

Sustainable Development and Climate Change

06 CHAPTER

ॐ सर्वेभवन्तुसुखिनः। सर्वे सन्तु निरामयाः।
सर्वे भद्राणि पश्यन्तु। माकचित् दुःखं भाग्भवेत्॥

**May all be happy; May all be without disease;
May all have well-being; May none have misery of any sort
— (Brihadaraanyaka Upanishad 1.4.14)**

The 2030 agenda for Sustainable Development with 17 Sustainable Development Goals (SDGs) and 169 associated targets encompasses a comprehensive developmental agenda integrating social, economic and environmental dimensions. Several initiatives have been taken at both the national and the sub national level to mainstream the SDGs into the policies, schemes and programmes of the Government. India has been taking several proactive climate actions to fulfill its obligations as per the principles of common but differentiated responsibilities and respective capabilities and equity. As mandated in the UNFCCC and its Paris Agreement, the climate actions of the developing countries would have to be supported by finance flows from the developed to the developing countries. The Nationally Determined Contribution (NDC) submitted by the country has been formulated keeping in mind the developmental imperatives of the country and is on a “best effort basis”. In its NDC, India has sought to reduce the emissions intensity of its GDP by 33 to 35 per cent below 2005 levels by the year 2030; achieve 40 per cent of cumulative electric power installed capacity from non-fossil fuel sources by 2030; and enhance forest and tree cover to create additional carbon sink equivalent to 2.5 to 3 billion tons of carbon dioxide by 2030. We need to strive for equity across nations and within a nation, and equity across and within the generations. The COVID-19 pandemic and the iniquitous impact of the consequent lockdown reemphasizes the fact that sustainable development is the only way forward.

INTRODUCTION

6.1 As the official adoption of SDGs reached its 4th anniversary, World Health Organization declared the outbreak of the coronavirus disease 2019 (COVID-19), on 30th January 2020. The resultant public health emergency, which was later pronounced to be a pandemic, has led to considerable human and economic costs setting countries back on their developmental goals and creating serious impediments to the attainment of the SDGs.

6.2 The year 2020 was supposed to be the year by which developed country Parties were to fulfill the goal of jointly mobilizing US\$ 100 billion a year for climate finance, an essential component of the commitments made by the developed countries, which has remained elusive. The postponement of COP 26 to 2021 also gives less time for negotiations and other evidence-based work to inform the post-2025 goal.

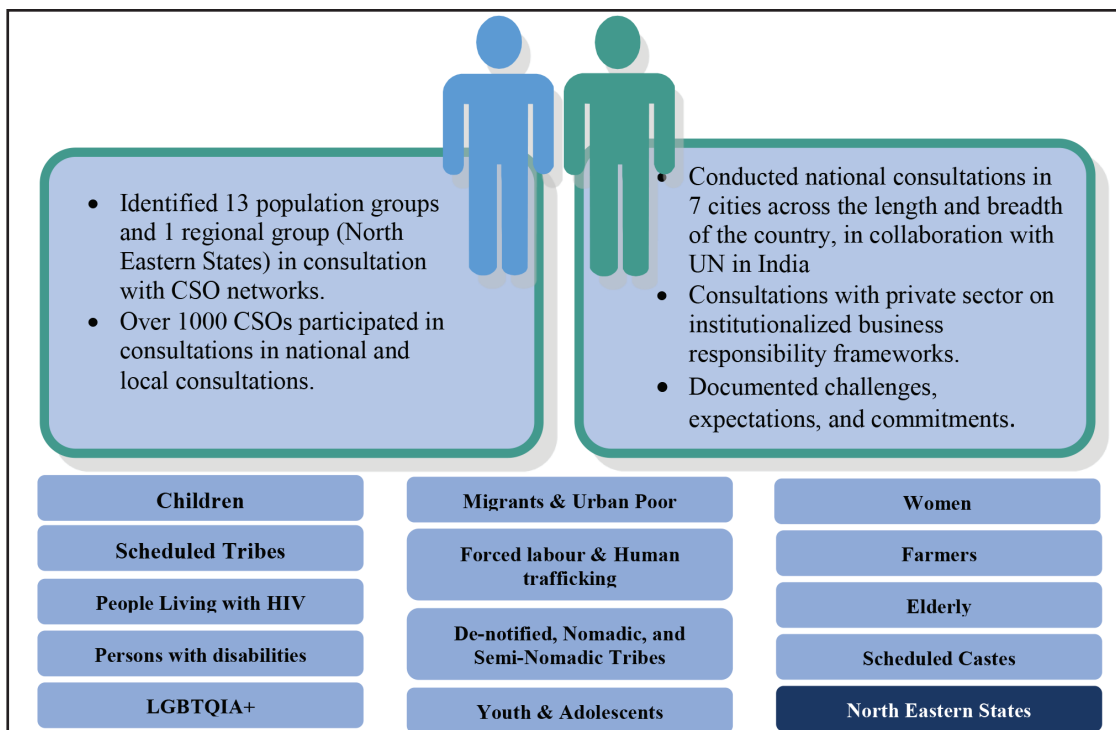
6.3 India is no exception to the unprecedented crisis unleashed by the pandemic. It is faced with remarkable challenges emerging from the need to provide substantive economic stimulus, address livelihood losses, introduce and implement wide ranging economic reforms. The need to develop sustainably, however, remains at the core of the country's development strategy.

INDIA AND THE SDGs

6.4 India has taken several proactive steps at both the national and the sub national level to mainstream the SDGs into the policies, schemes and programmes of the Government. In 2020, the highlight of India's SDG initiatives has been the Voluntary National Review (VNR) presented to the United Nations High-Level Political Forum (HLPF) on Sustainable Development which is the highest international platform for review and follow-up of the SDGs under the auspices of the United Nations Economic and Social Council. The reviews are voluntary and country-led and are aimed at facilitating the sharing of experiences, including successes, challenges and lessons learned. NITI Aayog presented India's second VNR to the HLPF in July 2020, which highlighted the country's accomplishments and the way forward on its journey towards achieving the SDGs. In addition to the progress achieved in various sectors, the VNR Report also presented the Indian model of SDG localisation, perspectives from various stakeholder consultations, strategies of integrating businesses with the implementation of SDGs, and ways to strengthen the means of implementation.

6.5 Consultations with over 1000 Civil Society Organisations (CSOs) have been the cornerstone of the VNR Report preparation process. The consultations involved fourteen specific groups (Figure 1). The focus of the consultations was the principle of "Leaving No One Behind", which lies at the heart of SDGs.

Figure 1: Stakeholder Consultations Process



Source: NITI Aayog

6.6 These stakeholder consultations provided a platform for engagement and feedback on India's progress towards the SDGs. This platform was widely acknowledged among the participants as a conduit for institutionalised dialogue. For state and market action to keep up

with the myriad manifestations of these challenges, the nature of engagement will have to be adaptive, iterative and based on feedback, which institutionalised dialogue can provide.

6.7 The preparation of the VNR also provided an excellent opportunity to strengthen the engagement with the private sector on SDGs. In the recent past, private sector spending under Corporate Social Responsibility (CSR) initiatives has been a major avenue for private sector involvement in the SDG framework. The VNR process enhanced the uptake in adoption of business responsibility and sustainability frameworks and created greater consciousness among industry leaders for the same. This is echoed in the ‘Report of the Committee on Business Responsibility Reporting’ which was released in 2020. Business Responsibility and Sustainability Report (BRSR) frameworks outlined in this report emanate from the National Guidelines on Responsible Business Conduct (NGRBC) which are aligned to the SDGs, and the United Nations Guiding Principles on Business & Human Rights (UNGPs). BRSR formats incorporate the growing salience of non-financial disclosures along with the annual financial disclosures ensuring the recognition of environmental and social responsibilities.

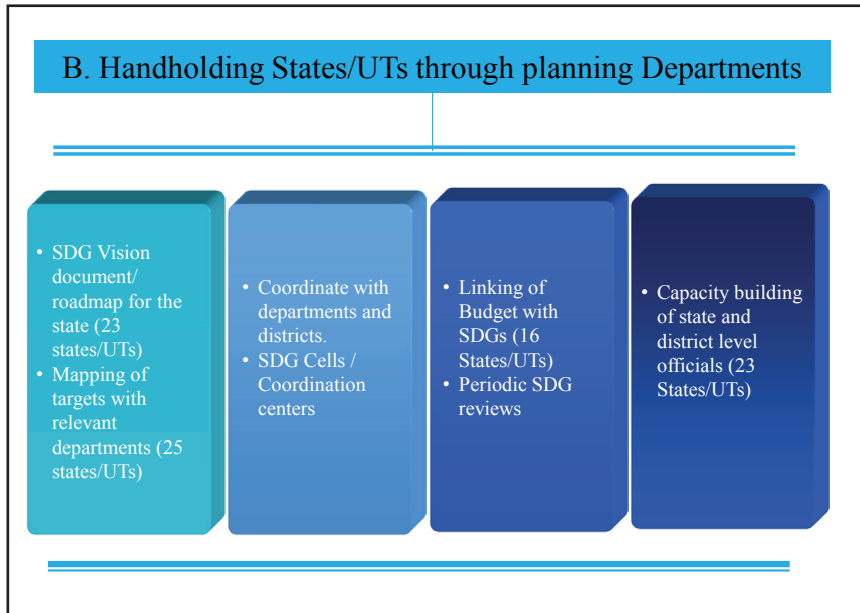
Localization of the SDGs

6.8 Localisation of SDGs is crucial to any strategy aimed at achieving the goals under the 2030 Agenda. Essentially, localising SDGs involves the process of adapting, planning, implementing and monitoring the SDGs from national to local levels by relevant institutions and stakeholders. In terms of engagement and collaboration of institutions, it is consequential how the Centre, State and Local Governments work together to achieve the SDGs at the national level; and how SDGs provide a framework for subnational and local policy, planning and action for realisation of the SDG targets at local levels. To accelerate SDG achievements, the country has adopted the approach of cooperative and competitive federalism which is based on Centre-State collaboration in nation building and healthy competition among the States in various development outcomes. The SDG India Index and Dashboard, designed and developed by NITI Aayog, is the principal tool to measure and monitor SDG performance at the national and sub-national levels. The states are institutionally empowered and positioned to achieve the SDGs with the support of the Central Government and allied institutions. Hence, the States are the key actors in the process of localisation of SDGs with the Central Government playing an enabling role.

