



INDO-GERMAN EXPERT GROUP

ON GREEN AND INCLUSIVE ECONOMY

BACKGROUND PAPER

EXPLORING PATHWAYS TOWARDS A GREEN AND INCLUSIVE TRANSFORMATION

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IMPRINT

PUBLISHED BY

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

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DESIGN AND LAYOUT

Schumacher. Visuelle Kommunikation
www.schumacher-visuell.de

AS OF

Nov 2014

ABOUT

INDO-GERMAN EXPERT GROUP ON GREEN AND INCLUSIVE ECONOMY

Green Economy has been recognized by the Rio+20 Summit as “one of the important tools available for achieving sustainable development”. It is emphasized that Green Economy should “contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth’s ecosystems”. Such a transition towards a green and inclusive economy requires major efforts both on a national and international level, and cooperation and exchange of experiences is key to support the process.

India and Germany are major players in this transition. Against this backdrop, an interdisciplinary working group of renowned experts from leading research institutions and political think tanks in India and Germany has been set up in November 2013 to enhance collaborative learning, contribute to informed decision making in both countries and feed into the international debate on a Green and Inclusive Economy.

Five key topics are:

- Frameworks and challenges for a green and inclusive transformation
- Natural resources and decoupling growth from resource consumption
- Sustainable lifestyles
- Green and inclusive cities
- Transformation of the private sector

This policy paper was elaborated based on discussions in the context of the 1st expert group meeting on 25–26 November 2013 in Berlin.

The group is supported by the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and facilitated by the GIZ Environmental Policy Programme in Berlin and the Indo-German Environment Partnership in Delhi.

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INTRODUCTION

The Indo-German Expert Group on a Green and Inclusive Economy has been initiated with the support of the German Federal Ministry for the Environment, Nature Conservation, Buildings and Nuclear Safety and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) with the aim of defining and shaping perspectives and political frameworks for a green and inclusive economy. An interdisciplinary working group of renowned experts from leading research institutions and policy think tanks in India and Germany has been set up to enhance mutual understanding and learning; and provide guidance for policymakers in both countries to support the transition towards a green and inclusive economy.

To get the network started, a series of four meetings have been agreed over a period of two years. Two will be held in Germany and two in India, and each meeting will be jointly hosted by a different "pair" of Indian and German institutions. The first meeting was jointly hosted by the Deutsches Institut für Entwicklungspolitik/German Development Institute and Indian Institute of Technology, Delhi in November 2013 in Berlin. This paper offers a first analysis of the issues at hand, highlighting the added value of an Indo-German Expert Group on a Green and Inclusive Economy and outlining specific issues to be dealt with in the course of the initial two years.

1 INCLUSIVE DEVELOPMENT THAT RESPECTS PLANETARY BOUNDARIES: THE NEED FOR A GLOBAL SYSTEMS TRANSFORMATION

The world is faced with two sets of inter-related challenges: ensuring that the rising tide of development lifts all boats and that this continued development does not overwhelm the very rubric – the environment – that is necessary for human survival.

We begin with recognition of the fact that we live in a highly unequal world in economic terms as well as access to basic amenities (see Table 1). In fact, 1.3 billion people in the world do not have access to electricity, 2.8 billion do not have access to clean household energy, 870 million are undernourished, 2.5 billion do not have access to basic sanitation, and 780 million do not have access to safe and clean drinking water. Therefore for developing countries, meeting such urgent challenges while advancing economic development more broadly is a key policy objective (UNDG 2013: 105 ff.).

At the same time, we are pushing against multiple planetary boundaries, including significant perturbation of the climate system, the hydrological cycle, the nitrogen and phosphorus cycles, or changes to land systems, or the acidification of oceans, or the loss of biodiversity. Perhaps the most urgent and ominous of these is climate change, because of the scale of the problem and its impacts as well as its intimate links to almost all aspects of human and economic activity.

Industrialized and developing countries both have contributed to these environmental disruptions, although to differing extents (again, see Table 1 for data on CO₂ emissions, as an illustration). Currently, per capita greenhouse gas emissions in India amount to about 1.5 tonnes p.a., Europe's to 10 tonnes and the USA's to 20 tonnes. Similar disparities apply for other environmental resources as well.

