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# MAUSAM

.... talking climate in public space

MAUSAM IS AN INITIATIVE OF INDIA CLIMATE JUSTICE (ICJ) COLLECTIVE

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Editorial

## Fossil Fuels and Capitalism: The Centrality of Resistance

It's a bad time for climate sceptics. Not just was April 2016 the hottest April ever, since instrumental temperature records began in 1880, it was the seventh month in a row that was the warmest ever in that manner. World average temperatures these past few months have been a huge 1.1 degrees Celsius above the average in the baseline period 1951-1980, and that itself is a few tenths of a degree Celsius above 1750. These record temperatures have no doubt been boosted by a receding and very powerful El Nino, but the broad scientific consensus is that the stronger factor is human-induced global warming.

It's also a bad time for many communities. The consequences of this unusually high warming have been dire. Forest fires have been erupting in many places across the world, right from Canada, to the US, to the Himalayan states of Uttarakhand and Himachal Pradesh. In India, over 400 million people across thirteen states are facing one of the most acute droughts in decades. Some have compared it to the drought of 1972, but we forget that the entire population of India in 1972 was a little over 500 million. This drought may have more the fingerprint of the El Nino. However, global warming has altered the background context in which these weather anomalies hit. By the Earth being so much warmer, it's become a permanent background factor.

When people talk of global warming's impacts, there's a tendency to focus on how we humans are affected. A lot of birds, insects and mammals also perished in the Uttarakhand fires. There is also a tendency to focus on extreme events and immediate impacts, and underplay global warming's slower, long-term consequences. For instance, the oceans have taken over 90 per cent of the excess heat trapped in recent decades and 28 per cent of all the carbon dioxide that humans have emitted since 1750. One of the gravest impacts of global warming is how lakhs of marine species are under stress and put at risk of extinction by our oceans getting warmer and becoming more acidic because of the billions of extra tonnes of carbon dioxide they absorb each year.

Meanwhile, political leaders the world over fiddle while the planet burns. The Paris Agreement, the outcome of the 21st Conference of the Parties in December 2015, needs to be ratified, and will come into force when 55 countries having a cumulative emissions of 30 billion tonnes of carbon dioxide-equivalent ratify it. But will the ratified agreement, whenever that happens, succeed in reducing emissions? Given the ambiguous text of the Agreement – which only talks of voluntary cuts and encourages more carbon trading – it is extremely doubtful. In fact, what they are ratifying is itself a recipe for disaster; even if all commitments to reduce emissions made by all countries are met, greenhouse gas emissions will climb by 2030 to fifteen billion tonnes above what is required to meet even the risky 2 degrees C warming threshold, and on track to an eventual warming of three degrees Celsius, possibly higher. Human civilization has no experience of these temperatures, nor the experience to cope with them.

One way forward is for society to learn to live more sustainably. But our society is hardly equal

This, the sixth issue of *Mausam*, narrates movements against coal fired plants in Bangladesh, and a yatra in the Sunderbans there in which some Indian organizations, including members of India Climate Justice, participated. Four people who were part of protestors against one such project were killed in firing by the police and company goons in April 2016 in Chittagong. Coercion, capitalism and climate change are part of a single continuum.



and getting more unequal each passing year. The urban poor in Delhi and other cities in India, with their low carbon footprint, their capacity to recycle and re-use, are showing us a way how to. But energy-guzzling by the rich keeps on increasing.

The key step forward to tackle global warming therefore can only be resistance and collective struggle. Over the past few years, the enemy finally has a face; it's the fossil fuel industry. In many countries, fossil fuel companies, financiers that back them and institutions that invest in them, have been the focus of a worldwide campaign against fossil fuels. This, the sixth issue of *Mausam*, narrates movements against coal fired plants in Bangladesh, and a yatra in the Sunderbans there in which some Indian organizations, including members of India Climate Justice, participated. Four people who were part of protestors against one such project were killed in firing by the police and company goons in April 2016 in Chittagong. Coercion, capitalism and climate change are part of a single continuum.

We also carry an interview of Larry Lohmann who argues that the issue is the trajectory of "ever-increasing industrial production" itself. For the worldwide climate justice movement to be meaningful and effective, the climate issue needs to be linked with a range of people's struggles and find overlaps with the issues they raise. In turn, people's movements and Left politics in general need to incorporate wider ecological crises and concerns.



climate change: perspective

## Climate Change: A View from Below

Climate change, as is well known by now, is a result of the release of greenhouse gases (GHG) into the atmosphere, which act as a kind of a blanket around the earth and do not allow the heat to escape, so that the planet begins to warm up. These gases were trapped in coal and oil, minerals which took roughly 190 million years to be created by the geological evolution of the earth and are now being burnt up in a mere 400 years, so that all the CO<sub>2</sub> is being restored back into the atmosphere at a hugely increased rate, while life-giving oxygen is being depleted at the same rate. It is this extremely rapid release of something that was accumulated over a very long period that is responsible for violently upsetting the natural carbon cycle of the earth and is the key ingredient of “unsustainability”.

Logically, therefore, there are two ways of approaching this problem of how to bring the cycle back into some sort of balance. One could either try to minimize the requirement of energy and, therefore, the change from solid or liquid carbon to the gas carbon dioxide; or one could extract as much as possible from this conversion while finding other sources of energy. The first way would require that the use of energy is reduced drastically and lifestyles changed. The second would mean trying to get more energy out of non-renewable sources, finding faster methods of re-fixing carbon, and developing renewable sources of energy. The second response is what has been dominating international negotiations at climate summits. The Indian government appears to fall in between, following the second response in international discussions, but unwilling to take up the first response as a domestic challenge.

Although India is the third largest emitter of CO<sub>2</sub> in the world, its average per capita emission is less than half the world average of 5 tonne CO<sub>2</sub> (tCO<sub>2</sub>). But there is considerable variation around this average. Studies suggest that the total per capita emission for land, water, electricity, transport, and cooking fuel for the rich, which is near the global average, is about 12 times that of the poor in India (0.35 tCO<sub>2</sub>), while it is only the lower middle class that is meeting the sustainable level of 2.5 tCO<sub>2</sub> that needs to be achieved to limit global warming below the critical limit of 2°C. If, therefore, 170 million people who today earn more than Rs 16,000 per month already emit more than 2.5 tCO<sub>2</sub> per annum, then to create climate space for the remaining 1.1 billion people in the country to survive meaningfully with a better quality of life, India needs to find a way to reduce the CO<sub>2</sub> emissions of this upper 13 per cent.

Can this better quality of life be achieved at lower energy levels? The late pioneering scientist, Amulya Reddy, had prepared plots of energy use against quality of life indicators in a range of 135 industrialised and developing countries. These show that at a level of annual per capita energy consumption of 1.2 tonnes of oil equivalent (amounting to about 2.5 tCO<sub>2</sub>) globally, infant mortality can fall below 20 per thousand live births, illiteracy reduced to less than 10%, fertility rate can come down to 2.5 births per woman, and life expectancy can rise to 70 years – as demonstrated by 13 of the 135 nations. In fact, El Salvador and Sri Lanka have achieved this feat at a per capita emission of 1 tCO<sub>2</sub>. None of these nations may be called ‘developed’, yet their human development indicators are far better because of the creative policies they have followed to invest in human beings rather than economic growth alone.

Policy makers agree that it is the poor people living in slums who are at particularly high risk from the

impacts of climate change. But if we look at the actual energy consumption figures for electricity, cooking, and transportation for different income classes, we find that it is the rich who would have to bring down their total emissions by about half, while the poor could increase their emission load by 100% - and this would clearly impact on the lifestyles of both. The poor may not have access to good land, potable water, health care, appropriate services, adequate credit, and other resources, but will further impoverishment really tip them over the edge? Instead of asking what would happen to the world if everyone were to consume energy at the level of the rich 'developed' American, perhaps we should enquire why everyone is not consuming at the level of the above-poor 'developing' Indian?

### Stories from different cities

Let us examine what is happening at the ground level in several cities and towns in India. In the metropolis of Kolkata, in 2013 the police banned all non-motorised transport (NMT) vehicles on 174 avenues on grounds of congestion. Consequently, there were protests on the streets by vendors, hawkers, cyclists, the handicapped (in wheelchairs), and cart-pullers who depend on the NMTs for their livelihoods. Kolkata is the only large city in India where trips by cycle (11 per cent) outnumber trips by cars (8 per cent), there are more bicycles than either 2- or 4-wheelers, 50-75 per cent of all trips are accounted for by cycling or walking by petty traders, suppliers, carpenters, masons, newspaper vendors, office clerks, milkmen, and courier delivery boys. Cars account for nearly 50 per cent of the air pollution load; and the city's economy is reeling due to an increase in fuel costs.

A study by Switch ON at key points of the city during peak traffic hours demonstrated that bicycles were only 2.6 per cent of the total traffic volume. Private cars constituted 31.5 per cent of the total vehicles, but carried only 4.9 per cent of commuters. On the other hand, buses and mini-buses constituted 9.8 per cent of the total vehicles, but transported 75.2 per cent of commuters. This data reinforces the argument that it is the huge majority of commuters (over 91 per cent) who are earning less than Rs 10,000 per month and are mitigating climate change by using public transport (other than taxis), while the major emissions are contributed by private vehicle owners who occupy a large section of the road but carry pitifully few passengers. This analysis, of course, does not include the large number of pedestrians and cyclists who also use the road and are also mitigating the impacts of global warming.

More revealing data comes from Jaipur, where ten bus routes are planned to decrease dependence on private motorised transport modes. This is also expected to improve air quality, road congestion, and journey speeds. In Phase I of the project, a 46.7 km-long corridor is being built at a cost of Rs 479.6 crore (a little over Rs 10 crore per km). This cost is less than the Rs 20 crore per km generally required for dedicated corridors. The corridor of Package I, from Todi on the periphery to Badi Chopad in the heart of the city, has been functional since 2010, and a survey was carried out in 2014 by Labour Education and Development Society to study whether the corridor has helped meet the transportation needs of the people. The 95 respondents, all earning less than Rs 10,000 per month, who were covered under the survey reported that non-motorised (and non-polluting) modes such as walking, cycling, and rickshaw had reduced significantly, while bus travel and commuting by car had gone up!

Why should this be so? What the study reveals is that the manner in which the corridor has been designed it has increased the travelling distance (by 17 per cent) and costs, while travel time has reduced slightly. Respondents said that the corridor takes an indirect route, which increases the distance and bus fares have gone up, while at times commuters had to change buses, also increasing expenses. But since the newly-laid carpet of the corridor contributes to ease of travel it has become more favourable for motorised private cars. Furthermore, there is no separate provision for non-motorised forms such as cycles and cycle-rickshaws on the corridor. In addition, those respondents whose livelihoods were directly affected also complained that the earlier available space for hawkers and vendors and for labour chowks had also decreased. In other words, the bus corridor had really been designed for the car-user.

