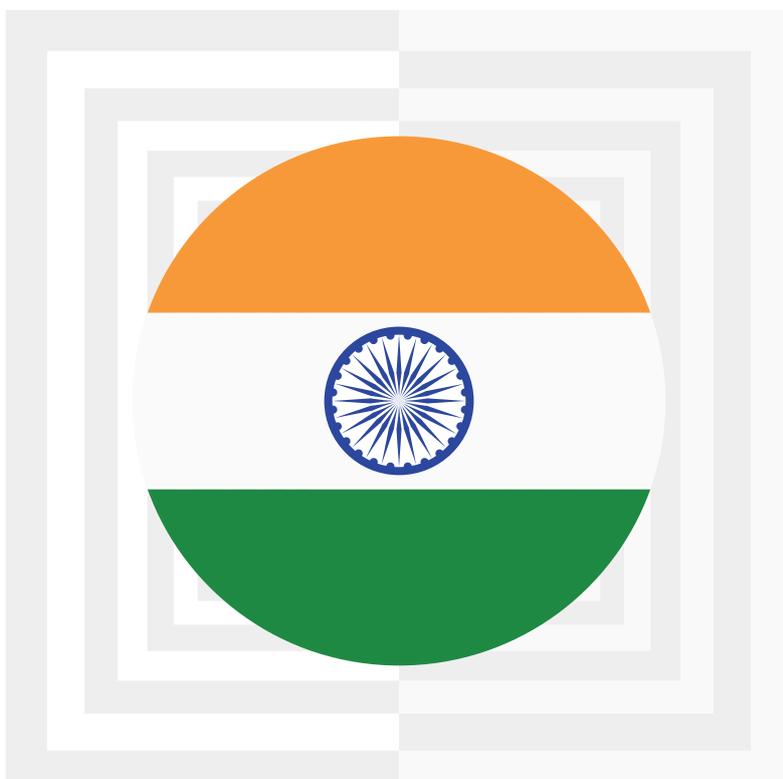


# Delivering a Sustainable Financial System in India

FINAL REPORT



## The Inquiry

The Inquiry into the Design of a Sustainable Financial System has been initiated by the United Nations Environment Programme to advance policy options to improve the financial system's effectiveness in mobilizing capital towards a green and inclusive economy—in other words, sustainable development. Established in January 2014, it published its final report, *The Financial System We Need*, in October 2015 and is currently focused on actions to take forward its findings.

More information on the Inquiry is at: [www.unep.org/inquiry](http://www.unep.org/inquiry) and [www.unepinquiry.org](http://www.unepinquiry.org) or from: Ms. Mahenau Agha, Director of Outreach [mahenau.gha@unep.org](mailto:mahenau.gha@unep.org)

## FICCI

FICCI, the apex industry organization in India, was established in 1927 with a nationwide membership of over 1,500 corporates and over 500 chambers of commerce and business associations, and speaks directly and indirectly for over 250,000 business units. FICCI facilitates business-to-business linkages, promotes trade and investment linkages, creates awareness on key issues for the economy, provides inputs for policymaking, facilitates government-industry exchange and promotes bilateral ties. FICCI's Committees and Task Forces on Environment, Climate Change, Solar Energy, Wind Energy, Bio-Energy, and the FICCI water Mission including the India Sanitation Coalition, serve as platforms for policy deliberations and interface with the government on key policy and regulatory developments. The FICCI Capital Markets Committee ensures development of a healthy and vibrant Indian capital market.

## About this report

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## Acknowledgements

The authors would like to express their gratitude to the members of the India Advisory Council for their insights and support and particularly acknowledge the leadership of Ms. Naina Lal Kidwai, who acted as Chairman of the Advisory Council. The list of the India Advisory Council members is at the end of this report.

The authors extend their gratitude to the various officials of the Ministry of Finance, Ministry of Environment, Forest and Climate Change, Ministry of New and Renewable Energy, IREDA, various public and private sector banks in India, and various stakeholders of the Indian banking, capital markets, insurance, clean energy, environment space as well as a cross sectoral representation of Indian business and industry who have provided their feedback and participated in the events of and related to the UNEP Inquiry.

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with



# Delivering a Sustainable Financial System in India

FINAL REPORT



# MESSAGE FROM THE UNION MINISTER FOR POWER, COAL, NEW AND RENEWABLE ENERGY



Under the leadership of Honourable Prime Minister Shri Narendra Modi ji, we have taken up renewable energy as an article of faith. Accordingly, India has the world's most ambitious plans for clean energy and this achievement requires significant planning and collaborative efforts of all stakeholders including the financial sector.

I am glad that the FICCI UNEP report highlights solutions for the financial system to deliver these plans. I am sure this report will be immensely beneficial to all the stakeholders.

Hon. Piyush Goyal  
Union Minister for Power, Coal, New and Renewable Energy



# MESSAGE FROM THE MINISTER OF STATE FOR FINANCE



I am glad that the FICCI UNEP Inquiry report for India highlights the steps that are being taken to harness India's financial system for clean energy, clean water and sustainable development as a whole.

I fully support the call for a national green finance strategy to scale up these initiatives.

Hon. Jayant Sinha  
Minister of State for Finance



# PREFACE



*“Sustainable development is the pathway to the future we want for all. It offers a framework to generate economic growth, achieve social justice, exercise environmental stewardship and strengthen governance.”*  
Ban Ki-moon, United Nations Secretary-General

The quote above from the Secretary-General of United Nations, Mr. Ban Ki-moon, sums up why our development trajectory should be altered towards a sustainable pathway. Sustainable, inclusive and equitable growth can alone guarantee a social atmosphere of peace and stability within a country and it can take environmental stewardship to new heights as the natural resources are then regarded as common property resources that should be conserved and utilized by all. Though such a growth pattern may seem like a distant dream for a rapidly growing economy like ours with multiple power centres, the growing concern towards environmental protection and inclusiveness cannot be ignored.

India today is witnessing an interesting change within the corporate sector. Indian companies are gaining worldwide recognition and are embracing sustainability, going beyond compliance to gain shared value and good reputation in the international business community. All this is basically voluntary in nature, since corporates realize the long-term benefits associated with this positive value creation. The government is laying a strong emphasis on sustainable development and its integration across the system.

Momentum has been growing in the financial sector as well. This report captures the sustainable financing momentum that is slowly building and how it needs to be accelerated. The financial community in India is waking up to the fact that sustainability-related information from companies can be a sustainable tool in lending and investment decisions. Many institutional investors are requiring disclosure from companies in which they invest with regard to water, energy efficiency and impact on forests for themselves and also from their supply chain. A lot can be done to build on the momentum that existing initiatives, whether by the Reserve Bank of India or various private and national banks, financial institutions, capital market players and stock exchanges, have provided. The capacity of the financial sector around a sustainable financing paradigm is also a critical need.

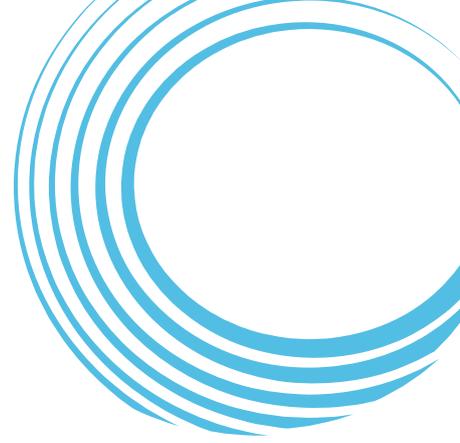
The UNEP Inquiry work in India started at a time that was most conducive for bringing about a directional change in the financial sector’s thought process on sustainable lending and investing. The most important and difficult task in front of the Advisory Council was to firstly map out these stand-alone initiatives and gauge their impact and secondly to recommend how they can become strong, replicable and effective as instruments for change. Since 2012, India has witnessed a growing momentum in a number of initiatives in this direction and the India Inquiry had the task to consolidate the efforts and create a document that not only makes people aware about the efforts taken by the Indian financial sector but importantly to

provide a framework for concerted action towards creation of a sustainable financing ecosystem in the country which will extend much beyond the India Inquiry report.

The successful completion of the Inquiry's work in India and the launch of this report is just the beginning of the revolutionary change that can be envisioned for the country, but will prove to be one of the most critical nodes in the fabric of sustainable development.

Naina Lal Kidwai  
Chair, UNEP Inquiry India Advisory Council  
Member, UNEP Inquiry Global Advisory Council  
Chair, FICCI Water Mission  
Past President, FICCI





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# EXECUTIVE SUMMARY

Financing India's goals for inclusive and sustainable growth requires the mobilization of additional low-cost, long-term capital. Raising incomes for the 800 million people living on less than US\$2 per day, generating livelihoods for the 12 million people entering the workforce every year and generating the natural resource base at a time of climate change require innovative approaches to the challenge of sustainable finance.

This report presents the results of an 18-month process of dialogue and analysis in India to identify key steps to respond to this challenge through building a sustainable financial system. The private sector led this process, working closely with the government of India and key stakeholders, and in partnership with the UNEP at the international level.

The findings of the India Inquiry are based on the understanding of the real economy, growth imperatives, national priorities, financial system architecture and the gradual momentum on sustainable financing. India has a comprehensive approach to reducing the resource and pollution intensity of growth and delivering clean energy and water. India is also taking the lead globally, for example, through the new International Solar Alliance.

Section 2 sets out the strategic needs for sustainable finance across key sectors of India's economy, such as manufacturing, infrastructure, agriculture and small enterprises. Just in terms of basic infrastructure alone, at least US\$1 trillion is required every five years, half of which needs to come from the private sector. Key challenges include overcoming the mismatch between long-term assets and short-term credit provision, as well as the imperative of attracting additional flows of foreign public and private capital.

Over the past decade, the pace of Indian innovation in sustainable finance has accelerated involving both a range of voluntary market-led initiatives as well as policy actions. Recent steps profiled in Section 3 include:

- the launch of national voluntary guidelines for responsible financing by the Indian Banks Association
- the decision by the Reserve Bank of India to include social infrastructure and decentralized renewable energy within the Priority Sector Lending requirements for banks
- the issuance by the Securities and Exchange Board of India (SEBI) of requirements for the development of the green bond market
- the approval of the Pradhan Mantri Fasal Bima Yojana initiative to extend crop insurance
- the increase in the coal cess, raising funds for the National Clean Energy Fund (NCEF).

The recommendations of the India Inquiry are based on this positive momentum – and the premise that the participation of the private sector and the availability of adequate finance are two of the framework conditions for India to achieve sustainable development.

The India Inquiry recommendations cover **six thematic areas** focusing specifically on action within the financial system:

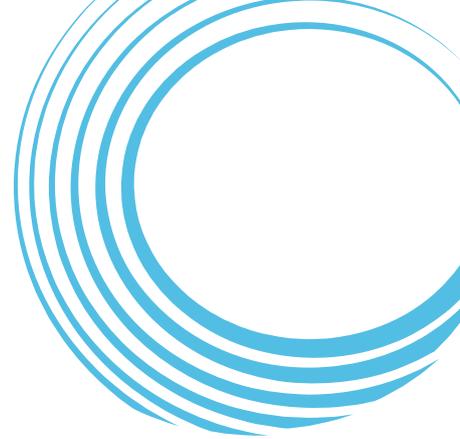
1. **Developing a sustainable capital markets strategy:** Building on SEBI's recent market guidelines, credit enhancement, adjustment to risk weightings and fiscal incentives could help further scale up the green bond market. Infrastructure investment trusts – known as yieldcos in the US – also have considerable potential to raise equity capital for illiquid green assets.

2. **Strengthening keystone financial institutions:** The pivotal role of the Indian Renewable Energy Development Agency (IREDA) could be further developed through building products for take-out, guarantees and loan-life extension. The NCEF's effectiveness could be improved through a well-articulated vision and revisions to operational guidelines.
3. **Aligning financial regulations with sustainability:** Further action can be taken to make additional sustainable finance projects admissible under Priority Sector Lending requirements. In addition, renewable energy could be given its own exposure limit outside of the overall power sector. Finally, the new Indian Financial Code (IFC) presents an opportunity to mainstream sustainability considerations in the regulation of India's financial system.
4. **Building financial sector capacities:** The capacity of the financial sector needs to be further developed in several areas, notably in financial ratings, financial disclosure and 'green credit' decision-making including for agricultural commodities and forestry.
5. **Increasing access to sustainable finance:** Access to sustainable finance is still lacking in many areas, notably for the Small and Medium Enterprises (SME) sector in terms of driving energy saving and adaptation to climate impacts. Further incentives are also required to channel finance into water, sanitation and waste management.
6. **Mobilizing international financial flows:** India has considerable opportunities to leverage the Green Climate Fund as well as the new International Solar Alliance. Finally, 'green credit' from overseas can be increased through changes to external commercial borrowing rules, while foreign institutional investors can be attracted through mechanisms such as the Green Infrastructure Investment Coalition, where India is strongly represented.

Within the contours of these six thematic areas of interventions, policymakers, regulators and financial market participants can embrace the beginning of a new design of the financial system that responds to the needs, challenges and opportunities arising out of India's sustainable growth objectives.



# 1 INTRODUCTION



*The business case for financing of sustainability has to be created. The UNEP Inquiry along with FICCI has set up an India Advisory Council to propose practical solutions for creating a framework for sustainable financing.*  
Naina Lal Kidwai<sup>1</sup>

In January 2014, the United Nations Environment Programme (UNEP) launched a two-year Inquiry into the Design of a Sustainable Financial System, with the aim to advance policy options that can change the financial system's effectiveness in mobilizing capital towards a sustainable and inclusive economy. Its focus is on how the financial 'rules of the game' – incentives, standards, regulations and policies – can be better aligned with long-term sustainable development. The Inquiry's global report<sup>2</sup> was published in October 2015 – and the Inquiry's mandate has been extended for a further two years, moving from 'design to delivery'.

The Inquiry converged at a critical juncture in the multilateral calendar – the year 2015. The global community adopted last year a new set of Sustainable Development Goals (SDGs) as successors to the Millennium Development Goals (MDGs) and a new international climate change agreement in the form of the Paris Agreement. The Inquiry is designed to provide a holistic view of international action aimed at influencing the interplay between the financial system (both local and global) and broader sustainable development and climate goals; both are collectively referred to as 'sustainability' throughout the course of in this report.

## BOX 1: EMERGING INTERNATIONAL PRACTICES

**Brazil:** Brazil's Central Bank has established environmental risk management requirements for banks, and is working with market actors in establishing how environmental lender liability might improve both environmental outcomes to Brazil and financial returns to banks.

**China:** The People's Bank of China has established a Green Finance Task Force, co-convened with the UNEP Inquiry, and has collaborated with dozens of public agencies and market actors to develop 14 sets of proposals for enhancing green financing through policy, regulatory and market innovations.

**Indonesia:** Indonesia's Financial Services Authority (OJK) has conceived the world's first ten-year Roadmap for Sustainable Finance.

**South Africa:** South Africa's stock exchange has led globally in requiring listed companies to report on their sustainability performance and the country's pension fund legislation has led the way in requiring pension fund trustees to take sustainability factors into account while making investment decisions on behalf of intended beneficiaries.

**UK:** The UK's Bank of England is the first central bank to initiate a prudential review to explore whether climate change poses a systemic risk to parts of the UK's financial sector.



The Inquiry's approach has been driven by engaging, catalysing, collaborating with, and building on the work of policymakers, special initiatives and institutions at the country level. Rapid policy innovation is taking place at the country level, and the Inquiry aims to understand the drivers behind these innovations. The Inquiry undertook work with national institutions and partners, and examined the landscape of sustainability through the actions of the financial system's governing institutions such as central banks and financial regulators, government bodies and standard setters. This work was carried out across Bangladesh,<sup>3</sup> Brazil,<sup>4</sup> China,<sup>5</sup> Colombia,<sup>6</sup> the European Union,<sup>7</sup> France,<sup>8</sup> Kenya,<sup>9</sup> India,<sup>10</sup> Indonesia,<sup>11</sup> the Netherlands,<sup>12</sup> South Africa,<sup>13</sup> Switzerland,<sup>14</sup> the UK<sup>15</sup> and the US<sup>16</sup> (see Box 1 for International Practices).

In India, the Inquiry's work has been conducted in partnership with FICCI, with an advisory council, chaired by Ms. Naina Lal Kidwai. An initial briefing was presented at a high-level launch meeting in November 2014, followed by an interim report prepared for the government of India that was released in February 2015. This report presents the findings and recommendations of the India Inquiry's work drawing on the efforts of a number of specialist working groups.

