



Climate Change Mitigation: Boost Ambition and Accelerate the Implementation

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Climate change is the biggest threat to the mankind. Starting from the '1972 Stockholm Environment Conference' a large number of global interactions have taken place – with a thrust on 'Calling Action'. Every assessment shows that sufficient action has not been effected. Now is the time to Act to mitigate climate change effect and promote sustainable development. A discussion on the topic can best be started with commitments at Paris Climate Change Convention in 2015.

India's Commitment

No commitment is made for a 'peaking year' when emissions will be capped and there are no sector-specific targets. Instead, India has outlined a plan to reduce emission intensity which is the ratio of greenhouse gases to GDP or emission per unit GDP.

India's Post-2020 'Climate Action Plan', promises to reduce emission intensity by 33-35% by 2030 over 2005 levels; boost clean energy in electricity generation to 40%; while adding carbon sinks – tree and forest cover to remove 2.5 to 30 billion tonnes carbon dioxide from the atmosphere.

India has stressed that its Post – 2020 Climate Action Plan does not bind it to any sector specific mitigation obligation or action, including in important sectors like

agriculture. India's declaration is intended to insulate the country from pressure from developed countries.

India has argued that it cannot be compared to China, despite roughly similar population sizes, as its per capita emissions are much lower. According to the World Resources Institute, India's per capita emissions are 2.44 metric tonnes to China's 8.13 metric tonnes. Though India is the third largest emitter – fourth, if one counts EU as a single entity – it accounts for less than 7% of greenhouse gases.

While US and China have agreed to converge at 12 tonnes of carbon dioxide per capita by 2030, India is still far lower than these emission levels.

India's Nationally Determined Commitments (NDC) has focused on eradicating poverty, reducing unemployment and ensuring energy sufficiency. Over one million medium and small enterprises in India will be involved in the “zero effect” and “zero defect” scheme. India's ambitious solar expansion programme seeks to enhance capacity to 100 GW by 2022, which is expected to be scaled up further. Efforts will include scaling up the share of non-fossil fuel based energy resources in total electricity mix including wind power, solar, hydro power, biomass, waste to energy, and nuclear power.

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India has focused on adopting energy efficiency route and move on a low carbon growth path to combat climate change.

India would also raise investment in programmes to adapt to climate change in agriculture, water resources, Himalayas, coastal regions, health and disaster management.

It will cost \$2.5 trillion about from 2015 to 2030, part of which India will seek from the West.

The Indian Government decided to launch Global Solar Alliance, IASPA (International Agency for Solar Policy and Application), of all countries located between the tropics of Cancer and Capricorn. The membership is now opened to all countries. The Prime Minister is making efforts to improve effectiveness of IASPA.

India's Major Concern

India needs to cut down on carbon dioxide emissions level to reduce the green house effect. India has extreme concern for the following five reasons:

- a. Protecting biodiversity: India has 7-8% of all recorded species and 4 out of 34 biodiversity hot spots.
- b. Conserving the Himalayan Eco System: It forms the most important concentration of snow-covered region outside the polar region.
- c. Disaster prone: Indian subcontinent is amongst most disaster prone areas. Almost 85% of its area is vulnerable to hazards.
- d. Coastal impact: 14.2% of its population inhabits its 7,517 km coastline which is most vulnerable to rising sea level. 1,238 islands are in danger.
- e. Agriculture: Drought and floods are frequent and the sector is already facing high degree of climate variability.

Keeping the above concern in focus, India has to plan and act in a climate resilient fashion. As speed at which such actions are introduced is crucial, India needs to monitor global actions and adopt best practices from all countries. International cooperation and in-country cooperation are crucial.

UN Secretary General has called an international conference in September 2019 to discuss the way forward. A preparatory meet took place in May 2019 in Germany. The outcome of this Conference has offered important pointers to future actions. The following indicators are drawn from that Conference proceedings and opinion of experts.

International Climate Action – Recent Efforts

The International Conference on Climate Action (ICCA 2019) convened in Germany during 22-23 May, 2019 was a preparatory event which will lead up to UN Secretary General's 'Climate Action Summit', scheduled for

September 2019. The Conference focused on 'How Vertical and Horizontal Cooperation can Strengthen Climate Mitigation and Adaptation Activities'. Experts identified that many solutions for increasing climate action already exist, but that enhanced collaboration between different government levels is needed to further strengthen their roll-out and up-scaling.

Climate policy from a sustainable development perspective and the role of science in climate action are important issues. Options for stepping up cross-border collaboration for climate action was also considered important.

The three thematic clusters considered important for climate resilient development include:

- i) energy transitions,
- ii) mobility and
- iii) resilience and adaptation.

Addressing Mitigation and Resilience at Urban and Local Levels Important

In September 2019, UN Secretary General Antonio Guterres will host the '2019 Climate Action Summit' to boost ambition and accelerate the implementation of the Paris Agreement. As was the case at the 2014 Summit, "Cities and Local Actions" will be a priority, as Guterres called for addressing mitigation and resilience at urban and local levels with a focus on new commitments on low-emission buildings, mass transportation, urban infrastructure, and resilience for the urban poor.

