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# The Green Economy in the G-20, Post-Mexico: Implications for India

Lydia Powell

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**Programme head:** Catherine Grant, [catherine.grant@saiia.org.za](mailto:catherine.grant@saiia.org.za)

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## **ABSTRACT**

India embraced the concept of green growth advocated at the G-20 forum primarily because it did not compromise on its pursuit of prosperity through economic growth. The concept of green growth also lent itself to multiple interpretations, which meant that India could adapt it to national circumstances and priorities, and present it as part of its routine policymaking. However, the discourse has not convinced all constituencies in India that green growth will lead to material and social progress without imposing any costs. In multilateral climate forums, even the Indian government departs from its G-20 stand on green growth and raises questions on the cost to poor nations shouldering the burden of climate change. The two parallel narratives in India reflect the coexistence of different political constituencies with different preferences. At the aggregate level India is a large economic power that wants to be seen as a global player. However, at the individual level India is an impoverished nation that cannot afford the lavish promises it makes as a global player. In the final analysis, the concept of green growth that promotes bureaucratic and technocratic solutions may prevail, but this will come at the cost of postponing solutions to the long-pending political and social conflicts that underpin environmental conflicts in India.

## **ABOUT THE AUTHOR**

Lydia Powell is a Senior Fellow at the Observer Research Foundation in New Delhi, India. She works on policy issues in energy, water and climate change in the Indian and South Asian context. Her current interests include mapping household energy access in India, developing a quantitative energy security index for India, tracking resource-based conflict and co-operation between India and its neighbours, and tracking climate change policies and its implications for South Asia and India. Contact address: [lydia@orfonline.org](mailto:lydia@orfonline.org)

## ABBREVIATIONS AND ACRONYMS

BRICS	Brazil, Russia, India, China, South Africa
GDP	gross domestic product
FYP	Five-Year Plan
GHG	greenhouse gas
GW	gigawatt
IWI	inclusive wealth index
Mtoe	million tonnes of oil equivalent
NAAQS	national ambient air quality standards
NAPCC	National Action Plan on Climate Change
NMEEE	National Mission for Enhanced Energy Efficiency
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
PAT	Perform, Achieve, Trade
PISA	Programme for International Student Assessment
PPP	purchasing power parity
RSPM	respirable suspended particulate matter
UNEP	UN Environment Programme
UNFCCC	UN Framework Convention on Climate Change
UN-IHDP	UN International Human Dimension Programme on Global Environmental Change
WHO	World Health Organisation

## INTRODUCTION

The embracing of the concept of the ‘green economy’ by multilateral organisations such as the Organisation for Economic Co-ordination and Development (OECD), UN Environmental Programme (UNEP) and the World Bank, as well as by national governments such as the government of India, shows that it is no longer just an idea. However, many academics still regard the concept as inadequately developed and not fully grasped, even by those who use it extensively.<sup>1</sup> As an evolving notion that is subject to multiple interpretations, the usefulness of the concept of green growth is not in conveying a clear and precise meaning, but in the discussions and controversies that it provokes. This has the potential to lead to new insights and perspectives.<sup>2</sup> The concept has thus far prompted the re-examination of the essence of economic growth, and enriched the debate on the social and ecological compromises that seem to be persistent companions of economic growth.<sup>3</sup>

India’s embrace of ‘green growth’ is linked to its membership of the G-20 group, which had adopted the concept as a key priority at the Seoul G-20 Leaders’ Summit in 2010. The attractiveness of the concept to India is that it links prosperity and sustainability; two goals that India had emphasised in its 11<sup>th</sup> Five-Year Plan (FYP) (2007–12).<sup>4</sup> The concept of green growth is also aligned with India’s perceived interests, and fits well with its way of viewing its key problem of poverty alleviation and solutions such as economic growth. India’s 12<sup>th</sup> FYP (2012–17) observes that ‘Rapid economic growth is viewed as a necessary condition (for poverty reduction) because it ensures an expansion in the productive capacity of the economy without which a broad based improvement in living standards is not possible.’<sup>5</sup>

India had historically interpreted carbon emission controls as an unfair burden on its fossil fuel-fired quest for poverty reduction through economic growth, but the idea of green growth has changed the terms of the debate. As Bowen and Fankhauser observe, the green growth narrative allows environmental protection to be cast as a question of opportunity and reward rather than a costly restraint.<sup>6</sup>

India presents an interesting landscape for testing the validity of the concept of green growth. It may be a large and powerful economy, but the average Indian is still among the poorest in the world. The size of India’s economy, estimated at about \$ 1.8 trillion, makes it the ninth largest economy in the world in terms of the current US dollars and the third largest in terms of purchasing power parity (PPP).<sup>7</sup> Among the BRICS nations, India has the third largest economy after China and Brazil if measured in current US dollars and the second largest in terms of PPP. However, the average income of Indians is estimated at \$ 1,508, which is 139<sup>th</sup> out of 185 countries and the lowest in the BRICS group.<sup>8</sup> As a large and powerful member of the G-20, India’s primary concern is to be a responsible partner of the group. This calls for the whole-hearted adoption of the concept of green growth. However, as a country characterised by pervasive poverty, India’s concern is to ensure that the adoption of the concept does not compromise its key objective of poverty reduction.