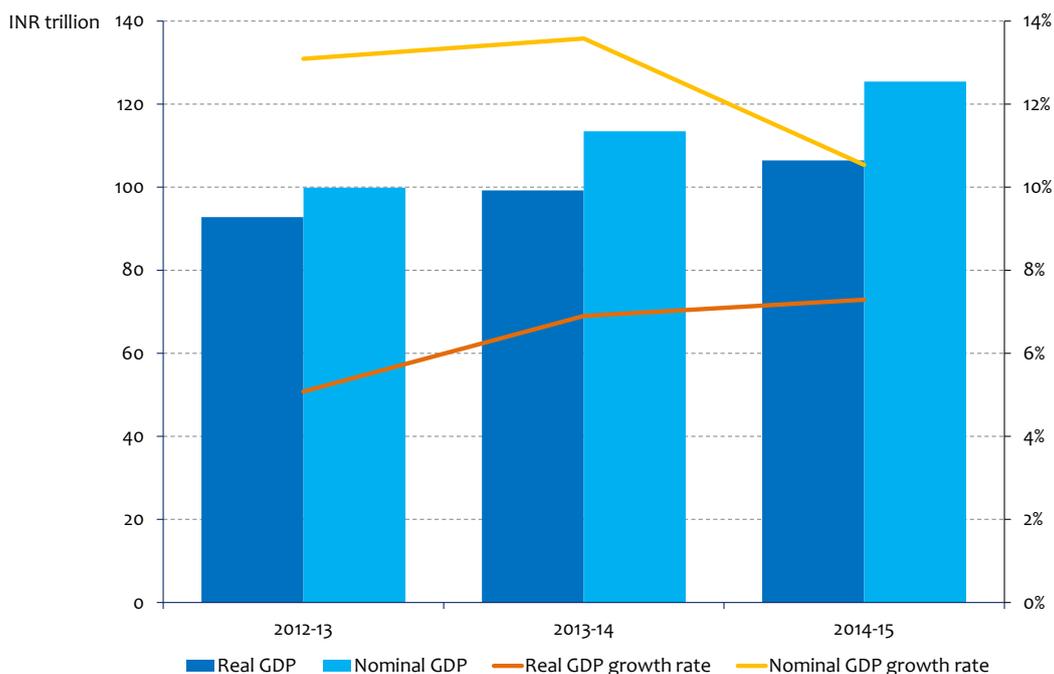
## 2 INDIA'S ECONOMY AND FINANCIAL SYSTEM



### 2.1 OVERVIEW OF THE ECONOMY AND CREDIT PROVISION

India is one of the fastest growing economies today. The economy's growth rate has managed to withstand the effects of the 2008 financial crisis. While muted consumption demand from developed economies has led to a sustained contraction of Indian exports in recent times, the domestic consumption trajectory has remained relatively robust. Figure 1 illustrates key GDP-related metrics of the economy. The growth rate of the nominal GDP has slowed down whereas the real GDP growth has increased. This is underpinned by the fact that the country is undergoing a rather severe aggregate disinflation due to a number of external and domestic factors, including falling oil prices and faltering domestic demand.

Figure 1: GDP and GDP Growth Rates

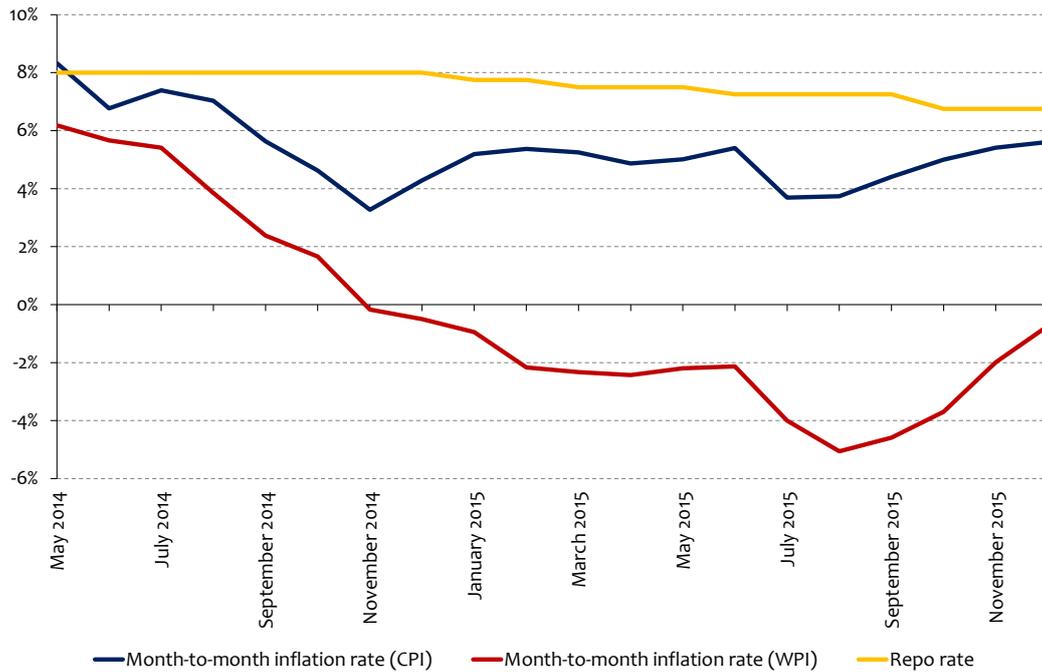


Source: RBI

Figure 2 illustrates these trends – the benchmark index for inflation in the Indian economy, the Consumer Price Index (CPI), remains relatively stable, whereas the Wholesale Price Index (WPI) that measures changes in producer's prices collapsed. India's fiscal deficit target of 4.1 per cent of GDP was set keeping in mind that nominal GDP growth will be slightly higher than real GDP growth. As they converge, the government has to find the resources to meet its fiscal deficit targets.



**Figure 2: Inflation and Interest Rates**



Source: RBI

In addition to concerns on the fiscal deficit target, the low WPI and the relatively high CPI have resulted in a high cost of capital. The growth in credit provision to industries as a whole slowed down to about 5% year on year in 2014-15. India’s Central Bank, the Reserve Bank of India (RBI), targets the CPI. As a result, the average lending rate is around 11%, and even priority sector loans incur interest rates above 10%, despite over 125 basis points of rate cuts over the last year. At these rates, commercial investments based on bank lending remain largely unviable. As inflation expectations have moderated, the RBI has begun a cycle of easing and is expected to keep reducing interest rates as long as the external environment remains favourable.

India has about 800 million people living at less than US\$2 a day and about 12 million people entering the workforce every year. As the country attempts to transition from a low-income to a middle-income economy and create jobs for its large and predominantly young workforce, it has to find its growth and development trajectory. Given the medium-term economic outlook, India has to aim for sustainable and inclusive growth, which is reflected in the 12<sup>th</sup> Five-Year Plan (2012-17) that lists a number of indicators to reflect the country’s vision of rapid, sustainable and more inclusive growth. One of the central indicators is the ‘emission intensity’ of GDP<sup>17</sup> – which is in consonance with India’s voluntary commitment at the Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) at Copenhagen in 2009, of reducing its emission intensity by 20 to 25% from 2005 levels by 2020. This has been further enhanced to 30% by 2030 in India’s Intended Nationally Determined Contribution (INDC) submitted to UNFCCC in October 2015. The country’s emissions per capita are at a fraction of those in developed countries (Table 1) and yet it needs near double-digit economic growth and job creation to sustain its socio-economic transformation to becoming a middle-income economy.

The growth trajectory of the energy-intensive sectors will be one of the key barometers of energy efficiency. These sectors are briefly covered in the next sub-sections, along with the agriculture sector, which employs the largest share of India’s workers.

**Table 1: CO<sub>2</sub> Emissions per Capita**

Country	2010	2011	2012	2013	2014
Australia	18.7	18.8	18.5	17.9	17.3
Canada	16.0	16.0	16.1	16.1	15.9
China	6.6	7.2	7.4	7.5	7.6
France	6.0	5.6	5.5	5.5	5.0
Germany	9.7	9.5	9.6	9.8	9.3
<b>India</b>	1.5	1.6	1.7	1.7	1.8
Japan	9.8	10.1	10.4	10.3	10.1
Korea, Republic of	12.3	12.5	12.3	12.4	12.3
Mexico	3.8	3.9	4.0	3.8	3.7
United Kingdom	7.9	7.3	7.4	7.2	6.5
United States	17.6	17.1	16.2	16.5	16.5

Source: EDGARv4.3, European Commission, Joint Research Centre (JRC)/PBL Netherlands Environmental Assessment Agency. Emission Database for Global Atmospheric Research (EDGAR)

The growth trajectory of the energy-intensive sectors will be one of the key indicators of energy efficiency going forward. These sectors are briefly covered in the next sub-sections, along with the agriculture sector which employs the largest share of India's workers.

### 2.1.1 MANUFACTURING

The Government of India has made the revival of Indian manufacturing a top priority, reflected in the "Make in India" programme. The focus on building capacity in the Indian manufacturing sector is not new. The National Manufacturing Policy of 2011 set an ambitious target of increasing the sector's contribution to GDP to 25% by 2022 compared with about 16% at the time the policy was announced, and also intended to create an additional 100 million jobs through the GDP-linked target. The policy had a focus on 'green manufacturing' as well by prescribing various environmental safeguards and compliance measures for industrial production including green building norms for units above a certain threshold, regular environmental audits, water conservation, waste water treatment, use of rainwater harvesting and renewable energy.

The manufacturing industry currently accounts for only about 23% of Gross Value Added (GVA) in the Indian economy (Table 2). One of the key reasons for the moderate GVA contribution of manufacturing sector to GDP may be the informal nature of a large proportion of the manufacturing economy and its supply chains, and its low productivity. Indeed, Micro, Small and Medium Enterprises (MSMEs), which are largely informal, are considered the backbone of the Indian economy, estimated to account for around 45% of the manufacturing output and 40% of the exports of the country. Many policies provide capacity building support. However, the sector has lost competitiveness in mass manufacturing, ceding markets to many regional competitors, largely due to the availability of cheaper labour, infrastructural bottlenecks and unreliable power supply.

**Table 2: Growth Rates and Shares in Gross Value Added at Basic Prices**

Sector	Growth Rate (%)				Share in GVA (%)		
	Average 2012-13 to 2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15
1. Agriculture, forestry and fishing	1.7	1.2	3.7	0.2	17.7	17.2	16.1
of which :							
Agriculture	2.6*	1.2	3.9	...	15.4	15.0	...
2. Industry	5.7	5.1	5.3	6.6	23.7	23.4	23.3
of which :							
a) Mining and quarrying	2.5	-0.2	5.4	2.4	3.0	3.0	2.9
b) Manufacturing	6.2	6.2	5.3	7.1	18.3	18.1	18.1
c) Electricity, gas, water supply and other utility services	5.6	4.0	4.8	7.9	2.4	2.3	2.3
3. Services	7.8	6.0	8.1	9.4	58.6	59.4	60.6
of which :							
a) Construction	1.0	-4.3	2.5	4.8	8.6	8.3	8.1
b) Trade, hotels, transport, communication and services related to broadcasting	10.5	9.6	11.1	10.7	18.0	18.8	19.4
c) Financial, real estate and professional services	9.4	8.8	7.9	11.5	19.5	19.7	20.5
d) Public Administration, defence and other services	6.6	4.7	7.9	7.2	12.5	12.6	12.6
4. GVA at basic prices (at 2011-12 prices)	6.2	4.9	6.6	7.2	100.0	100.0	100.0

... : Not available

\* : The absolute figure for the sub-sector 'Agriculture' is yet to be released by CSO for the year 2014-15; hence the average pertains to 2012-13 and 2013-14.

Note: Following methodological changes, the Central Statistics Office provides as of 2011 the share of sectors in Gross Value Added at basic prices as opposed to Gross Domestic Product.

Source: Central Statistics Office, Government of India

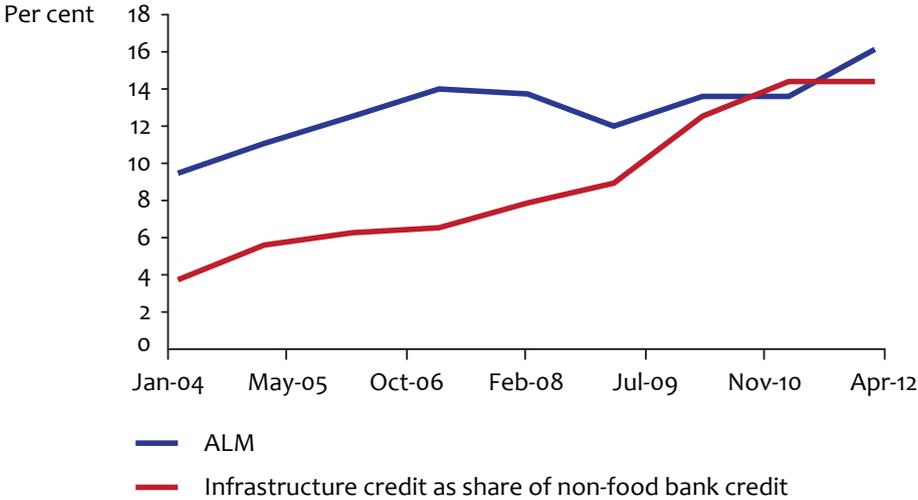
### 2.1.2 INFRASTRUCTURE AND POWER

Infrastructure development and financing are top priorities for India, which is also reflected in the country's advocacy in favour of infrastructure financing at the Group of 20 (G20) and other important forums such as BRICS (consisting of Brazil, Russia, India, China and South Africa). India has also been in favour of institutions that can supplement available infrastructure financing, and is a critical part of the BRICS-led New Development Bank, and the China-led Asian Infrastructure Investment Bank (AIIB). The NitiAayog (formerly Planning Commission) is India's central planning body and has estimated the country's infrastructure needs at US\$1 trillion every five years, around half of which needs to come from the private sector.

The 12<sup>th</sup> Five-Year Plan targeted gross capital formation in infrastructure to exceed 10% of GDP. Historically, investments have been largely concentrated in power, telecom and oil and gas. Other areas such as ports, railways, storage and water supply have not met investment targets. The targeted gross capital formation in infrastructure appears difficult to achieve. Infrastructure has largely been financed through budgetary allocations and internal resources raised through public sector ‘non-bank’ financial companies (NBFCs). Given the persistent gap in supply of funding, the government has focussed on revitalizing the public-private partnership (PPP) model. In the last couple of years, it has introduced reforms including single window clearances. Perhaps as a result, the private sector has emerged as a large investor, estimated to contribute around 40% of total infrastructure investment. Between 2008 and 2014, bank credit to infrastructure as a percentage of total bank credit increased from 25.6% to 34.7%.

Fiscal prudence is expected to limit the central government’s ability to allocate budgetary resources to large-scale infrastructure projects. As a result, enhanced participation from private sector and capital market depth for bond financing is needed. Banks alone cannot meet the financing requirements of the sector, particularly as their lending is restricted by exposure norms, capital adequacy requirements and an acute asset-liability mismatch. This asset liability mismatch (Figure 3) is due to low long-term savings and insufficient financial market depth. Deposits in the Indian banking system are typically of a short tenure (between one and two years), whereas infrastructure loans have a duration of 10 to 15 years. In September 2014, SEBI, the capital markets regulator, allowed firms to launch real estate investment trusts (REITs) and infrastructure investment trusts (InvITs) that allow project promoters to raise capital against projects from sources other than the banking sector and financial institutions such as non-banking financial companies (NBFCs). SEBI proposed a minimum sponsor/developer commitment of 10 per cent.

**Figure 3: Trend in Asset-Liability Mismatch and Infrastructure Lending**



Source: Operation and Performance of Commercial Banks, RBI, 2012

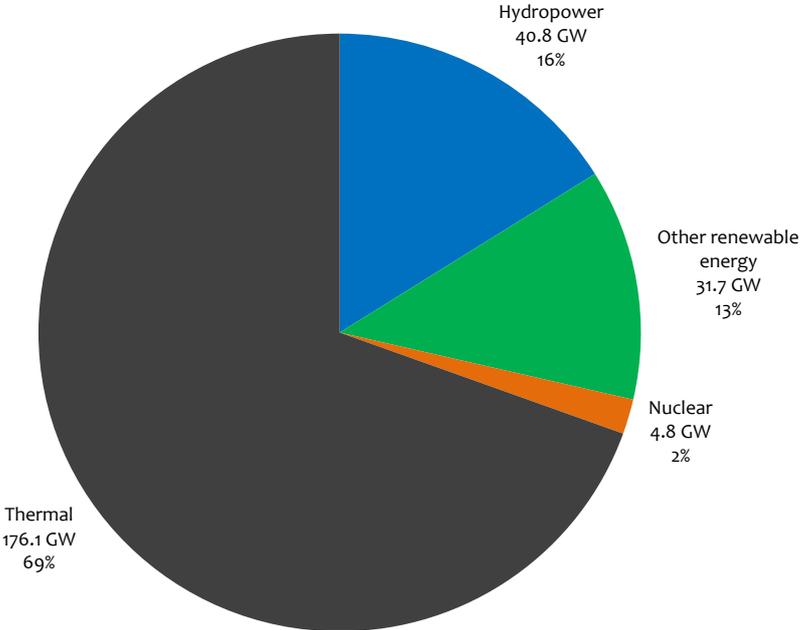
The outstanding credit in the power sector went up 57% between April 2011 and April 2013, from US\$42 billion to US\$65.9 billion, faster than credit for the overall infrastructure sector (42%). This resulted in banks having a large power sector portfolio. The fundamental challenge for the sector is the fiscal viability of power purchasers (state distribution boards) that are unable to pay power generators in many states. This is a systemic problem that cannot be overcome without downstream reform, particularly in terms of rationalizing power tariffs. Electricity remains heavily cross-subsidized for agricultural and domestic consumers and comes at a heavy premium to industry. As a result of cross-subsidization and operational inefficiencies, Indian DISCOMs (power distribution companies) have been historically trapped in a vicious cycle of funding operational losses through debt. They have accumulated losses of around INR3.8 trillion with an approximate outstanding debt of INR4.3 trillion (US\$58 billion) as of March 2015, an increase of over INR2 trillion since 2011, with interest rates as high as 15 per cent. Financially stressed DISCOMs are unable to supply power at affordable rates or purchase renewable power, which has higher



tariffs on average than conventional sources. To mitigate this, the Union Cabinet approved in November 2015 a new scheme moved by the Ministry of Power, Ujwal DISCOM Assurance Yojna (UDAY), with the goal of financially reviving and providing a sustainable operating environment for power distribution companies. This is done through: (i) improving operational efficiencies of DISCOMs; (ii) reducing the cost of power; (iii) reducing the interest cost of DISCOMs; (iv) enforcing financial discipline on DISCOMs through alignment with state finances.

