A stylized world map composed of a grid of grey dots, with several dots highlighted in red to represent specific countries or regions.

Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

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- The study provides an overview of the different just transition, energy transformation and climate justice discourses of the previous years and how they are ultimately reflected in the Paris Agreement. It shows how they overlap in terms of transition narratives and policy demands. The shared value base could serve as a starting point for building alliances, which are necessary to make just transition become a reality.
- A set of eight just energy transition principles is presented, designed to make justice applicable to energy transition processes, which go beyond an abstract call for justice. They cover the climate, socio-economic and political dimensions in a balanced way to reflect the legitimate justice claims of a broad range of potential allies for a just energy transition alliance. Each principle is associated with indicators, and a formula is used to attach a final score, to assess a country's level of justice in the energy transition.
- The approach is applied as a reference framework for twelve countries of the Global South. Their scores show that justice concerns are gaining traction in the energy transition. However, there remains a great deal of room for improvement and countries have a lot to learn from each other.



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List of Abbreviations

BAU	Business as usual
CAT	Climate Action Tracker
CBDRDC	Common but differentiated responsibilities and respective capabilities
CCPI	Climate Change Performance Index
CPI	Corruption Perceptions Index
COP	Conference of the Parties [to the UNFCCC]
CSO	Civil Society Organization
CVF	Climate Vulnerable Forum
GDP	Gross Domestic Product
GHG	Greenhouse Gases
HDI	Human Development Index
IEA	International Energy Agency
ILO	International Labour Organization
INDC	Intended Nationally Determined Contribution
IRENA	International Renewable Energy Agency
ITUC	International Trade Union Confederation
LEDS	Low Emission Development Strategies
LTS	Long-term low greenhouse gas emission development strategy (Long-term strategy)
LULUCF	Land Use, Land-Use Change and Forestry
MDG	Millennium Development Goal
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
NDRC	National Development and Reform Commission
PA	Paris Agreement
RE	Renewable energy
REN21	Renewable Energy Policy Network for the 21st Century
SDG	Sustainable Development Goal
TPES	Total Primary Energy Supply
TWh	Tera Watt hours
UNFCCC	United Nations Framework Convention on Climate Change



Editorial Note

*By Manuela Matthes, Friedrich-Ebert-Stiftung
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The Climate Crisis is one of the biggest challenges that we are facing today. 1 °C of global warming has already been reached, leading to even stronger and more frequent extreme weather events such as storms, floods and droughts. As a result, millions of people, especially in the Global South, are confronted with its consequences every day. However, climate is only one of many planetary boundaries that are under threat. Loss of biodiversity or Nitrogen and Phosphorus cycles are further examples. If we fail to develop our societies within those boundaries, we will reach devastating tipping points from which there will be no turning back. People who are already living in poverty today, but also future generations and nature itself, would suffer tremendously. This would be extremely unjust since those who suffer the consequence would not be those who caused the problems.

The 2015 Paris Climate Agreement and the Sustainable Development Goals (SDGs) both underline the necessity of a transition toward a sustainable, zero-carbon future for all. Since it is responsible for most of the carbon emissions, clearly the energy sector must be at the center of such an extensive shift. The question is neither whether we need this transition, nor whether it will happen, but rather whether we will achieve it fast enough to meet the 1.5 °C temperature goal set by the Paris Agreement.

The global energy transition away from fossil fuels toward 100 per cent Renewable Energy (RE) faces numerous challenges. Speed will be essential to avoid irreversible damage. Further challenges such as energy access, energy storage, technology transfer, enabling investment, the vested interests of the fossil industry and the effects on the labor market must be addressed quickly. In order to be successful, the transition has to be socially inclusive and just, leaving no one behind.

Even though the global energy transition represents an enormous challenge, calling for efforts from all of us, we should not only focus on the difficulties and risks, but more importantly also on the manifold opportunities it brings with it. According to the International Labour Organization (ILO), RE have a huge potential for creating jobs. Jobs in the RE sector are created directly and

indirectly along the entire value chain. If we ensure that these jobs have decent working conditions in terms of health, salaries and benefits, then they can be clearly preferable to jobs in the traditional energy sector. Because Renewable Energy sources can be installed and used in a decentralized way, they can bring access to energy to everybody, especially also in rural areas, which is important for sustainable development from which everyone can profit. In addition, they create cleaner air and are healthier, so that they not only save lives but also potentially thousands of dollars in public health care costs. A 100 per cent RE future is our only chance to achieve both the goals of the Paris Climate Agreement and the SDGs.

The global energy transition is affecting everybody. We should thus all be involved in shaping it. But how exactly can we all shape it? The principle that unites every movement and every stakeholder active in this process is justice. But what does justice mean in the context of the energy transition away from fossil fuels toward Renewable Energy sources? How can we unite the different approaches to justice – from trade unions that rightfully insist that workers' rights be respected, to development groups that rightfully stress the importance of rapidly eradicating poverty, to environmental groups that rightfully underline the importance of respecting planetary boundaries? The key – and this quickly becomes very clear – is to build bridges, not walls. Different groups must combine their efforts to support a just global energy transition that is already well under way. 2016 marked the first year in which global investments in RE were higher than those in fossil fuels – especially in the Global South. The Climate Vulnerable Forum's (CVF) announcement during COP22 in Marrakesh on wanting to achieve 100 per cent RE by 2050 at the latest is a positive sign regarding where the world is and should be heading. This path needs to be accelerated and strengthened by an alliance of developing countries, developed countries, civil society, trade unions, scientists and business.

This study »Guiding Principles & Lessons Learnt for a Just Energy Transition in the Global South« by Bread for the World and Friedrich-Ebert-Stiftung aims to specify what »justice« means in the context of a global energy transition and to identify hooks and anchoring points for a just transition. We identify principles and criteria for such a just energy transition through closer examination of the Nationally Determined Contributions (NDCs) of



12 selected countries from the Global South. And we conclude with concrete policy recommendations on how to increase the level of justice and on how to shape a just energy transition.

We are convinced that focusing on justice provides one key to achieving the global energy transition by satisfying the requirements of the Paris Agreement and the SDGs. Yet, in embarking on this journey together, we must ensure that no one is left behind. The aim of this study will be fulfilled if we succeed in initiating a discussion across sectors on a just energy transition in the Global South.



Executive Summary

Just transition is generally regarded as the exclusive domain of trade unions: The just transition discourse has its origin in the struggle of North American trade unions for programs supporting workers who lost their jobs as a result of environmental protection policies in the 1970s and 1980s. Later, at the Rio plus 20 Summit in 2012, just transition was brought to the global level and linked with the sustainable development agenda. Mainly due to the efforts of the International Trade Union Confederation (ITUC), it was then also introduced into climate negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) and was ultimately anchored in the preamble to the Paris Agreement, thereby ensuring recognition for the legitimate interests and rights of workers and their communities, which are exposed to restructuring and job losses in the transition process from a greenhouse gas-intensive to a low-carbon economy.

However, the justice discourse around climate change is much broader than this would suggest. A huge variety of groups express justice claims in the form of demands for justice for those most vulnerable to the adverse effects of climate change and for expelled workers and their families, justice in how the burdens and opportunities of the energy transition are shared, and justice to nature and for future generations. These justice claims overlap in part. They concern different domains of justice, i.e. recognition and structural, distributive and participatory justice. There is considerable coherence among different claim holders for justice on underlying values, as for instance »leave no one behind« or »rights based«, whereas their just transition narratives and policy demands vary. The shared value base could serve as a starting point for building alliances, something which is necessary to reach the goal of achieving a just transition for everybody.

In order to preserve a chance of remaining below 2°C, or ideally below 1.5°C, of global warming, it is imperative that greenhouse gas (GHG) emissions should peak, plateau and begin the decline by 2020. And without ambitious climate action, it is unlikely that the Sustainable Development Goals (SDGs) will be achieved, thereby inflicting even more injustice on the people, especially in developing countries. While all economic sectors must ultimately be de-carbonized to achieve net zero emissions as called for by the Paris Agreement, the transition of the

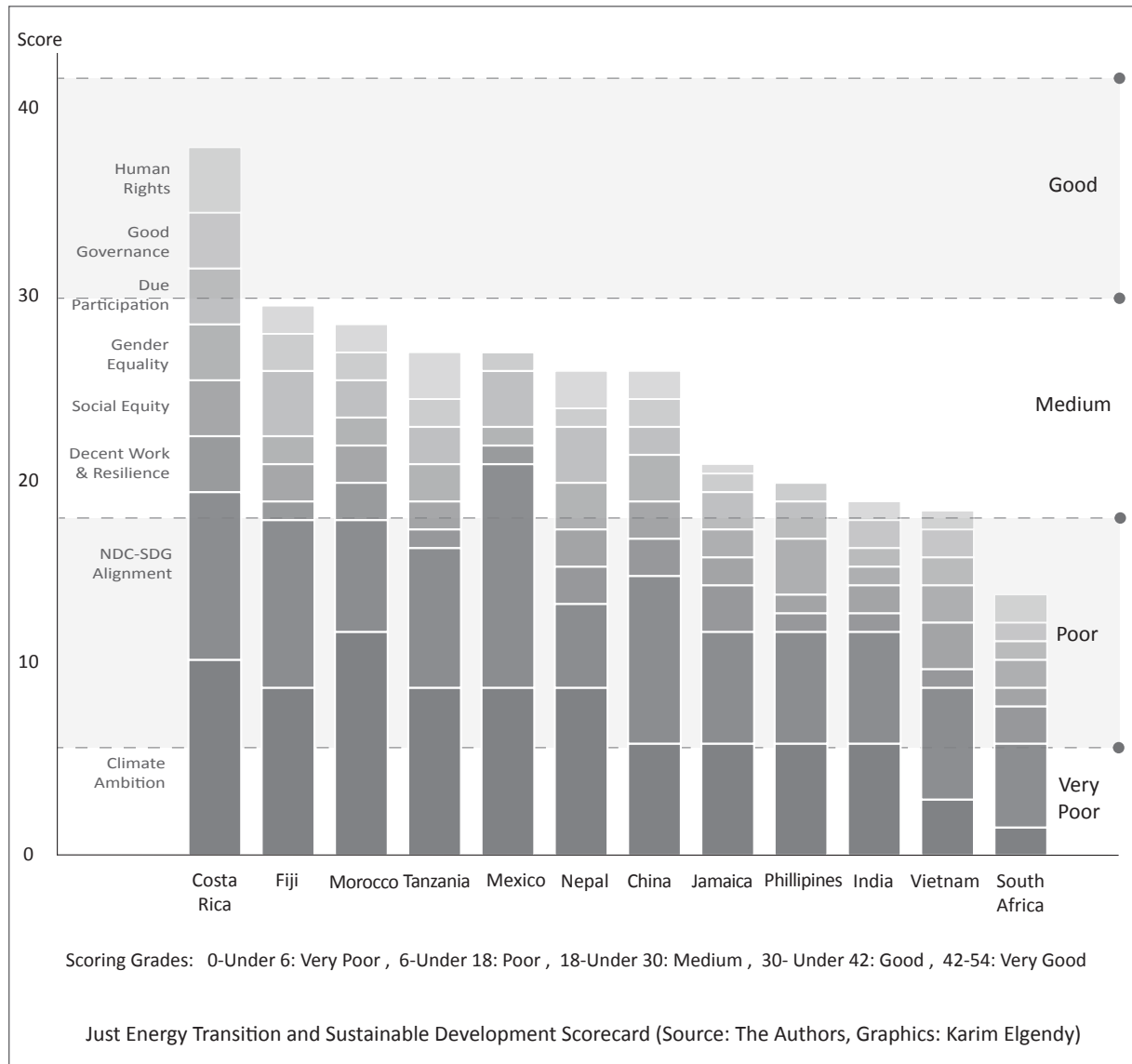
energy sector is the easiest way of achieving reductions; apart from challenges, it also presents many economic opportunities; and it is already under way.

We have developed a set of eight just energy transition principles designed to make justice applicable to energy transition processes in developing countries, which go beyond an abstract call for justice. They cover the climate, socio-economic and political dimensions in a balanced way to reflect the legitimate justice claims of a broad range of potential allies for a just energy transition alliance. Each principle is associated with indicators, and a formula is used to attach a final score to a country's level of justice in the energy transition.

We then applied this approach as a reference framework to assess the energy transitions in twelve countries of the Global South. Their respective scores show that justice concerns are gaining traction in the energy transition and that different countries adopt interestingly different approaches to justice. However, there remains a great deal of room for improvement and countries have a lot to learn from each other. Neither do those countries which claim to be pioneers of the energy transition necessarily perform better in terms of the social and political dimension of a just transition, nor are those who claim to be pioneers regarding justice automatically in the lead when it comes to climate ambition. Our study concludes with recommendations that build on the findings and aim to support alliance building.



Figure 1: Just Energy Transition and Sustainable Development Scorecard





Introduction

The world is currently facing large-scale transformational socio-economic processes whose speed, complexity and intensity are without historical precedent. At the same time, and closely connected with these socio-economic transformations, we are witnessing manifold political and cultural changes around the globe, which are releasing enormously disruptive, but also creative, energies.

The general picture: A fast-changing world and a general mood of uncertainty

The contemporary world is undergoing rapid change as a result of the pressure of scientific progress, globalization and technical innovation. At the same time, political crises and insecurity, increasing inequality between, as well as within societies, and huge environmental threats are omnipresent.

Despite the many challenges and uncertainties we are facing, the shape that our common future will assume remains open. It still can become »The Future We Want«, i.e. the better world envisioned by the 196 states that unanimously agreed at the Rio plus 10 Summit in 2012 on common principles of sustainable development. This agreement led in turn to the Sustainable Development Goals (SDGs), the Paris Climate Agreement and the Sendai Framework for Disaster Risk Reduction, all of which were adopted in 2015 in major initiatives of multilateral policymaking.

Justice as an imperative for transforming the energy sector in a climate-constrained world

Climate change is a major threat that shapes – and endangers – the future of humanity. Keeping global warming below 2°C, or ideally 1.5°C, is imperative to bringing justice to the billions of people who are vulnerable to climate change, as well as to future generations. The clock is ticking: Without immediate and deep reductions in emissions, the 1.5°C threshold will soon be out of our reach.

The energy sector is crucial, specifically whether it develops in a green or a brown direction: The energy transition, i.e. reaching 100 per cent Renewable Energy for all

by 2050, is a necessary precondition for keeping global warming well below 2°C, and if possible below 1.5°C.

The energy transition also represents an extensive change in the industrial system, with far-reaching implications for national and regional economies, business sectors and local communities – and, importantly, for about 30 million workers who are employed indirectly in the global energy sector, about ten million of whom are dependent on coal. Already today 6.5 million people are employed in the Renewable Energy sector, which is expanding very rapidly and will soon employ more people than coal- and oil-based energy production, according to the Greenpeace report »Energy [R]evolution – A Sustainable World Energy Outlook 2015«. However, some people will lose their jobs and the energy transition could lead to social unrest. Therefore, if wide-scale social frictions are to be avoided, the transition must become a *just* transition based on the widest possible agreement with those affected rather than being imposed against their wills.

Achieving a better alignment of climate and energy plans within the broader framework of sustainable development strategies represents both an urgent challenge and a major economic opportunity: Countries can achieve climate-compatible and inclusive economic growth in their energy sectors provided that they pursue fiscal and structural reforms that support low-emission investments, backed up by climate policies, as is shown by the OECD study »Investing in Climate, Investing in Growths«, which was published in June 2017 at the initiative of the German G20 presidency.

Bringing justice to transition processes is possible – if preventive action is taken and if policies are designed in that adequately take into consideration the needs and rights of those people who are most vulnerable to climate change impacts, on the one hand, and to disruptive changes in the transition process, on the other. This means for instance that investments in the energy transition should be accompanied by investments in the world's rust and coal belts and their populations that help them to cope with unavoidable economic change and to maintain their dignity and make their regions prosperous again – without compromising our children's future and the earth's environmental integrity: »There are no jobs on a dead planet«, as the slogan of the International Trade Union Confederation (ITUC) rightly states.



Why we focus on developing countries

Readers may ask why we place our emphasis specifically on developing countries and not on industrialized countries with their higher historically accumulated emissions, their still strong dependency on fossil fuels and their increasing employment problems in the traditional energy sector. We have chosen the focus on the Global South for three reasons:

Firstly, there is a more urgent need to connect the energy discourse better with the justice discourse in developing countries considering the dynamic developments surrounding the substantial buildup in Renewable Energy systems currently taking place in these countries, e.g. China, India or Mexico. China alone must reallocate jobs for 500,000 coal and steel workers in 2017, having already done so for 726,000 jobs in 2016, according to Yin Weimin, the head of China's Ministry of Human Resources and Social Security.¹

Secondly, we see a considerable research gap when it comes to a »just transition« of the energy systems for developing countries. While a great deal of research has been conducted for Europe and North America, the issue of transitional justice is comparatively new for the Global South. This is particularly true for the non-G20 member states of the Global South, i.e. the overwhelming majority of developing countries.

Thirdly, our goal is to inspire the stakeholders in processes surrounding Nationally Determined Contributions (NDCs), Long-Term 2050 Climate Action Plans and the SDGs to operationalize justice in these contexts. This seems to be especially relevant for the very poor and vulnerable developing countries, such as Nepal and Tanzania, among others, which are still struggling to provide access to energy for their populations, and hence face very different transition challenges compared to China or Mexico: While the former must leapfrog to Renewable Energy sources for all from their current levels of relative energy poverty, the latter must replace brown with green energy. Each of these challenges represents a massive transition, which may turn out to be the »largest and most rapid system change in human history«, as it was put by Sharan Burrow from the ITUC in 2015 at the High-

Level Segment during the Paris Climate Conference. In order to make this happen, multi-trillion investments must be shifted from brown to green energy sources. However, the costs of failing to act would be much higher. Hundreds of millions of people on the frontlines of climate change would be left unprotected. A rapid energy transition would reduce the loss and damage they suffer, while at the same time creating new jobs. In China alone, 3.4 million people are already employed in the Renewable Energy sector – and the numbers are increasing.

Our terminological understanding of justice in the energy transition and how it is applied

While referring to justice in an abstract sense would hardly be contested by anybody, the concept becomes quite contested once we move to the concrete level: Do the claims involved concern structural, distributive or participatory justice? Who are the rights holders and who are the addressees of the claims? What are the corresponding entitlements and through which instruments of justice could they be achieved? We will address these questions, arguing that justice in the context of climate change has an intra-generational, an inter-generational and a »justice to nature« dimension. In addition we will argue that, apart from workers and regions that are negatively affected by the transition from fossil to Renewable Energy sources, in addition populations which are vulnerable to climate change, future generations and »Mother Earth« deserve justice and that the corresponding claims addressed to governments, companies and whole societies are justified. This will lead us to discuss a theory of transformational change and of the formation of transition coalitions.

Keeping the global increase in temperature below 2 °C or even 1.5 °C compared to preindustrial levels, as agreed in the Paris Agreement, requires achieving the full decarbonization of the global economy and zero net emissions of greenhouse gases (GHG) by the beginning of the second half of this century. This transformation goes far beyond the energy sector. However, the decarbonization of the energy sector is the first step, which has already started with significant achievements: The fact that to all appearances global CO₂ emissions have plateaued in recent years despite constant economic growth can be attributed to the global emissions decline the energy sector as a result of the ongoing energy transition. We

1. See Reuters, March 1, 2017, <http://www.reuters.com/article/us-china-economy-employment-idUSKBN1683AZ> (last accessed on May 15, 2017)



define the energy transition as the combination of four interrelated elements: (I) The shift from fossil to Renewable Energy sources, combined with (II) an accelerating increase in energy efficiency due to technical innovation, (III) a reduction in the demand for energy due to more sustainable production and consumption patterns, and (IV) access to sustainable energy for all.

The just energy transition narrative used in this study is positive, progressive and inclusive. We believe in transition by design, leading to sustainable development and prosperity for all, leaving no one behind, with respect for the rights of future generations and environmental integrity. Our concept of a just transition covers a broad community of justice, with very different and partly even conflicting claims, including, apart from affected workers and their families, climate-vulnerable communities, people without adequate access to energy, environmentalists, youth movements, faith groups, citizens and sustainable cities and businesses.

Multilateral policy frameworks for a just transition

Among the multilateral policy frameworks for a just energy transition, we regard the Paris Agreement (PA) and the Agenda 2030 with the SDGs, both of which were agreed upon unanimously by the community of states in 2015, to be the most important.

The PA provides a benchmark for the level of climate ambition required to avoid dangerous climate change: »Holding the increase in global average temperature to well below 2°C ... and pursuing efforts to limit the temperature increase to 1.5°C ... « [PA, Art. 2.1a]. It also sets the goal of fostering climate resilience as an imperative for vulnerable populations exposed to extreme risks associated with climate change that threaten their lives and livelihoods: »Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience ... « [PA, Art.2.1b]. As a third pillar, the PA places particular emphasis on aligning *all* investments – and not only climate finance in the strict sense – with the above-mentioned goals. All three goals are interrelated and should be translated into climate action at the national level, as laid down in the NDCs.

The PA emphasizes that climate and development action must be combined and stresses »the context of sustain-

able development and efforts to eradicate poverty« (PA, Art. 2). In its preamble, the PA makes specific reference, among other things, to equitable access to sustainable development, food security, human rights, the needs of vulnerable communities and people, gender equality, intergenerational equity and safeguarding biodiversity and speaks explicitly of »taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities« (PA, preamble). Furthermore, the PA recognizes »that Parties may be affected not only by climate change, but also by the impacts of the measures taken in response to it« (PA, preamble). These formulations clearly indicate that the parties which ultimately adopted the PA were fully aware of its wide scope, which goes far beyond a sectoral climate policy framework.

The Agenda 2030 »Transforming Our World« with its 17 SDGs and 169 associated targets also describes a transition agenda, one which encompasses all major socio-economic sectors and societal spheres in both developing and developed countries. Accordingly, it goes far beyond the scope of its predecessor, the Millennium Development Goals (MDGs). In addition to SDG 8 (decent work), SDG 7 (access to affordable and sustainable energy) and SDG 13 (combating climate change), we consider to be relevant from a just transition perspective: SDG 1 (poverty reduction), SDG 2 (ending hunger), SDG 6 (access to water), SDG 9 (resilient infrastructure), SDG 11 (sustainable settlements and cities) and SDG 12 (sustainable production and consumption).

From policy goals and frameworks to just energy transition principles and indicators

Building on the goals of the PA and the SDGs we have developed a set of guiding principles and indicators for a just energy transition. They have been tested in twelve short country studies in the form of a just transition assessment of these countries and their climate and energy policies, with a particular focus on NDCs. For each country, a performance scorecard on just energy transition and sustainable development, covering the climate, socio-economic, political and human rights dimensions is presented. The list of countries includes China, India, Nepal, The Philippines, Vietnam, Fiji, Morocco, South Africa, Tanzania, Costa Rica, Jamaica and Mexico.



The study concludes with policy recommendations for how to proceed in making a just energy transition a key element of national climate and development policies. Our hope is that multiple stakeholders will be inspired to follow up on some of our ideas.

Ensuring a Just Transition –
A Trade Union Perspective
by German Trade Union Confederation
(Deutscher Gewerkschaftsbund, DGB)

The demand for a just structural development – a »Just Transition« – has been raised by trade unions for years and is anchored in the Paris Climate Agreement. Economies, regions, sectors, enterprises and employees are undergoing a structural change characterized not only by climate protection but also by digitization, urbanization, individualization and demography. Such a profound change represents a major challenge and cannot simply be allowed to take its course. On the contrary, it should be actively shaped by employees, companies and an active and engaged government. The goal must be to prevent job losses and create new, high-quality jobs with decent working conditions. Without a just approach and unless this process is shaped in accordance with justice it cannot be successful. Just Transition must therefore become a guiding principle of international, European and German energy and climate policy. Just Transition is understood by many social and political stakeholders as easing the social hardship caused by climate protection activities. However, it is clear that this does not provide the whole picture. The question of how to take advantage of the opportunities for new, high-quality employment and qualitative growth presented by decarbonization has to be at the center of a just structural development process. Furthermore, the competitiveness and capacity for innovation of industry must be strengthened and value chains and jobs must be developed further while respecting ambitious climate goals.

Employees must play an active role in this transformation process, which they can influence through commitment and new ideas. Well-qualified employees are an indispensable prerequisite for this important chal-

lenge. It is they who apply and implement innovative concepts and systems. They know best how their companies work and how this work is organized. Therefore, there needs to be strong investment in qualification programs for employees in addition to ensuring lifelong education. For its part, Germany can rely on the successful tradition of social partnerships. It is very clear that shaping a just and successful transition can only happen with workers and not against them.

