

# Innovation: The Key to Achieve Sustainable Development

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**Abstract:** *“Reflecting on the [Millennium Development Goals] and looking ahead to the next 15 years, there is no question that we can deliver on our shared responsibility to put an end to poverty, leave no one behind, and create a world of dignity for all.”*

- The then Secretary General of the United Nations ,Ban-Ki Moon in 2015

The concept of ‘sustainable development’ was highlighted for the first time at Stockholm in the United Nations Conference on human environment in 1972. However, this term was coined two years later in the Cocoyoc (Mexico) Declaration on Environment and Development and further emphasized upon at the Rio Declaration at the Earth Summit in 1992. It may be understood, as the development that meets the needs of the present generation without compromising the ability of the future generations to meet their own needs. Sustainable development is thus an integration of developmental and environmental imperatives. It can be also equated with being a new way of science that involves, an integration of technology and social philosophy.

The United Nations adopted a new set of global development goals for 2016-2030 known as the Sustainable Development Goals in September 2015 as part of the 2030 Agenda for Sustainable Development. This agenda puts forward a comprehensive agenda for global action to be taken on sustainable development and is aimed at inter alia ending poverty and reducing inequality in all forms. However, in order for the agenda to succeed, new innovative approaches are required with respect to the goals.

This includes innovation as a new form of social practice coupled with new or improvised technological products especially in the light of achieving Goals 2 and 9 amongst other goals. Goal 2 focuses on ending hunger, achieving food security and improving nutrition and promoting sustainable agriculture. Similarly Goal 9 deals with building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation.

Therefore, this paper will deal with how innovative approaches are integral in order to achieve the sustainable development goals and thereby not compromising the ability of future generations to meet their needs while at the same time, meeting the needs of the present generation. The paper will delve into how the agenda of the goals puts forward a tremendous opportunity for new forms of innovation to contribute to ensuring sustainable development while also explaining the constraints that might be encountered in the process of doing so.

**Keywords:** innovation, sustainable development, goals, technology, social

## Introduction

The concept of ‘Sustainable Development’ was highlighted for the first time at Stockholm, in the United Nations Conference on human environment in 1972. However, this term was coined two years later in the Cocoyoc (Mexico) Declaration on Environment and Development and further emphasized upon at the Rio Declaration at the Earth Summit in 1992. It may be understood as the development that meets the needs of the present generation without compromising the ability of the future generations to meet their own needs.

Sustainable Development is thus an integration of developmental and environmental imperatives. It can also be equated with being a new way of science that involves, an integration of technology and social philosophy. Since the adoption of the United Nations Framework Convention on Climate Change (hereinafter referred to as the “Convention”) in 1992, the global community has strengthened the response mechanisms to the threat of climate

change through various milestones. The ultimate objective of Convention is to stabilize green house gases (hereinafter referred to as “GHG”) concentration in the atmosphere at a level that will prevent dangerous interference with the climate system, in a time frame which allows ecosystems to adapt naturally and enables Sustainable Development.<sup>1</sup>

The United Nations adopted a new set of global development goals for 2016-2030 known as the Sustainable Development Goals (hereinafter referred to as “SDGs”) in September 2015 as part of the 2030 Agenda for Sustainable Development. This agenda puts forward a comprehensive agenda for global action to be taken on Sustainable Development and is aimed at *inter alia* ending poverty and reducing inequality in all forms. In adoption of 2030 global agenda, the countries are moving ahead for achieving a world free from poverty, gender inequality and economic inequality and thereby ensuring a healthy planet for future generations. These goals are multi-dimensional and integrate various social, economic and environmental dimensions.<sup>2</sup>

However, in order for the agenda to succeed, new innovative approaches are required with respect to the goals. The SDGs are global goals, built upon the erstwhile Millennium Development Goals. They are exhaustive, universal and integrated and emphasize on core areas of poverty and inequality, economic-growth, innovation, sustainable consumption and production, climate change, peace and justice and partnerships.<sup>3</sup> This includes innovation as a new form of social practice coupled with new or improvised technological products especially in the light of achieving Goals 2 and 9 amongst other goals with respect to combating climate change. Goal 2 focuses on *inter alia* promoting sustainable agriculture while Goal 9 deals with *inter alia* promoting inclusive and sustainable industrialization and fostering innovation.