India faces the triple imperative of meeting its growing energy needs, extending access and improving the environmental performance of its power sector. Currently, thermal power generation, based on coal, accounts for close to 70 per cent of installed capacity (Figure 4). A key priority is improving the environmental performance of coal mining, transportation and thermal power generation efficiencies. At the same time, India counts itself among a handful of large economies that have over a tenth of total installed capacity in the form of non-hydropower renewable energy, with ambitious plans to extend this further.

**Figure 4: India’s Energy Mix for Electricity Generation (2015, Installed Capacity)**



Source: Background for India Energy Congress 2015, Deloitte

**2.1.3 AGRICULTURE AND ALLIED ACTIVITIES**

The Indian economy has long depended on agriculture. Even today, the sector supports close to 50 per cent of the population, but accounts for only 16.1 per cent of total GVA. While this is true of many transitioning economies, the fact remains that Indian agriculture requires urgent investment to ensure food security. Rationalizing and targeting subsidies better could generate part of the necessary resources, but external finance will be needed, with an efficient allocation of deployed funds.

Indeed, a lot of debate has been generated in India about the subsidy regime put in place following the ‘Green Revolution’, centred in particular on sustainability concerns relating to the increased use of fertilizers and pesticides for farming. India’s subsidy regime for these inputs has created a dependency cycle that is self-perpetuating.<sup>18</sup> The high yielding seed varieties used as part of the Green Revolution have led to the depletion of groundwater reserves and an excessive preponderance of chemical inputs. This in turn has created debt traps, exacerbated by the incentives created through the subsidy regime. The enhancement of farm credit is needed to change the saving and investment cycles of small and marginal farmers, and therefore is directly linked to the sustainability imperative.



The government has taken several measures to improve the credit flow and reduce interest rates on farm loans. For example, to discourage the distress sale of crops by farmers, the benefit of interest subvention has been provided to small and marginal farmers having Kisan Credit cards for an additional six months (post-harvest) against negotiable warehouse receipts (NWRs) at the same rate available to crop loans. The remaining farmers have been granted post-harvest loans against NWRs at the commercial rates. Additionally, the Interest Subvention Scheme for short-term production credit (crop loans) started in 2006-07 was extended to private-sector banks in 2013-14.

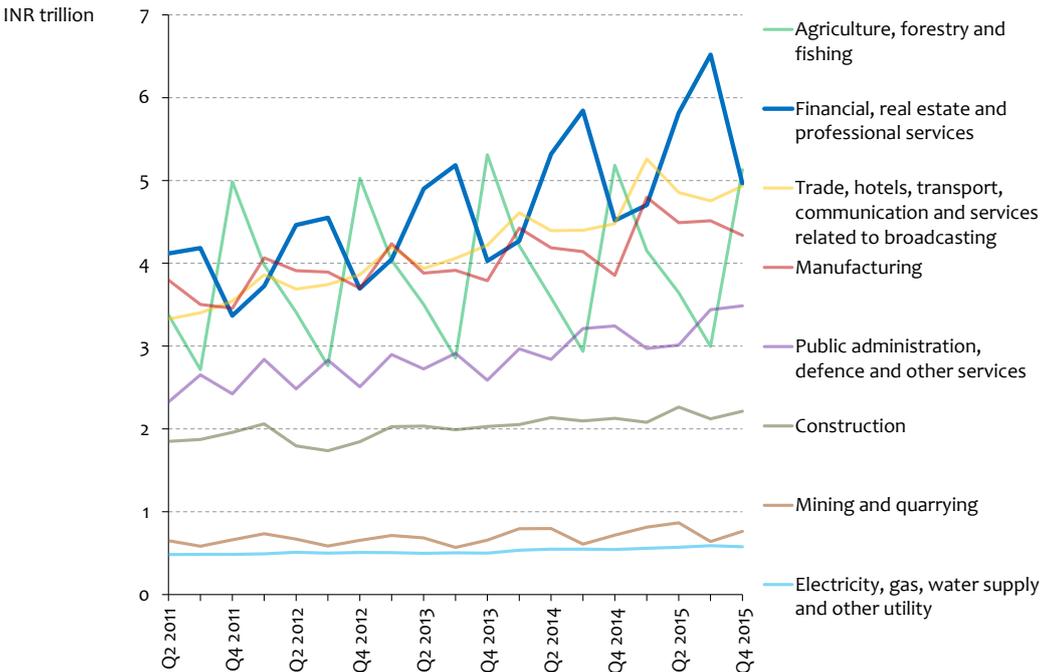
Although the agricultural credit flow target of INR7 trillion was achieved in 2013-14, studies conducted by the RBI and the National Bank for Agriculture and Rural Development (NABARD) indicated that crop loans were not reaching the intended beneficiaries and several bank branches had no adequate procedures to monitor the end usage of funds. Also, although the overall credit flow to the agriculture sector has increased under 'Priority Sector Lending' in recent years, the share of long-term credit in agriculture or investment credit declined. Furthermore, approximately 40 per cent of agricultural credit still comes from informal sources, despite an increase in the flow of institutional credit to agriculture in recent years.<sup>19</sup>

In order to address some of the sustainability challenges in agriculture, the Indian government has been implementing several policies and missions including the National Food Security Mission, the Mission for Integrated Development of Horticulture, the National Mission for Sustainable Agriculture, Paramparagat Krishi Vikas Yojana to promote organic farming practices, Pradhan Mantri Krishi Sinchayee Yojana to promote efficient irrigation practices and the National Mission on Agricultural Extension and Technology. They are also part of India's INDC.<sup>20</sup>

### 2.2 OVERVIEW OF CREDIT AVAILABILITY TO SMALL FIRMS

India's industrialization and development-related capacities can only be built through the availability of finance. The far-reaching changes in the Indian economy since the liberalization in the early 1990s have had a large impact on the financial sector. It is now one of the fastest growing sectors in the Indian economy, and one that has witnessed increased private sector participation including through an increase in the number of banks, insurance companies, mutual funds and venture capital firms (Figure 5).

Figure 5: Gross Value-added by Sector

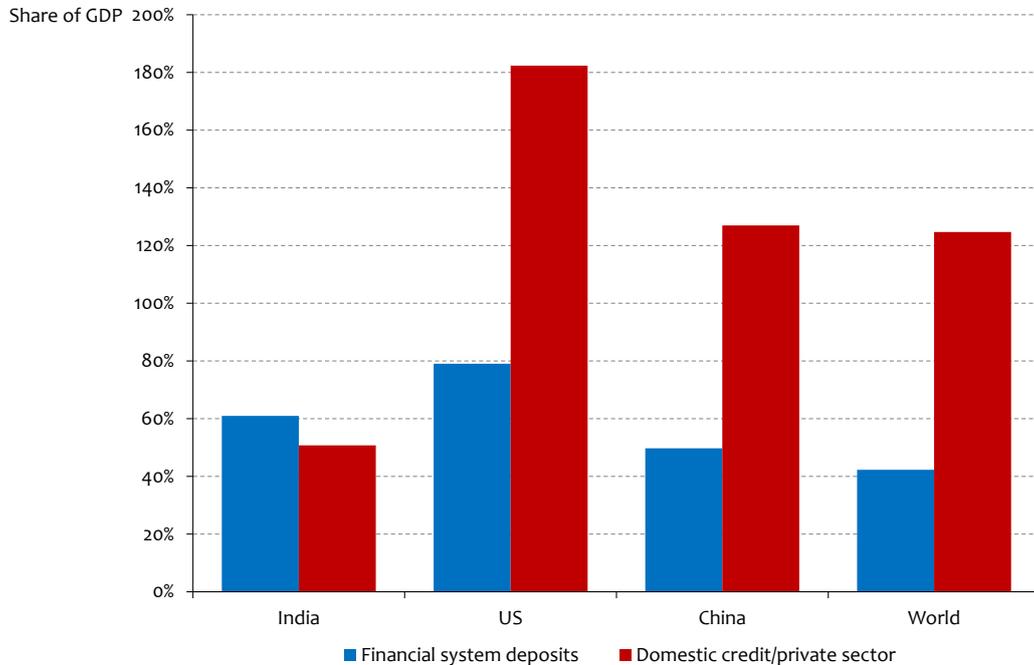


Source: RBI Handbook of Statistics 2015



Despite the limited credit disbursement in certain sectors, credit advances are expected to grow exponentially by 2025 to reach US\$28.5 trillion.<sup>21</sup> India's banking sector (by size and volume) is not too far behind China's, but others, which have limited India's financial sector depth, are (Figure 6). Insurance, pension and mutual fund penetration is low: while India has the largest insurance sector in the world with over 360 million policies, the penetration is only about 4% of GDP.

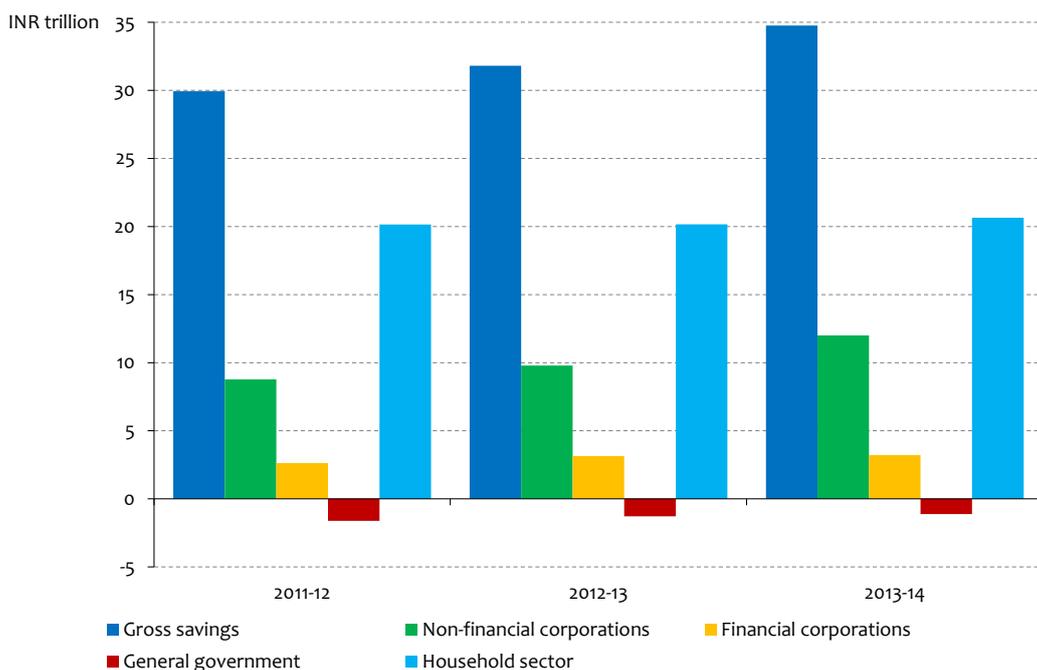
**Figure 6: Relative Size of the Indian Financial Sector**



Source: IBEF

High levels of gross savings in the household sector (Figure 7) indicate a significant opportunity to create channels for retail investments in small firms as well as critical sectors that are facing a shortage of credit.

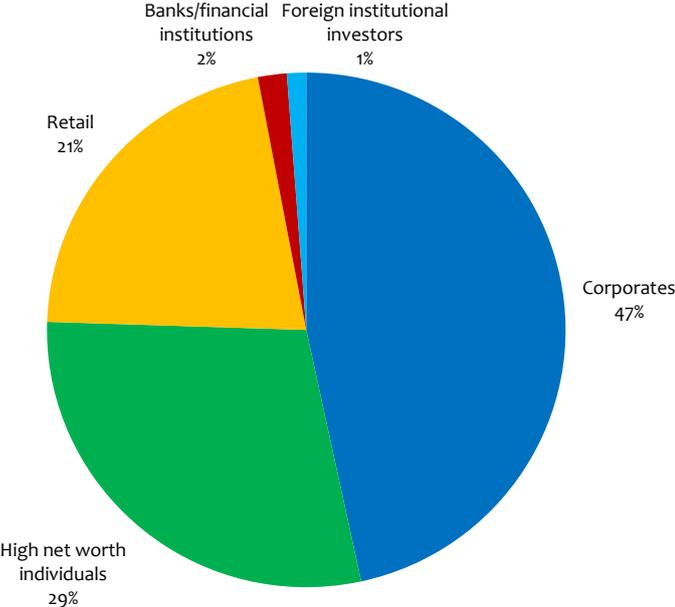
**Figure 7: Gross Savings by Sector**



Source: RBI

The average retail investor in India does not have many options for participating in the responsible finance ecosystem and accounts for a smaller share of market participation than high net worth individuals and the corporate sector (Figure 8). Retail participation in the bond markets is also very limited; however, mutual funds, REITS and perhaps even InvITs may offer avenues for integrating non-institutional market participants in the sustainability thrust. Sustainability-linked investment products, either in the form of mutual funds or other special investment vehicles (REITs and InvITs) can potentially encourage retail participation in financial products.

**Figure 8: Participation in the Indian Markets**



Source: IBEF

**2.2.1 ENABLING ACCESS TO FINANCE**

**2.2.1.1 PRIORITY SECTOR LENDING**

The RBI has the regulatory powers to direct credit to specific sectors as provided for in the Banking Regulations Act of 1949 and the RBI Act of 1934. The Priority Sector Lending (PSL) norms are a unique feature of Indian banking. These sectors have been identified as agriculture, infrastructure, education, and MSMEs. More recently, the categories of social infrastructure and renewable energy have been included under PSL. Many banks fall short on their PSL targets every year and the targets have come under criticism as the banking sector’s Non-Performing Assets (NPAs) have been a challenge in the priority sectors in particular.<sup>22</sup> Table 3 highlights that NPAs in PSL advances have increased marginally across the board, with the exception of private sector banks. It should also be noted that PSL related NPAs as a percentage of total NPAs have reduced over the last three years. This is due to a combination of a contraction in PSL growth, and due to relatively higher NPAs in non-PSL assets.

In the context of credit targets such as those prescribed by the RBI, the regulations do not mandate lending to any particular sector as the credit decision ultimately lies with the lender: sector-wise exposure limits are not specified under PSL or any other regulation. This means that in practice, the exposure that any banking institution has to a particular sector, for instance renewable energy, depends on its internal risk assessment policies as well. Therefore, as is the case in India, PSL norms for off-grid renewable energy projects have not necessarily resulted in an increased credit flow to the sector, even though loans given to individuals to set up off-grid solar and other renewable energy solutions for households were allowed to be classified as priority sector in 2012.<sup>23</sup>



**Table 3: Proportion of Non-Performing Assets in Priority Sector Lending Advances (%)**

Year	Public sector banks	Nationalized banks	State Bank of India Group	Private sector banks	All SCBs (foreign banks excluded)
2013	5.2%	4.6%	6.8%	1.6%	4.5%
2014	5.2%	5.0%	5.8%	1.6%	4.5%
2015	5.8%	5.8%	5.9%	1.6%	4.9%

SCBs: scheduled commercial banks

Source: RBI

In India, Non-banking Financial Companies (NBFCs) also lend to different businesses, typically to the smaller and niche businesses. Unlike the universal banks, NBFCs have the advantage of a faster credit appraisal system as they are closer to clients whose niche needs are catered to by these entities. NBFCs also have to adhere to a different set of regulations than universal banks. One of the implications is that the classification of an NPA for term loans is at six months (non-payment) compared with 90 days for banks. While this gives NBFCs greater room to manoeuvre in terms of what are perceived to be risky investments in areas such as off-grid power generation, they also have a higher cost of funds than banks. Different banks refinance NBFCs, which in turn are able to lend to companies that banks are apprehensive of lending to. But this affects the viability of any particular project as the interest rates charged are higher. Bank lending to NBFCs that were lending onward to PSL sectors used to be construed as PSL, but this provision was recently removed.

### 2.2.1.2 MSMEs AND SOCIAL ENTERPRISES

India's burgeoning MSME sector plays a pivotal role in the socio-economic development in the country, contributing more than 35% of GDP in recent years. MSME firms are of particular importance to the manufacturing sector (see Section 2.1.1). Availability of finance is a key enabler for economic activity and the growth of entrepreneurship. In the MSME context, finance encompasses equity capital, loans for fixed asset investment and working capital for meeting cash flow gaps.

Several policy initiatives have been taken to promote the availability of finance to MSMEs. These include, among others, credit support mechanisms administered by government institutions. Credit outstanding from scheduled commercial banks to the MSMEs has registered an annualized growth of about 23% from March 2012 to March 2014, compared with 14.1% for overall non-food credit. However, a severe shortage of credit remains: according to the International Finance Corporation, the MSME sector faces a severe capital shortage of INR32.5 trillion. Out of this, the debt shortfall is INR26 trillion, which the organized financial sector will have to provide to ensure that they are properly capitalized and can continue to grow.