This paper explores how the idea of green growth is being interpreted, implemented and contested in India by various stakeholders. For the sake of simplicity, it divides the multiple discourses on green growth that contest for space into two broad categories. The dominant discourse to which the government (irrespective of which political party it represents), the business sector, liberal economists and the articulate wealthy classes

subscribe closely traces the contours of the international interpretation emerging out of the G-20, UNEP and the World Bank.<sup>9</sup> The basic premise of their argument is that there is no trade-off between economic growth and environmental sustainability. The counter-discourse from development economists, social scientists, non-governmental organisations and the large, but silent, underclass contests the claims of green growth, especially its ability to lead to prosperity and sustainability for all. Their discourse highlights the inadequacies of economic growth in addressing poverty. More importantly, it questions the assumption that there is no environmental trade-off in the pursuit of economic growth.

### **Dominant discourse**

This is a discourse that is consistent with the vision of India as an emerging global power. As an emerging power, India wants to be seen as a technologically evolved nation that is capable of applying market- and science-based strategies for facilitating economic growth that is also environmentally sustainable. In its first few decades as an independent country, India shunned the ‘market’ as an instrument for overall development and, instead, used ‘socialist’ planning to meet development goals. India’s adoption of market- and technology-based strategies for ‘green’ growth is in line with the view that the green economy concept is in reality an ‘imaginative extension of the idea of the knowledge-based economy’ that was born in the 1980s.<sup>10</sup> In a ‘knowledge-based economy’ knowledge and technology are factors that directly affect production, rather than factors that only play an external role in production.<sup>11</sup> Unlike capital, labour, land and materials, which are subject to fundamental economic principles such as scarcity and the law of diminishing returns, knowledge is seen to be abundant and therefore returns on investment in knowledge are seen to be unlimited.<sup>12</sup> This means that the ecological limits to economic growth can be overcome by the careful application of knowledge and technology; an idea exploited by South Korea, one of the originators of the concept of ‘green economy’.<sup>13</sup> The 2010 Seoul G-20 summit, at which the concept of green growth was first introduced formally, knowledge and innovation in clean, low-carbon technologies were promoted as the means to accelerate growth, create new competencies and stimulate job creation without imposing compromises on the environment.<sup>14</sup>

India’s strategies and plans for ‘faster and more inclusive and sustainable growth’ described in its FYPs reflect the use of the concept of green growth promoted at Seoul in 2010 and later endorsed by the G-20. The most important goal of the plan for the current five years (2012–17) is faster growth, as it is seen as the only means to reduce poverty and lower inequalities.<sup>15</sup> According to the plan, sustainability is to be achieved by making economic growth-promoting activities such as energy production more efficient and by increasing the share of renewable energy sources in energy generation using knowledge and technology.

Based on suggestions by an expert group set up to suggest pathways for low carbon growth, the Planning Commission of India has recommended that India target policies for efficiency and the lowering of carbon emissions in 12 focused areas during the 12<sup>th</sup> planning period (2012–17).<sup>16</sup> These technologies will allow economic growth to continue, while yielding ‘co-benefits’ in the form of greater inclusiveness, lower carbon emissions and environmental sustainability (see Table 1 in annexure).

The list of 12 areas begins with the initiative of introducing advanced coal technologies. Coal is the most important fuel for power generation in India. In the financial year 2011–12,<sup>17</sup> coal accounted for almost 70% of power generation.<sup>18</sup> Hydropower contributed only about 15%, and natural gas about 10%.<sup>19</sup> Nuclear power and power derived from renewable sources such as wind accounted for the rest. Power generation contributed about 38% of the total greenhouse gas (GHG) emissions in 2007 and most of this was from coal-based power plants.<sup>20</sup> This means that decreasing emissions from coal-based power plants would make a large contribution towards ‘greening’ the economy. It has been established that increasing the efficiency of coal-based power plants by 1% through heat rate improvements would result in a proportional decrease in emissions.<sup>21</sup> If the most advanced coal technologies are used, the reduction in emissions could be even more significant.

Other initiatives on the list include a national wind energy programme and a national solar energy programme for increasing the share of renewable energy in power generation. India’s wind energy sector is quite mature and is primarily driven by the private sector. Beginning in the early 2000s, the government has ‘pushed’ the sector with incentives such as capital subsidies, feed-in tariffs and accelerated depreciation. It has also ‘pulled’ the industry from the demand side by imposing renewable purchase obligations on electricity utilities. More than 80% of grid interactive renewable power in India in 2012 came from wind.<sup>22</sup> The second largest contribution came from bagasse, put at 9%, followed by small hydro at 4–5%. Solar and biomass contributed roughly 2–3% of the total share of renewable energy in power generation.

The push for solar power is also significant as it is one of the most ambitious plans relative to the other initiatives on the list. A national mission to facilitate the growth of solar energy was initiated in 2010. The goal of the mission is to create an enabling policy framework for building a solar power generation capacity of about 20 GW by 2022.<sup>23</sup> If the mission continues to progress as planned, grid parity is expected by 2022 and parity with coal-based thermal power by 2030.<sup>24</sup>

The ambitious missions on renewable energy are expected to increase the share of renewable sources in electricity generation from around 6% in 2012 to 9% in 2017 and 16% in 2030.<sup>25</sup> If this objective is met, India will be generating more electricity from renewable sources such as solar and wind compared with what it generates from hydropower (11%) or nuclear sources (12%) by 2030 (see Table 2 in annexure). India is already among the top five countries in renewable energy capacity and was second after China in the growth of renewable energy investments (see Figure 1 in annexure).