Climate Change has become an urgent and pervasive preoccupation across the globe and represents one of the greatest environmental, social and economic threats facing the planet. Finding strategies for the adaptation and mitigation to face such changes is a major challenge for countries such as India with a large and fast rising population, extensive and thickly populated coastal zone, large number of agriculture-dependent communities, large and fragile ecosystem and also various socio-economic and political reasons that are hurdles in implementing adaptation measures.<sup>4</sup>

This paper will deal with how innovative approaches are integral in order to achieve the SDGs especially in the context of climate change and thereby not compromising the ability of future generations to meet their needs while at the same time meeting the needs of the present generation. The paper will delve into how the agenda of the goals puts forward a tremendous opportunity for new forms of innovation to contribute to ensuring Sustainable Development to tackle climate change while also explaining the constraints that might be encountered while doing so.

### Salient features of the Paris Agreement

The Paris Agreement (hereinafter referred to as the “Agreement”) that was formulated in 2015 is a treaty within the definition of the Vienna Convention on the Law of Treaties. However, not every provision of the Agreement creates a legal binding obligation. It instead contains a mixed bag of mandatory and non-mandatory provisions with respect to parties’ mitigation contributions. One of the key features of the Agreement as enshrined in the Preamble is emphasizing the intrinsic relationship that climate change actions, responses and impacts have with equitable access to Sustainable Development and eradication of poverty.

The main aim of the Paris Agreement is to hold the increase in the global average temperature well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase even further to 1.5°C above pre-industrial levels. The Paris Agreement sets a roadmap for all nations in the world to take actions against climate change in the post-2020 period.<sup>5</sup> The Preamble acknowledges that climate change is a common concern of humankind, and the Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the rights to health, the rights of indigenous people, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergeneration equity.

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<sup>1</sup> 05 Chapter on Sustainable Development and Climate Change presented during the Union Budget in India and available at [www.budget.gov.in](http://www.budget.gov.in) (last accessed on 30<sup>th</sup> September 2019).

<sup>2</sup>*Ibid.*

<sup>3</sup>*Ibid.*

<sup>4</sup>*Ibid.*

<sup>5</sup>*Ibid.*

Furthermore the Preamble also recognizes (a) the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge and (b) the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, as provided for in the Convention while taking full account of the specific needs and special situations of the least developed countries with regard to funding and transfer of technology.

Hence, it is in this context that innovative approaches are integral in order to achieve the SDGs especially in the light of achieving Goals 2 and 9 of the SDGs. As per Article 2 (1) (c), the Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty. This may be done inter alia by making finance flows consistent with a pathway towards low GHG emissions and climate-resilient development.

Article 4 of the Agreement establishes binding commitments by all Parties to prepare, communicate and maintain a Nationally Determined Contribution (hereinafter referred to as “NDC”) and to pursue domestic measures to achieve them. It also prescribes that Parties shall communicate their NDCs every 5 years and provide information necessary for clarity and transparency. <sup>6</sup>Each Party’s successive nationally determined contribution will represent a progression beyond the Party’s then current NDC and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

This Article also states that developed countries should continue to take the lead by undertaking absolute economy-wide reduction targets, while developing countries should continue enhancing their mitigation efforts, and are encouraged to move towards economy-wide reduction targets over time in the light of different national circumstances. Furthermore, even the least developed countries and small island developing States may prepare and communicate strategies, plans and actions for low GHG emissions development reflecting their special circumstances.

It is the Parties who shall account for their NDCs and thus be eventually responsible. All Parties should strive to formulate and communicate long-term low GHG emission development strategies, keeping in mind Article 2, taking into account their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances. Sustainable Development requires every nation to prioritize their targets and carefully implement various schemes/programmes in accordance with local challenges, capacities and available resources.<sup>7</sup>

Article 6 notes that Parties recognize some Parties choose to pursue voluntary cooperation in the implementation of their NDCs to allow for higher ambition in their mitigation and adaptation actions and to promote Sustainable Development and environmental integrity. Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance.