At the level of methodology, we combined different methods. In a first step, we conducted a thorough literature analysis on all relevant topics. We then developed and implemented an approach to screen all (Intended) Nationally Determined Contributions of developing countries, using selected keywords, which indicate how they understand transitional justice and related themes. Building on our findings, we conducted an expert workshop in which we defined the scope of the study more precisely, performed a stakeholder mapping, achieved greater conceptual clarity concerning »justice« and identified countries for further case studies. Subsequently we agreed on the structure of the study and developed just transition principles and indicators for the country-level scoring, which were then reviewed by fourteen experts from a wide range of stakeholder groups. Building on their feedback, the set of principles and indicators to be applied in the study was finalized. In a further step, external authors were commissioned to provide twelve country studies using a similar set of assessment criteria and the remaining chapters were written in parallel by the lead author. Finally, the draft study was reviewed by selected experts and edited accordingly.



Low Carbon Development – Origins of the term and how we use it

The term »low carbon development« originated in the UNFCCC process. Although no formal definition has been adopted, low carbon development includes strategies, plans and actions that uncouple development from GHG emissions, leading to low-emission economic growth. »Low Carbon Development Strategies« became part of the Copenhagen Accord (2009) and were firmly anchored in the UNFCCC process at COP16 in Cancun (2010). While »mitigation« in the UNFCCC or climate policy context usually has an implication of concrete short- or medium-term emission reduction action, the term »low carbon development« is broader and more closely related to »development.«

Recently, the G20 Hamburg Climate and Energy Action Plan for Growth, as developed under German presidency in 2017, considers »long-term low greenhouse gas emission strategies to be a unique opportunity for national, country-specific approaches, guiding short(er) term planning and policy making in relevant sectors, mainstreaming climate action with efforts to promote inclusive economic growth and the implementation of the Agenda 2030. They can incentivise respective investment flows and technological innovation. They will be living documents; there will be no one-size-fits-all solution« (G20 2017, p. 4).

Very much along these lines, but in more specific ways, this study builds on an understanding of *low carbon sustainable development* that has been the subject of a predecessor project of the Friedrich-Ebert-Stiftung and Bread for the World, in collaboration with ACT Alliance, Climate Action Network International and World Wide Fund for Nature (WWF), between 2013 and 2015. The project elaborated the six following features of low carbon sustainable development pathways:

Low carbon: Minimal output of GHG emissions

Ecologically sustainable: Fully respecting planetary boundaries

Human rights-based: Strong focus on participation and poverty reduction

Socially inclusive: Creating wealth and employment while absorbing negative social impacts

Just: Equally sharing burdens and opportunities among different stakeholders.

In the present study, with its focus on the energy transition, we blend the low carbon discourse with the discourse on just transition in order to arrive at principles and indicators.

We wish to express our thanks to the following colleagues for their valuable contributions: Zina Arvanitidou (FES), Lars Blume (GreenID), Rhoda Boateng (ITUC Africa), Raju Pandit Chhetri (Prakriti Resources Centre), Toby Couture (E3 Analytics), Nafisa D'Souza (INECC), Daniela Eichelmann (SES 2017), Karim Elgendy, Christiane Heun (FES), Susanne Hildebrandt (Climate & Development Advice), Tanjir Hossain (CCDB), Mostafa El Jamea (Menares), Gauri Khandekar (Global Relations Forum), Brian Kohler (IndustriALL), Lina Li (adelphi), Tirthankar Mandal (Climate & Development Advice), Sixbert Mwanga (CAN Tanzania), Alexander Ochs (SD Strategies), Michael Renner (Worldwatch Institute), Marc Saxer (FES), Bastian Schulz (FES Trade Union Competence Centre for Sub-Saharan Africa), Sabrina Schulz (E3G), Mattias Soederberg (DanChurchAid), Ajita Tiwari (INECC), Isaiah Toroitich (ACT Alliance), Bert de Wel (ACV-CSC), German Trade Union Confederation (DGB), Richard Worthington, and others who wish to remain unnamed.



1. Why a Just Global Energy Transition is Needed – And What it Implies

Three imperatives of a just energy transition

1.2 billion people are still without access to electricity and many more suffer from an unstable electricity supply. Insufficient energy is one of the main reasons why these people get stuck in poverty. Providing affordable access to sustainable energy for all is therefore the first imperative of a just energy transition.

Access to energy must be sustainable and climate friendly: In view of the dramatic implications of climate change (see below), sustainable energy must be low carbon and in the near future even zero carbon, i.e. Renewable Energy. In terms of justice to people who are vulnerable to the adverse effects of climate change, justice to nature and justice to future generations, carbon neutrality is therefore a second imperative for a just transition.

While some countries, particularly countries without major fossil fuel industries and huge fossil fuel-fired power plants, may leapfrog to the Renewable Energy age, other countries with a large fossil fuel-based industrial sector face severe economic losses and economic restructuring, at least in the short term, with negative implications on the workforce. Therefore, a third imperative of a just energy transition is to find solutions for affected workers and their communities.

The climate challenge cannot be neglected any longer

Breaching the 1.5°C/2°C- threshold would be dangerous because it could trigger several earth system tipping points, such as the permanent melting of the great ice sheets. »We have been blessed by a remarkably resilient planet over the past 100 years, able to absorb most of our climate abuse«, says Johan Rockström from the Stockholm Resilience Centre, co-author of a recent *Nature* comment.² »Now we have reached the end of this era, and need to bend the global curve of emissions immediately, to avoid unmanageable outcomes for our

modern world.« Hans Joachim Schellnhuber from the Potsdam Institute for Climate Impact Research and co-author of the same *Nature* comment adds: »The climate math is brutally clear: While the world can't be healed within the next few years, it may be fatally wounded by negligence until 2020. ... Action to mitigate emissions by 2020 is necessary, but clearly not sufficient – it needs to set the course for halving CO₂ emissions every other decade.«

Rockström and Schellnhuber together with more than 60 outstanding experts and opinion leaders, including the former head of the UNFCCC, Christiana Figueres, and Sharan Burrow, General Secretary of the ITUC, have published a *Nature* article³ in which they argue that GHG emissions must peak before 2020 and fall afterwards in order to achieve the temperature goals of the Paris Agreement (PA). Based on calculations of the remaining carbon budget, they argue that six milestones of a great sustainability transformation must be achieved by 2020, in line with both the PA and the SDGs. Aggressive reduction of fossil fuels is at the very heart of this action plan, which coincides to a large extent with the findings of another recent study by the CAT, identifying the following required actions:

- Sustain the high global growth rate of Renewable Energy sources until 2025,
- Reduce emissions from coal power by at least 30 per cent by 2025,
- Cease the construction of new coal-fired power plants immediately,
- End the sale of gasoline and diesel cars no later than 2035,
- Make all new buildings fossil-free and near zero energy by 2020,
- Increase the building energy renovation rate to five per cent per year by 2020.

In order to implement these measures, industrialized countries must rapidly decarbonize their economies while developing countries are facing an even more monumental challenge: With the support of the developed countries, they must end poverty while simultaneously cutting emissions.

2. See at <https://www.nature.com/news/three-years-to-safeguard-our-climate-1.22201> and at https://www.pik-potsdam.de/news/press-releases/turning-the-climate-tide-by-2020?set_language=en (last accessed: 2.10.2017)

3. https://rael.berkeley.edu/wp-content/uploads/2017/06/Figueres-ThreeYearstoSafeguardOurPlanet-Nature-2017_full.pdf (last accessed: 2.10.2017).



How the energy transition is perceived through the lens of different stakeholders

Important milestones of the energy transition have been reached: Power generation from wind and solar energy sources is booming, particularly in Europe, China, India and the U.S. At the same time, financial investors are becoming increasingly aware of carbon risks. While more and faster action is required, an understanding is also developing of how to make that happen, as we will discuss in the following, examining four lead studies published by very different stakeholders.

»Better Energy, Greater Prosperity«

This report, which was written by the Energy Transitions Commission, a multi-stakeholder group with energy experts from science, politics, think tanks and business, argues that more equal access to energy is paramount for prosperity and that in a climate-constrained world the full decarbonization of the energy sector by the second half of the century is vital. Current global carbon emissions by the energy sector of 36 Gt would have to be cut to 20 Gt by 2040, which is less than half of the level in the business-as-usual scenario (47 Gt). The proposed goals of the energy transition – sufficient access to sustainable energy for all and decarbonization – would require rapid and steady progress on two fronts: annual increases in energy efficiency of three per cent (as compared with a baseline of 1.7 per cent) and an increase of the share of zero-carbon energy sources (mainly renewables) of at least one per cent per year. The Energy Transitions Commission is convinced that the transition is technically and economically viable and proposes four transition strategies: the full decarbonization of the power sector combined with extended electrification; the decarbonization of all activities that cannot be cost-effectively electrified (e.g. heating); accelerated energy productivity improvements; and the optimization of fossil fuels use with overall carbon budget constraints.

The report considers two major enablers to be necessary for a successful energy transition: a shift of investments and favorable public policy frameworks. With regard to the former, additional energy investments of between USD 300 and 600 billion (i.e. less than one per cent of global GDP) are deemed necessary and economically feasible. However, the cost structure for Renewable Energy

in comparison to traditional power plants is marked by high upfront capital and low operating costs, and thus calls for policy frameworks that increase the predictability of long-term cash flows. According to the report, this is especially true for developing countries, where high investments are needed, which implies a major role for development banks and concessional finance. In addition to transition policies that pro-actively address long-term investment, integrated planning, structural change, labor and affordability of energy, carbon pricing is considered to be another key element of favorable policy frameworks: The report calls for carbon prices of USD 50 per ton in the 2020s rising to USD 100 per ton in the 2030s as essential. It also calls for fossil fuel subsidies to be phased out.⁴

Regarding the NDCs, the report calls for the full recognition of all four dimensions of the energy transition in the NDCs as necessary for achieving the PA goals. Ambitious action over the next 15 years is declared to be pivotal for success. The report recognizes that densely populated low-income countries such as India face the most severe challenges of shifting from brown to green energy sources while simultaneously enhancing access to energy, whereas rich and lightly populated countries such as the U.S. face far less severe challenges. According to the report, however, developing countries have an opportunity to get energy productivity »right first time« – that is, they can avoid the lock-in effects of high carbon economies. Countries like Chile, with excellent conditions for solar, wind and cheap land prices, but also Brazil and Ethiopia with their large hydroelectric resources, have all the prerequisites for an easy decarbonization by comparison with poor and densely-populated countries with a steeply growing energy demand, such as Bangladesh or India. Therefore, according to the report, the latter requires strong global support and financial aid as a matter of justice.⁵

»Investing in Climate, Investing in Growth«

This OECD study, commissioned by the German G20 presidency in 2017, also stresses the need to factor in elements of justice as a precondition of an inclusive tran-

4. Energy Transitions Commission, »Better Energy, Greater Prosperity.« Available at: <http://www.energy-transitions.org/better-energy-greater-prosperity> (last accessed: 2.10.2017).

5. Ibid, p.114



sition process: »At the same time, we must recognise that sustainable growth also means inclusive growth. Coherent climate and investment policies, effective fiscal and structural policy settings and reforms must work together to facilitate the transition of exposed businesses and households, particularly in vulnerable regions and communities. Early planning for the transition is essential if societies are to avoid stranded assets in fossil-fuel-intensive industries and stranded communities alongside them.«⁶

The report stresses that the energy transition will heavily impact the national economy, welfare, jobs and tax revenues, with potential repercussions for inclusiveness.⁷ The readiness of a country to make the shift will depend heavily on its capabilities and the role played by the fossil energy sector in the domestic economy, but also the country's exposure to climate risks, which may turn it into an agent of change. What then is the key to ensuring that the transition is as swift and just as possible? The report regards political, social and economic inclusiveness as the main dimension of justice. It points to the fact that inclusiveness hinges on a country's general political conditions: Good governance and accountability, due participation and stakeholder involvement in transition processes, a strong role for civil society, public awareness and climate sensitive media are considered to be crucial to ensuring inclusiveness. These elements are also essential constituents of our just transition principles.

Does the OECD report also provide insights into distributive aspects of a just transition, apart from the aforementioned structural and participatory elements of justice? It points to the fact that »the success of the transition, and public support for it, depends on equitable and transparent distribution of its costs and benefits across society.«⁸

Carbon pricing leading to higher energy prices can have regressive effects on the poor. The report argues, however, based on simulations for 20 high- and middle-income countries, that transferring a third of the additional revenues from higher energy taxes could improve energy affordability in the transition process.⁹ It also argues

that concerns about the post-tax distribution of income should be addressed through tax reform rather than through differentiated carbon or energy taxes, which can harm the energy transition.¹⁰

Phasing out fossil fuel subsidies is indispensable to remaining below the 2°C limit on global warming, but is often considered to be socially critical. However, the report cites various studies and concludes that subsidies disproportionately benefit middle- and high-income households, while poor households could be more efficiently supported by targeted direct cash transfer programs, quoting examples from Bolivia, Brazil and Peru. In contrast, for every USD 100 spent on fossil-fuel subsidies, only USD 18 reached the poorest 40 per cent of households, according to an IMF study that was conducted in 32 developing countries.

The interests of the workforce of companies that are to be restructured or closed due to the energy transition are usually at the core of the just transition discourse, in particular of trade unions. The OECD report devotes a subchapter of their own to these aspects: »Toward a just transition.«¹¹ Following its approach on inclusiveness, the report argues that »for climate action to be successful, workers should have a say in their company's strategy to respond to the climate challenge; and when restructuring and closures are anticipated, proper social measures should be planned.«¹² An energy transition leading to a 2°C pathway will cost jobs as a result of the closure of fossil fuel assets, including jobs in coal mining. However, the aggregate effect might be modest, or even positive, when new jobs related to Renewable Energy sources are taken into consideration. Still the balance will not be positive everywhere and for everybody, considering that new jobs will not necessarily be created where fossil energy jobs are lost and that skill requirements may vary. The report concludes that »upgrading and diversifying workers' skills is vital to strengthen their resilience to risks and shocks, particularly where access to education is limited and incomes are low, limiting the opportunities to re-skill and relocate.«¹³ With reference to the ITUC and its principles for a just transition for all (see below), the report mentions the recognition of the interests of

6. OECD, »Investing in Climate, Investing in Growth«, (Paris: OECD Publishing, 2017), p.16.

7. Ibid, pp. 237ff.

8. Ibid., p. 247.

9. Ibid

10. Ibid, p. 249.

11. Ibid, p. 250ff.

12. Ibid, p.250

13. Ibid, p.251



workers in the fossil-fuel industry, support for innovation, investment in community renewal, guarantees for human rights and social protection, the establishment of just transition funds and social dialog backed by collective bargaining as key ingredients of a just transition strategy.

»Renewables Global Futures Report – Great Debates Toward 100 % Renewable Energy«

The 2017 report of the REN21 discusses in depth the feasibility, challenges, costs and benefits of the energy transition toward 100 per cent renewables by 2050.¹⁴ The experts who contributed to the report agreed for the most part with the feasibility of the goal of achieving 100 per cent Renewable Energy, but stressed that technical, political and economic challenges remain. Regarding negative impacts on the workforce in the energy sector, the report calls for a discussion on a »global social plan« to ensure that the transition process benefits rather than harms the affected workforce.

With a view to enhanced access to affordable energy as a precondition for sustainable development, the report concludes that renewables can make a significant contribution to increased access to energy services for (rural) people who currently lack it, but that the process of switching to Renewable Energy sources must be speeded up. Apart from decentralized small-scale solutions, the report stresses the need to find solutions for how renewables »can fuel the economic development not only of (least) developed countries but also of rapidly growing economies, while avoiding the expansion of fossil fuels during the economic growth period.« Recent developments in India, which in the 2016 surpassed China for the first time with over 17 GW of newly installed solar energy capacity, provide reasons for optimism for the future.¹⁵

14. Available at: <http://www.ren21.net/wp-content/uploads/2017/03/GFR-Full-Report-2017.pdf> (last accessed: 3.10.2017).

15. Ibid, p.95ff.

»Energy [R]evolution: A Sustainable World Energy Outlook 2015«

This study, commissioned by Greenpeace International,¹⁶ advocates combining Renewable Energy and energy efficiency approaches for switching to a 100 per cent Renewable Energy pathway compatible with a global warming ceiling of well below 2°C. It concludes that the ongoing energy revolution is progressing much too slowly and that more rapid electrification based on Renewable Energy sources aimed at reaching 31 per cent of global electricity production in 2020 and 58 per cent by 2030 would be critical for success. The report argues that such a pathway would be economically beneficial and financially viable. It is optimistic regarding the effects on employment: The Advanced Energy [R]evolution scenario it advocates would result in more energy sector jobs globally at every stage of the projection – for instance 35.5 million energy sector jobs in 2020, as compared with just 29.6 million in the reference scenario. For 2030, 46.1 million jobs are projected in the advanced scenario, but only 27.3 million in the reference scenario. The report argues that jobs in the coal sector would decline in any case as a result of productivity improvements. At the same time, employment would grow steadily in Renewable Energy sources, which are expected to account for 86 per cent of all energy jobs by 2030. Solar photovoltaics would then provide 9.7 million jobs, equal to the number of coal jobs today. Employment in the wind sector would increase from 0.7 million today to over 7.8 million in 2030, accounting for twice as many jobs as the present-day oil and gas industry.¹⁷

The evolving justice discourse

The historical origins of the term »just transition« can be traced back to the political struggle of North American trade unions for programs to support workers who lost their jobs due to environmental protection policies in the 1970s and 1980s.

The term was brought to the global level in the Trade Union Resolution on Labor and the Environment, published on June 13, 2012 on the occasion of the Rio plus

16. Available at: <http://www.greenpeace.org/international/Global/international/publications/climate/2015/Energy-Revolution-2015-Full.pdf> (last accessed: 3.10.2017).

17. Ibid, pp. 14f.



20 Summit.¹⁸ The resolution calls for a just transition to sustainable development, with dignity, freedom, social equality, human rights and good governance as guiding principles. The resolution also calls for equity and justice between and within countries, across genders and between generations. It stresses that the global commons should remain under public ownership and protection. This would require investments of two per cent of the global GDP and the recognition of social protection as a human right, in line with International Labour Organization (ILO) Convention 102 (on social security) and ILO Recommendation 202 (on national social protection floors). The transformation of the economy would require large-scale investments in Renewable Energy sources, sustainable mobility, improving the energy efficiency of buildings, waste recycling, the promotion of life-cycle approaches for goods and ecological agriculture, fisheries and forestry, leading to green and decent jobs.

Between 2013 and 2015, the ILO, in cooperation with the trade unions and the business sector, developed Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All.¹⁹ Building on the four pillars social dialog, employment, social protection and rights at work, it includes the following principles:

- Strong social consensus on the goal and pathways to sustainability
- Policies that respect rights at work
- The recognition of the strong gender dimension of environmental challenges and opportunities, and the consideration of policies to promote equitable outcomes
- Policy coherence across economic, environmental, social, education, training and labor portfolios to generate an enabling environment for the transition
- The anticipation of impacts on employment, social protection for job losses and displacement, skills development and social dialog – including the right to organize and bargain collectively
- The need to take into account specific conditions of countries, including their levels of development, eco-

18. Available at: https://www.ituc-csi.org/IMG/pdf/resolution_-_2nd_trade_union_assembly_on_labour_and_environment.pdf.pdf (last accessed: 3.10.2017).

19. Available at: http://www.ilo.org/wcmsp5/groups/public/---ed_emp/--emp_ent/documents/publication/wcms_432859.pdf (last accessed: 3.10.2017).

omic sectors and enterprises – i.e. no »one size fits all« solutions

- The importance of fostering international cooperation among countries.

The report also stresses the equally important dimensions of intra- and intergenerational justice, justice across borders and justice under recognition of the principle of common but differentiated responsibilities (CBDR). It calls for the alignment with poverty eradication strategies. The provision of enabling environments, i.e. »a country-specific mix of macro-economic, industrial, sectoral and labour policies« and mainstreaming just transition and sustainable development through all areas of social dialog are regarded as just transition drivers.²⁰

Since then, trade unions and trade union confederations, such as the ITUC, the European Trade Union Confederation (ETUC), IndustriAll Global Union and the German Trade Union Confederation (DGB) have published policy papers, calling for a just energy transition.

Sharon Burrow (ITUC) called at the High Level Segment of the Paris Climate Summit on December 8th, 2015 for decarbonization by 2050 in line with the 1.5° Celsius temperature limit »to protect people at the frontlines of climate change.« Social dialog, human rights and decent work were mentioned as key criteria for a just transition.

In conclusion, today just transition is understood by trade unions as an active approach to planning and investing in a shift to climate-compatible, more sustainable jobs, sectors and economies, building on principles such as social dialog, promotion and protection of employment, advocacy of the poor, participation and human rights. Differences exist, however, depending on how profoundly the workforce organized by the trade unions is affected by a shift from brown to green: According to IndustriAll, the energy and the mining sectors will face the most extensive transition impacts.²¹

However, the discourse on climate and energy justice has an even broader range of connotations. For populations and countries that are vulnerable to the adverse effects of climate change, like the member states of the Climate

20. Ibid, p.6ff.

21. See IndustriAll at <http://www.industrial-all-union.org/industrial-global-union-sectoral-sustainability-report> (last accessed: 3.10.2017).



Vulnerable Forum (CVF, see below), or the Association of Small Island States (AOSIS), climate justice is a matter of survival, at least in the long term: The claims to justice raised by the inhabitants of sinking islands or territories that are threatened with becoming uninhabitable refer to the most fundamental of all rights, namely the right to live for them and their children.²² Thus, the dimensions of intergenerational justice and of justice to nature (for instance, the survival of coral reefs and fish stocks) also play an important role. The addressees of the corresponding claims to justice are the wealthy countries as the main carbon emitters. The main justice-based demand is the call for ambitious climate action to limit global warming to 1.5°C. The second important demand is to provide support, i.e. to compensate for climate-induced loss and damage, and to support »migration in dignity.«²³

Indigenous peoples with the support of Latin American countries and environmental groups refer in their call for climate justice to »Mother Earth«²⁴ or stress nature and its intrinsic rights. Justice to nature also plays an important role in Pope Francis's 2015 encyclical *Laudato Si*.

Another group of claimants from developing countries, in particular low-income countries, who see their right to development threatened by the industrialized countries' disproportionate use of scarce carbon space, call for financial compensation and support to enable their access to energy, to escape from poverty and to make the transition to sustainable development.²⁵

Toward more conceptual clarity on justice in the energy transition

Our conclusion is that perceptions, narratives and visions of what is just in the energy transition process are as diverse as the claimants or rights holders:

Trade unions focus mainly on the claim for justice of those whose entitlements or livelihoods are *threatened by taking ambitious climate action* (e.g. through the shift from coal to Renewable Energy sources), be it in terms of jobs or access to cheap energy.

Those who are vulnerable to the adverse effects of climate change as claim holders are *threatened* with suffering loss and damage *as a result of climate action that is not sufficiently ambitious*. Their justice-based claim is that the transformation should take place faster and that they should receive support in measures to increase their resilience.

The third group is concerned about the loss of biodiversity and about environmental harm resulting from climate change that affects nature and future generations. They act as claim holders on behalf of either nature/the earth (»Mother Earth«), or of future generations, addressing the dimensions of *justice to nature* or *intergenerational justice*, and call for a faster transition.

The fourth group of energy-poor claim holders, who are not directly threatened by climate change, call for *access to energy in order to escape poverty* and to live a life in dignity. Their concern is that they may not be able to afford energy in the transition and that they may be left behind in a climate-constrained world.

Thus »just transition« is not the exclusive possession of just one group of claim holders. Different groups express partially overlapping legitimate claims, with sound foundations for justice, i.e. ethical frameworks, conferring legitimacy on their claims. The justice dimensions they address extend from intra-generational dimension to the dimensions of justice to nature and inter-generational justice. The addressees of the various claim holders are relatively homogeneous – namely those in power, be it governments, companies or owners of resources.

The *judicandum*, i.e. that what is to be judged as just (the energy transition process, its rules and collective actors),²⁶ concerns different domains of justice, i.e. recognition (e.g. the precautionary principle), structural justice (e.g. just institutions), distributive justice (e.g. polluter pays) and participatory justice (e.g. dialog).

22. As Tuvalu's prime minister Apisai Ielemia put it at the COP in Poznan in 2008: »It is our belief that Tuvalu as a nation has a right to exist forever.«

23. See Anote Tong, the President of Kiribati at <http://www.climatechangenews.com/2016/02/18/kiribati-president-climate-induced-migration-is-5-years-away/> (last accessed: 3.10.2017).

24. See at: <http://www.ienearth.org/world-peoples-conference-on-climate-change/> (last accessed: 3.10.2017).

25. A conceptual basis for this approach is provided by the Greenhouse Development Rights (GDR) approach. See at: http://policydialogue.org/files/events/Kartha_Baer_Athanasios_Kemp-Benedict_Right_to_Development_Paper.pdf (last accessed: 3.10.2017).

26. See Stumpf/Becker/Baumgärtner 2016.



With regard to these domains of justice, there is extensive coherence among the different claim holders with regard to underlying values/recognition (i.e. »leave no one behind in the transition process«, »provide justice to man and nature, now and in future«, »social equality«, »fair and lawful«, »rights based« and »focus on the most vulnerable«).²⁷ In terms of structural justice (»accountability«, »good governance«, democratic decision«) and participatory justice (»inclusion«, »due participation«, »social dialog«, »shape the process actively«, »access to information«) there is also a wide coherence among the different claim holders. Only when it comes to the desired outcome level regarding distributive justice does there exist a range of even conflicting attributes that are called for by claims holders: These conflicts are the result of differences in perceptions of how quickly the energy transition should proceed and how deep it should be and who should be supported or compensated as a matter of priority.

