qila. It is possible that orally transmitted histories are legends that have been embellished and woven around actual historical events;<sup>16</sup> note that a village named Indrapat continued to exist in the Purana Qila complex till the late nineteenth century CE.

In the *Adi Parva*, the first book of the *Mahabharata*, Indraprastha is described as a city built on the banks of the Yamuna after burning down the Khandava forest, and hunting animals trying to escape the fire. The description of thorns and prickles in the forest suggests xerophytic conditions.<sup>17</sup> A.K. Sharma conjectures that the city of Indraprastha may have been established after monsoon patterns changed, leading to scant vegetation in the area. Excavations at the Purana Qila led to archaeological discoveries from the Harappan time period; however, no structural remains have been found as yet that match the description of the city.

The history of Delhi for almost a millennium after the date of Harappan settlements is unclear, although there is evidence of Delhi being continually inhabited.<sup>18</sup> The first recorded rulers

in medieval Delhi were the Tomar Rajputs, who constructed forts on the Aravali hills (southern Delhi-Faridabad). Some scholars opine that the location may have been selected because of the 'bare and barren' Aravalis' relative isolation and the security it offered. Some inferences about the vegetation and topography during that period can be drawn from archaeological remains.

The rocky hills of Aravalis have many reservoirs that were built during Rajput rule by making embankments or *bunds*, like Surajkund and Anangpur dam, probably to collect rainwater run-off that did not easily percolate into the ground. Bunds are also found during the following Sultanate rule; the southern side of Tughlaqabad fort (built in 1321 CE atop a rocky hill) was a reservoir made by constructing bunds between the eastern hills.<sup>19</sup> Firoz Shah Tughlaq was fond of hunting and built many hunting lodges like Malcha Mahal, Bhuli Bhatiyari ka Mahal, and Kushk Mahal close to bunds that retained rainwater and could lure game. Numerous references to water catchments indicate extensive run-off because of sparse vegetation and impervious, rocky soil.

Some scholars have suggested that Delhi was thickly forested during Rajput rule, especially in and around the Mehrauli region.<sup>20</sup> These forests were reportedly cleared on a large scale by the Khilji and Tughlaq dynasties during the Sultanate period, and replaced with orchards. While forests

were being cleared over large areas across northern India,<sup>21</sup> there are contemporaneous records of Firoz Shah Tughlaq undertaking afforestation measures in the ridge and even fencing some portions.<sup>22</sup> Medieval texts do record deforestation having forced rulers to travel to far off forests for hunting.<sup>23</sup> The presence and recorded hunting of animals like the blackbuck and chinkara<sup>24</sup> that prefer open expanses, suggests that Delhi's ecology was largely arid, scrub forest during this time period. There are numerous medieval and colonial paintings as well that depict Delhi's hinterland as open grasslands.<sup>25</sup>

Although it is speculated that Delhi was deforested during the late Mughal period, paintings and textual records suggest that the scenery had been arid scrubland at least from the early

21. R.C. Jauhri, *Medieval India in Transition – Tarikh-i-Firozshahi: A First Hand Account*. Sandeep Prakashan, New Delhi, 2001, p. 293.

22. Kothari et al., 1991, op. cit.; Varsha, 2014, op. cit.

23. The *Tarikh-i-Firozshahi* records, 'Most of these animals have their habitat at places full of forest, grass and water. Such a location could not be near Delhi because the Sultan had, on account of his affection for the subjects, already populated and ended the desolation of the regions. Only the region near Badaun was left desolate for the purposes of hunt, otherwise that region too could have been deforested and populated. Every year, the Sultan proceeded on hunting expedition from Firozabad to the reserved forests in the neighbourhood of Badaun and hunted innumerable animals.' Jauhri, 2001, op. cit.

24. Blackbucks (*Antelope cervicapra*) are antelopes that prefer grasslands and open country. D.P. Mallon, *Antelope cervicapra*. The IUCN Red List of Threatened Species 2008: e.T1681A6448761. <http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T1681A6448761.en>. Chinkara (*Gazella bennettii*) are gazelles that primarily inhabit arid areas, dry scrub and light forests. D.P. Mallon, *Gazella bennettii*. The IUCN Red List of Threatened Species 2008: e.T8978A12945880. <http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T8978A12945880.en>. Both downloaded on 14 July, 2016.

15. Singh, 2006, op. cit.; Mudrit Trivedi, 'On the Surface Things Appear to Be... (Perspectives on the Archaeology of the Delhi Ridge)', in Upinder Singh and Nayanjot Lahiri (eds.), *Ancient India: New Research*. Oxford University Press, New Delhi, 2009, pp. 39-70.

16. Singh, 2006, op. cit.

17. A.K. Sharma, *Prehistoric Delhi and its Neighbourhood*. Aryan Books International, New Delhi, 1993, p. 56.

18. Y.D. Sharma, *Delhi and its Neighbourhood*. Archaeological Survey of India, New Delhi, 1964, p. 128.

19. A.K. Sharma, 1964, op. cit.

20. Jaweed Ashraf, 'Ecology as Culture', in Jaweed Ashraf, *Studies in Historical Ecology of India*. Sunrise Publications, New Delhi, 2004, pp. 1-34.

medieval period. The ridge area around Mehrauli (southern Delhi) may have had more foliage due to human intervention, since there are references that Mughals built summer homes and exploited the microclimatic coolness that dense foliage offered to escape the heat. It is alleged that although Delhi was deforested, it did not lose its greenery since the forests were replaced with verdant orchards, the fruits being an important source of revenue.<sup>26</sup> Whether both afforestation and deforestation were simultaneously undertaken in specific areas for different reasons will need further investigation. However, it can be conclusively said that Delhi and its environs supported wildlife that was rich enough to qualify for royal hunts. The *Padshah-namah* records Shah Jahan hunting 40 blackbuck in one day in Palam; even tigers were encountered in the ravines along the Yamuna close to Delhi.<sup>27</sup>

The dawn of British rule in Delhi was marked by large-scale afforestation activities.<sup>28</sup> British records speak of Delhi being denuded of greenery, and the landscape described as ‘a desolate plain’, ‘a desert’ and a ‘country of stones and dust’.<sup>29</sup> The Delhi Gazetteer of 1883-84 also describes the land-

scape as generally bare and ‘unattractive’, quarried with a few stunted trees.<sup>30</sup> The ridge and fallows were covered with Pala or Beri (*Zizyphus nummularia*), a small thorny bushweed that was an important source of firewood and fodder for livestock and goats herded by pastoralists like Gujjars predominating the hill villages. Apart from grazing, an important economic use of the rocky hills was the stones and gravel that were extensively quarried by the local population, and the Gazetteer records 24 operative *kankar* mines yielding 933,000 *maunds* annually.