The Climate Action Summit will be a Forum for raising climate ambition with a view to limit average global temperature rise to 1.5°C. Collaboration across government levels is key for effective climate action and there is a need to increase pressure on decision makers to become more "climate ambitious". It is necessary to make it expensive to ruin the climate, for example through taxing carbon dioxide emission.

There is an urgent need for a new culture for both vertical and horizontal cooperation that creates mutual trust. A realisation must emerge that there is a need to ensure that ecological and economic considerations go hand-in-hand. It is also necessary for the technology rich institutions and regions to demonstrate that economic growth can be decoupled from resource depletion. Climate change already impacts many cities around the world and it

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is necessary for the industrialized countries to be the climate policy front-runners. The cities and metropolitan regions contain most of the global population and produce 80% of the world's GDP.

The challenge of mobilizing USD 93 trillion needed to adapt to climate change at the 2019 UN Climate Summit is a key opportunity to drive transformative action on issues such as energy transition and nature-based solutions.

A combination of both bottom-up and top-down approaches to deliver Paris Agreement is necessary. The opportunities and challenges related to digitalization and block chain technologies need to be fully appreciated.

Transport and land use are two major sectors that need greater attention. The European Union has plans for 2030 and 2050 with the aim to foster economic transformation by focusing on local level in creating the change. Climate action goes “way beyond increasing the number of electric cars on the road”. The focus has to be on holistic rethinking of how cities are designed and infrastructure is built. Climate action is not to be considered as “an extra cost”. There is an urgent need for “doing everything differently and changing the way we spend our resources”. Expert estimate indicates “around 30% of people in the Global South do not have a fixed address”. Poor people with all their problems, who want to participate and to have a voice, are just being perceived as burden.

Important Issue for Developing Climate Action Plans

Since the Climate Action Plan is not mandatory and actions are more voluntary under it, there are certain issues that need to be discussed and finalised for effective actions. These are as follows:

- i) How to foster and better recognize local and regional climate action in countries where the national government is antagonistic to such initiatives;
- ii) Providing predictable and continuous financial support to cities, especially in countries where cities do not have sovereign access to tax revenues;
- iii) Establishing carbon taxing and using this revenue to support local projects;
- iv) Engaging sub-national governments developing Nationally Determined Commitments;
- v) Aligning all public policies and funding from development banks with the goals of the Paris Agreement and the 2030 Agenda for Sustainable Development;
- vi) Not just “doing more” but doing things differently to derive transformative change;
- vii) Addressing issues of distributional justice; and
- viii) Ensuring collaborative frameworks allow every government level to do “what they do best”.

Share Global Experience and Best Practice

A number of effective practices have been developed in local context that can also be relevant under a different set of conditions. It is, therefore, necessary to create a system to share these best practices amongst global communities. Following issues can be deliberated in local, regional and global context to promote collaborative action.

- mapping of informal settlements and self-organized redesign to reduce vulnerability, notably to flooding;
- risk-informed spatial planning and infrastructure development;
- overcoming siloed adaptation responses resulting from split government responsibilities;
- subsidizing green roofs and increasing green spaces for rain run-off management;
- collecting locally relevant data to inform disaster risk reduction strategies;
- enhancing the dialogue between researchers, as data suppliers, and local stakeholders, as data users;
- build local communities' capacity for collecting data;
- leveraging the opportunity of private investment in sustainability projects, both through commercial banks and bottom-up mechanisms such as crowd funding initiatives;
- using district heat management projects as an accessible entry way for subsequently expanding climate action;
- technological solutions that generate revenue for more climate action;
- developing capacity not only to replicate projects, but also to manage them sustainably;
- project preparation facilities playing a crucial role in helping local authorities to prepare bankable projects;
- the need for the public sector to serve as a role model, notably through green procurement and using renewable energy in municipal buildings;
- ensuring that support structures at different government levels are complementary to each other; and
- taking social considerations into account in planning climate action and raising awareness about co-benefits.

“It is necessary to identify and document lessons learned about success factors and barriers to collaborative climate actions and delineate potential leverage point for replicating, scaling up, and speeding up actions”.

The speed, scale, and force of the “urbanization search” are important. If this urbanization takes place in a business-as-usual manner, much of the newly urban

population will live in slums and that urban sprawl will significantly increase. An investment of USD 70 trillion is needed to build the “cities of tomorrow”, noting that such investments have to be carbon-free. Communities need to be empowered to decide the allocation of local budgets as a means to strengthen their role as change-makers in the transformative pathway towards sustainability. Social dimension of sustainable cities need to be focused so that the climate action results in an increased human well-being and access to public goods.

Circular Economy and Sustainable Development Goals

The Second World Economy Forum 2018 took place during 22-24 October, 2018 at Yokohama, Japan to discuss on the role of Circular Economy. To have a proper understanding the concept of Circular Economy explanation given in following three paragraphs will be important.