Article 6 also establishes a mechanism to contribute to the mitigation of GHG emissions and support Sustainable Development under the authority and guidance of the Conference of the Parties (hereinafter referred to as “COP”) serving as the meeting of the Parties to the Agreement for use by the Parties on a voluntary basis. This mechanism aims to achieve the following:

- a) To promote the mitigation of GHG emissions while fostering Sustainable Development,
- b) To incentivize and facilitate participation in the mitigation GHG emissions by the public and private entities authorized by a Party;
- c) To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfil its NDCs; and
- d) To deliver an overall mitigation in global emissions.

This article also puts the onus on the Parties to recognize the importance of integrated, holistic and balanced non-market approaches being available to Parties to assist in the implementation of their NDCs in the context of Sustainable Development and poverty eradication, in a coordinated and effective manner, including through, inter alia, mitigation, adaptation, finance, technology transfer and capacity-building, as appropriate.

Article 7 of the Agreement deals with adaptation. As per this provision, the Agreement aims to significantly strengthen national adaptation efforts, including through support and international cooperation. It recognizes that adaptation is a global challenge faced by all and that the adaptation efforts of developing countries should be

<sup>6</sup><https://onlinelibrary.wiley.com/doi/abs/10.1111/reel.12154> (last accessed on 1st October, 2019).

<sup>7</sup>*Supra* note 1.

recognised.<sup>8</sup> Furthermore it also recognizes that greater levels of mitigation can reduce the need for additional adaptation efforts, and that greater adaptation needs can involve greater adaptation costs. Therefore Parties recognize the importance of support for and international cooperation on adaptation efforts and the importance of taking into account the needs of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change.

This article focuses on Parties strengthening their cooperation on enhancing action on adaptation, taking into account the Cancun Adaptation Framework, including *inter alia* assisting the developing country Parties in identifying effective adaptation practices, adaptation needs, priorities, support provided and received for adaptation actions and efforts, and challenges and gaps, in a manner consistent with encouraging good practices. Each Party shall, as appropriate, engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, which may include the assessment of climate change impacts and vulnerability, with a view to formulating nationally determined prioritized actions, taking into account vulnerable people, places and ecosystems.

Article 4 also envisages that support shall be provided to developing country Parties by the developed country Parties in accordance with Articles 9, 10 and 11 for the implementation of this Article. As per Article 9, the developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under their Convention. Moreover the Financial Mechanism of the Convention, including its operating entities, shall serve as the financial mechanism of this Agreement.

Parties share a long-term vision as per Article 10 on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce GHG emissions. Parties, noting the importance of technology for the implementation of mitigation and adaptation actions under this Agreement and recognizing existing technology deployment and dissemination efforts, shall strengthen cooperative action on technology development and transfer.

Emphasis has also been laid in the Paris Agreement in capacity-building. Capacity-building under this Agreement as stated in Article 11, should enhance the capacity and ability of developing country Parties, in particular countries with the least capacity, such as the least developed countries, and those that are particularly vulnerable to the adverse effects of climate change, such as small island developing States, to take effective climate change action, including, *inter alia*, to implement adaptation and mitigation actions, and should facilitate technology development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness, and the transparent, timely and accurate communication of information.

Capacity-building should be country-driven, based on and responsive to national needs, and foster country ownership of Parties, in particular, for developing country Parties, including at the national, subnational and local levels. All Parties should cooperate to enhance the capacity of developing country Parties to implement this Agreement with Developed country Parties enhancing support for capacity-building actions in developing country Parties.

The Agreement also emphasizes the role of climate finance in strengthening the global response to climate change. The Scope, Scale and Speed of climate finance required, have been stated in the Agreement and are explained below as follows:<sup>9</sup>

**i) Scope**

Climate finance should support both the adaptation and mitigation activities of the developing countries in accordance with the country needs and priorities. The Paris Agreement gives equal weightage to adaptation and mitigation. Under the Convention, the intent and obligation of climate finance is unambiguous as the developed country Parties shall provide financial resources to developing countries.

**ii) Scale**

Developing countries have developmental challenges and climate change puts an additional burden on the already scarce resources.

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<sup>8</sup>*Supra* note 6.

<sup>9</sup>*Supra* note 1.

### iii) Speed

To answer the question, whether the pace of climate finance in the multilateral climate change regime is sufficient, it is important to understand if the developed countries have fulfilled their commitments and the progress of delivery of finance is from developed to developing countries.

