

## United Nations Climate Change Conference COP 20 at Lima concluded: what next?

The United Nations Climate Change Conference was held in Lima, Peru, from 1 to 14 December 2014. This was the 20th yearly session of the Conference of the Parties (COP 20) of the United Nations Framework Convention on Climate Change (UNFCCC). After several days of intense consultations and lobbying, the UNFCCC finally announced that the parties reached a consensus to come up with plans on their national contributions to reduce emissions, called Intended Nationally Determined Contributions (INDCs). These are expected to determine future mitigation strategies, based on the outcome of the upcoming COP 21 in Paris by the end of 2015. During October 2014, the European Union (EU), the third largest emitter of greenhouse gases (GHGs), proposed to reduce its emissions to 40% below 1990 levels by 2030, with an intention to achieve an ambitious target of 80% by 2050. The EU also proposed to raise its share of renewable sources to 27% in total energy consumption by 2030. Just before the Lima COP 20, USA and China, the two biggest emitters of GHGs, also announced reductions in emissions of 26–28% compared to 2005 levels. Even then, emission from China would continue to increase and is expected to peak by 2030. China has also proposed to increase the share of renewable sources to 20% by 2030.

The Lima COP 20 raises several issues. How realistic are the nation-specific INDCs? Who would determine whether collective effort of the INDCs is adequate to contain the warming within 2 degrees? Who would monitor whether the commitments by the parties are being followed? It is important to note that many nations did not fulfil their commitments in the case of the Kyoto protocol. Committing emission cuts is one aspect, but actually implementing them is more important. What if any party decides not to fulfil commitments at a later stage after the proposed year of its peak emission? In a world where binding commitments are not being followed, will INDCs without review be relevant at all? Mandatory and binding commitment with a global consensus (though it appears impracticable) is probably the only way forward and can be viewed as a serious effort. Given the history of non-cooperation at a global scale in the past for imposing the

committed emission cuts, most likely, there is little hope as far as the feasibility of INDCs is concerned. It appears that the list of unresolved issues before COP 21 is quite long. However, as a first step, introduction of INDCs is probably a welcome move.

At COP 16 (Cancun), the parties established a Green Climate Fund (GCF), which will support projects, programmes, policies and other activities in the developing countries. Nations have pledged various amounts for four years and at COP 20, UNFCCC announced that around US\$ 10 billion had been mobilized as of December 2014. GCF will disburse this fund for projects starting from 2015. The UNFCCC further requested the countries to accelerate the ongoing resource mobilization and urged developed countries for enhanced contributions in order to reach the original target of US\$ 100 billion by 2020. Contributing to GCF is still a question even to many developed countries, especially in an era of economic slowdown. Adding to the complexity, the definition of 'loss and damage' to any party as a consequence of climate change, is not fully clear. It is difficult to determine whether any particular climate catastrophe is the consequence of climate change or a natural disaster. Cloud burst in 2010 in Leh is an example. In any case, GCF should be utilized for funding projects which would help developing nations to develop mitigation and adaptation strategies, including development of cleaner energy sources. The fund should not be utilized for development activities such as rebuilding a region affected by a climate change disaster. The goal of the projects funded by GCF should be to develop the knowledge required for societies worldwide, to face challenges posed by global environmental change and to identify and implement solutions and opportunities for a transition to global sustainability. How about participation from industries? Industries also have contributed to the present level of CO<sub>2</sub> and it is logical that they too must be mandated to contribute to GCF.