Despite the sparse and quarried landscape, the Gazetteer describes Delhi teeming with wildlife. Delhi’s fauna included large numbers of wild pigs, foxes, hares, though antelopes and peafowls were ubiquitous. While gazelles were plentiful in the hills, wolves were found in smaller numbers. Leopards frequented outlying villages and the Tughlaqabad area. The banks of the Yamuna were forested, and the Yamuna is described as a river in which hundreds of crocodiles and gharials abound. Similar descriptions of wildlife can be found in the Delhi land settlement report<sup>31</sup> and other accounts.<sup>32</sup> References to British hunting expeditions near Humayun’s tomb,

present-day Mongolpuri, and village fields<sup>33</sup> also allude to the presence of abundant wildlife in the region. Delhi’s wildlife had survived hunting by earlier rulers like the Mughals for centuries, but could not endure the massacre unleashed by the British, who not only hunted them recreationally but also marked them as vermin and paid bounty for their heads. The Gazetteer records payments having been made during a 5-year period for killing 10 leopards, 367 wolves and 1,128 snakes.<sup>34</sup>

These colonial records are key since they clearly identify Delhi’s topography as scrub forest that failed to meet the aesthetic standards of beauty for the British. Despite its negative perception, this sparse vegetation supported a rich array of wildlife and was important for Gujjars. British rulers initiated several tree plantation exercises, with municipal records from the time indicating that approximately 3000 Neem (*Azadirachta indica*) and Babul trees were planted between 1878 and 1879 alone and foreign species like *Prosopis juliflora* were introduced because of its drought resistant properties. Initially, afforestation was limited to the northern ridge which was close to English settlements. After Delhi was selected as the site for the new capital for imperial India in the early 20th century, afforestation efforts started in earnest in 1912 in present day central ridge. The intention was, ‘forming an area which will be dustless and pleasant to

25. Delhi’s open landscape is depicted in Mazhar Ali Khan’s (active 1840-55), A Miniature Panorama of Delhi with the Fort in the Distance. Ca. 1845. Watercolour on ivory. Approx. H. 23/8 x 31/8 in. (6x8 cm). The Victoria and Albert Museum, Iso.3563. William Dalrymple and Yuthika Sharma (eds.), *Princes and Painters in Mughal Delhi, 1707-1857*. Asia Society Museum in association with Yale University Press, New Haven and London, 2012, p. 212. Also see J.P. Losty, *Delhi 360°: Mazhar Ali Khan’s View from the Lahore Gate*. Lustre Press, Roli Books, Delhi, 2012, p. 92.

26. Jauhri, 2001, op. cit.

27. Mahesh Rangarajan, ‘The Hunt and the Wilderness in Mughal India’, in Mahesh Rangarajan, *India’s Wildlife History: An Introduction*. Permanent Black, New Delhi, 2001, p. 135.

28. Michael Mann and Samiksha Sehrawat, ‘A City With a View: The Afforestation of the Delhi Ridge, 1883-1913’, *Modern Asian Studies* 43(2), 2009, pp. 543-70.

29. H.K. Kaul (ed.), ‘Ruins and Landscapes’, in H.K. Kaul, *Historic Delhi: An Anthology*. Oxford University Press, New Delhi, 1985, pp. 10-17; Mann and Sehrawat, 2009, op. cit.

30. Punjab Government, *Gazetteer of the Delhi District 1883-84*, p. 215. Published as *Delhi District Gazetteer, 1883-84*, by Gazetteers Organization, Revenue Department, Haryana. Chandigarh, 1999, pp. 20-21.

31. Oswald Wood, General Aspect of the District, in Oswald Wood, R. Maconachie, *Final Report on the Settlement of Land Revenue in the Delhi District Carried in 1872-77* by

*Oswald Wood, Esq. and Completed 1878-80 by R. Maconachie, Esq., C.S.*, Victoria Press, Lahore, 1882, pp. 2-5.

32. H.K. Kaul (ed.), ‘Flora and Fauna’, in *Historic Delhi*, pp. 189-99. Kaul quoted from C.F. Gordon Cumming, *In the Himalayas and on the Indian Plains*. Chatto and Windus, London, 1884, p. 220.

33. Kaul, 1985.

34. Punjab Government, 1884, op. cit.

the eye...’ primarily for European settlers.<sup>35</sup> Afforestation particularly harmed pastoral communities like Gujjars, who were being systemically pushed towards a sedentary lifestyle by the British.

**A**t the time of independence, the northern ridge had become an isolated segment; however, much of the ridge remained broadly contiguous.<sup>36</sup> Details of ridge management policies in the following decade are scant, except some information like the soil conservation officer being notified as forest officer in 1958, and the Delhi Development Authority (DDA) being charged with ridge management.<sup>37</sup> In the next few years, plantations and fencing began at northern and central ridge. In the first master plan for Delhi after independence for the years 1961-81, the ridge was planned to be protected as a forest, and set up as a regional park on the lines of New York’s Central Park. However, no clear guidelines or steps were spelt out. The plan also set out contradictory goals; while the plan proposed that the forest should be retained in an ‘undisturbed’ state, regular weeding and clearing of undergrowth was also recommended.

Ridge administration was also divided amongst several bodies (for example, Central Public Works Department was given charge to maintain the southern ridge to create parks and gardens). In fact, the forest department currently administers only about two ha in the northern ridge as a nursery, while the rest is managed by DDA. And fragmentation of the ridge has continued unabated. A ‘secret’ note

35. Mann and Sehrawat, 2009, op. cit.

36. Map titled ‘Delhi and Locality’, dated 1950 (third edition). Survey of India, Delhi Archives, Department of Art and Culture, Government of NCT of Delhi.

37. Varsha, 2014, op. cit.

from Town and Country Planning Organization in 1982 quoted a study that 40% of the ridge had been destroyed, much of it due to government action.<sup>38</sup> Today, five fragments of the former ridge remain: northern ridge (87 ha), central ridge (864 ha), south-central ridge (626 ha), southern ridge (6200 ha), and Nanakapura south-central ridge (7 ha).<sup>39</sup> Delhi also has 40 old and new ‘city forests’ planted by the forest department mostly on *gaon sabha* or village common lands.<sup>40</sup> Two biodiversity parks have also been set up in Delhi, and one in Gurgaon, with several others in the pipeline.

**B**ritish interests in the expansion of agricultural revenue land had led to open scrub lands preferred by pastoralists being categorized as wasteland, although the fallows were ‘public spaces’ with important economic uses for villagers. British intervention not only led to the extinguishment of many land rights, but also transformed land use and ecology of the region. The carefully balanced agro-pastoral land use shifted heavily towards agriculture, and canals transformed fallows into cultivable land. Shrinking common property resources and increasing livestock numbers led to overgrazing and degradation of the commons.<sup>41</sup>

These measures of usurping and fencing village lands were faithfully

38. Kothari et. al., 1991, op. cit.

39. Varsha, 2014, op. cit.

40. Forest Department, ‘Recorded Forest (Notified Forest Area in Delhi’, Government of NCT of Delhi. Accessed at [http://delhi.gov.in/wps/wcm/connect/doi\\_forest/Forest/Home/Forests+of+Delhi/Recorded+Forest](http://delhi.gov.in/wps/wcm/connect/doi_forest/Forest/Home/Forests+of+Delhi/Recorded+Forest) on 14 July 2016. In 1994 all 7,777 ha of the ridge was notified as ‘Reserved Forests’ pursuant to directions from the Supreme Court in Writ Petition (Civil) no. 4677/1985 (MC Mehta vs. UOI & Ors.). This is a temporary arrangement, and a final notification can only be issued after the Forest Settlement Officer has passed all settlement orders determining ownership of forest land. Sinha, 2014, op. cit.

continued by the post-colonial Indian state.<sup>42</sup> Of the total 6200 ha of Asola Bhati Wildlife Sanctuary, 4207 ha is ‘surplus uncultivated land’ of various *gaon sabhas* that was transferred to the forest department. The government fenced the forest to carry out afforestation and set up an eco-task force for its management, restricting grazing rights of villagers. Densification of trees is an important component of the biodiversity parks in Delhi and Gurgaon, and a stated goal of the forest department of Delhi.<sup>43</sup> The ecologically harmful invasive *Prosopis juliflora* having gone rouge over the ridge gives legitimacy to efforts to replant the ‘original’ indigenous trees. Trees are also viewed as a panacea for the city’s noxiously polluted air; the more the merrier.