The National Mission for Enhanced Energy Efficiency (NMEEE) is also among the 12 initiatives for low carbon growth during the 12<sup>th</sup> planning period (2012–17). The schemes under the NMEEE include initiatives for improving consumer appliance efficiency, financial instruments and fiscal incentives that would facilitate an increase in efficiency. The flagship scheme, ‘Perform, Achieve, Trade’, which is a market-based system to improve energy use efficiency in large energy-consuming industries such as power, cement, iron and steel, has also been initiated.<sup>26</sup> By 2015, these schemes are expected to save the energy equivalent of 23 million tonnes of oil equivalent, avoid electricity generation capacity of 19 GW and reduce emissions by about 98 million tonnes per year (which is more than the total emissions of a medium-sized country such as Romania in 2009).<sup>27</sup>

In all 12 initiatives inclusiveness, a measure of how the policy embraces poor people, is expected to ‘increase’ if the price of the service delivered decreases as a result of the green

initiative, and ‘decrease’ if the price of the service delivered increases. For example, the plan document says that India’s plan to increase wind energy could reduce inclusiveness as it may increase the price of energy. Alternatively, the plan document expects inclusiveness to increase when energy efficiency programmes are executed, as that would decrease the price of energy.

Other policy documents such as the Economic Survey of India (covering the period 2011–12), an important annual document that reviews the progress of existing policies, choose to refer to the concept of ‘inclusive green growth’; not just ‘green growth’. The document observes, rather optimistically, that the aim of introducing ‘inclusive green growth’ into the G-20 agenda was to support the transition of developing countries towards becoming lower carbon economies, and to enable countries to become more resilient to climate change.<sup>28</sup>

The narrative on green growth in India’s policy documents closely traces the narrative promoted by international bodies such as the G-8 and G-20, or multilateral agencies such as the UN. For example, India’s 12<sup>th</sup> FYP (2012–17) observes that:

We need to sustain over 7% growth for the next 20 years if we are to meet the rising aspirations of our people and become a genuine middle income country that provides a decent living standard to all its citizens. To achieve this dream, pursuit of low carbon strategies is essential, as otherwise sustainability and energy insecurity would itself become a constraint on growth.<sup>29</sup>

This win-win narrative seems to be derived from the 2009 declaration of the G-8, which states that:

The interlinked challenges of climate change, energy security and the sustainable and efficient use of natural resources are amongst the most important issues to be tackled in the strategic perspective of ensuring global sustainability. A shift towards green growth will provide an important contribution to the economic and financial crisis recovery. We must seize the opportunity to build synergies between actions to combat climate change and economic recovery initiatives and encourage growth and sustainable development worldwide.<sup>30</sup>

India’s approach also reflects the UN secretary-general’s view expressed in the report to the second preparatory committee of the UN Conference on Sustainable Development in 2010, which stated that ‘the concept of green economy focuses primarily on the intersection between the environment and the economy’.<sup>31</sup> It also conformed to the view that there was ‘growing recognition that achieving sustainability rested almost entirely on getting the economy right’, expressed in a 2011 report by UNEP.<sup>32</sup> The crucial message embedded in all of these is that economic growth and environmental stewardship are complementary strategies. This counters the view that there are strong trade-offs between the two objectives.

Despite the strong pitch for ‘green growth’ in India’s policy documents, there is no guarantee that all policies articulated in policy documents will be implemented. Even making marginal improvements in energy use efficiency through changes in pricing energy is proving to be very difficult in India. The country’s repeated attempts to roll back cross-subsidies on oil, gas and electricity, as promised at the Pittsburgh G-20 meeting in



2009, have been curtailed not only by vested political interests, but also by the fact that a large section of India's population is impoverished and incapable of absorbing a new pricing energy regime.<sup>33</sup> The counter-discourse primarily arises from the concerns of the impoverished majority in India.

### Counter-discourse

India's embrace of the green economy concept is underpinned by the measurable promises it makes, such as high annual economic growth rates along with consistently falling carbon emissions rates, greater local environmental protection and falling poverty levels. The counter-discourse essentially questions these claims. One key argument offered is that past records do not adequately support the government's claims that economic growth contributed to poverty reduction and inclusiveness. The discourse raises the question as to how adding a 'green' component to some areas of economic activity would magically transform the same economic paradigm into one that is socially inclusive and environmentally sustainable.

According to government figures, the percentage of India's population living below the poverty line declined from 36% in 1993 to 29% in 2010. The government attributes this to economic growth. The average annual growth rate in this period was over 6%; the highest yet for India.<sup>34</sup> The first concern here is that the figure for poverty reduction is derived from a poverty line that is set at about INR<sup>35</sup> 3,900 (less than \$ 65) a month for a family of about five in rural areas and INR 4,800 (less than \$ 80) a month in urban areas, which is considered unrealistically low even by Indian standards.<sup>36</sup> The second concern is that India's poverty reduction accomplished through economic growth compares poorly with the poverty reduction accomplishments of China and Brazil. A study by Martin Ravallion, former Director of Development Research at the World Bank, using a \$ 1.25 per person per day benchmark, observed that between 1981 and 2001 the share of the population living below the poverty line fell from a staggering 84% to 16% in China and from 17% to 8% in Brazil.<sup>37</sup> For India, the reduction in the share of its population living below the poverty line went from 60% in 1981 to 42% on the basis of the same poverty line (see Figure 2 in annexure).