Was the Lima COP 20 successful in achieving the objectives? Actually, consensus was reached only in its commitment to reaching an agreement in 2015 in Paris. It merely advocated for improved financial support to

developing countries for mitigation and adaptation actions. The Lima COP 20 did not fully succeed in making the developed world commit to any additional mitigation or funding the GCF. The fact that the GCF has reached US\$ 10 billion only cannot be considered a significant development as the original target for 2020 is an order of magnitude larger, which is unlikely to be realized considering the outcome of COP 20. Developed countries argue that around half of the global emissions are coming from the developing countries. Considering that residence time of CO<sub>2</sub> in the atmosphere is several hundred years and that the developed nations are responsible for half of the current CO<sub>2</sub> levels (historical emissions), they should be considered significantly responsible for the current scenario. Unfortunately, past emissions, which account for more than half of the present CO<sub>2</sub> levels have been overlooked or ignored in these discussions. Developing countries appear not united and hence have not succeeded to effectively voice collective views/opinions.

According to IPCC assessment reports, the occurrence of extreme weather events is increasing of late and IPCC has linked this to global warming, with increased degree of confidence. Surprisingly, the response/cooperation from global community has been weak. Definitely monitoring mechanisms to ensure that strategies projected by parties are being followed is inevitable. Considering the urgency to contain the warming within 2 degrees, UNFCCC could follow monitoring the implementation of the proposals on emission cuts on the lines the International Atomic Energy Agency (IAEA) implements nuclear non-proliferation. The system can act as a supervisory body, which triggers an early warning and prompts the relevant party as well as the international community as and when parties violate commitments. It is important that all parties should provide an outline of the plans for their proposed emission cuts, which would be monitored to make sure that commitments are met while approaching the deadline. This would avoid last minute surprises. Monitoring could include inspection/verification to ascertain whether the parties are following the proposed roadmap or are deviating from their commitments. Additionally, monitoring includes visits and even on-site inspections of large point/areal sources, if necessary. This can be done whenever the agency feels that information provided by the parties is not adequate to assess the outcome of the proposed roadmap. There should be an international panel to study the consequences of collective reduction in proposed emissions by various countries, something similar to IPCC. One of the most significant contributions of the IPCC assessment report-5, is the assessment of the maximum allowable/missible carbon dioxide emission, so as to limit the global average temperature rise to 2 degrees above pre-industrial levels. The purpose of such a panel is to evolve a global consensus

in case collective emission cut is not adequate to keep the warming within 2 degrees. We must also understand the contribution/responsibility of each country in present-day CO<sub>2</sub> levels.

As the fourth largest emitter, challenges before India prior to COP 21 are enormous. The EU proposal followed by the US–China deal will most likely bring India to focus in COP 21. However, it is important to note that India's emissions are less than 25% compared to China and about 30% compared to USA. India has already committed itself to a 20–25% reduction in emissions (divided by GDP) below 2005 levels by 2020. In COP 21 at Paris, it is likely that India may need to commit additional emission cuts. Before this, India should have a realistic assessment of its GHG emissions. Costs, benefits and consequences associated with any proposed emission cuts should be assessed accurately and adequately before its INDCs are proposed/announced to the global community/UNFCCC. A combination of maximum utilization of renewable/non-conventional energy sources, combined with developing adaptation strategies to deal with changing climate appears to be the best option in the present scenario. Are we prepared to implement adaptation measures? Assessment of adaptation measures requires high-resolution climate models and is a computationally intensive work. This is not as simple as using any climate model and downscale it. We also need data at high-resolution and computational power. Fully coupled climate model with coarse grid resolution (300 km) usually requires a Teraflop computing system, whereas one with a high grid resolution (1 km) requires exascale computing or at least a petaflop machine. Developing climate models which are capable of predicting the district-level effects of climate change should get immediate attention in the country. India needs a clear outline of various scenarios of costs associated with strategies for emission cuts a few years from now versus those for a distant future, several decades from now, which would obviously be much more rigorous and expensive. Before COP 21, India may be able to propose to peak its emissions by 2050; however, experience in Lima indicates that there is much more work for India to do before COP 21. India needs to engage as many developing countries as possible and should take the lead to voice a collective position in this regard. Adequate internal discussions/consultations are also necessary before India announces its INDCs in Paris by the end of 2015.

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