The (just) transition narratives of the claim holders vary with the justice claims. Very few are regressive (»level playing field«, »compensation for historical injustice«); on the contrary, most are progressively reflecting their perception of the energy transition as an opportunity rather than as a threat: »zero carbon, zero poverty«, »100 per cent Renewable Energy for all«, »one million climate jobs.« In conclusion: The location of the specific narratives of claim holder groups in the broader landscape of narratives and attributes on energy transition and climate action can serve as a good starting point for alliance building since. It cannot be repeated often enough that alliances are very necessary because no single group is strong enough to achieve a just transition (see chapter 2).

Political momentum to meet the transition challenges remains strong

As we have shown, a lot of technological and economic momentum is making Renewable Energy sources the cheapest solution and driving the transition; but it is also leading to strong resistance on the part of fossil fuel industries and vested interests of powerful groups. However, the political momentum for the implementation of

the PA, and thus for a transition from brown to green energy sources, is still intact, despite the decision of the Trump administration to pull out of the PA.

The Climate Vulnerable Forum (CVF) launched its vision on November 18, 2016, during the High Level Meeting at COP22 in Marrakech, stating that »the response to climate change is climate justice and social justice in action.« This vision includes, among other things, climate ambition (»the achievement of net carbon neutrality by the 2050s in realization of the Paris Agreement«) and the commitment by each member state to update its NDCs before 2020, to prepare mid-century, long-term low GHG development strategies that connect short-, medium- and long-term development pathways geared to limiting global warming to 1.5°C and to endeavor to realize 100 per cent domestic Renewable Energy production as soon as possible, while working to end energy poverty and to protect water and food security. To address climate vulnerability, the members of the CVF made a commitment to implement ambitious National Adaptation Plans and to strengthen participatory local risk governance. Regarding sustainable development, they made a commitment to implement all SDGs and the Sendai Framework for Action no later than 2030 and to focus in particular on the elements of their 2016–2018 Roadmap, i.e. agriculture, education, health, human rights, gender, labor migration/displacement, science, tourism and water. They also stressed participatory justice as a key element of their commitment – namely, to ensure inclusiveness, due stakeholder participation and transparency. As a means to achieving a just transition and rapid decarbonization, they called for climate investments and committed to strive for carbon pricing and the elimination of harmful high-carbon subsidies. With this vision and call for action, the CVF has become the most ambitious supporter of a just energy transition, as part of a comprehensive strategy for low-carbon, climate-resilient sustainable development.

The G20 minus the U.S. (G19) in their 2017 summit declaration also reconfirmed their non-negotiable commitment to implement the PA and reaffirmed that sustainable and clean energy contributes toward prosperity and innovation. Along these lines, the G19 also confirmed their full support for the implementation of the SDGs and that they will work toward low-GHG-emissions energy systems consistent with the SDGs. To put these commit-

27. The bracketed concretization is preliminary. It is the result of an expert workshop and interviews with claims holders.



ments into action, they agreed on the G20 Hamburg Climate and Energy Action Plan.²⁸ It includes

- that G20 countries will align their development cooperation with partner countries' NDCs,
- that long-term low-GHG development strategies represent a unique opportunity for delivering inclusive growth and incentivizing investment and that these strategies inform investments in infrastructure,
- that developed countries emphasize their commitment to provide USD 100 billion annually from 2020 onwards to support the transformation in developing countries,
- the invitation to the OECD, UNEP and the World Bank to coordinate ongoing activities within the G20 to make finance flows consistent with the PA, and
- the encouragement of all G20 members that have not already done so to initiate a peer review of inefficient fossil fuels subsidies.

The self-exclusion of the U.S. from the G20 communication, which is without precedence in G20 history, does, of course, pose a threat to the fulfillment of the goals of the PA. Another threat to a rapid energy transition is posed by the role of many export credit agencies and development banks, especially from China and Japan, which continue to lend money at discount rates for building new coal-fired power plants, in particular in Asia, and thereby undermine the PA, even at a time when private investors find it too risky to continue to invest in coal.

On the other hand, it is interesting to observe how the carbon disclosure projects of major companies, the divestment decisions of global investors and the commitment of major cities, regions and federal states, also in the U.S., are playing out to promote the energy transition. These actors are crucial to implementing NDCs and to shifting investment flows from brown to green energy, to driving technical innovations and to developing new business models that largely determine the course, speed, inclusiveness and justice of the energy transition.

However, as mentioned above, making the energy transition fast and just remains vital to providing planning security and enabling legal frameworks. This brings us

back to the relevance of frameworks within the political domain.

Hooks for a just energy transition in the Paris Agreement

Achieving the PA's goals represents the new benchmark for climate ambition:

- »Holding the increase in global average temperature to well below 2°C ... and pursuing efforts to limit the temperature increase to 1.5°C ...« (PA, art. 2.1a),
- »Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience ...« (PA, art. 2.1b), and
- »Making finance flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development« (PA, art. 2.1c).

These three goals demonstrate that the Paris Agreement is different from its predecessor – the Kyoto Protocol – in that it no longer focuses merely on climate change. In fact, the Paris Agreement represents an attempt to pave the way to a socio-ecological transformation.²⁹

In order to fulfill these ambitious goals, in the first place state parties »are to undertake and communicate ambitious efforts«, i.e. NDCs, every five years, representing »a progression over time, while recognizing the need to support developing country Parties for the effective implementation of this Agreement« (PA, art. 3). Secondly, and with a view to further specifying their resilience-building efforts, state parties should elaborate National Adaptation Plans (NAP), and align them with development planning. And, finally, state parties should »communicate, by 2020, to the secretariat [i.e. of the UNFCCC] mid-century, long-term low GHG emission development strategies« (1/CP.21 §35). The discretionary decision committing states to elaborate long-term Low-Carbon Development Pathways to 2050 is complementary to the mandatory NDCs as short- and mid-term domestic climate action plans, and to the NAPs: Long-term strategies shall provide a national vision for low carbon climate resilient sustainable development by 2050, and a road map how to achieve this vision. By doing so, long-term low greenhouse gas emission development strategies (LTSs) provide planning

28. Available at: https://www.g20.org/Content/DE/_Anlagen/G7_G20/2017-g20-climate-and-energy-en.pdf?__blob=publicationFile&v=5 (last accessed: 3.10.2017).

29. See Bred for the World (2016): The Paris Climate Agreement.



security and predictability to investors, and can therefore guide decisions on investments in energy projects and infrastructure, even if the long-term plan is discretionary and a living document subject to modification.

The relevance of NDCs, NAPs and LTSs as the three main tools for the domestic transition process is underlined by the fact that international support platforms have been created to foster cooperation and international support for developing countries for each of the three instruments: The NDC Partnership³⁰, the NAP Global Network and the NAP Global Support Program³¹, and the 2050 Pathways Platform, which is still in the making.³²

We can conclude that the PA includes hooks designed to promote the *climate ambition* to stay well below the 2 °C threshold, and even to achieve the 1.5 °C target. But how about hooks for *justice* in the transition process?

The preamble to the PA calls on states to take »into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally determined development priorities.« In addition, it sets forth further principles of the PA: to take climate action based on the best available science; to act in solidarity with the most vulnerable countries; to recognize the intrinsic relationship between climate change and the struggle to overcome poverty; to respect food security and wide-ranging human rights obligations, particularly toward indigenous people, local communities and vulnerable people; to note the importance of climate justice, gender equality and intergenerational equity; to note the importance of the integrity of all ecosystems; and to recognize that sustainable lifestyles and consumption patterns play an important role in addressing climate change.

As such, the preamble reflects a transformative understanding of development. Comparing the PA's preamble with that of the UNFCCC reveals how much the focus of the discourse on transition and transformational change has shifted since 1992. It must be emphasized, however, that the preamble constitutes very soft law and that the other articles of the PA fail to exhibit comparable

levels of recognition for and commitment to justice in the transition process to those they show for climate ambition. Those who have championed justice in the transition process in all its various dimensions, whether it be trade unions, vulnerable communities, youth movements or environmentalists, to name only a few, have achieved progress by ensuring that references to their claims for justice were anchored in the preamble to the PA. These hooks must now be used to strengthen justice in the implementation of the PA, be it in the NDC, NAP or LTS process.

Hooks for a just transition in the SDG implementation process

A major hook for a just transition is the SDG principle to leave no one behind. In addition, SDG 7 on affordable and clean energy is especially important, identifying 2030 as a target date to

- ensure universal access to affordable, reliable and modern energy services,
- increase substantially the share of Renewable Energy in the global energy mix,
- double the global rate of improvement in energy efficiency,
- enhance international cooperation to facilitate access to clean energy research and technology, including Renewable Energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology, and
- expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing states and land-locked developing countries, in accordance with their respective programs of support.

SDG 8 on decent work and economic growth is the other development goal of special relevance as a hook for a just transition process. According to the ILO, over 215 million workers were unemployed in 2015, inequalities are becoming more extreme, political space for trade unions is shrinking in many countries and there are not enough

30. See at <http://www.ndcpartnership.org> (last accessed: 3.10.2017).

31. See at <http://napglobalnetwork.org> and <http://www4.unfccc.int/nap/Support/Pages/NAPGSP.aspx> (last accessed: 3.10.2017).

32. See at <http://newsroom.unfccc.int/media/791675/2050-pathway-announcement-finalclean-3.pdf> (last accessed: 3.10.2017).



jobs to supply work for a growing labor force.³³ In view of these challenges, the objective of SDG 8 is to

- sustain per capita economic growth;
- achieve higher levels of economic productivity through diversification, technological enhancement and innovation, among other things through a focus on high value-added and labor-intensive sectors;
- promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the growth of micro-, small- and medium-sized enterprises, including through access to financial services;
- improve progressively global resource efficiency in consumption and production and endeavor to uncouple economic growth from environmental degradation;
- achieve full and productive employment and decent work for all, and equal pay for work of equal value by 2030;
- reduce substantially the proportion of youth not in employment, education or training by 2020;
- take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labor and end child labor in all its forms by 2025;
- protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment;
- devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products by 2030;
- strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all;
- increase Aid for Trade support for developing countries, in particular least developed countries; and
- by 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the ILO.

These targets, if taken seriously, would constitute perfect guides for achieving justice in the energy transition with a view to decent works and sufficient jobs. In virtue of their characteristics – i.e. decentralization, labor-intensity,

technological innovation and health aspects – the Renewable Energy and energy-efficiency sectors provide far superior opportunities for decent work and quality jobs than the fossil energy sector.

33. See at <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-8-decent-work-and-economic-growth.html> (last accessed: 3.10.2017).



2. Building Transition Coalitions – Elements of a Theory of Change

Until the PA, the climate and energy policy focus was mainly on the international negotiation process. In the post-Paris phase the focus has shifted to implementation at the national level. Alliance-building has proved to be an important factor in achieving progress in the negotiation process, as the recent history of the UNFCCC indicates. This raises the question of whether formal and informal coalition building will also help to ensure the success of the just energy transition in which a number of challenges need to be addressed, as shown above.

So which factors determine the success of coalitions? Research shows that coalitions differ with regard to hard and soft factors.³⁴ Important hard factors for success are, among others, common goals in harmony with the core interests of the coalition members, the conviction of the partners that their aims can be better achieved in an alliance, political relevance, good coordination, narratives with strong political and media resonance, a good balance between exclusivity and openness to third parties and impact orientation (i.e. flexibility and the ability to change). Key soft factors are integrity, an anticipatory assessment of one's coalition partners and a positive image as a motor of progress, among others.

The energy transition will ultimately manifest itself in the financial markets and in the real economy. That means that coalitions require stakeholders who have a strong say in the implementation of the NDCs and in the elaboration of long-term (2050) decarbonization and resilience strategies. In addition, G20 members are important in order to promote a sense of responsibility, cohesion and cooperation among the major GHG emitters and to counteract free-riding, to bring issues to the table, to establish anchors and, finally, to agree on forms of collaboration. Alliances such as the CVP can generate the appropriate pressure of expectations on the G20 from outside. Taken together, the championing vision statement of the CVP and the resonating G20 Hamburg communication indicate that an energy transition is possible.

However, in order to bring about far-reaching transformation processes in the real economy with correspond-

ingly profound social and political impacts, strong driving forces must be brought to bear. Shaping this process politically in innovative and ambitious ways calls for new coalitions that include stakeholders from the economy and the financial sector, from cities, municipalities and regions, as well as from academia, trade unions, churches, NGOs and social movements.³⁵ Policymakers must be pressured to implement the political instruments needed to avoid further delays in the energy transition with negative impacts for everyone, and instead to opt for solutions that benefit people and the planet.

Civil society is assuming an indispensable role in multi-stakeholder alliances: Civil society organizations (CSOs) can function as catalysts to promote transformative and forward-thinking change. They can serve as watchdogs and transmission belts for a wide range of social groups and can represent the interests of the disadvantaged and articulate concerns that otherwise do not benefit from political representation.

Possible coalition partners along these lines are, as we have identified before, trade unions, their confederations (e.g. ITUC, ETUC, IndustriAll Global Union) and partners (e.g. Just Transition Centre, Sustainlabour), faith-based organizations and their networks (e.g. ACT Alliance, World Conference of Churches), development and environmental NGOs, youth movements, specialized platforms like Economy of Tomorrow, Just Transition Alliance and Just Energy, Transition Towns, the divestment movement, sustainable investors, Renewable Energy industries, think tanks like the Global Green Growth Institute, ICLEI – Local Governments for Sustainability, international organizations like the ILO, the International Renewable Energy Agency (IRENA), UNDP or UNEP, and many more.

Transformative change making³⁶ might be an interesting approach that can help to foster the necessary commitment across different actor groups to move the energy transition forward and, at the same time, address justice issues. Transformative change making attempts to form coalitions neither exclusively based on beliefs («there is only one true belief») nor exclusively based on technocracy («there is only one scientific truth based on fact and

35. Ibid.

36. See Saxer, M. (2017): Transformative Change Making; available at: <http://library.fes.de/pdf-files/bueros/indien/13269.pdf> (last accessed: 3.10.2017).

34. See Hirsch (2016); available at: <http://library.fes.de/pdf-files/iez/12689.pdf> (last accessed: 3.10.2017).



figures») nor based on »horse trading.« It builds on the assumption that fundamental transition processes create winners and losers and therefore lead to tough struggles and transformational crisis (see introduction) that cannot be tackled successfully exclusively by using traditional means of conflict resolution. Instead, a new understanding has to emerge of »what is happening« and »what needs to be done.« While those who want to maintain the status quo will spoil such a new discourse, those who want to bring about change may have difficulties in arriving at a shared understanding because of divergent identities, interests and priorities.³⁷

The transformative change making approach proposes to use discourse methodologies and a step-by-step approach to break up these silos and finally build so called »transformative alliances.« The method has already been tested successfully in India, Pakistan and Thailand, among others, in peace building and in the energy transition. In a first step, pioneers of change form seed communities. They then go after the low-hanging fruit and win partners to form a transactional change coalition to focus on win-win strategies based on technically feasible, economically viable and politically sellable projects, while still remaining within the status quo. By making a success of these projects, the pioneers of change can win transactional allies (»those sitting on the fence«) by providing the right incentives to form transformative alliances against the spoilers. However, this important step from a transactional to a transformative alliance (or from »within the status quo« to »against the status quo«), i.e. break through the glass ceiling, requires more than win-win projects, namely a clear alternative vision of a better future (as for instance the American Dream), a change narrative with moral weight capable of tipping game changers and resonating with as many discourse communities as possible (e.g. Barack Obama's »Yes, we can« presidential campaign), and catalytic projects that finally translate discourses into action. To trigger these steps, distinct discourse technologies are proposed by the approach, involving different discourse layers (policy, paradigm, narrative and metaphysical layers), which aim to break up silos and bring different discourse communities together, leading to the creation of transformational alliances or transition coalitions.³⁸ As regards the discourse levels, it is argued that conflicts of inter-

est on a higher level can be overcome by introducing a synthesis at a deeper level – for instance, by building a bridge at the level of the narrative discourse. Competing paradigms can be shifted to a convergence zone, and in this way policies that seemed to be trade-offs can be re-defined as two sides of the same coin. If this discourse strategy is combined with successful catalytic projects, the status quo could be finally overcome, leading to a breakthrough.

The just energy transition discourse, which is still quite fragmented as shown in chapter 1, could benefit from being seen through this lens. The different claim holders within the community of justice, while aiming to pluck low-hanging fruit, could form seed communities and later win further allies to form a transactional coalition: The Paris Agreement coupled with the SDGs provides sufficient hooks and the political momentum is still generally favorable, motivating a broad range of actors to stand together against Donald Trump's attempt to revive the geopolitical power regime and the old economy of the previous century. Under these framework conditions, and in view of the manifold challenges and transformational crises (see the introduction above), an alternative vision of a common, climate-safe and peaceful, sustainable future should become attractive. A change narrative centered on 100 per cent Renewable Energy sources for all, combined with overcoming vulnerability and providing decent work, could represent a powerful vision. In terms of catalytic projects, just energy transition projects that are inclusive and aim to leave no one behind could be designed and implemented at various levels, from municipalities up to regions and countries. By creating the right incentives, a climate and energy race to the top could successfully oppose the Trump race to the bottom. At the same time, such catalytic projects could stimulate and deepen the just energy transition discourse, following the transformative change making methodology and providing empirical evidence and examples of good practice.

37. Ibid, p. 2

38. Ibid, pp. 2ff.



3. Guiding Principles and Indicators as a Frame of Reference for a Just Energy Transition

While we sought to enhance conceptual clarity and the political understanding of a »just energy transition« in the previous chapters, we still need to answer the question of how the abstract call for justice could be implemented and whether there are ways to assess countries' efforts to make the energy transition just.

Acknowledging that circumstances differ from country to country, a one-size-fits-all just energy transition approach won't work. However, building on the results of a literature review and expert interviews with different stakeholders from across the world, we came to the conclusion that a set of just transition principles could be developed that can serve as a reference framework for a just energy transition. These principles should encourage stakeholders to transform the energy sector from brown to green energy sources in a just way.

Along these lines, just transition principles can provide guidance to prepare for, plan and implement transition processes. They can also be used to assess NDCs, long-term climate and energy strategies and development plans of countries, showing the strengths and weaknesses or »justice gaps« that need to be addressed.

To make these assessments transparent, verifiable and comparable, we found it important to also define indicators for each of the principles. While we achieved agreement on the proposed principles among the consulted experts, it turned out to be much more difficult to agree on a relatively homogeneous set of indicators. Furthermore, specific national circumstances make it very difficult to compare countries, even based on measurable indicators. These difficulties again became clear when we tested our reference framework to measure the just transition performance of the NDCs of twelve countries (see the next chapter).

It is important to emphasize that both our proposed principles and the indicators should be seen as a first attempt to set up a just energy transition reference framework, an effort that leaves room for improvement.

In terms of the scope for a just transition reference framework we consider it as extremely relevant not to limit it to

energy and climate policy, but also to include the wider context in order to gain a comprehensive understanding of the transition process and of possible challenges and risks to justice. In our case, building on the conceptual understanding that was discussed in the previous chapter, we consider the *climate dimension* to be as important as the combined *socio-economic* and *political dimension* for achieving a just transition process leading to sustainable development:

Climate dimension: Without committing to an ambition level of reductions in GHG emissions that is congruent with a trajectory limiting global warming to 1.5°C, or at least to well below 2°C, no one can honestly pretend to champion justice in the energy transition process, given that any global temperature increase exceeding this threshold will inflict disproportionate harm on vulnerable populations, biodiversity and future generations.

Socio-economic dimension: Climate action must be combined with development action in order to ensure sustainable results: A just transition of the workforce, the creation of decent work and quality jobs, but also access to sustainable energy for all, fair benefit sharing, resilience-building for vulnerable populations, and positive impacts on social equity and gender equality are pivotal criteria.

Political dimension: A just energy transition requires enabling political framework conditions to manage the transition process and unavoidable conflicts in a transparent and effective way, without violence, and to the benefit of the people. Good governance, due participation and respect and protection of human rights are critical for success.

We have developed eight principles for a just energy transition, representing the three aforementioned dimensions. They all have an universal claim for validity in addition to further possible options, such as for instance principles with a strong energy technology focus: The latter (e.g. with a focus on phasing out coal-fired power plants by a concrete date) may be a good fit with a just energy transition discourse in a country like Mexico, but may be less appropriate for Nepal. This implies that the proposed frame of reference for a just energy transition might need to be complemented further in order to become fit for purpose at different national discussion levels.



Although the main focus of applying the just energy transition reference framework is on NDCs, it also seems necessary to include a comprehensive assessment of a country's sustainable development and energy policies because an excessively narrow focus can easily become misleading. Embedding the NDC analysis in a broader country assessment can help to identify structural problems, general challenges, or specific potentials to mobilize development co-benefits.

In conclusion, the set of proposed indicators, in contrast to the just transition principles, cannot claim universal validity: Due to the limitations of the available data and in part non-comparable parameters, indicators need to be carefully reviewed before they are applied at the country level. The same level of caution and flexibility is recommended for the definition of country-specific targets to measure possible achievements under the just transition principles.

In the following, we outline principles and indicators for a just transition reference framework.

Climate dimension

1. Climate Ambition Principle: The energy transition described in the Nationally Determined Contribution (NDC) and the Long-term low greenhouse gas emission development strategy (LTS) reflects an ambitious attempt to achieve zero GHG emissions by 2050, and thereby contributes to achieving the 1.5/2 °C temperature goal.

Indicators:

- Rating of level of ambition according to (i) CAT – Climate Action Tracker, (ii) Climate Change Performance Index of Germanwatch & CAN Europe, and/or (iii) CCPI Climate Performance Ranking of Climate Transparency et al.
- Impact of NDC/LTS on the country's GHG emission trend
- The country's share of global GHG emissions and per capita GHG emissions
- Availability, quality and level of ambition of a Renewable Energy roadmap

Observations from the pilot country assessments: Only half of the countries have been rated thus far. The other indicators work for all but are less meaningful.

2. NDC-SDG Alignment Principle: The NDC-guided energy transition is closely aligned with the implementation of the SDGs, aiming at achieving sustainable development co-benefits.

Indicators:

- Assessment of the level of alignment of the NDC with the SDG implementation plan
- Actual level of SDG implementation, in particular with regard to SDG 1 (poverty reduction), SDG 2 (overcoming hunger), SDG 6 (access to water), SDG 7 (access to affordable and sustainable energy), SDG 8 (decent work), SDG 9 (resilient infrastructure), and SDG 12 (sustainable production and consumption)
- The country's ranking in the Human Development Index (HDI) and the specific HDI country profile

Observations from the pilot country assessments: The level of SDG implementation is difficult to assess at this early stage in the process, whereas it is easier to analyze how far the development planning and the NDC are aligned. The level of success in achieving the MDGs can also serve as reliable indicator for assessing how seriously the implementation of development goals was pursued in the past. The extent to which the NDC/LTS refers to the selected SDGs (see above) is easy to observe while it is more difficult to estimate to what extent the NDC/LTS implementation is likely to have a positive or negative impact on SDG implementation.

Socio-economic dimension

3. Decent Work and Vulnerability Focus Principle: The NDC/LTS-guided energy transition strives to create decent work in sustainable infrastructure development, reflects commitments to support those who are losing jobs and is focused specifically on those who are most vulnerable to climate risks and those who may lose their jobs due to the energy transition.

Indicators:

- The country's general status of labor rights and its proportion of precarious jobs as measured by the most recent ITUC Global Rights Index



- Job gains and losses related to the energy transition according to International Energy Agency (IEA) and/or IRENA calculations³⁹
- Availability and quality of programs for re-skilling workers who have lost their jobs in the fossil energy sector or related industries and services
- Other measures taken by the government and stakeholders to manage the transition and its implications for workers and communities in pro-active ways
- Climate risk ranking of the country according to the most recent Climate Risk Index of Germanwatch
- Climate risk focus in the country's NDC
- Access to energy according to most recent World Energy Outlook of IEA

Observations from the pilot country assessments: The impacts of NDC/LTS on decent work and quality jobs are difficult to assess due to a lack of data and research. To undertake this kind of research and to show the potential of Renewable Energy sources to create more new jobs than the old jobs that will be lost in the energy transition could provide a strong incentive to stakeholders to invest in the transition. It is also difficult to assess measures taken to pro-actively manage the transition and to re-skill workers who lost their jobs due to the energy transition. It would be very interesting to make a systematic stocktake and to document lessons learnt.

4. Social Equity Principle: The measures taken in the NDC/LTS-guided energy transition should have a positive impact on social equity and in particular should contribute to improving the socio-economic integration of vulnerable groups.