**A**fforestation measures in the Gurgaon Aravali Biodiversity Park has also been undertaken on former *chargah* or village common land formerly used for grazing livestock and quarrying. The park has been fenced and plantation of indigenous flora has been carried out in a scientific and methodical manner, involving local companies that sponsor afforestation. Given the open public access to the park for recreational use, the restrictions on livelihood based activities in the park is an interesting example of a public park also partly functioning as a private one.<sup>44</sup> The historical bareness

41. Chakravarty-Kaul, 2015, op. cit.

42. Much of Aravali hills in the neighbouring state of Haryana was also village commons that were privatized in the last three decades. Since then, these hills have suffered land fragmentation, change of land use and land grabbing in the neighbouring district. Directorate of Consolidation of Holdings, Haryana, 23 August 2012. Order: De-notification of Village KOT (Hadbast no. 16), District Faridabad.

43. Department of Forests and Wildlife, accessed at <http://www.environment.delhigovt.nic.in/ppt/forestppt.pdf> on 14 July, 2016.

of Gurgaon<sup>45</sup> is invoked to contrast the former emptiness of the landscape with the verdant vegetation of new settlements. Shubhra Gururani warns that by declaring Gurgaon to be nothing before settlement, the discourse also wipes out the existence of villages, their inhabitants and way of life. The xerophytic Aravali hills and the linked agro-pastoral economy are being replaced by greenery based on western envisioning of cities. Similar to the British usurpation of public spaces like Qudsia and Roshanara Gardens by restricting access to Indians,<sup>46</sup> urbanization and urban conservation in peri-urban regions like Gurgaon is functioning through elite capture, restricting access to the commons and causing environmental problems because of land use change.<sup>47</sup> Loss of employment opportunities, decrease in agricultural land, expansion of built up area and increased use of water have exacerbated problems for local farming and pastoral communities.

There have been many incidents where illegal construction on the ridge by the rich has been allowed on grounds of its 'planning' and architectural aesthetics, while an unplanned slum cluster has been demolished in the same breath.<sup>48</sup> Given that most of the construction in Delhi violates some statute, illegality has become a

44. Gururani, 2012, op. cit.

45. Punjab Government, *Gazetteer of the Gurgaon District 1883-84*. Arya Press, Lahore, 1884, p. 150.

46. Narayani Gupta, *Delhi Between Two Empires 1803-1931: Society, Government and Urban Growth*. Eastend Printers and Oxford University Press, Calcutta and Delhi, 1981, p. 304.

47. Sumit Vij and Vishal Narain, 'Land, Water and Power: The Demise of Common Property Resources in Periurban Gurgaon, India', *Land Use Policy* 50, 2016, pp. 59-66.

48. D. Asher Ghertner, 'Rule by Aesthetics: World-Class City Making in Delhi', in Ananya Roy and Aihwa Ong (eds.), *Worlding*

negotiable state that can mutate into legitimacy through leveraging political and economic power.<sup>49</sup> As land become more contested, conflicts over green spaces too will be negotiated within the existing power matrix of a deeply hierarchical society, and mediated by factors such as class, and caste.<sup>50</sup>

This intention to refabricate Delhi's topography is not merely an ecological or historical exercise, it is a socio-political project that seeks to serve the city's political and economic elite. Whether Delhi was once a thickly forested tract is not as relevant as acknowledging that it has primarily been a predominantly semi-arid land for centuries. Although without luxuriant vegetation, the landscape performed numerous socio-ecological functions for local communities and supported wildlife endemic to arid areas.

Delhi's landscape needs to be representative of these historical and ecological truisms. For the just recreation of Delhi's wilderness, the distinct material and cultural meanings of the ridge for its diverse populace needs to be recognized. Delhi's reimagined forests have so far embodied an aesthetic manifestation of power and privilege, but for justice to reflect in the greenery, forests should illustrate the varied meanings of nature for its peoples.

*Cities: Asian Experiments and the Art of Being Global*. Wiley-Blackwell, Oxford, 2011, pp. 279-306.

49. Shubhra Gururani, 'Flexible Planning: The Making of India's "Millennium City", Gurgaon', in Anne Rademacher and K. Sivaramakrishnan (eds.), *Ecologies of Urbanism in India*. Hong Kong University Press, Hong Kong, pp. 119-43.

50. Rene Veron, 'Remaking Urban Environments: The Political Ecology of Air Pollution in Delhi', *Environment and Planning* 38, 2006, pp. 2093-2109.

51. Ibid.

# In memoriam

Dileep Padgaonkar 1944-2016

IN the final chapter of *Don Quixote*, Miguel de Cervantes portrays a defeated, ill, sad and dying Don Quixote. In his final moments, Don Quixote admits to his mistaken belief in the existence of knights errant in the world. Witnessing his transition from madness to sanity, a distraught Sancho Panza implores Don Quixote not to die. A man like him, pleads Sancho, must die a glorious death at the hands of someone rather than be killed by his own melancholy.

Dileep Padgaonkar too died of sorrow, defeated by a world that was crass, intolerant, cynical, disenchanted and unreasonable. Like a knight errant, he believed in a world that never approximated to reality; his 'madness' consisted in believing in one that was inhabited by books, music, taste and conversation. When he died on 25 November 2016, he had spent a life in trying to defeat a world he detested and working towards realizing one that spilled out from the pages of fiction, philosophy and poetry. Of course, there were

medical reasons too. To paraphrase Auden, the provinces of his body had revolted and the squares of his mind were empty; silence did invade the suburbs and the current of his feeling failed too. But the physical decline was just one reason.

Don Quixote of La Mancha was mad but reverted to being Alonso Quixano the Good in his dying days. This passage from madness to sanity is not about morality or ethics but a reflection of the complexity of life and of the world. Dileep lived this complexity throughout his life and it defeated him in the end. He was resolute and compromising, convivial and reserved, snobbish and down-to earth, cerebral and trivial, giving and acquisitive, sensitive and indifferent, formal and friendly. In later life, he frequently spoke of an individual inhabiting multiple selves, a phrase that became for him a shorthand for explaining his own contradictions arising out of complex choices in a hostile world.

For Dileep, the *Times of India* was such a choice. In his first stint as editor, he admitted that he had the satisfaction of building the paper into a meaningful and modern newspaper. But those of us who witnessed his second innings at the TOI saw him reduced to serving a paper that was nothing more than an advertisement broadsheet with spaces left to fill incidental content. He lived with this shrunken mandate, often fighting for good writing and stories but also often enough capitulating to the pressures of post-literate wealth creators. For him, the phrase ‘*barah pachaas*’ signified the state of the ‘times’. This was part of the long and protracted pricing meetings for the paper resonating continuously and resoundingly with the banality of the ‘*barah pachaas*’ phrase (the significance of the offending phrase lay in ensuring that the weekly collections ought not to fall below rupees twelve and fifty paise for the paper to remain eligible for auditing by the bureau of circulation). All meaning, all purpose, all effort and all questions of quality and relevance, it seemed, flowed effortlessly into this vast and capacious ideal of ‘*barah pachaas*’. Taking a cue from this, all anecdotes and narratives conveyed to close friends would invariably be suffixed with Dileep saying ‘*barah pachaas*’. As Siddharth Varadarajan has evocatively written, Dileep remained a ‘Times Man’ long after the paper had ceased to be itself. Truth no longer prevailed, as the motto of the TOI suggests. Rather, all that prevailed was necessarily true. The talismanic ‘*barah pachaas*’ had won. Dileep invoked it as a joke to hide his hurt and disappointment.