Though India demonstrated economic growth rates above 5% per year on average in the period 1981–2001, China's growth rates were far higher, generally above 10% per year with proportionate decrease in poverty rates.<sup>38</sup> The case of Brazil illustrated that growth was not necessarily critical for poverty reduction. Brazil demonstrated stagnant or low growth rates in the same period (1981–2001), but was able to achieve higher levels of poverty reduction primarily by lowering levels of inequality. At 1.5% per year during the period 1981–2001, India's rate of poverty reduction was lower than that of Brazil or China. Surprisingly, India's rate of poverty reduction was slightly higher in the lower growth period of 1981–1993. If India's poverty reduction per unit growth in GDP (elasticity of poverty reduction) had been the same as that of Brazil, India's poverty would have been reduced at the rate of 15% per year compared to 1.5%; the actual rate achieved. If India's elasticity of poverty reduction were only comparable to that of China, India's poverty reduction rate would have been more than 3%.<sup>39</sup>

Even if the argument that economic growth was the key reason for poverty reduction in India is accepted, experts in the field have shown that the rise in inequality dampened

poverty reduction.<sup>40</sup> Inequality increased in both India and China between the 1980s and 2000s, with the Gini index rising from 0.29 to 0.42 in China and from 0.31 to 0.33 in India. As pointed out by Ravallion, there are reasons for caution in this comparison. In India, the Gini index is calculated using consumption expenditure as a proxy, while the Gini index in China is calculated on an income basis. A consumption-based Gini tends to show lower inequalities relative to income-based Ginis.<sup>41</sup> In terms of inequalities in human development measured by UN development indicators, India fared poorly compared with the other BRICS nations.<sup>42</sup> Apart from gross inequalities in landownership that were never fully corrected despite efforts over the past 60 years, inequalities in educational attainment and health care services dampened poverty reduction. A Thomson Reuters Foundation poll, conducted in 2012, ranked India as the worst nation in which to be a woman out of all G-20 nations (20<sup>th</sup> out of the 20 nations in the G-20 group).<sup>43</sup> India was 71<sup>st</sup> out of 73 countries in the Programme for International Student Assessment (PISA) ranking for mathematics and science skills among school pupils in 2012.<sup>44</sup> In addition, governance deficits encouraged practices such as corruption, severely restricting access to public services that help to improve the living conditions of the poor. In 2012 India was ranked 94<sup>th</sup> out of 144 nations in Transparency International's corruption perception index, with all of the BRICS nations, except Russia, ranking above it.<sup>45</sup> The point that the counter-discourse makes with these figures is that India's economic growth is not impressive in terms of quality, even if it is impressive in aggregate quantity.

The discourse also points out that India's economic growth has been achieved only through local and global environmental compromises. India's contribution to GHG emissions from 2002–12 has been second only to that of China, notwithstanding the fact that India is among the top five countries investing in renewable energy generation (see Figure 1 in annexure).<sup>46</sup> India's long-term sustainability is seen to be precarious by many studies, even under liberal interpretations of the idea of sustainability. For example, as per the inclusive wealth index (IWI) developed by the UN, the UN University Human Dimensions Programme on Global Environmental Change (UN-IHDP) and UNEP to capture wealth stored as manufactured, social, human and natural capital, prospects for India's long-term sustainability are not bright.<sup>47</sup>

Among 20 countries studied over the period 1990–2008, India is ranked high in IWI growth along with countries such as Kenya, China and Chile, but its growth in wealth seems to have been derived largely through a compromise in natural wealth. China experienced a lower decline in natural capital compared with India and Chile, even though China's economic growth rates were almost twice that of Chile and India between 1990 and 2008 (ie, 5.4% for Chile, 6.2% for India and 10.5% for China).<sup>48</sup> Even in terms of local environmental measures such as air quality in cities, India fared poorly against global benchmarks.<sup>49</sup> Most Indian cities exceeded the current national ambient air quality standards (NAAQS) of 60  $\mu\text{m}/\text{m}^3$  for respirable suspended particulate matter (RSPM). A study that covered six cities in India, namely Chennai, Mumbai, Pune, Bangalore, Kanpur and Delhi, found that all of the cities except Chennai exceeded the standard levels of air quality from 2000 to 2006.<sup>50</sup> For example, the average annual concentration of RSPM for Delhi was about 120  $\mu\text{m}/\text{m}^3$ , compared to World Health Organisation standards of 20  $\mu\text{m}/\text{m}^3$ .

The negative social, economic and environmental outcomes outlined above are not necessarily the result of green economic policies. However, the counter-discourse poses

the question as to how these outcomes would be magically reversed under a green growth paradigm. This question becomes important in light of the fact that only a few selected areas would be subject to the process of greening, while the basic economic paradigm of economic growth through production and consumption remains unchanged.

India's 12<sup>th</sup> plan calls for the creation of a green technology fund and the promotion of green products. The plan also promotes green energy, green buildings, green townships, green cities, green IT and the greening of rural development, as if to imply that the prefix 'green' makes everything better. In this context the counter-discourse observes that neo-liberalism has colonised the discourse on environmental and ecological challenges in order to control the emergence of counter-narratives.<sup>51</sup>

## CONCLUSION

The idea of green growth lends itself to multiple interpretations. This is perhaps the most important attribute that contributed to the attractiveness of the concept to India. The Economic Survey of India for 2011–12 observes that 'The outcome document (on the green economy) affirms that there are different approaches, visions, models and tools available to each country in accordance with its national circumstances and priorities for achieving sustainable development.'<sup>52</sup> It adds that 'It is a matter of satisfaction that the document firmly rejects prescriptive policies, unilateral measures and trade barriers as well as unwarranted conditionality on official developmental assistance (ODA) in this context.'<sup>53</sup>

Consistent with its stated position on green growth that promotes a unique national 'interpretation', India prefers to discard its G-20 mask and stand with the G-77 group of poorer nations in multilateral forums on climate change that call for firm financial commitments. The rejection of 'prescriptive policies' and 'unilateral measures' characterises India's positions on climate change. This means that India is seen as a naysayer that resists calls from developed countries to take on specific targets for the reduction of its GHG emissions, even though its total emissions are the third largest in volume after that of the US and China. India's consistent response to the question 'How can a multilateral accord on carbon mitigation be achieved if India and other major emitters refuse to accept responsibility?' reflects a clear departure from its G-20 position on green growth.