Figure 2: SDG Localisation



Source: NITI Aayog



Source: NITI Aayog

6.9 States and UTs have created discrete institutional structures for implementation of SDGs in their own specific contexts. Several states have also created nodal mechanisms within every department and at the district levels to make coordination, convergence and data management more precise and predictable. Figure 2 (A and B) shows the institutional set up for SDG localisation.

SDG related intervention of the Centre Governments during the pandemic

6.10 The COVID-19 pandemic has, further, underscored the need to keep sustainable development at the very core of any development strategy. The pandemic has challenged the health infrastructure, adversely impacted livelihoods and exacerbated the inequality in the food and nutritional availability in the country. This has reemphasized the criticality of having institutions and mechanisms that can facilitate the country to absorb exogenous shocks well. The period of the pandemic has seen coordinated efforts of both the Centre and the State Governments in preserving and creating livelihoods, ensuring that food and nutritional requirements are met and that the health facilities are augmented to cope with the pressure created by the contagion. Initiatives addressed the immediate impact of COVID-19 pandemic and enabled the country to progress on its SDGs even in these very difficult times. In addition several reforms measures have been brought in such as in agricultural labour and MSME reforms which will directly or indirectly impact the SDGs. The State Governments also responded with several measures to support those affected by the pandemic through various initiatives and reliefs to fight this pandemic.

CLIMATE CHANGE

6.11 India has been taking several proactive climate actions to fulfil its obligations as per the principles of common but differentiated responsibilities and respective capabilities and equity. The Nationally Determined Contribution (NDC) submitted by the country has been formulated keeping in mind the developmental imperatives of the country and is on a “best effort basis”. In its NDC, India has sought to reduce the emissions intensity of its GDP by 33 to 35 per cent

below 2005 levels by the year 2030; achieve 40 per cent of cumulative electric power installed capacity from non-fossil fuel sources by 2030; and enhance forest and tree cover to create additional carbon sink equivalent to 2.5 to 3 billion tons of carbon dioxide by 2030. The other goals pertain to adoption of sustainable lifestyles based on traditional values of conservation and moderation, adaptation to climate change, clean economic development and environment-friendly technology, etc.

Prominent Government initiatives on mitigation & adaptation actions and their progress

6.12 India's National Action Plan on Climate Change (NAPCC) was launched in 2008. It has through 8 National Missions focussed on advancing the country's climate change related objectives of adaptation, mitigation and preparedness on climate risks. The Government has decided to revise the NAPCC in line with the NDC submitted by India under the Paris Agreement to make it more comprehensive in terms of the priority areas. The major developments under the NAPCC are captured in Table 1 below.

Table 1: National Missions under NAPCC

Missions	Major objective/Target	Progress
1. National Solar Mission (NSM)	Achieve 100 GW of solar power in seven years starting from 2014-15.	The cumulative capacity of 36.9 GW was commissioned till November 2020. Around 36 GW solar energy capacity is under installation, and an additional 19 GW capacity has been tendered.
2. National Mission for Enhanced Energy Efficiency (NMEEE)	<ul style="list-style-type: none"> To achieve growth with ecological sustainability. Mandating reduction in energy consumption in large energy-consuming industries, Financing for PPP to reduce energy consumption through demand-side management programs in the municipal, buildings, and agricultural sectors, Energy incentives, including reduced taxes on energy-efficient appliances. 	<ul style="list-style-type: none"> The Perform Achieve and Trade (PAT) Scheme is one of the initiatives under the NMEEE, and was initiated in March 2012. PAT Cycle I (2012-2015) has over-achieved the target, saving around 31 million tonnes of CO₂ (Mt CO₂). PAT Cycle II (2016-17 to 2018-19)-emission reduction of 61.34 MtCO₂ was achieved. PAT Cycle III (2017-18 to 2019-20) concluded on 31 March 2020, results of this cycle are awaited. Currently PAT Cycle IV is under implementation.

Missions	Major objective/Target	Progress
3. National Mission for a Green India (GIM)	Improved ecosystem services by Increasing forest/tree cover by 5 m ha and improving quality of forest cover on another 5 m ha (a total of 10 m ha).	A sum of ₹ 343.08 crore has been released to 13 states during the period 2015-16 to 2019-20 for undertaking afforestation activities over an area of 1.42 lakh ha.
4. National Mission on Sustainable Habitat (NMSH)	<ul style="list-style-type: none"> • Development of sustainable habitat standards. • Promoting energy efficiency as a core component of urban planning by extending the existing Energy Conservation Building Code (ECBC). • Strengthening the enforcement of automotive fuel economy standards, and • Using pricing measures to encourage the purchase of efficient vehicles and incentives for the use of public transportation. 	<ul style="list-style-type: none"> • The mission is being implemented through three programmes: Atal Mission on Rejuvenation and Urban Transformation, Swachh Bharat Mission, and Smart Cities Mission. • Under the ECBC, 335 demonstration buildings have been supported with technical assistance for compliance in the states/UTs. Cumulative built-up area of 0.16 billion m² ensures an approximate energy saving of 0.17 BU. • Under the Smart Cities Mission, 1987 projects have already been completed so far, while 4375 projects are under completion. Smart Cities Mission requires cities to have at least 10 per cent energy coming from solar and at least 80 per cent buildings to be energy efficient and green. • Urban Transport Modal Shift: As on June, 2020, 700 km of metro rail was operational in 18 major cities and a Bus Rapid Transit (BRT) network of about 450 km was operational in 11 cities across the country carrying 10 million passengers daily. • Smart Cities Mission: As on June 2020, the value of tendered smart city projects was over ₹ 1,66,000 crores, including ₹ 1,25,000 crores of work orders issued and ₹ 27,000 crores of completed projects.

Missions	Major objective/Target	Progress
		<ul style="list-style-type: none"> • Smart roads, smart solar, smart water, PPPs and vibrant public spaces projects are being implemented under the Mission. • Swachh Bharat Mission: 6.2 million household toilets, against the mission target of 5.8 million, and 0.59 million community & public toilets, against the mission target of 0.50 million, have been constructed as in December 2020. Under the mission, 100 per cent door-to-door waste collection has been achieved in more than 83 thousand wards. • 4340 (99 per cent) of the total 4372 cities have been declared Open Defecation Free (ODF) in the country.
5. National Water Mission (NWM)	<ul style="list-style-type: none"> • Focuses on monitoring of ground water, aquifer mapping, capacity building, water quality monitoring and other baseline studies. • Promoting citizen and state action for water conservation, augmentation, and preservation. • Focusing attention on overexploited areas. • Promoting basin-level integrated water resources management. 	<ul style="list-style-type: none"> • The National Institute of Hydrology is the nodal agency to get the State Specific Action Plan (SSAP) for the water sector for 16 selected states. Five States have completed the first phase of SSAP. • 6,376 new ground water monitoring wells created.
6. National Mission for Sustainable Agriculture	Enhancing food security by making agriculture more productive, sustainable, remunerative, and climate resilient.	<ul style="list-style-type: none"> • 7960 farm machinery banks established in 2018-19 to reduce crop residue burning. • Under Rainfed Area Development Programme, an area of about 74,175.41 ha and 55,902.92 ha was brought under different Integrated Farming System approach in 2018-19 and 2019-20 respectively. • During 2018-19 & 2019-20, an area of 4.14 lakh ha was covered under organic farming. At present, 25.34 lakh ha, is under organic farming.

Missions	Major objective/Target	Progress
7. National Mission for Sustaining Himalayan Ecosystems	<ul style="list-style-type: none"> To continuously assess the health status of the Himalayan Ecosystem. Enable policy bodies in their policy formulation functions. Start of new centres relevant to climate change in the existing institutions in the Himalayan States. Regional cooperation with neighbouring countries in Glaciology. 	<ul style="list-style-type: none"> The key achievements include setting up of the Centre of Glaciology at Wadia Institute of Himalayan Geology. A national network programme on Himalayan Cryosphere has been launched. A mega programme named Human and Institutional Capacity Building (HICAB) programme for the Indian Himalayan Region was launched during the 2018-19 and six state level knowledge networks have been supported in the states of Jammu & Kashmir, Himachal Pradesh, Assam, Meghalaya, Manipur and Arunachal Pradesh in the Himalayan Region. Under this programme, 18 projects and 7 Major R&D programmes are getting implemented. In addition, three Centres of Excellence, one each at Kashmir University, Sikkim University and Tezpur University have been supported under the mission.
8. National Mission on Strategic Knowledge for Climate Change (NMSKCC)	<ul style="list-style-type: none"> To gain a better understanding of climate science, formation of knowledge networks among the existing knowledge institutions engaged in research and development. Development of national capacity for modeling the regional impact of climate change on different ecological zones within the country. 	<ul style="list-style-type: none"> Key achievements include setting up of 12 Centres of Excellence and 10 State Climate Change Centres. 8 Global Technology Watch Groups (GTWGs) in the areas of Renewable Energy Technology, Advance Coal Technology, Enhanced Energy Efficiency, Green Forest, Sustainable Habitat, Water, Sustainable Agriculture and Manufacturing have been set up.