The sense of loss came not from a loss of sense of power. Despite the intellectual laziness of perennially associating Dileep with the ‘second most important job’ quote, there was nothing in him that was self-righteous and sanctimonious. He had a strange fascination of power. Making sure but hesitant overtures to power, his resolve to court the powerful invariably failed at the crucial moment. Fear that his freedom to think and express might be smothered was one reason he never managed to become a full-time courtier like a few of his epigonic contemporaries. But there was another more compelling reason.

Dileep was a cultural evangelist. One evening, handing over a copy of Satyajit Ray’s screenplay of *The Chess Players* to me, Dileep spoke of his favourite scene in the film. The British resident asks Wajid Ali Shah to desist from singing and dancing in the court because Empress Victoria disapproves of it. On hearing this, Wajid Ali Shah (played in the film by Amjad Khan) is shocked and devastated. How could the most

powerful person on earth not like to sing and listen to *thumri*, he wonders. Dileep increasingly lived in a world where politicians, bureaucrats, CEOs, corporate honchos, and journalists never read, watched great cinema or listened to *khayal* or *thumri*. The names of Isaiah Berlin, Ustad Amir Khan, M.S. Subbulakshmi, Ritwik Ghatak, Kurosawa or Kiarostomi did not matter to them. Therefore, despite his abstract and unrequited love of power, he feared the mediocrity of the powerful.

Dileep rejected the distinction between ‘high’ and ‘popular’ culture conventionally offered by those in power to pander to the lowest common denominator. Nor could judgement of culture be relegated to reductive obsessions of our time like postmodernism or the market. Hence, rising to his feet, Dileep danced around a small room after hearing Ganapathi Maharaj singing *abhang* and paused to say: ‘This is our pop music.’ Another time, after hearing a long discourse in the TOI on the perceived toxic effects of ‘high culture’, he emerged from the room and said in a voice that signified both exasperation and fatigue: ‘Man doesn’t live by Dada Kondke alone.’ A few days after this particular meeting, he approvingly copied and sent across a quote from Godard which said: ‘Art is the exception while culture is the rule... it is part of the rule to want the death of the exception.’

To navigate contradictions, complexities, and identities sometimes took its toll. His friends bore the brunt of this more than most people, especially if they also happened to be his colleagues. Some of Dileep’s choices and actions surprised, angered and alienated his close friends. This would lead to communication and contact ceasing for short or long periods. Always, without exception, Dileep would initiate the process of reconciliation. He did it in a way that resembled reclaiming of something that was rightfully his, and his alone. This act of reclaiming friendships was what defined Dileep. Sometimes, it seemed as if insignificant things mattered to him. More so, the compromises he made to attain those were larger than necessary. But no ambition and no compromise for him was large enough to merit losing a good friend. I once asked him about this. He said he will answer the question in his next trip to Hyderabad. When he arrived a few months later, he came armed with a copy of Robert Musil’s *Diaries*. He opened page 91, entry 30.V, handed the book to me and asked me to read it aloud. This is what it said:

‘With the regularity of some law at work the following process runs full circle within me: I am arrogant, dis-

missive, reticent, refined, happy. Some or other sense of power takes territorial hold. I have taken too much pleasure in my muscles while I was rowing or I am working at philosophy with an intensity that blunts the senses. I feel first that my arrogance, with its conciliatory frontage on the outside world, is deserting me. I am no longer so friendly; I am less witty. I feel empty and work out of sheer desperation. My behaviour in company deteriorates. I suffer a defeat. I feel that, by comparison with some other person, I am stupid. I behave with spectacular ineptitude, I cannot find an appropriate rejoinder to some insult. A few hours later I am, once again, arrogant, dismissive, reticent, refined, happy.'

Having finished reading, I looked up. There was a moment of awkward silence, a quiet acknowledgement of the accuracy of the writing but also of Dileep's deep identification with the description. The talismanic 'barah pachaas' came to our rescue, dissolving both of us into loud guffaws.

In the twenty years I had known him, I never called him 'Dileep'. He was always 'Mr. Padgaonkar'. The only concession to this formality, something that he heartily approved, was an act that we would perform mimicking the various new-age gurus that we regularly met as part of our job at the TOI. In this act, he was 'prabhu' and I was 'baalak'. The prabhu-baalak duo emerged only to offer social satire and political criticism. And now, the act is over for ever. And there will never be another one like him: refined, cerebral, generous, witty, and complex. Towards the end of the prologue to his fine book on Roberto Rossellini in India (*Under Her Spell: Roberto Rossellini in India*, Penguin/Viking, 2008), Dileep sums up Rossellini as a man and a filmmaker by quoting a line from Walt Whitman: 'I am large enough to contain all contradictions.' These lines could as well have been written for Dileep.

**Jyotirmaya Sharma**

## Adieu Dileep

'We have to repair the web of time when it is broken...'  
– Chris Marker, *Sans Soleil*

AROUND ten to twelve days before he was admitted into the ICU, Dileep called to ask if I had ever met Chris Marker, once upon a time his favourite film maker. For me, as well, he stands out as the finest 'documentarist', along with Joris Ivens. With an exchange of a few words Dileep and I agreed that Chris Marker was perhaps the most significant of the Left Bank cineastes, because

he was constantly examining his own position, inviting colleagues and viewers to do so as well.

Now that Dileep is gone, I wonder what was on his mind. Was it to tell me that he was very unwell, not just upset that we had not met on my last trip to Pune? Did he want to say adieu and that there may be few occasions left for us to discuss, dispute or relish the moments of truth that we most often did on the streets of Paris and in the auditorium of the Cinemathèque Française at Trocadero?

I had first been introduced to him in the foyer of that auditorium, where the founders themselves (Madame Meerson and Henri Langlois) sometimes sat and 'sold' the subsidized tickets!

Dileep lived within walking distance of the place, at Avenue Kleber, completing his thesis in a chambre-bonne in an attic room meant for the maids of the bourgeoisie that had yet to consolidate its glory, often rented out instead to students and artists from all over the world. It was a classy address, soon to become the location of the Vietnam peace negotiations between Le Duc Tho and the pugnacious Kissinger.

While Dileep theorized over verisimilitude and cut the onions appropriately for a Sindhi *bhuna gosht* to be had the next evening, our illustrious neighbours quarrelled over the seating arrangements for the peace talks for days before they began. In the meantime, the bombing of Vietnam escalated, making a mockery of the *mise-en-scène*, the narratives of democracy and *la condition humaine*.

Andre Malraux, the celebrated freedom fighter, had taken to whitewashing monuments and institutions as De Gaulle's Minister of Culture. No longer oscillating between action and meditation, he who had gifted to France the voices of silence from far away shores like Elephanta, had clamped down on the very foundations of the secular, the critical, the activist. Diderot, Rivette, Langlois. Godard, for whom he had been a source of inspiration, called him a coward. We had all joined a *satyagraha* at the Place de Trocadero around two or three months before the events of May 1968.

In that context alone, one must congratulate the French for giving Dileep the highest civilian award – the Legion d'Honneur, many years later.

In 1971, during Indira Gandhi's trip to Paris, I think, Dileep was both charmed and amused by Andre Malraux's touching offer to relive his heroic participation in the Spanish Civil War by leading a liberatory march from India, across the Padma to Dacca in what is now Bangladesh and was then East Pakistan.