Finally, while social enterprises are a subset of MSMEs in India, they can be more specifically defined as enterprises that demand high-risk investments for relatively low returns, but with high social impact. Like MSMEs, the social enterprise sector is faced with a dearth of accessible credit and supportive regulatory instruments; it is estimated that the sector currently requires an additional US\$900 million of debt in the immediate future, with rural development (including agriculture) and renewable energy identified as the sectors with the highest demand for debt.<sup>24</sup>

## 2.3 FINANCING INDIA'S SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE POLICIES

### 2.3.1 INDIA'S SUSTAINABILITY INITIATIVES

India's domestic plans for sustainability require large financial outlays from both public and private sources. The Research and Information System for Developing Countries (RIS), a government think tank,

with support from the United Nations Development Programme (UNDP), is spearheading a programme of consultations among policymakers, the private sector and civil society on the SDGs. The aim is to create a roadmap for the implementation of relevant targets at the state level, as enshrined in the wider SDG agenda. The RIS is also collaborating with key international think tanks and organizations in India on specific issues related to the SDGs to strengthen knowledge partnerships. In 2016, it plans to intensify the discussion around the social and economic dimensions of the SDGs and to deepen the engagement on ‘means of implementation’.

The Expert Group on Low Carbon Strategies (set up by the former Planning Commission) has also recognized that aggressive climate change mitigation cannot be achieved without substantial international support, both in terms of financial resources and technology transfer. Table 4 outlines the central and state level action plans that require support; it includes a number of climate change-related initiatives, highlighted in India’s INDC.

**Table 4: Intended Nationally Determined Contributions and Related Initiatives**

Initiative	Description
National Action Plan on Climate Change (NAPCC)	The NAPCC is a comprehensive national climate change policy that addresses eight priorities for sustainable development with climate change co-benefits. The project is expected to cost a total of US\$38 billion
National Solar Mission (NSM)	The NSM is a comprehensive policy aimed at incentivizing solar power generation. The NSM is being scaled up from its initial target of 20 GW added solar capacity to 100 GW. The initiative is expected to require a total outlay of US\$100 billion.
National Mission on Enhanced Energy Efficiency (NMEEE)	The NMEEE Includes a variety of policies and initiatives, including PAT, ZWS Compact Fluorescent Lamp Programme and the operationalization of the Partial Risk Guarantee Fund/Venture Capital Fund for Energy Efficiency. An estimated outlay of US\$28.74 billion for the 12 <sup>th</sup> Five-Year Plan is required.
	Perform Achieve and Trade (PAT): A market-based efficiency trading mechanism, at present covering 478 plants in eight energy-intensive sectors. Under the PAT programme, the respective industries have achieved a 4 to 5 per cent decline in their specific energy consumption in 2015 compared with 2012.
	Zero Effect, Zero Defect (ZED): ZED is a policy initiative aimed at rating MSME industries on quality control and certification for energy efficiency, enhanced resource efficiency, pollution control, usage of renewable energy, and waste management. It is currently envisaged to cover about one million MSME enterprises.
Smart Cities	100 smart cities are planned with the object of developing new generation cities, which will provide core infrastructure and a decent quality of life to their citizens in a clean and sustainable environment. The total expected outlay over five years is INR480 billion or US\$7.3 billion.
Atal Mission for Rejuvenation and Urban Transformation (AMRUT)	AMRUT is a new urban renewal mission launched for 500 cities with a focus on ensuring basic infrastructure services including water supply, sewerage, and the development of green spaces and parks. The total expected outlay over five years is INR500 billion or US\$7.6 billion.
Solid Waste Management (SWM)	The government has invested significantly in SWM projects as grants in aid to states for SWM through PPP. An estimated US\$397 million has already been allocated towards SWM projects.
Swachh Bharat Mission	The government has recently launched the ‘Swachh Bharat Mission’ with the objective of making the country clean and litter-free in over 4,000 towns covering a population of 306 million people.



Initiative	Description
Dedicated Freight Corridors (DFCs)	The first phase of DFC implementation will see two corridors, Mumbai-Delhi and Ludhiana-Dankuni, being constructed. The project is expected to reduce emissions by about 457 million ton CO <sub>2</sub> equivalent over a 30-year period.
Mass Rapid Transport System (MRTS)	Around 236 km of metro rail is operational in the country, with an additional 550 km under construction. The Delhi metro, which has become India's first MRTS project to earn carbon credits, has the potential to reduce emission by about 0.57 million tons of CO <sub>2</sub> equivalent annually.
Green Highways (Plantation and Maintenance) Policy	The Green Highways Policy aims to develop a 140,000km tree-line with plantations along both sides of national highways. One per cent of total civil cost of projects is to be set aside to implement the policy.
National Electricity Mobility Mission Plan 2020 (NEMPP)	The NEMMP is a government initiative promoting hybrid and electrical mobility through a combination of policies aimed at gradually ensuring a vehicle population of about 6-7 million electric/hybrid vehicles in India by the year 2020. The project will require an estimated cumulative outlay of INR140 billion or around US\$2.1 billion.
Faster Adoption and Manufacturing of Hybrid and Electric Vehicles in India (FAME)	FAME is a scheme formulated as part of the NEMMP to promote faster adoption and manufacturing of hybrid and electric automobiles.
Fuel Efficiency Programmes	The government has introduced several fuel efficiency initiatives, such as the Vehicle Fuel Efficiency Programme which finalizes the first passenger vehicle efficiency standards, potentially keeping 50 million tons of CO <sub>2</sub> out of the atmosphere. Other initiatives include the National Policy on Biofuels, aimed at achieving a 20 per cent blending of biofuels, both for biodiesel and bioethanol.
Green India Mission	As of 2015, the Perspective Plans and Annual Plan of Operations submitted by four States – Mizoram, Manipur, Jharkhand and Kerala – had been approved for the development of forests and their fringe areas. The cumulative outlay amounts to an estimated US\$6.9 billion, while US\$1.97 billion has already been allocated.
Abatement of Pollution	Initiatives include the Continuous Emission Monitoring System (CEMS), Common Effluent Treatment Plants (CETPs), Fly Ash Utilization Policy, Implementation of the National Air Quality Index and amendments to the Municipal Solid Waste Management Rules.
Citizens and Private Sector Contribution to Combating Climate Change	In addition to the initiatives being carried out by the government of India, the private sector has also embarked on a number of voluntary and mandated actions.
	Companies Act: The Companies Act of 2013 directs companies earning a certain level of profits to spend 2 per cent of annual profit on CSR activities.
	New Ventures India: It is an initiative to support cleantech entrepreneurs in developing their business plans and access to finance and markets.
	SME Cluster Programmes for Energy Efficiency: It currently covers more than 150 clusters all over the country and has resulted in substantial improvement in sustainability parameters.
National Mission on Sustainable Agriculture (NMSA)	The NMSA aims at enhancing food security and protection of resources such as land, water, biodiversity and genetics, with an estimated outlay of US\$16.34 billion for the 12th Five-Year Plan, while US\$1.97 billion have already been allocated.
Other agricultural initiatives	Other agricultural initiatives include the National Initiative on Climate Resilient Agriculture (NICRA), the introduction of Soil Health Cards and the National Agroforestry Policy (NAP).



Initiative	Description
National Water Mission	The progress includes the preparation of state-specific action plans on climate change under way; a pilot study of basin-wise water done for two basins (Godavari and Brahmani-Baitarani), with studies extended to all the basins; and an MoU that has been signed between the Ministry of Water Resources and the Asian Development Bank (ADB) for technical assistance with the objective of undertaking research for identifying and testing flood mitigation and flood management strategies. An outlay of US\$13.78 billion was required for the 12th Five-Year Plan.
National Mission for Clean Ganga	The National Mission for Clean Ganga aims to regenerate the river along its length of more than 2,500 km through diverse activities.
Initiatives for Coastal Regions	Initiatives for the mitigation of climate change on coastal regions include the Integrated Coastal Zone Management project (ICZM), the Mangroves for the Future (MFF) project, and the implementation of the Island Protection Zone (IPZ).
National Mission for Sustaining the Himalayan Ecosystem (NMSHE)	The objective of the Mission is to develop national capacity to assess the health of the Himalayan ecosystem and to assist progressive policy formulation at the level of the states and relevant sub-regions. US\$226.9 million was the required outlay for the 12 <sup>th</sup> Five-Year Plan, while US\$83 million had been approved.
National Mission on Sustainable Habitat (NMSH)	Notable progress achieved under this mission is described below. An estimated US\$143.72 million was required for the 12th Five-Year Plan.
	NMSH standards developed for six sub-sectors, namely solid waste management, water and sanitation, storm water drainage, urban planning, energy efficiency, and urban transport for integration in developmental activities in the state.
	Energy Conservation Building Code 2007 made mandatory for new as well as old buildings and incorporated in the Central Public Works Department (CPWD) general specifications for electrical works in 2013.
	Green Building norms made mandatory for the CPWD since 2009 and incorporated in the CPWD Works Manual 2012.
National Mission on Strategic Knowledge for Climate Change (NMSKCC)	The NMSKCC seeks to build a dynamic knowledge system that would inform and support national policy and action in addressing climate change challenges while not compromising on the nation's growth goals. An outlay of US\$378.2 million is required for the 12th Five-Year Plan period.
National Clean Energy Fund (NCEF)	This fund was created from a coal cess of INR50 per ton (about US\$1), which was gradually increased to INR400 per ton in the Union Budget of 2016-17. As of 10 March 2016, approximately US\$5.3 billion has been approved for clean energy projects since the financial year 2011-12.
National Adaptation Fund	The objective of the fund is to assist State and Union Territories that are particularly vulnerable to the adverse effects of climate change in meeting the cost of adaptation. US\$55.6 billion has been allocated for the various projects.
State Action Plans on Climate Change (SAPCC)	As a follow up to the NAPCC, SAPCCs were introduced to identify state-specific priorities and strategies to combat climate change at subnational levels. As of April 2014, 26 States/Union Territories had prepared their SAPCCs. A new central-sector scheme titled Climate Change Action Programme has also been approved during the 12 <sup>th</sup> Five-Year Plan. The objective of the scheme is to build and support capacity at central and the state levels for assessing climate change impact and formulating and implementing adequate response measures. Thus far, US\$13.62 billion has been allocated for the initiative.



### 2.3.2 THE FINANCING IMPERATIVE

The Expert Group set up under the former Planning Commission to evolve 'Low Carbon Strategies for Inclusive Growth' estimated the cumulative costs of implementing these strategies at around US\$834 billion. This will divert resources from other sectors and financing may not be possible if underlying economic growth assumptions are not met. International support, in both finance and technology, would therefore be critical.<sup>25</sup> Despite the Paris Agreement, the climate finance landscape is still uncertain, operating through a patchwork of multilateral/bilateral channels, development banks, and national institutions, lying both within and outside the aegis of the UNFCCC.

The Green Climate Fund (GCF) is expected to channel part of the annual US\$100 billion multilateral commitment for climate finance. Even if it is fully capitalized, the success of the GCF will still depend on the preparedness of developing countries. This raises the question of adequate and domestic capacity for utilizing the resources disbursed through the GCF. The government of India has already initiated a consultation process engaging relevant stakeholders on related issues. The Ministry of Environment, Forest and Climate Change has encouraged three nodal organizations – the National Bank for Agricultural and Rural Development (NABARD), the Small Industries Development Bank of India (SIDBI) and IDFC Limited – to apply for accreditation. In addition, India has accessed about US\$477 million through the Global Environment Facility (GEF), of which US\$284.2 million is for mitigation and US\$10 million for adaptation. Recently, 30 donor countries pledged US\$4.43 billion to the GEF for its sixth cycle (July 2014-June 2018). India pledged a contribution of US\$12 million, which is a 33 per cent increase over its previous GEF contribution.

### 2.3.3 WHAT IS THE SUSTAINABLE DEVELOPMENT FINANCING CHALLENGE?

Financing for sustainable development requires the availability of low-cost, long-term finance. In the Indian financial sector context, banking regulations and guidelines from the RBI direct credit to various sectors and influence interest rates, exposure limits, security and other conditions for lending by banks. For example, the system of priority sector lending ties 40 per cent of aggregate bank credit to sectors including agriculture and MSMEs. However, this is not enough. Sustainable development financing in India faces barriers not only in terms of the amount available but also from risks associated with political, regulatory, technological and financial aspects that affect the bankability of new projects. Three main challenges relating to the mobilization of finance are evident in the Indian context:

- The first is related to the fact that India does not have substantial access to multilateral finance or grant funding for plugging the fiscal gap in sustainable development-related expenditure. The NitiAayog estimated that the country needs to spend close to US\$1 trillion every five years on basic infrastructure (over the 12<sup>th</sup> Five-Year Plan period between 2012 and 2017),<sup>26</sup> whereas the total budget of the central government is closer to US\$250 billion and the total size of international climate finance by 2020 will be closer to US\$100 billion per year. Moreover, India has graduated from its low-income status and is now a lower middle income country according to the World Bank classification, which means that access to concessional lending from the World Bank will decrease; importantly, India has been the largest recipient of loans from the World Bank, amounting to around US\$102.1 billion, between 1945 and July 2015.
- The second challenge relates to the participation of the private sector. Again, the example of the infrastructure funding requirement is indicative of the size of the challenge: the government estimated that around half of the US\$1 trillion requirement would have to come from the private sector. Similarly, India spent about 1.9 per cent of GDP on health and 3.9 per cent of GDP on education in 2014 according to World Bank statistics. There is a large gap to fill, and private sector participation is currently limited, partly because of the limited banking credit available to finance long-term projects as well as the lack of institutional capacities to mitigate or manage political risk.<sup>27</sup> The participation of the private sector is also linked to the challenge of structural

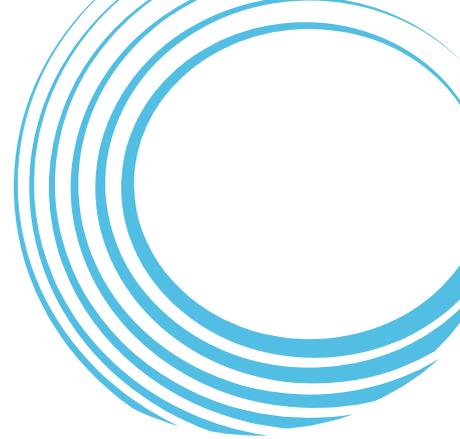
economic reform – the longer the country delays substantive reforms in sectors ranging from public procurement to tax administration, the bigger the challenge.

- ④ The last challenge is one that the country has begun to respond to: instituting overarching political frameworks for focused bilateral and multilateral cooperation on the sustainable development agenda. Such cooperation where the government leads and the industry follows could become a global template for sustainable development-linked cooperation. For instance, at COP21, the Indian government took the lead in instituting the International Solar Alliance, which aims to bring together developed and developing countries, governments, industries, academics and other relevant institutions. The members of the Alliance will make joint efforts through innovative policies, projects, programmes, capacity building measures and financial instruments to “mobilize more than US\$1,000 billion of investments that are needed by 2030 for the massive deployment of affordable solar energy”. India will be hosting this initiative at the premises of the National Institute for Solar Energy and will provide around US\$30 million to build the secretariat infrastructure. All partners hope that this will help catalysing investments and research in solar energy across the world, with the private sector expected to play a critical part.

These challenges can also be looked at as framework conditions for achieving sustainability-related goals. The two focus areas are the participation of the private sector and the availability of finance.