Unless, therefore, there is a change in mindsets of planners and designers (mostly car-using individuals) from regarding the poor as 'vulnerable' to viewing them as 'best practice' for climate change adaptation and mitigation, it is unlikely that there will be desired impacts on global warming. This is illustrated

by the experience of housing in Vishakhapatnam, where the Municipal Corporation decided in 2005 to provide 50,000 Domestic Units (DUs) for the slum population at a cost of Re 1 lakh per unit. In the subsequent nine years, a total of 24,423 flats were approved in 12 multi-storied projects and the cost of each DU rose to Rs 3 lakhs. A study of this pattern of housing by the Association for Rural and Tribal Development (ARTD) revealed that these flats had been constructed on the outskirts of the city, with consequent adverse impacts on employment, incomes, transportation expenses, quality of water, and costs of health and education.

Hence, in 2013, when Surya Tejanagar was to be resettled at almost Rs 5 lakhs per DU, the residents mobilised with ARTD to design their own housing. Ninety-five per cent of the families had migrated to the city in search of work, and while some of them were working as drivers, carpenters, masons, plumbers, domestic maids, more than half were earning a living as daily labourers. Their monthly incomes were in the range of Rs 5,000-8,000; they commuted up to 10 km to get to work, the majority by bus and the rest cycling or walking. Most families were concerned at the loss of significant investments made by them in the past in land, houses, and services. They proposed that if they were given legal tenure on 40 m<sup>2</sup> plots at the same location, they would be able to preserve the past investments, retain their livelihoods, and the cost of low-rise houses would reduce to Rs 50,000. This would have correspondingly reduced the energy requirements for housing, as also contribution to climate change.

### **Sustainable lives of the poor**

Similar data is now available for land, energy, water, fuel and transport use by the poor in Delhi, where the resource use of the middle consumption class leaves a carbon footprint more than 12 times that of the low consumption families. In Nagpur, the demands by plumbers for cancelling the privatisation of water supply and returning it to the municipality would not only restore water supply quantity and quality, but also significantly bring down energy costs by almost a quarter. In Bhubaneswar, the efforts by street vendors to acquire vending rights on all pavements has dramatically brought down prices of goods while reducing the potential energy costs of sale of those same goods by department stores and malls. And junk dealers in Indore, who ply their trade without a license, earn about Rs 6,000 per month but buy and sell and recycle junk worth Rs 9,000 per month with minimal energy costs.

Thus, most analysts and theoreticians of climate change and its mitigative or adaptative responses seem to forget that, in practice, the poor illustrate the most amazing capacity to survive. Over and above the resources to which they have limited access, it is their power to use their own labour that enables them to adapt, migrate, produce, and progress in a manner that is not only sustainable from the view of climate change but is also sustainable in terms of overall resource utilisation. The limited data that is available is beginning to illustrate these trends and reinforce a subaltern perspective of climate change, but policy makers have an aggressively different perspective. Their vision of incessant growth continues to drive our society, without any consideration of the energy required to power this growth. Global warming and climate change will, therefore, continue to haunt the earth as long as this vision persists.

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## Acidification: The Other Big Crisis of Carbon Emissions

Most of the attention to the problems of the emission of carbon dioxide and other greenhouse gases (GHGs) has focused on their role in increasing the average temperature of the Earth's atmosphere and the resultant climatic changes. At the same time, the hydrosphere – mostly the oceans, which absorb 90 per cent of the total extra heat trapped by greenhouse gases, and harbour an unknown number of species (the best estimate is about 2.3 million<sup>1</sup> compared to an estimated 6.5 million terrestrial species, ten times the approximately 230,000 known marine species) – has not received similar attention. This despite the fact that the oceans cover a larger living-volume than terrestrial living space.

This atmosphere-centric thinking by us humans seems 'natural' for most of us, as we live in this 'airy-ocean' and have little understanding of our connections to, and dependence on the water-oceans; oceanic changes are not 'experiential' for us. But for the majority of earth's life-forms who reside in these seas/oceans, it's a 'life and death' concern. And the oceans also control our atmospheric changes to a large degree, primarily by their interactions with the air at the interface. Thus, the climate-determining El Nino and La Nina phenomena depend largely on temperature gradients of equatorial Pacific Ocean waters and their heat exchanges with the trade winds. Most large tropical or subtropical storms form on the seas/ oceans as they get their driving energy from the condensation of huge quantities of moisture contributed by the warming oceans.

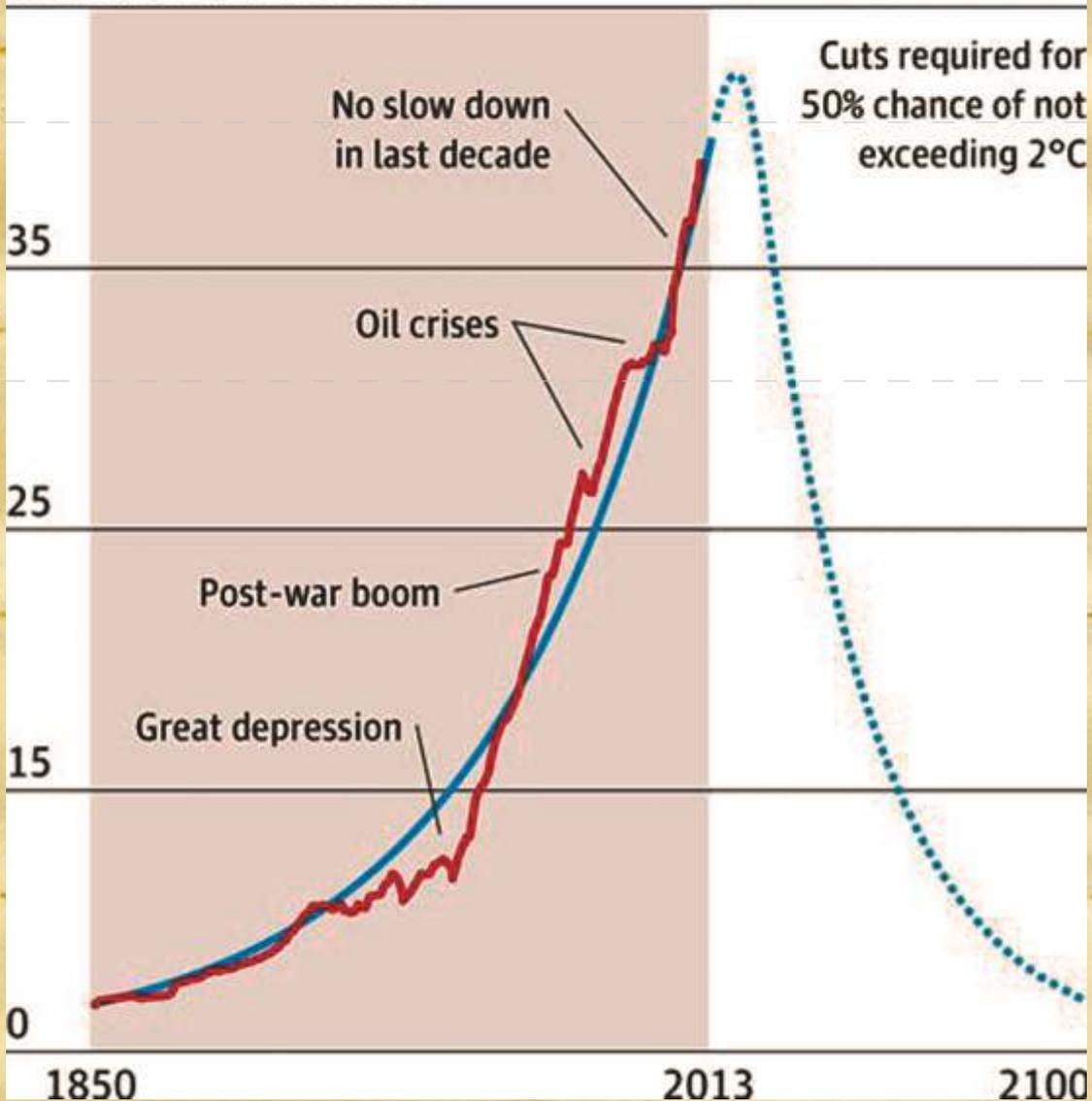
### Acidic waters

All the above phenomena are largely dependent on the temperature of the surface and near-surface waters of the oceans, which are rising due to global warming. However, there is another major change happening a little more invisibly. The world is currently emitting over 50 billion tonnes (50 Gt) of carbon dioxide equivalent greenhouse gases every year, out of which fossil fuel burning contributes about 33-34 Gt. This consumption of fossil fuels and resultant CO<sub>2</sub> emission is continuously and rapidly increasing since the last 150 odd years, only occasionally slowed down a bit by economic recessions (figure below)<sup>2</sup>.

Roughly 30 per cent of human CO<sub>2</sub> emissions are quickly dissolved in the oceans, the largest single sink for CO<sub>2</sub>, and roughly an equal amount absorbed by forests, grasslands etc. The remaining portion of CO<sub>2</sub> builds up CO<sub>2</sub> levels in the atmosphere and contributes to warming the earth. (Over a much longer time period, over 80 per cent of CO<sub>2</sub> emissions are taken in by the oceans, as air-water mixing continuously takes place at the ocean surface.) From the start of the fossil fuel driven industrial revolution, we have thus 'dumped' 568 billion tonnes of CO<sub>2</sub> (IPCC AR5 data), about 28 per cent of all we have emitted, in the world's oceans.<sup>3</sup> The present rate of short-period dissolution is about one million tons of CO<sub>2</sub> per hour.

As a result, the waters of the oceans are turning more acidic (to be accurate, less basic, as the ocean waters are slightly basic to begin with, with an average pH of 8.2, neutral water pH is 7.0, while drinking water pH should be within about 6.6 to 7.5). In the last 100-odd years, the ocean water pH value has changed to about 8.1 from 8.2 where they were for the last few tens of thousands of years at least. As the pH or acidity measurement is on a logarithmic scale, what may seem tiny is actually a major rise of over 25 per cent already. And the estimates are that this pH value might change/decrease by another 0.4 by the year 2100, and by 0.7 in the next century, taking the earth's oceans to a state unknown for the last 25 million years! While the uptake of CO<sub>2</sub> by the oceans reduces atmospheric CO<sub>2</sub> thus reducing the

## 45 Billion tonnes of CO<sub>2</sub>



potential warming we land animals would experience, the resultant 'hidden climate change' in the oceans is causing huge damage to the largest life-support system on this planet.

### **Horrific Effects on Marine Life**

This change in pH or 'acidification' is causing huge problems for most marine life, but most acutely for those numerous creatures that build their shells out of the carbonate ions in ocean waters – clams, crabs, urchins, snails, lobsters and the like. The carbonate ions are used to build the calcified plates of microscopic phytoplankton as well. Phytoplankton forms a large part of the base of the food chain for most marine animals. Modern marine life has evolved to live in the present oceanic contents of CO<sub>2</sub> that is roughly 89 per cent bi-carbonate ions, 10 per cent carbonate ions and 1 per cent dissolved gases. The many air-breathing marine animals are also impacted by this change, as their physiology is suited to the present ratios. The increasing CO<sub>2</sub> dissolution in the oceans is decreasing the percentage of carbonate ions, increasing dissolved CO<sub>2</sub> – thus changing the entire chemistry of their water-environment. The metabolic functioning of most marine animals are also tuned to a narrow pH range of sea water; as this balance is changing fast, by evolutionary standards, these animals are beginning to 'feel the heat'. Fossil records have shown that during periods in earth's geologic history when CO<sub>2</sub> levels have risen fast, large scale extinctions of marine life have occurred. Probably we are facing the next one, and quite soon, as this particular change is happening very fast by geological standards. This 'sixth mass extinction' will be a combined result of a fast warming of both air and water, and equally fast acidification of the oceans.

