

India lacks carbon policies

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We are not interested to start to mitigate climate change process in India because of my experience while dealing with the subject. Along with companies, cities and financial institutions, more than 130 countries have now set or are considering a target of reducing emissions to net zero by mid-century but India is not one of them. The government of India stresses that the focus should be on climate finance and transfer of green technologies at low cost. I understand that both the issues are extremely important but technology will only come when the country signs up net zero carbon emission as soon as possible. As far as green climate fund is concerned, we aren't sure how will this operate because the issues related to public fund and private funds are very tricky issues and hopefully this needs to be resolved at 26th meeting of Conference of the Parties (CoP26) in Glasgow from October 31 to November 12th 2021. But we need to have a carbon policy for each of the sectors before we enter into multiple agreements with the countries who have requisite technologies. Despite developed countries having collectively emitted more than their estimated emission allowances and keeping the arguments of climate justice in mind, the action on the ground is already too late. India is still quibbling about historical global emitters and who should take the blame and fix it but this will not work at multiple forums like UNFCCC. We are vulnerable because of the fact that 22 of the 30 most polluted cities in the world are in India is a major cause of concern. The polluters pay principle will not work in our case as we are the third largest emitter of the carbon in the world. According to the Global Carbon Atlas, India ranks third in total greenhouse gas emissions by emitting annually around 2.6 billion tonnes (Bt) CO₂eq, preceded by

China (10 Bt CO₂eq) and the United States (5.4 Bt CO₂eq), and followed by Russia (1.7Bt) and Japan (1.2 Bt). This is not hidden from anybody that Delhi is the world's most polluted capital as per the World Air Quality Report, 2020. For those of us residing in Delhi, the winter months become a challenge as stubble burning in adjoining states and low wind speeds take the AQI beyond 300 on average, with some days going as high as 600 to 800, while the safe limit is below 50. This is also clear that international negotiations are done on the basis of per capita carbon emission and the emission intensity of GDP but this will also not work because we have very high decadal population growth rate which hinges around 12.5% and lower GDP growth rate. Of these top five absolute emitters, the US has the highest per capita emissions (15.24 tonnes), followed by Russia (11.12 tonnes). India's per capita emissions is just 1.8 tonnes, significantly lower than the world average of 4.4 tonnes per capita. I am sure negotiators are not likely to be convinced by this argument. If one takes emissions per unit of GDP, of the top five absolute emitters, China ranks first with 0.486 kg per 2017 PPP \$ of GDP, which is very close to Russia at 0.411 kg per 2017 PPP \$ of GDP. India is slightly above the world average of 0.26 (kg per 2017 PPP \$ of GDP) at 0.27 kg, while the USA is at 0.25, and Japan at 0.21. But India ranked seventh on the list of countries most affected due to extreme weather events, incurring losses of \$69 billion (in PPP) in 2019 (Germanwatch, 2021). This is worrying. In our Nationally Determined Contributions (NDCs) submitted in 2016, India committed to "reduce emission intensity of its GDP by 33 to 35 per cent by 2030 from 2005 level.

EMISSION SHARE OF INDIA IN DIFFERENT SECTORS

The sector wise emission is much skewed in India. Energy sector is the largest source of CO₂ emitter and constitute 68.7% whereas in agriculture sector the carbon dioxide emission is around 19.6%. However, in absolute terms, emissions from agriculture have increased to about 650 Mt CO₂ in 2018, which is similar to China's emissions from agriculture. But the emissions pie in India owes its largest chunk (44 per cent) to the energy sector, followed by the manufacturing and construction sector (18 per cent), and agriculture, forestry and land use sectors (14 per cent), with the remaining being shared by the transport, industrial processes and waste sectors.

WE SHOULD BRING ABOUT CHANGES IN AGRICULTURE SECTOR

The agriculture is a big sector and needs its own carbon policy. Carbon dioxide emission within the agriculture sector is very interesting to understand. Carbon dioxide emission in agriculture sector in India are primarily from the livestock sector (54.6 per cent) in the form of methane emissions due to enteric fermentation and the use of nitrogenous fertilizers in agricultural soils (19 per cent) which emit nitrous oxides; rice cultivation (17.5 per cent) in anaerobic conditions accounts for a major portion of agricultural emissions followed by livestock management (6.9 per cent) and burning of crop residues (2.1 per cent). A carbon policy for

agriculture must aim not only to reduce its emissions through a change in crop pattern R & D but also reward farmers through carbon credits which should be globally tradable. Unfortunately, we have a negligible allocation on researches and development but the problem is compounded with the world's largest livestock population (537 million) therefore, India needs better feeding practices with smaller numbers of cattle by raising their productivity. Rice cultivation on around 44 million hectares is the other culprit for methane emissions therefore, there is a need to change the crop pattern to maize or other less water-guzzling crops especially in the irrigated tracts of north-west India. The change to maize will also reduce our huge dependence crude oil dependence after having converted them to ethanol. The carbon trading market has to be simplified so that farmers gain from this process. Agricultural soils are the largest single source of nitrous oxide (N₂O) emissions in the national inventory. Nitrous oxide emissions from use of nitrogen-fertilizer increased by approximately 358 per cent during 1980-81 to 2014-15, growing at a statistically significant rate of 5,100 tonnes per year therefore, a change in the fertilizers may bring us less carbon emitting countries. The government should incentivize and give subsidies on drips for fertigation, switching away from rice to corn or less water-intensive crops, and promoting soluble fertilizers at the same rate of subsidy as granular urea.