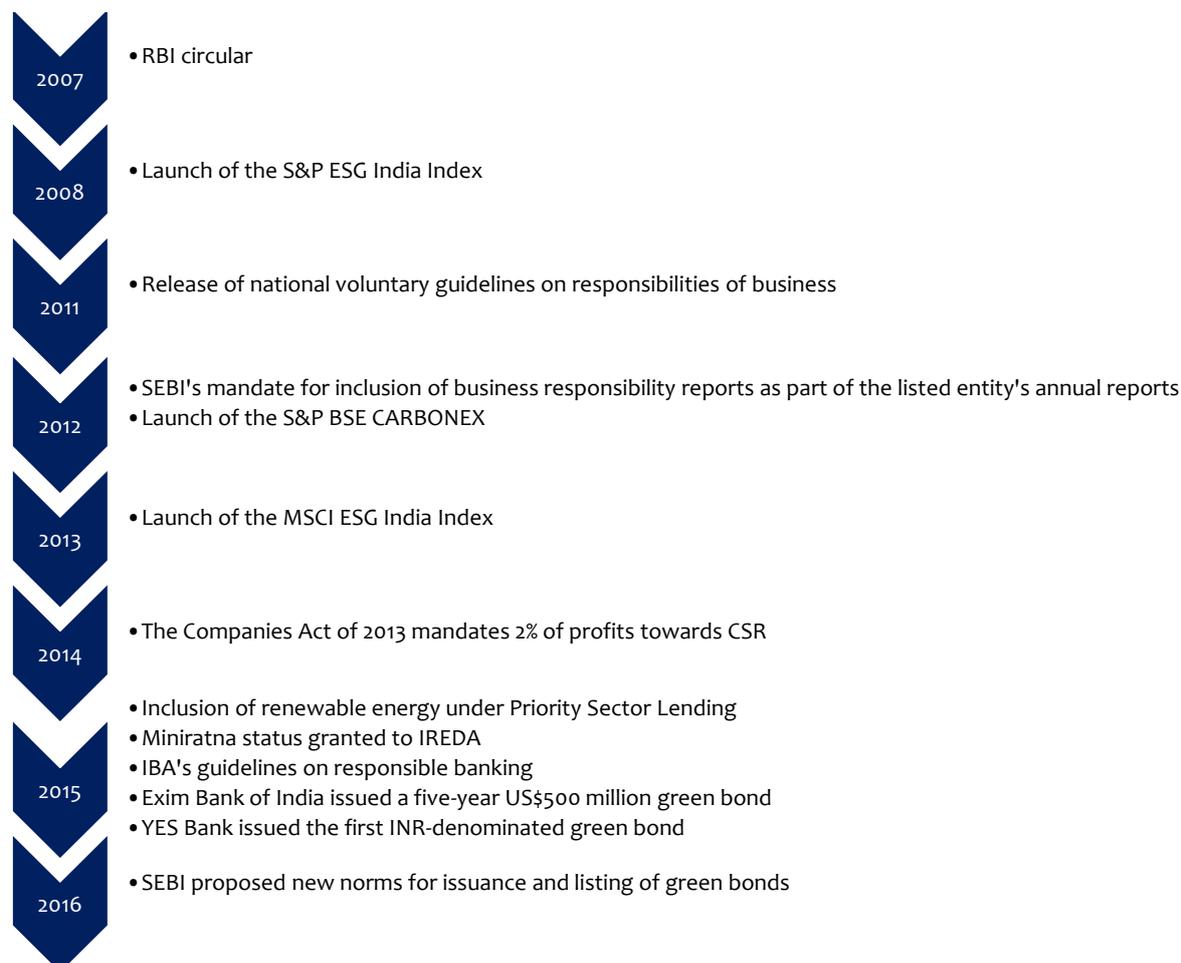
## 3 THE MOMENTUM FOR SUSTAINABLE FINANCE



### 3.1 A GROWING MOMENTUM

A range of voluntary and legislative actions have highlighted prominent strands of the sustainability imperative in India, particularly related to financial markets and the banking system. The RBI issued its first circular on banking and sustainable development in 2007, encouraging the adoption of best practices and greater transparency. Since then, important steps have been taken as outlined below. In addition to various progressive measures, corporate social responsibility (CSR) has been formally introduced through the Companies Act of 2013 with effect from 1 April 2014. All companies, private limited or public limited, with a net worth of INR5 billion (US\$81.8 million), a turnover of INR10 billion (US\$163.7 million) or a net profit of INR50 million (US\$0.8 million) have to spend at least two per cent of their average net profit of the immediate preceding three financial years on CSR activities. Notably, sustainability-linked funding is an option available to companies.

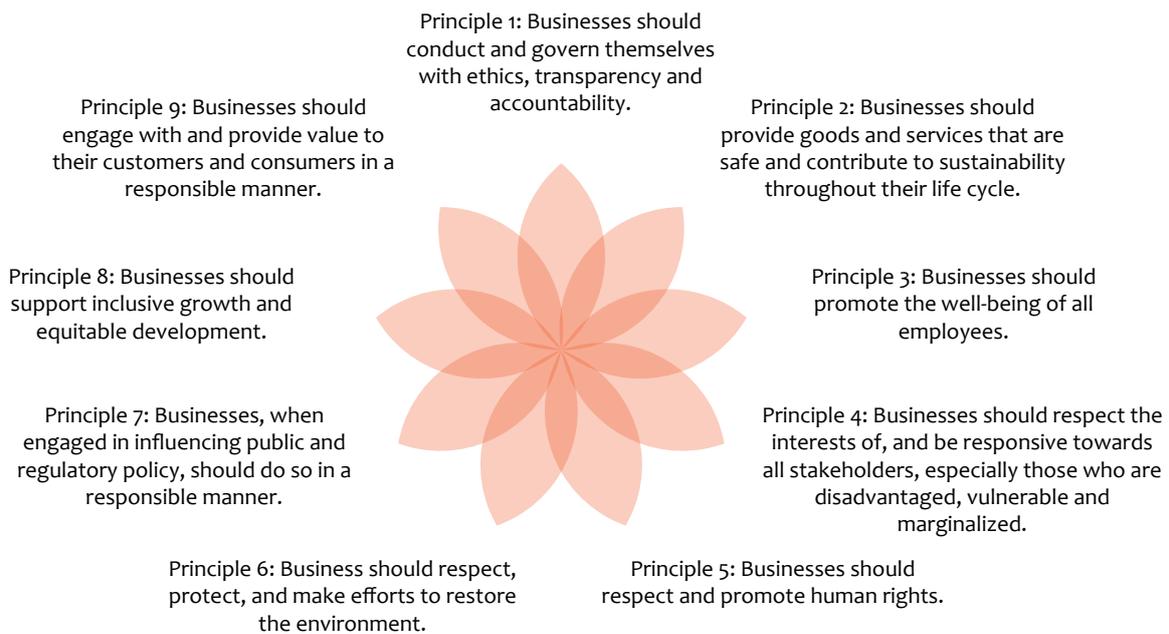
Figure 9: Sustainability Initiatives in the Financial Sector



## 3.2 CROSS-CUTTING INITIATIVES

Released in July 2011, the National Voluntary Guidelines (NVGs) are the product of an intensive multi-stakeholder collaboration spanning three years. These guidelines are constituted into nine core principles (Figure 10) that address different aspects of business responsibility and 48 core elements that are included alongside the core principles to help guide businesses in adopting and integrating the NVGs into their operations. The NVGs are a step towards creating a framework to ensure responsible investment behaviour. They are designed to be used by all businesses irrespective of size, sector or location.

**Figure 10: Nine Core Principles as Articulated by the NVGs**



Source: Ministry of Corporate Affairs, Government of India

Business Responsibility (BR) reports mandated by SEBI for the top 500 companies is a ‘comply or explain’ type corporate governance reporting policy. Considering the larger interest of public disclosure relating to steps taken by listed entities from an Environmental, Social and Governance (ESG) perspective, SEBI has mandated the inclusion of BR reports as part of the annual reports for the top 500 listed entities based on market capitalization at Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) as of 31 March 2012. The BR reporting format follows the lines of the nine principles articulated by the NVGs (Table 5): companies have to reply with “yes” or “no” to each question mapped against compliance with the NVGs and explain in the case of a no. Other listed entities may voluntarily disclose BR Reports as part of their annual reports.

The Indian Institute of Corporate Affairs together with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) published an analysis of the corporate reporting in 2014, which states that “the first cycle of reporting would have been a learning curve for first-time reporters and is expected to have established internal processes for data collation”.<sup>28</sup> The quality of reporting is expected to improve over time as companies begin to put in place new systems to report and gather data more systematically. The report also mentions that “the indicator-based structure followed by other sustainability reporting frameworks leaves much to the interpretation of companies and requires a comprehensive understanding of each indicator to identify the data-owner”.

**Table 5: Business Responsibility reporting questions**

	Principle 1	...	Principle 9
Do you have a policy/policies for...			
Has the policy being formulated in consultation with the relevant stakeholders?			
Does the policy conform to any national /international standards? If yes, specify?			
Has the policy being approved by the Board? Is yes, has it been signed by MD/owner/CEO/appropriate Board Director?			
Does the company have a specified committee of the Board/ Director/Official to oversee the implementation of the policy?			
Indicate the link for the policy to be viewed online?			
Has the policy been formally communicated to all relevant internal and external stakeholders?			
Does the company have in-house structure to implement the policy/policies?			
Does the Company have a grievance redressal mechanism related to the policy/policies to address stakeholders' grievances related to the policy/policies?			
Has the company carried out independent audit/evaluation of the working of this policy by an internal or external agency?			

Source: SEBI

Finally, the working group of Indian Banking Association (IBA) finalized the National Voluntary Guidelines for Responsible Financing in 2015: these are financial sector-specific guidelines that combine and adapt international and national best practices. They contain eight principles:

1. Ethical conduct and Environmental and Social (E&S) Governance
2. Integration of E&S risk management in business activities
3. Minimizing environmental footprint in internal operations
4. Environmentally friendly products, services and investment
5. Enabling inclusive human and social development
6. Stakeholder engagement
7. Commitment to human rights
8. Disclosure

### 3.3 RESPONSIBLE BANKING

Responsible banking and finance means capital allocations made from the point of view of preserving stakeholder interests. All market participants are considered stakeholders; non-market participants are also stakeholders – all those who are affected by the capital allocation directly or indirectly. The high level of savings by Indian households, amounting to close to 60 per cent of gross savings, is both an opportunity and a challenge for policymakers and market participants to allocate this capital efficiently.

As mentioned above, social infrastructure and renewable energy have recently been included under PSL for the banking sector as follows:<sup>29</sup>



## “6. Social infrastructure

*Bank loans up to a limit of [INR50 million] per borrower for building social infrastructure for activities namely schools, health care facilities, drinking water facilities and sanitation facilities in Tier II to Tier VI centres.*

## 7. Renewable Energy

*Bank loans up to a limit of [INR150 million] to borrowers for purposes like solar based power generators, biomass based power generators, wind mills, micro-hydel plants and for non-conventional energy based public utilities viz. street lighting systems, and remote village electrification. For individual households, the loan limit will be [INR1 million] per borrower.”*

Both categories pave the way for funding sustainability initiatives. For instance, waste management centres can be counted under social infrastructure as part of sanitation initiatives. The Internal Working Group to Revisit the Existing Priority Sector Lending Guidelines of the RBI recommended that given the importance of social infrastructure and its impact on credit absorption, financing certain infrastructure development activities should be treated as a separate category under PSL, subject to a ceiling of INR50 million per borrower. This includes the construction of schools, health care facilities, potable water facilities, and sanitation facilities in Tier II to Tier VI centres with less than 100,000 inhabitants. The RBI followed this recommendation and revised the PSL guidelines to include sanitation in social infrastructure in April 2015. The definition for renewable energy is also straightforward. Bank loans to organizations up to INR150 million (US\$2.5 million) and individual loans up to INR1 million (US\$20,000) for the augmentation of installed renewable capacity now qualify as PSL. However, while this is a step in the right direction, all sustainability-related projects, including energy efficiency projects and green building projects should be made eligible for preferential lending from banks.

The Small Industries Development Bank of India (SIDBI) and GIZ have co-developed the National Voluntary Guidelines on Responsible Finance for India’s financial institutions. These guidelines aim to integrate the ESG principles into both lending and investment decisions. In light of increasing NPAs in infrastructure projects pointed out in above, these guidelines may serve as a useful tool to improve lending practices and due diligence. In the global context, the Equator Principles are a benchmark for responsible finance. They provide a credit risk management framework for identifying, assessing, and managing environmental and social risk in project finance. The Infrastructure Development Finance Company (IDFC) is the only Indian bank to have signed the Principles (Box 2). Some public financial institutions have been very active in taking up sustainable financing initiatives as well (Box 3).

### **Box 2: EQUATOR PRINCIPLES AND INDIAN FINANCIAL INSTITUTIONS: IDFC**

IDFC is one of the largest infrastructure finance companies in India. Since its inception, IDFC has been a pioneer in integrating E&S risk management and responsible governance into its business operations. The ESG agenda of IDFC is influenced by its inclusive approach of working with project promoters in adopting “best in class” sustainability practices. On 3rd June 2013, IDFC became the first Indian financial institution to adopt the Equator Principles. Adoption of Equator Principles (EP) has reinforced IDFC’s commitment to E&S risk management and sustainable project financing. IDFC’s Environment and Social policy as well as its Environmental and Social Management Systems and Procedures (EMS&P) were developed based on the International Finance Corporation’s environmental and social safeguards standards.

### Box 3: SBI AND SIDBI SUSTAINABILITY INITIATIVES

#### State Bank of India

- India's largest bank (by a large margin), the SBI was the first bank to venture into generation of green power by installing windmills for captive use and provided long-term repayment plans with concessional rate of interests. It has financed more than US\$818.33 million worth of projects in wind power.
- SBI focuses on financing alternative energy projects like solar energy; it has financed US\$491 million worth of solar energy projects which include financing industrial units. The repayment window for such projects has been at a long period of about 15-20 years.
- SBI also finances pollution control projects. For example in Tirupur, Chennai, a highly polluted area due to huge garment manufacturing industries, SBI helped in setting up common effluent treatment plants.
- The Bank has been extending project loans on concessionary interest rates to reduce greenhouse gas (GHG) emissions by adopting efficient manufacturing practices through acquisition of latest technology. SBI has been providing consultancy services in CDM (Clean Development Mechanism) registration process. SBI is also a signatory to the Carbon Disclosure Project (CDP), a reporting based initiative of over 550 institutional investors.

#### Small Industries Development Bank of India

- SIDBI has funded various energy efficiency initiatives in the MSME sector through lines of credit in the form of loans and partial credit guarantees. These credit lines are targeted towards training programmes, knowledge sharing on new technologies, process changes and purchase of equipment to ensure energy savings and emission reduction etc.
- SIDBI provides loans of up to seven years at a 75:25 debt equity ratio for existing MSME units. Equipment is screened as per their identified Energy Saving Equipment List for energy efficiency and loans have first charge of the assets financed along with other collateral as deemed necessary. For strengthening the competitiveness of MSMEs in the global market, SIDBI introduced the "Sustainable Finance Scheme" during 2012-2013 to broaden the scope of finance through its own fund.
- SIDBI has also renewed its membership of "The Montreal Group" (TMG), Canada, as one of the founder members. TMG is an association of eight development banks engaged in financing and development of MSMEs.

## 3.4 GREENING THE BOND MARKET

Green bonds have emerged as one way to raise capital to promote sustainable development-linked infrastructure. They are particularly relevant to Indian sustainability financing requirements given the overreliance on the banking sector, which suffers from an asset liability mismatch (see section 2.1.2). The difference between a green bond and other bonds is that the proceeds of a green Bond offering are earmarked towards financing green projects. International experience has shown that the main challenge in getting green bonds to work are to get investors to view sustainable development-linked infrastructure projects (and therefore their funding) as investments and not costs, and to provide a steady stream of investable projects.

These two challenges apply to the Indian market too, but the biggest challenge is an illiquid bond market. Despite this, India will have to discover ways to make green bonds work, especially in the context of

developing urban infrastructure for India's Smart Cities Initiative. The measures taken by the RBI and SEBI, the securities regulator, have resulted in some progress in the issuance of corporate bonds as well as in secondary market trading. According to the RBI, the total corporate bond issuance has increased by around 155% from INR2.7 trillion in 2010-11 to INR 4.8 trillion in 2014-15 (approximating four per cent of GDP) and the number of issuances has increased by almost 77% from 4,280 in 2010-11 to 10,941 in 2014-15.<sup>30</sup> Yet, the bond markets in India are much smaller than in other Asian economies (Table 6).

**Table 6: Size of Local Currency Corporate Bond Market in other Asian Economies (% of GDP)**

	Q2 2014	Q2 2015
China	17.8	18.8
Hong Kong, China	29.3	29.0
Indonesia	2.2	2.2
Korea, Republic of	74.0	76.4
Malaysia	41.3	41.5
Philippines	5.6	5.8
Singapore	30.6	32.4
Thailand	16.7	17.4
Japan	16.9	16.2

Source: Asia Bond Monitor, September 2015

Recognizing the potential for growth from a low base, YES Bank, a private bank, issued the first green bond in February 2015. The INR10 billion (US\$161.5 million) bond will finance renewable energy projects. The Export Import Bank of India has also raised money through a larger US\$500 million green bond – from international investors. The bond will finance renewable energy and low carbon transport projects. The investment areas funded by the international green bond market seem to be aligned with India's priority investment areas and retail participation by Indian investors should be encouraged through advocacy and awareness campaigns. The rupee is a relatively volatile currency, which makes the cost of hedging against the foreign exchange risk high – around 8 per cent for a 10-year bond (USAID green bonds in India) – reducing the benefits of foreign investment.

In order to help meet financing requirements of US\$2.5 trillion for climate change actions in India by 2030, SEBI has proposed new norms for issuance and listing of green bonds in 2016, which may also include the details of expected environmental impact of such projects. The issuance, listing and disclosure requirements as prescribed under existing regulations for debt securities will continue to be applicable, like any regular corporate bond issuance. However, for designating an issuance of corporate bonds as green bonds, in addition to the compliance with the requirements under the existing regulations, an issuer will have to disclose in the offer document certain additional information about the green bonds, which have been based upon the Green Bond Principles.<sup>31</sup> SEBI also talks about the introduction of tax-free infrastructure bonds of INR50 billion (US\$794 million) for funding of renewable energy projects during 2015-16.