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*Pteropod' shells seen dissolving from increased acidity of ocean waters in US west coast. Credit: NOAA*

A research team led by NOAA biologists have recently found<sup>4</sup> the first evidence of shells of tiny free-swimming marine snails (called pteropods) dissolving due to this increased acidity of ocean waters, off the continental shelf of the US West Coast. These form an important part of the diets of pink salmon, mackerel and herring, raising the spectre of population declines in these commercially important fish species. And the oceans harbour far more than just economically important fish, in a sense – regulating all life on earth through their indirect impacts.

The other, very visible ramifications of this calcification are for the world's coral reefs, which – along with mangroves – are the greatest nurseries of marine life diversity. Coral reefs occupy only about 0.1 per cent of the world's oceans, but about 25 per cent of all fish species live in reefs, thus making them extremely important for coastal fishers' livelihoods and to the world's marine food supply as well. They also harbour 32 animal phyta, compared to only nine in tropical rainforests. Most of the world's coral reefs are in tropical waters, with Australia and Indonesia accounting for 17 per cent and 16 per cent respectively, and it is these tropical waters that are getting affected the most by rising ocean temperatures and acidity (along with chemical and thermal pollution from rampant coastal industrialization).

Rising temperatures of ocean waters cause increasing coral bleaching and die-offs, as was noticed on large scale in the Andaman Sea during 2009-10. An increase in frequency of such bleaching events will reduce the prospects of coral reefs recovering. Increased acidity of ocean waters reduces the capacity of coral-polyps to build the hardened skeletons that go into building biodiversity-rich coral reefs all around. Another vital function some of the bigger coral reefs perform is protection from cyclones

and coastal storm-surges. The biggest continuous coral reef in the world – the Great Barrier Reef on Australia's north-eastern coast, has lost a massive 50 per cent of its coral cover between 1985 and 2012, according to a study led by Australian Institute of Marine Sciences.<sup>5</sup>

It is obvious that these critical changes are also happening in the oceans in India's 'exclusive economic zone' - in the Indian Ocean, Bay of Bengal and Arabian Sea. It is estimated that roughly one-fourth of India's population of 1.27 billion reside in the coastal influence zone, and are also dependent on marine resources in some way or the other (for instance, fishes, crabs, crustaceans are an important source of protein for a large part of our population). India also has over 11 million coastal fish-workers, whose lives and livelihoods depend on the temperature and acidity of the coastal seas. It is a sad commentary on Indian 'science and research communities' that there is hardly any relevant research/ investigation being done on this critically important and hidden impact of human-induced changes in the carbon cycle and global warming. One can only hope that this changes soon, for the better.

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climate politics

## The Paris Agreement: A French-brokered UN Climate Deal Sans Justice

On 18 December 2015, blogger Aneesa Khan wrote in Earth In Brackets “To be in a room for seven whole hours is arduous in itself. However, for that room to be one filled with painfully complacent idiots, the overpowering smell of corporate power, and sickeningly thundering applause? Well, that can only be described as torturous. Feelings along the lines of delirious levels of fury, profound misery and a fairly good amount of second-hand embarrassment for those in the room were inevitable and rampant.

“Those clapping fools who thought that COP21 in Paris had delivered to us (in the words of dear Laurent Fabius) a historic “differentiated, fair, balanced, legally binding agreement” were either highly misinformed or painfully naive or highly manipulative of the final Paris Agreement. The narrative of the climate deal was so molded by the French Presidency, developed countries, sell-outs from the Global South, and the media, that it was easy for many to lose sight of what actually went down in the hallowed halls of Le Bourget and within the 31 pages of the disastrous deal.”

This deal arrived at Le Bourget on the 12 December 2015 has now been inked with signatures of more than 170 country governments. A climate agreement that falls short of its own goals and is tailored to suit the United States and its developed allies. Climate justice was the casualty in Le Bourget; vulnerable communities continue to be the victims of this delirium hailed as historic.

### **A bad deal is worse than a ‘no deal’**

Climate justice is a concept that views climate change as an ethical and political issue involving equality, human rights, collective rights and historical responsibility. Climate justice is justice for the people and the environment. It is based on the principles of equity and common but differentiated responsibility (CBDR). It differentiates between developed and developing countries. It recognizes the need for renewable energy, the need to keep fossil fuels in the ground, the point of fair shares, and the need for finance and technology transfer. It supports those on the frontlines, it supports indigenous rights, migrants’ rights, gender justice, and voices from trade unions. Nowhere in the thirty-one pages of the Paris Agreement do we see any recognition and commitment to such justice for the millions. The text pays mere lip service to CBDR, equity, non-market mechanisms, gender equality, and finance. More than that, these honorable mentions are an infuriating co-option of the language of the climate justice movement.<sup>1</sup>

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The United Nations' fundamental principles of justice were betrayed and compromised in Paris, under the very nose of its leader Ban Ki Moon. The hobnobbing of the UN with the business and corporate sector ensured that the affluent industrial nations refuse to accept historical responsibility for the crisis. Its own principles and references to human and indigenous rights, intergenerational equity, gender justice, sustainable development and food sovereignty were sacrificed at Le Bourget. In fact, environmental de-regulation was promoted by design, in the anticipation of free trade agreements. Yet, Christiana Figueres, in her closing speech to the Summit had the temerity to claim, "When in 2014 the UN Secretary General convened his UN Climate Change Summit and hundreds of thousands of people marched in the streets of New York, it was then that we knew that we had the power of the people on our side."

Before the talks began, social movements, environmental groups, and trade unions around the world came together and agreed on a set of criteria that the Paris deal would need to meet in order to be effective and fair:

- Catalyze immediate, urgent and drastic emission reductions;
- Provide adequate support for transformation;
- Deliver justice for impacted people;
- Focus on genuine, effective action rather than false solutions.

### **The 1.5 degree Celsius Conundrum**

The Paris Agreement aims to keep the global average temperature rise to well below 2 degrees above pre-industrial levels and will pursue to limit the temperature rise to 1.5 degrees. But the real emission cuts (voluntary pledges), which have now become an official part of the agreement based on INDCs of various countries, even if they are all met, will ensure that average global temperatures soar beyond 2 degrees and will actually result in temperature rises between 3 and 3.7 degrees. By the time the pledges come into force in 2020, the world may use up the entire carbon budget consistent with 1.5 degrees C. To achieve the Paris target, at least 80 per cent of fossil fuels have to be left in the ground; we need to stop deforestation, reduce the emissions of other greenhouse gases and tackle the growth of animal agriculture and industrial livestock farming.

The text does not mention emissions from aviation and shipping, talk of REDD+ in anticipation of further deforestation, not a whisper about livestock, soya and palm oil and suffers from an absolute amnesia about coal, gas or oil.

### **Climate finance: the ever dangling carrot**

According to the International Energy Agency, the transformation to a fossil-free world will require US\$ 1,000 billion per year by 2020. Around two-thirds of this – US\$ 670 billion - will be needed in developing nations. Thus, there has to be a significant flow of finance from countries of the North to the global South. This is only fair, because industrialized nations have grown so wealthy by burning fossil fuels for the last two hundred years; countries containing just ten per cent of the world's population are responsible for around 60 per cent of the GHGs currently in the atmosphere.

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However, the Paris Agreement only commits to 'mobilizing' \$ 100 billion per year by 2020, to cover not just emission cuts but also adaptation. There is no firm commitment to increase this figure, merely an aspiration to review it by 2025. The definition of 'mobilize' is purposefully broad, to include loans, private finance, grants with strings attached, and the reallocation of aid budgets. Compare this to an estimated \$5,300 billion spent per year on direct and indirect subsidies to fossil fuels. Janet Redman from the Institute of Policy Studies says, "Wealthy nations have to shift money from their banks and tanks to clean energy and climate resilience", referring to the fact that \$2,000 billion a year is spent on the military and \$14,000 billion mobilized to bail out banks.

### **A crime against the impacted**

Many climate vulnerable nations, especially the small island nations and the climate justice groups have fought hard for the right to reparation and compensation. While the climate justice groups vented their anger through well crafted actions (with permission from the summit security) inside Le Bourget, and on the streets of Paris, the small island nations were bullied and bribed to accepting a clause that absolves the rich countries of any legal, moral and political responsibility for the carbon pollution that has devastated lives and livelihoods of millions.

The concept of a just transition – that governments should provide training and financial support to ensure that workers in the fossil fuel industry can find alternative employment in the shift to a zero-carbon world – is mentioned in the preamble but not in the core, agreed text of the Paris deal. And the requirement that human rights should be taken into account has been stripped from the text. With that is also thrown out the rights of indigenous peoples and that too from a UN document. As Tom Goldtooth of Indigenous Environmental Network explains: "It's hard to take as an Indigenous person that our ability to decide and self-determine our futures, where we get our food from, where we get our water from, is not legally recognised by the nations of this world. It's destructive, it hurts."

### **Justifying false solutions and unregulated carbon trading**

The Paris deal emphasizes unscientific and untested technologies and vague actions to open doors to all kinds of false solutions. From an all-pervasive use of offsets to BECCS – the most damaging carbon capture mechanism ever thought of. Renewable energy is mentioned just once in relation to Africa. The text gives legitimacy to enhancing of sinks to offset emissions without mentioning any achievable target to end fossil fuel use. The slippery language allows for the possibility of fossil fuel burning 'offset' by 'removals' via dubious carbon capture, geo-engineering and REDD+ like forestry schemes.

The door is now open for 'internationally transferred mitigation outcomes' as a legitimate solution – the global carbon trading mechanism. There is no mention, however, of respecting land rights of forest peoples to promote effective and fair solutions, clean and equitable energy, ensuring food sovereignty for small communities and farmers. While carbon capture gains ground, keeping carbon locked up underground is relegated to the dustbins. The UNFCCC Paris text gives unlimited power to the corporates to overturn environmental regulations that affect their profits and the coffers of their political masters.

Many climate activists were apprehensive that the Paris agreement would fall short of expectations and end up as a bad deal. Many talked of moving beyond Paris and generating a global climate movement and others already started talking of a path beyond Paris. But what is worrying is when two kinds of people want to use the 'success' of Paris to their own ends. Those supposedly fighting climate change who argue for the deal as a psychological boost because it unveils to the world the need to urgently decarbonize; and those responsible for climate change who use it as a psychological boost because it tries to hoodwink the world about their ongoing role in unsustainable emissions.