Source: MoEFCC

6.13 The Government launched the Jawaharlal Nehru National Solar Mission (JNNSM) in 2010 with the aim to (i) deploy 20,000 MW of grid connected solar power by 2022 to be achieved in 3 phases, (ii) 2,000 MW of off-grid solar applications including 20 million solar lights by 2022 and (iii) 20 million sq. m. solar thermal collector area. The above targets are divided phase wise as presented in Table 2 below:

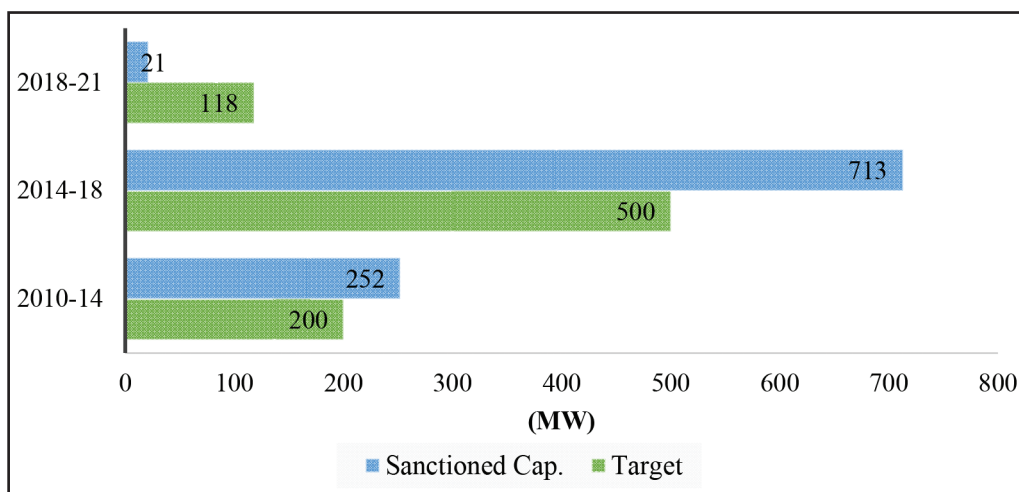
Table 2: Phase wise distribution of Targets under JNNSM

S. No	Application segment	Cumulative Target for Phase I (2010-13)	Cumulative Target for Phase 2 (2013-17)	Cumulative Target for Phase 3 (2017-22)
1	Solar collectors	7 million sq meters	15 million sq meters	20 million sq meters
2	Off grid solar applications	200 MW	1000 MW	2000 MW
3	Utility grid power, including roof top	1,000-2000 MW	4000-10,000 MW	20000 MW

Source: Ministry of New and Renewable Energy

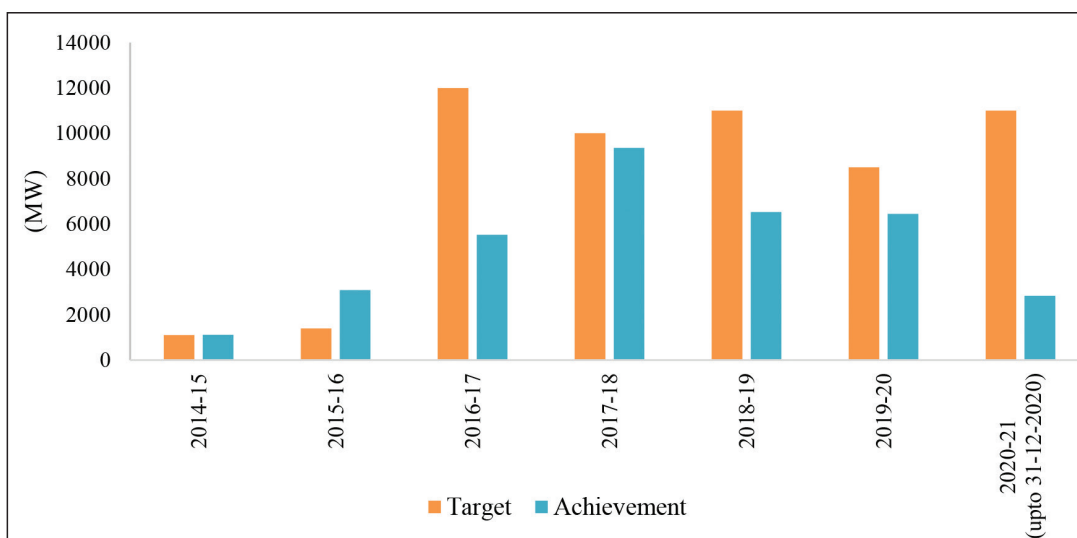
6.14 Subsequently, Government had revised the target of grid connected solar power projects from 20,000 MW by the year 2021-22 to 100,000 MW by the year 2021-22 under the National Solar Mission in 2015. Figures 3 & 4 highlight the target and achievement under the off-grid solar programme and the grid connected solar projects under NSM.

Figure 3: Target & Achievements under Off-grid Solar Programme



Source: Ministry of New and Renewable Energy

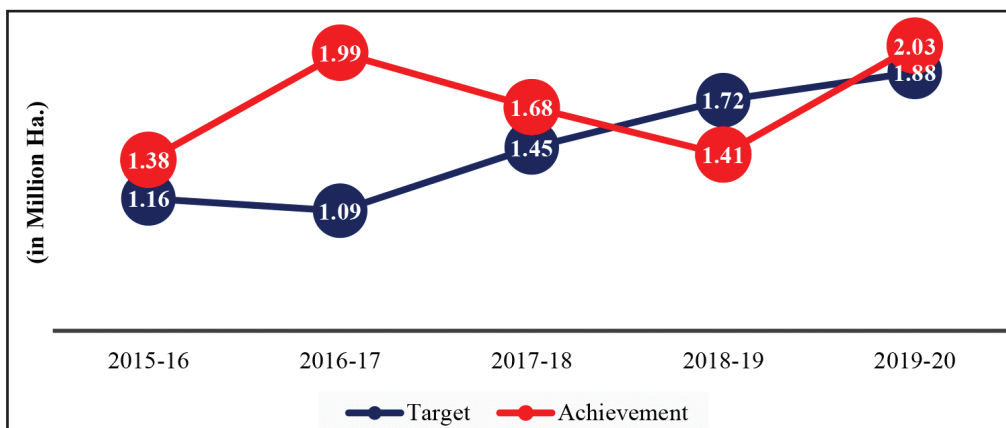
Figure 4: Physical Target and Achievement of Grid connected Solar Projects under NSM



Source: Ministry of New and Renewable Energy

6.15 The National Mission for a Green India (GIM) was introduced with the aim to protect, restore and enhance India's forest cover. It takes a holistic view on greening and focuses on multiple ecosystem services along with carbon sequestration and emission reduction as co-benefits. The mission was started with the objective to increase forest/tree cover on 5 million hectares (m ha) of forest/non-forest land and improve quality of forest cover on another 5 m ha land area. The mission also targeted improvement of ecosystem services including biodiversity, hydrological services and carbon sequestration. The mission's interventions were started in the year 2015-16 with the collaborative effort of Central and State Governments. The various afforestation activities including tree plantation were taken up over 8.49 m ha area from 2015-16 to 2019-20 under the various schemes of the Central Government inclusive of 1.42 lakh ha under this mission, state plan schemes and also plantation taken up by the NGOs, civil societies and corporate houses as reported under the Twenty Point Program. Figure 5 below depicts the afforestation target and its achievement.

Figure 5: The afforestation target and its achievement under various schemes including Green India Mission.



Source: Directorate of Green India Mission

6.16 Climate Change Action Plan (CCAP) a Central Sector Scheme, was approved in January 2014 to build and support the scientific and analytical capacity for assessment of climate change in the country, establish appropriate institutional framework and implement climate actions at a total cost of ₹ 290 crores for a duration of five years. Two important components of the CCAP scheme are the National Carbonaceous Aerosols Program (NCAP) and the Long-Term Ecological Observatories (LTEO). NCAP is a multi-institutional program being implemented by a consortium of 17 institutions led by IIT Bombay. It was inaugurated in the year 2017-18 and is a five-year duration project. LTEO is another project under the CCAP scheme for duration of 5 years and was started in the year 2019-2020. The duration of CCAP was initially from 2017-18 to 2019-20 and this was later on extended till 2020-21 with a budget outlay of ₹218.43 crore.