In its response, India observes the following:

- Historical emissions cause climate change. Even if India's emissions were miraculously brought down to zero today, climate change would continue to take place, as it is caused by the emissions of developed nations over two centuries.
- India has voluntarily committed itself to ensuring that its per person emission will not exceed that of developed countries and to capping its emissions.
- India cannot be called a 'major emitter' by any stretch of the imagination. India's per person emission at 1.1 tonnes is far lower than the 20 tonnes per person emitted by the US and 10 tonnes per person emitted by OECD countries. India accounted for only 4% of global emissions compared with over 16% for China and the US.
- India is a country that faces routine, but extreme, climate variations, which forces it to spend more than 2% of GDP on adaptation measures. Adaptation measures are as

important as mitigation measures.<sup>54</sup> This position seems to be contradicting India's optimistic projection of green growth as a solution to economic growth for poverty alleviation and environmental sustainability at G-20 platforms.

India's policy documents consistently express two specific concerns over adopting green growth policies. The first is that India may have to 'sacrifice' a significant proportion of its GDP growth if it takes a green path. A study by India's Ministry of Environment and Forests quoted in the country's economic survey for the financial year 2012–13 shows that even a modest revenue neutral carbon tax of \$ 10 per tonne of GHG emissions would result in a GDP loss of about \$ 632 billion at 2005 prices.<sup>55</sup> For an economy that has only reached the 'trillion dollar' size, this is a steep price. The economic survey therefore argues that relying solely on carbon taxes and subsidies may not be the most viable option, and that India needs a careful mix of market mechanisms, together with fiscal instruments and regulatory interventions.

Multilateral development agencies that have an interest in putting India on a green or low carbon diet have released studies to alleviate the fear that green growth strategies require a sacrifice of conventional GDP growth rates. A World Bank study released in 2012 showed that policy interventions such as environmental taxes were likely to yield positive net environmental benefits for India. This conclusion is used to show that green growth scenarios are as attractive as conventional GDP growth scenarios.<sup>56</sup> The basis for this argument is that India could realise an additional benefit of \$ 59 billion even at the modest price of \$ 10 per tonne if it participates in emerging carbon markets.

The second concern over choosing a green path to growth reiterated in many of India's economic policy documents is that there is no commitment to additional funding from developed nations.

The economic survey of 2011–12 observes that:<sup>57</sup>

There has been no mention of provision of new and additional financial resources by developed countries, something India would have wanted to see. Any new green economy and sustainable development goals would be meaningless without new money and technology commitments on the table.

The speech by the Prime Minister of India at the Rio+20 summit reflected the same sentiment 'Many countries could do more if additional finance and technology were available. Unfortunately, there is not enough evidence of support from the industrialised countries in these areas.'<sup>58</sup>

The most recent estimates presented at the UN Framework Convention on Climate Change (UNFCCC) workshop on long-term finance calculate that investment in the range of \$ 600–1,500 billion would be required each year for mitigation and adaptation initiatives in developing countries.<sup>59</sup> India's policy documents note that this sum is at least 5–10 times the prospective finance flows of \$ 100 billion agreed upon as the goal under the UNFCCC.<sup>60</sup> Quoting a study by Oxfam, India's economic survey also highlights the fact that less than 33% of the money is new and additional, while the rest is recycled from overseas development assistance already committed.<sup>61</sup>

In the absence of monetary assistance from foreign countries, most of India's current missions for greening the economy and combating climate change are to be financed

by internal budgetary resources and new taxes or through market mechanisms. India estimates that the implementation of its National Action Plan on Climate Change (NAPCC) alone would cost about \$ 40 billion. This does not cover the cost of India's total low carbon and environmental initiatives. As a result, India may end up spending much more than the \$ 100 billion that the developed world has committed to climate assistance to the rest of the world.<sup>62</sup> India has already imposed a cess (environmental tax) of INR 50 (roughly equivalent to \$1 in 2012) per tonne of coal to generate funds for green initiatives. The government expects to collect about \$1 billion by 2015 under this scheme.

The contradiction between the stance taken by India in the G-20 and in multilateral climate forums clearly reflects its difficulty in mediating the conflict between quantity at the aggregate level and quality at the individual level. At the aggregate level, India is among the top three carbon emitters in the world, but at the individual level, Indians are among those who emit the least. Even a small increase in energy consumption at the individual level – which is absolutely necessary to provide small improvements in people's quality of life – will mean a substantial increase in total energy consumption and, consequently, carbon emissions. In this light, one can see the merit in both discourses. Nationally, the dominant discourse on green economy could be seen as a wise interpretation of an ambiguous concept. It helps to present India as a responsible nation that is shouldering more than its share of the burden in addressing climate change while allowing it to continue with its largely 'business-as-usual' economic growth path. The absence of a clear definition of the approach to green economy, in fact, encourages India and other nations to forge their own unique interpretations.