Table 1: Select development and CO₂ emissions data for Germany, India and comparator countries

	JAPAN	GERMANY	UK	USA	BRAZIL	CHINA	INDIA
GDP per capita, PPP (constant 2005 intl \$) 2012 *	31425	34819	32671	45335	14300	7957	3340
Poverty headcount ratio, (\$2/day, PPP (% of pop.) 2009, **2010	–	–	–	–	10.8	27.2	68.8**
CO ₂ emissions (Mt) 2010	1171	745	494	5433	420	8287	2009
CO ₂ emissions (kg/2005 PPP\$ GDP) 2010	0.3	0.27	0.24	0.4	0.21	0.7	0.4
CO ₂ emissions (metric tons/capita p.a.) 2010	8.6	8.9	7.6	17.3	1,9	5.8	1.7
Electricity consumption (kWh/capita) 2010	8378	7162	5745	13395	2381	2944	641

Source: World Bank *<http://www.quandl.com/browse/worldbank/world-development-indicators/economic-policy-external-debt/gdp-per-capita-ppp-constant-2005-international-all-countries>; All others: <http://data.worldbank.org/>

1 INCLUSIVE DEVELOPMENT THAT RESPECTS PLANETARY BOUNDARIES: THE NEED FOR A GLOBAL SYSTEMS TRANSFORMATION

These global imbalances are changing, however, as poor countries become wealthier. According to the socio-economic trends, while 45% of the world's population was below the poverty line 30 years ago, now it's only about 20%. With incomes anywhere between US \$ 4,000 – US \$ 40,000 (according to UN definition), there is a significant rise in the middle class population across the world. In 2009, 80% of the world's middle class was in OECD countries with only about 20% in non-OECD countries, but the situation will become the opposite in 2030. This is particularly evident in China. With increasing per capita incomes, emissions are also increasing. China's per capita emissions have already risen to about 6 tonnes, approaching European levels.

The world economy needs to be largely decarbonised if dangerous climate change is to be avoided. In the coming 40 years, greenhouse gas emissions will have to be reduced by more than 50% globally. Given their high per capita emissions and historical responsibility due to accumulated emissions in previous decades, OECD countries need to decarbonise at a much faster pace: 80–90% until 2050. But even if the complete OECD population goes green, we will not be able to manage climate change and earth-system change sustainably. Hence the emerging economies, too, will have to contribute to a green paradigm change. OECD and emerging countries need to work together and agree on principles that guide the use of finite resources. Such principles need to take the remaining absorption capacity of the global atmosphere, historical responsibility and population growth into account. According to calculations of the remaining global carbon budget, emerging economies will have to stabilise their emissions quickly and then reduce

them by 2050 to the level of about 1 to 1.5 tonnes p.a. per person. This is the level to which each individual on Earth will be entitled in the mid-21st century if the goal of stabilising global warming at about 2 °C is to be achieved (WBGU 2009); it is roughly the current Indian level of emissions.

The scale and scope of these challenges and their urgency suggest that a radical departure from business as usual will be needed. Energy efficiency (and more broadly: resource efficiency) need to be increased significantly in all sectors of the economy; entire economic subsystems need to be radically changed, such as the energy system; the transport system; the way cities are designed; and the way agricultural production is organized. In parallel, climate-compatible consumption styles need to be developed, which again implies a profound departure from current OECD practices.

The way these changes are enacted need to differ substantially from country to country, given the wide disparity of resources and capabilities across countries. Finding the right pathways to deep decarbonisation for each country, accelerating the transition and designing it in a socially inclusive way is a challenge unprecedented in history. Suitably sharing the costs and opportunities is central to this transition for reasons of both effectiveness and fairness, both within and between countries.

Given all this, what might be the pathways that allow us to advance human development that allows all global citizens to live a decent life, while respecting planetary and ecosystems boundaries? Such an exploration will undergird our conversations on green and inclusive economy.

2 WHAT WE CAN LEARN FROM EARLIER DEEP SOCIO-TECHNICAL TRANSFORMATIONS¹

There are no good examples of green transformation from history; and it is even less clear how such a transformation can be harmonized with the socio-economic requirements of latecomer development. Hence, we need to explore uncharted territory. Still, there may be valuable lessons from history. Kondratieff's theory of "long waves of economic change" describes economic cycles driven by key technological innovations (Kondratieff, 1926; Perez, 2002). In the past, innovations leading to profound economic change and transformative investment waves occurred every 40–60 years (1780–1850 steam engine, mechanical loom, coal, iron; 1840–1890 railway, steel production, improved agricultural methods; 1890–1940 electricity, chemistry, automobile, mass production; 1940–1990 electrical engineering, petro-chemistry, computer, aircrafts, rockets; 1990 to the present, information and communication technologies).