### **From Le Bourget to the Swamps of Sunderbans**

While thousands were marching on the streets of Paris defying the diktat of the French government and the threats of terror bombing, and the INGO lobbyists were busy poring over the pages of the final Paris text inside Le Bourget, the Avaaz Community was gleefully typing on their laptops and keypads sending out self-congratulatory messages across the world hailing the Paris Agreement and exposing chinks within the CSO world. One of their first messages read:

"World leaders at the UN climate talks have just set a landmark goal that can save everything we love! This is what we marched for, what we signed, called, donated, messaged, and hoped for: a brilliant and massive turning point in human history... Ambitious visions like these rely on movements to carry them into the mainstream, and on movements to make them a reality in our everyday lives. Today is no exception."

The Avaaz Community, in an act of shamelessness, also subsumed the peoples' climate movement when they added: "Working with many partner organisations and after months of preparation, we staged the biggest climate march ever on the eve of a critical UN Climate Summit — 400,000 people in NYC and another 300,000 across the globe — all with one powerful message: the world wants 100 per cent clean energy. Weeks later, the US and China signed a landmark agreement to reduce emissions. The political momentum on climate had changed."

The big NGOs and alliances were surprisingly cautious in their responses. Friends of the Earth climate justice coordinator Lucy Cadena said the agreement "marks a turning point for the balance of power", while Greenpeace International executive director Kumi Naidoo said of the agreement that "the human race has joined in a common cause ... it is only one step on a long road ... but it is progress. This deal alone won't dig us out of the hole we're in, but it makes the sides less steep."

Even the statement issued by the left progressive Rosa Luxemburg Foundation was not only cautious but diplomatic: "The answer to the question of whether the climate summit was a success or failure largely depends on the perspective from which one assesses its results. The fact that German civil society and the majority of the media largely describe the deal as 'historic' and 'successful' is due to their strongly process-immanent perspective, a perspective that analyses the results of the summit through the prism of the framework laid out by the UN

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climate convention. From this point of view, the summit achieved much more than has otherwise been accomplished during the last 20 years and far more than most observers had expected. For the first time, 195 states, some with highly contradictory interests, have jointly adopted an international climate agreement. Many people were surprised that the agreement includes the 1.5-degrees-target. Seen in this light, the Paris Agreement is indeed a great success, and it remained unclear until the very last moment whether an agreement would be possible. Credit for this diplomatic masterstroke goes to French Foreign Minister Laurent Fabius and his large diplomatic corps. At the discursive level, the adoption of the agreement sends a message to the world, namely that climate change is such a grave problem that tackling it is truly in everybody's interest."

While some climate justice groups severely criticized the US-EU nexus and blamed the corporates and these polluters behind a scandalous deal, calling the US a 'cruel hypocrite' in creating a climate catastrophe, the next big and upcoming polluters like China, India, Brazil and South Africa were let off. While these countries swear by CBDR, they themselves are responsible for climate apartheid within their boundaries. Their INDCs, while committing to cuts in emission intensities, fail to address inequalities within, the growing consumption of a miniscule minority and an effective mechanism to reign in their emissions. Some Indian NGOs supported the Government of India's demand for carbon space. One such representative rued that "The absence of the term 'carbon space' in the Paris Agreement will hurt India in the long run because the carbon space is fast disappearing. In 2030, the Human Development Index (HDI) of India will be less than 0.7. India will need carbon space post-2030 to meet basic development needs like food, shelter, infrastructure and energy. But this will not be available. Unfortunately, the Paris Agreement is robbing the carbon space of the poor so that the rich can continue with their lifestyle." The Indian poor and the vulnerable never had carbon space and they do not demand any carbon space. All that they want is their right to life and livelihood, the right to live in dignity and equality. Global climate politics denies them that right.

Ariel Salleh, visiting professor of Nelson Mandela University and research associate with the University of Sydney argues for the possibility of another climate strategy when he says:

"The Paris negotiations as such, should have been declared null and void by social movements at the outset. This would constitute step one in a dual power strategy. Once the master discourse is refused, the global majority – women, indigenous people, and peasants – can lead with ecological insights grounded in life-affirming regenerative skills. The era of technocratic environmentalism bypassed this meta-industrial labour class. But care for new generations, for water, and for forests is a prerequisite to food, energy, and other kinds of sovereignty. Even in the global North, conspicuous consumption is now transitioning into degrowth, and joyful commoning for eco-sufficiency. This approach to the climate crisis was articulated at the 2007 COP13 in Bali and in the 2010 Cochabamba Summit vision of *buen vivir* – and we the peoples must hold to it."

A couple of months before COP 21, Pablo Solon, the former climate negotiator for Bolivia, articulated that with the demise of the Kyoto Protocol and binding climate agreement, mobilizing around climate summits such as the COP will be irrelevant for the climate movements. "The mobilization should move further down to the grassroots, around farms, in the mines, along the coasts, supporting the forest communities and closing down the fossil fuel industry", he added.

Climate politics will go nowhere as long as peoples' movements remain locked into debates over arithmetic. It is time to re-set the start line for climate struggles in a place that transcends the old episteme.<sup>2</sup>

The Break-free from Fossil Fuels mobilization in May 2016 and the March of the Thousands against the Rampal thermal power station in Bangladesh to protect the swamps and mangroves of Sundarbans resisting state repression and police bullets indicate that beginning.

## Souparna Lahiri

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### end notes

- 1. Aneesa Khan, Earth In Brackets, 18 December at <http://www.earthinbrackets.org/author/akhan/>
- 2. Ariel Salleh, December 20, 2016, circulated by Wally Menne of Timberwatch Coalition, South Africa



## US-WTO Shadow on India's Solar Power Plans

Last week a panel set up by the WTO's Dispute Settlement Body ruled against India on a complaint by the USA in early 2013 that India's Domestic Content Requirement (DCR) for some solar power projects violated WTO prohibitions on measures that result in "less favourable treatment" of international trade partners. The Panel was ruling on an appeal by India in response to the original injunction in August 2015 and essentially reiterated the WTO's previous decision.

Under the Jawaharlal Nehru National Solar Mission (JNNSM) launched in India in 2010, one of several technology missions conceived as part of the National Action Plan on Climate Change, twenty gigawatts (or GW; 1 GW = 1,000 MW) of solar power generating capacity was targeted by 2020, later dramatically ramped up in 2014 by the Modi government to 100 GW by 2022. (Incidentally, the same target has anomalously been retained in India's target for 2030 announced in India's INDC submitted before the Paris climate summit.) The Mission called for a certain percentage of this installed capacity to be based on domestically made Solar Photovoltaic (SPV) modules, this percentage declining batch-wise from 50 per cent to 10 per cent. It was this provision that the US had objected to and, when negotiations with India broke down, lodged a complaint with the WTO.



Image Courtesy: [en.wikipedia.org](https://en.wikipedia.org)

### WTO versus Climate

As expected, and with ample justification, the ruling was greeted with outrage by environmentalist and other civil society groups both in India and abroad. Coming as it did just a few weeks after the Paris Agreement on Climate Change, when developed countries led by the US were self-righteously exhorting developing countries like India to reduce emissions

through various measures including adoption of renewable energy despite its higher cost, the hypocrisy of the US action in penalizing India for promoting the twin goals of renewable energy and boosting job creation could not be missed. Especially since US President Barack Obama was vigorously patting himself on the back for doing just that in the USA's recently announced clean energy plan! And even more so when thirteen states in the US have policies designed to promote local manufacture of renewable energy generating hardware.

This hypocrisy is not new, of course. While international climate negotiations have on the one hand been characterized by debates loaded with moralizing appeals by developed countries to others to reduce emissions, supposedly linked issues of technology transfer and economic development were kept within strict if unwritten boundaries drawn by these same nations so as to zealously protect their own economic interests in particular and those of global capital in general. For several years now, the so-called 'green economy' which was supposed to provide a win-win framework and incentivize developing countries to adopt low-emission technologies has run up against all kinds of barriers at WTO and other bilateral and international fora. The WTO is undoubtedly working at cross-purposes with the UNFCCC and the Sustainable Development Goals which support an approach of simultaneously pursuing multiple objectives of reducing emissions, promoting jobs and income creation, and improving local environment and health. Ostensibly "free-market" trade is increasingly being used as a trump card against environment-friendly and sustainable development.

There have, of course, also been voices arguing in favour of the WTO ruling, mainly on grounds of supposed market distortions and related cost inefficiencies but also that emission reduction goals would be adversely affected by biases favouring less effective technologies. Such commentary could easily be dismissed as standard neo-liberal arguments. However, as will be argued below, DCR is not always or necessarily the best option and there can indeed be other ways of achieving the desired objectives.

In the context of local content requirement as a tool to promote renewable energy and the domestic 'green economy', India is not alone in facing such a WTO ruling. The Canadian province of Ontario had a similar provision struck down in 2013 by the WTO on a complaint by Japan and the EU. The adverse ruling against India therefore did not come as a surprise at all, and one should indeed ask why this outcome was not anticipated by the Indian government and why alternative avenues towards the desired goals, as adopted by many countries including the US, were not explored.

### **Small impact on India's solar capacity**

It is interesting to note that, although the WTO ruling has come as a rude shock both here and abroad, and is sure to be appealed against again by India, the actual impact on India's solar power generation capacity is actually quite small.

The JNNSM was launched with the objectives of reducing the cost of solar power generation through long-term policy, R&D, and domestic production of raw materials and components towards establishing India as a "global leader" in solar energy.

Towards this end, the Mission had announced that 10 per cent of the targeted installed capacity must use domestically made modules and auctions would be conducted in this manner. Of the total targeted 100 GW, the current short-term target to be achieved by 2017 is 29,000 MW. Out of this, in the present phase of the work, 50 percent in Batch 1 of 750 MW was to conform to DCR, 33 percent of 1,500 MW in Batch 2, and a mere 10 percent of 2,000 MW in Batch 3, making a total of 1,075 MW or just 3.7 percent of the target!

In the solar power industry, there are broadly two interest groups, namely the power project developer, i.e. those who set up power plants, and those who manufacture the raw silicon, the solar cells and the panel or thin film modules. Both these groups have so far worked against each other. The government's policies have also not addressed several structural factors in Indian industry and related policy frameworks. In many ways, even more than the US complaint or the WTO ruling, it is this conflict of interests, and the continued neglect of these and other related factors in the government's solar energy policy, which also needs attention if India is serious about becoming a "world leader" in this sector. The US and other nations are fishing in these troubled waters.

#### **Weak Indian industrial policy**

Project developers want least cost modules which they feel domestic module manufacturers are unable to supply. Many overseas manufacturers sell modules at very low prices which many regard as dumping. While China is most often mentioned, the US too is notorious for low pricing made possible by all manner of subsidies from the US government at home. US-based financial institutions as well as Exim Bank also provide cheap loans on the condition that US-made modules or components are bought. Apart from the obvious market distortion, this has also caused several other problems for the development of a manufacturing base in India.