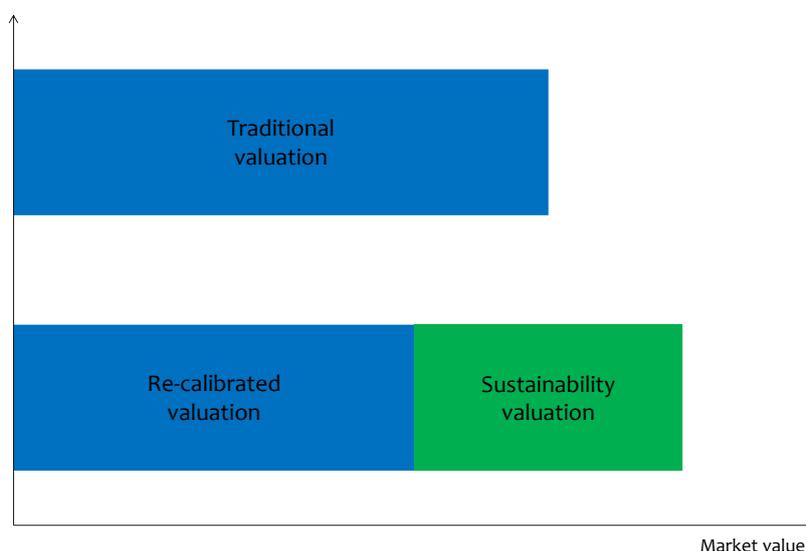
### 3.5 SUSTAINABILITY IN EQUITY MARKETS

ESG-related ratings for India are an example of how investors increasingly use sustainability-related indices to guide investment decisions in equity markets. Globally, many indices operate under the aegis of sustainability and most of them are used as signalling/rating tools. In order to be considered credible tools for allocating investments, they need to fulfil certain basic criteria including transparency, accountability, and objectivity. A few ESG indices have been operating in India with mixed success:

- The S&P ESG India Index was launched in January 2008. The index provides investors with an instrument to incorporate sustainability performance into their investment decisions. The index comprises of 50 Indian companies that meet certain ESG criteria and have been drawn from the largest 500 companies listed on the NSE through a two-stage screening process.
- The MSCI India ESG Index, launched in July 2013, is a capitalization-weighted index that lists companies with good ESG performance relative to sector peers. It consists of large and mid-cap Indian companies. The index is designed for investors seeking a broad, diversified sustainability benchmark with relatively low tracking error to the underlying equity market.
- The S&P BSE CARBONEX, launched in November 2012, is designed to provide a cost-effective way for equity investors to manage the risks associated with climate change, by identifying key climate change risks, sensitivity and responsiveness factors. It takes a strategic view of organizational commitment to climate change mitigation. The index analyses companies from the S&P BSE 100, with the constituent weights modified in accordance with the companies' relative carbon performance as measured by the level of their GHG emissions and mitigation policies.

Reporting requirements of stock exchanges are also creating triggers for sustainability-linked financing. Valuations for companies have traditionally focused on short-term performance indicators such as quarterly earnings. However, indices and ratings that focus on evaluating sustainability performance aim to deconstruct long-term metrics such as the efficiency of energy use and the robustness of corporate governance practices (Figure 11). Therefore, the sustainability valuation of companies is useful for investors with long-term horizons. It can be argued that most retail investors have long-term horizons by default as they look to the financial markets for preserving and increasing the value of cash assets over time.

**Figure 11: Changing Traditional Valuation Metrics**



Source: Gtrade Carbon Ex Rating Services Private Ltd.

Table 7 highlights the prominence of issues like energy efficiency measures and carbon emissions mitigation in the factors considered by asset managers for making investment decisions. Funds are managed using a wider set of investment criteria than ESG indices, and no structured products are based on the existing ESG indices, but ESG criteria can add to the robustness of risk assessment. Tools such as PRISM (Portfolio Risk, Impact, and Sustainability Measurement) are used by impact investors who are focused on sustainability targets.<sup>32</sup> Between 2000 and 2011, the total capital committed through such impact funds grew from US\$1.17 million to US\$250 million.<sup>33</sup>



**Table 7: Factors Considered by Indian Asset Managers in Investment Decisions**

Indicators	% of responses	
	Mutual Fund Managers	Private Equity Managers
Risk profile of the company	26.9	20.0
Capital gains generated	16.4	26.7
Companies taking measures to reduce carbon footprint	10.4	6.7
Energy-efficient companies	9.0	6.7
Companies with high retention rate of employees	14.9	13.3
Companies with least legal disputes	19.4	13.3
Other	3.0	13.3
Total	100.0	100.0

Source: Proceedings of the International Symposium on Emerging Trends in Social Science Research (IS15Chennai Symposium)

While initiatives ranging from reporting standards to ESG indices are not new to the Indian market, the fact that less than 10 per cent of asset managers use the available data indicates a gap between the demand and supply of such information. The supply of sustainability-related data points needs to be linked to a more robust approach to risk management through a combination of investor advocacy, greater awareness, better products and policies to bring coherence to existing initiatives.

## 3.6 INSURANCE

### 3.6.1 WEATHER INSURANCE

India is an agrarian society, with an increasingly large number of small and marginal farmers, primarily relying on rain for irrigation. But the increasing uncertainty of monsoons due to climate change directly impacts the livelihood of farmers, which makes weather insurance, defined as an indemnity for losses that may arise due to abnormal weather conditions (such as too high or too low rainfall, variations in temperature, wind speeds and humidity) an important tool.

Weather-based insurance schemes in India currently cover the majority of crops, including oilseeds, high-value crops such as cotton and coffee, and food crops. Risk cover is available for the sowing to harvesting period for standing (food) crops for non-preventable risks, partial coverage is for preventive sowing/transplanting risk, and for post-harvest losses for particular crops due to extreme weather events such as cyclones. Pay-outs are based on relevant weather indices derived from time series data collected from weather stations. For example, the weather index for rainfall is a function of deficit rainfall, consecutive dry days, number of rainy days, excess rainfall and consecutive wet days.

ICICI Lombard General Insurance Company Limited originally piloted weather index insurance in India in 2003, followed by the Agricultural Insurance Company of India (AICI) and IFFCO-Tokio in select states in 2004. The feedback from these pilots eventually led to the formulation of the Weather-Based Crop Insurance Scheme (WBCIS), which was implemented in 2007 as an alternative to existing insurance products. Initially, the scheme did not gain traction due to a lack of customer appeal, but it was revitalized following the introduction of affordable pricing policies, leading to its current status as the most widely used crop insurance instrument in Indian agriculture. Between 2007-08 and 2012-13, a cumulative 47 million farmers and 63 million hectares of land were covered.

**Table 8: WBCIS Business Statistics**

Season <i>Kharif</i>	Farmers Insured (thousand)	Area Insured (thousand ha)	Sum Insured (INR billion)	Gross Premium (INR billion)	Claims (INR billion)	Farmers Benefitted (thousand)	Farmers Benefitted (%)	Claim Ratio (%)	Loss Cost (claims as % of sum insured)
2007	44	50	0.5	0.1	0.1	35	81	71.4	9.4
2008	184	221	3.5	0.4	0.2	109	59	44.2	4.6
2009	1,161	1,531	21.2	2.1	1.6	903	78	74.5	7.5
2010	4,919	7,391	56.8	6.0	1.9	1,792	36	32.2	3.4
2011	6,909	9,788	108.7	10.3	4.3	3,598	52	41.4	3.9
2012	8,008	11,125	128.7	12.9	8.7	6,749	84	67.0	6.7
2013	8,927	11,230	146.4	14.8	10.4	5,601	63	70.4	7.1
<b>Total</b>	<b>30,152</b>	<b>41,336</b>	<b>465.8</b>	<b>46.6</b>	<b>27.1</b>	<b>18,787</b>	<b>62</b>	<b>58.1</b>	<b>5.8</b>

Season <i>Rabi</i>	Farmers Insured (thousand)	Area Insured (thousand ha)	Sum Insured (INR billion)	Gross Premium (INR billion)	Claims (INR billion)	Farmers Benefitted (thousand)	Farmers Benefitted (%)	Claim Ratio (%)	Loss Cost (claims as % of sum insured)
07-08	635	1018	17.4	1.4	1.0	191	30	70.8	5.8
08-09	192	261	5.4	0.5	0.3	121	63	72.5	6.2
09-10	1,202	1,891	28.6	2.4	1.9	600	50	79.4	6.5
10-11	4,386	5,757	86.5	7.0	4.4	2,527	58	63.7	5.1
11-12	4,766	5,945	98.6	8.1	7.5	2,732	57	92.1	7.6
12-13	5,606	6,992	107.3	9.3	10.6	4,049	72	114.4	9.9
<b>Total</b>	<b>16,787</b>	<b>21,864</b>	<b>343.7</b>	<b>28.6</b>	<b>25.8</b>	<b>10,220</b>	<b>62</b>	<b>90.0</b>	<b>7.5</b>

<b>Grand total</b>	<b>46,939</b>	<b>63,200</b>	<b>809.5</b>	<b>75.2</b>	<b>52.8</b>	<b>29,007</b>	<b>62</b>	<b>70.3</b>	<b>6.5</b>
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Source: Report of the Committee to Review the Implementation of Crop Insurance Schemes in India, Ministry of Agriculture, Government of India, May 2014

The protection against climate factors allows the farmers, the banks, micro-finance institutions and agro-based industries to operate without uncertainty. Weather insurance products are developed using universally accepted parameters that make it easier to transfer the risk to international financial markets through reinsurance. Such a global pooling of risk allows for more competitive portfolio-adjusted financing for the insurer as well as for the farmer.

### 3.6.2 PRADHAN MANTRI FASAL BIMA YOJANA

As an alternative to WBCIS, the Union Cabinet approved the Pradhan Mantri Fasal Bima Yojana in January 2016 with an expected outlay of INR176 billion (or about US\$2.67 billion) as an upgrade of the NAIS and MNAIS crop insurance schemes. Unlike WBCIS, the new scheme revolves around yield-based pay-outs primarily determined by crop-cutting experiments conducted in reference unit areas and the current and historical minimum support prices for respective crops.

One of the major obstacles facing Indian crop insurance is the lack of policy enrolment by farmers, currently at 23 per cent, due to prohibitive premiums and a general lack of awareness. To rectify this, the new scheme will fix the maximum premium for two per cent for Kharif crops, 1.5 per cent for Rabi crops, and five per cent for annual commercial and horticultural crops. Additionally, the limit on government subsidies for has been removed, ensuring that farmers will get receive claims against the full sum insured without any reduction. Finally, the premium rates for WBCIS will be rationalized in line with the new rates specified by the new scheme.

**Table 9: Details of the Weather Insurance Schemes**

No.	Feature	NAIS	MNAIS	PM Crop Insurance Scheme
		[1999]	[2010]	
1	Premium rate	Low	High	Lower than even NAIS (Government to contribute 5 times that of farmer)
2	One Season – One Premium	Yes	No	Yes
3	Insurance amount cover	Full	Capped	Full
4	On account payment	No	Yes	Yes
5	Localized risk coverage	No	Hail storm	Hail storm
			Landslide	Landslide
				Inundation
6	Post-harvest losses coverage	No	Coastal areas - for cyclonic rain	All India – for cyclonic and unseasonal rain
7	Prevented sowing coverage	No	Yes	Yes
8	Use of technology (for quicker settlement of claims)	No	Intended	Mandatory
9	Awareness	No	No	Yes (target to double coverage to 50%)

### 3.7 ENERGY TRADING

One of the key ways in which India can achieve sustainability and financing targets is through market-based mechanisms. The government runs two such mechanisms, which are described below.

First, under the National Mission for Enhanced Energy Efficiency, the country has devised a trading scheme analogous to the ‘cap and trade’ system, adjusted to the domestic context. The ‘Perform, Achieve and Trade’ (PAT) scheme is a market-based mechanism to enhance the cost-effectiveness of improvements in energy efficiency in large energy-intensive industries through the certification of the traded energy savings.

Through the Energy Conservation Act of 2001, India has identified 15 large energy-intensive industries that are low-hanging fruits for energy efficiency improvements and can yield substantive energy savings. Eight of these industries are currently covered under the PAT scheme (Table 10). The central

government is authorized to issue energy savings certificate (EScerts) to designated consumers (DCs) that consume less than the prescribed limits for their operations; conversely, DCs that consume more than the prescribed limits are entitled to purchase EScerts to comply with them. These EScerts can then be traded. The scheme has had teething issues however, which relate to the estimation of standards for different industrial units. The energy intensity reduction target depends on the current efficiency of different units. As a result, the scheme had limited success in its first round.

**Table 10: Minimum Energy Consumption Thresholds for Designated Consumers (DCs)**

Industry	Minimum energy consumption for DC (toe)	Number of identified DCs
Aluminium	7,500	10
Cement	30,000	85
Chlor-alkali	12,000	22
Fertilizer	30,000	29
Pulp and paper	30,000	31
Thermal power	30,000	144
Iron and steel	30,000	67
Textile	3,000	90

Note: toe: ton of oil equivalent

Source: Bureau of Energy Efficiency, Government of India

Some of the challenges related to the PAT scheme are that: (a) the boundaries of industrial activity have not been clearly defined, which created problems in audit and compliance, (b) the targets have not been found to be viable by industry, (c) the secondary market for EScerts is more or less absent, and (d) industry preparedness for understanding the scheme as well as implementing it has been low.

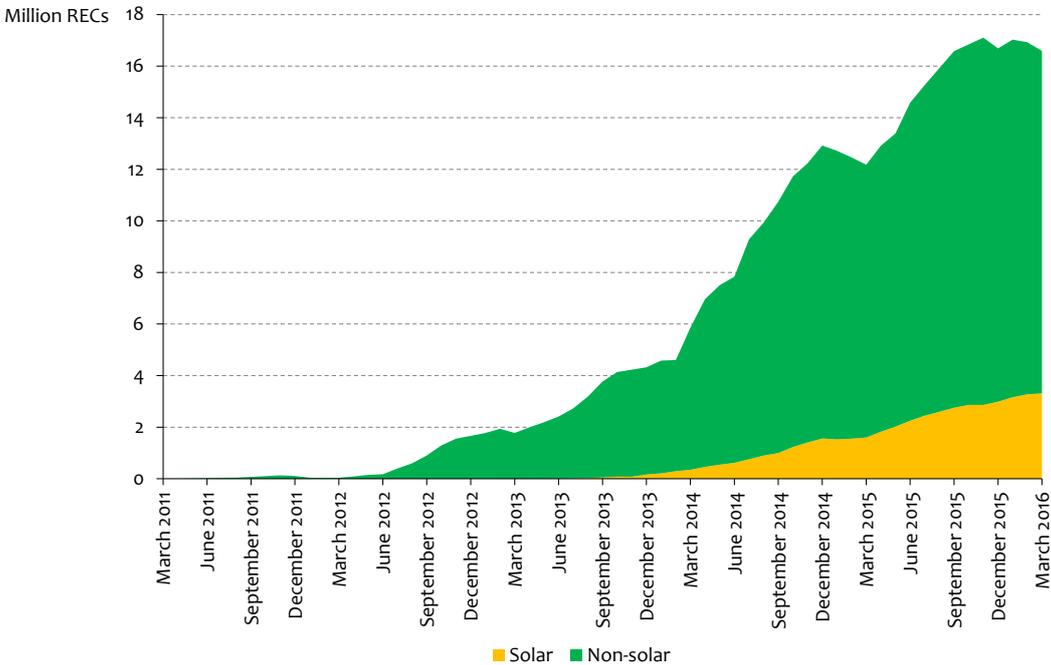
A second, relatively more successful market mechanism is the trading of renewable energy certificates (RECs). The Electricity Act of 2003 empowers the State Electricity Regulatory Commissions to specify a percentage of total consumption of electricity in the area of a distribution licensee to be procured from renewable energy sources (also referred to as the renewable purchase obligation). The RECs help power producers recover their relatively higher (than conventional generation) cost of power generation. All distributors of electricity need to meet their renewable purchase obligations, and are therefore able to buy RECs from distributors that have a surplus of renewable energy in their distribution mix. RECs are tradable through authorized power exchanges approved by the Central Electricity Regulatory Commission. Each REC is the equivalent of one megawatt-hour. REC inventories began to pick up sharply from June 2012, although trading on solar RECs only began from December 2013. While solar RECs have picked up since then, the vast majority (and growth) in RECs were non-solar (Figure 12).

The lack of market depth and liquidity is a key challenge that REC trading has yet to overcome. The limited number of buyers and sellers of these certificates creates concern over the resale value of RECs. However, non-compliance is a more serious issue. The REC inventory was of 16.6 million megawatt hours at the end of March 2016. Since RECs are valid for three years, such a build-up worries power producers. The non-compliance comes from the state utilities, nearly all of which face fiscal constraints due to the loss of revenue through cross-subsidized power. As a result, there is a large gap between the number of RECs available for sale in the designated exchanges and the actual amount purchased by different utilities. According to stakeholders, “penalties are rarely imposed, and if at all, then only in those states whose state electricity regulatory commissions are vigilant”.<sup>34</sup> The problem of getting the RECs off the ground seems therefore to be inherently a political one.



Aside from the two schemes described above, a pilot emissions trading scheme is currently tested in the states of Gujarat, Tamil Nadu and Maharashtra. The pilot for the three states will cover 1,000 high particulate emission industries. The emissions trading scheme focuses on particulates, namely SO<sub>2</sub>, NO<sub>x</sub> and SPM.

**Figure 12: REC Inventory Pile Up**



Source: Renewable energy certificate registry of India

### 3.8 PUBLIC FINANCE

#### 3.8.1 COAL CESS AND EXCISE DUTY

The Indian government has increased its coal cess from INR50 per ton to INR100 in 2014, INR200 in 2015, and finally INR 400 per ton in 2016. The proceeds from the cess are used to finance clean energy initiatives, and are expected to contribute INR13,000 to the NCEF every year. In addition, India has decreased subsidies and increased taxes in the form of excise duty on petrol and diesel, even as global oil prices have collapsed. For example, the basic excise duty rate on aviation turbine fuel has increased from 8% to 14%. This has acted as an implicit carbon tax. Both these fiscal measures, combined with India’s ambitious renewable energy initiatives, are substantive steps in the direction of sustainable development.