6.17 In addition to the above, National Adaptation Fund on Climate Change (NAFCC) a Central Sector Scheme with National Bank for Agriculture and Rural Development (NABARD) as the National Implementing Entity was operationalized in 2015-16, with a budget allocation of ₹350

crores for the 12th Five Year Plan. This scheme has continued beyond the 12th Five Year Plan till 31st March 2020 with a financial implication of ₹364 crores. The aim of NAPCC is to support concrete adaptation activities which are not covered under on-going activities through the schemes of State/UT and National Governments. Till September 2020, 30 projects (including two multi state regional projects) worth ₹847.5 crores have been approved by NAFCC. These projects are at different stages of implementation in 27 states in agriculture, water, forestry, urban, coastal sectors, marine system, etc.

6.18 The Government is implementing Faster Adoption and Manufacturing of (Hybrid&) Electric Vehicle in India (FAME India) scheme¹ w.e.f 1st April, 2015 to encourage progressive induction of reliable, affordable and efficient electric and hybrid vehicles. The Phase-I of the Scheme was extended from time to time and the last extension was allowed till 31st March, 2019. Based on outcome and experience gained during the Phase-I of FAME India Scheme and after having consultations with all stakeholders including industry and industry associations, the Government notified Phase-II of FAME India Scheme on 8th March, 2019, which is for a period of three years commencing from 1st April, 2019 with a total budgetary support of ₹10,000 crore. This phase aims to generate demand by way of supporting 7000 electric buses (e-bus), 5 lakh electric three wheelers (e-3W), 55000 electric four wheeler passenger cars (including strong hybrid) (e-4W) and 10 lakh electric two wheelers (e-2W).

India's NDC and its forthcoming challenges

6.19 India has recognized that its path of development must be one which places adequate emphasis on all the three pillars of sustainable development, namely, economic, social and environmental. A great deal of stress is also being laid upon the inter-generational equity in regard to the emerging climate actions proposed to be taken by the present generation. However, the imperatives of the intra-generational equity, i.e., eradication of poverty and equitable social and economic development cannot be brushed aside. The implementation of the climate targets is intertwined with global and national economic scenario.

6.20 The national circumstances demand that the first priority for India be adaptation, being a country highly vulnerable to extreme weather events. Climate change impacts are expected to worsen with the passage of time because of the momentum due to carbon stock continuing to increase the temperature. Hence, India's adaptation efforts will have to be further intensified and with that the adaptation costs will increase. The country is relying on domestic resources to implement adaptation and mitigation action on mission mode. The financing considerations will therefore remain critical especially as the country steps up the targets substantially. With the COVID-19 pandemic, the primary focus of the country is on ensuring protection of lives and livelihoods. Even so climate action remains a priority.

6.21 The implementation of NDC effectively commences on 01.01.2021. India's NDC clearly states that finance is a critical enabler of climate change action. The preliminary financial estimates in NDC document indicates that India would need around US\$ 206 billion

¹ <https://fame2.heavyindustry.gov.in/>

(at 2014-15 prices) between 2015 and 2030 for implementing adaptation actions in key areas like agriculture, forestry, fisheries, infrastructure, water resources and ecosystems. Apart from this, additional investments will be needed for strengthening resilience and disaster management. Preliminary estimates provided by NDC indicates that India's climate change actions till 2030 will require financial resource of US\$ 2.5 trillion (at 2014-15 prices). It is important to have a clearer assessment of the financial requirement for implementing India's NDC so that allocation of resources may be appropriate and efficient considering India's commitments and the fact that resources have competing uses. Hence, a careful estimation of the cost requirements for implementing the NDC and the possible sources for meeting these requirements is an essential pre-requisite.

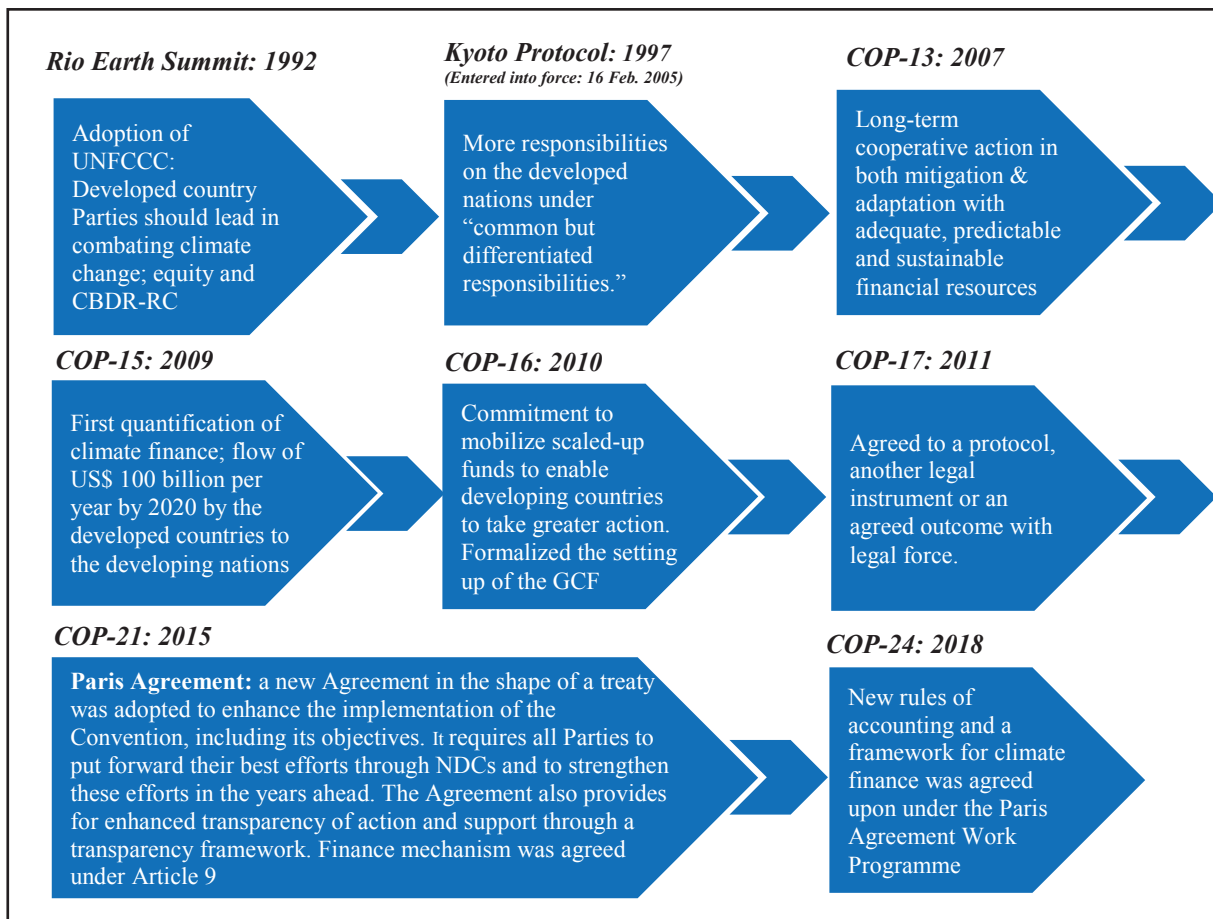
6.22 Availability of adequate financial resources required to implement wide-ranging NDC goals presents a major challenge. India has proactively pursued actions on climate change and achieved a reduction in emission intensity of GDP by 21 per cent over the period 2005-2014 as per India's second Biennial Update Report (BUR). However, to fully implement our NDC in a timely manner, the country requires enhanced new and additional financial resources, technological support and capacity building. New and additional financial resources and technological support to the developing countries was committed to by the developed countries under the Paris Agreement and this needs to be implemented.

6.23 An integrated approach is required at the domestic and international front to get the necessary resources essential for apposite climate action. Further, it is important to note that the developed countries need to do much more than what they are currently committed to, achieve climate action at an appropriate level. The present scope, scale and speed of international climate finance is, however, insufficient as the climate finance requirements run into trillions of dollars as against a commitment of US\$ 100 billion each year by 2020 by the developed countries, a very modest obligation but which has yet to be realized.

MULTILATERAL NEGOTIATIONS ON CLIMATE CHANGE

6.24 Since the Rio Conference and the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, the multilateral regime on climate change has evolved and adopted a number of agreements and decisions to strengthen the global response to address the problem of climate change. The latest treaty - the Paris Agreement was adopted under UNFCCC in December 2015 to enhance the implementation of the Convention. Its central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century to well below 2 degrees celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees celsius through enhanced support from developed countries to the developing countries. A brief history of the agreements and decisions adopted from Rio Earth Summit in 1992 is brought out in Figure 6.

**Figure 6: Rio Summit 1992 to the 24th Session of the Conference of Parties (COP 24)-
A brief history of the decisions taken**



Source: Various COP Decisions. GCF – Green Climate Fund

25th Session of the Conference of Parties (COP 25)

6.25 The COP 25 decision text, titled ‘Chile Madrid Time for Action’, emphasized the continued challenges that the developing countries face in accessing financial, technology and capacity-building support. It recognized the urgent need to enhance the provision of support to the developing country Parties to enable them to strengthen their national adaptation and mitigation efforts. The decision also recalled the commitment made by the developed country Parties to the goal of mobilizing jointly US\$ 100 billion per year by 2020 to address the needs of the developing country Parties. On the issue of global ambition for combating climate change, the decision adopted provided for a balanced and integrated view that includes not only efforts for climate change mitigation, but also for adaptation and ‘means of implementation’ support from the developed country Parties to the developing country Parties.