For one, project developers in India have been importing thin films in large quantities including from the US. Part of this is due to glaring regulatory gaps and loopholes. While the Mission has prescribed domestic content requirement, concerned state governments such as Rajasthan, Gujarat and Tamil Nadu have no such provision! And films are actually exempt too! As a result, India is almost the only country where thin films have a higher market share than crystalline silicon used to make panels! Excess capacity for thin films in the US, EU and China due to falling global demand has resulted in these countries or regions pushing exports through soft loans and linked conditionalities.

For their part, manufacturers have shown little zeal or enthusiasm for expanding the production base. Installed capacity at present is a meagre 1,400 MW for solar cells and 2,700 MW approximately for modules. And India produces zero poly-silicon. Various industrial projects are languishing at different stages, despite substantial government budgetary support but with poor follow-up. Plants supported for making silicon wafers are importing them instead, and making IC chips from them! The only significant capacity for making wafers are in the public sector with SCL, CEL, BEL and BHEL but with no support from government which has also shown little interest in rejuvenating this highly under-utilized capability.

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While the present government tom-toms its support for its 'Make in India' programme to boost the manufacturing sector in India, India's seemingly never-ending dependence on imports in solar energy technology and materials, which are often the same as used in the burgeoning electronics industry as well, is baffling to say the least. India's electronic imports are the second highest, next only to defence. Both are shameful. Both also reflect the mournful fact that the ecosystem and government support for manufacturing in India are in fact in terrible shape. Add to this the fact that Indian corporate houses prefer easier imports or assembly to manufacturing makes for a bleak future scenario.

The US and the WTO are nasty, and everyone knows that. It is time India also looks into a mirror.

### **D. Raghunandan**

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struggles

## Anti-coal movements and the Bangladeshi Sundarbans

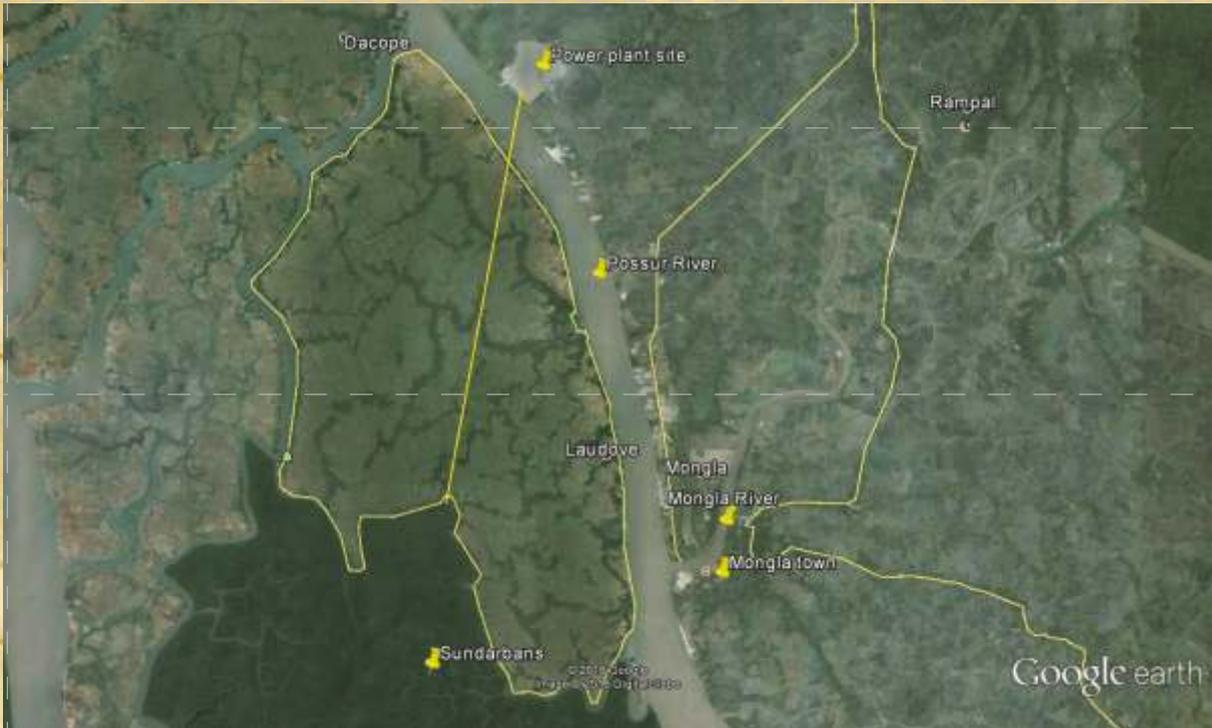
Think of nearly ten million people with thriving natural resource dependent local economies, Bengal Tigers and Ganges and Irrawaddy dolphins. What do all three have in common? The Sundarbans, a UNESCO World Heritage-listed mangrove forest, the world's largest continuous block of tidal mangroves at that, a recognized Ramsar wetland and also the world's largest delta stretching across parts of Bangladesh and India. Its name, Sundarbans, means "beautiful forest" in Bengali. Many suggest that the name might have originated from the abundant Sundari trees, the mangrove species called *Heritiera fomes*.

Over two-thirds of this, over 10,000 sq kms of forest, falls in Bangladesh, but borders are created by politics, with Nature integrating the parts in more ways than one. The Sundarbans falls in the administrative areas of Khulna division in Bangladesh and the districts of South and North 24 Parganas in West Bengal in India. It is created by a rare mega confluence of four big rivers, in southern Bangladesh and West Bengal – the Ganga/Hooghly, Padma, Brahmaputra and Meghna. The GBM river system – though much smaller in volume than the Amazon system, is known to carry about the largest silt load of any river system in the world, and has thus created this largest and unique and most fertile deltaic forests and rich habitations.

Google Earth Image of the project area bordering Sundarbans. The Possur River will be used to bring in massive coal barges from the Bay of Bengal (to the south) through the forest. The straight line distance from the project site to Sundarbans is 14 KMs. The dark area clearly shows the forest cover still existing, despite large scale deforestation over the last 200 years.

This site of international significance hosts the Sundarbans National Park (also a Tiger Reserve) and the Sajnakhali Wildlife Sanctuary, in West Bengal on the India side. On its Bangladeshi side, it hosts three protected forests – Sundarbans East, West and South Wildlife Sanctuaries. The Sundarbans are home to a myriad of wildlife, including the rare Ganges and Irrawaddy Dolphins and is the largest habitat of the majestic Bengal Tiger. The livelihood of over three million people depend directly on access to the Sundarbans' natural resources, while many more millions live in and depend on the Sundarbans indirectly. Stretching over 6,200 sq kms in the Bangladesh side, the forest protects over four crore people and the eighth most populous country from increasing climate change-driven extreme weather events like stronger tropical cyclones, on both sides of the Bangladesh-India border.

And now the Sundarbans are in big trouble.



Two coal-fired power projects — the Rampal and Orion-Khulna projects not-too-far away — are proposed to be built less than fifteen kilometres from the Sundarbans. The Rampal project, which is well on its way with ground preparations moving fast, is being financed by the Indian Export Import Bank (Exim Bank) and the privately promoted Orion project will potentially be financed by the US Export Import Bank.

This intricate ecosystem has already witnessed several smaller industrial disasters over the past few years on the Bangladesh side. On March 19, a cargo vessel carrying 1,235 tons of coal capsized in the Shela River at the Chandpai Range of the Sundarbans. In October 2015, another coal vessel carrying 510 tons of coal capsized in the Passur River. In May 2015, a vessel with 500 tons of toxic fertilizer sank in the Bhola River in the Sundarbans. An oil spill from a sinking tanker in December 2014 spilled 357,665 litres of furnace oil into the Shela River.

These are probably just the beginning. A joint venture between Bangladesh's Power Development Board (PDB) and India's state-owned National Thermal Power Corporation (NTPC) is already constructing the 1,320 megawatt Rampal coal power project, also known as the Maitree (friendship) Super Thermal Power Project, and is now threatening to devastate the communities whose livelihoods depend on it.

### **Devastation caused by these coal power projects**

The Rampal coal project, if completed, will consume about 13,000 tons of imported coal daily, result in over six miles of river dredging each year and create an over 25-acre coal ash pond filled with highly toxic sludge – with nearly one million tonnes of ash generated each year. It will release about ten million tonnes of carbon dioxide each year, or the equivalent of cutting down

about 450 million trees each year. The 4.7 million tonnes of coal needed to supply this plant every year will be shipped close to the coast in the Bay of Bengal at Akram Point and carried in barges through the fragile river inside the mangrove forests, day in and day out. This would result in the spillage of huge amounts of chemically toxic coal dust into the sensitive ecosystem. Huge increase of barges transporting machinery and supplies through the sensitive forested rivers will be damaging to wildlife. Burning this massive amount of coal will also emit an estimated 52,000 tons of sulphur dioxide and 31,000 tons of nitrogen oxides every year – both known to be health and environment damaging, including inducing acid rains. There will be a daily hot water discharge of over 120 million litres in the Possur river (from the cooling system), which is sure to devastate aquatic life, including economically important fish species.

The Orion-Khulna power project, a 565 megawatt coal-fired power project privately owned by the Orion Group, will add nearly half as much again of these toxic discharges to the water, air, and land. Taken together, Rampal and Orion plants will add over one-fifth as much climate threatening CO<sub>2</sub> as Bangladesh's current total annual CO<sub>2</sub> emissions! And taking advantage of the projected power availability, cement plants, ship breaking yards, and many other polluting industries are already making a beeline for these endangered forests.

The Orion Group has also sponsored the Orion-Dhaka plant in Mushiganj District, around 150 miles south of Dhaka, Bangladesh's densely populated capital. According to the Orion Group, this plant may also be financed by the US ExIm Bank.

### **India's Dubious Role**

India is playing a massive role in the Rampal project with state-owned NTPC holding half the equity at 15 per cent of project cost (the remaining half of the equity is held by the Bangladesh Power Development Board), India's Exim Bank is financing the US\$1.82 billion (Bangladeshi Taka 14,584 crore) project, Bharat Heavy Electricals Limited (BHEL) has won the bid to be the equipment supplier, and PricewaterhouseCoopers (India) has been contracted to source coal for the project. The project would actually be illegal on the Indian side of the Sundarbans, as India's Wildlife Protection Act calls for a 15-kilometre exclusion zone around national parks, wildlife sanctuaries, and reserve forests, and the Rampal power plant is only 14 kilometres away from the Sundarbans.

NTPC is both the largest power producer and the largest polluter in India, and in tandem with Coal India Ltd, is the world's largest coal producer-consumer government entity. Together, these two companies have displaced and devastated the tribal, indigenous, and farming populations in many forested regions in central and eastern India, poisoned many rivers, and caused massive health issues for the crores of people who live near their projects.

And in Bangladesh where the environmental and social laws are even less stringent than in India, the consequences of the Rampal and Orion power projects would be devastating. The 1834 acres of land acquired for the project was the most fertile multi-crop land with aquaculture

ponds, generating good incomes for the villagers.

In fact, in April 2015, the group South Asians for Human Rights conducted a fact-finding mission and later last year [released a report](#) that highlights several human rights concerns as well as flaws in the Rampal coal project's environmental impact assessment (EIA) and resettlement process.