Indicators:

- General status of distribution of family income according to GINI Index
- Possible impact of NDC/LTS implementation on social equity (positive, negative, neutral)

Observations from the pilot country assessments: Possible impacts of NDC/LTS on social equity are very difficult to assess due to a lack of data and research. To undertake research and demonstrate possible co-benefits of NDC/LTS implementation on social equity is highly recommended.

39. See for instance at Partly IRENA/IEA, e.g. at <http://resourceirena.irena.org/gateway/dashboard/?topic=7&subTopic=10Knowledge> (last accessed: 3.10.2017).

5. Gender Equality Principle: A gender impact assessment of the NDC/LTS should be undertaken with a view to avoiding negative and to stimulating positive effects on gender equality in the course of the NDC/LTS implementation.

Indicators:

- General status of gender equality, according to Gender Inequality Index (GII) of HDI ranking and Gender Equity Index (GEI)
- Possible impact of NDC/LTS implementation on gender equality (positive, negative, neutral)
- Requirement to undertake a gender impact assessment in NDC/LTS implementation process

Observations from the pilot country assessments: Assessment results from the Gender Inequality Index (GII) of HDI rating and the Gender Equity Index serve as a very good yardstick for assessing the general gender equality status in the country. None of the countries analyzed has undertaken or plans to undertake a gender assessment in the NDC implementation phase. However, some countries address the gender issue, which at least indicates a certain level of sensitivity. It is difficult to assess whether the NDC/LTS implementation will improve gender equality. An assessment could contribute to sensitizing stakeholders to the high level of gender sensitivity of NDC/LTS implementation in most countries and in many regards.

Political dimension

6. Due Participation Principle: Multi-stakeholder participation in the NDC/LTS process from planning to implementation and evaluation should be ensured in accordance with international good practice standards, and a dialog on justice issues should be included in the transition process.

Indicators:

- Planned stakeholder participation in NDC process (if, how, who, when, for what purpose)
- Estimation of the proportion of the population that has heard about the country's NDC

Observations from the pilot country assessment: The second indicator is difficult to measure. To assess the quality of stakeholder participation, it is important to consult with stakeholders who have participated in the process.



7. Good Governance Principle: Transparency and accountability, including an adequate cost-benefit-analysis of energy transition measures, should be ensured in the NDC/LTS implementation process.

Indicators:

- General situation in the country regarding good governance and corruption according to the Transparency International Corruption Perceptions Index
- Analysis of transparency and accountability measures as mentioned in the NDC/LTS, including cost-benefit analyses, if undertaken

Observations from the pilot country assessment: The assessment results from the pilot countries show that most of them perform poorly with regard to governance. Accordingly, this principle deserves particular attention. While the first indicator is easy to implement, the second one is more complex. As yet, none of the pilot countries has published a detailed cost-benefit analysis for its NDC/LTS.

8. Respect for Human Rights Principle: Human rights should be respected in the energy transition and NDC/LTS implementation, including the fulfilment of human rights obligations deriving from international human rights treaties that the country has ratified. The »Do No Harm Principle« should be employed and a human rights impact assessment should be part of the NDC/LTS implementation process.

Indicators:

- General human right situation in the country, according to rating in Human Rights Risk Index
- Anchoring of and references to human rights in NDC/LTS
- Requirement to undertake a human rights impact assessment as part of the NDC process
- Do no harm principle respected in the NDC/LTS process

Observations from the pilot country assessment: The human rights situation in most of the pilot countries is a matter of concern, if not of profound concern. The assessment results clearly indicate how important this just transition principle is, and that the human rights gap is still huge. None of the pilot countries foresees a human rights impact assessment as part of the NDC/LTS process

or any other instrument to address human rights in these processes.

Scoring just energy transition performance – The scorecard

To score the just energy transition performance of countries we take the eight principles introduced above which reflect the three dimensions of justice – namely, the climate dimension (climate ambition, NDC-SDG alignment), the socio-economic dimension (decent work and vulnerability focus, social equity, gender equality) and the political dimension (due participation, good governance, human rights).

Performance will be scored for each of the eight principles using the reference indicators introduced above as key criteria. The scores extend from very poor (0) to poor (1), medium (2), good (3) and very good (4). If necessary, intermediate scores, for instance poor to medium (1.5), can be used.

We have chosen to attach equal weights to the climate dimension (which has only two principles) and to the combined socio-economic and political dimensions (both of which have three principles). This leads us to the following formula to calculate a country's just energy transition score:

$$\frac{(((Climate\ ambition + NDC-SDG\ alignment)*3) + (Decent\ work/vulnerability\ focus + Social\ equity + Gender\ equality) + (Due\ participation + Good\ governance + Human\ rights))}{12} = Just\ energy\ transition\ scoring\ result$$

Final scoring results are categorized as follows:

- 0–5.9 Scores: Very poor
- 6–17.9 Scores: Poor
- 18–29.9 Scores: Medium
- 30–41.9 Scores: Good
- >40 Scores: Very good

Each country's score is shown in the form of a graph in the next chapter in the country scorecards and is explained further in the country assessments. The concluding observations contain a chart with an overview of the results for all countries.



4. Just Energy Transition Country Profiles – Spotlight on NDCs

Justice and ambition in developing countries' NDCs

How is the transformation of the energy sector from brown to green energy sources reflected in developing countries' NDCs? How strategically relevant do these countries consider their own energy transition to be and is it perceived as a burden or instead as an opportunity? What level of attention is being paid to justice in the context of the energy transition? And finally, is reference made to the concept of »just transition« as discussed in this study?

In order to find first answers to these questions, we screened all of the (I)NDCs of developing countries for the keywords »just transition«, »transition«, »transformation«, »justice«, »equity«, »response measures«, or a combination thereof. For those countries that mention equity or justice, we also analyzed how they define the community of justice. We then compared the findings of this screening with screening results from a previous study, which examined the different ways in which (I) NDCs address climate vulnerability.

Championing a »just transition«? – The case of South Africa

The explicit term »just transition« is only used by South Africa in the section of its INDC that explains how South Africa considers its INDC to be a fair and ambitious contribution: »In the absence of a multi-laterally agreed equity reference framework, South African experts, applying Convention principles of responsibility, capability and access to equitable sustainable development, determined a carbon budget that is larger than the PPD [Peak, plateau and decline] trajectory range outlined in this INDC. South Africa has used this evidence base to evaluate whether its INDC is a relative fair effort. ... South Africa is of the view that its contribution is both fair and ambitious. The PPD trajectory range is an ambitious and fair effort in the context of national circumstances, and priorities to eliminate poverty and inequality, promote inclusive economic growth and reduce unemployment. It presents a trajectory that is consistent with a *just transition* to a

low carbon and climate-resilient future« (Government of South Africa 2015, p. 7, emphasis added).

While the INDC does not go into any further detail, what is meant by »just transition«, this question is addressed in an informal South African submission to the UNFCCC from 2016. The submission was filed in the context of an UNFCCC work program on the implications of so-called »response measures« (see below). The main focus is on the urgent need to diversify a strongly coal-dependent energy system and economy and to create new jobs. It states that

»Transitioning to a low carbon development trajectory for South Africa and Africa means Africans must see increased industrialization, localization, job creation and skills development linked to ... green infrastructure and energy development ... Africa's transition to a low emission development trajectory depends significantly on access to support ... The National Climate Change Response White Paper, pursues the goals of building the climate resilience of the country, its economy and its people. ... There is a legislative imperative for South Africa's policies with respect to economic diversification and just transition of labor to ensure sustainable development, job creation, improved public and environmental health, poverty eradication, and social equality when pursuing and achieving climate resilience« (Government of South Africa 2016).

From this, as well as from other documents, it is apparent that South Africa's understanding of justice in the transition process from »high carbon« to »low carbon« is focused on creating co-benefits for both the economy (diversified growth and improved energy supply), and the workforce (more jobs). Creating decent jobs – South Africa expects 300,000 new jobs from the expansion of Renewable Energy sources by 2020 alone – seems to be the main indicator for a »just energy transition« from the South African government's perspective.

Importantly, it is also apparent that a positive meaning is attached to the energy transition (e.g. that it can lead to more jobs). A just energy transition in this context is an affirmative approach to the transition we are facing. This may come as a surprise given that South Africa's economy is heavily depending on fossil energy and extractive industries. On the other hand, the country has been severely hit by the adverse impacts of climate change



and it must deal with the high expectations of millions of Africans, who regard the Government of South Africa as a strong advocate of their interests at international policy forums.

Accordingly, the submission also indicates that the community of justice extends beyond the workforce to include »the people«, and especially vulnerable communities, who suffer from increasing climate risks. In addition, the submission mentions other expected benefits from the transition process (which go beyond the energy sector): Climate resilience, improved public and environmental health, poverty eradication and social equity. It is striking how well the elements listed in the submission cohere with the just transition principles presented in the previous chapter. Looking at the target group addressed in the submission as those who should contribute to fulfilling the claims of justice, the Government of South Africa, as a key proponent of the so-called equity reference framework (an approach that was not ultimately adopted in the PA), makes a strong plea for support from developed countries. Looking again at South Africa's INDC, it becomes clear that providing this support is itself treated as a matter of climate equity and justice, in line with the principle of common but differentiated responsibilities and respective capabilities (CBDRRC).

The notion of justice and transformational change in other NDCs

As stated above, no other developing country besides South Africa directly refers to »just transition« in its NDC. This can be taken as another indication that the »just transition« discourse, despite the efforts of its main proponents, still lacks support of policymakers and governments. Therefore, to reiterate, greater attention may have to be paid to wider alliance-building by the proponents of a just transition.

73 countries⁴⁰ mention one or more of the keywords »equity«, »justice«, »transition«, »transformation« or

40. Including the following: Albania, Armenia, Azerbaijan, Bahrain, Barbados, Bolivia, Brazil, Burkina Faso, Central African Republic, Colombia, Comoros, Congo, Costa Rica, Cuba, Dominica, Dominican Republic, Eritrea, Equatorial Guinea, Gambia, Guatemala, Haiti, Honduras, India, Iraq, Israel, Jordan, Kiribati, Kuwait, Kyrgyzstan, Laos, Lebanon, Lesotho, Liberia, Malaysia, Marshall Islands, Mauritius, Montenegro, Morocco, Namibia, Nepal, Niger, Nigeria, Niue, Panama, Papua New Guinea, Qatar, the Philippines, Republic of Korea, Rwanda, Saudi Arabia, Senegal, Solomon Islands, South Africa, Sri Lanka, Surinam, Swaziland, Tajikistan, Tan-

»response measures« in their NDC, employing in one form or another a narrative of transformative change, justice or energy transition. The countries in question can be divided into three groups, in addition to South Africa.

One group is composed by 37 countries⁴¹ which employ a narrative of equity and justice to lend moral and political weight to their call for enhanced international support for their climate resilient, sustainable low carbon development pathways. Most of these countries are particularly climate vulnerable and poor, and therefore focus in the first place on building resilience, followed by low carbon development as a second priority. The community of justice in most of these cases is not specified precisely with a few exceptions which mention indigenous people, communities or displaced people, while most countries speak in terms of »the people« in general or don't mention the rights holders at all. As already above-mentioned, the addressees of claims are first and foremost the developed countries. In conclusion, apart from South Africa, the call for justice is not centered on workforce or employment, but addresses instead vulnerability and resilience building. While the focus is different, South Africa and this group have many things in common, which can serve as a basis for alliance-building: an affirmative attitude toward the transition to a climate resilient, sustainable low carbon economy; a strong and positive moral notion of change; the alignment of sustainable development with climate action; and, importantly, the same main claim addressee, namely developed countries.

A further group of 22 countries⁴² whose members are quite heterogeneous, consisting of poor, middle-income, but also oil-exporting countries, employs a narrative of transformational change toward resilient low carbon development pathways as a major objective of their NDCs. Some of the countries in this group also belong to the first group, and hence have a strong notion of

zania, Thailand, Toho, Tonga, Trinidad and Tobago, Turkmenistan, Tuvalu, Uruguay, Vanuatu, Venezuela, Yemen, Yugoslav Republic of Macedonia, Zambia and Zimbabwe.

41. This includes Albania, Armenia, Azerbaijan, Bolivia, Comoros, Costa Rica, Cuba, Dominica, Eritrea, Gambia, Guatemala, India, Honduras, Kiribati, Lesotho, Liberia, Mauritius, Montenegro, Namibia, Nepal, Papua New Guinea, Senegal, Sri Lanka, Rwanda, Solomon Islands, Surinam, Swaziland, Tanzania, Togo, Uruguay, Vanuatu, Venezuela, Yemen, Zimbabwe

42. This group is formed by Bahrain, Bolivia, Burkina Faso, Cuba, Gambia, Honduras, India, Laos, Lesotho, Liberia, Malaysia, Nepal, Niger, Nigeria, Niue, Panama, Papua New Guinea, Philippines, Rwanda, Surinam, Sri Lanka, Tajikistan, Thailand, Togo, Tonga, Trinidad and Tobago, Tuvalu, Venezuela, Yemen,



justice and equity in their NDC. However, all members of the second group use a terminology of »transition« or »transformation« toward resilient low carbon development pathways in their NDCs. This can be interpreted as a genuine interest in active change management. Their narrative appears to highlight the intrinsic value of the transition. As a result, they do not place so much emphasis on the support of the claim addressees, the developed countries, as a *precondition* to take transformative action. The screening results indicate that members of this group may also support a just energy transition.

It should be stressed that the differences between these groups are subtle – and that too much importance should not be attached to the screening results. They provide some pointers concerning preferred narratives and their spin, but, of course, cannot replace more thorough NDC assessments.

The justice discourse around response measures – a spoiler to just energy transition

The final group comprises six Arab oil-exporting countries, namely Saudi Arabia, Iraq, Qatar, Kuwait, Bahrain and United Arab Emirates. Under the leadership of Saudi Arabia, these countries have build their justice narrative around the negative economic impacts they may face due to response measures taken by developed countries to address climate change. The concept of »impacts of response measures« has been the focus of controversy in climate negotiations for many years. Proponents argue that developed countries should compensate developing countries for the negative economic impacts of climate action, e.g. on the fossil fuel industries. To lend more weight to this argument, they make the connection with historical emissions and extend the CBDR concept to cover this case. Thus they argue along these lines that compensating them for the loss of future profits is a question of climate justice.

Apart from the reference to justice and equity, there is little overlap between the core interests of these countries and those of the above-mentioned groups: They have no intrinsic interest in a rapid energy transition from brown to green energy sources since that would fundamentally undermines their business model. Accordingly, their goal is to slow down rather than to speed up the energy transition and ambitious climate action.

However, as discussed before, these countries sometimes associate themselves, at least verbally, with calls for a just transition, they express concerns about losing jobs and back trade union criticism of too ambitious decarbonization. Proponents of a just energy transition should therefore be wary of false friends and the high risk of being instrumentalized for a proxy war: While countries from the first three groups may qualify as potential members of a just transition alliance, for the time being the fourth group should instead be regarded as a spoiler of transformational change, despite the fact that they incorporate justice and equity language in their messages.⁴³

In conclusion, the just transition screening of developing countries' NDCs has not revealed any genuine champions of a just transition. However, there are strong indications that issues surrounding justice and transformational change are on the agenda of a large group of countries, backed by an affirmative conception of a just transition and a narrative that stresses the opportunities of climate resilient sustainable low carbon development, combined with a strong appeal to developed countries to support transformational change as a matter of justice. Having said this, there are good reasons to believe that a transformational alliance could gain sufficient momentum to set the agenda for an energy transition discourse that takes into account, and ultimately puts into practice, just transition principles and indicators.

To test our draft principles and indicators, and to enhance our understanding of the current performance of selected developing countries judged by these criteria, in the following we present the results of twelve country analyses, covering poor developing countries as well as emerging economies. To make the results to a certain extent comparable, a similar assessment grid was used in each case.

43. In 2016, developing countries' NDCs were screened for how they address climate risks (Bread for the World et al. 2016). The lesson that can be taken from this screening is that a majority of 90 out of the 127 NDCs analyzed prioritize adaptation over mitigation, that almost all NDCs with an adaptation priority identify sectoral priorities, but that only a minority take the next steps of identifying populations at risk and expressing a willingness to cooperate with civil society actors to close climate risk gaps. This reflects the prevalence of a top-down approach to climate resilience instead of a people-centered approach. However, 13 NDCs could be identified with a strong emphasis on bottom-up approaches to resilience building: Bolivia, Botswana, Cambodia, El Salvador, Fiji, Gambia, Grenada, Guinea, Indonesia, Kenya, Marshall Islands, Mexico, Seychelles, Sierra Leone, Thailand, Togo and Vietnam. This group shows little coherence with the groups described above. However, Fiji, Mexico and Vietnam are included in our country studies and it will be interesting to assess how they perform when it comes to addressing vulnerabilities in the transition process.



China

By Lina Li

Abstract

Backed by high-level political commitments and building on the successful experience of achieving most of the MDGs, China's energy transition, SDG and NDC agenda exhibits a relatively high level of ambition and policy alignment both with regard to specific targets, policy pathways and the frameworks for achieving them. The socio-economic indicators of a just energy transition reflect a medium level of performance in China, due both to positive trends such as Renewable Energy investment and job creation, and to negative ones such as the wide urban-rural gap. China has room for improvement with regard to participation, transparency, accountability and other political and human rights aspects. In order to advance the just transition process, China must further enhance institutional efficiency and policy synergies, develop a long-term low emission development plan, embed labor, social and gender equity principles more firmly in policy implementation and ensure stakeholder engagement. In particular, it must conduct region-specific transition dialogs. China is also expected to play an important role in driving the just transition agenda internationally.

Introduction

China today enjoys the status of being one of the most influential nations in the world. With a population of 1.3 billion it is the world's most populous country. With almost 30 years of GDP growth in double digits, it has the second largest economy in absolute terms. As a key emerging economy, China is classified as an upper middle-income nation undergoing an economic transition from an export-led to a consumption-based model. Facing the »new normal« of economic development (annual growth rate slowing down to about 7 per cent), China is striving to shape this »new normal« with a focus on improving the quality of the economy, i.e. to balance economic, social and environmental development and achieve prosperity for all.⁴⁴

44. See: <http://www.shanghaidaily.com/opinion/chinese-perspectives/xi-political-economy-renews-Chinas-drive-to-achieve-prosperity-for-all-amid-challenges/shdaily.shtml> (last accessed: 3.10.2017).

China is seeking to transform its energy system into a more sustainable and low carbon one. After a phase of dramatic increases from 1.47 billion tonne coal equivalent (tce)⁴⁵ to 4.17 billion tce between 2000 and 2013 dominated by coal (accounting for about 67 per cent in primary energy consumption in 2013), China's energy consumption has entered a new phase marked by a low rate of growth.⁴⁶ The energy transition agenda goes hand in hand with its climate and environmental protection (in particular pollution control) agendas.⁴⁷ The move away from coal in China's energy mix has accelerated as a result of supportive policies and investments in Renewable Energy sources combined with direct control of coal production and consumption. The energy transition and efforts to meet climate and sustainable development targets are backed by the highest level of political commitment. President Xi championed low carbon development at Davos in 2017 where he defended the multilateral climate regime.

China's sustainable development profile

China's GDP increased from Renminbi (RMB) 10 trillion in 2000 to RMB 63.6 trillion in 2014.⁴⁸ Entering the »new normal« phase, China's GDP grew 6.7 per cent to RMB 74.4 trillion (USD 10.8 trillion) in 2016. China's extreme poverty rate plummeted from 66.5 per cent in 1990 to 1.9 per cent in 2013.⁴⁹

China counts as a High Human Development Country, enjoying a Human Development Index (HDI) of 0.738 for 2015.⁵⁰ This represents remarkable progress from its score of 0.407 in 1980, reflecting considerable improvements in life expectancy and access to education, as well

45. A tonne of coal equivalent (tce) is a conventional value based on the amount of energy released by burning one tonne of coal that is commonly used in energy statistics reporting in China. 1 tce = 8.141 MWh.

46. National Center for Climate Change Strategy and International Cooperation (no date), To Promote Energy Revolution and Address Climate Change, Beijing.

47. In March 2014, in response to severe air pollution in China's major cities, China's Premier Li Keqiang announced the »War on Pollution« and backed it up with a pledge of trillions of Yuan of investment.

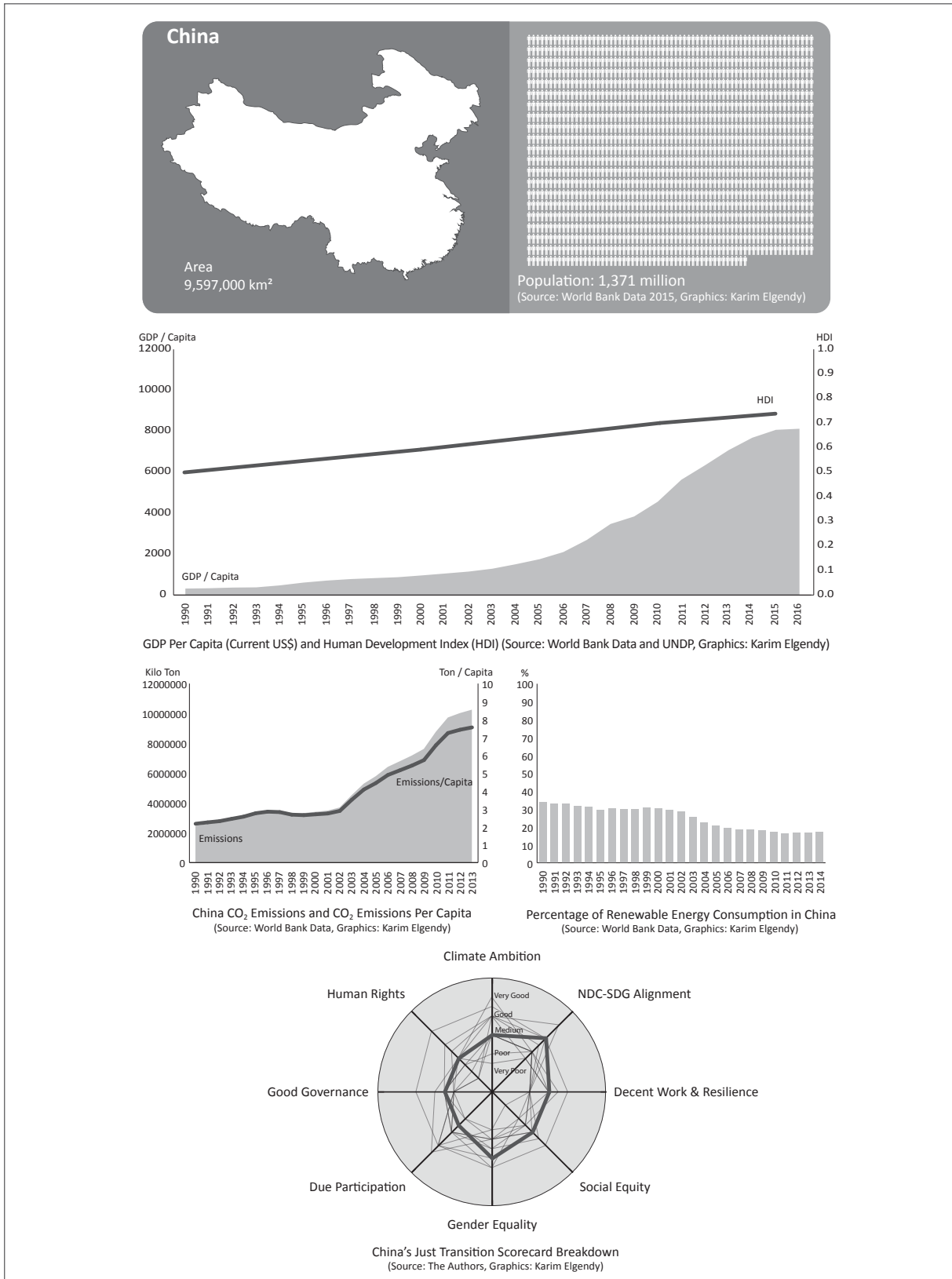
48. UNDP (2015), Report on China's Implementation of the Millennium Development Goals (2000-2015); available at: http://issuu.com/undp-china/docs/undp-ch-ssc-mdg2015_english (last accessed: 3.10.2017).

49. UNDP (2016), Human Development Report 2016: Human Development for Everyone; available at: http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf (last accessed: 3.10.2017).

50. See: <http://hdr.undp.org/en/composite/HDI> (last accessed: 3.10.2017).



Figure 2: China's Just Transition Scorecard Breakdown





as increased incomes.⁵¹ While malnutrition remains a problem in China, especially in rural areas, the country has made great progress in recent decades:⁵² China reduced the level of undernourishment in the country from 23.9 per cent in 1990–92 to 9.3 per cent in 2014–16; from 1990 to 2010, the number of underweight children under five fell by 74 per cent. China alone accounts for almost two-thirds of the total reduction in the number of undernourished people in developing regions since 1990.