26th Session of the Conference of Parties (COP 26) and Post 2020 Issues

6.26 Due to COVID-19 pandemic, the COP 26 and the preceding UNFCCC subsidiary bodies’ sessions has now been postponed to 2021. COP 26 is expected to take forward the discussions and reach consensus on the transparency mechanism; Article 6 (market and non-

market mechanisms); common time frames for nationally determined contributions; long-term climate finance etc. The other important issues for COP 26 include governance of Warsaw International Mechanism for loss and damage, continued work on pre-2020 implementation and launch of second periodic review of the long-term global goal under the Convention and of overall progress towards achieving it. On finance matters, it is essential to arrive at a consensus on the definition of climate finance and on a common accounting methodology for assessment and evaluation of climate finance. This is also critical for initiating the process required for establishing the new collective goals on climate finance, post 2020, based on the requirements of the developing country parties.

ALIGNING FINANCE WITH SUSTAINABILITY

Augmenting Finance for Sustainable Development

6.27 There is a coherent move to augment financing for sustainable development. Consistent with the aspirational vision for the financial sector in India, the Government's development priorities and the need to support the well-being of the people, several measures have already been taken in the past few years and further steps are being taken. These include the following:

- (i) National Voluntary Guidelines for Responsible Financing² was finalized in 2015. These are financial sector-specific guidelines that combine and adapt international and national best practices. The guidelines are a voluntary instrument and raise the bar of conduct for financial institutions beyond compliance. These guidelines lay down 8 principles, which cover different aspects of environmental, social and governance (ESG) responsibilities to inform business action.
- (ii) In 2015, the RBI included lending to social infrastructure and small renewable energy projects within the priority sector targets³. In September 2020, the loan limits for renewable energy were doubled to ₹30 crores and for individual households, the renewable energy loan limit is ₹10 lakhs per borrower.⁴
- (iii) The 'Voluntary Guidelines on Corporate Social Responsibility'⁵ were issued in 2009 to mainstream the concept of business responsibility. The guidelines were developed based on India's socio-cultural context and priorities as well as global best practices including United Nations Guiding Principles on Business & Human Rights, Paris Agreement on Climate change etc. The revised guidelines were released as the National Guidelines on Responsible Business Conduct⁶ in March 2019. The NGRBC has been designed to assist businesses to embrace the principle of responsible conduct.
- (iv) In order to reflect the NGRBC principles in the Business Responsibility Reporting (BRR) framework, a Committee was constituted to review and update the BRR

² <https://www.cafra.org.in/sfControl/content/LearningTakeaWays/1213201764617PMNationalVoluntaryGuidelinesforResponsibleFinancing.pdf>

³ <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=10497&Mode=0>

⁴ <https://www.rbi.org.in/scripts/NotificationUser.aspx?Mode=0&Id=11959>

⁵ <http://www.mca.gov.in/SearchableActs/Section135.htm>

⁶ https://www.mca.gov.in/Ministry/pdf/NationalGuideline_15032019.pdf

formats for listed as well as unlisted companies. In its Report⁷ submitted in May 2020, the Committee recommended a new reporting framework called the ‘Business Responsibility and Sustainability Report (BRSR)’ to better reflect the intent and scope of reporting on non-financial parameters by both listed as well as unlisted companies above specified thresholds of turnover and/or paid-up capital. The Committee envisions that the information captured through BRSR filings be used to develop a Business Responsibility-Sustainability Index for companies.

- (v) The Securities and Exchange Board of India (SEBI) through its ‘Listing Regulations’ in 2012 mandated the top 100 listed entities by market capitalization to disclose their performance against the NVGs using a Business Responsible Report (BRR) format⁸ from an environmental, social and governance perspective. This was extended to top 500 listed entities in 2015-16. In December 2019, SEBI extended the BRR requirement to top 1000 listed companies by market capitalization from 2019-20⁹. SEBI had also issued a circular in 2017, which stated that Integrated Reporting¹⁰ may be adopted on a voluntary basis from the financial year 2017-18 by the top 500 listed entities which are required to prepare BRR.
- (vi) Going beyond the innovative sustainability-themed capital market products such as Green Bonds or Social Impact Bonds, India is moving in the direction of creating a Social Stock Exchange (SSE), under the regulatory ambit of SEBI for raising capital by Social Enterprises working for the realization of a social welfare objective. SEBI constituted a Working Group (WG) on Social Stock Exchanges in September 2019¹¹. The Working Group submitted the Report¹² on 1st June 2020. The Working Group has outlined its vision and made recommendations, which include participation of Non-profit organizations (NPOs) and For-profit enterprises (FPEs) on SSE subject to committing to minimum reporting requirements. Additionally, the WG has also recommended standardization of financial reporting by NPOs on SSE. In terms of the recommendations of the WG, there is a need to develop a framework for on-boarding NPOs and FPEs on the SSE prescribe disclosure requirements relating to financials, governance, performance etc. and dwell upon aspects related to social impact, social audit, and information repositories etc. In September 2020, SEBI has constituted a technical group to develop and make recommendations on these aspects¹³.

⁷ http://www.mca.gov.in/Ministry/pdf/BRR_11082020.pdf

⁸ https://www.sebi.gov.in/sebi_data/attachdocs/1344915990072.pdf

⁹ <http://egazette.nic.in/WriteReadData/2019/214955.pdf>

¹⁰ https://www.sebi.gov.in/legal/circulars/feb-2017/integrated-reporting-by-listed-entities_34136.html

¹¹ https://www.sebi.gov.in/media/press-releases/sep-2019/sebi-constitutes-working-group-on-social-stock-exchanges-sse-_44311.html

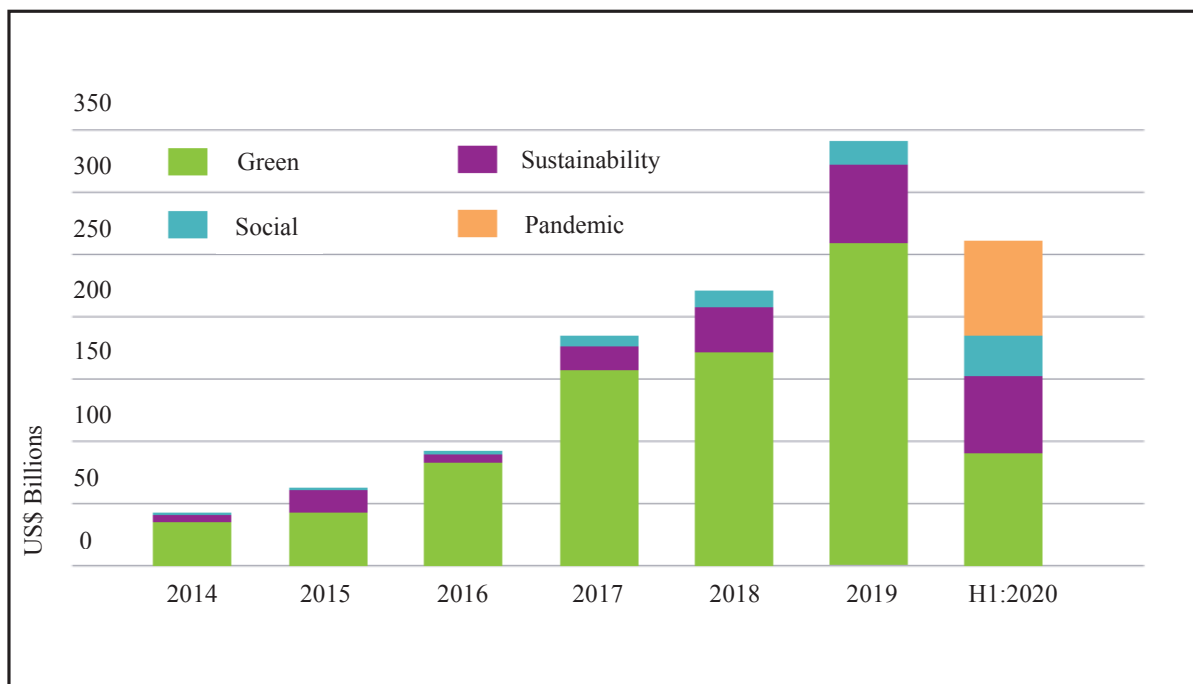
¹² https://www.sebi.gov.in/reports-and-statistics/reports/jun-2020/report-of-the-working-group-on-social-stock-exchange_46751.html

¹³ https://www.sebi.gov.in/media/press-releases/sep-2020/sebi-constitutes-technical-group-on-social-stock-exchange_47607.html

(vii) Green bonds are debt instrument issued by an entity for raising funds from investors and the proceeds of a green bond offering are used towards financing ‘green’ projects. Green bonds are an effective vehicle to raise capital for renewable energy projects while meeting the environmental targets of the investors and climate targets of the Government of India. In 2017, to give push to Green Bonds issuances in India, SEBI issued guidelines¹⁴ on green bonds including listing of green bonds on the Indian stock exchanges. The launch of green indices such as S&P BSE CARBONEX (in 2012), MSCI ESG India (in 2013), and S&P BSE 100 ESG Index (in 2017) allows passive and retail investors to invest in ‘green’ companies. As of 24th December, 2020, eight ESG mutual funds have been launched in India.

6.28 The cumulative issuance of global green bonds crossed US\$ 1 trillion mark in 2020. Despite overall growth in the global bond markets, green bond issuance in the first half of 2020 slowed down from 2019. Green bond volumes were the most negatively impacted of all themes, but there were positive signs in the market that point to increasing demand and better performance of green vs. vanilla debt instruments¹⁵ (Figure 7). India has the second largest green bond market among the emerging markets after China (Figure 8).

