Science
THE WIRE

Something Is Wrong With the Language of Climate Change

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Since 1886, when Svante Arrhenius presented his hypothesis that carbon dioxide in Earth's atmosphere will increase the average surface temperature of Earth, many parallel voices have come up extrapolating the implications.

More money has been invested in climate research since the 1950s, environmental movements have grown in number and size since the 1970s. The first World Climate Conference was held in Geneva in 1979, when the 'World Climate Programme' was set up.

Since the Brundtland report in 1987, which gave birth to the idea of sustainable development, the Intergovernmental Panel on Climate Change was created in 1988, followed by the UN Framework Convention on Climate Change (UNFCCC) in 1992, the signing and implementation of the Kyoto Protocol in 1997 and 2005, the first and second commitment period of the Kyoto Protocol in 2008 and 2013, the Durban Platform in 2011 and now, in 2020, the voluntary emissions commitments and financing commitments.

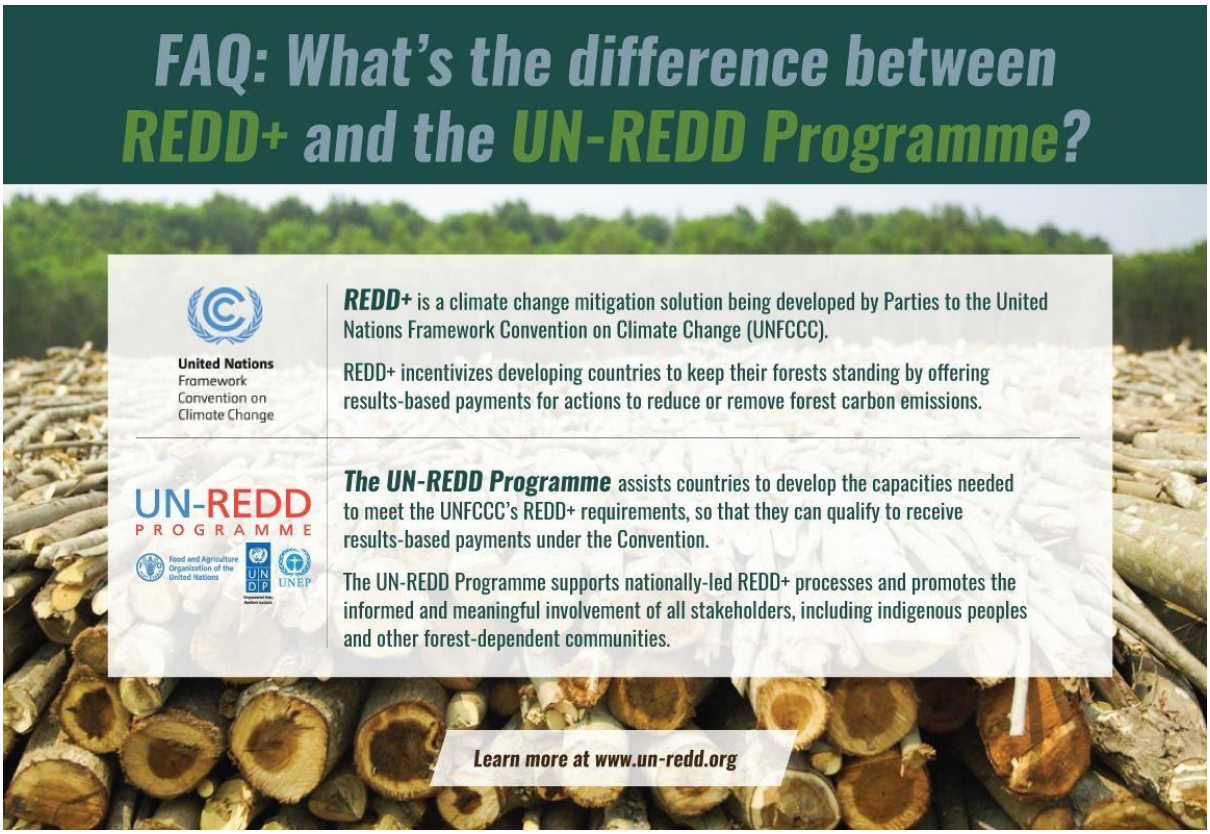
Since the 1990s, almost all countries have participated in climate negotiations within the UNFCCC context. But what's really remarkable – even if predictable in hindsight – is that these discussions are nowhere near a binding international commitment. Countries differ from each other, environmentally, socially and politically, and have unequal capacities to contribute to limiting carbon emissions. The will to act towards a global goal differs as well, as the US has often shown. Some countries try to take advantage, attempting 'free rides' at the expense of another country. There is also a lack of clear scientific understanding of the factors related to global warming and the effect of human activities on it.