MDG achievements

China attached great importance to the implementation of the Millennium Development Goals (MDGs). Since 2000, with the consistent efforts of the Chinese government, the participation of the society and the support of the international community, China has made notable progress in many areas such as eliminating poverty and hunger, achieving universal primary education, ensuring healthcare for women and children, controlling and preventing diseases and protecting the environment.⁵³ China achieved or substantially achieved 13 out of a total of 21 associated MDG targets.

Despite the overall achievements of the MDGs, inequality has increased and there is a need to work toward balanced regional economic growth and to realize sustainable development compatible with equity. National figures mask large and growing development gaps between the relatively rich eastern coastal zone and the poor central and western regions. Similarly, gender gaps still exist in some respects. China has summarized its experiences in achieving the MDGs and highlighted the importance of making development its top priority, formulating and implementing mid- and long-term national development strategies and integrating them into national planning. These are expected to apply when it comes to implementing the SDGs.

SDG alignment with development plans and policies

China is making major efforts to implement the 2030 Agenda and link it with domestic mid- and long-term development strategies. The domestic coordination mechanism for the implementation, comprising 43 government departments, was established in 2016.⁵⁴ China released its national plan for implementing the 2030 Agenda on October 12, 2016, translating each target of the SDGs into action plans.⁵⁵ As the holder of the G20 Presidency in 2016, China also placed the topic at the heart of the G20 agenda, which resulted in a collective action plan on the 2030 Agenda for the first time in the history of the G20. China is facing multiple challenges such as the change in pace of economic growth, difficulties associated with structural adjustments and the transformation of drivers of growth. Facing considerable pressure to maintain sustained growth, China needs to work on fighting poverty, narrowing the urban-rural development gaps and improving the environment.⁵⁶

Energy and climate policy

Access to electricity has increased from below 90 per cent in 1990 to 100 per cent in 2014. Coal still plays a prominent role in China's energy mix, accounting for 68 per cent of the total primary energy supply (TPES). The share of Renewable Energy sources in the electricity supply has varied between 15 and 20 per cent over decades and the share of renewables in its total primary energy supply currently stands at eleven per cent.

China is the world's largest GHG emitter, accounting for 23.6 per cent of global GHG emissions in 2012. Since 1990, emissions have increased threefold and are expected to undergo a further surge. However, there is a momentum for a stabilization of the emissions: In March 2016 the International Energy Agency (IEA) stated that

51. See: <http://www.cn.undp.org/content/china/en/home/countryinfo/> (last accessed: 3.10.2017).

52. See: <https://www.wfp.org/stories/10-facts-about-nutrition-china> (last accessed: 3.10.2017).

53. UNDP (2015), Report on China's Implementation of the Millennium Development Goals (2000-2015); available at: http://issuu.com/undp-china/docs/undp-ch-ssc-mdg2015_english (last accessed: 3.10.2017).

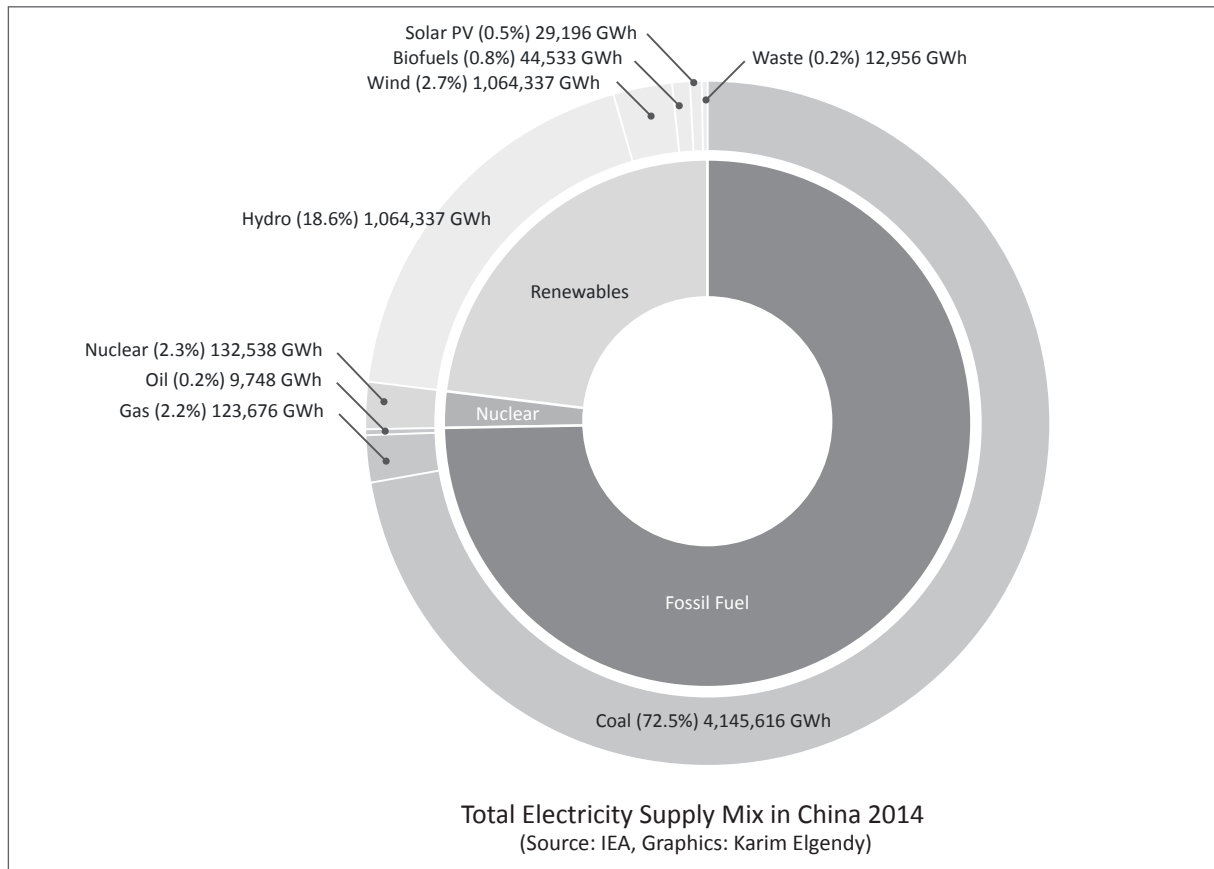
54. See: <https://sustainabledevelopment.un.org/hlpf/2016/china> (last accessed: 3.10.2017).

55. See: <http://sdg.iisd.org/news/china-releases-national-plan-to-implement-sdgs/> (last accessed: 3.10.2017).

56. China (2016), China's National Plan on Implementation of the 2030 Agenda for Sustainable Development; available at: http://www.fmprc.gov.cn/mfa_eng/zxxx_662805/W020161014332600482185.pdf (last accessed: 3.10.2017).



Figure 3: Total Electricity Supply Mix in China 2014



emissions had dropped by 1.5 per cent in 2015.⁵⁷ The GHG emissions per capita were 9.2 tCO₂e in 2012 which exceeded the G20 average. In 2014, China's emissions per unit of GDP had decreased by 33.8 per cent compared with 2005.⁵⁸

Renewable energy sources have developed rapidly in recent years and this trend is expected to continue. The proportion of non-fossil fuels in the overall primary energy mix had reached 11.2 per cent by 2014. By the fourth quarter of 2015, China overtook Germany with the largest installed capacity of solar power in the world (with a total of 43 GW).

57. See: <https://www.iea.org/newsroom/news/2016/march/decoupling-of-global-emissions-and-economic-growth-confirmed.html> (last accessed: 3.10.2017).

58. China (2016), China's National Plan on Implementation of the 2030 Agenda for Sustainable Development; available at: http://www.fmprc.gov.cn/mfa_eng/zxxx_662805/W020161014332600482185.pdf (last accessed: 3.10.2017).

59. The endorsement of the 2020 climate change target for China (40-45 per cent carbon intensity reduction comparing to 2005) by the National People's Congress in fall 2009 made it legally binding.

Climate change has been on the national agenda since China joined the UNFCCC. China does not have an explicitly named »low carbon development strategy« yet, but it does have national level emission limitation targets⁶⁰ and a comprehensive policy framework which has been gradually developed. Since 2005, climate change targets have been included in the Five-Year Plans (FYPs). A number of climate change policies and measures have been introduced, including energy conservation targets and associated accountability mechanisms; frameworks for monitoring progress on energy conservation; targets and support measures (e.g. feed-in tariffs, subsidized finance, etc.) for low-carbon energy; and, more recently, air pollution-related restrictions on coal production and consumption in key regions.⁶⁰

60. Averchenkova-et-al (2016), Climate policy in China, the European Union and the United States: main drivers and prospects for the future, December 2016; available at: http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2016/11/2630_GRI_3Jurisdictions_policy_report_web.pdf (last accessed: 3.10.2017).



Figure 4: China's Non-Fossil Capacity Growth with Estimated Additions by 2030

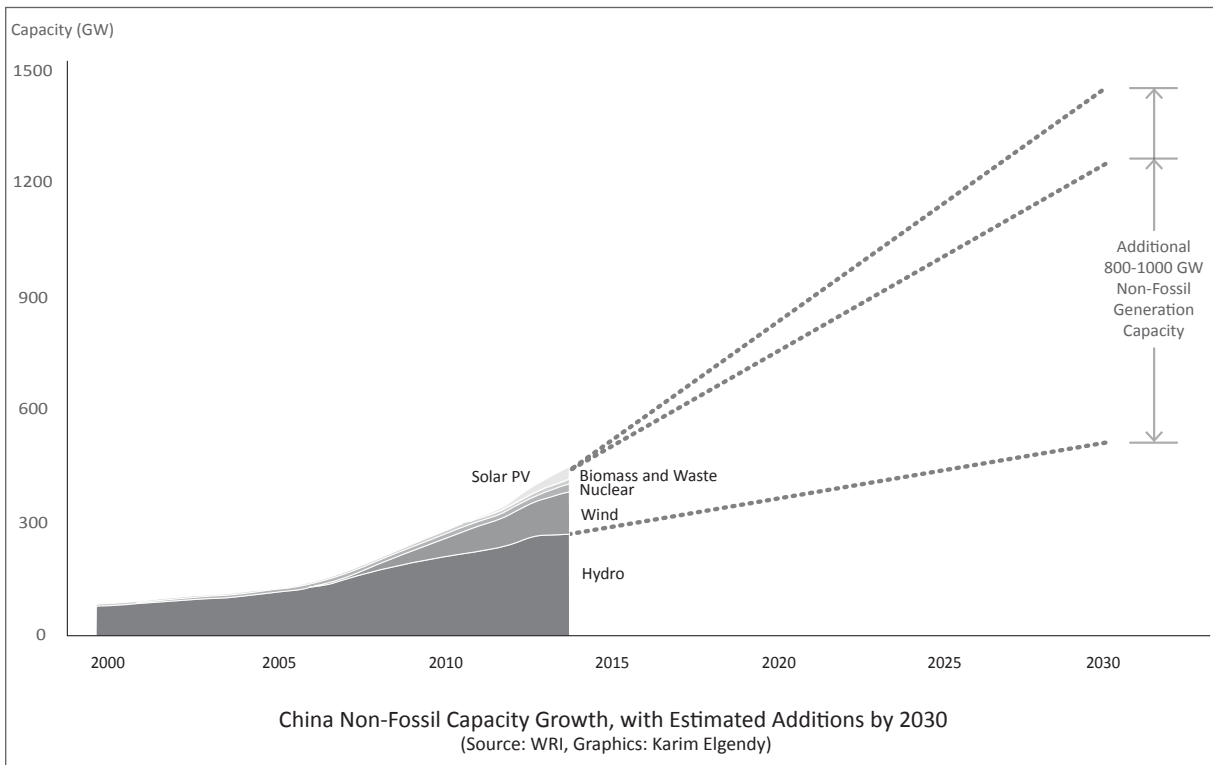


Figure 5: Flow Chart of 5-Year Energy Plan Formulation in China

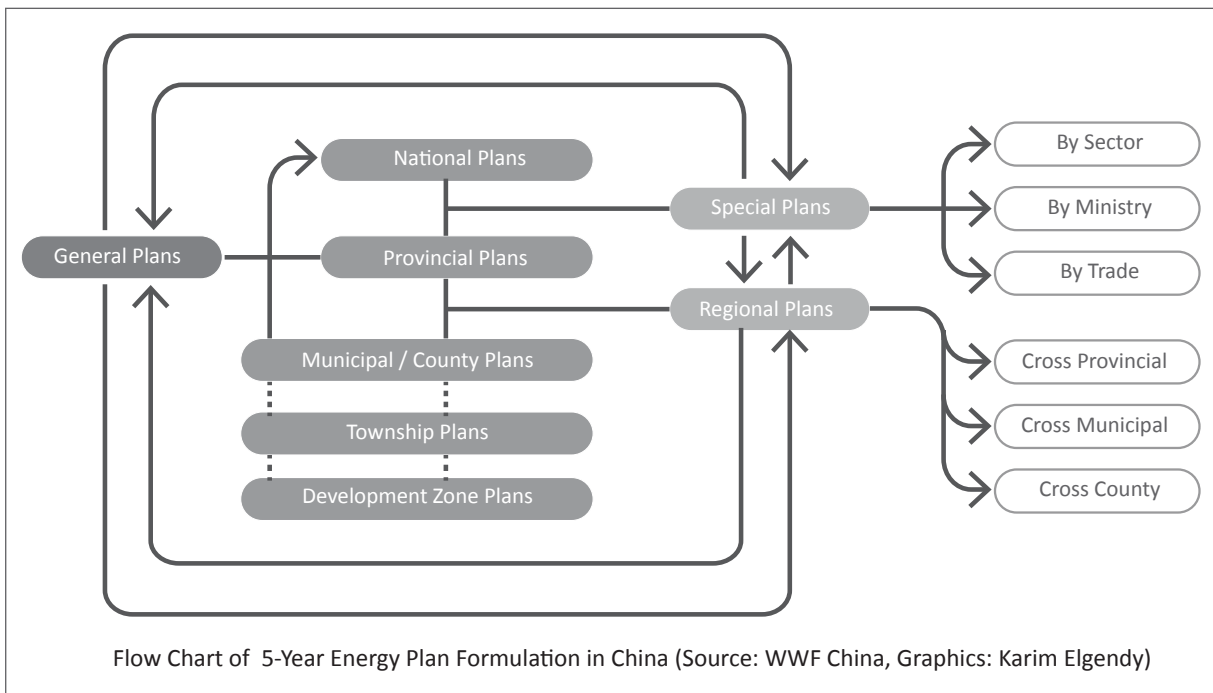
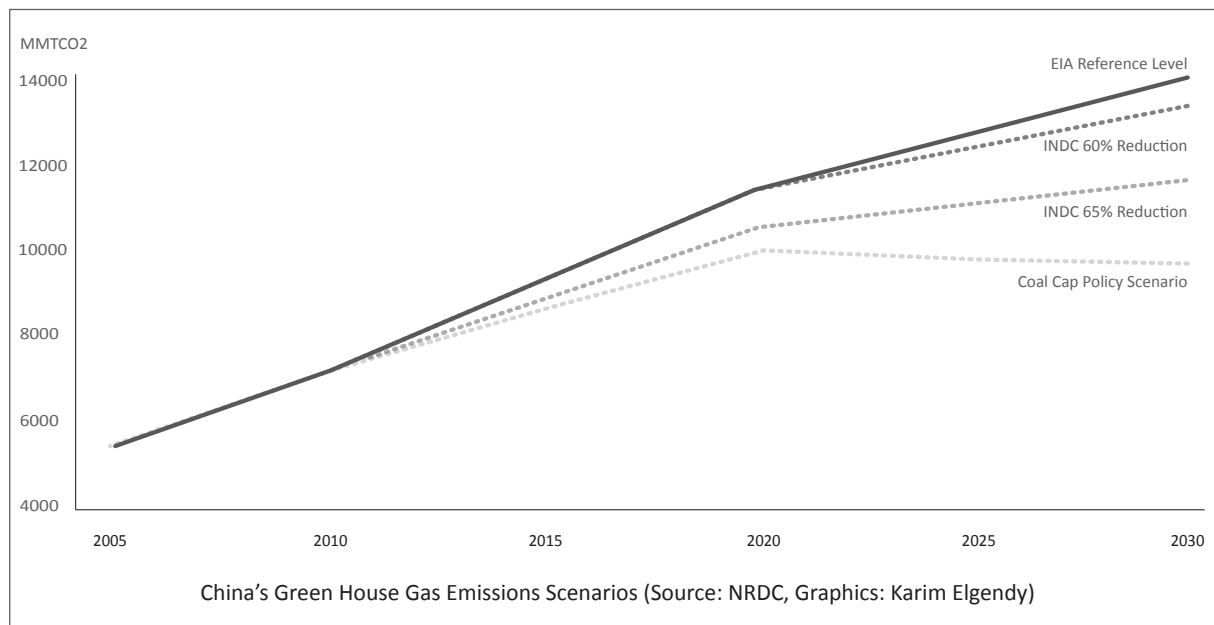




Figure 6: China's Greenhouse Gas Emission Scenarios



Bringing climate policy to the national strategy level, the 12th FYP (2011–2015) confirmed China's commitment to a low carbon transformation pathway. The 13th FYP (2016–2020) has introduced the concept of innovative, coordinated, green, open and shared development. Work on the national climate change legislation began in 2011 but it has yet to be finalized.

In continued efforts to diversify the energy mix and to limit coal use, China has become a frontrunner in promoting RE development. FYPs set up targets of certain levels of installed RE capacity and production to be achieved. China has relied on Feed-in Tariffs (FITs) to promote renewables such as onshore wind, solar PV and biomass, which ensure that RE projects will receive a fixed price per kWh of generated electricity. Additional support schemes for RE include, among others, corporate income tax reduction, rebates on value-added tax, RE supply projects in remote areas and RE surveys and information systems.

The modernization of China's electricity infrastructure and the development of a »unified strong and smart grid« have also been a focus for the power sector since 2010. The challenge of connecting distant population centers to hydro and wind resources continues to drive Chinese investments in its grid infrastructure. China's largest transmission and distribution company is ex-

pected to invest \$243.2 billion by 2020, as outlined in the 13th FYP.

In recent years, China has also coordinated its energy and climate agenda with its anti-pollution strategy. The new Air Pollution Control Law stipulates that climate change and air pollution must be addressed together. Similarly, the 2014–2015 Action Plan for Energy Conservation, Emissions Reduction and Low Carbon Development sets goals related to emission intensity and air pollution control. The blueprint Air Pollution Prevention and Control Action Plan set out specific objectives such as coal consumption cap targets.⁶¹

Since 2011, five provinces and two cities have been piloting an emissions trading system (ETS) and, based on their experiences, a national ETS is set to be launched in 2017, which will be the world's largest carbon market expected to cover three to five billion tons of CO₂e from eight sectors.⁶² Regions and cities also play a key role. China's 18 Nationally Designated New Areas have formed an alliance to deliver high-end, green and smart growth. The

61. Huw Slater (2014), Insights: China's War on Pollution and its impact on climate change mitigation; available at: http://www.chinacarbon.info/wp-content/uploads/2014/11/CCF-Insights_September-2014.pdf (last accessed: 3.10.2017).

62. See the China ETS factsheet at: <https://icapcarbonaction.com/en/ets-map> (last accessed: 3.10.2017).



36 Nationally Designated Economic Development Areas have done the same.

China's NDC

China's NDC includes a target to peak CO₂ emissions by 2030 at the latest and to reduce the carbon intensity of GDP by 60–65 per cent below 2005 levels by 2030. Other targets include increasing the share of non-fossil energy in the total primary energy supply to around 20 per cent by 2030 and to increase forest stock volume to around 4.5 billion cubic meters above 2005 levels. China's NDC devotes considerable space to outlining the policies and measures planned for achieving its stated mitigation and adaptation goals, including, among others, plans to control coal and increase wind and solar capacity, as well as the share of natural gas, to control GHG emissions in Urbanized Zones for Optimized Development, to control emissions from key industrial sectors like iron and steel and chemicals as well as addressing emissions from buildings and transport.

While limited in measurable targets, especially for the post-2020 timeframe, the NDC indicates that China is serious about moving toward a comprehensive framework for addressing GHG emissions at all levels, building on gains that have already been made.

Just transition assessment (score of 26 – medium)

Climate ambition (medium)

China has not endorsed a low emission development plan with GHG emission targets for 2050 yet, but it is in the process of doing so. According to CCPI 2016, China receives a relatively good evaluation from national experts, improving its score from 2015. CAT rates China's INDC as medium but with inadequate carbon intensity targets to achieve a 2°C pathway.

NDC-SDG alignment (good)

China has achieved the MDGs and is one of the first countries to develop an SDG implementation plan.⁶³ The development planning and the NDC are aligned. Green development is one of the five fundamental guiding ideas in the national SDG implementation plan, which also endorses the aim of integrating the 2030 Agenda into China's mid- and long-term development strategies as well as aligning them with climate change strategy. Although the NDC itself doesn't refer directly to SDGs, it mentions sustainable development seven times. The implementation of the NDC would lead to positive impacts on SDG implementation. However, the NDC could be better integrated into the national five-year planning cycles.

Decent work and resilience (medium)

ITUC Global Rights Index 2015 rated 141 countries on a scale from 1 (irregular violations of rights) to 5 (where 5 represents no guarantee of rights and 5+ the breakdown of the rule of law) and China received a score of 5.⁶⁴ The workers who build the cities are mostly migrants from rural areas who have limited access to social welfare in the city. One estimate suggests that unregistered migrants made up roughly twelve per cent of the urban population and another reveals that in many large cities more than half of the migrants are unregistered and most end up working in precarious jobs.⁶⁵

Renewable energy has become a major employer in China.⁶⁶ China is one of the countries with the largest number of Renewable Energy jobs, accounting for 34 per cent of global employment in the renewable sector.⁶⁷ In 2015, it employed 3.5 million people (with solar PV accounting for 1.7 million and wind power for 507,000). This is nearly one million more jobs than in the oil and gas

63. See: <http://sdg.iisd.org/news/china-releases-national-plan-to-implementation-sdgs/> (last accessed: 3.10.2017).

64. See: <https://www.ituc-csi.org/ituc-global-rights-index-2015?lang=en> (last accessed: 3.10.2017).

65. Sarah Swider (2015), *Building China: Informal Work and the New Precariat*, Cornell University Press, New York.

66. See: <https://www.chinadialogue.net/article/show/single/en/9553-President-Xi-champions-low-carbon-development-at-Davos> (last accessed: 3.10.2017).

67. IRENA (2016), *Renewable Energy and Jobs, Annual Review 2016*; available at: http://seforall.org/sites/default/files/IRENA_RE_Jobs_Annual_Review_2016.pdf (last accessed: 3.10.2017).



sector. Jobs in renewables had increased by 1.8 million since 2012. China believes that its 13th Five-Year Plan will create an additional 13 million jobs in renewables by 2020.

As coal becomes less profitable, whole communities in China – entire towns and dusty cities – face upheavals, with tens of thousands of people losing their jobs in mining. In part as a result of a drive to reform state-owned companies, the country plans to lay off 1.3 million workers in the coal industry and 500,000 in steel industries.⁶⁸ They are expected to be retrained, relocated or retired early according to the guideline released by the Ministry of Human Resources and Social Security and six other government bodies in 2016,⁶⁹ with a range of measures such as free job training. China's coal and steel sectors employ about twelve million workers.⁷⁰ The central government will allocate 100bn yuan (£10bn) over two years to relocate workers laid off as a result of China's efforts to curb overcapacity.⁷¹

China ranked 34th out of 180 countries in the Germanwatch Global Climate Risk Index (CRI) for 1996–2015.⁷² Despite claiming that China is among the countries that are most severely affected by the adverse impacts of climate change, adaptation features in just one among the 15 main policies and measures in its NDC, indicating a relative lack of focus on adaptation compared to mitigation. On the positive side, China issued its first National Strategy of Climate Change Adaptation in 2013, calling on provinces, cities and national agencies to better protect the country from the impacts of climate change.⁷³

68. <https://www.techinasia.com/china-coal-miners-uber-economy-didi-drivers> (last accessed: 3.10.2017).

69. The original guideline is available in Chinese at: http://www.mohrss.gov.cn/gkml/xxgk/201604/t20160413_238000.html (last accessed: 3.10.2017).

70. See: <https://www.theguardian.com/business/2016/feb/29/china-to-cut-jobs-in-coal-and-steel-sectors> (last accessed: 3.10.2017).

71. Ibid.

72. Germanwatch (2016), Global Climate Risk Index 2017, Bonn, Germanwatch e.V., November 2016; available at: <https://germanwatch.org/en/download/16411.pdf> (last accessed: 3.10.2017).

73. See the English version at: <http://www.preventionweb.net/english/professional/policies/v.php?id=35854> (last accessed: 3.10.2017).

Social equity (medium)

The GINI Index indicating the general status of distribution of family income in China ranged between 47 and 49 over the last decade, higher than the warning line set by UN as an indicator of increased risk of social unrest.⁷⁴ Social equity is one of the key areas in the SDG implementation plan, while the NDC doesn't have a strong focus on social equity or vulnerable groups. The potential impact of NDC implementation on social equity is difficult to gauge, while SDG implementation would have a positive impact especially on narrowing the urban-rural gap.