The dominant discourse on green growth also sends a progressive message to India's population, which desperately aspires to a better quality of life. It promises prosperity for all through the application of knowledge and technology that will minimise or even eliminate environmental or ecological threats. In the dominant discourse, GDP growth continues to serve as a proxy for achieving both ecological sustainability and inclusiveness. It relies on the same 'trickle-down' effect for introducing a substantial change in the quality of life of the majority of people. This is essentially a top-down discourse in which the government presents itself as the repository of knowledge on the problem concerning growth and sustainability, and the solutions that must be applied. Other 'knowledges', if they exist, are treated as either irrelevant or inadequate by those who promote the dominant discourse. Within this discourse, national security and national economic strategy are the twin lenses through which policies are evaluated.<sup>63</sup> A central premise of this narrative is that economic growth, social inclusion and environmental protection are compatible. Using this framework, the liberal market order and greening of the economy not only work together, but also facilitate social inclusiveness.<sup>64</sup>

The counter-discourse questions these claims, as it does not see how major progress on human development and environmental conservation can be achieved from within an economic system that is designed for neither. According to the counter-discourse, as long as economic growth remains the primary policy goal, ecological and social compromises will persist. The difference, if any, between 'brown' growth and 'green' growth would only be in the degree of destruction imposed on the environment and society.

India has, in fact, raised objections to the green growth paradigm, seeking its subordination to the concept of sustainable development, which supposedly addresses social and ethical issues. However, most of India's objections have been feeble and within

the neo-liberal institutional contexts of trade, intellectual property rights, market access, technology transfer and so on.<sup>65</sup>

The coexistence of two contradictory narratives in India reflects the coexistence of different political constituencies with different preferences. As a large economic power, India is keen to be seen as a global player but this is often in conflict with its responsibilities to its impoverished population. Building power plants, factories, roads and dams is important for India as a growing economic power, but this often means wiping out livelihoods dependent on land, forests and river basins. This is true even when the technologies used are among the greenest possible. The narrow focus on economic prospects makes the 'green economy' concept appealing to the nation state, but not necessarily to its people.

While India's wholehearted embrace of green growth is well intended, its current growth paradigm, even with heroic levels of green investment, may not keep within environmental limits, and deliver poverty alleviation and greater equality. As pointed out in a background paper prepared for the Rio+20 summit, the paradox in the last few decades has been that even small amounts of poverty reduction at the bottom of the pyramid requires ever more consumption by the already-rich and over-consuming.<sup>66</sup> This implies that consumption and the consequent carbon emissions are a necessary evil that will always accompany poverty alleviation achieved through economic growth. Other studies have shown that, using the ecological footprint measure, lifting everyone above an income of \$ 3 per day at prevailing levels of global inequality would require natural resources equivalent to 15 planets like the Earth.<sup>67</sup> This means that the world faces a difficult choice. It can either create an equal world at incomes lower than \$ 3 per day per person or live with the current world, where some have much higher incomes than the others.

To use an analogy of Jenkins and Simms in their background note to the Rio+20 summit, India's attempt to overlay green growth onto the finance-driven model of economic globalisation is 'like setting freshly spawned fish to swim against a flood tide'.<sup>68</sup> They argue that without a radically new paradigm, green growth would be little more than 'mood music' to a business-as-usual growth scenario.

Like most policy paradigms, 'green growth' appears to be becoming less and less sophisticated as it climbs the policy ladder. It is losing much of its intellectual underpinnings in the process. Policy advisers are screening out ambiguities and blurring the fine distinctions that are typical of theoretical paradigms. The concept has now become convenient enough to be widely used as a buzzword, even by politicians, in the context of sustainable development and poverty eradication. This is no surprise, as the concept of a green economy, though couched as 'new knowledge' that is necessary to address the impending crisis of climate change, is not an objective absolute, but rather a socially constructed narrative linked to existing power relations.<sup>69</sup>

For the economic and political elite in BRICS nations (and other industrialised and industrialising nations), green policies seem to be a means of 'managing' environmental conflicts with bureaucratic and technocratic solutions within the exiting institutional paradigm. This necessarily means overlooking the social and political conflicts that underpin the environmental conflict. Emphasis on expert knowledge and technology-driven solutions could mean that the resolution of long-pending social conflicts is once again postponed indefinitely. Even though the balance of evidence is tilted in favour of

the counter-discourse, the balance of power clearly favours the dominant discourse. This means that the ideology of green growth will lead to the de-politicisation of fundamental environmental conflicts, just as the development discourse de-politicised fundamental social conflicts a few decades ago. The development discourse and its accompanying narrative of 'modernisation' controlled the flow of power, finance and technology in the past and thus separated and isolated the 'other' under-developed nations. Likewise, the green growth discourse and its attendant policy solutions could sustain control over the flow of power, finance and technology to the 'other', potentially un-green masses. Who is green and who is not green could be decided on the basis of who can and who cannot use technology, and not on the basis of who pollutes the least. This may or may not sustain the planet, but it will almost certainly sustain social, political and economic inequalities between and within nations.

## ANNEXURES

**Table 1: Green growth strategies and their co-benefits**

	<b>Thrust area</b>	<b>Co-benefit sought</b>	<b>Qualitative assessment of co-benefit potential</b>
<b>Advanced coal technologies</b>	Growth	Positive	Although costs are marginally higher, coal is used more efficiently Energy security and reduced import dependence
	Inclusion	Neutral or mildly negative	If power costs increase and are passed on to low-income consumers
	Local Environment	Positive	Reduced emission of SO <sub>x</sub> , NO <sub>x</sub> and particulate matter
	Carbon mitigation	Positive	10 GW of Ultra Supercritical coal plants can reduce emissions by ~ 15% compared to current plants
<b>National wind energy mission</b>	Growth	Positive	Can substitute for fossil fuel imports and provide energy security indigenous manufacturing for large capacities can lead to job creation and growth
	Inclusion	Neutral	Can be mildly negative if average electricity costs increase Could also be mildly positive through creation of a decentralised energy industry
	Local environment	Positive	Although land is required for wind installations, policy can enable mixed land use Noise pollution could be a concern
	Carbon mitigation	Positive	Zero emissions power
<b>National solar mission</b>	Growth	Mildly positive	Can substitute for fossil fuel imports, decrease import bill and provide energy security
	Inclusion	Neutral	Can be negative at present costs, which are higher than other sources, could also be mildly positive through creation of a decentralised energy industry
	Local environment	Positive	Decentralised rural applications substitute diesel, kerosene and firewood For large projects, dedicated land and water requirement may be a concern due to competing uses. However, solar power does not emit local air pollutants
	Carbon mitigation	Positive	Zero emissions power