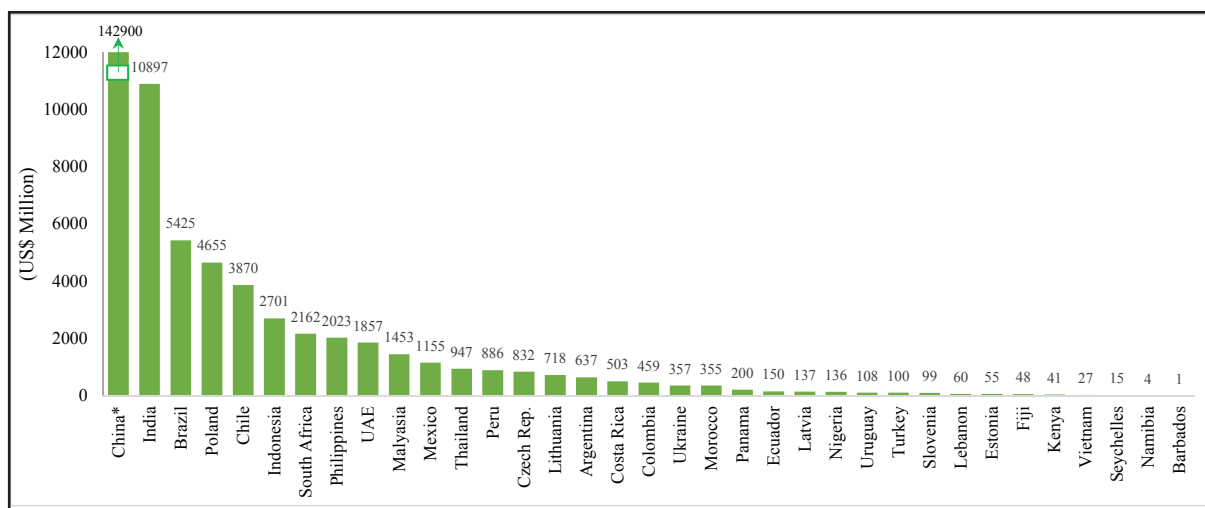
Figure 7: Thematic split of Sustainable Debt Market in H1 2020



Source: Climate Bond Initiative; Sustainable Debt Global State of the Market H1 2020

¹⁴ https://www.sebi.gov.in/legal/circulars/may-2017/disclosure-requirements-for-issuance-and-listing-of-green-debt-securities_34988.html

¹⁵ <https://www.climatebonds.net/system/tdf/reports/cbi-sustainable-debt-global-sotm-h12020.pdf?file=1&type=node&id=54589&force=0>

Figure 8: Major Emerging Markets for Green Bonds Issuance 2012-19 (US\$ Million)

Source: Emerging Market Green Bonds Report 2019

Note: * The break in the column for China represents much higher number than the scale.

6.29 With the objective of promoting global cooperation in sustainable finance, India joined the European Commission-led International Platform on Sustainable Finance (IPSF) in October 2019 as one of the founding members. The 16-member jurisdiction platform accounts for 50 per cent of the world population, almost 50 per cent of global GDP and about 55 per cent of global GHG emissions. The platform is designed as a member driven informal and inclusive entity. The Platform acknowledges that the global nature of financial markets has the great potential to help finance the transition to a green, low-carbon and climate resilient economy by linking financing needs to global sources of funding. The platform would act as a forum for facilitating exchanges and, where appropriate, coordinating efforts on initiatives and approaches to environmentally sustainable finance, in particular in the areas of taxonomies, disclosures, standards and labels, while acknowledging differences in national and regional contexts.

6.30 India and United Kingdom have agreed during the 10th India-UK Economic and Financial Dialogue held on 28th October 2020 to establish a bilateral Sustainable Finance Forum to drive forward deeper cooperation between the UK and India on sustainable finance. The Forum would draw members from finance ministries/treasury and other important stakeholders from both sides.

Investing in Resilience for Sustainable Development

6.31 As per the Global Climate Risk Index, in 2018, India lost US\$ 37 billion due to climate events such as cyclones battering the east coast and flooding and landslides in Kerala where about a quarter million people were displaced, 20,000 houses and 80 dams were destroyed. During 1998-2017 these losses added up to US\$ 79.5 billion (Eckstein, et al. 2019). On the other side, in 2019, 42 per cent of land faced drought conditions worsening the farm crisis (Kapil 2019). Chennai's record-breaking 272 mm rainfall in 12 hours (2015) affected over 10 thousand MSMEs and reportedly caused US\$ 250 million in damage (Idicheria, et al. 2016). International Labour Organisation's study concludes that India would lose 5.8 per cent of its working hours by 2030 due to heat stress. Moreover, because of its large population, India is in

absolute terms expected to lose the equivalent of 34 million full-time jobs in 2030 as a result of heat stress. Although most of the impact in India will be felt in the agricultural sector, more and more working hours are expected to be lost in the construction sector, because of heat stress. These losses underscore the need for investment in building resilience and adoption of policies for mainstreaming risks through building appropriate social protection systems, including the provision of social insurance and social assistance which can help workers and their families to adapt to the consequences of heat stress (ILO 2019).

Climate Risk Insurance

6.32 Climate risk insurance is an important tool for providing security against loss of livelihoods and of assets as a consequence of disasters. The basic risk faced by agriculturalists is that of weather variability and the uncertainty of crop yield. The magnitude and intensity of the same is especially high in India, considering that an overwhelming majority of farmers who excessively depend on the farming sector have extremely limited means and resources to cope with the disastrous consequences of crop failure. Thus, given the significant contribution of the agricultural sector in the Indian economy, coupled with looming “climatic aberrations,” crop insurance becomes a necessity to mitigate the risks associated with a majority of the country’s farmers. The weather index insurance for agriculture introduced in 2003, did not find much success as it suffered from complex processes, moral hazard, adverse selection, and low penetration of institutional credit. Insurance in Indian agriculture is challenging because of – a large number of small and scattered landholdings, varying climatic and soil conditions, lack of basic data, and variety of agricultural practices, making it practically impossible to implement the scheme on a wide scale. Further, there is widespread lack of knowledge about the nature and functions of crop insurance amongst the farmers, a majority of whom are illiterate and poor.

6.33 Studies suggest moving towards parametric insurance that agrees to make payment on just the occurrence of a climate event, data for which is easily accessible. Further, the use of climate information services could also be useful. The example of the Karnataka State Natural Disaster Monitoring Centre’s *Varuna Mitra* which has not only benefitted 3.5 lakh farmers through its weather advisories but also provides data to insurers at panchayat scale to improve pay-outs to farmers (Manjunatha 2018) is a case in point.

6.34 With increasing conversion of natural/primary forests to secondary forests driven by agriculture and development (Padma 2018) risk of new infectious diseases is high; requiring climate risk insurance to include pandemic insurance as well. An example in this regard is the insurance bought by Wimbledon tennis tournament against a pandemic occurrence in 2003 following the SARS outbreak, thus receiving an insurance pay-out of US\$ 142 million in 2020 which was utilised to pay the prize money and staff wages (Insurance Journal 2020).

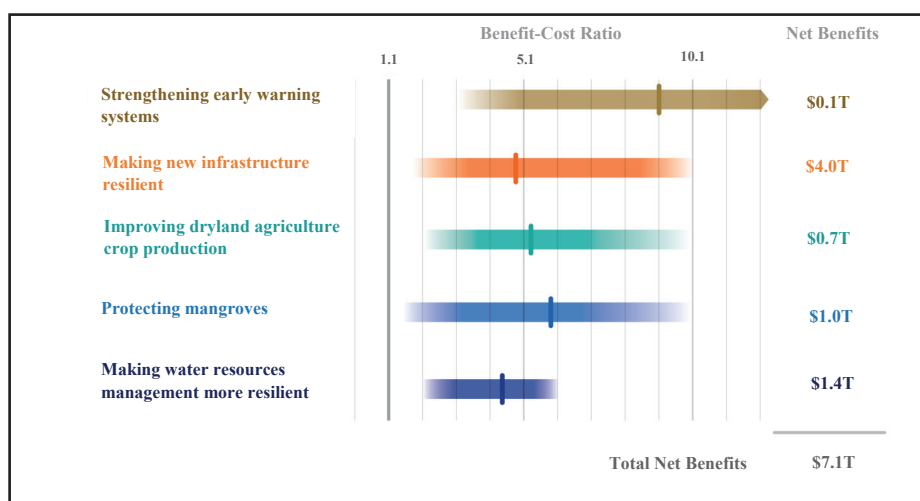
Developmental Schemes and Protection of Environment-Need for Convergence

6.35 Many Central and State level incentive schemes (especially KUSUM and state solar policies) are promoting uptake of low carbon technologies such as decentralised solar systems for community scale water supply and irrigation as part of its agenda to build rural resilience in rainfed regions. Some water supply schemes mandate ground water assessments before approving solar based pumping installations. However, these assessments do not consider climate projections for the regions. Similarly, solar irrigation pumps are being subsidised all over the country without any incentive for farmers to use ground water judiciously. Such

schemes have an immense impact in reducing production losses during dry periods; but can also lead to unsustainable extraction of ground water. These incentive schemes need to be designed by considering cropping patterns, local environment, and climate projections, and should further incentivise farmers to adopt water conservation and rainwater harvesting practices. Such convergence will not only build local resilience while transitioning to low carbon technology but will also influence the credit market in developing guidelines for supporting much needed technological advancement in the agriculture sector.