All these earlier cycles show that fundamental change occurs in a co-evolutionary manner: As new technological solutions come up, social institutions also change, reflecting that technologies are socially embedded through market relations, norms and regulations, and infrastructures. Change may be triggered by different mechanisms: Certain events

in history (11 September 2001, the beginning and end of the Second World War; the global economic crises 1929/30 and 2007–2009; the nuclear accident in Fukushima in 2011); by the invention of new technologies (as highlighted by Kondratieff); by the increased or reduced availability of certain resources; or by gradual changes of societal norms and values. Geels and Schot (2007) describe several transformation pathways with different drivers and dynamics, some more gradual and others more disruptive. What they have in common, however, is that they are influenced by a large number of political, scientific, economic, and civil social actors, producers as well as consumers. As such, they are neither linear and unidirectional processes, nor are they intentionally set in motion by certain powerful actors; rather, they result from interlinked dynamics occurring at different system levels and time scales, which then, in their compounded form, create a certain direction of the transformation process. And most importantly in our context: Such systemic change has so far always been open-ended, unpredictable and therefore not manageable in an intentional way.

¹ This section has been adapted from Leggewie/Messner (2012).

3 HOW IS THE GREEN AND INCLUSIVE TRANSFORMATION DIFFERENT?

The transformation that lies ahead of us – to achieve a global economy that is radically decarbonised, respecting other planetary and ecosystems boundaries and allowing all global citizens to live a decent life – has elements in common with the earlier transformations, but is likely to be even more complex in several regards (Altenburg/Pegels 2011; Leggewie/Messner 2012).

First, while deep technological innovations are needed, as in the case of the Kondratieff cycles, the most difficult changes transcend technologies and call for much deeper transformations (WBGU 2011). The challenges are also about changing lifestyles; defining “development” differently; systematically internalising social costs; dealing responsibly with cross-generational justice; finding a formula to allocate rights to use scarce environmental resources that take historical debts into account; and revolutionizing global cooperation so that it can deal effectively with global public goods. All this is uncharted territory. There are no established role models for the transformation to inclusive green growth. Currently, there is not a single low-carbon model country that could guide the way.

Second, the green transformation has a clear and tight deadline. While earlier transformations unfolded gradually over several decades, deep decarbonisation needs to be achieved within 15 or 20 years. Given such time pressure, change must be pushed intentionally and proactively. This is fundamentally different from previous transformations which occurred as open-ended evolutionary processes without a “master plan”. The sustainability turnaround has to be the first great transformation in the history of mankind that has to be consciously brought about by the strength of politics and policies.

Third, huge upfront investments in new technologies and infrastructure need to be made without having markets that signal the real scarcities. This calls for new instruments to price environmental goods – but these prices require societal agreement on scarcities and preferences. What is the societal value of, for example, a ton of CO₂, a litre of clean water, or the survival of a species? How do societies weigh the cost and risks of alternatives, such as whether the environmental risks of carbon storage are preferable to the risks of increased carbon emissions? Hence, the transformation necessarily builds upon societal agreements and socially constructed markets, rather than any “objective” standards. This implies the deliberate use of policy rents to make “green” investments artificially lucrative; defining these policy rents under enormous uncertainty about technological innovation, consumer behaviour etc. in a politically contested field creates risks of misallocation and rent capture by lobbyists. Managing green policy rents smartly is one of the big challenges of the green transformation (Schmitz/Johnson/Altenburg 2013).

Fourth, the guiding principles of social development must undergo radical changes. It must be generally accepted that the planetary boundaries must serve as the reference point of all social development and prosperity increase. The primary motive of the era of industrialisation was to overcome the boundaries set by nature (dis-embedding). Now, new forms of social development need to be developed that respect planetary and local ecosystem boundaries (re-embedding). This is not a petition for a romantic return to nature, nor the rejection of technological solutions for mankind’s challenges. Quite the opposite. What we need is wealth creation within the boundaries of a limited world. Providing sustainable

livelihoods for a population of 9 bn by 2050 does require enormous research efforts and creative thinking to maintain decent rates of wealth creation that is decoupled from resource consumption. This implies the need to rethink key concepts of economic governance, including measures of wealth and productivity. Moreover, technological progress is unlikely to yield the needed rates of decoupling (Jackson). Particularly in rich societies, consumption patterns need to be adapted.