Gender equality (medium/high)

While the belief still persists to some extent in rural areas that boys are much more valuable than girls and women as subject to a general social expectation regarding their aspirations and roles, the stereotype of women being subordinate to men is no longer true. The Gender Development Index (GDI) of HDI of China is 0.954 of a possible 1, which is quite good.⁷⁵ Schooling and HDI rates are similar between male and female, while some gaps still exist regarding, for example, per capita income, labor force participation and secondary education. More significant gaps exist regarding female representation among legislators, senior officials and managers (16.8 per cent) and women's share of seats in parliament (23.6 per cent).

The potential impact of the NDC on gender equality is difficult to judge precisely, a positive impact is conceivable. Gender impact assessment is not foreseen in the NDC. On the positive side, some Chinese experts are arguing for a gender focused adaptation approach.⁷⁶

74. See: <https://www.statista.com/statistics/250400/inequality-of-income-distribution-in-china-based-on-the-gini-index/> (last accessed: 3.10.2017).

75. <http://hdr.undp.org/en/countries/profiles/CHN> (last accessed: 3.10.2017).

76. See: <http://www.ccchina.gov.cn/Detail.aspx?newsId=67286&TId=57> (Chinese); http://www.chenlihui.net/qxxw/qxyw/qgmt/201703/t20170308_210950.htm (Chinese) (last accessed: 3.10.2017).



Due participation (poor/medium)

China's (I)NDC was developed through a consultative process following a highly centralized and linear approach:⁷⁷ The initial stage was mainly technical in nature, relying predominantly on technical expertise within the National Development and Reform Commission (NDRC) research groups.⁷⁸ An external review process was then organized on the possible INDC elements. The middle phase involved consultations with a broader group of stakeholders comprising central government ministries and experts, such as the National Committee of Climate Change Experts. In the final phase, the process became essentially political involving the State Council and then the Politburo Standing Committee. The subnational government, industry stakeholders or civil society groups were not consulted directly, and no dialogs were conducted with workers on climate change and energy transition.

The NDC itself mentions broad participation of stakeholders as one of the 15 main policies and measures (item no. 14). However, no specific public consultation or stakeholder participation process is outlined in the NDC.

Good governance (poor/medium)

China ranked 79th out of the 176 countries in the Transparency International Corruption Perceptions Index (CPI) in 2016 (the same as Brazil), with a slight improvement in its score (40) compared to the previous years (ranging from 36 to 40 between 2012 and 2015), where 0 means highly corrupt and 100 very clean.⁷⁹ Corruption and social inequality are generally closely related and provide a source for popular discontent.

Transparency and accountability measures are not mentioned in the NDC while the annual white paper on China's Policies and Actions for Addressing Climate Change serves as official annual progress report. Cost-benefit analysis is common in China's climate and energy

77. H. Craig, Zhu Jiayan, and Ying Jiahui (2015), Mapping China's Climate Policy Formation Process; available at: <http://www.chinacarbon.info/wp-content/uploads/2015/11/Mapping-Chinas-Climate-Policy-Formation-Process.pdf> (last accessed: 3.10.2017).

78. Especially modelling experts within its Energy Research Institute (ERI) and National Center for Climate Change Strategy and International Cooperation (NCSC).

79. See: http://www.transparency.org/news/feature/corruption_perceptions_index_2016#table (last accessed: 3.10.2017).

policy making, with the results usually not being made publically available.⁸⁰

Human rights (poor/medium)

Three major factors have emerged since its reform and economic opening in late 1970s that influence the overall human rights situation in China: conservative and slow improvement in political and legal institutions; aggressive and vast yet uneven economic development; and the revival of traditional values such as Confucianism, which often informs social policies and political doctrines.⁸¹ China ranked as one of the 30 worst performing countries among the 198 countries assessed in the Human Rights Risk Index 2016-Q4.⁸² According to Amnesty International, the Chinese government continued to draft and enact new national security laws that posed serious threats to the protection of human rights. Human rights are not directly anchored in the NDC, nor does it foresee a human right impact assessment. On the other hand, positive developments have been associated with the boom in social media leading to social change and the growth of the civil society organizations, the charity sector and other forms of bottom-up social actors such as social enterprises.

Internationally, China has formally opted in to the international human rights framework by signing a wide range of human rights treaties. In recent years it has also officially accepted the universality of human rights.⁸³ China continues to view human rights in strongly aspirational rather than legal terms and argues that priority should be placed on socio-economic rights and the right to development.

80. More recently there are some analysis especially with focus on co-benefits available; see for example: <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2014/08/Teng-and-Jotzo-Reaping-the-Economic-Benefits-of-Decarbonization-for-China.pdf>; and: https://china.energypolicy.solutions/docs/20160703_ExecutiveSummary_CN.PDF (Chinese) (last accessed: 3.10.2017).

81. Hsiu-lun Teng (2009), Human Rights in China; available at: <https://www.du.edu/korbel/hrhw/researchdigest/china/China.pdf> (last accessed: 3.10.2017).

82. See: <http://reliefweb.int/report/world/human-rights-risk-index-2016-q4> (last accessed: 3.10.2017).

83. Sonya Sceats and Shaun Breslin (2012), China and the International Human Rights System, Chatham House, October 2012; available at: https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/International%20Law/r1012_sceatsbreslin.pdf (last accessed: 3.10.2017).



Policy recommendations resulting from the just transition assessment

1. Further enhance institutional efficiency and policy synergies: A range of institutions are involved in China's climate change and energy transition agendas at the national, regional and local levels. Political commitment requires enhancing governance capacities and policy implementation in which sub-national governments and private companies play a key role. There is further potential for synergies and avoiding policy conflicts between climate, development, energy transition, and pollution control.⁸⁴

2. Develop a long-term 2050 low emissions development plan and enhance the level of ambition of the NDC for 2030 before 2020; further strengthen justice in policy implementation, in particular regarding labor aspects and social and gender equity. Utilizing China's long-term planning experience, a long-term vision that is shared by all sectors and levels is crucial. Through the regular review process, the NDC ambition could be raised to further accelerate the transition. Future NDCs need to be better coordinated with SDG implementation as well as five-year planning processes.

3. Foster stakeholder engagement: There are five major stakeholder groups: industry (covering upstream and downstream sectors, e.g. coal mining, coal power plants, RE, and grid companies, and also industry associations), labor (union and employees), government (at the national, regional and local levels), experts and citizens (such as non-governmental organizations and private individuals).⁸⁵ Participation of labor and citizens should be enabled during further planning and implementation processes. More inclusiveness should also be offered to regional and local governments. A dialog should be initiated on justice issues in the transition process which fits its own political culture, as an ongoing feature of policy design, implementation, review and revision processes.

4. Leave no one behind: Retrain and relocate workers who have been laid off; conduct region-specific transition dialogs and jointly develop an economic restructuring plan to provide new job opportunities; carefully monitor and share the progress and obstacles and adjust the approaches – e.g. enhance necessary short term support and compensation.

5. Actively drive the just transition agenda internationally through the NDC and SDG processes as well as in other arenas. China plays a dual role for low carbon and just transition policy both domestically and internationally. It has provided support for more than 120 developing countries. South-South Cooperation features prominently on its NDC and SDG agendas. China has promised USD two billion for SDG support in developing countries via the Assistance Fund for South-South Cooperation.⁸⁶ In March 2015, the NDRC, the Ministry of Foreign Affairs, and the Ministry of Commerce of China issued the Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-century Maritime Silk Road (the B&R initiative) as its own development cooperation strategy.

84. Fekete H. et al. (2013) Climate Change Mitigation in Emerging Economies: From Potentials to Actions, German Federal Environmental Agency, October 2013; available at: <http://www.umweltbundesamt.de/publikationen/climate-change-mitigation-in-emerging-economies> (last accessed: 3.10.2017).

85. IEA (2009), Cleaner Coal in China, Paris, France, 2009; available at https://www.iea.org/publications/freepublications/publication/coal_china2009.pdf (last accessed: 3.10.2017).

86. See: <http://www.norrag.org/en/publications/norrag-news/online-version/education-training-and-agenda-2030-what-progress-one-year-on/detail/chinas-dual-role-in-sdgs.html> (last accessed: 3.10.2017).



India

By Tirthankar Mandal

Abstract

Since 2015 India has been the focus of international attention because of its ambitious announcements on energy transition. The country subsequently began implementing one of the world's largest clean energy transition programs exploiting its Renewable Energy potential. At the same time, India has also made a commitment to meet the SDGs. The main institutional problem hindering implementation is the weak connection between the federal government and the governments of the states. The result is a disconnection between the priorities of the states as opposed to those of the federal government. To make sure that the SDGs and the climate policies are realized to their full potential and that a just energy transition takes place, the state governments should take more political ownership. To facilitate this ownership, the federal government should create an environment of co-operation and participation.

Introduction

In its climate policies, India has taken a co-benefit approach with development at its core. Thus, India's prime objective is to meet its poverty and food security-related goals in a climate friendly manner. In order to do so, India is currently assessing the existing schemes and programs that are already being implemented under the SDGs with the aim of identifying gaps that will determine the requirements and financial implications for the government. Furthermore, Indian climate policies rely heavily on domestic finances. Therefore, the country has increased the levy on coal and is currently designing a Disaster Relief Fund to address emergency situations during climate induced calamities. At the institutional level, India seems to have a strong and robust policy framework, but implementation is lagging behind.

India's sustainable development profile

India is currently experiencing a phase of robust economic growth. However, the economy is facing a lot of structural changes due to globalization and attempts to

strengthen the industrial sector, including the creation of new jobs. Although the government aspires to balance economic and social development, policies and programs have not yet shown the desired results. Achieving progress in these respects in the coming years is a priority for the government given its international and domestic commitments.

In the last five years, the Indian economy has consistently achieved growth rates of at least seven per cent of GDP – demonstrating a robust economic performance that is the strongest among the G20 countries.⁸⁷ Government income from taxes and revenues has exhibited an upward trend over the last few years.⁸⁸ The per-capita GDP (PPP) of the country is currently USD 6105.⁸⁹ However, economic growth has contributed little to overcoming poverty: Currently, almost 304 million people in India are without electricity, 89 million children in the age group of zero to three years are malnourished and 35.6 million of them are underweight.⁹⁰ These shortcomings have limited the overall progress in terms of development, as we shall discuss below.

MDG achievements

India's economic growth over the past decade was promising, making it one of the countries that have suffered less from the effects of the global financial crisis and slowdown.⁹¹ Despite economic growth, overall progress on MDGs has been limited. India had achieved only four out of the eight MDGs by 2015.⁹² Only six of the 21 targets falling under the MDGs have been fully achieved. The major concern for the government is the underachievement with regard to healthcare facilities.⁹³ India

87. See: <https://www.ibef.org/economy/indian-economy-overview> (last accessed: 3.10.2017).

88. Ibid.

89. See: <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD> (last accessed: 3.10.2017).

90. As per the Census 2011 data reported at: <http://www.thehindu.com/news/national/india-yet-to-achieve-un-millennium-development-goals/article7654764.ece> (last accessed: 3.10.2017).

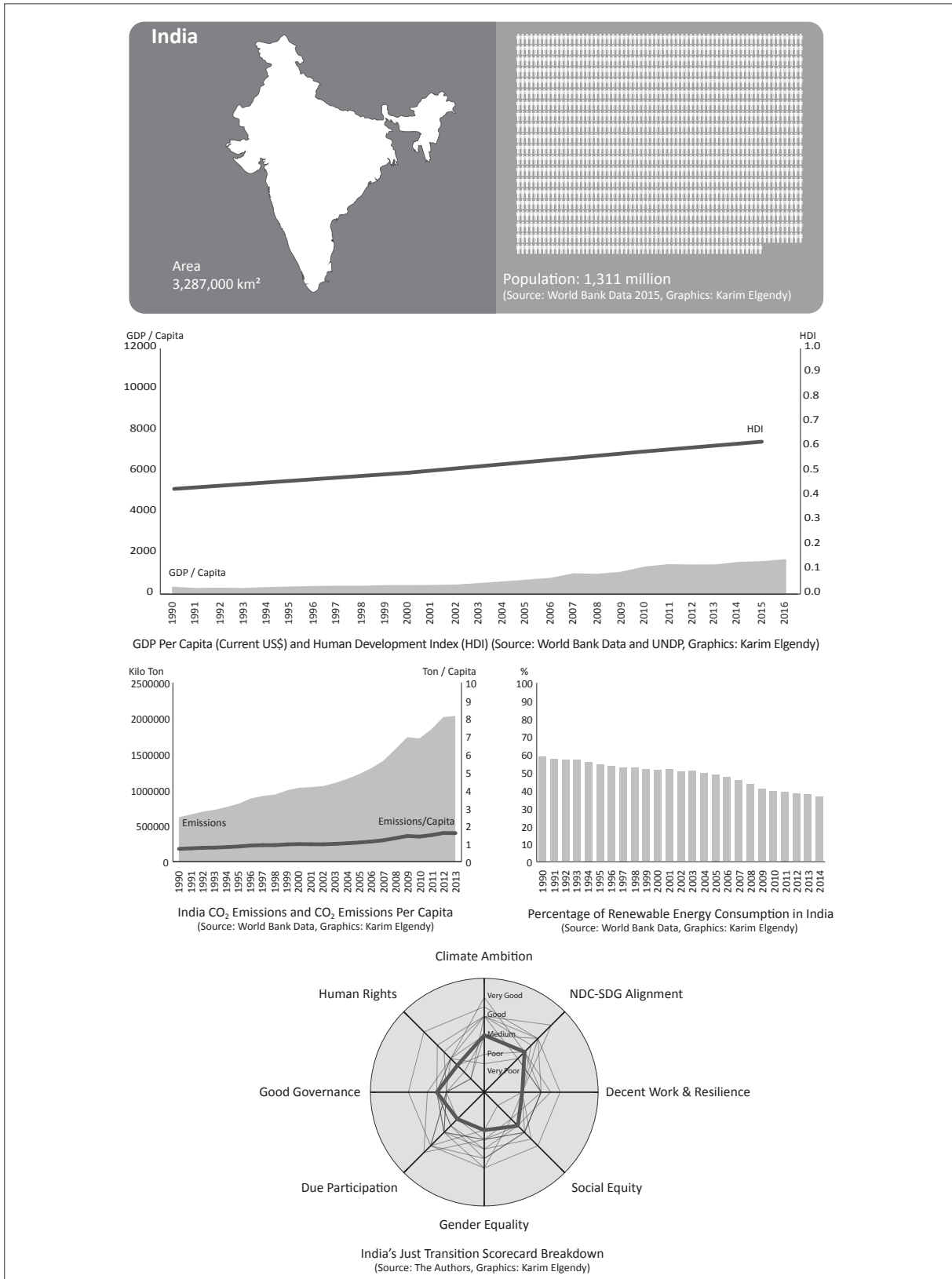
91. See: rajyasabha.nic.in/rsnew/publication_electronic/glob_eco_crisis_2009.pdf (last accessed: 3.10.2017).

92. See: <http://www.thehindu.com/news/national/india-yet-to-achieve-un-millennium-development-goals/article7654764.ece> (last accessed: 3.10.2017).

93. See: http://www.business-standard.com/article/economy-policy/millennium-development-goals-india-s-achievement-is-a-mixed-bag-115020500035_1.html (last accessed: 3.10.2017).



Figure 7: India's Just Transition Scorecard Breakdown





has also failed to meet the targets of universal primary education and maternal and child mortality rates.⁹⁴ Furthermore, the country has failed to increase the proportion of women's employment (currently 23 per cent) in the total workforce to 50 per cent. While the government claims success in the MDGs and targets that have been achieved, it faces strong criticism that adequate data to really monitor the progress are lacking.⁹⁵

SDG alignment with development plans and policies

The principles that inform the Indian government's development of indicators for SDG implementation measurement focus on inclusion, justice and a safe environment for future generations.⁹⁶ Recently, the government has assigned responsibilities among the ministries and independent bodies in the institutional framework to work on developing indicators and monitoring mechanisms for coordinating and implementing the SDGs. It has also mapped out the existing policies that are in line with the SDG targets and has identified gaps in them that call for more focused attention.

Energy and climate policy

India's climate change objectives are designed to meet both the developmental and environmental goals. All of its actions on mitigation and adaptation adhere to a co-benefit approach and thereby deem the development agenda of the government to be non-negotiable.

India is on a pathway to enhanced emission reduction in line with the commitment it made in Paris. Even though its current share in global emissions is 5.8 per cent of the total, it has considerably grown from only 2.9 per cent in 1990.⁹⁷ In India, the largest share of emissions is accounted for by the energy sector, followed by agriculture.

94. See: <http://www.thehindu.com/news/national/india-yet-to-achieve-un-millennium-development-goals/article7654764.ece> (last accessed: 3.10.2017).

95. See: http://www.business-standard.com/article/economy-policy/millennium-development-goals-india-s-achievement-is-a-mixed-bag-115020500035_1.html (last accessed: 3.10.2017).

96. See: <http://niti.gov.in/content/pm%E2%80%99s-statement-un-summit-adoption-post-2015-development-agenda> (last accessed: 3.10.2017).

97. CAIT database accessed on www.cait.wri.org (last accessed: 3.10.2017).

Most of the agricultural emissions are related to food production. Most of the increase in the GHG footprint has come from the growing industrial and energy sector.

India is currently undergoing a transition from a fossil fuel based economy to an economy with cleaner sources of power such as various RE. As per the latest IEA data, total energy produced was 541.81 million tons of oil equivalent (Mtoe), with a TPES of 824.74 Mtoe.⁹⁸ At present, almost 304 million people still lack access to electricity and 700 million people use traditional biomass for cooking.⁹⁹ Furthermore, with 805 kWh/year per-capita energy consumption, India's per capita energy consumption is below the global average.¹⁰⁰

The energy intensity of the GDP (TPES/GDP) has been reduced over the past decade-and-a-half (0.12toe/USD (2010)) and is below the global average (0.19toe/USD (2010)). Since 2007, India has significantly scaled up its efforts to transform its energy sector toward lower GHG emission levels. Starting to realize the abundant RE resources of the country, policymakers have formulated ambitious RE targets and corresponding RE policies. This has facilitated the expansion of the sector at a compounded annual growth rate of 20 per cent between 2007 and 2015. However, coal still remains the main source of energy.

Indian RE policy aims to initiate one of the most extensive energy transitions in the world by 2030. The current plan is to achieve cumulative RE capacity of 175 GW by 2022 and to meet 40 per cent of total energy needs from non-fossil fuel sources by 2030. This would require India to add nearly 23 GW of RE capacity annually and to increase its current capacities three-fold by 2022. It is going to be tough but with the current positive political climate, experts are optimistic.

The Indian RE program aims to meet the growing future energy requirements while providing access to energy to all people in order to meet the development targets. To this end, India is currently implementing policies that address both the grid and off-grid sectors. Robust transmission, distribution and generation reforms are required

98. Key Energy Statistics, IEA 2016, p. 54.

99. Draft Action Plan for 2017-18-2019-20, NITI Aayog, Government of India.

100. Key Energy Statistics, IEA 2016, p. 53.



Figure 8: Development of Renewable Energy in India Compared to Other Energy-Economic Variables

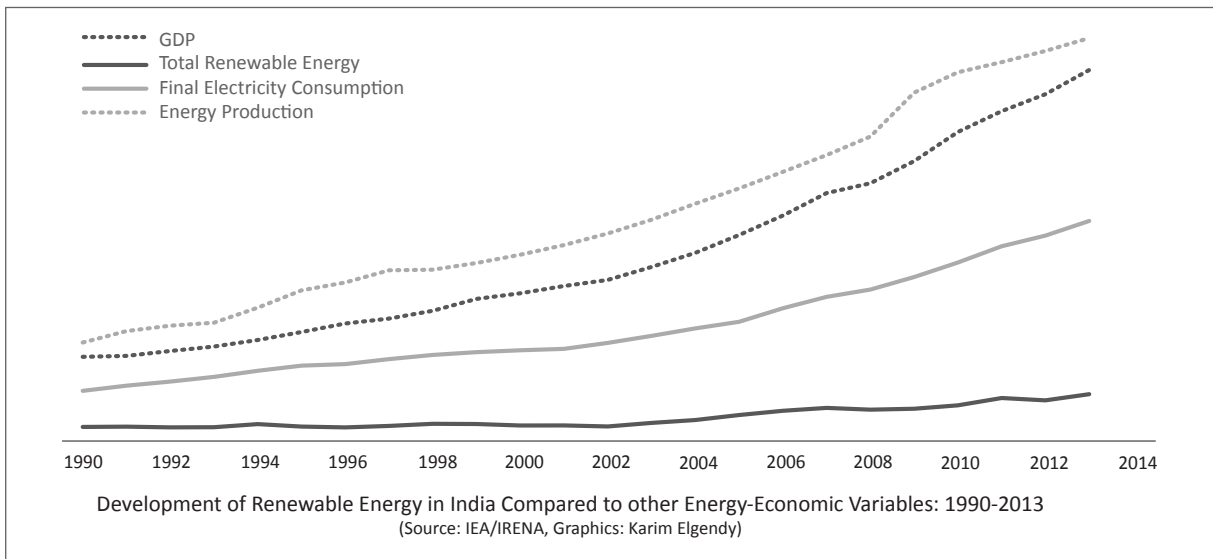


Figure 9: Timeline for Salient Indian Policies on Renewable Energy

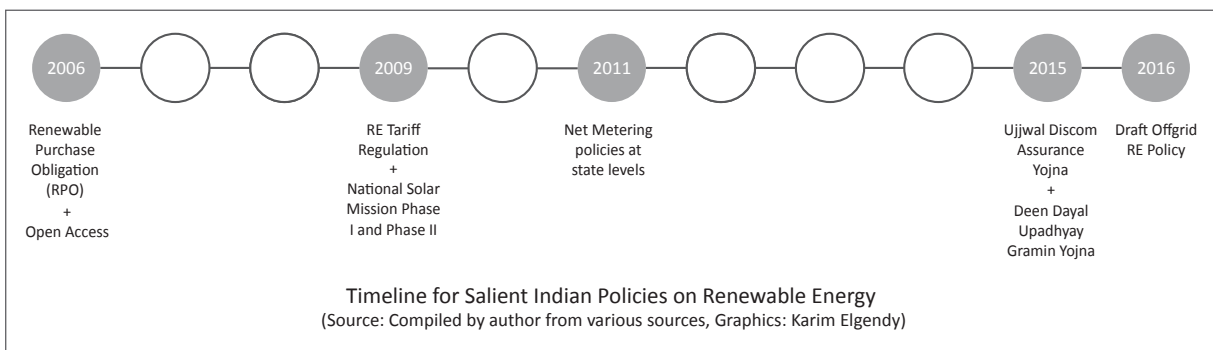
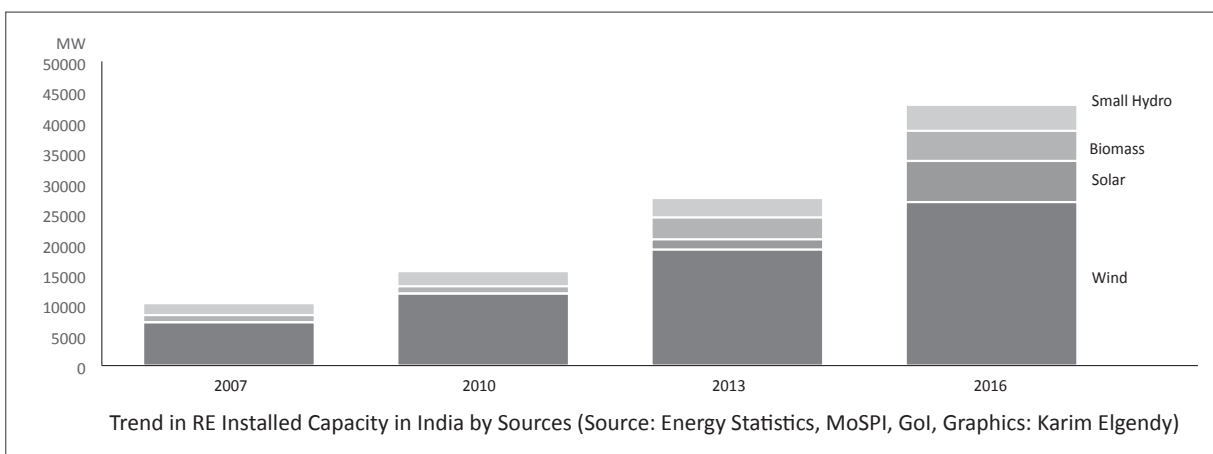


Figure 10: Trend in RE Installed Capacity in India by Sources





in the electricity sector. The government has undertaken some reforms to meet the physical growth of the sector and to ensure system-wide technical and financial efficiency.

Investment requirements are estimated to range from USD 160 billion (Ministry of New and Renewable Energy) to USD 200 billion by 2022.¹⁰¹ Policymakers want public finance to leverage private investments in the RE sector. Therefore, the government has budgeted USD 758 million for 2016–17.