Against a background of global population growth, the current economic model of ever increasing production and consumption, which is also associated with acute pattern of unequal distribution and social exclusion, is already presenting substantial challenges. These include scarcity of an unequal access for natural resources and energy, as well as climate, social and geopolitical disruption. The Earth community has already crashed through four out of nine critical “planetary boundaries” or risk thresholds (climate change, species extinction, deforestation and land use change, nutrient loads) identified by the Stockholm Resilience Centre. The role of circular economy as the “industrial leg” of efforts to combat climate disruption was underlined by a Sitra-commissioned study on the role that the circular economy can play to keeping global warming below 2 degrees Celsius. The study, *'Re-configure: The Circular Economy – A Powerful Force for Climate Mitigation'*, shows that switching to the circular use of the four materials (steel, plastics, aluminum, and cement) responsible for the largest GHG emissions could help reduce EU industrial emissions by 56% (300 MT) annually by 2050, more than half the amount necessary to achieve net zero emissions.

In response to the emergence of these converging crises, the concept of “circular economy” has been coined to inform the design of an alternative economic model based on entirely different principles. The circular economy decouples virgin and non-renewable resource use from economic growth and seeks to put an end to an era of overconsumption – an era that has caused climate change, alarming loss of biodiversity and the over-use of

natural resources

The outcome of Yokohama Forum on Circular Economy has focused on the following actions.

a) The global thrust on sustainable development is focusing on consideration of the role that a circular economy can play as a vehicle for de-coupling economic growth from the ecological impact of natural resource consumption and as an important means to

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meet the challenges of the Sustainable Development Goals and the UN Framework Convention on Climate Change Paris Agreement on Climate Change.

- b) Natural resource conservation is considered the most important element in promoting circular economy; and challenges of plastic waste and marine pollution, climate change and biodiversity are important issues.
- c) Circular economy is seen as the industrial approach of fighting climate change.

There is a close link between the circular economy and the fourth industrial revolution “Industry 4.0”, food systems, finance and investment, business solutions, life styles and consumptions, plastics, education, climate change, research and development, rural development, and value chains.

- d) SDGs are excellent basis to build a global circular economy's strategy which defines a trajectory for advancement by 2030, and beyond and how to get there. The G-20 and UN meetings were identified as ideal decision-making tools to build a global circular economy strategy and together tackle global challenges of climate change, polluted environments and unemployment. It is important to note that the issue of unemployment and poverty is directly linked with the climate change issues.
- e) Circular Economy is also considered important for limiting the global warming to well below 2°C, as there is growing recognition that renewable energy and energy efficiency measures alone will not suffice.
- f) Circular Economy is considered good for business, trade and job creation. There is a need for shared global vision for a circular economy that can correct current political emphasis on national interest and help remove and prevent harmful obstacles to international trade and collaboration such as trade tariffs and protectionism. Increase in trade of knowledge and services combined with local

production close to markets are identified as contributions to lowering environmental impact through less required transportation and more efficient supply chain. Product and service solutions that enable the circular economy need to be spread across global markets freely.

- g) There is an urgent need for stronger leadership and international collaboration to help build a global circular economy by 2050 and create a planet where the economy and environment are no longer in contradiction. This calls for strong political and business leadership to shift away from a linear economic paradigm, which was described as the root cause of global challenges, such as climate change, polluted environments and unemployment.

Following important steps can play important role in effective implementation of Circular Economy and meeting the challenges of climate change in the SDGs.

- The era of mass consumption and production is not sustainable and alternative pathway has to be pursued;
- The circular economy must play a role in meeting the challenges of climate change and the SDGs;
- Every entity, from governments to individuals, can set and share actions to help create a circular economy movement;
- Japan has experience on resource productivity and is playing a leadership role on Circular Economy and is expected to focus on the outcomes at various important international forums including the UN General Assembly.
- A transition to a circular economy is underway and is the only way to preserve life on Earth within planetary boundaries;
- Alongside climate change, biodiversity loss and over-use of natural resources, the global sustainability crises include social inequality; and
- The root causes of over consumption of natural resources and energy must be addressed.

The concept of Circular Economy for Sustainable Development is expected to play an important role in future course of mitigation and adaptation in climate change and ensuring growth at appropriate levels.

Conclusion

The government has shown determination to fulfill its commitment of reducing carbon dioxide emission and also

improving national growth. These targets, to be achieved in a 'mission mode', are being reoriented to ensure that through alternate path or through mid-course corrections in the milestones or the content the targets are achieved. An example is the Minister for New Renewable Energy, Government Of India, making a statement on June 11,



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2019 that the government is determined to achieve 175 GW through renewable energy sources by year 2022 even if that calls for changing the targets of energy mix. That means, 100 GW may not come from solar but the balance can come from some other renewable energy source. Determined policy efforts of the government duly supported by the industry, mainly its Make-in-India Programme will be crucial to achieve national targets. The industry has shown enterprise and has worked on all the sectors by improving energy efficiencies in production systems as well as operational efficiencies of various products and has also taken advance actions to move in the right direction in case of electric mobility, energy efficient buildings and infrastructure, transit oriented

development and increasing number of sustainable smart cities. Multi-modal transport systems with smart control and regulatory mechanism will hold the key. Financial implications are large when considered as a stand-alone project. However, with the industry sharing the expenses it is possible to achieve national targets at a faster pace.



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