The Sundarbans here is not only habitat and livelihood support for over three million Bangladeshi people, it is also the best protection from increasing tropical cyclones, and protects around 35-40 million people from the worst impacts of climate change. People of Bangladesh are also emotionally attached to the Sundarbans and its natural riches, as it is also an identity for them (the national cricket team is called 'the Tigers', and this emotional bond with the 'beautiful forests' have drawn people from even far off places to protest these destructive developments.



*Site preparation in Rampal progressing fast. Photo: Soumya Dutta*

### **Local Resistance from Bangladesh to India**

These destructive coal projects have faced massive public resistance for years. The people of Bangladesh have been tirelessly fighting to protect their homes, livelihoods, and the Sundarbans. And as a result, the development of the Rampal power project has been delayed several years. Since 2001, communities in Bangladesh have been protesting to save the Sundarbans and started organizing protest marches and rallies across the country. About 20,000 people participated in the first [Long March in 2013](#), marching nearly 250 miles from Dhaka to Rampal against the proposed project. The protest was organized under the leadership of the "National Committee for Protection of Oil, Gas, Minerals, Electricity, and Ports."



*Fertile farmland & aquaculture ponds sit next to Rampal project site. Photo: Soumya Dutta*



*Jana Yatra / Long March on its way towards Rampal. Photo: Soumya Dutta*

The second Long March was held from March 10-13 this year and nearly a thousand people from all walks of life in Bangladesh marched again for over 100 miles – with thousands more locals participating in protest meetings all along the route – against both the Rampal coal project and the adjacent Orion Khulna power station. There were over a dozen large public meetings in as many towns on the way from the capital Dhaka to the small town Katakhal

during these four days, and throughout the march there was strong participation from youth, student unions, worker's unions, Left parties, farmers, tour operators and other people dependent on the Sundarbans.

Looking at the massive role that the Indian government is playing in the Rampal coal power project, an 11-member-strong contingent of Indian civil society activists took active part in the Long March to express solidarity and share actions. Throughout the route, activists heard many chants – “There are alternatives to producing power, BUT none for the Sundarbans,” “Sundarbans is our mother, we will not let it get destroyed,” “We will give our blood and our lives, but not give away the Sundarbans,” “Coal plants kill and damage. We won't let it happen here.” The Jana Yatra ended on the afternoon of 13 March with a large public meeting at Katakali – the entrance to the Sundarbans area, giving a warning to Bangladeshi government to scrap the plan for the Rampal coal project or face even larger public actions.



*Public meeting in Khulna town, gateway to the Sundarbans. Photo: Soumya Dutta*

### **A Strong International Movement**

Internationally, many organizations and activists are standing in solidarity to save the Sundarbans. Seven US-based groups have already come together to urge the U.S. Export-Import Bank to publicly commit to rejecting any proposal for the financing of coal projects near the Sundarbans and any other fossil fuel projects in Bangladesh.

Today, there are environmentally friendly and economically competitive alternatives for producing electricity to massively damaging coal. Bangladesh, in particular, has one of the fastest growing solar home system projects in the world. As it is already the second-most vulnerable country in the world in terms of climate impacts and disruption, Bangladesh should not commit to disastrous projects like Rampal and Orion. Already facing massive land erosion, farmland salinity, and submergence due to climate change effects, the rights of communities in Bangladesh need to be supported now more than ever.



*Local people at Rampal site. Photo : Soumya Dutta*

There is no excuse for destroying one of the world's greatest treasures, and the home and livelihood support for so many, in the name of fossil fuelled power. It is also time for Indian and U.S. financial institutions to join the [Norwegian Sovereign Wealth Fund](#) and major [French banks](#) and say no to financing coal projects in Bangladesh and near the Sundarbans.

#### **Four killed protesting another coal power plant**

Less than one month after the massive Jana Yatra ended with a clear warning to the Bangladeshi and Indian governments that the people would not allow massively destructive projects in their mother-lands, the Sundarbans, news of another large coal power development in another beautiful region of Bangladesh coast resurfaced with tragic consequences. On 4 April 2016, villagers protesting the illegal and forceful acquisition of their land by Bangladeshi business conglomerate S Alam Group, were fired upon in an indiscriminate and unprovoked firing by police and hired goons of the promoter company. Four protestors died in the firing. The company is trying to set up a 1220 MW coal-fired power plant in the densely populated and very productive coastal area of Banskhal Upazila in Chittagong. Hundreds are reported injured. It is reported that the police fired upon and even helped the company goons to assemble and fire on the thousands of unarmed protesters from the villages under threat of losing their lands, houses, mosques, even cyclone shelters in this naturally hazard-prone coastal belt. This is a brazen attack on the fundamental rights of ordinary people, on democracy and justice. We strongly condemn this heinous attack on ordinary people's basic rights to their land, homes and nature-dependent livelihoods. An impartial probe about this whole incident should be immediately constituted. False cases have been slapped on over 3,000 local people; these should be immediately withdrawn, and the forceful land acquisition process stopped forthwith pending a full investigation.

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This big coal power project is being pushed in collaboration with two Chinese companies, SEPCOIII Electric Power and HTG; the agreement for this was signed in 2013. The Bangladesh government approved this in February 2016. The area targeted is home to thousands of families, around 70 mosques, graveyards, a technical education institution, around 20 cyclone shelter houses, 1 high school, 8 primary government schools, several madrassas, five markets, and one government hospital. In spite of this large and thriving population in the locality, only 150 households in the area have been reported by the local administration in order to be able to handover the land to S. Alam group.

Local people had earlier requested relocating the plant to a sparsely populated area, but ignoring the rich agricultural, fisheries and salt-making based economy of the area, the Bangladesh government has permitted the group to set up the coal power plant in the coastal Gondamara village area of Banskali, Chittagong. The over six hundred acres of land being acquired would uproot thousands of local farmers, many of whom get three crops a year from these fertile lands. The area is also rich in fishery resources, and thousands of small salt producers practice their environment friendly livelihoods while supplying salt to Bangladesh.

These massive protests show that this kind of big and polluting project based “development” is hurting many more people in this poor country than the supposed beneficiaries. The people of Bangladesh have every right to get more electricity, but this must not be at the cost of snatching away their livelihoods, their most productive farmlands, and the hugely economically important and protective mangrove forests. Bangladesh is known to be one of the most vulnerable countries from the adverse impacts of increasing climate change threats, and the government must protect the lives and livelihoods of its vulnerable people at all costs.

**Soumya Dutta and Neha Mathew**

Soumya Dutta is convenor of Bharat Jan Vigyan Jatha and founder member, India Climate Justice.  
Neha Mathew is with the Sierra Club’s International Campaign.



climate justice

## Climate justice movements and the capitalist politics of climate and energy:

### An interview with Larry Lohmann

(On behalf of Mausam, Soumitra Ghosh recently had a conversation with Larry Lohmann, one of the foremost activist thinkers of our day. Larry Lohmann is associated with The Corner House, UK, and has written extensively on REDD, climate justice, the politics of energy and related issues.)

**Mausam (M):** We are trying to develop a discourse of sorts on the entire climate justice movement, to see where it is going, trying to visualize the future of such activism in the global arena. We all know that these international convergences have followed a given course so far, certain ritualistic events like inter-governmental CoPs (Conferences of the Parties of the United Nations Framework Convention on Climate Change [UNFCCC]) and suchlike. The question, however, is whether climate justice movements can be visible in some other arena as well, outside the known amphitheatres, and become living entities. Are these movements really movements as one understands the term? Can these be seen, felt, heard independently? The mobilizations that have been happening, even the large ones seen during the last few years, can one call these movements? Can one say that there is a climate justice movement as such?

**Larry Lohmann (LL):** In a sense, yes. People have been regularly going to climate justice marches and meetings; activists and groups have been discussing various issues seriously and trying to influence climate policies. And yet, if you ask whether there is a 'movement' in the sense of some other historical movements such as the international labour movement, the answer is not clear. Of course that's setting the standard a bit high; not many movements have that kind of strength and analysis. But does the climate justice movement have the potential to bring about real transformation? I'm a bit sceptical. No doubt there are many serious local movements against fossil fuel extraction, mining, power plants and so on ... but an international *climate* movement?

One problem is that I find the concept of 'climate justice' itself a bit problematic, especially the way it is understood by most social movements today. Because climate in the sense in which the term is usually used today in some ways distances us from the central issues. One doesn't have to go far back in history to see that what is called 'climate' is always changing. For example, take the famous desiccation discourse that occupied colonialists so much. Had deforestation been historically responsible for desiccation or desertification? If so, what should be the response of ruling elites? This is a somewhat different discourse to the one we find surrounding climate today, which has become extremely 'non-political' in certain ways. The panel of scientists that advises the UNFCCC has evolved a dense but extremely physics-oriented concept of climate that is organised



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around computer simulations. What comes to the fore here are things like molecule movements, carbon dioxide concentrations, land albedo [reflectivity], ocean currents, photosynthesis, granite weathering, and so forth. The greater the density of such details, the more sparse the political analysis. The Inter-governmental Panel on Climate Change (IPCC's) conception of climate change excludes labour and the politics of fossil fuels. IPCC documents talk about carbon dioxide concentrations, but not about the political economy of fossil fuels whose burning produces carbon dioxide. They contain absolutely nothing about why fossil fuels have become so crucial to capitalist efforts to discipline and improve the productivity of labour and the speed of commodity circulation. Oil and coal companies are mentioned nowhere in any UNFCCC document on climate change.

How can you try to help organize a movement that encompasses labour, which includes small farmer movements fighting oil-intensive agribusiness, if you continue to rely on this utterly depoliticized and physical notion of climate? Of course, climate does touch ordinary people and their everyday lives; any change in climate tends to affect ordinary people most. Yet this climate is not an 'external', physical thing consisting of 'energy balances' and anonymous molecules zipping around here and there, but is intimately tied up with the history of exploitation. Confronting the climate change question is not a matter of encouraging the better expert management of molecules and energy balances, but of challenging exploitation. A notion of climate that excludes society and politics is not well-suited for popular movement-building; quite the contrary. I just don't see how we can build a popular movement around the IPCC's concept of climate.

**M:** This gets really interesting. You are saying that the entire discourse that has been built around climate is apolitical, deliberately so. There is a deliberate attempt to depoliticize the issue by floating a largely computer-simulated notion of climate ...

**LL:** I wouldn't use the word 'deliberate'; that sounds like we're talking about a conspiracy, a plot. The reality is more complicated, historically-embedded and frightening at that. One needs to look at, for example, how the computer-generated models of climate used by IPCC evolved, how the notion of an external, purely 'physical' climate was born in the first place. Part of this history goes back to the partly-colonial origins of the concept of 'ecosystem'; another part goes back to the Second World War, when things like systems analysis, operations research, computer development started to get off the ground as military tools. Cybernetics and digital computer technology, which became so important for climate models, were not parts of a deliberate plot to depoliticize climate change; but they didn't come out of some ivory tower, either.