India's NDC

India strives to achieve a 33 to 35 per cent reduction in carbon intensity by 2030 compared to the 2005 level and with additional international support it could go beyond this. The country will have installed capacity of 175 GW of RE electricity by 2022 and 40 per cent of the total energy will come from non-fossil fuel based resources by 2030. Achieving 175 GW of RE electricity would mean avoiding 326.22 million tons CO₂e of emissions. Of the total of 175 GW of RE, 60 GW would be wind capacity and 100 GW would be solar power.

Demand side management has been central to the country's energy efficiency interventions. Measures like LED lighting, expansion of standards and labelling programs to cover more appliances, and the introduction of energy conservation building codes for commercial buildings are the main intervention tools for the government. Developing climate resilient urban centers through smart cities is another focal area. Furthermore, plans will be developed to introduce efficient modes of rapid mass transportation, to build freight corridors for faster movement of goods and commodities and to improve the utilization of inland waterways for transportation.

The NDC envisages undertaking sector-specific adaptation measures. There are various policies in place to support sectoral adaptation plans. Among others, the government envisages protecting vulnerable coastal zones and their ecosystems through dedicated programs.

A National Disaster Relief Fund (the Fund) has been created to address climate related extreme events. The government is planning to impose additional levies to finance the Fund, which will meet the financial requirements during disasters. It will also be used to develop early warning systems, capacity building and training and to compensate for loss and damage.

Just transition assessment (score of 19 – medium)

Climate ambition (medium)

India's climate ambition is twofold: to meet development needs *and* global climate goals. It is acknowledged in the Climate Action Tracker (CAT) analysis tool that India is transiting toward a low carbon society with a combination of ambitious RE targets to be met by 2022 and the cancellation of so called »ultra-mega coal-fired power plants«. ¹⁰² A recent report by the Central Electric Authority suggests that the country will not need any new coal-fired power plants to meet its electricity demand if all planned RE and the existing thermal power plants remain in operation until 2027. The CAT analysis still places India's action only in the medium category because it is not consistent with the science-based 2°C pathway.

NDC-SDG alignment (medium)

Based on its mixed record in achieving the MDG goals, India has started to put forward national level targets under each of the SDGs. One of the main underlying assumptions has been to achieve resilience for the marginalized section of society. India's action on adaptation and mitigation efforts include the overall objectives of mass poverty reduction, achieving food security and adequate nutrition and attaining universal education and primary healthcare for its people.¹⁰³ Thus, it is fair to say that its NDC and SDG actions are objectively aligned. However, full NDC and SDG alignment would require India to reform institutions to ensure better cooperation in line with their functional and operational roles. Currently this objective is being promoted by identifying separate nodal

101. Announcement RE Invest; available at: mnre.gov.in/file-manager/UserFiles/Announcement-RE-INVEST-2016.pdf (last accessed: 3.10.2017).

102. Power plants with a capacity of more than 4000 MW.

103. See: ris.org.in/pdf/SDGs_Report_Chapter_13.pdf (last accessed: 3.10.2017).



ministries to coordinate and monitor implementation of the SDGs.

Decent work and resilience (poor)

The Global ITUC Index ranked India among the ten worst countries in the world when it comes to respecting labor rights.¹⁰⁴ According to the index, rights are not guaranteed. In order to improve the situation, the Ministry of Labor and Employment is currently developing measurable targets under SDG 8.

The social security level for workers is very low throughout the entire country and for the whole workforce.¹⁰⁵ In India, the informal sector accounts for almost 92 per cent of the total workforce today with nearly 400 million people employed. The organized sector is often unionized and thus could secure some of the basic rights. For the non-organized sector, there are very few social benefits and securities. Furthermore, if an employer is caught for not fulfilling the minimum legal obligations to the workers, the penal action is soft and does not constitute a deterrent to others. In recent years, the Mahatma Gandhi National Employment Guarantee Act 2005 provided some relief to the marginalized workforce by securing guaranteed employment of 100 days per year with a stipulated minimum daily wage.

The government has taken measures to develop the skills of the workforce for green jobs. The National Skill Development Council trains the workforce in specific capabilities required in the RE sector, especially in solar and wind sector. However, the rural workforce is vulnerable since most of its members depend on an agriculture system that relies on the monsoon, which is becoming more volatile, placing smallholder peasants at risk. The NDC of India has not provided any explicit roadmap to address these challenges.

In 2015, India created 400,000 jobs in RE.¹⁰⁶ It is projected that at least one million new jobs could be created

104. See: https://www.ituc-csi.org/IMG/pdf/survey_global_rights_index_2015_en.pdf (last accessed: 3.10.2017).

105. The Indian workforce is divided into two broad categories, the formal and informal sectors.

106. See: http://www.business-standard.com/article/specials/india-eyes-a-million-jobs-from-renewable-energy-by-2022-115052200188_1.html (last accessed: 3.10.2017).

by 2022 if the targets for wind and solar sector are met. The Indian RE sector accounts for 5.7 per cent of the global RE jobs and is ranked fourth in the world.¹⁰⁷

Social equity (poor/medium)

A combination of factors such as poverty, lack of basic workers' rights, and the position of women in the society, impacts social equity. In a socially fragmented country like India, in which many minorities, in particular indigenous people (Adivasi) and outcasts (Dalit), suffer de facto discrimination in combination with high level of income inequality, there have been many efforts in recent decades to reduce social inequalities through affirmative action but with limited success. In recent years, national crime records register an increase in violence against women,¹⁰⁸ increased violence against religious minorities¹⁰⁹ and against the marginalized sectors of the society.¹¹⁰ This situation creates an environment of fear and oppression among the people who do not align with mainstream views. Altogether, social equity has decreased in recent years.

The NDC reflects an attempt to incorporate inclusive development in all its proposed programs. However, with the decreasing social equity, the marginalized section of the society would be mostly exposed to adverse impacts of climate change.

107. See: http://www.business-standard.com/article/specials/india-eyes-a-million-jobs-from-renewable-energy-by-2022-115052200188_1.html (last accessed: 3.10.2017).

108. See: <https://scroll.in/article/.../crimes-against-women-reported-every-two-minutes-in-india> (last accessed: 3.10.2017).

109. See: <http://indiatoday.intoday.in/story/muslims-dalits-religious-attacks-grew-in-india-narendra-modi-us-report/1/879370.html> (last accessed: 3.10.2017).

110. See: <http://www.firstpost.com/politics/with-narendra-modi-govt-under-fire-is-bjp-afflicted-with-a-dalit-problem-2931254.html>; and: <http://indiatoday.intoday.in/story/muslims-dalits-religious-attacks-grew-in-india-narendra-modi-us-report/1/879370.html> (last accessed: 3.10.2017).



Gender equality (poor)

India ranks 127 of 142 countries in the Gender Equality Index 2015¹¹¹ and 131 in HDI 2016.¹¹² This suggests that inequalities remain prevalent in the country. Gender inequality is more prevalent with the falling number of girls in the age group of zero to six years in the country,¹¹³ indicating a further erosion of the gender balance in the future. Furthermore, the workforce participation has also reduced during the period 2005–2015.¹¹⁴

The Indian NDC reflects the commitment to ensure gender equality, but thus far the plans and programs have followed a business-as-usual pathway.

Due participation (poor)

India is a country where civil society plays a very limited role in policymaking. In recent years, there has been a crackdown on civil society groups under the pretext of non-fulfillment of procedures and irregularities in filing taxes.¹¹⁵ Experts claim that the harsh action against civil society is largely due to increased environmentalism in the country in the wake of climate change and other issues related to the environment. Furthermore, the government is putting a halt to the acceptance of foreign financial support for civil society in India and is thereby making it extremely difficult for CSOs to operate with external funding.

The process of climate policymaking is plagued by limited civil society participation in decision making. The government is not using the vast treasure of knowledge of civil society which works with the communities. This knowledge could have been helpful in designing better policies and fostering inclusiveness in a more effective

111. See: <http://timesofindia.indiatimes.com/india/India-ranks-127th-on-gender-inequality-index-out-of-142-countries-Report/article-show/49758677.cms> (last accessed: 3.10.2017).

112. See: <https://thewire.in/118050/human-development-index-india/> (last accessed: 3.10.2017).

113. See: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC261649/> (last accessed: 3.10.2017).

114. See: <http://www.huffingtonpost.in/2016/07/26/the-number-of-working-women-in-india-has-been-steadily-falling/> (last accessed: 3.10.2017).

115. See: https://www.nytimes.com/2017/01/09/opinion/narendra-modis-crackdown-on-civil-society-in-india.html?_r=0 (last accessed: 3.10.2017).

manner. However, the NDC process only provides limited opportunities for such exchange.

Good governance (poor/medium)

India is a country where the measures to implement transparency and accountability at different levels of governance abound on paper, but very few of which are implemented. As a result, the overall ranking of the country is 79 out of 176 countries in the Transparency International Report 2016.¹¹⁶ India is slowly transitioning to a decentralized government structure with more power at state levels.

Human rights (poor)

The prime minister of India has declared that a climate justice approach will provide the basis for meeting the GHG reducing targets.¹¹⁷ When elaborating the NDC, it was decided that poverty reduction and achieving justice for the marginalized sections of the society would become the overall goal. To this extent, the Indian NDC acknowledges the concept of »climate justice.« The NDC envisages fulfilling justice and therefore the people's basic rights by reducing poverty and raising India to the same HDI level as developed countries.¹¹⁸ This would imply the creation of more green jobs, securing resilience for the vulnerable sectors of society and achieving the goals of inclusive development.¹¹⁹ However, given its poor record in social equality, workers' rights and gender equality, the overall human rights situation in the country still needs to improve substantially.

Evaluation of the Indian NDC in the context of just energy transition

India's NDC pursues the above-mentioned co-benefit approach to ambitious climate action and development. It also acknowledges the importance of intergenerational

116. See: http://www.transparency.org/news/feature/corruption_perceptions_index_2016 (last accessed: 3.10.2017).

117. See: <https://nationalclimatejustice.org/2015/11/05/india/> (last accessed: 3.10.2017).

118. The INDC speaks of attaining an HDI between 0.8 and 0.9 by 2030.

119. See: <http://www.orfonline.org/expert-speaks/rethinking-climate-justice/> (last accessed: 3.10.2017).



justice. However, it does not apply justice or just transition principles consistently and the government does not employ a concrete justice framework.

When it comes to due participation, the NDC identifies actions at the federal level, but remains silent about the participation of sub-national and other relevant stakeholders. This could become a limiting factor for the success of the NDC. In the context of a just transition, exclusion will have negative effects on the overall achievements of the NDC. Fostering resilience of especially vulnerable groups should be a central element of the NDC, given the Indian context and climate risks faced by the poor. This, however, is not the case with the current NDC.

Policy recommendations resulting from the just transition assessment

1. Improved participation of non-state actors: To achieve ambitious targets, strong ownership and participation of all stakeholders, and high level of cooperation among them are critical for success. This is especially the case for a large and diverse country like India. India has still a long way to go in this regard, and should make it a central priority, reversing the current trend of hindering rather than enabling multi-stakeholder engagement and cooperation to ensure a smooth and successful transition.

2. Strengthening the role of sub-national governments in national climate policy-making: Most of the national climate change policies are driven by the federal government with little involvement of the sub-national or provincial governments, which are crucial for implementation. The result is a lack of ownership and limited success of the policies. To speed up the transition, this lack of ownership needs to be addressed as a matter of urgency by improving cooperation and by involving states and provinces more in policy design.

3. Improving gender equality and enhancing women's participation: Gender equality and a stronger focus on women's participation in climate policies and SDG implementation is a prerequisite for success. Despite the fact that women are more climate vulnerable than men and that their ownership in a transition process is needed, they are by and large marginalized and severely under-

represented in climate and energy policy design. This gap must be addressed as a matter of urgency.

4. Coal and informal sector workers' rights and social safety: Workers in the coal sector, which will face severe restructuring and downsizing, and in the informal sector suffer from the absence of social protection policies, labor rights and social safety. If they lose jobs due to a transition of the energy sector, which is needed to keep global warming below 2°C, they are at high risk. The government should take this into account and should design programs and schemes to address their situation adequately and pro-actively.



Vietnam

by Lars Blume

Abstract

Vietnam is very ambitious at the international level when it comes to NDC processes and its willingness to embrace green growth. However, the potential to leap-frog fossil fuel investment and start an energy transition from scratch has not been explored thus far. Vietnam's green growth strategy, a Renewable Energy strategy and the NDC are well defined and need a timely realization. Strategic objectives include, among others, reducing import dependency by encouraging the use of Renewable Energy resources and reducing environmental risks and greenhouse gas emissions to achieve Vietnam's NDC.

Achieving these objectives calls for society-wide recognition that fossil fuels are a finite resource and lead to negative impacts on the environment, health, the economy and social issues. Vietnam has no alternative but to shift from an energy mix that strongly relies on fossil fuels to one that is more efficient, includes more Renewable Energy sources and will generate fewer emissions. Public awareness is important to achieve a social consensus about the implementation of the objectives defined in the strategies mentioned above.

Introduction

Accelerated by economic and political reforms under *Đổi Mới* in 1986, Vietnam underwent a transformation from one of the world's poorest nations to a lower middle-income country. With an average increase of 6.4 per cent per year in the 2000s, Vietnam's GDP per capita growth has been among the fastest growing in the world since 1990. Vietnam's electricity have been growing at approximately twelve per cent per year for the past decade. After exploiting most of its hydropower potential, the Vietnamese government turned its attention to coal and nuclear power to meet future energy needs. So far, the potential of Renewable Energy has not been explored and the political will to make use of this domestic asset is underdeveloped. A transition away from fossil fuel toward Renewable Energy is also not reflected in Vietnam's current power development plans (Power Development Plan VII). It is planned to cover the future electricity

demand by investing in fossil fuel sources. Renewable energy solutions will provide only a minor share of up to ten per cent of the installed capacity in 2030. However, Vietnam will achieve its NDC targets (based on very high growth assumptions under the business-as-usual (BAU) scenario on which the targets are based) and does not face great pressure to change its plans for future generation capacity. Coming from a low level of GHG emissions, Vietnam has in theory a great window of opportunity to leap-frog fossil fuel investment and experience a relatively painless transition. To avoid the path of locking the country in a fossil fuel structure, political will is needed and a fair competition for fossil fuel and Renewable Energy generation needs to be developed.

Vietnam's sustainable development profile

Vietnam has achieved a number of MDGs and targets such as eradicating extreme poverty and hunger, providing universal primary education and promoting gender equality in education. Regulations on environmental sustainability have been integrated into national development policies and the forest coverage rate has increased. However, more concerted efforts and law enforcement are required to ensure environmental sustainability. Furthermore, Vietnam's HDI value for 2015 is 0.683, which places the country in the medium human development category, with a rank of 115 out of 188 countries and territories. Between 1990 and 2015, Vietnam's HDI value increased from 0.477 to 0.683; an increase of 43.2 per cent.

In 1993, more than half of the country's population lived on less than USD 1.90 per day. Today, the rate of such extreme poverty has fallen to three per cent. The proportion of the population living below the national poverty line was 13.5 per cent in 2014. More than 40 million people escaped poverty over the course of two decades. There have also been substantial improvements in access to basic infrastructure, e.g. in terms of access to sanitation facilities and clean water.

However, these achievements are based on economic growth caused by catching up effects, public spending, and a growing middle class. The contribution of productivity growth, the main driver of the increase in GDP in the 1990s, has declined over the last ten years and is still quite low compared to other countries in the region.



Figure 11: Vietnam's Just Transition Scorecard Breakdown

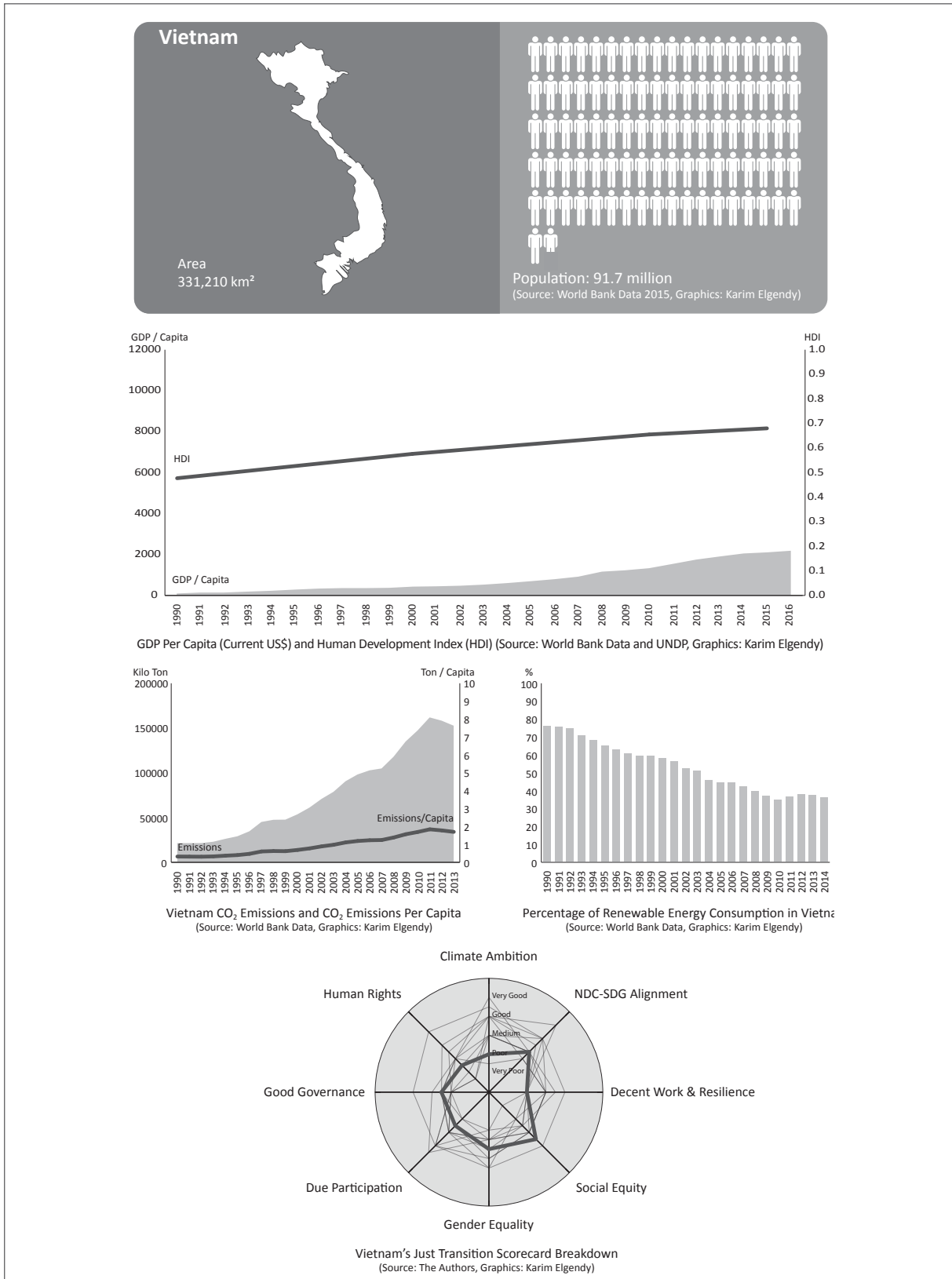
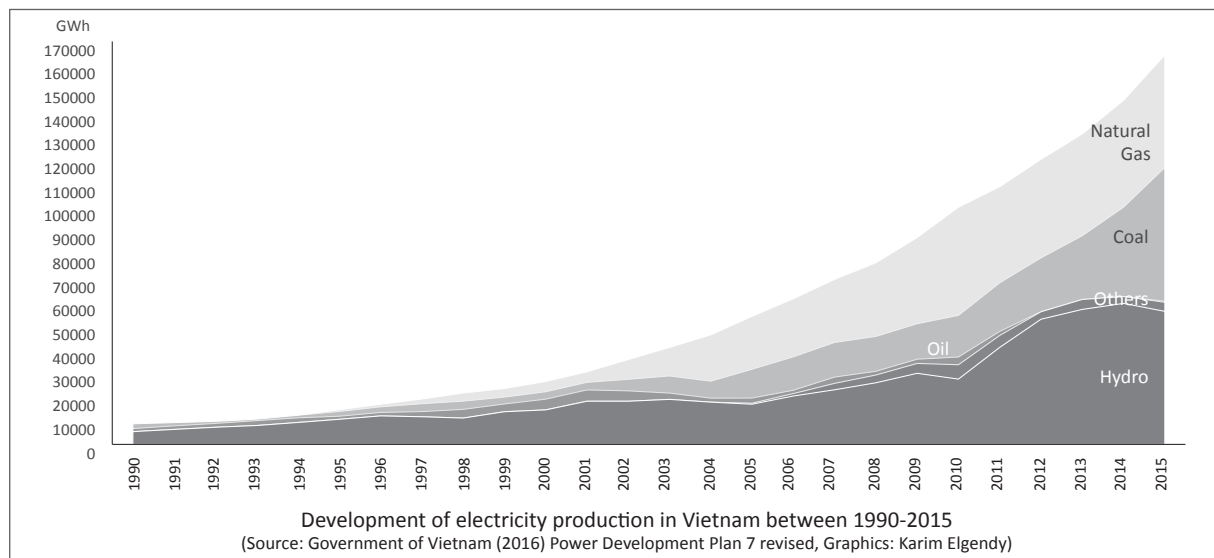




Figure 12: Development of Electricity Production in Vietnam between 1990–2015



Poverty gains are fragile and a significant portion of the population is vulnerable to falling back into poverty, particularly in rural areas and among ethnic minorities. Continued modernization of the agriculture sector is also a key factor, because agriculture will remain an important driver of economic growth and poverty reduction in Vietnam for years to come. In 2014, Vietnam's GDP was accounted for by industry (38.5 per cent), agriculture (18.1 per cent), and services and others (43.4 per cent). The average unemployment rate between 1998 and 2016 was 2.3 per cent. Most jobs are still in the agricultural sector (46.8 per cent) and in services and others (32 per cent), followed by industry with 21.2 per cent in 2014.¹²⁰

Vietnam's Socio-economic Development Strategy (SEDS) for the period from 2011 to 2016 identified three »breakout areas«: (i) Promoting the development of skills, in particular for modern industry and innovation; (ii) improving market institutions, and (iii) further infrastructure development to sustain and build on what had been achieved. SEDS for 2016 to 2020 acknowledges the slow progress with regard to the three breakout areas and highlights the need to increase the competitiveness of Vietnam's industry.

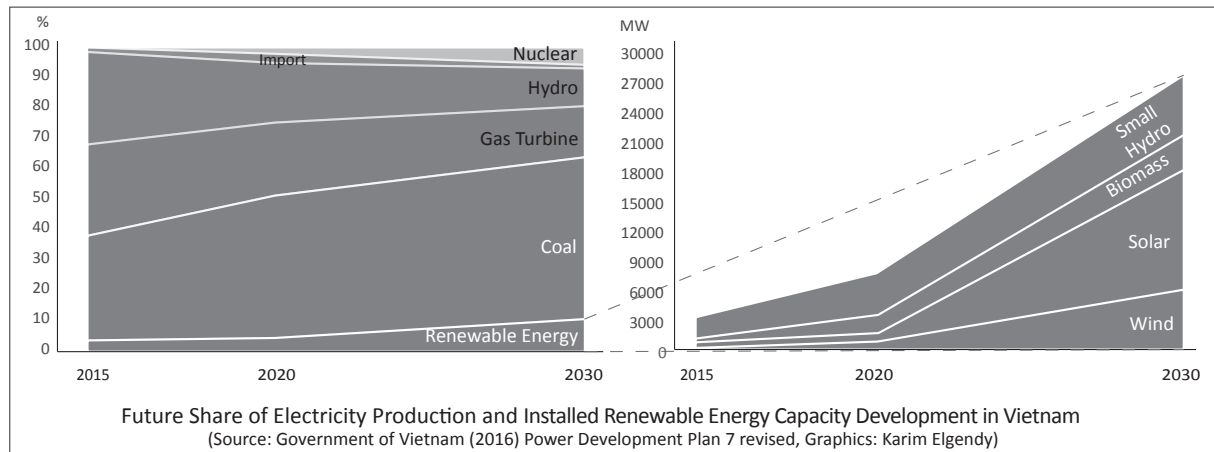
120. See: <http://data.un.org/CountryProfile.aspx?crName=Viet%20Nam> (last accessed: 3.10.2017).

