**Climate change negotiations at Paris**

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Twenty three years after the Rio conference on sustainable development where the United Nations Framework Convention on Climate Change (UNFCCC) was approved by the heads of 100 countries, the world is again at a cross road about how to take next steps. Many wish, to have a legally binding treaty with responsibility for all countries.

Beginning with concerns about how to reduce green house gas (GHG) emissions largely due to the use of fossil fuels, the debate now has gone beyond the GHG reduction and also includes technology, finance and how to adapt to climate change. The shape of these negotiations is likely to impact development pathways for India for all times to come. Most of the measures such as renewable energy, energy efficiency etc. are beneficial in the longterm but its urgency due to climate treaty may lead to costly measures earlier than India may wish to take.

Until now, India has to address climate change issues voluntarily as per capacity. However, after the Paris meeting in 2015 for which a number of meetings and drafts are already taking place, we may have to declare Intended Nationally Determined Contributions (INDC) to reduce green house gases. These will be declared and perhaps monitored or self reported. It is in India’s interest to have a world with less emissions. Therfore, our endeavour should not be to stop this stronger initiative but encourage it, however ensuring that the principle of common but differential responsibilities (CBDR) is enforced. India has to worry about another set of “INDC” i.e. India’s National Development Compulsions to worry about. India needs to light up nearly \*\*\*\*million households without electricity, address issues of sanitation, water, literacy, health services etc which would require services, more buildings, roads and infrastructure all of which will increase emissions. Thus, the principle of CBDR is important for India. The millennium development goals (MDG) need to be reached as per our own commitment to poor but also as per our UN obligations.

However, despite the above compulsions, India has already taken steps for ambitious and courageous plans.

**Some bold initiatives that will reduce GHG of India that could be shown as INDC are:**

 • 100 Gigawatts( GW) solar, 60 GW wind, 15 GW from hydro and bio mass by 2022 are not only seen as global landmarks today but even regarded as all time historic goals coupled with Renewable Purchase Obligations (RPO).

 • Bureau of Energy Efficiency (BEE) has star rating system for labeling appliances- which has led to the promotion of energy saving appliances such as refrigerator, air conditioners, washing machines etc

 • Perform, Achieve and Trade scheme where the industries can trade emissions by performing above agreed benchmarks and receive credit.

 • Urban mass rapid transit (metro) may be reaching out to 27 cities

 • 14th Finance commission provides support to local bodies, who actually can enforce and even monitor many of the INDC

 • Building codes & energy efficiency

 • Bachat Lamp Yojana that provides CFL Bulbs at the price of in\_incandescent\_\_lamps, the price difference borne by the electricity distribution companies who claim carbon credit to recover .

 • 100 Smart cities

 • Swachh Bharat( Clean India)

 • Recent cess on petrol and diesel and increase in cess on coal for financing clean energy

Many of these are highly ambitious. These should not be dismissed as “already announced”, that “they-will–be–done-anyway” and require India to take additional measures to further reduce its emissions. Most emission reduction measures have co-benefits e.g. reducing air pollution, increasing energy security or accumulating govt revenues through prices or tax increase. India needs to argue that regardless of purpose of the measures or their co-benefits, they should be counted as valid INDC as long as the GHG emissions are reduced compared to over expected or projected emissions. . Unless this is done, India will have incentive to delay action. Thus already declared plans can be reported as INDC. These formidable targets would require finance and technology.

We may leap frogg to the best technologies at high cost e.g. LED lamps. This process should be seen essential for the world as a whole, so there are no excessive additions as the developing countries progress. For example, our needs for lighting may increase but by leap frogging to LED lamps , we may be able to curb excessive increase in electricity consumption. Leapfrogging is a service to ourselves and also helps global carbon management and should qualify for extra funds and technology.

India not only has to follow MDG and inclusive development but also invest for adaptation. Thus, the additional investment needed for the GHG reduction is additional demand and puts threefold demand on the available investment.

Investments are not only needed for GHG reduction and inclusive growth, but also for adapting to climate change and reducing vulnerability. For example, the cities are economic growth engines and even a few days of disruptions lead to enormous and prolonged economic and livelihood losses in addition to immediate losses of lives and infrastructure. They can face floods, drought (water scarcity) storms, extreme rainfall, temperature, cyclone etc. Urban resilience and adaptation are now recognised as major challenges subsequent to Srinagar and Vizag debacles. Very large scale disruptions can occur to lakhs of persons concentrated in cities with high density for whom high-cost infrastructure is created. In addition to hazards; there are also steady trends of temperature increase causing heat island effect or coastal erosion requiring investment to reduce vulnerabilities.

Rural Adaptation involves climate impact on agriculture. We observe changes in cropping patterns especially in the states in Himalayan ecosystems (HP, Uttarakhand). Also forest fires or losses of non-timber forest products are observed**.** Many rural jobs are based on agriculture. These non- farm or off- farm activities will suffer due to climate change.

 India should start documenting the losses in a systematic framework for which training should be given to all states. Naturally, global climate finance should cover some of these losses.

Thus, the demand for finances will face competition from the three sources; the investment to reduce emissions, for the measures for protection or adaptation and to ensure that the poor do not suffer the climate risks and for development and economic growth. We should look for as much synergy among them as possible.

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