Nonetheless, these meetings and conferences surrounding climate change have generated a dominant vocabulary. There is the Clean Development Mechanism (CDM), which allows a country with an emission-reduction or emission-limitation commitment to implement an emission-reduction project in a developing country, (with business scope). There are carbon offsets – reductions in carbon dioxide or greenhouse gas emissions to compensate for emissions elsewhere, with its own unit of measurement in tonnes of carbon dioxide equivalent (CO2-e), and which has become big business. There's carbon stock, the amount of carbon sequestered and stored in a forest ecosystem, whose measurement and estimate remains debatable.

REDD stands for 'reducing emissions from deforestation and forest degradation', believed to be an incentive for developing countries to protect and manage their existing forests. REDD+ refers to the conservation and enhancement of the carbon stock in such forests.

Today there are also manuals to measure carbon stock – one even produced by the UNFCCC in 2015 – that takes us on another journey to 'aboveground biomass', 'belowground biomass', 'soil organic carbon', 'deadwood' and 'litter'.

The language of climate change has effectively excluded the people most knowledgeable and concerned about forests. These are primarily the rural and indigenous peoples, especially the women in such communities, who have a high stake in the forest environment for their livelihoods as well as their cultural and spiritual sustenance.



REDD and REDD+ – adding to the confusion. Image: UN-REDD

Tropical-forest biologists, who have figured out many of the relationships required for forests to evolve, often lament the destruction of habitats due to industrial development. Instead, the complicated lingo of climate change has brought in experts who know more about negotiations instead, including politicians and statesmen of several hues – for whom everything appears ultimately to be a business deal. The grammar is little about ensuring, implementing and monitoring commitments – in fact, it is about avoiding them – and pushing the limits of narrow national and political goals.

How can we avoid commitments? How can we get away without emissions-reduction? To achieve these latter goals of evasion, a suitable language that is conducive for negotiations has evolved – the CDM and carbon offsets being the key buzzwords – but which makes little room to understand what really is at stake: the fate of humanity and several other species.

In the last two decades, various countries in the negotiating process – but mainly the developed and developing nations — have further split into subgroups. There are also countries that belong to more than one group or subgroup. From three groups in 2001, we now have 10, with their 'like-minded' partners. Some observers have suggested that this fragmentation is a reflection of the 'progresses' the negotiations have made. This optimism is unfounded.

Indian forestry and state action plans

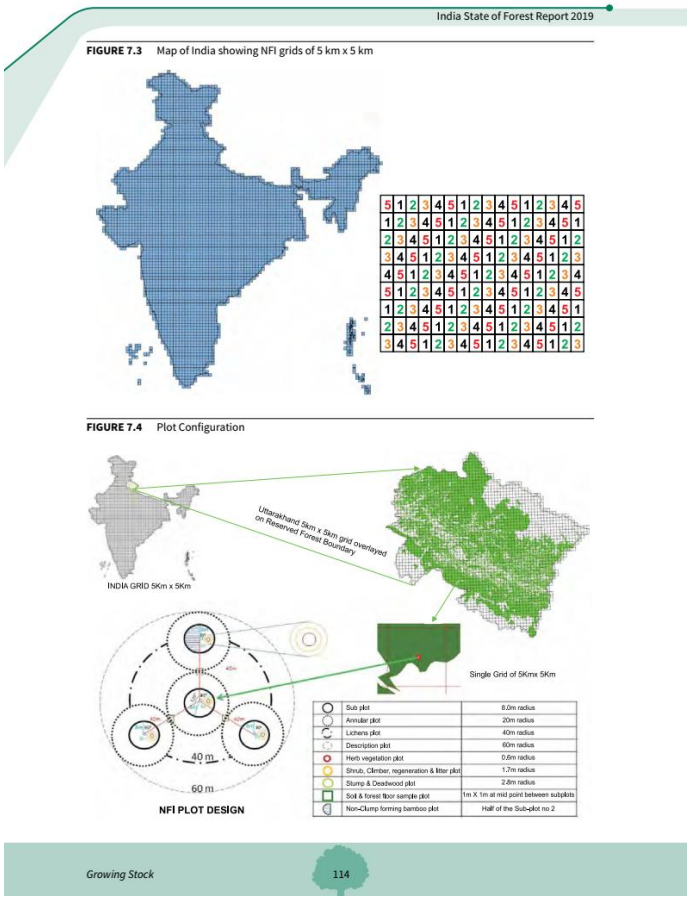
In the Indian context, 'tree cover' and 'growing stock' have been highlighted as being crucial for discussions around carbon sequestration. Forest cover assessment includes all areas of more than 1 ha with a tree canopy greater than 10%.