	Thrust area	Co-benefit sought	Qualitative assessment of co-benefit potential
<b>Technology improvement in iron and steel industry</b>	Growth	Positive	Less fossil fuel consumption, reduction in import of fossil fuels, improved domestic and global competitiveness
	Inclusion	Neutral	Mildly positive, if micro, small and medium enterprises (MSME), also benefits (especially) the sponge iron industry Mildly negative, if cost of output increases
	Local environment	Positive	Usually improved technologies provide increased environmental performance such as reduction in noise, particulate matter, SO <sub>x</sub> , NO <sub>x</sub> , slag and other waste
	Carbon mitigation	Positive	Reduced emissions per unit of iron and steel produced
<b>Technology improvement in the cement industry</b>	Growth	Positive	Less fossil fuel consumption, reduction in consumption of raw material per unit of cement produced
	Inclusion	Neutral	Mildly positive if price of cement reduces with higher clinker substitution Mildly negative if cost of output increases due to technology costs
	Local environment	Positive	Usually, improved technologies provide increased environmental performance such as reduction in noise, particulate matter, SO <sub>x</sub> , NO <sub>x</sub> , and so on; reduction in fly ash, slag and other waste
	Carbon mitigation	Positive	Reduced emissions per unit of cement produced
<b>Energy efficiency programmes in the industry</b>	Growth	Positive	Less fossil fuel consumption, reduction in import of fossil fuels, Improved domestic and global competitiveness
	Inclusion	Positive	Potential price reduction over a longer term due to increased efficiency Lower consumption could reduce peak power or energy deficit
	Local environment	Positive	Improved technologies provide increased environmental performance such as reduction in noise, particulate matter, SO <sub>x</sub> , NO <sub>x</sub> and so on Reduced waste as by-products of energy feedstock are utilised
	Carbon mitigation	Positive	Reduced production intensity of fossil fuels
<b>Vehicle fuel efficiency programme</b>	Growth	Mildly positive	Reduced fuel imports, enhanced energy security Savings on fuel expenditure could be invested domestically
	Inclusion	Neutral	Unless it results in a significant improvement in bus efficiencies, which could lower fares

	<b>Thrust area</b>	<b>Co-benefit sought</b>	<b>Qualitative assessment of co-benefit potential</b>
	Local environment	Positive	Reduced air pollution as exhaust pipe emissions decrease
	Carbon mitigation	Moderately positive	Fuel consumption would reduce, unless undermined by increased driving patterns
<b>Improving efficiency of freight transport</b>	Growth	Positive	Savings on fuel expenditure, reduced fuel imports May facilitate enhanced trade
	Inclusion	Mildly positive	Transport cost of goods would reduce, thus impacting overall prices
	Local environment	Positive	Decreased emissions either through modal shift or improvements in efficiency of road transport
	Carbon mitigation	Positive	Improving freight transport efficiency will have a positive impact on carbon mitigation
<b>Better urban public and non-motorised transport</b>	Growth	Mildly positive	Reduced fuel imports and savings on fuel expenditure could be invested domestically
	Inclusion	Positive	Mobility for the poor would improve significantly
	Local environment	Positive	Reduced local emissions
	Carbon mitigation	Positive	Reduced consumption of fossil fuels
<b>Lighting, labelling and super-efficient equipment programme</b>	Growth	Mildly positive	Energy efficiency is typically cheaper than new power generation, bringing down average cost of electricity
	Inclusion	Neutral	Positive, if appliances supported are used by relatively poor populations; negative, if predominantly used by the rich
	Local environment	Positive	Energy efficiency substitutes for thermal power generation and brings down local air pollution
	Carbon mitigation	Positive	Carbon mitigation as energy-efficient appliances substitute for thermal power generation
<b>Faster adoption of green building codes</b>	Growth	Neutral	Decreased energy costs lead to lower investments in higher-cost power infrastructure
	Inclusion	Neutral	Negative if green building codes raise costs
	Local environment	Positive	Energy efficiency substitutes for thermal power generation and brings down local air pollution
	Carbon mitigation	Positive	Carbon mitigation occurs as energy-efficient appliances substitute for thermal power generation

	Thrust area	Co-benefit sought	Qualitative assessment of co-benefit potential
<b>Improving stock of forest cover</b>	Growth	Neutral Mildly positive	Forest enhancement can increase ecosystem services
	Inclusion	Neutral negative	Depends on the existing use of land and whether afforestation causes displacement and loss of livelihood
	Local environment	Positive negative	Depending on the type of forest cover
	Carbon mitigation	Positive	Forests sequester carbon