6.36 The Global Commission on Adaptation (GCA) (Figure 9) in its flagship report concluded that investing US\$ 1.8 trillion globally in five areas i.e. strengthening early warning systems, making new infrastructure resilient, improving dryland agriculture crop production, protecting mangroves and making water resources management more resilient-from 2020 to 2030 could generate US\$ 7.1 trillion in total net benefits, as overall rate of return on such investments is high with benefit-cost ratios ranging from 2:1 to 10:1 and higher. In addition to avoiding losses, investing in the future can provide economic benefits now, by reducing risk, increasing productivity, and driving innovation while continuing to restore the environment. Failing to do so will, however, undermines potential growth and prosperity (GCA 2019).

Figure 9: Benefits and Costs of Illustrative Investments in Adaptation



Source: GCA 2019¹⁶, T stands for trillion.

INDIA'S INITIATIVES AT THE INTERNATIONAL STAGE

International Solar Alliance (ISA)

6.37 International Solar Alliance (ISA) has recently launched two new initiatives – a ‘*World Solar Bank*’ and ‘*One Sun One World One Grid Initiative*’ - of global import that are poised to

¹⁶ This graph is meant to illustrate the broad economic case for investment in a range of adaptation approaches. The net benefits illustrate the approximate global net benefits to be gained by 2030 from an illustrative investment of US\$1.8 trillion in five areas (the total does not equal the sum of the rows due to rounding). Actual returns depend on many factors, such as economic growth and demand, policy context, institutional capacities, and condition of assets. Also, these investments neither address all that may be needed within sectors (for example, adaptation in the agricultural sector will consist of much more than dryland crop production) nor include all sectors (as health, education, and industry sectors are not included). Due to data and methodological limitations, this graph does not imply full comparability of investments across sectors or countries. (GCA 2019)

be instrumental in bringing about solar energy revolution globally. The proposed *World Solar Bank* would cater to the need for dedicated financing window for solar energy projects across the members of ISA. It is expected to provide low-cost financing at favorable terms for solar energy projects as well as engage in co-financing with other multilateral/bilateral development financial institutions. The ‘*One Sun One World One Grid*’ vision was laid down by the Hon’ble Prime Minister of India at the first assembly of the ISA. The initiative aims to create an interconnected green grid that will enable solar energy generation in regions with high potential and facilitate its evacuation to demand centers. ISA’s progress in solar rooftop programme has been equally noteworthy, with a demand of more than 1 GW aggregated from member countries. ISA has diversified its programmatic focus onto health sector, cold storage chains for agriculture & vaccines and other innovative applications of solar energy.

6.38 ISA’s Framework Agreement mandates partnerships with various stakeholders, including public and private corporate sector, to promote sustainable, clean and affordable solar energy. To institutionalize its partnership with the Corporate sector, the ISA Secretariat has recently launched a ‘Coalition for Sustainable Climate Action’ comprising of global public and private corporates. The partner organisations under the coalition would benefit from the network and the platform provided by ISA to leverage and demonstrate their expertise in promoting sustainable development globally.

6.39 ISA organized the First World Solar Technology Summit (WSTS) in September 2020 with an objective of showcasing to Member Countries the state of the art and next-generation solar technologies. The summit also provided a platform to deliberate on the way forward for increasing access to new technologies at an affordable cost.

Coalition for Disaster Resilient Infrastructure

6.40 Since the launch of the Coalition for Disaster Resilient Infrastructure (CDRI) in September 2019 at the UN Climate Action Summit, the need for disaster resilience in all aspects of human activity has been unambiguously highlighted by the COVID-19 pandemic. CDRI is another expression of India’s commitment to work with all the partners to address global challenges. The Coalition functions as an inclusive multi-stakeholder platform led and managed by national governments, where knowledge is generated and exchanged on different aspects of disaster resilience of infrastructure. As of December 2020, 19 countries and 4 multilateral organizations have become members of the Coalition. The CDRI is co-chaired by India and the United Kingdom (UK).

6.41 The CDRI is working on enhancing the resilience of power sector in the state of Odisha, which was impacted by Cyclone Fani on the eastern coast of India in May 2019. On transport sector, CDRI has initiated a global study on disaster resilience of airports. The study will look at the airports that were affected by disasters but which have successfully managed the extreme events. The coalition has initiated the process to carry out the national level risk and resilience assessment of infrastructure to support better decision making and policy development and thus protect infrastructure investments from disasters and climate change. In the first phase, the CDRI will develop a framework for risk and resilience assessments using Indian transportation infrastructure as the basis. Following this, a thorough analysis is intended to be undertaken in order to understand the level of impact that will be caused by disasters. A detailed vulnerability

assessment will be performed of the elements related to transportation infrastructure, services and operations in India.

6.42 CDRI is working on expanding its membership to include countries from all the continents and at varied level of development and risk. Future initiatives are aimed at supporting member countries in learning from disasters to support recovery and reconstruction, improve governance and financing for creation of resilient infrastructure, creation of resilience standards and decision support systems, and promoting innovation in the field of disaster resilient infrastructure.

CONCLUSION AND WAY FORWARD

6.43 There is an increasing recognition that the sustainable macroeconomic development should entail an alignment of both climate and economic policies to the extent possible. India's endeavour is to ensure a robust growth and a sustainable development path while combating the climate change risks on best effort basis. India has taken a number of initiatives on both mitigation and adaptation strategies with emphasis on clean and efficient energy system; resilient urban infrastructure; water conservation & preservation; safe, smart & sustainable green transportation network; planned afforestation, as well as by supporting various sectors such as agriculture, forestry, coastal and low-lying systems and disaster management. ISA and CDRI are evidence of India's serious action at the international level.

6.44 The country is on its track to successfully decoupling its economic growth from GHG emissions. As per the second BUR submitted to UNFCCC in 2018, India's emission intensity of GDP reduced by 21 per cent in 2014 over the level of 2005. To ensure the use of cleaner automobile fuel, India has also leapfrogged from BS-IV to BS-VI emission norms on 1st April, 2020, earlier than the initial date for adoption in 2024. The effort of the International Solar Alliance in solar energy revolution is noteworthy and it has brought to fruition the '*One Sun One World One Grid*' vision laid down by the Hon'ble Prime Minister of India.

6.45 India's proactive climate actions mainly rely on the domestic budgetary resources. Climate finance is critical to fulfil the execution of NDC targets submitted by India in a timely manner. Climate finance is an obligation of the developed countries as a part of their historical responsibility as they are the major contributors to the stock of GHG in the atmosphere accumulated since the industrial revolution. By 2020, the developed country partners had to fulfill the promised support of US\$ 100 billion per year in the form of climate finance to the developing nations. This has not happened. The lack of required momentum in the scope, scale and speed of climate finance from developed to developing countries needs to be addressed. The enhanced new and additional financial resources, technological support and support in capacity building should be mobilized and delivered to strengthen the on-going climate actions in developing nations like India.

CHAPTER AT A GLANCE

- Sustainable development remains core to India’s development strategy, despite several challenges emerging on account of the unprecedented crisis due to COVID-19 pandemic.
- The pandemic has challenged the health infrastructure, adversely impacted livelihoods and exacerbated the inequality in the food and nutritional availability in the country. This has reemphasized the criticality of having institutions and mechanisms that can facilitate the country to absorb exogenous shocks well.
- India has been taking several proactive climate actions to fulfil its obligations as per the principles of common but differentiated responsibilities and respective capabilities and equity. The first priority for India is adaptation as the country is highly vulnerable to extreme weather events.
- The NDC submitted by the country has been formulated keeping in mind the developmental imperatives of the country and is on a “best effort basis”. In its NDC, India has sought to reduce the emissions intensity of its GDP by 33 to 35 per cent below 2005 levels by the year 2030; achieve 40 per cent of cumulative electric power installed capacity from non-fossil fuel sources by 2030; and enhance forest and tree cover to create additional carbon sink equivalent to 2.5 to 3 billion tons of carbon dioxide by 2030.
- The country is on its track to successfully decoupling its economic growth from GHG emissions. As per the second BUR submitted in 2018, India’s emission intensity of GDP reduced by 21 per cent in 2014 over the level of 2005.
- The country is relying on domestic resources to implement adaptation and mitigation action on mission mode. The financing considerations will remain critical especially as the country steps up the targets substantially.
- The implementation of NDC has started from 1st January 2021. There is a huge gap between resource availability and the requirements, implementation of wide-ranging NDC goals presents a major challenge
- COP 26 now scheduled in 2021 is expected to discuss and arrive at a consensus on transparency mechanism; Article 6 (market and non-market mechanisms); common time frames for nationally determined contributions; long-term climate finance etc. On finance matters, it is essential to arrive at a consensus on the definition of climate finance and on a common accounting methodology for assessment and evaluation of climate finance.
- In 2017, to give push to green bonds issuances in India, SEBI issued guidelines on green bonds including their listing of green bonds on the Indian stock exchanges. The cumulative issuance of global green bonds crossed US\$ 1 trillion mark in 2020.