Indira Gandhi was building her charisma at that time and almost everyone I knew – including Dileep – was under her spell. As she ‘shyly’ sat on edge through those tumultuous years of a growing nexus between Nixon and the Gang of Four, the oil crisis that has perpetuated the Crusades into our days, the dollar denomination of world trade that is perhaps mimicking Rauschenberg’s art object – the Machine that Destroys itself.

Nobody really understands the entropy signalled by the virus, self-generated by the system into which we are wired in, not even the designers of manga comics. I think that Dileep had to deal with that entropy from the very first steps that he took to enter the halls of power: to become ‘the second most important person in the country.’ He was, of course, ironical about it all through, as he was about everything personal, above all of ‘insights’ generated by ‘false consciousness’ of all sorts, from any vantage point of view. In his last days, I am told by Arun Khopkar, he joked about all his assets that were turning into liabilities – the heart, the liver and the kidneys.

Thus it is with the fourth estate, since words and images themselves lose significance under dispensations of monopoly ownership and management control. Thus, it happened during the notoriously cruel Emergency and the parallel times that we are living through now, on a scale that includes more individuals, more nations, across the globe. The triumph of technology over human interaction, the failure of society to evolve restorative citizenship in the ever growing electronic supremacy within the nature-culture continuum can lead to more than mere asymmetries of fiscal and monetary policies, the unprecedented attacks on the institutions and instruments of justice. We run the risk of losing our limbs, the synapses that interconnect our senses and give us our *prise de conscience*, our empathy.

Dileep kept his friendships alive across continents and decades. When he and Latika decided to leave Delhi and relocate in Pune, Aruna Vasudeva almost broke down. It was a long and sustained relationship over a span of nearly fifty years, cemented by what they valued in the cinema and the publication of *Cinemaya* from Defence Colony, where they resided for years.

It was always great to be hosted by them together almost every time, to savour the wine and food, ranging from kotambir wadi, through lotus seeds to the delicious plateau of cheeses. Very often, we also met in Mumbai, to savour the delicacies of the subcontinent’s western coast, while Dileep regaled us with mimics of the honchos and politicians that he had most recently met.

By coincidence, in Delhi, I had sometimes seen him handle – at public functions and private parties – the dubious postures of these gentlemen-criminals that have been ruling us. He was calm and dignified while they wished to ensnare him with their threatening charm or strident rhetoric. The only public figure who matched his dignity was I.K. Gujral.

When Dileep agreed to chair the Kashmir interlocuters’ group, I wondered if he were exposing himself to the violent and crude shenanigans of terror that coil the citizens from all sides, alienating the nation from the state, the people from the nation, snatching sovereignty from the individual. I believe that he and his team met the challenge with the true elegance of a classical liberal.

His manner and his tastes were catholic in more senses than one – multicultural like his well-wisher Pere Deleury (the translator of Tukaram’s poems), who had inspired his initiative to pursue his studies in political science and cinema in France. Dileep loved the *abhangs* of the great poet especially as rendered by Bhimsen Joshi.

The last time that I met Latika and Dileep in Pune, as we looked out from their magnificent balcony-verandah, he hummed one of Tuka’s creations that he used to sing out loud, above the din of traffic in Paris and New York, to feel at home and at peace with the world.

Beyond the lights of these bustling cities, he has reached that ‘elsewhere –  
*Là, tout n’est qu’ordre et beauté.  
Luxe, calme et volupté.*

**Kumar Shahani**

## Javeed Alam 1943-2016

I remember quite vividly the first time I read something written by Javeed Alam. It was an article written early in 1983 in *Social Scientist* on the approach to the peasantry and Marxist historiography as represented by the inaugural volume of *Subaltern Studies*. The article was, of course, combative and very critical of the latter trend. I did not quite know the context of the provocation or understand the significance of Javeed’s robust defence of ‘Marxist historical understanding in India’. I was completing my postgraduate studies in sociology then, and my initiation into Marx and Marxism was structured accordingly through the placid terrains of ‘classical’ sociological thought. But I was seized by the prospect that I was confronting something distinctive: a sharply honed mind, argumentative and polemical, formulating

a line of critique in a language that was nuanced and theoretically stringent. It was an analytically charged and yet historically nuanced kind of Marxism.

Many years later in the mid-1990s, as I found my foothold in academia, I met Javeed in person – literally on the road to Shimla. Needless to say, I was both surprised and delighted. Could the extraordinarily warm and gracious man across from me at the roadside *dhaba* be reconciled with the combative ideologue of ‘Marxist revolutionary theory’ in the polemic just alluded to? This was the puzzle of Javeed Alam, or rather, his achievement: a gracious man whose generosity of spirit flourished in concert with others, and could do so even as he articulated, in person and in print, the sharpest of arguments. It was a mixture that won him the loyal and adoring friendship of many people in a long and successful life straddling academia, politics and administration. In his final years, in private conversations with his friends and admirers, Javeed seemed to take pride in the fact of reconciling the organized Marxism of a revolutionary left with the traditions of liberalism and social democracy, and was increasingly given over to consolidating his insight into what he publicly proclaimed as the ‘indispensability of secularism’. Equally, it is not surprising that Javeed devoted his years to theorizing the peculiar alchemy of democracy and equality in contemporary India.

I take it that ours – Javeed and I – was a strange and anomalous friendship that both spanned and transformed our mutual lives. To be sure, and quite unlike me, Javeed enjoyed gossiping about others, trading anecdotes about the celebrated and the famous, often offering rich insight into the making of personalities. More than everything, yet, he delighted in talking philosophy – specifically the modern and early modern western philosophical tradition – while also striving to embody a philosophical approach to the political in modern and contemporary India. Of course, Javeed’s ‘personal’ life – I mean his romance and ‘inter-religious’ marriage with Jayanti Guha – is the stuff of legend and historical commentary, and I will not rehearse that part of his journey here. But more emphatically, even as his upbringing and youthful years in Hyderabad in a family and public milieu sensitive to questions of armed struggle, minority and class politics were crucial to the shaping of his leftist commitments, I am inclined to think of his evolution as a Marxist intellectual and activist as a singular combination of philosophical culture, ethical moorings and enormous generosity of spirit.

It has been said that what distinguishes the sagacious is their extraordinary strength of will and capac-

ity to overcome their former selves. Even as his father, the venerable Alam Khundmiri exhibited this in good measure as reflected in his life and work, Javeed seemed to take this capacity to another level. Thus, while retaining his Marxist credentials, he displayed an unusual measure of sociological and ethical sensitivity to the socio-political realities of India’s public life (specifically, the peculiarities of caste and its associated structures of discrimination/oppression). This is an aspect of Javeed’s work within the Marxist intellectual tradition of our contemporary times that awaits consolidation; it also means coming to terms with a specific ethical twist to Marxism and the structures of its theorizing in contemporary India.

I shall now in what follows pass over personal reminiscences, important as they are to the remembering process. I would like to highlight the manner in which Javeed’s distinctive approach to Marxism has a lesson for all of us, given over to articulating rival and competing ideas of India. We can see Javeed Alam working towards a renewed understanding of the ethical imperatives of Marxism in India in his *India: Living with Modernity* (1999), and I shall here dwell at some length with this axis of his philosophizing. In this complex piece of work, geared to reworking modernity as a ‘living need’, Javeed raises the possibility of disturbing the identity of modernity by opening up to its untapped potential, and in doing so actively strives to transform that potential into a necessity, at once moral and political. The logic of this inversion is Marxian, of course, albeit recuperating ‘modernity’ both as a historical condition and as an ideological claim: the *condition* of modernity and the *claims* of modernity upon that space. (Incidentally, the central point of developments inside India’s electoral democracy that Javeed later explored in his strongly charged ‘tract’ entitled *Who Wants Democracy?* (2004) similarly takes off from a thought about a process of change detaching itself from the infirmities and inconsistencies surrounding it and acquiring an ‘*autonomy* of its own’.