#### 3.8.2 MUNICIPAL BONDS

Despite an enabling constitutional amendment (74<sup>th</sup>), urban local bodies (ULBs) lack the governance structure and control over revenues that would enable them to be considered credit worthy or capable of raising funds to make sustainability-linked investments, indicating that further devolution to the ULBs needed. As a first step towards fiscal empowerment, SEBI allowed municipal bodies in March 2015 to issue debt securities that could be listed. SEBI says its regulations relating to municipality bonds will provide a “framework governing the issuance and listing of bonds by municipalities which will enable investors to make informed investment decisions before investing in bonds issued by such entities”. SEBI regulations also set disclosure rules for these bonds and could facilitate the listing of privately placed municipal bonds. These regulations conform to the government’s guidelines for issuing tax-free bonds by municipalities. All municipal bonds should have a three-year tenure, a mandatory credit rating, which should be of investment grade in case of public issuances, and banks or financial institutions should be appointed as monetary agencies that will prepare periodic reports on the issuer.



#### **BOX 4: THE CASE FOR ENERGY SERVICE COMPANIES (ESCOs)**

ESCOs establish credibility through an energy savings performance contract (ESPC) mechanism that guarantees the client (host entity) a certain level of energy savings from the identified energy efficiency measures, thereby transferring the technical project risk to the respective ESCO.

However, India currently lacks universally accepted regulations, established best practices or associated legal provisions for ESCO-implemented transactions. In the Indian energy efficiency market, implementation through ESCOs has been stymied because ESCOs or small- to mid-tier host end-user entities lack access to finance. ESCOs are often cash-strapped as banks often do not lend to ESCOs or for energy efficiency improvements in smaller/mid-tier end-users due to higher perceived risks.

In order to minimize the risk, banks/financial institutions face, a partial risk-sharing facility for energy efficiency (PRSF) has been initiated. The objective of the project is to promote increased levels of energy efficiency investments, particularly through ESPC delivered through ESCOs. The successful demonstration of ESCO-managed energy efficiency subprojects, through PRSF support, is expected to reduce the risk commercial banks perceive in providing credit to energy efficiency projects. It is estimated that the project is will provide a credit guarantee to more than 500 ESCO-implemented energy efficiency projects that would mobilize around US\$127 million. Furthermore, the project is expected to result in energy savings of more than 1,000 gigawatt-hours and mitigation of carbon emissions of up to 734,000 tons.

### **3.8.3 INDIAN RENEWABLE ENERGY DEVELOPMENT AGENCY (IREDA)**

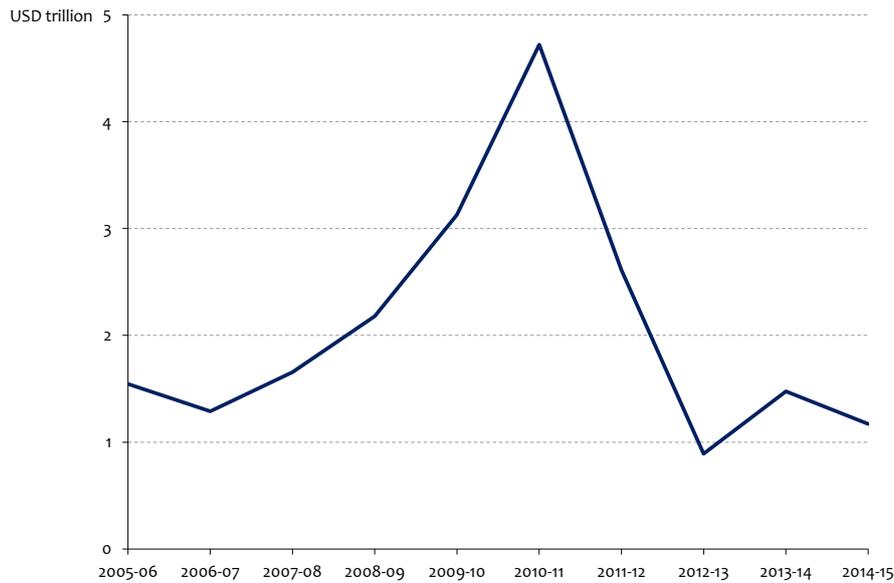
The Indian Renewable Energy Development Agency Limited (IREDA) was established in March 1987 to promote, develop and extend financial assistance for renewable energy and energy efficiency/conservation projects. It has been notified as a public financial institution and registered as a non-banking financial company (NFBC) with the RBI. IREDA provides debt financing for renewable energy and energy efficiency projects. It also offers financing schemes, such as project financing of up to 80 per cent of project costs, equipment financing of up to 75 per cent of equipment costs and other types of medium- to long-term debts.

### **3.8.4 MULTILATERAL AGENCIES AND DEVELOPMENT ASSISTANCE**

Multilateral development banks (MDBs) such as the ADB and the World Bank work in partnership with central and state governments, independent specialists and other financial institutions to fund development objectives in India. Disbursements take the form of loans, grants, technical assistance, guarantees and debt management products, and are generally tied to the outcomes of the project. For instance, the ADB has introduced results-based lending (RBL), which aims at increasing the accountability of the receiving country/government. This type of lending was introduced in June 2013 and will run as a pilot for six years. India could access funds for some of its target-based renewable plans.

A lot of the lending by multilateral and bilateral agencies in India is based on concessionary rates of interest. One of the key drawbacks is that India is no longer a net recipient of development assistance, and the levels of assistance to India are reducing over time (Figure 13).

**Figure 13: Net Inflow of Development Assistance**



Source: RBI

**Box 5: UNDP’s BIOFIN PROJECT**

The UNDP is implementing the Biodiversity Finance Initiative (BIOFIN), a global multi-country project that provides tools and the methodological framework for measuring expenditure on biodiversity, which the countries may choose to use in their efforts to mobilize resources required for achieving the global and national biodiversity targets. Launched in October 2012, BIOFIN focuses on the national implementation of the methodological framework in the countries that agree to pilot the initiative. So far, 19 countries are implementing the project, with many more likely to join soon.

The Ministry of Environment, Forests and Climate Change (MoEFCC) has participated in the BIOFIN project emphasizing that BIOFIN implementation in India would be completely country-driven, taking into account the activities already undertaken for developing national biodiversity targets and assessing the funding for biodiversity in the country.

The BIOFIN project is significant as available evidence indicates a significant gap in the funding for biodiversity and the global investment required for meeting the Aichi biodiversity targets. The UNDP has allocated US\$1 million for piloting BIOFIN initiative in India.<sup>35</sup> At various BIOFIN meetings organized by MoEFCC, it was agreed that while the implementation of BIOFIN would be pan-Indian, pilots can be considered for a few states in different regions, with capacity building and awareness generation integral elements of the project. The Ministry is currently assessing how much finance has flowed in from various national banking and financial institutions towards biodiversity conservation within the country and is also mapping out how much corporates have spent towards biodiversity conservation under their CSR funds.

**3.9 CONCLUSION**

The proliferation of sustainability-linked initiatives in the Indian financial markets indicates a positive direction and momentum. Initiatives range from policy-mandated disclosure to energy trading. Large companies are low-hanging fruits: they have the financial and human resources capacity to adhere to sustainability mandates and are among the largest potential long-term beneficiaries as well. However,



a number of challenges remain in mainstreaming sustainability through such companies. The largest challenge is perhaps one of incentives – companies have no underlying incentive to report better and to perform better as far as sustainability is concerned. This incentive can only be created through financial market depth, so that retail investors can begin to signal that long-term factors such as ESG performance are as important as short-term factors and quarterly financial returns.

Many financial inclusion-linked policies and initiatives have also begun to create the conditions for broader market participation. The government's 'Jan Dhan Yojana' is one such flagship scheme that is focused on providing universal access to banking facilities for all households in the country. As of February 2016, 207 million new bank accounts had been opened under this expansive scheme. These accounts have also been linked to unique identification numbers under the 'Aadhaar Scheme'. The government envisions that through the trinity of mobile banking, unique identification numbers and banking inclusion, a paradigm change in financial inclusion and financial market participation can be enabled over time.

Despite such ambitious policy focus and implementation, retail investors as well as stakeholders at the bottom of the pyramid such as farmers continue to be at the margins of the sustainability discourse. Efforts to harness the growing sustainability ecosystem to their benefit have begun in earnest. This will also have to involve structural changes prompted by economic reforms that focus on financial inclusion beyond the operationalization of bank accounts. For instance, awareness initiatives will have to accompany a number of innovations such as weather insurance. At the same time, the products will need to be suitably contextualized to India's sustainability challenges.





## 4 RECOMMENDATIONS

A holistic approach using a set of concrete measures is crucial in generating momentum towards integrating sustainability parameters in financial and investment decision-making. This includes several measures on policy incentives and regulations, the creation of new markets, capacity building of financial institutions, the creation of suitable frameworks to attract international public and private finance. The recommendations in this section are placed within this context.

### 4.1 DEVELOPING A CAPITAL MARKETS STRATEGY LINKED TO SUSTAINABILITY

#### 4.1.1 GREEN BONDS

Debt for renewable energy projects has been mostly provided by domestic banks, domestic non-bank financial intermediaries and development finance institutions (DFIs). Several domestic banks are approaching their prudential sector limit and are unlikely to have the capacity to support such growth alone. In this context, tapping the domestic capital market is crucial. Innovative financing structures like green bonds can mobilize funds from institutional investors to renewable energy projects, which otherwise would be reluctant to invest in sub AA-rated bonds issued by private sector renewable energy companies. Some policies and market perspectives to develop a green bond market are as follows:

- The withholding tax on external commercial borrowings (ECBs) is currently set at five per cent, which should be removed for green bonds. A preferential withholding tax rate has previously been given to long-term infrastructure investment, setting a precedent for the use of this fiscal incentive for green bonds. In addition, removal of 40 per cent ceiling on re-financing through ECB for green bonds would support market expansion.
- Establishment of a national exchange risk liquidity facility with a special focus on infrastructure, including green infrastructure. The NCEF can be tapped to create a facility to support green bonds.
- Consolidation of the credit enhancement facilities offered by donors and the introduction of exclusive arrangements for green bonds. The NCEF can also commit funds to the consolidated credit enhancement facility.
- Obtaining debt through government issuances and government selectively guaranteed issuances to lower the cost of debt for green infrastructure and energy developers.
- The government can start offering Green National Savings Certificates (NSCs) and Government Savings Bonds, using the scheme to grow a market for green retail bonds.
- India can discuss access to funding from the UNFCCC's Green Climate Fund for developing exchange risk guarantees for international credit enhancement.
- Indexing electricity tariffs to inflation rates and foreign currencies, in particular US\$ (for export-oriented facilities/zones).
- Investments made by banks in green bonds should be a permissible Priority Sector Asset.
- Allow hold to maturity classification for investment for tenors less than seven years, as well for banks investments in green bonds.
- Lowering the risk weightage for investments into green bonds can help the popularization of such bonds, while CRR/SLR benefits can also be extended to investments into green bonds.

- ⦿ Allow investment of a larger percentage of long-term funds without board approval. Currently, insurance companies are allowed to take only up to 10% of long-term funds without board approval on a per issuer basis, and 20% with board approval.
- ⦿ Allow exposure to private limited companies as most issuers in the renewables space are structured as SPVs in private limited company formats. Include investment into green bonds in one of the mandatory investment categories such as low-cost housing.
- ⦿ Allow transactions rated as structured obligations without board approvals as most of the infrastructure issuers are lower rated and are issued with credit enhancements.
- ⦿ Allow EPFOs to invest in non AAA-rated bonds in the private sector for such green issuers.
- ⦿ Require relevant bond issuance by government entities to be certified and establish a standard for annual reports of compliance through these bonds.
- ⦿ Provide financial support to market-led initiatives seeking to develop standards for green bonds with the Indian context in mind.

#### **4.1.2 MUNICIPAL BONDS**

Municipal bonds are crucial to improve India's urban infrastructure. They can potentially act as an alternative to the central and state government grants to ULBs. Adopting an innovative mode of financing, such as Government Citizen Partnership (GOCIP) Bonds, where citizens invest in the bonds floated by ULBs to improve urban infrastructure and urban civic services, is one such option. Citizens, as investors of GOCIP bonds, can keep an eye on ULBs' performance and use of resources. Public issuance of revenue bonds will be supported by revenue from specific projects to ease the debt servicing process. Additionally, user charges are currently not sufficient to even recover overheads and maintenance expenditure; hence user charges on assets should be revised at regular intervals.

#### **4.1.3 YELDCOS AND GREEN IPOS**

A yieldco is an income-oriented investment vehicle that generates regular cash flow by bundling up renewable assets with long-term power purchase agreements (PPAs). Companies adopt the yieldco structure to unlock value from long-term contracted assets that may be undervalued in existing businesses, to access the broad yield focused public investor base, and to create a buyer/long-term owner for project developers. Given the ambitious targets for renewable energy, access to low-cost, liquid capital sources becomes crucial. Equity markets are inherently more liquid than any fixed income capital sources, and are well suited to meet the capital requirements of the expanding sector. Yieldcos have the ability to continue to approach capital markets, without ever holding large amounts of cash to fuel growth.

### **4.2 STRENGTHEN KEYSTONE FINANCIAL INSTITUTIONS**

#### **4.2.1 INDIAN RENEWABLE ENERGY DEVELOPMENT AGENCY**

Leveraging the financial strength and capability of the IREDA to increase the bank book size would enable further channelling of finance towards sustainable development. IREDA was presented with the MiniRatna (Category 1) status by the Department of Public Enterprises under the Union Ministry of Heavy Industries and Public Enterprises, allowing it to make capital expenditure on new products, approve modernization measures and purchase equipment without the approval of the government up to a limit of INR5 billion (US\$81.8 million). A larger financial capability mandate would allow the deployment of international funding through the GCF. Additionally, strengthening swap and hedging capabilities of the IREDA with government support and building in products for take-out, guarantees and loan life extension would garner additional lines of finance to provide low-cost, long-tenor financing in both foreign and Indian currency.

## 4.2.2 NATIONAL CLEAN ENERGY FUND

The National Clean Energy Fund aims to provide momentum for the development of clean energy in India, although it has consistently underperformed so far. This is primarily due to the absence of a robust project pipeline and minimal disbursing of funds to approved projects. Better governance and institutional capacity, along with a reform of the Fund's operational framework will help improve its performance. The NCEF will also benefit from a well-articulated vision. This could include establishing a separate allocation for specific types of projects that improve energy access. Some amendments to the existing guidelines that will help improve performance of the Fund include:

- Revisions to the existing guidelines for appraisal and approval of projects/schemes eligible for financing under the NCEF;
- Establishing the monitoring and evaluation procedures and processes for the Fund as well as approved projects; and
- Eliminating barriers that have prevented the participation of the private sector, universities and research institutes.

## 4.3 ALIGN FINANCIAL REGULATIONS WITH SUSTAINABILITY

### 4.3.1 PRIORITY SECTOR LENDING

The following measures are recommended in order for priority sector lending benefits to have a greater impact at the ground level:

- Reworking the PSL policy towards facilitating the identification of sustainable businesses, improving the viability of PSL.
- Developing a mechanism through which unutilized PSL funds can be directed towards sustainability projects.
- The bank loan limit for investments into renewable energy projects should be enhanced to INR500 million (US\$8.18 million), so that reasonably sized renewable energy projects can attract finance.
- Manufacturing for clean energy and waste-to-energy projects should be included in the PSL guidelines for renewable energy. Manufacturing in renewable energy machinery plays an important role in the development of the sector and in realizing the government's vision of 175 GW by 2022. Priority sector lending needs to be expanded and deepened to provide a wider net to different kinds of renewable energy projects, both in generation and manufacturing.
- In addition to direct lending, lending to intermediary financial institutions, NBFCs and MFIs for the dedicated purpose of lending to sustainability initiatives could also benefit from PSL classification.
- Investment by banks in pass-through certificates with loans to the renewable energy sector as underlying assets originated by NBFCs should qualify as PSL.

### 4.3.2 THE DRAFT INDIAN FINANCIAL CODE (IFC)

The draft IFC has a provision mandating that any measure for market infrastructure or directed lending should be reviewed in terms of its costs to society as a whole. This includes claims by firms with respect to environmental sustainability standards met (or often not met) by their products. This should curb lending to environmentally harmful sectors, and perhaps encourage lending to greener sectors. The IFC contains provisions for the regulation of financial products aiming at protecting consumers. The IFC also envisages regulations with respect to capital controls as these regulations currently do not include future cross border flows of capital that finance 'dumping' of environmentally undesirable investments. The opportunity now exists to make sustainable finance a critical dimension of the final version of the Code.