Fifth, the transformation must be pursued globally, and embraced by industrialised, newly industrialising and even poor developing countries simultaneously. Given the enormous global imbalances in terms of wealth, current and historical resource consumption, however, issues of fairness and burden-sharing must be addressed. Formula need to be found that balance the need to decarbonise and the right to develop (see the Germany Advisory Council on Global Change's "budget approach": WBGU 2009).

Hence, many characteristics of the low carbon transformation are truly different from earlier lessons. Mankind must prove that it is capable of proactively shaping and directing radical change towards a low-carbon society. This can only be achieved on the basis of thinking and acting with a very long-term perspective in mind; it must leave the epoch of nation states behind and foster an unprecedented culture of global cooperation; it must also forge a sustainable and legitimised narrative which will serve prosperity, security, liberty, and fairness in a global society of soon-to-be 9 billion people, and which will accept the boundaries of the Earth's ecosystems.

4 SPECIFIC IMPLICATIONS FOR INDUSTRIALISED/ HIGH-RESOURCE CONSUMPTION ECONOMIES AND INDUSTRIAL LATECOMERS WITH LOW RESOURCE CONSUMPTION

The implications for “advanced” industrial economies and poor industrial latecomer economies are very different. In the former (e.g. Germany), per capita emissions and resource consumption need to be brought down quickly and radically. Cultural values need to adapt to resource constraints, e.g. consumption of certain goods (fossil fuel, meat) needs to be radically reduced. In the latter (e.g. India), per capita resource consumption is much lower. This is mainly due to limited purchasing power, and only partly reflects sustainable patterns of development (such as cultural norms that limit meat consumption). With the global rise of “consuming middle classes” there is a huge risk that resource-inefficient patterns of consumption and production are copied – e.g. regarding mobility and nutrition. Still, India’s main challenge is not to bring per capita resource consumption down, but to balance the needs for human development (which may require more resource use) and environmental sustainability. There is still a significant part of the population in India living on US \$2/day, hence issues of poverty and an emphasis on equity are important. Though green economy is an overarching goal, the development for the poor and the inclusiveness aspect should be at the centre of green economy. Also, if limited global resources were budgeted on a per capita basis, India would have much more resources available for future development than Germany (WBGU 2009).

The wealthy nations are the ones that fail particularly badly with regard to resource efficiency. This is why we put “advanced” in parenthesis: The urgent need for environmental sustainability forces us to rethink development concepts, and thus the development agenda implicit in terms like “advanced”, “modern”, or “industrialised”.

At the same time, many social and economic institutions in countries like Germany have unfolded over long periods of time, allowing for incremental accumulation of knowledge and fairly good institutional performance. These long-standing investments in institutional development – including a differentiated research landscape, private sector organizations and all sorts of public-private networks – help to search for alternative pathways in systematic way. Institutional routines, however, may also go along with path dependency and carbon lock-in. India has very efficient institutions at the top level, but faces considerable constraints at lower levels of the institutional pyramid. In its efforts to strengthen the institutional landscape for a green and inclusive transformation, India may therefore tap into existing German (or other foreign) networks; and at the same time avoid becoming locked into outdated institutional routines stemming from a high-carbon past and test new pathways.

The same logic applies to physical infrastructure. India and Germany also display huge differences regarding the ratio of *infrastructure stocks* to *flows*: India, due to its higher rate of economic growth, is quickly adding new capacities (e.g. power plants, factories, buildings, roads, vehicles) to its existing stocks, whereas slow-growing Germany mainly replaces existing stocks. This has implications for lock-in: Creating new infrastructure provides opportunities, as India may take advantage of scientific progress to add more resource efficient new generations of technologies, thereby decreasing average resource efficiency rapidly; but it also implies risks, as the infrastructure that is being built up today will last very long, creating big problems in the future when resource inefficient technologies continue to be used for decades ahead.