It should by now be evident that Javeed wanted his critique to meet two seemingly incompatible objectives (and there perhaps lies the methodological challenge of his philosophizing). On the one hand, his theory of modernity is designed to account for the transition to modernity as a process, among other things, of individuation. Indeed as Javeed constantly reminds, precisely in order to do this, it must incorporate a differentiation between a *condition* of modernity and the *claims* of modernity upon that very space. On the other hand, his theory must also account for how context-

specific developments within the space of the modern are thematizable. Javeed is here astutely clear that an idea (or an ideal) will be logically compelling, and serve to justify a politics, if and only if one could reasonably reject it as a foundational principle: if and only if it is, in that sense, contingently irresistible.

Thus his insistence through the space of his philosophically charged work that modernity is now being conditioned as much by its own *consequences* in the course of its historical development. With the necessity historically entailed by modernity having accordingly been rendered contingent, modernity is now open to correction; much of it can be reassembled in new creative ways, ‘integrat(ing) and harmoni(zing)’, as he writes, ‘the best in different cultures around the world’. For Javeed, then, there is no going outside modernity to live-in and rework modernity.

Undeniably, given the configurations of our political present, it is by no means clear that the battles about the nature and object of India’s modernity are not entirely pointless. But, as with every question of modernity in which an ethical and political charge is concealed, it makes sense to add to the question: to attempt understanding how the development of modernity causes a flutter in the fabric of social relations and situations, and also to look for threats to modernity and the logic which provides their rationale. For every question of India’s modernity, therefore, as Javeed passionately reminded us, we need to supplement a more crucial and complex question, that of the trajectory and sequence of modernity’s ethical promise. The issue must now arise of how, or whether, independently perceived sequences (of histories) might be related to each other – the idea of connected and contingent histories – and whether, in order to apprehend the specificity of these connected histories, it might be necessary to institute certain distinctions and analytic separations as a guarantee of ethically charged modes of investigation and argumentation.

Controversies accordingly about whether certain terms currently in use in discourse have been illicitly borrowed from the West are sterile. In fact, this is the primary reason, as Javeed affirms, why a contextualist determination of modernity is persuasive. As he puts it in *India: Living with Modernity*: ‘For a society on the path to modernity, there is a sense of unfamiliarity and strangeness to the individual experience. How does this experience become (socially) communicable? Can the earlier languages and their conceptual reserves articulate this experience?’ This goes hand in hand with a second reason which, for Javeed, allegedly supports

such contextualism: namely, that the concepts mediating India’s experience of modernity – such as rights, secularism and the nation – have never been put through ‘the prism of a grounded critique’ so as to take care of ‘the linguistic or cultural specificities, regional peculiarities or historical memories’. This failure in turn, Javeed is convinced, has put enormous strain on the Indian polity to cope with questions of national unity and secular integrity.

Without doubt, this synoptic commentary encapsulating aspects of Javeed’s philosophical work translate into the point that there could be Marxist accounts of modernity which operate at a different level of analysis from the concepts of Marxist political economy; and, what is more, that ‘modernity’ could yet be served as our primary secular category of historical totalization. Obviously, much work needs to be done to fill out this picture of the structure of Javeed’s philosophizing about the ethical imperatives of Marxism and the historicization that he effects about modern India in particular. But hopefully it is clear that in traversing this space, there is more than simply friendship (or comradeship) in remembering our departed colleague.

What matters is that we intellectuals and activists alike, whether adhering to a Marxist intellectual tradition or otherwise, develop a philosophically and empirically acceptable account of how historical and ethical complexity is built into the structure of our theorizing. There are lessons yet to be learnt from the precise contours of Javeed’s Marxist philosophizing and historicization. Precisely because nothing would be more futile than mandating another set of imperatives to judge the legitimacy of how modernity is represented and invoked, it is all the more important to consider Javeed Alam *on his own terms*. Adieu, my senior friend and comrade, I hope our conversations will continue in that little hilltop where you now rest.

**Sasheej Hegde**

## Sulabha Brahme 1932-2016

Sulabha Brahme passed away quietly at her residence on the morning of December 2016. Her death emulated much of her life – alone in her Pune bungalow, quietly, without fanfare, surrounded by her books. Not that she was lonely. The multitude of people who gathered to pay their last respects reflected the vast spectrum of political and social movements that she maintained close contact with for over five decades. Whether it was activists of the organized left parties, women’s

organizations, Dalit groups, the People's Science Movement, trade unions, peasant cooperatives and organic farming collectives, or environmentalists, writers, poets and cultural activists not just from Maharashtra but across the country, Sulabhatai, as she was popularly known, reached out to all, and equally. That was a hallmark of her relationship with them – she treated each with respect for their ideas and work, yet never yielding ground and compromising on the core humanitarian values that she held dear to her heart.

She inherited these values from her parents. Her father was the Cambridge educated Dhananjayrao Gadgil, eminent economist and Deputy Chairman of the Planning Commission, who strongly believed in people centred development. Her mother Pramila Kale was actively involved in the education of girls, widow remarriage, and initiatives for greater dignity and 'empowerment' of women as part of the social reform movement in Pune during the early part of the 20th century. Born on 2 February 1932 in Satara, young Sulabha grew up in a liberal atmosphere that eschewed casteism and religious bigotry, espousing the values of scientific temper, women's emancipation and the dignity of labour. She remained fiercely uncompromising about these core values throughout her life. She was an avid reader, delving into her father's rich library of literature, history and autobiographies that exposed her to progressive thought. Her quiet rebellion started in her school days at Hujurpaga, with a refusal to adorn herself with 'kumkum', as was the practice with Hindu girls of her age.

After finishing her schooling, she followed in her father's footsteps and went on to study Economics at the SP College, Pune. After her Masters, she joined the Gokhale Institute of Economics and Politics, and submitted a doctoral thesis on the textile industry. She went on to do post-doctoral studies at the London School of Economics in 1958. She also visited Harvard University to undertake special studies in planning. It was during this period that she imbibed Marxism, first as a philosophy and method of research, and eventually as an ideology that shaped her way of life.

Her strong belief in the need for socially relevant research led her to undertake some pioneering studies of the political economy of Maharashtra while at the Gokhale Institute. These included the landmark Regional Development Plan for Marathwada, and a Report on Land Use in Western Maharashtra. She was a Reader, and also a Registrar at the Institute, but that did not deter her from organizing researchers and staff members to strike in order to protect their autonomy

and rights! Her 1966 visit to the USSR to study regional and urban planning left a deep and lasting impression on her about the socialist system, especially its people-centred programmes and its emancipatory impact on women.

But Sulabhatai's academic career did not deter her from active involvement with people's issues, which led her to found several initiatives. One was the Purogami Mahila Sanghatana, a progressive organization of left oriented women, and the bimonthly Marathi journal on women's issues, *Baija* that she edited from 1977 to 1984. Another was the Lok Vidnyan Sanghatana, with the objective of promoting scientific attitude among the masses and popularizing science. Her deep interest in agrarian issues and the problems of the peasantry led to the formation of the Maharashtra Dushkal Nivaran and Nirmulan Mandal to tackle the question of drought that Maharashtra experiences from time to time. But she never hankered after posts and positions, preferring to play a supporting yet definitive role in the policy and practice of these organizations.