For areas smaller than 1 ha, there are technical problems in the measurement, and a technique known as stratified random sampling is used. Across rural and Adivasi India, many tree patches that have cultural value for local communities are usually smaller than a hectare, and include grave sites, shrines and groves. These might get left out of official assessments. The total area of tree patches in

areas both less than and more than 1 ha is then known as “forest and tree cover”. (The confusion here is not my doing. It is worded as such in the report.)

“Tree cover” is also separately defined as “all tree patches less than 1 ha outside the recorded forest area”. Further, “trees outside forests” refers to trees outside recorded forest area, regardless of the area of the tree-patch. Estimating the tree cover in rural and urban areas requires high-resolution satellite data; the tree cover for the whole country has thus been estimated to be 95,027 km2, with a standard error of 6.06%.

The other term, “growing stock”, is the volume of trees in an area of forest above a certain thickness at breast height and measured in cubic meters. It is actually a term pulled out of the forest department’s working plans, and is used for the sustainable harvest of timber. It quantifies forest resources and indicates forest productivity. The ‘growing stock’ is the basis for calculating the amount of biomass and carbon stock in forests.



India’s growing stock of wood in 2019 was estimated to be 5,915.76 m cum, with 4,273.47 m cum in forests and 1,642.29 m cum outside forests, arrived at by sampling thousands of plots in urban, rural and forest areas. These numbers in turn are used to estimate the amount of carbon stock – in a calculation riddled with as many doubts as agreements among experts.

Although the state action plans on climate change (SAPCC) have been on the anvil since 2009, and are now being up-scaled to feed into an increased Nationally Determined Contribution, most Indian state governments are lagging behind thanks to many reasons. According to a document by Oxford Policy Management, some of the main reasons are that the SAPCC is a top-down process, that the states are expected to leverage their own funds for implementation, and that there is a lack of leadership, political will and clear directions.

Further, the policy on climate change stands by itself – believed to be a matter to be dealt with by the environment ministry – and not integrated into policy implementation vis-à-vis agriculture, irrigation, transport or even education.

All this will need to change if climate action in India is going to make any difference and contribute to what it has signed up for through the Paris Agreement.

Other concepts and perceptions

In a Teachers' Day speech in 2014, and in response to a student's question on climate change, Prime Minister Narendra Modi said that the "climate has not changed. We have changed. … our tolerance and habits have changed. If we change, then God has built the system in such a way that it can balance on its own."

Between then and 2019, at the UN Global Climate Summit, Modi had changed his mind, and urged people to do more. "We must accept that if we have to overcome a serious challenge like climate change, then what we are doing at the moment is just not enough." He also promised that India would increase its non-fossil-fuel energy capacity by 2022 "to much beyond 175 GW and take it further to 400 GW."

In June 2020, under the Atmanirbhar Bharat Abhiyan, Modi announced the auctioning of 41 coal blocks, suggesting this would help bring the country out of an economic crisis brought on by the COVID-19 lockdown.

One of the 16 districts to be mined subsequently was the Hasdeo Arand, a rich forest and an elephant habitat, and tagged as a 'no go' zone by environmental groups, including WWF India.

This sort of doublespeak is quite in line, and encouraging, for a whole lot of other attempts at fighting climate change in India. In 2019, about 500 quintals of mango wood were used for a yagna in Meerut to curb pollution. This event had been organised by the Shri Ayuchandi Mahayagna Samiti and conducted by 350 Brahmins. The Uttar Pradesh Pollution Control Board refused to intervene as it was "a matter relating to a particular religion".

The state labour welfare board minister Sunil Bharala echoed this thought, and rubbished criticism of stubble burning in Punjab. He also believed in yagnas and insisted that the government should conduct them, and offer them to the god of rain to "set things right".

Biologists working in the tropics have another set of concerns. They have raised questions like 'What shaped tropical biotas?', the answers to which have taught us how geographies changed, and how today's rainforests used to be savannahs in a previous era. Researchers have also studied forest birds and their speciation, throwing light on how the present-day's Amazon forest represents a rather recent and temporary stage in its history.

They have asked questions about why the tropics are more biologically diverse than the planet's temperate zones. The replies have varied from "natural selection via strong biotic interactions was the major evolutionary mechanism in the tropics" to its opposite, that "low population densities of most tropical species would cause random genetic drift to prevail over natural selection".

Many of these ideas and probes into the workings of tropical forests have only scratched the surface. And the researchers behind them have had to come up with extremely precise words to describe the world of forest ecology. For example, the a paper on seed dispersal might have the following words: 'endozoochory', 'chiropterochory', 'myrmecochory' (plant dispersal by vertebrate animals, bats and ants respectively – also known to be mutualistic evolutionary processes). And they indicate just how specialised a field can become in its terminology, in order to describe processes that are clear and understandable.