- Climate risk insurance is an important tool for providing security against loss of livelihoods and of assets as a consequence of disasters. Thus, given the significant contribution of the agricultural sector in the Indian economy, coupled with looming “climatic aberrations,” crop insurance becomes a necessity to mitigate the risks associated with a majority of the country’s farmers.
- ISA organized the First World Solar Technology Summit (WSTS) in September 2020 with an objective of showcasing to member countries the state of the art and next-generation solar technologies.
- CDRI is another expression of India’s commitment to work with all the partners to address global challenges. The Coalition functions as an inclusive multi-stakeholder platform led and managed by national governments, where knowledge is generated and exchanged on different aspects of disaster resilience of infrastructure. As of December 2020, 19 countries and 4 multilateral organizations have become members of the Coalition.

REFERENCES

- Barbiroglio, Emanuela. 2020. Green Bond Market Will Reach \$1 Trillion With German New Issuance. September 2. Accessed November 5, 2020. <https://www.forbes.com/sites/emanuelabarbiroglio/2020/09/02/green-bond-market-will-reach-1-trillion-with-german-new-issuance/?sh=54172e382e97>
- Bennett, Vanora. 2019. World’s first dedicated climate resilience bond, for US\$ 700m, is issued by EBRD. September 20. Accessed November 5, 2020. <https://bit.ly/315MCIT>.
- Climate Bonds Initiative. 2020. “Sustainable Debt Global State of the Market H1 2020”. <https://www.climatebonds.net/system/tdf/reports/cbi-sustainable-debt-global-sotm-h12020.pdf?file=1&type=node&id=54589&force=0>
- Eckstein, David, Vera Künzel, Laura Schäfer, and MaikWinges. 2019. Global Climate Risk Index 2020 : Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2018 and 1999 to 2018. Bonn: German watch. V. https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_10.pdf
- EPW, Vol. 45, Issue No. 06, 06 Feb, 2010, Crop Insurance in India: Changes and Challenges; <https://www.epw.in/journal/2010/06/commentary/crop-insurance-india-changes-and-challenges.html>
- GCA. 2019. Adapt Now: A Global Call for Leadership on Climate Resilience. Global Commission on Adaptation. https://cdn.gca.org/assets/2019-09/GlobalCommission_Report_FINAL.pdf
- Idicheria, C, A Neelakantan, A Graft, A Banerjee, K Kumar, Jessica Seddon, Eric Vaughan, and Samasundaram L. 2016. Transforming Chennai: Building Micro, Small and Medium Enterprise Resilience to Water-Related Environmental Change. Chennai: Mercy Corps. https://www.mercycorps.org/sites/default/files/2020-01/Transforming_Chennai_Okapi_Mercy_Corps.pdf

- IFC. 2020. Emerging Market Green Bonds Report 2019. Washington DC: Amundi Asset Management (Amundi) and International Finance Corporation (IFC). <https://www.ifc.org/wps/wcm/connect/a64560ef-b074-4a53-8173-f678ccb4f9cd/202005-EM-Green-Bonds-Report-2019.pdf?MOD=AJPERES&CVID=n7Gtahg>
- ILO and ADB, 2020, “Tackling the COVID-19 youth employment crisis in Asia and the Pacific”, <https://www.adb.org/sites/default/files/publication/626046/covid-19-youth-employment-crisis-asia-pacific.pdf>
- ILO. 2019. Working on a Warmer Planet: The Impact of Heat Stress on Labour Productivity and Decent work. Geneva: International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_711919.pdf
- Inderst, G., Kaminker, Ch., Stewart, F. (2012), “Defining and Measuring Green Investments: Implications for Institutional Investors Asset Allocations”, OECD Working Papers on Finance, Insurance and Private Pensions, No.24, OECD Publishing. https://www.oecd.org/finance/WP_24_Defining_and_Measuring_Green_Investments.pdf
- Indian Bank Association. “National Voluntary Guidelines for Responsible Financing”. <https://www.cafral.org.in/sfControl/content/ningTakeaWays/1213201764617PMNationalVoluntaryGuidelinesforResponsibleFinancing.pdf>
- Insurance Journal. 2020. Wimbledon Shows How Pandemic Insurance Could Become Vital for Sports, Other Events. April 13. Accessed November 5, 2020. <https://www.insurancejournal.com/news/international/2020/04/13/564598.htm>
- Kapil, Shagun. 2019. Drought watch: More than 44% of India now suffers. June 17. Accessed November 4 2020. <https://www.downtoearth.org.in/news/climate-change/drought-watch-more-than-44-of-india-now-suffers-65127>
- Larsen, Gaia, Giulia Christianson, and Niranjali Amerasinghe. 2019. So Far, Green Bonds Fail to Raise Much Money for Resilience. The Climate Resilience Principles Aim to Change That. October 15. Accessed November 5, 2020. <https://www.wri.org/blog/2019/10/so-far-green-bonds-fail-raise-much-money-resilience-climate-resilience-principles-aim>
- Manjunatha, A. V. 2018. Economic Impact Evaluation of Varuna Mitra on Agriculture - A 24x7 Interactive Help Desk of Karnataka State Natural Disaster Monitoring Centre. Bengaluru: Institute for Social and Economic Change
- MCA. “135. Corporate Social Responsibility”. <http://www.mca.gov.in/SearchableActs/Section135.htm>
- MCA. 2011. National Voluntary Guidelines on Social, Environmental & Economic Responsibilities of Business”. https://www.mca.gov.in/Ministry/latestnews/National_Voluntary_Guidelines_2011_12jul2011.pdf
- MCA. 2019. “National Guidelines on responsible Business conduct”. https://www.mca.gov.in/Ministry/pdf/NationalGuideline_15032019.pdf
- MCA. 2020. “Report of the Committee on Business Responsibility Reporting” <http://>

www.mca.gov.in/Ministry/pdf/BRR_11082020.pdf

- McKinsey & Company. 2019. More than values: The value-based sustainability reporting that investors want. <https://www.mckinsey.com/business-functions/sustainability/our-insights/more-than-values-the-value-based-sustainability-reporting-that-investorswant#>
- MoF. 2015. Report of the Committee set up to examine the financial architecture of the MSME sector. Department of Financial Services, Ministry of Finance
- OECD, 2020, The Impact of Covid-19 on Education Insights From Education At A Glance 2020, <https://www.oecd.org/education/the-impact-of-covid-19-on-education-insights-education-at-a-glance-2020.pdf>
- Padma, TV. 2018. “Reports say forest cover decreasing, contrary to government claims.” <https://india.mongabay.com/2018/05/reports-say-forest-cover-decreasing-contrary-to-government-claims/>
- RBI. 2007. “Corporate Social Responsibility, Sustainable Development and Non-Financial Reporting – Role of Banks”. <https://rbidocs.rbi.org.in/rdocs/notification/PDFs/82186.pdf>
- RBI.2020. “MasterDirections–PrioritySectorLending(PSL)–TargetsandClassification”. <https://www.rbi.org.in/scripts/NotificationUser.aspx?Mode=0&Id=11959>
- Reserve Bank of India (RBI). 2019. Report on Trend and Progress of Banking in India 2018-2019. <https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0RTP241219FL760D9F69321B47988DE44D68D9217A7E.PDF>
- SEBI. 2012. “Business Responsibility Reports”. https://www.sebi.gov.in/sebi_data/attachdocs/1344915990072.pdf
- SEBI. 2017. “Disclosure Requirements for Issuance and Listing of Green Debt Securities”. https://www.sebi.gov.in/legal/circulars/may-2017/disclosure-requirements-for-issuance-and-listing-of-green-debt-securities_34988.html
- SEBI. 2017. “Integrated Reporting by Listed Entities”. https://www.sebi.gov.in/legal/circulars/feb-2017/integrated-reporting-by-listed-entities_34136.html
- SEBI. 2019. “SEBI constitutes working group on ‘Social Stock Exchanges’ (SSE)”. https://www.sebi.gov.in/media/press-releases/sep-2019/sebi-constitutes-working-group-on-social-stock-exchanges-sse-_44311.html
- SEBI. 2020. “Report of the working group on Social Stock Exchange”. https://www.sebi.gov.in/reports-and-statistics/reports/jun-2020/report-of-the-working-group-on-social-stock-exchange_46751.html
- SEBI. 2020. “SEBI constitutes Technical group on Social Stock Exchange”. https://www.sebi.gov.in/media/press-releases/sep-2020/sebi-constitutes-technical-group-on-social-stock-exchange_47607.html
- The Aga Khan Rural Support Programme (India), Action for Social Advancement, Grameen Sahara, i-Saksham, PRADAN, SAATHI-UP, SeSTA, SevaMandir and

Transform Rural India Foundation, 2020, “How is the hinterland unlocking? Findings from 2nd round of survey”, https://villagesquare.in/webinar/wp-content/uploads/2020/08/VAF-CSO-Covid19-survey-round-2-3-8-20-webinar-slides_Kiran-Limaye.pdf

- The Gazette of India. 2019. <http://egazette.nic.in/WriteReadData/2019/214955.pdf>.
- Trucost. 2015. “Natural Capital Risk Exposure of the Financial Sector in India. <http://www.emergingmarketsdialogue.org/wp-content/uploads/2018/02/resources.pdf>
- UNEP Inquiry. 2016. Green Bonds: Country Experiences, Barriers and Options. http://unepinquiry.org/wp-content/uploads/2016/09/6_Green_Bonds_Country_Experiences_Barriers_and_Options.pdf
- UNESCO, 2020, COVID-19 Impact on Education Data, <https://en.unesco.org/covid19/educationresponse>