While she firmly believed in activism, she was equally clear that it had to be accompanied by a thorough study of the problem, analysis in the Marxist framework, and most importantly, concrete people oriented alternatives. It led her to write and publish a plethora of pamphlets and booklets of several important issues, particularly in Marathi, aimed at field level activists and ordinary people and, therefore, also distributed at highly affordable prices. Some were polemical, like a somewhat little-known but important essay she wrote with another Marxist intellectual, Rajani Desai, called the 'Materialist Basis of Women's Liberation' or on imperialism, world peace, nuclear energy, communalism, people-centric development models, and so on. Many were on immediate problems facing ordinary people, like price rise, unemployment and the agrarian crisis, or privatization of education. And several were centred around ongoing struggles, like the one against the Enron power plant at Dabhol, or the nuclear power plant at Jaitapur in Maharashtra. One of her most important recent contributions was on issues around the ban on cow slaughter. Each booklet was written precisely, every fact and reference verified. There is a story of how she wanted to include Vivekananda's views on the subject; being unsatisfied with the secondary sources available in Marathi, she asked for the original Bengali and had it translated before including it in her text! The long list of references she always included at the end are testi-

mony to this painstaking research, but they were also intended to encourage the reader to go beyond and read further.

It was these concerns that inspired her to start the Shankar Brahme Samajvidnyan Granthalaya, a lasting memorial to her late husband who died tragically young. But Sulabhatai bore her loss stoically, putting all her energies and material belongings into establishing it as a centre for radical thought, where left, secular and progressive activists and intellectuals could gather to discuss and exchange ideas, and plan struggles and movements. The span of her contacts was staggering; and it was as if each one of them knew but one facet of her personality. Yet she had an individual relationship with each one of them, and none of their personal travails escaped her attention.

Equally, she believed in showing the way through concrete alternatives. In 2004, she launched 'Lokayat Vyaspeeth', a project she started in Khalapur and Pen blocks of Raigad district of Maharashtra to develop an ecologically friendly and people-centric development model in agriculture, education and health and cultural values. Its basic purpose was to build a cooperative organization of rural working people to make agriculture sustainable and to improve their quality of life. She spent a considerable amount of her personal energies as well as resources in supporting such initiatives. For her, the political was truly personal.

Of late, Sulabhatai was deeply troubled by the negative impact of caste and religious identity politics that continues to pose a big hurdle to the class unity of the working people. The rise of Brahmanical forces to power in the Indian Republic was required to be countered, as she wrote in a detailed note that she circulated to several activists for discussion and debate, 'by an alternative secular order' based on 'the principles of liberty, equality, fraternity, social justice, dignity of labour, gender equality, scientific temper and harmonious relations with nature.' The Buddha Dhamma identified by Dr Babasaheb Ambedkar was one such alternative. But for those who did not wish to embrace an established order, she proposed another concept, that of a Manavta Dhamma based on the above principles and in consonance with the values of the Indian Constitution. She was keen that people at large turn their backs on Brahmanical Hinduism, and adopted one of these alternatives, especially because she felt that this would, over a few generations, also help them to escape the shackles of the Brahmanical caste system, which she deeply despised. In turn, this would help to effectively fight the forces of neoliberal capitalism.

She had a zest for life that was not always apparent, especially because she led an amazingly frugal and simple lifestyle. But she had a love for poetry, painting and the fine arts, and an extraordinary appreciation of Indian classical music. When some of her family members took the initiative to organize a series of celebrations for her 80th birthday, she participated in them with a childlike enthusiasm that left many of us dumbfounded. It only showed that her intellectual stature could not take away her immensely human nature.

Age was never a problem for her, and she was active till her last days. Just a week before her death, she had visited Purandar block in Pune district, participating in late night meetings to listen to the people and particularly the peasants affected by the proposed international airport in the area. Her enthusiasm never once waned, and she was always ready with a new set of ideas and plans, seeking out people who would support them. Revolution may be a distant dream for many of us, but for Sulabhatai, it was always an achievable goal, if only one made the effort! *Laal Salaam* to a 'Quiet Revolutionary'!

**Kiran Moghe**

## Anupam Mishra 1948-2016

ON Anupam Mishra's chair at the GPF (Gandhi Peace Foundation) is a sticker from an anti-dam campaign of the 1980s, its edges worn. *Power Without Purpose*, it reads. Three words that encapsulate the attitude of this low-key man who spent his entire working life – 47 years – in a low-key organization like the Gandhi Peace Foundation (GPF). Yet, since his death on 19 December 2016, after an 11-month battle with cancer, a string of condolence meetings have been held, numerous obituaries written, and even TV channels have talked about him.

Mishra's death, just like his life, is a testament to the power of purpose. It's a lesson he learnt from Banwarilal Choudhary, a friend of his father's. An agriculture scientist in Madhya Pradesh who led the Mitti Bachao Andolan in the early 1970s (which segued into a wider anti-dam movement), Choudhary stressed that good work does not rely on resources. Mishra, then cutting his teeth as a social activist and journalist, was among the first to write about the farmland being destroyed by waterlogging due to the canals from the Tawa dam.

An inspirational person for many, Choudhary made a deep impression on the young craftsman. That

was another quality of Mishra's: he saw himself as an artisan, patiently working to produce something useful and attractive to another person. From his house to his office to each wall, each surface that he could access – most people he met – bore a mark of his craftsmanship. Not just gifts, but each little note, memo, letter, postcard, official file was embellished with a little hand-drawn motif, a tastefully made border with a discarded sketch pen. He was adept at taking useless things, even garbage, and turning them into something useful and beautiful.

He did this with people too. Numerous people went to meet him in his office for recourse, for advice, for hearing something deep and worthwhile, delivered with a light touch. His doors were always open to everybody. Among his regular visitors were a few mentally disturbed people. He used to patiently hear their babble, soothe them with his gentle manner, help them in some small way, and come back to his seat. If he had any visitors, he used to tell them this is a tax he must pay. He never forgot a kind turn anybody did for him, and considered it his duty to extend the same regard to others. If he was at the end of somebody's anger or a distasteful deed, it ended with him; there was no response, no carry forward. Colleagues who mistreated him were at the receiving end of his compassion.

He took this craftsmanship to his language. Literary critics fawn over the quality and lucidity of his prose in Hindi. And yet his writing was stripped of learnedness, of any pretension to a classical education. He avoided using literary references or quoting weighty knowledge. If he had to use it, he made it a point to dissolve it, to put it within the grasp of any ordinary person who could read. Abstract ideas were turned into images in his prose, all depth and loftiness brought up or down to a level-headedness that is as rare as it is appealing. Over his last decade or so, he had turned into a prized public speaker, who could hold the attention of an audience for long durations. His speeches were often recorded and published and distributed by an ever-widening circle of admirers.

His sense of language owed much to his father Bhawani Prasad Mishra, a storied poet in Hindi, renowned for using the ordinary idiom and everyday words, as also an insistence that language is first and foremost a spoken form; he asserted that it is possible to write well by staying close to the spoken form. Mishra was no poet like his father, but plenty of readers swear by his lyricism and the grip of his prose. Journalist and editor Prabhash Joshi, also a disciple of his father's, was a big influence on his prose.

A third remarkable quality of this purposeful craftsman was his eye. Not just his observation, but the motive and mode with which he went about his research, his writing and his editing. Mishra was deeply averse to the kind of academic eye that, in the name of objectivity, objectifies other people. He used to often warn about how academic research can boil down to the victors studying the vanquished, the powerful analyzing the powerless. For all that he knew and learned over nearly five decades of work, he had a deep interest in ignorance. He was always mindful of what he did not know, and he respected the unknown. As the editor of GPF's bimonthly publication *Gandhi Marg*, he was always on the lookout for material that talked about the attitude towards the unknown. He published the thoughts of Vinoba Bhave on the subject, as also modern scientists such as Stuart Firestein.