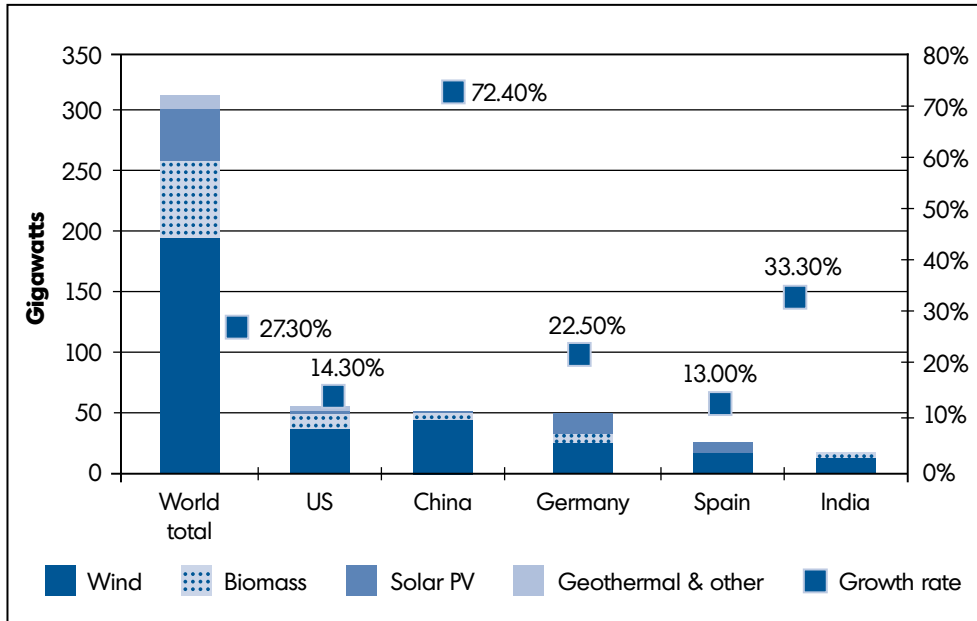
Source: India, Planning Commission, 12<sup>th</sup> Five-Year Plan (2012–17), I, New Delhi: Sage Publications, 2013, pp. 141–42.

**Table 2: Expected growth in share of renewables in power generation**

% share in power generation	2012	2017	2030
Coal	70	69	58
Oil	0	0	0
Gas	7	5	3
Hydro	14	12	11
Renewables	6	9	16
Nuclear	3	5	12
<b>Total clean energy</b>	<b>23</b>	<b>26</b>	<b>39</b>

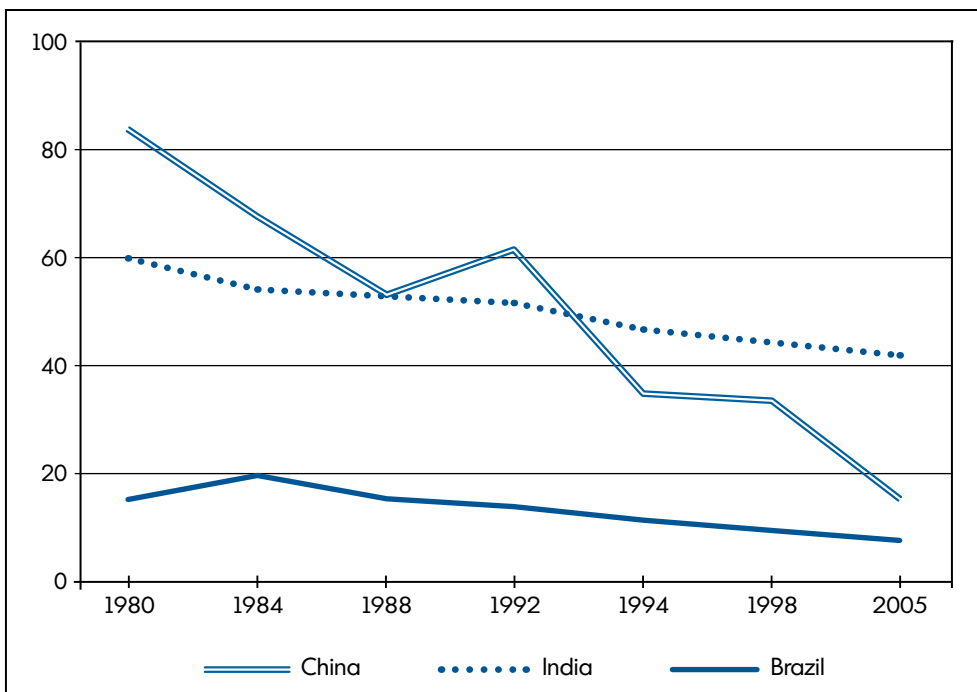
Source: India, Planning Commission, 12<sup>th</sup> Five-Year Plan (2012–17), I, New Delhi: Sage Publications, 2013, p. 147.

**Figure 1: Renewable power capacities: world total and top five countries**



Source: REN21 (Renewable Energy Policy Network for the 21<sup>st</sup> Century), *Renewables 2011: Global Status Report*, 2011.

**Figure 2: Percentage of population living below \$1.25 per day at 2005 PPP**



Source: Ravallion M, 'A Comparative Perspective on Poverty Reduction in Brazil, China and India', Policy Research Working Paper, 5080. Washington: World Bank Development Research Group, 2009.

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South African Institute of International Affairs  
Jan Smuts House, East Campus, University of the Witwatersrand  
PO Box 31596, Braamfontein 2017, Johannesburg, South Africa  
Tel +27 (0)11 339-2021 • Fax +27 (0)11 339-2154  
[www.saiia.org.za](http://www.saiia.org.za) • [info@saiia.org.za](mailto:info@saiia.org.za)