### 4.3.3 RENEWABLE ENERGY

- The RBI should come up with risk mitigation options and guidelines for renewable energy. One option is to see the renewable projects bundled at the organization level instead of individually, reducing the risks of standalone projects
- To increase lending to this sector, renewable energy needs to have its own exposure limit. Currently, renewable energy figures in the power sector based on the RBI guidelines. Most banks reach their exposure limits quickly with conventional energy projects, which lowers the flexibility to fund a renewable energy project. There is a continual asset-liability mismatch due to the long-term nature of these projects causing tightness in liquidity and borrowing costs.
- Alternatively, renewable energy could be included under infrastructure projects, which would make long-term and low-cost financing from insurance and pension funds available for the sector.
- Off-grid and decentralized solar applications, including solar rooftops, are an important means to enhance energy access. The Ministry of Finance has taken a positive step towards promoting rooftop installations through its notification to public sector banks for clubbing funding of solar rooftops with home loans and home improvement loans. The rooftop segment can also be promoted in a large way if the third party ownership model is provided a proper payment security mechanism. If the banking system can create a mechanism for direct security with the SME and residential sector, it will help in expanding accessibility for off-grid solar applications significantly.
- Waiving off collaterals for loan approvals up to INR500,000 (around US\$7,500) for the off-grid sector will help stimulate the growth of the sector. Refinancing off-grid and decentralized systems through nationalized banks will only further encourage development.
- The RBI has a vision to create a market for trading PSL securities/papers. Loans to the renewable energy sector can be packaged into tradeable papers and investments so that they qualify for PSL.
- In order to encourage investment into sustainable firms, the central government can issue orders for the provision of financial services to any identified classes of consumers (Section 344). This power can be used for priority sector or social sector obligations that various regulators have imposed currently.

## 4.4 BUILDING FINANCIAL SECTOR CAPACITIES TO IMPLEMENT KEY MEASURES

### 4.4.1 RATINGS AND GUIDELINES

The Ministry of Environment, Forest and Climate Change together with the Ministry of Finance can ensure that the existing ratings systems and guidelines are used more effectively so that they become an active part of business decisions. They can also incentivize the evolution of market instruments based on frameworks such as the National Voluntary Guidelines, or the current energy disclosure formats.

### 4.4.2 USING THE SUSTAINABILITY REPORTS AS A TOOL FOR INVESTMENT DECISIONS BY FINANCIAL INSTITUTIONS

Though the top 500 companies listed on the National Stock Exchange have been mandated to submit their BRR, the actual impact of these reports on sustainable financial/investment decisions should be analysed. Additionally, capacity building in this direction is suggested so that an already available resource on public disclosure may be used effectively in taking investment decisions.

### 4.4.3 SUSTAINABILITY IN LENDING DECISIONS

Banking guidelines, disclosure requirements, ESG ratings and sustainability-driven indices are required in order to mainstream sustainability into investment decisions. These measures should be complemented by capacity building of financial institutions as well as retail investors. Integrating sustainability into project implementation decisions ensures the long-term viability of infrastructure projects. Currently,

banks facilitate the vast majority of institutional lending towards infrastructure development. However, infrastructure credit protocols do not adequately take sustainability into account. Nationally, this can be incentivized by making efficiency benchmarks mandatory and instituting the requisite monitoring and contract enforcement frameworks.

#### **4.4.4 COMMODITIES AND DEFORESTATION**

Commodities like timber, paper and palm oil can be produced unsustainably and have a significant impact on areas of critical ecological importance. Agriculture and forestry, while often representing small portions of global investment portfolios, drive some of the largest negative impacts – including deforestation, GHG emissions, biodiversity loss, unsustainable water use, and impacts on local and indigenous communities. Financial institutions' role in providing capital to the producers, traders, retailers and consumers of commodities means they can play a unique role in driving sustainability through their client base across numerous value chains. This can take the form of putting in place clear sector policies that require verified good practice and production standards. Existing commitments and efforts by the financial sector to improve client performance, if scaled, may represent a low-hanging fruit to improve the natural economy

### **4.5 FOCUS ON INCREASING ACCESS TO SUSTAINABLE FINANCE**

#### **4.5.1 VIABILITY GAP FUNDING FOR SMEs**

SMEs often lack the security required for conventional collateral bank-based lending, or high enough returns to attract formal venture capitalists in what has been coined as the SME finance gap. In order to overcome this, many innovative financial instruments, such as broadening the collateral-based approach by encouraging bank lenders to finance SMEs with reduced collateral, should be brought into practice. This might be done through an external party providing the collateral or guarantees required. An alternative approach would be to supply bank or private equity finance to suitable SME applicants on mutually satisfactory terms and conditions. The main obstacles to funding here appear to be on the demand rather than the supply side of the business finance market. In order to have success with the instruments covered by PRSF/VC funding by SME banks, transparency by MSMEs is a potentially critical factor for its success. In addition, ESCOs need to be built as a viable tax-efficient investment opportunity to allow the rapid entrepreneurial development of the ESCO market in India.

#### **4.5.2 ADAPTATION FINANCING**

In the past, the MSME sector has suffered largely because of a dearth of access to technology and finance required to meet adaptation challenges. Adaptation financing to MSMEs should also cover manufacturing of the equipment necessary for adaptation purposes. For example, adaptation finance should cover access to technologies that potentially mitigate the effects of climate change, such as drip irrigation equipment, weather forecasting equipment, and agricultural chemicals and fertilizers.

#### **4.5.3 BUNDLING OF PRODUCTS**

Large capital upgrades can be financially justified by bundling capital goods with supplementary services that have a quick payback. The most common bundling example in India is the CDM-based programme of activities under the Bachat Lamp Yojana for the replacement of incandescent lamps with CFLs and the energy efficiency improvements in furnaces used in the SME steel industry clusters.

#### **4.5.4 WATER AND SANITATION**

To ensure sustainability, it would be crucial to fund sanitation promotion and marketing rather than providing supply-driven subsidies for sanitation infrastructure. This would imply funding sustainable

sanitation that ensures adequate resource availability for the entire value chain of sanitation services and helps in upstream and downstream market creation.

Apart from water risk assessments conducted within an ESG framework, financial institutions can influence better water management by engaging directly at basin conservation and stewardship along with other stakeholders like industry, policy makers and civil society. Funding and supporting innovations, technology assimilation and multi-stakeholder platforms on water will help further mitigate water risks.

#### **4.5.5 WASTE MANAGEMENT**

Incentives need to be provided in the waste management sector in the form of results -based financing or output-based support. Results-based financing could also be adopted for waste-to-energy projects and other new sectors in the renewable energy space, where, based on project evaluation, money could be paid to project developers and contractors on the successful completion of various stages of the project.

### **4.6 MOBILIZING INTERNATIONAL FINANCIAL FLOWS**

#### **4.6.1 GREEN CLIMATE FUND**

The GCF should be leveraged to provide funding to projects that enable a significant transformation towards a low carbon trajectory, such as projects on energy access through clean energy, MSME-focused low carbon projects that have a wider ramification on reducing energy consumption, and waste management projects that address not only environmental concerns but also social concerns.

#### **4.6.2 TECHNOLOGY TRANSFER**

Currently, private and foreign participation in the Indian electricity sector remains limited. Collaborative efforts with developed countries need to be put in place in order to support joint R&D projects and related technology transfer. Continued R&D efforts and demonstration plants should be supported by governments to facilitate technology transfer in the future. In addition, issues such as intellectual property rights and perceived political and market risk need to be addressed to attract more foreign direct investment in power sector.

#### **4.6.3 BUILDING ON THE INTERNATIONAL SOLAR ALLIANCE**

The government of India envisions that the secretariat of the International Solar Alliance (ISA) will be a specialized body, which will help in promoting, disseminating and deploying renewable energy, and will not replicate the work done by existing multilateral agencies such as the International Renewable Energy Agency.<sup>36</sup> While the ISA White Paper has identified various ways of leveraging business and knowledge partnerships, the ISA can provide value through matching institutional demand and supply: to increase commercial viability of solar projects, the ISA can develop projects with implementing partners and infrastructure funding institutions such as the New Development Bank and the Asian Infrastructure Investment Bank.

#### **4.6.4 EXTERNAL COMMERCIAL BORROWINGS**

The following policy measures to incentivize external commercial borrowings need to be taken to enable access international finance for domestic borrowers:

- ⦿ *Withholding tax:* In order to increase debt service capability, exemption from withholding tax payments on ECB interest payments should be introduced.

- ⦿ *Replacement of construction finance and refinancing:* The guidelines should be amended to allow the ECB route to take out 100% of INR-denominated construction finance debt facilities. Refinancing of existing ECBs should be freely permitted and new ECB loans allowed with greater average maturity or higher cost.
- ⦿ *Hedging:* Innovative hedging solutions are allowed for project net-worth above INR2.5 billion (US\$40.9 million). This should be reviewed to a lower net-worth criterion for green projects.

#### **4.6.5 FOREIGN INSTITUTIONAL INVESTORS: THE GREEN INFRASTRUCTURE INVESTMENT COALITION**

In December 2015, a new Green Infrastructure Investment Coalition was launched to bring together countries and investors who had a strategic interest in scaling up finance for sustainable infrastructure assets.<sup>37</sup> The coalition will work with its partners to design green financing strategies, develop debt and equity capital market frameworks, bring together risk bridging mechanisms and host market creation events between issuers and investors. A number of Indian institutions have joined the coalition including FICCI, IDBI Bank, Export-Import Bank and the National Institute of Public Finance & Policy. The coalition could be an important arena for India to share its future pipeline of infrastructure assets in the green economy arena with long-term foreign institutional investors. To take advantage of this opportunity, Indian decision-makers could establish a forum for attracting green finance from foreign investors.

## ABOUT THE INDIA INQUIRY

The UNEP India Inquiry process was launched at the **FICCI-UNEP Conference on the Design of a Sustainable Financial System in India** in November 2014, as a part of the **UNEP Inquiry**. The inaugural event of the India Inquiry had the presence of two Union Ministers – Mr. Piyush Goyal, Union Minister for Power, Coal, New and Renewable Energy, and Mr. Jayant Sinha, Minister of State for Finance. The Inquiry is supported by an India Advisory Council, chaired by Ms. Naina Lal Kidwai, Chair of FICCI Water Mission and Past President of FICCI. In November 2014, the **executive briefing *Building a Sustainable Financial System to Serve India's Development Needs*** was released and presented to key Ministries in the Indian government. In February 2015, the **interim report *Designing a Sustainable Financial System for India*** was launched in New Delhi and presented to Minister Goyal on the sidelines of the first Renewable Energy Global Investors Meet (REINVEST).

The UNEP Inquiry global report had an India launch on 27 November 2015, at FICCI in New Delhi where the findings of the India Inquiry were also shared with the stakeholders. The day before, the draft report along with findings of the India Inquiry were presented in Mumbai to Mr. R. Gandhi, Deputy Governor of the Reserve Bank of India. Since the India Inquiry inaugural event, continuous dialogue and deliberations have been carried out with different stakeholders and within the India Advisory Council. Two events on green bonds were also held in November 2014 under the aegis of the UNEP Inquiry and September 2015 under the aegis of FICCI supported by HSBC to advance the dialogue on green bonds market development in India. The UNEP Inquiry also partnered in the FICCI-ICRIER Conference on “Strategies for Sustainable Development: Climate Action, Financial Reform” in August 2015. Feedback from all the consultations and workshops fed into this final India Inquiry Report. During COP21 in Paris in December 2015, FICCI organized a side event on “Delivering a Sustainable Financial System in India and Prospects for Climate Finance” where the UNEP Inquiry global report and findings of the India Inquiry were presented. Members of the India Advisory Council participated in all the events mentioned.

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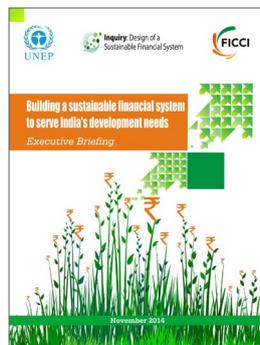
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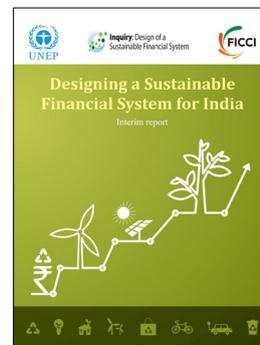
# UNEP INQUIRY'S JOURNEY IN INDIA

- FICCI – UNEP Conference on Designing a Sustainable Financial System for India, 25 November 2014, New Delhi
- FICCI – ICRIER Conference on Strategies for Sustainable Development: Climate Action, Financial Reform, 3 August 2015, FICCI, New Delhi
- Conference on Green Bonds, 8 September 2015, FICCI, New Delhi
- FICCI Side Event at UNFCCC COP 21: Delivering a Sustainable Financial System in India and Prospects for Climate Finance

Executive briefing



Interim report



# REFERENCES

- <sup>1</sup> <http://blogs.timesofindia.indiatimes.com/toi-edit-page/greenbacks-for-greening-india-needs-a-finance-system-that-promotes-ecologically-sustainable-industry/>
- <sup>2</sup> <http://unepinquiry.org/publication/inquiry-global-report-the-financial-system-we-need/>
- <sup>3</sup> <http://unepinquiry.org/publication/bangladesh/>
- <sup>4</sup> <http://unepinquiry.org/publication/brazil-2/>
- <sup>5</sup> <http://unepinquiry.org/publication/establishing-chinas-green-financial-system/>
- <sup>6</sup> <http://unepinquiry.org/publication/colombia/>
- <sup>7</sup> <http://unepinquiry.org/publication/european-union-report/>
- <sup>8</sup> <http://unepinquiry.org/publication/france-country-report/>
- <sup>9</sup> <http://unepinquiry.org/publication/india/>
- <sup>10</sup> <http://unepinquiry.org/publication/indonesia/>
- <sup>11</sup> <http://unepinquiry.org/publication/kenya-country-report/>
- <sup>12</sup> <http://unepinquiry.org/publication/netherlands-input/>
- <sup>13</sup> <http://unepinquiry.org/publication/governance-policy-innovations-in-south-africa/>
- <sup>14</sup> <http://unepinquiry.org/publication/switzerland/>
- <sup>15</sup> <http://unepinquiry.org/publication/united-kingdom/>
- <sup>16</sup> <http://unepinquiry.org/publication/united-states/>
- <sup>17</sup> For the economy as a whole, emissions intensity is usually expressed as emissions per dollar of GDP.
- <sup>18</sup> <http://www.npr.org/2009/04/14/102944731/green-revolution-trapping-indias-farmers-in-debt>
- <sup>19</sup> [http://mospi.nic.in/Mospi\\_New/upload/KI\\_70\\_33\\_19dec14.pdf](http://mospi.nic.in/Mospi_New/upload/KI_70_33_19dec14.pdf)
- <sup>20</sup> <http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf>
- <sup>21</sup> <http://www.ibef.org/industry/financial-services-india.aspx> Accessed on 10 October 2015.
- <sup>22</sup> <http://archive.indianexpress.com/news/glitches-in-mpa-classification-priority-sector-lending-pain-behind-united-bank-of-indias-mess-probe/1233788/>
- <sup>23</sup> <http://shaktifoundation.in/wp-content/uploads/2014/02/RE-Financing-Final-report.pdf>
- <sup>24</sup> <https://www.giz.de/en/downloads/giz2014-en-msme-innovations-social-enterprise-financing.pdf>
- <sup>25</sup> Source: The Final Report of the Expert Group on Low Carbon Strategies for Inclusive Growth, Planning Commission 2014.
- <sup>26</sup> [http://planningcommission.nic.in/reports/genrep/rep\\_carbon2005.pdf](http://planningcommission.nic.in/reports/genrep/rep_carbon2005.pdf)
- <sup>27</sup> <http://www.ey.com/IN/en/Industries/Government--Public-Sector/Accelerating-public-private-partnerships-in-India>
- <sup>28</sup> <http://www.bseindia.com/downloads1/FinalBRR.pdf>
- <sup>29</sup> <https://rbi.org.in/scripts/NotificationUser.aspx?Mode=0&Id=9688> Viewed 1 September 2015.
- <sup>30</sup> [https://rbi.org.in/Scripts/BS\\_SpeechesView.aspx?Id=980](https://rbi.org.in/Scripts/BS_SpeechesView.aspx?Id=980)
- <sup>31</sup> <http://www.dnaindia.com/money/report-here-are-the-new-norms-for-green-bonds-proposed-by-sebi-2151652>
- <sup>32</sup> More information on PRISM can be found at: <http://www.prismforimpact.com/about-prism/>
- <sup>33</sup> <http://acumen.org/blog/the-impact-investing-landscape-in-india-an-overview/>
- <sup>34</sup> <http://www.livemint.com/Politics/nuk1yqmbZLj6foZY1kzh2l/Can-market-mechanisms-help-India-fight-climate-change.html>
- <sup>35</sup> [http://envfor.nic.in/sites/default/files/press-releases/Press%20Release\\_BIOFIN.pdf](http://envfor.nic.in/sites/default/files/press-releases/Press%20Release_BIOFIN.pdf)
- <sup>36</sup> <http://mnre.gov.in/file-manager/UserFiles/ISA-Working-Paper.pdf>
- <sup>37</sup> The Coalition is co-organized by the Climate Bonds Initiative, the PRI and the UNEP Inquiry: <http://2xjmlj8428u1a2k50341m71.wpengine.netdna-cdn.com/wp-content/uploads/Green-Infrastructure-Investment-Coalition-Fact-Sheet-9th-Dec.pdf>



# NOTES



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**Inquiry:** Design of a Sustainable Financial System

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