Several obituaries have described his extraordinary humility, his regard for other people that used to sometimes make them uncomfortable. Some have said that, on meeting him initially, they thought such humility can only be affected. Those who knew him well knew its origin. His mother Sarla, a redoubtable matriarch to not just the family but an extended social world, had soft eyes and compassion for everyone. Mishra was raised by a hand that sought the divine in others.

When Mishra began working in GPF's research and publication wing as a 22-year-old postgraduate in Sanskrit, he saw it as an extension of the world he was accustomed to at home. His first major assignment, along with journalists Prabhash Joshi and Shravan Garg, was to negotiate the surrender of scores of dreaded dacoits in the Chambal region. It was around this time, in October 1972, that he met Chandiprasad Bhatt, a Sarvodaya activist working for a bus union in Gopeshwar, Garhwal. Bhatt had led popular protests against logging permits granted by the forest department, because the people of this part of the middle Himalaya depended on the forest for their livelihood.

Mishra took Bhatt to meet Raghuvver Sahay, editor of the influential Hindi magazine *Dinman*, and helped prepare a special issue on the Garhwal region the following month. From 1973, Mishra began travelling in the Garhwal region to understand this unrest. Not as a journalist or a researcher, but as an activist out to understand his society. Wherever he went, he stayed for a while, letting himself steep in the people and their world. (Some of the relationships he built then are still alive.) It wasn't till much later that he began writing on what would come to be called the Chipko movement, and which created a new environmental

consciousness in India and the world. Perhaps the first major reported feature on Chipko appeared two years later in Dinman. It carried a photo of Gaura Devi, one of the protagonists of the struggle. Some people call Mishra the first historian of Chipko. Mishra insisted that he was no historian or journalist or environmentalist, merely a faithful messenger of ordinary folk.

Through the '70s and '80s, Mishra travelled to places where people were engaged in environmental struggles, taking other journalists and activists alongside. One such location was Bikaner, where journalist Shubhu Patwa was leading a campaign for the protection of common pastures. During such travels, he became familiar with the traditional means of water harvesting in the desert areas of Rajasthan. This became his biggest project, which would consume most of his working life here onwards.

Mishra was deeply impressed by the environmental common sense of ordinary people, most of them illiterate, in harvesting rainwater through a range of complex and time-tested systems. He began to travel and understand these. The result of this was his 1993 book *Aaj Bhi Khare Hain Talab*. Free of copyright, the book had attractive production qualities – Mishra's long-term friend and associate Dileep Chinchalker had illustrated it by hand.

The book's success has been overwhelming. More than 40 editions, translations in several Indian languages, not to mention Braille, French and English editions – an Arabic translation is in the works. It has sold more than 2,00,000 copies. Several readers have brought out their own editions. Newspapers and radio stations have serialized it. Its success made Mishra famous internationally. But what pleased him the most was ordinary readers writing to him, telling him that they felt inspired to revive and protect their waterbodies.

Herein lies the most outstanding part of Mishra's work. Because he wrote about traditional water management as a son writing about his own society, he helped ordinary people imagine how their ancestors valued their waterbodies, how they maintained them – with love and labour. Mishra wrote about a society's relationship with its environment in cultural terms, not in a technical manner.

The craftsman – with a grand purpose and a compassionate eye – described life, faithfully and vividly. His descriptions brought to life dead water systems in the hearts and minds of ordinary people. Not through prescription, but through imagination.

**Sopan Joshi**

# Backpage

HALF way into his term, Prime Minister Narendra Modi arguably faces the toughest challenge of his somewhat tempestuous political career. Most other politicians would have been cowed down, if not broken, by the scrutiny and criticism he was subjected to following the 2002 ‘killings’ in Gujarat, not merely from the ‘secular’ opposition but by senior leaders of his party. Today, a decade and half on, howsoever reluctantly, one needs to admit that he has weathered that storm. His use of the entire repertoire available to wielders of power – *saam, daam, danda bhed* – without due concern for legal integrity or ethics to ‘discredit’ and ‘silence’ critics while directing media and public attention to other, more proximate, concerns, could well serve as case material for political analysts. It is thus instructive that currently many more, including his erstwhile admirers, wonder whether the Modi mystique is fraying, and that he might be on a slippery slope. True, given the thrill he is held in few are willing to openly articulate their opposition but there is little doubt that should he falter, the knives will be out.

Few other politicians in post-independence India have shown as great a willingness to take risks. In his embrace of a deliberate politics of disruption and change by building on aspirations, opportunity and technology, Narendra Modi has unsettled the earlier certitudes of Indian politics and changed the rules of the game, not merely for opposition politicians but for those in his own party and affiliated organizations. Unfortunately, while so far successful in retaining his personal popularity, he has made himself the locus of all power, a high-risk strategy since now there is no one but him to shoulder the blame should events not unfold as per plan.

Midway into his term, we are no longer dealing with the promise of Narendra Modi, the hard sell of *achche din*. Citizens at large have by now had the opportunity of assessing for themselves which one of his regime’s promises and programmes have delivered, and how much. Our relations with the outside world, neighbours and otherwise, are hardly less fraught than they were when he assumed power despite his frantic travels abroad and keenness to demonstrate a personal relationship with foreign leaders. And nothing captures this better than our now hot, now cold engagement with Pakistan, significantly discrediting the claim of having reduced the dangers of terrorism. Even the much lauded ‘surgical strike’ against terror bases in Pakistan has been shown up to be a nonstarter.

Of far greater importance is the record on the economy – from giving a kick-start to investment, particularly in infrastructure, creating new jobs, and controlling corruption. These too have been shown up as more *hawa* than substance. Even though economists and policy planners realize that the degrees of freedom available to any national government in an interconnected global economy are low, and that the fate of the Indian economy rests on a pick-up in the US, Europe and China, a restive populace which had invested high hope in Modi’s campaign promises, is less likely to be as understanding.

Equally unclear is the impact of Narendra Modi’s latest move – demonetization. At the moment, what was claimed to be only a short-term disruption with significant long-term benefits – from extinguishing black money and illegal currency, eliminating corruption and by seeking to reduce the role of currency in our economy, putting into place a ‘cleaner’ India better equipped to attract investment and do business – appears a chimera. What is evident is a significant slowing down of the economy and a loss of jobs, particularly in the informal small-scale sectors and in agriculture, and a significant deepening of inequality, with the poorer and marginal sections of society taking a far bigger hit than the well-off.

This is why the impending elections to five state assemblies – Uttar Pradesh, Punjab, Uttarakhand, Goa and Manipur – have acquired such significance. In the event that the BJP does not fare well, there is little doubt that both Prime Minister Modi and party chief Amit Shah will be under severe pressure, both from an energized opposition as also dissident elements from within their own party. More so since they have made the elections – particularly in Uttar Pradesh – a referendum on the prime minister, his government’s performance and his style of ruling.

Whatever the results, Indian electoral politics is likely to experience a qualitative change. A victory for the BJP will greatly strengthen Narendra Modi, further centralizing power, with possibly a negative long-term impact on our democracy. His loss may well usher in a phase of uncertainty, at least till the polity manages to strike a new equilibrium. In either case, Narendra Modi will have lived up to his reputation of being a game changer, just not in the way he may have imagined.

**Harsh Sethi**