This clarity and preciseness is important: they allow us to describe and discuss events that may be difficult to convey to a broader audience, but which help those in the know to communicate faster, and more efficiently.

But such clarity all but disappears when one enters the larger climate change discourse – where a forest is recognised only in terms of its carbon stock, which in turn is negotiable currency – thus excluding important stakeholders, especially those who live in forests and who stand to lose the most.

It is this obfuscation of terms and concepts that prevents any meaningful dialogue or action around climate change. Instead, it allows mostly rhetoric, contradictions and lies to sneak in between speech and action, feeds obscurantism, and appeals to heavenly powers for meaningful change.

The peoples' language

Forests are habitats of millions of life-forms, including humans, that interact or depend on each other. Our and their existence and quality of life is a delicate balance that depends on the outcome of these interactions. It is in forest spaces – and not carbon sinks – that a myriad indigenous cultures have evolved, as also sacred spaces and shrines, the embodiments of faith and belief, which have helped conserve biodiversity and create a sense of wonder outside scientific discourse.

Like indigenous peoples everywhere, forest people also have words and a language to describe their living space. It may surprise us to know that these are very rich languages, which use metaphors to describe the relations between natural phenomena with as much precision as the cause and effect equations of the natural sciences.

Most peoples' languages also have precise words for various landscapes, words that hint at the kind of soil or vegetation and, by extension, the kind of game and foods found there. Being required to collect food regularly has meant that they closely observe different natural phenomena over generations. These include phenological observations – the impact of climate on the seasonal occurrence of flora and fauna, and the periodically changing form of an organism – whose collation over time could perhaps suggest tangible relationships between the climate and the local environment. However, these observations will also necessarily be in the languages of people who live in the forests, and whose lives have historically shaped forest landscapes to be as we see them today.

After a recent field study, I found (in vol. 702 of Seminar) that the Durwa language has 24 verbs – nine each for hunting and gathering, and six for fishing – involving food-gathering actions. These verbs, which include searching, chasing, feeling, digging, bailing and wandering, hint at some of the ways a member of a forest-based community could perceive and experience a forest environment.

Note that these experiences are not without danger. These very physical actions are juxtaposed with a metaphysical counterpart that includes sacred spaces, monthly offerings to particular forest spaces, first fruit ceremonies, spirit trees and shamanic sittings and dances, etc. These latter spaces and events play their own role in regulating the movement and lifestyle of the communities, and reveal a synchronicity with physical experiences.

Over the last two decades, maybe more, a new batch of 'climate change experts' who view and value forests as 'carbon stock' – as stands of trees whose sole purpose is to sequester carbon – have usurped the value of forests and the language used to describe them. They have drawn equations between different types of forests – 'open', 'mixed', 'dense', 'very dense' – their spread over a certain area, and the amount of carbon that they can thus isolate. Forests have become carbon sinks, just like an ocean or any other aspect of the natural environment.

At present, India seems to be on track (although there are some doubts, thanks to the official definition of forests) with its Nationally Determined Contribution of 2.5-3 billion tonnes of CO2-e by 2030, according to the increased forest cover as measured in 2019. It could be a leading example in this sector of countries achieving their COP21 targets for reducing emissions. India has also increased investments in renewable energy.

However, the government continues to send mixed signals with its plans to increase its capacity for coal-derived power, from more than 200 GW at present to 300 GW in the near future.

For India to be taken seriously in climate dialogues and negotiations, it will need to be clear about its intentions – in terms of language and action – and avoid supporting spiritual events like the World Cultural Festival, organised by Sri Sri Ravi Shankar's Art of Living Foundation, which destroyed about 300 acres of the Yamuna floodplains in 2017. Or supporting, by staying silent, events like the Meerut yagna or the felling of 40,000+ trees in a people-protected forest to make way for a coal mine in Talibara, Odisha.

India will also need to decentralise its climate action plan at the state and district levels, and work out how various departments can incorporate climate mitigation and adaptation strategies within their plans. The decisions made at multinational fora need to be backed by action on the ground, especially by being sensitive towards the people who live in and conserve their forests in spite of state apathy.

Most of all, we need a new, common language – to understand the technicalities of carbon dioxide emissions – which includes the immediate need to stop global warming, and the concomitant actions – and have all parties do their bit to reduce emissions. Such a language could open up a new way of understanding the problem, describing it in words familiar to the people who live in and understand that forest habitats are definitely more than just carbon sinks.

Source: https://science.thewire.in/the-sciences/climate-change-carbon-economy-conservation-ecology-narrative-language-exclusion/