Parties to the Paris Agreement have made concerted efforts to develop the modalities, procedures and guidelines for implementing the Agreement and the Paris Agreement Work Programme was adopted at the 24<sup>th</sup> session of the Convention's Climate Change Conference, held from 2<sup>nd</sup> to 15<sup>th</sup> December in 2018 in NDCs that preserves the nationally determined nature of these contributions and provides for Parties to submit different types of contributions including adaptation. Furthermore, the guidance on adaptation does recognize the adaptation needs of developing countries and the overall guidance reflects the principles of the Paris Agreement and also recognizes the leadership that developed countries such as India and China, have to display for achieving the objectives of the Paris Agreement.<sup>10</sup>

Parties have also agreed to initiate the work setting up the new collective finance goals post-2020 from the floor of US\$100 billion, the overarching framework for technology recognizes the need for enhanced support towards operationalization of the framework and comprehensively covers all stages of technology development and transfer. The Convention mandates that countries in Annex-II (industrialized countries) provide financial resources, including for the transfer of technology, needed by the developing country Parties to take climate actions.<sup>11</sup>

### India's stand on Sustainable Development and climate change

I would like to highlight India's stand with respect to the topic since, I have been closely following the steps being taken by the Indian Government in this regard. India ratified the Paris Agreement on 2<sup>nd</sup> October, 2016. India has continuously demonstrated its responsibility towards acknowledging the emerging threats from climate change and implementing the climate actions on the basis of the principles of equity and common but differentiated responsibilities for improving efficiency of the economy and its engines of growth. In fact its NDCs outline the post-2020 climate actions India intends to undertake under the Paris Agreement on climate change adopted in December, 2015.<sup>12</sup>

Climate change requires concerted global efforts and India has been focusing to address the climate challenges by rapidly progressing towards achieving the SDGs along with other developmental imperatives. At the national level, the roadmap for implementation of India's NDC is being prepared. An overall assessment and quantification of finance requirements for adaptation and mitigation for a country with so much diversity and demand is a difficult task given the rapid pace of changing technologies and innovation. Increasing growth rate and rapid urbanization in India have spurred the demand for natural resources, exerting pressures on the environment and raising sustainable concern. For instance, the country has been making substantial additions to its installation of renewable power capacity.<sup>13</sup>

However the Nation Clean Air Program has been launched by the Government as a pan-India, time bound, national level initiative to address the country-wide issues of air pollution in a comprehensive manner. Swachh Bharat Mission (SBM), Beti Bachao Beti Padhao (BBBP), Pradhan Mantri Jan-Dhan Yojana (PMJDY), Deen Dayal Upadhyay Gram Jyoti Yojana (DDUGJY) and Pradhan Mantri Ujjwala Yojana (PMUY) have substantially contributed to India's progress for achieving the SDGs. Thus, a developing country like India has been endeavouring to do the best possible within its own domestic resources, keeping in mind the Sustainable Development imperatives.<sup>14</sup>

A National Adaptation Fund on Climate Change was established in 2015 to meet the cost of adaptation to climate change for the State and Union Territories that are particularly vulnerable to the adverse effects of climate change. The Scheme will continue till 31 March, 2020 with a financial implication of ₹364 crore. Till date, 30 adaptation projects have been approved at a cost of ₹847 crore covering vulnerable sectors such as water, agriculture and animal husbandry, forestry ecosystems and biodiversity.<sup>15</sup>

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<sup>10</sup>*Ibid.*

<sup>11</sup>*Supra* note 1.

<sup>12</sup>*Supra* note 6.

<sup>13</sup>*Ibid.*

<sup>14</sup>*Ibid.*

<sup>15</sup>*Ibid.*

India also engaged positively and constructively in the negotiations at the 24<sup>th</sup> session of the Convention's Climate Change Conference while protecting its key interests including recognition of different starting points of developed and developing countries: flexibilities for developing countries and consideration of principles including equity. Furthermore it reiterated its promise to implement the Paris Agreement in its spirit and to act collectively to address climate change.<sup>16</sup>

### **Innovative aspects missed out in the Paris Agreement**

In my opinion, there should have been a concept of a Green Development Mechanism (hereinafter referred to as the "GDM"). Under the GDM the developed country Parties to the Convention could have undertaken the project of quantified emission reductions in developing country Parties and least developed countries. Also, if rapidly growing industrial (hereinafter referred to as "RGI") economies like India and China voluntarily had agreed to qualify as developed countries, then they could have been awarded Certified Emission Reductions and Additional Reductions Credits.<sup>17</sup>