5 WHAT MIGHT BE THE ROLE OF THE INDO-GERMAN EXPERT GROUP ON A GREEN AND INCLUSIVE ECONOMY?

Given the enormity of the challenge facing all of us, what contribution can a network of Indian and German environmental and economic policy think tanks make?

One can imagine contributions at multiple levels:

First, we need to act urgently, but we are all moving on uncharted territory. The expert group has a good understanding of planetary boundaries and policy options for dealing with them. Sharing this expertise may help defining pathways towards a green and inclusive economy.

Second, building trust and enhancing mutual understanding. An improved mutual understanding of the issues involved in this transformation and perspectives shaped by our different national contexts: Germany and India are located at different ends of the global continuum along the dimensions of per capita income and wealth, but also in per capita resource consumption and historical liabilities. Strategies are needed for inclusive low-carbon development that reflect these enormous differences. Jointly reflecting on national strategies that take these differences into account will help to understand each other's concerns and problem framings, contrast existing viewpoints, challenge established views on both sides, explore common ground and flag remaining controversies.

Third, identification of specific immediate action items that Germany and India could undertake jointly that would be the first steps towards a green and inclusive economy. This includes the identification of areas for mutual learning: Both countries are

experimenting with a range of policies, which provides a rich laboratory for mutual learning. For example, can India learn from German technologies and institutions in the field of waste management, and what would be needed to adapt those experiences to local conditions? What can Germany learn from India, where, for example, competitive reverse bidding for renewable energy tariffs successfully triggered a solar investment rush while bringing tariffs down – whereas Germany's design of pre-established feed-in tariffs is now becoming so costly that political support is eroding. What lessons can India draw from the German "Energiewende" when its main political priority is reliability of energy supply? This group should identify areas for joint and comparative future research in selected areas.

Fourth, the research community is committed to developing ideas and strategies for the transformation towards an environmentally sustainable and inclusive world, regardless of whether the experts live and/or work in India or Germany. All of them know both world regions and are aware of the unevenness of the "playing field". While the group takes the different concerns of Indian and German constituencies seriously, its members have the freedom to think beyond day-to-day concerns of their constituencies at home. Thus the group may think of new solutions before national policymakers take them to the political arena.

6 MAKING A MAJOR CONTRIBUTION TO INDO-GERMAN COOPERATION

There are a wide range of ongoing bilateral cooperation efforts between India and Germany. The experts should discuss ways to use the group to make Indo-German cooperation even more ambitious and effective. This may include looking at other major bilateral initiatives such as the US-India Track II Dialog on Climate and Energy or the UK-India Low Carbon Partnerships to explore whether they provide lessons for bridging environmental research and policy.

The group should inform and support a substantive environmental partnership between the two countries, particularly as all the participants are strongly engaged in providing strategic policy advice. In addition, it should try to transfer knowledge into political action more effectively. This would imply, for example, ideas for new institutional arrangements to accelerate technological and social innovations. Likewise, there is an obvious need to explore innovative ways of enhancing stakeholder participation and building partnerships with the aim of enhancing societal consensus and creating transformative alliances. And last, but not least, the challenges ahead – e.g. related to managing green policy rents – call for more effective and faster evidence-based policy learning, which requires closer interaction between policymakers and researchers. High level briefings can be organised following each meeting, evening events with parliamentarians, business representatives, trade union representatives and other members of civil society; meetings can take place back to back with other big events to

reach out to a broader audience; place work of the group in relevant media outlets, offer interviews with experts and panel discussions; and there could be an involvement of the next generation of researchers through public lectures, summer schools, exchange of PhD students, or/and joint supervision of their thesis.

The world has gone down a pathway that is neither environmental sustainable nor just. Even individual countries that have been able to provide an adequate level of development for all its citizens have not been able to do so in an environmentally sustainable manner. Thus there is no blueprint for the transition to inclusive and environmentally sustainable development either in terms of the kind of trade-off that might be warranted or how to get there. Many established concepts might need to be radically reconsidered, including the concept of ‘development.’ Hence, we need to be ambitious and explore big issues (such as pathways to a green transformation, national green growth strategies, issues of global “carbon justice”) rather than immediately zooming into sector-specific technicalities. At the same time, we should approach this process with some humility – achieving such a transition obviously will not be trivial and therefore the question should be what it is that such group can add to the deliberations on this important and weighty topic.

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