**M:** But are climate mobilizations and the climate justice movement perhaps now bringing the missing component of politics back to the climate discourse? Are they injecting an element of social reality into the dense 'apolitical' physics in climate models? Also, more importantly, are they potent enough to influence the actual physical as well as social events that cause global warming? Or the typical economic behavior of the capitalist system or capitalism itself?

**LL:** I think climate justice movements are trying to change that economic behavior, and trying to

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change the typical analysis too. I am just not too sure whether, without some changes, they are going to be enough. Take the example of fossil fuels. Everybody knows that climate change is all about fossil fuels, and so everybody says, yeah, we have to fight fossil fuels, we have to leave fossil fuels underground. There's a lot of talk about a fossil fuel-free society, and so on. But I sometimes wish that the climate justice movement would slow down a bit, and devote a bit more time to the question, what is the politics of fossil fuels? Why does it seem so *hard* to keep fossil fuels in the ground? This politics is not just about big bad coal companies, oil corporations and car manufacturers, but the entire course of industrial development, the history of industrial civilization. Which means the question of ever-increasing industrial production and labour. Do we really understand enough about why all of the powerful governments, leaders and companies are so desperate to hold on to fossil fuels? I'm not sure. I don't hear climate activists talking very much, for example, about the role of fossil-fuelled electricity in powering the machines and computers that discipline and augment labour, how deeply embedded this is, and what this might mean for the political strategy of climate movements. Or for the possibility of climate movements' joining more meaningfully with movements concerned about exploitation of labour, or land-grabs, or enclosure of commons, or pollution of fenceline communities all over the world.

**M:** If you look at climate justice movements, those are mostly happening in spaces offered by governments and official institutions, spaces which intrinsically disallow participation of those who would make up the bulk of future political alliances. The way that the movements try to focus on such spaces, doesn't it limit their scope, organisational as well as political? Can the big events in spaces controlled by governments and capitalists lead to long-term political alliances of people? Shouldn't the movements try instead to move out of official spaces, and create their own spaces? And can that happen internationally at all? Shouldn't the movements try and figure out how functional alliances can be forged at national, sub-national or local spaces, involving villages and towns?

**LL:** I think it is very alienating for commons activists, these big international meetings and the conventional spaces for talking about climate. The big meetings are not really a space for people who do grassroots-level organising. In fact, people often find that the meetings are not dealing with their issues at all. Many official meetings treat climate as an issue of capitalist management. A lot of work has to be done to shift attention away from such venues and toward more productive ones. That means educating yourself about where the real issues *are* being discussed. For example, where people are talking about keeping coal in the hole and oil in the soil, about resisting agribusiness and extractivism and coal-fired power plants. These movements are already there – even inside the United States. They don't have to be created. And they are often succeeding. It's important that climate justice activists learn to see these struggles *as* their struggles, and as the real starting points for climate justice campaigns.

**M:** Hasn't the climate justice movement of late become more sensitive to the irrelevance of international climate negotiations? For instance, the climate space declaration from the Tunis World Social Forum rejected the Paris talks even before they began, saying that nothing can be expected from such talks. And yet the action programme at the end talked

about greater mobilizations and bigger climate marches in Paris during the talks. One finds this confusing. If you know that the Paris talks won't really result in anything tangible and substantial, why waste your time, energy and money over that? One can understand French trade unions having gone to Paris in good numbers, along with activists from neighbouring European countries. But why would people from outside Europe be there in large numbers?

LL: I often hear people saying that official negotiations are not going to yield anything, so let's mobilize and protest 'outside' the official venues. Fine, but I'm a little worried that the focus remains on the mainstream concept of climate discussed by the UNFCCC. How can we move away from this concept of climate as a subject of technology and management, where global managers and companies remain the most important players?

M: What really puts one off is the persistent refusal to see climate as something more than physical. When you talk to political activists even, climate is always an issue either of alternative/renewable energy or of sustainability, something 'environmental'. The idea that you are trying to float here, the interconnections you talk about — between climate and enclosures, climate and labour, labour and fossil fuels, these are never talked about. Contrariwise, one always sees a bit of hedging, a tendency to move away from the politics of the issue...

LL: Yes, and one problem is that question of energy itself is more difficult and more political than it appears. It's not just a question of finding 'renewable' or 'alternative' sources of energy. The issue involves scientific and conceptual democracy. We are educated to see energy as an apolitical background to politics, not as a concept that is itself political. We see thermodynamic energy as something ahistorical, not something that is in fact being questioned and put in perspective all the time in practical ways at the grassroots. Energy seems to be just a fact, and how can you question a fact? My feeling, on the other hand, is that the time has come to say that there is a sense in which the scientific concept of energy has always had anti-democratic and anti-labour aspects.

In reality, the science of what we have come to call 'energy' is a very recent development, something that went hand in hand with the 19<sup>th</sup>-century rise of industrial capitalism. The science of thermodynamics came out of the development of steam engines. Steam engines are connected with fossil fuels, gathering large numbers of workers in a central place, exploiting labour in new ways, emptying the countryside so that there is no dearth of labour in the cities. Thermodynamics is not an innocent science thought up by geniuses in ivory towers. Thermodynamics is political in the sense that it helped unify many different forms of energy under a fossil-fuelled industrial regime involving mechanized growth and transport. It represents a new concept of energy that for the first time unified fire, muscle power, magnetism, electricity, all the rest.

Of course, I am sympathetic to renewable energy as a part of efforts to move away from fossil fuels. But so long as thermodynamic energy is allowed to dominate discrete "commons energies", which tend to be more resistant to capital accumulation, climate justice strategies will be limited. My feeling is that climate justice activists have to understand better the politics of energy, how the biased and, as it were, 'capitalist' concept of thermodynamic energy has gone hand in hand with the rule of fossil fuels.

Non-fossil fuel energy will also be problematic if it is geared toward wholesale exploitation and the destruction of commons and indigenous territories.

**M:** Can we conclude then that we need to bring more politics into the discourse of climate change, an element of knowledge of politics and political issues? We need to look at the visible 'root causes' of the crisis, but also the apparently invisible ones: the economic, social and political contexts which shaped the science and concept of energy. But when you say this, and stipulate that this practice of critical looking beyond forms a necessary pre-condition of climate justice movements, doesn't that become somewhat antithetical to the demands of the moment? People want immediate redress, they want policy changes that would stop global warming in the immediate future. If you ask them to go back in time and search, will that be acceptable to activists? One could see that you have in mind a kind of politically informed activism rather than just marches and mobilizations.

**LL:** Yes, I guess so. We all know professional activists who need an 'activity of the day'. They look at the day's newspaper, and see if there is something that needs to be responded to or that deserves a statement. There's nothing wrong with this as such, but I also think there is a need to think more seriously about the nature of activities one engages with, to choose one's activities in a way that expands the political space beyond that framed by states and corporations.

There are in fact many "demands of the moment", and many of them require work to discover. The choice is not between going to the next UNFCCC meeting and not doing anything. Nor is it between "taking global action" and "being concerned only with one's local area". This is a false way of framing strategy. Getting closer to actual movements on the ground, trying to support them: these are also 'global' actions. How are people reacting to energy projects on the ground? What do they think energy is? Learning these things is an important political action. And for this kind of action, communities and movements are better spaces than UNFCCC meetings. Talking to indigenous people to try to learn their perspectives on energy and changing climate, as many activists already do: to me that can be a more important action in both the short and long term than buying a plane ticket for Paris in order to lobby for policy change at the UNFCCC.

**M:** Well, the problem perhaps is one can only live for so many years. Activists, as they grow old, even younger ones, always need the promise of something tangible, some change in the system perhaps, or a vision of such change perhaps, during their lifetimes. It is an illusion that persists, this cycle of temporality that refuses to break. Yet this break is now a desperate political need...one must learn, even if forced to, to think outside the periphery of the perpetual present, this endless quest for tangible and immediate goals and outcomes of a certain preconceived form.

**LL:** Yes, I agree. It's not that these activities are not necessary; it's rather that a framework of activism that sees only one type of 'tangible action' and only one type of 'change in the system' is problematic. Going to UNFCCC meetings supposedly to effect 'global change', or looking for an obvious 'activity of the day' in order to do 'something tangible', can sometimes prevent you from exploring thousands of other options.

## Post-Paris: Where Have We Reached?

In November-December 2015, the representatives of most countries' governments met in Paris, in the 21st Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC), to chart out the contours of climate politics and actions at the government level post-2020. The Paris Agreement that came out of that meeting included a rhetorical commitment to keep the average global temperature rise to below 2 degrees C, and would try to keep it below 1.5 C. It has been severely critiqued widely by many constituents of the climate justice movement worldwide, including elsewhere in this issue of Mausam. The major critique – with extremely grave implications for the poor and other species everywhere, on a planetary scale – is that even if all the countries' pledges to cut greenhouse gas emissions are met, the planet is on track to an average warming of 3 degrees Celsius, or possibly even higher. But where have the climate negotiations reached, post-Paris? The first step after the Paris COP was for countries to sign it, which the representatives of 175 countries did at the UN headquarters in New York on Earth Day, 22 April 2016. Countries are then required to ratify the Agreement. The agreement only comes into force only after two conditions are met: when a minimum of 55 countries and emitting at least a total of 55 per cent of greenhouse gas emissions at the time ratify it. The world is currently emitting 53 billion tonnes of greenhouse gases; 55 per cent would mean roughly 30 billion tonnes. So, the Paris Agreement would come into force when it is ratified by at least 55 countries, having cumulative emissions of at least 30 billion tonnes of carbon dioxide-equivalent. Those who have followed negotiations for a while would remember that the Kyoto Accord, though drafted in 1997, came into force only in 2005 because its minimum requirements were not met until then. It is very unlikely that the Paris Agreement would have to wait that long. Sixteen countries have already ratified it at the time of writing this, in mid-May. Others, including the two biggest emitters, China and the US, as well as Australia and Canada, have said they would ratify it this year. The ratification process in some countries will be looked at closely. Whether the US ratifies it depends on the outcome of the political process currently underway in the United States to elect the next President. It has been reported that Donald Trump has appointed a climate sceptic as his energy advisor. The US ratification may well hinge on the Presidential elections in November and on the composition of the US Congress, which had refused to ratify the Kyoto Accord. If the US, the world's second biggest emitter, were to refuse to ratify the Agreement, it would have varied consequences on what follows. This could impact China's ratification, though it is likely China will do so. In India's case, the issue is still being debated by experts in the media and public forums as to whether Parliament should ratify the Paris Agreement if the US does not.