Four new panels should also have been created under the GDM, which would directly derive their powers from the Conference of Parties to the Convention and would be directly responsible to it and no other entity. They would be the Technical Panel, Financial Panel, Social Research Panel, and Research and Development Panel.<sup>18</sup> The panels are described as under:

- (a) **Technical Panel:** The role of this panel would be to set guidelines to quantify the development carried by developed country Parties in developing country Parties and least developed countries and this panel would also decide upon how much Additional Reduction Credits must be granted to RGI economies in case they undertake GDM projects in other countries.
- (b) **Financial Panel:** It would have assisted in arranging funding of certified project activities under GDM by setting action targets of emission trading.
- (c) **Social Research Panel:** This panel would have had the role of categorizing countries in developed, developing and least-developed countries.
- (d) **Research and Development Panel:** This panel would have promoted the innovation of technology for the reduction of emission and would also have promoted and encouraged the scientific research and innovation of alternative sources of energy by establishing green research and development institutions worldwide.

The technical panel would have finalized the threshold limits of emission for each member party and the panel would have also provided grace expansion to each member country but this expansion would not have exceeded 10% of the allocated threshold limit. Also, the technical panel would have reviewed the National Allocation Plans prepared by each member State and would have ratified them if they were found suitable or else the panel would have recommended some changes which would have had to be incorporated by the Parties before the final ratification of the plan by the technical panel.<sup>19</sup>

The decision given by the Technical Panel would have been final and legally binding on all the parties, however in case of any dispute the problem could have been referred to an arbitral chamber which would then adjudicate upon the matter. This creation of chamber was important but the Paris Agreement lacks a dispute resolution mechanism and the parties have no place to appeal against the decision of the COP. The dispute resolution mechanism would have been legally binding with the arbitral chamber determining its own procedure.

The GDM regime would have also incorporated the provision to regulate emissions for the RGI Economies. This measure would have removed the frictions that existed between the developing and developed economies and hence universalized the acceptance of the Agreement. The Agreement should have also given incentives to RGI Economies to perform the green projects under the GDM.<sup>20</sup>

The problem of Financing actually revolves around the technology transfer issues. A prudent and proper incentive structure for technology transfer would have ensured financing from the private players. For instance, the

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<sup>16</sup>*Ibid.*

<sup>17</sup> Laura Nielsen, Peter Pagh & Anita Ronne (Eds.), *"The Copenhagen Protocol on Climate Change"*, Djof Publishing, 2009 at pp. 183-198.

<sup>18</sup>*Ibid.*

<sup>19</sup>*Ibid.*

<sup>20</sup>*Ibid.*

use of micro-credit in financing and building climate resilient models could have been followed and emphasized upon.<sup>21</sup>

### Conclusion

The 2030 Agenda for Sustainable Development and its 17 SDGs presents a roadmap for future development trajectory to all nations with focus on poverty eradication, environmental sustainability, peace and prosperity. The achievement of these goals is an imperative for, not just any particular country but the global community as a whole. Implementing the 2030 Sustainable Development Agenda and the Paris Agreement requires investments of scale and size, which is unprecedented. In future to increase the scale of sustainable investments there may be funding capacity problems for the banks if they are the primary provider of sustainable debt.<sup>22</sup>

Globally, the green bond market has seen a tremendous growth over the past 5 years with an increasing number of investors seeking environmentally sustainable investments without having to sacrifice financial returns. In India, it's security exchange watchdog namely the Security Exchange Board of India has provided a regulatory environment for issuance of green bonds in May, 2017. The fruits of this are reflected in the cumulative issuance of green bonds in India. India presently stands at 11<sup>th</sup> position in global country ranking and accounts for 33 percent of the Certified Climate bonds by number in emerging markets.<sup>23</sup>

It is thus time for the global community to act by exhibiting the required momentum to act upon their responsibilities of establishing an enabling environment for Sustainable Development and actions to combat climate change while striving to achieve the SDGs especially Goals 2 and 9.

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<sup>21</sup>*Ibid.*

<sup>22</sup>*Supra* note 1.

<sup>23</sup>*Ibid.*