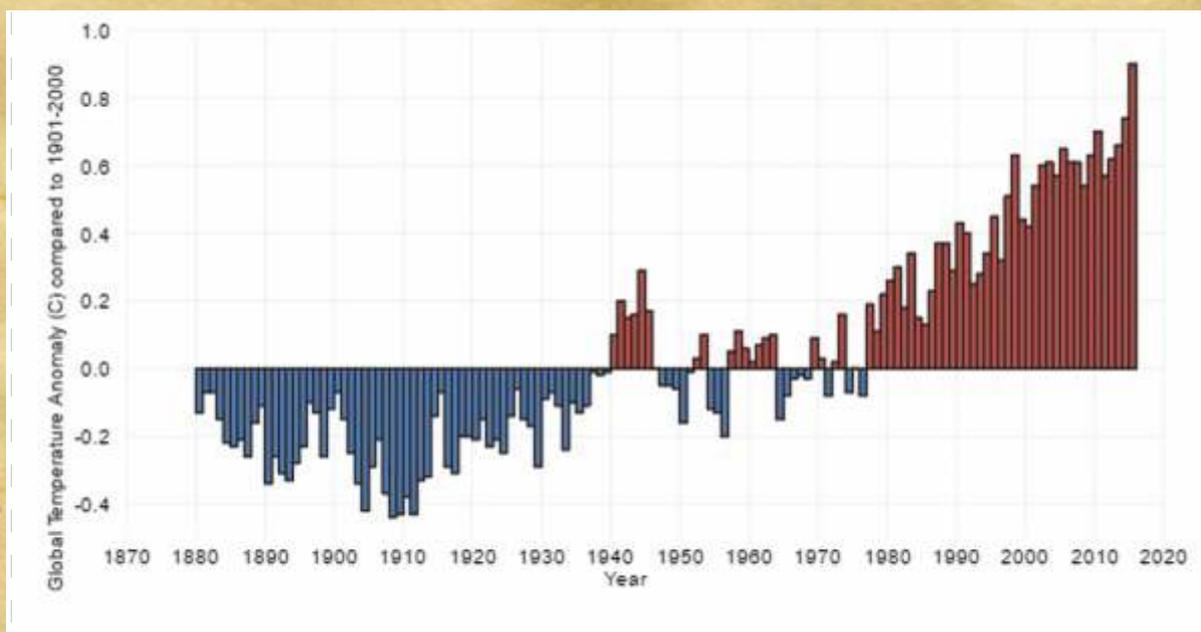
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## Breaking Records Serially is The New Normal

One year ago, the world woke up to the fact that 2014 was the warmest year in the instrumental temperature record. This global record of temperatures dates back to 1880, and of these 135 years, 2014 was the warmest – but only until 2015 shoved it to second place. Now, all the major scientific data recording centres – including NASA and NOAA – have confirmed that 2015 is the new heat champion on record, and by a wide margin.

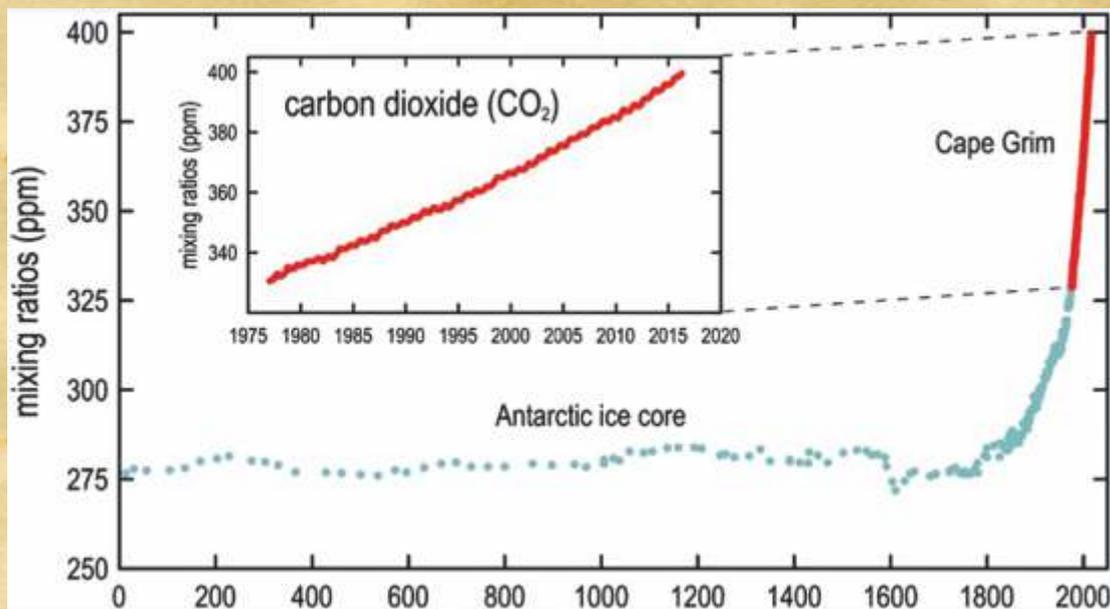
The global annual average temperature in 2015, over land and ocean surfaces, was higher than the 20<sup>th</sup> century average by a whopping 0.90°C. This beat the previous record-holder, 2014, by 0.16°C, which is unusually high as these anomalies (divergences from the normal) go. From 1880, the global annual average temperature increased by over 0.85°C by 2014.



*Global Annual Average Temperature Anomaly: NOAA National Climate Data Centre.*

Of course, the strong El Niño of 2015-16 contributed, putting a lot of heat into the atmosphere, but this was only partly the reason. The relentlessly increasing concentration of greenhouse gases (which reached 400 parts per million last year) is the primary reason for this warming. A comparison with the year 1998, when one of the strongest recorded El Niños occurred, confirms this, as 1998 is currently only the sixth warmest year on record, tied with 2009. The facts (instrumental records) show the trend clearly –

1. From 1880 to 2015, the average temperature increase per decade was about 0.07 degrees C, but this has accelerated to 0.17 C per decade in the more recent period 1970-2015.
2. Out of the 16 warmest years on record from 1880 to 2015, 1998 is the only one in the 20<sup>th</sup> century, the rest are all the last fifteen consecutive years.
3. February 2016 was the hottest month on record by far (by the amount of departure from the 1951-1980 average – by +1.35 C, as measured by NASA), till March 2016 claimed this (dis)honour – being warmer than the 1951-1980 average March temperature by +1.65 C.
4. The last seven consecutive months – till April 2016 - were all the warmest respective months ever recorded with instrumental data.
5. 2016 is already showing signs that it might catch up with 2014, if not with ‘heat-champion’ 2015 itself, as the first four months are all hottest respective months on record.
6. The Arctic was warmer by a massive 5 degrees Celsius than the 1950-1980 average, leading to Arctic winter sea ice this February being one of the lowest recorded.
7. The atmospheric CO<sub>2</sub> in the southern hemisphere reached the record-breaking 400 ppm mark for the first time in May 2016, as reported by measuring stations in Tasmania/Cape Grim (figure below – from the Commonwealth Scientific and Industrial Research Organisation, CSIRO, Australia), following the more inhabited northern hemisphere, which reached this level nearly two years earlier.



Because most human industrial activity is concentrated in the northern hemisphere, the GHG levels here tend to remain higher than the south. As they say, the writing is on the wall. Unless the global community takes immediate and drastic measures to sharply cut down GHG emissions and control deforestation, the Earth's climate and life-support systems are going for a toss. In the face of this dire threat, the Paris climate deal (the total of all mitigation commitments made in the INDCs) do not even go half way!

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## Why are the Himalayan forests burning?

The following statement was issued by India Climate Justice in the context of the forest fires that were raging in April and May 2016 across large parts of Uttarakhand and Himachal Pradesh. Recent writing suggests it may have been worse and more widespread than when we issued our statement. Capitalism's spreading ethic of profiting from anything is the underlying cause of these fires, as it is of global warming.

**Mausam**

### **A statement from India Climate Justice**

14 May 2016

The India Climate Justice collective expresses its deep concern over the extensive forest fires that have been devastating large tracts across the western Himalayas. More than two thousand separate incidents of fires have been reported from Uttarakhand and adjoining Himachal Pradesh. Initial reports suggest that over 7,500 hectares – 4,500 thousand hectares in Himachal and about 3,200 hectares in Uttarakhand – have been affected, well over double the area put out by the central government's MoEFCC. At least a dozen people have lost their lives, probably more. Access to forest resources and livelihoods seriously eroded, and people face respiratory and other health hazards. Black carbon from these forest fires will over time settle on mountain snow and glaciers, hastening their melting. Forest fires on this scale are also devastating for birds, insects, mammals and a range of other fauna, all of which form an integral part of the rich biodiversity of these forests.

Multiple factors explain these forest fires. Commercial interests in timber, which first penetrated these areas 150 years ago with the colonial demand for railway sleepers, has intensified over the past few decades, reflecting capitalism's spreading ethic of profiting from anything, and in any which way. Though fires are sometimes started by local farmers with the objective of fertilizing the soil or helping fresh grass grow, these fires are most commonly triggered by those acting on behalf of timber contractors and real estate agents, often in cahoots with functionaries of the Forest Department. Burning trees also improves the flow of resin from chir/ pine trees, profitable for the turpentine industry. This desire for quick profits from Nature entices some small sections of the local communities, who are exploited by commercial interests to undermine older societal relations of communities with the forest commons.

The extensive plantation of chir pine worsens the situation. Whereas pine trees are more fire-resistant, its pine needles on the forest floor are more flammable. The Forest Department practice of so-called 'controlled burning' to remove forest floor litter often gets out of hand and



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cause fires to spread far and wide. Regrettably, Forest Departments have drastically reduced clearing and maintaining fire-lines in the forests – artificial clearings in foliage dug to contain fires – which need to be at least ten metres wide, thereby enabling the fires to spread.

The situation is worsened by global warming. Average temperatures across the Indian Himalayas have risen by 1.5 degrees Celsius in the last 25 years, three times as much as India's average and over three times the world's average rise. The rise in temperatures is even higher in winters. According to the Himachal State Action Plan on Climate Change, temperatures across the state have risen by 1.7-2.2 degrees Celsius since the 1970s. Maximum temperatures have also risen across the Northwest Himalayas. This may actually result in precipitation falling more as rain than snow, greater rainfall, and generally greater humidity. But this winter, there was far less snow and rain than usual. The forests have been dry since September 2015. When conditions are dry, the situation is ripe for a disaster. The forest floor has been bone dry with less rainfall, less meltwater to percolate, and higher temperatures that prevail.

At this very time, let us not forget, 400 million people across thirteen states of India are facing acute drought conditions. 2014 and 2015 have broken temperature records worldwide. Every single month in 2016 has broken temperature records by huge margins. The ongoing El Nino worsens the situation but the background reason for these higher temperatures is human-caused global warming. Like in every instance of climate change in recent years in India – the Uttarakhand floods in June 2013, Kashmir in 2014, Chennai in December 2015, yet again global warming's impacts have interlocked with our trajectory of maldevelopment and the desire for reckless profits. Ordinary people and other species pay the price.

**India Climate Justice demands:**

- ✍ A judicial enquiry, including independent experts, to probe the causes and extent of damage caused by these forest fires, including the number of those dead
- ✍ A longer-term regeneration to what might be ecologically more appropriate vegetation in the western Himalayas
- ✍ The timber contractors and others guilty of organizing the arson be charged
- ✍ Given the likelihood of similar occurrences of widespread fires in the future, a comprehensive mitigation and response strategy be devised by the state and district administrations, after open public consultations.

Cover Photo : Soumya Datta

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