Energy and climate policy

The country's high economic growth rate has led to an increasing demand for energy. In 1976, the first year after the reunification, only 2.5 per cent of the rural population had access to electricity. Today, almost the entire Vietnamese population is connected to the grid. In 2013, the rural electrification rate was 97 per cent, with a governmental plan to reach 100 per cent electrification by 2020. Vietnam's Power Development Plan from 2011 planned 65 GW of new coal capacity which would have resulted in an increasing share of coal in the power generation mix from 17 per cent in 2010 to 58 per cent in 2030. If all these coal-fired power plants were built, Vietnam would have had the fourth largest number of coal-fired power plants in the world directly behind China, the United States and India. Vietnam has a large potential for Renewable Energy. But because of the national electricity companies' preference for continued investment in well-known technology, it's reluctance to invest in renewables and a business-as-usual emphasis on entrenched technologies such as coal, large hydropower and nuclear energy, very little of this potential has been exploited. Because the utility is a state-owned monopoly, political will is required for a change in policy toward a sustainable business model based on a much larger share of generation from Renewable Energy sources. One approach that has been discussed in Vietnam is to implement a portfolio standard which will compel the existing generation companies to invest in RE.



Figure 13: Future Share of Electricity Production and Installed Renewable Energy Capacity Development in Vietnam



In 2015, Vietnam’s installed capacity reached 39.35 GW. Coal (34.4 per cent), gas (30 per cent) and medium and large-scale hydropower (30.4 per cent) were the three main pillars of electricity production in 2015, whereas Renewable Energy sources account for just 3.7 per cent including small hydro (2,143 MW), biomass (375 MW), wind (165 MW) and solar (5.6 MW).

Vietnam’s GHG emissions are relatively low in a global context. However, between 1994 and 2010, its total GHG emissions¹²¹ increased from 103.8 to 246.8 million tons of CO₂ equivalent, which means that the emissions more than doubled during this period. Today, Vietnam is already ranked 34th in GHG per capita emissions.¹²² Vietnam is emitting much more CO₂ emissions per unit of GDP than any comparable neighboring country in Southeast Asia. Vietnam’s greenhouse gas emissions are expected to increase dramatically in the future to 466.0 million tons of CO₂ in 2020 and 760.5 million tons of CO₂ in 2030, mainly caused by the emissions from the energy sector. Energy production will be responsible for the principal share of total emissions.

In 2015, just a couple of days before COP21 began in Paris, Vietnam’s prime minister announced a Renewable Energy Strategy (RES). The targets of the RES were also reflected in the Revised National Master Plan for Power Development (PDPVII revised) and were approved

by the prime minister in March 2016. PDPVII reduced the capacity of new coal-fired power plants by 26 GW, which corresponds to about 18 coal-fired power plants that will not be built, and increased its RE targets substantially. The reduction in other numbers of coal-fired power plants to be newly built in Vietnam leads to GHG emission reductions equivalent to 32 million less cars on the road every year. The Vietnamese government also reduced its energy demand forecast for 2030 by 18 per cent. According to PDPVII revised, over ten per cent of Vietnam’s total electricity production is now planned to be from RE in 2030. To promote Renewable Energy development and to create a market to unlock the private investment potential, concrete actions need to follow in the upcoming process, such as creating a suitable legal framework and establishing supportive price mechanisms for projects using REs.

Officially, no subsidies have been paid to coal-fired power plants since 2014 but low environmental and pollution control standards, as well as subsidized loans, still exist. Even though all major Renewable Energy solutions have existing support mechanisms, such as feed-in-tariffs or other kinds of subsidies, REs are not yet substantially increasing. Since there are only a few RE projects at the moment, the sector currently provides very few jobs. Following the government’s targets, this will change dramatically in the coming years with a resulting risk of a shortage of qualified workers specialized in Renewable Energy technology.

121. Including Land Use, Land-Use Change and Forestry (LULUCF)

122. See: <https://www.transparency-partnership.net/country/vietnam> (last accessed: 3.10.2017).



Vietnam's NDC

Vietnam has defined its GHG emission reduction targets for 2030 compared to the business-as-usual (BAU) scenario that is based on the assumption of economic growth in the absence of existing climate change policies. The reference year of the BAU scenario is 2010 (the latest year of the national GHG inventory), and BAU assumptions cover the energy, agriculture and waste sector, as well as Land Use, Land-Use Change and Forestry (LU-LUCF). Using domestic resources in 2021–2030, Vietnam intends to reduce its GHG emissions by eight per cent by 2030 compared to the BAU scenario. It plans to meet the eight per cent target by declining the emission intensity per unit of GDP by 20 per cent compared to 2010 levels and by increasing forest coverage to 45 per cent. The above-mentioned eight per cent contribution could be increased to 25 per cent if international support is received through bilateral and multilateral cooperation, as well as through the implementation of new mechanisms under the PA.¹²³ However, the high growth rates under the BAU have not been realized because power demand growth slowed after 2010 rendering the reduction targets even less ambitious.

In order to achieve the above targets, a number of conditional and unconditional emission reduction targets have been developed for the sectors energy, agriculture, waste and LULUCF. In order to mitigate energy emissions, 17 options were identified in the field of energy-saving and Renewable Energy.¹²⁴

Vietnam's specific contribution to climate change adaptation up to 2030 is based on national priority activities and aims to strengthen the resilience of economic sectors and vulnerable communities and to ensure a sustainable socio-economic development. The Vietnam Green Growth Strategy is the main vehicle for organizing mitigation activities and is reflected in all strategies developed afterwards. Vietnam aims to minimize the loss of life and property due to climate change; therefore the climate change adaptation priority actions for 2021–2030 include responding proactively to disasters and improving climate monitoring to ensure social security and respond to a rising sea-level and urban inundation.

123. Intended Nationally Determined Contribution of Vietnam.

124. Households (4), industry (2), transport (3), commercial services (1), electricity production (7).

Just transition assessment
(score of 18,5 – medium)

Climate ambition (poor)

There is no rating by CAT or any other comparable ranking for Vietnam. The country acts its part quite well at the international level and will achieve its NDC with the potential to over-fulfill its targets – with or without international support.

Coming from a low level of GHG emissions, Vietnam's ambition is ranked quite low with regard to the main political agenda. Ambitious objectives with many plans, development strategies and targets exist.¹²⁵ However, these plans are not aligned in the first place and most of the targets are not reflected in the country's current legal framework. Even if useful laws like the law on environmental protection tax are in place, effective implementation and enforcement of those laws remain inadequate. Furthermore, Vietnam's planned significant expansion of power generation capacity will mainly be generated by fossil fuels plus small increases in Renewable Energy. This energy transition toward a carbon intensive system will lead to a carbon lock-in for at least 40 years and stands in sharp contrast to the required development.

NDC-SDG alignment (medium)

Vietnam's Nationally Determined Contribution (NDC) puts forward a target to reduce emissions by eight per cent as discussed above. The NDC does not specify a national system for GHG accounting and measurement, reporting and verification (MRV). Vietnam's NDC is somehow typical for the group of developing countries that put in place national climate change policies and strategies. In general, they need to strengthen national policy frameworks and to develop specific policy actions and measures further to achieve NDC goals. There is a strong need for harmonization with other agendas, e.g. Vietnam Green Growth Strategy and other energy efficiency strategies.

125. E.g. national climate change strategy, green growth strategy and green growth strategy action plan, national target plan to respond climate change, national action plan to respond to climate change, and many more.



Decent work and resilience (poor)

Vietnam's labor code, which provides basic standards for employment, was first adopted in 1994 and was amended and supplemented in 2002, 2004, 2006 and 2007. However, it is in need of further reform to take into account the rapidly growing role of the private sector in generating employment, to ensure conformity with ratified conventions and international labor standards and to meet the needs of a modern industrialized economy. Without an effective labor inspection system, there is weak compliance with the labor code that is unevenly applied to different types of enterprises.¹²⁶ In any case, companies have a strong responsibility for their labor force when coal-fired power plants are shut down since the owners must ensure ongoing employment. Because Vietnam's fleet of coal-fired power plants is growing, for the time being the NDC and the governmental energy plans have no effects on existing jobs. However, a potential shift from centralized power plants to more decentralized and renewable units might increase job opportunities in rural Vietnam.

With its long coastline and its diverse topography and climate, Vietnam is one of the most hazard-prone countries in the Asia-Pacific region. Storms and flooding in particular are responsible for economic and human losses. As Vietnam's main area of agriculture and as one of its economic hotspots, the Mekong delta will be heavily impacted by the rise in the sea level. A drought in 2016 was already a first indicator for future development; nearly a million people in central and southern Vietnam lacked access to fresh drinking water and saltwater intrusion destroyed at least 244,805 ha of rice.¹²⁷

126. See: http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-hanoi/documents/genericdocument/wcms_434270.pdf (last accessed: 3.10.2017).

127. See: [http://reliefweb.int/sites/reliefweb.int/files/resources/Recovery%20draft%20Sep%202016_final%20\(2\).pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/Recovery%20draft%20Sep%202016_final%20(2).pdf) (last accessed: 3.10.2017).

128. One of Vietnam's key socio-economic achievements since Doi Moi has been a very rapid expansion of the power grid, currently reaching about 98 per cent of households.

Social equity (medium)

Vietnam strives to ensure social equity in all sectors, including the power sector (energy access¹²⁹ and energy poverty¹²⁹). The country achieved rapid growth with only modest increases in income inequality. This trend will remain with the implementation of its NDC. More Renewable Energy sources could provide the future growth model for rural areas and therefore increase social equity in areas that until now have not been part of Vietnam's story of growth. The World Bank measures »shared prosperity« using the growth rate of the average income of the poorest 40 per cent of the population. In Vietnam, the average income of the bottom 40 per cent grew at an annual rate of nine per cent between 1993 and 2012. In this category, this is one of the highest rates of income growth worldwide.¹³⁰

Gender equity (medium)

There are no legal restrictions on women's freedom of movement and access to public space, although traditions and customs often insist that women »follow after« their husbands, meaning they are expected to live in the residence of their husband's choosing. Women and men appear to have the same rights to vote and stand for election in Vietnam.

Equality in rights is almost good in Vietnam but in application, culture and in some other areas, many inequalities still exist.

Due participation (poor/medium)

Vietnam's NDC initially pursued a highly centralized and linear approach. However, national and international experts were invited to work together with the relevant ministry to submit their recommendations. Civil society actors were consulted and their expertise was used when needed. Participation remains low in the main law-making process even though there is a standardized procedure that gives everyone the possibility to address their concerns and express recommendations.

129. Social tariffs and free amount of power are in place to ensure affordable electricity access for poor households.

130. See: <http://www.worldbank.org/en/country/vietnam/overview> (last accessed: 3.10.2017).



Good governance (poor/medium)

Vietnam is ranked 113th out of the 176 countries reviewed in the Transparency International Corruption Perceptions Index (CPI) in 2016. Vietnam is led by a communist party that is committed to maintaining a permanent monopoly on power. There is a stable committee within the communist party, the Political Bureau (Politburo) of the Central Committee of the Communist Party of Vietnam. Vietnam was open to comments from civil society during the INDC process and showed interest in sharing drafts in open consultations.

Human rights (poor)

With a score of 3.9 out of 10, Vietnam is ranked 128th among 198 countries assessed in the Human Rights Risk index. The country has not ratified all important international human rights treaties. However, Vietnam has ratified the International Covenant on Civil and Political Rights (ICCPR) and the Convention Against Torture (CAT). With regard to freedom of the press, Vietnam is ranked 175th out of 180 countries worldwide.¹³¹ During the INDC process, voices and knowledge of civil society were welcomed by the national delegation and a participatory approach is currently used for implementing the NDC in Vietnam.

Policy recommendations resulting from the just transition assessment

Setting the record straight and debunking Renewable Energy myths is essential. Public awareness is important for achieving a social consensus about the implementation of objectives defined in the Renewable Energy Development Strategy issued by the Vietnamese government in 2015. Strategic objectives include, among others, reducing dependency on imports by encouraging the use of Renewable Energy resources and reducing environmental risks and greenhouse gas emissions to achieve Vietnam's NDC.

Achieving these objectives calls for society-wide recognition that fossil fuels are a finite resource and lead to negative impacts on environment, health, economy and

social issues. If Vietnam does not want to be locked into a carbon future with increasing energy dependency it has no alternative except to shift from an energy mix that relies strongly on (partly imported) fossil fuels to one that is more efficient, includes more Renewable Energy resources and will generate fewer emissions. To achieve this energy transition toward Renewable Energy, Vietnam must prioritize the following actions:

1. Set more ambitious reduction targets: While keeping the INDC targets as they are, ambitious targets backed up by joint strategies and actions by all of the ministries involved are required to begin a comprehensive transition process.
2. Focus on the co-benefits of Renewable Energy sources: Besides climate change mitigation, the benefits for rural areas, health issues and the domestic economy need to be highlighted to increase the reputation of RE. Making efforts to debunk the myths surrounding RE will help to focus attention on important issues and to find innovative solutions for overcoming barriers.
3. Increase energy efficiency: According to research by GreenID,¹³² 57 billion kWh of electricity could be saved through energy efficiency measures. Even though increasing energy efficiency requires large-scale investment, it is possible to avoid environmental and social impacts.
4. Begin to invest in Renewable Energy projects now and increase investments steadily over time: Investing in generation capacity is a long-term investment with a huge potential to lock Vietnam in a fossil fuel future or increase the risk of stranded assets. A future Renewable Energy pathway would increase energy independency and lead the country into a green and sustainable future.
5. Stop investments in new coal plants: Following a Renewable Energy pathway immediately will reduce the impacts of transition on society and the economy and will help Vietnam not to lock itself into a fossil fuel system that will have to be changed in the near future. Acting now will reduce the transition problems for Vietnam dramatically because only a few regions and workers are affected directly. Those affected need support during the transition.

131. See: <https://rsf.org/en/vietnam> (last accessed: 3.10.2017).

132. GreenID (2015): Assessment of Power Development Plan VII and recommendations for Power Development Plan VII revised toward sustainable energy development for Vietnam.



Philippines

By Tirthankar Mandal

Abstract

The Philippines' just transition pathway would have to involve a combination of efforts to achieve the social, economic and climate goals. In the social sector, it should meet poverty reduction targets under the SDGs, satisfy basic human rights standards and achieve healthcare goals. In climate and energy terms, the country would have to manage the transition to a low carbon economy in ways that are consistent with its clean energy goals as set out in the long-term policies. Finally, economic progress would imply greater resilience to international shocks and would reduce the vulnerability of the population through sustained income growth.

Introduction

The Philippines is classified as one of the most vulnerable countries of the world. The Global Climate Risk Index 2017 grouped the Philippines among the ten countries most adversely affected by climate extremes between 1996 and 2015.¹³³ The country's vulnerability is a result of the increasing number of extreme events that have hit the Philippines in recent decades and in all probability will continue to do so. The lack of progress in achieving key development targets makes people particularly vulnerable. Thus, improvements at the level of social development are crucial for building effective resilience. Until now, however, the country has not been particularly successful in this regard.

The sustainable development profile of the Philippines:

Once regarded as an Asian Tiger because of its economic progress and potential, the Philippines is currently experiencing subdued economic growth. The influx of investment went for the most part into the commercial real

estate sector during the 1990s and subsequently slowed down,¹³⁴ leading to an economic downturn.

The economy experienced a moderate annual average growth rate of 5.8 per cent of GDP during the period 1980–2017. Its GDP in 2015 was USD 292 billion,¹³⁵ with services being the largest sector followed by manufacturing and public administration.¹³⁶ The country experienced a gradual rise in per-capita GDP (PPP) during the period 1990–2015¹³⁷ and is ranked 120th out of 187 countries in the world with per capita GDP of USD 8,223.¹³⁸ In terms of social development, the major problem has been the slow progress in poverty reduction and the resulting inequality. In 2015, the country was ranked 116th in HDI,¹³⁹ and its economy is primarily driven by the economic performance and human development of overseas Filipinos.¹⁴⁰ This needs to change if hunger and poverty are to be addressed effectively.

MDG achievements

Of the 21 MDG targets to be achieved by 2015, 52 per cent remain underachieved. The country has performed relatively well in primary education, empowering women, and in fighting Malaria and Tuberculosis. It has not met the targets to reduce poverty, maternal mortality, access to reproductive health, combating the spread of HIV/AIDS and increasing the proportion of students who finish high-school.¹⁴¹

Originally the country set a target of raising 82.4 per cent of the population above the poverty line but has managed only 74.8 per cent. Similarly, in providing energy to households, it has met only half of the target.

134. See: <http://philippinebritish.com/outlook/commercial-real-estate-boom-in-manila/> (last accessed: 3.10.2017).

135. See: <http://www.tradingeconomics.com/philippines/gdp> (last accessed: 3.10.2017).

136. See: <http://www.tradingeconomics.com/philippines/gdp> (last accessed: 3.10.2017).

137. See: <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD> (last accessed: 3.10.2017).

138. See: <http://statisticstimes.com/economy/gdp-capita-ranking-2017.php> (last accessed: 3.10.2017).

139. See: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/PHL.pdf (last accessed: 3.10.2017).

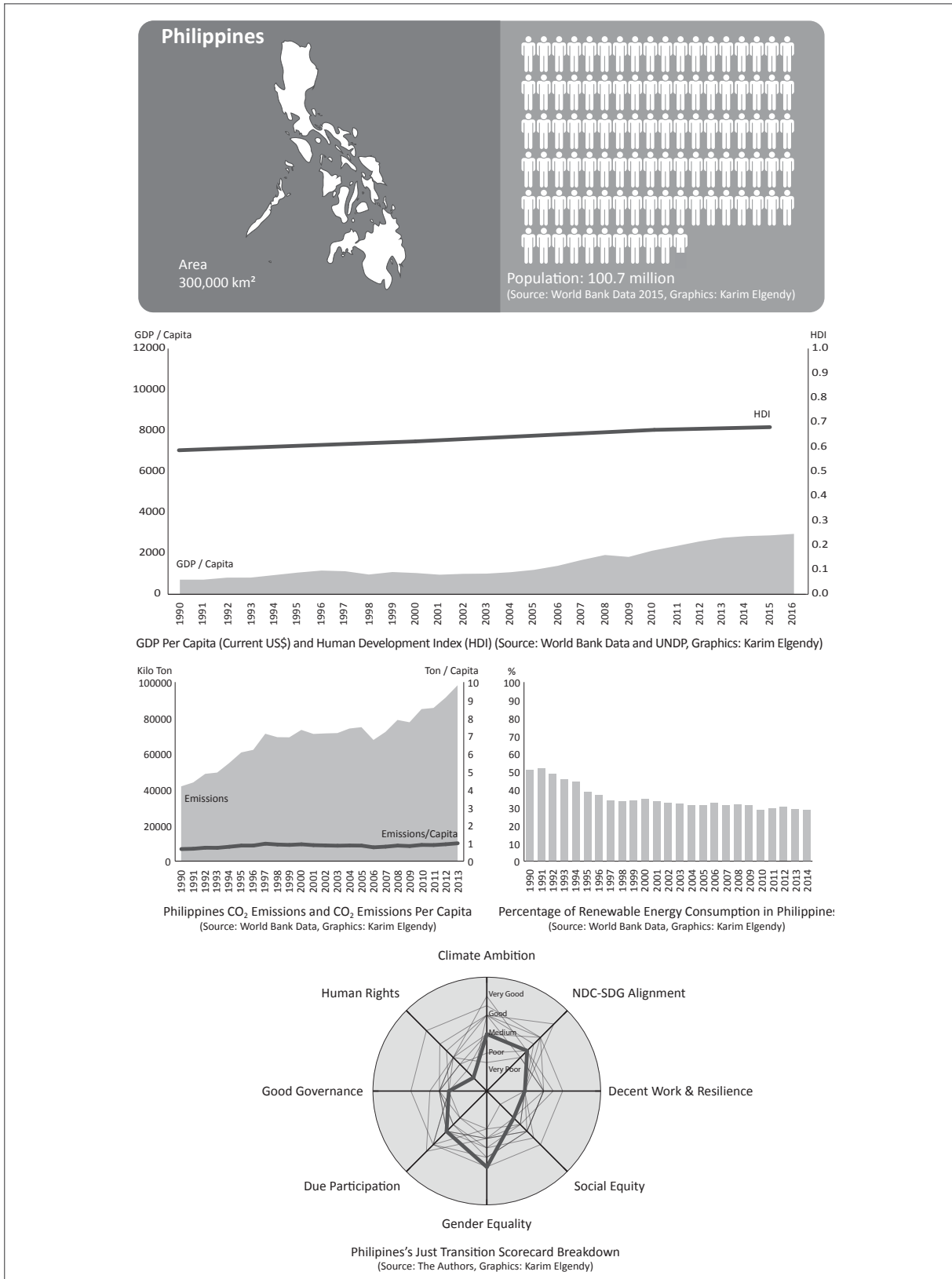
140. See: <http://news.abs-cbn.com/focus/01/19/16/undp-ph-human-devt-rank-is-up-but-needs-improvement> (last accessed: 3.10.2017).

141. <http://business.inquirer.net/164861/ph-to-miss-2015-poverty-reduction-goal> (last accessed: 3.10.2017).

133. Global Climate Risk Index is published by Germanwatch. This reflects a long term CRI ranking.



Figure 14: Philippines' Just Transition Scorecard Breakdown





Furthermore, many health-related targets remained under-fulfilled, for instance the adolescence birth rate and maternal mortality.

SDG alignment with development policies

In order to »leave no Filipino behind«, the country has identified priority sectors for development¹⁴² and has integrated them into the 2030 development plans for the Philippines. These plans are broken down into sectoral programs for which a participatory process and monitoring mechanism are being constructed. Currently, this process is under way and the details of the plans are being developed at various levels.

Energy and climate policy

Historical and current emission trends show that the country has a low carbon footprint. Even though emissions more than doubled between 1990 and 2013,¹⁴³ its share of Asia's emissions is only 0.54 per cent and its share of global emissions just 0.31 per cent.¹⁴⁴ The energy sector accounts for the largest share of emissions with almost 56 per cent of the total. Annual per capita emissions are 1.76 tons CO₂e.¹⁴⁵

The Philippines is heavily dependent of fossil fuels to meet its energy demand. According to the latest IEA data, total energy produced was 25.85 Mtoe in 2016, and TPES was 47.67 Mtoe.¹⁴⁶ 87 per cent of the people have access to electricity¹⁴⁷ compared with only 61 per cent in 1990.¹⁴⁸ However, 54 per cent of the population still depend on traditional biomass for cooking¹⁴⁹ and per capita energy consumption is very low (0.48 toe per capita).

142. The themes are poverty reduction and social inclusion, environmental sustainability, climate change and DRR management, peace and security, accountability and transparency, fair and stable order based on international rule of law as per <https://sustainabledevelopment.un.org/content/documents/21391Philippines.pdf> (last accessed: 3.10.2017).

143. <http://cait.wri.org/> (last accessed: 3.10.2017).

144. <http://cait.wri.org/> (last accessed: 3.10.2017).

145. <http://cait.wri.org/profile/Philippines> (last accessed: 3.10.2017).

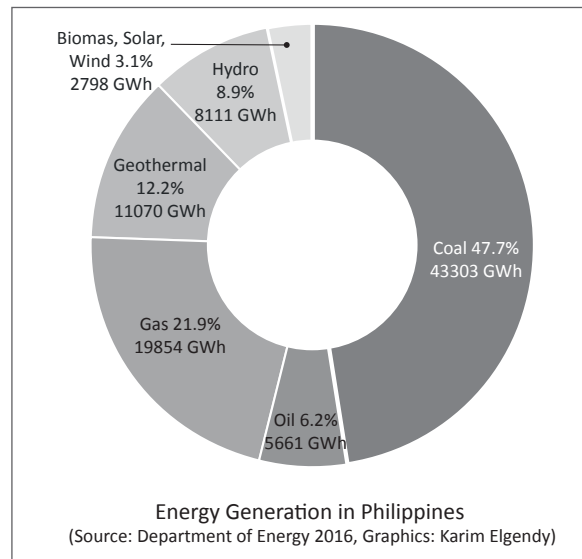
146. Key Energy Statistics, IEA 2016, page 54.

147. http://www.theglobaleconomy.com/Philippines/Access_to_electricity/ (last accessed: 3.10.2017).

148. <http://www.indexmundi.com/facts/philippines/indicator/EG.ELC.ACCTS.ZS> (last accessed: 3.10.2017).

149. https://www.iea.org/publications/freepublications/.../WEO2015_SouthEastAsia.pdf (last accessed: 3.10.2017).

Figure 15: Energy Generation in Philippines



The Philippines have a fossil fuel-driven economy. Coal accounts for 47.7 per cent, oil for six per cent, and natural gas for 21 per cent of total energy generation.¹⁵⁰ Coal-fired power plants produce 44 per cent of total electricity (2013).¹⁵¹ With a projected increase in the overall energy demand in the future, this share is set to rise further. An IEA report published in 2015 predicted high dependency on imported oil and gas (>60 per cent) for the Philippines to meet its energy demand by 2035 – unless corrective action is taken.¹⁵²

Similar to other South East Asian countries, the growth of Renewable Energy sources in the Philippines has been relatively slow. However, the government has now taken measures to make better use of its Renewable Energy potential by 2035. In 2015, the installed capacity of RE was about six GW. Solar, wind, and geothermal energy have the greatest potential for increasing power generation from RE in the future.

The National Renewable Energy Program (NREP) has developed the future RE roadmap for the country. The roadmap foresees an increase in the installed capacity by 200 per cent for the period 2011–2030. The government has stipulated sectoral RE targets and has put in place

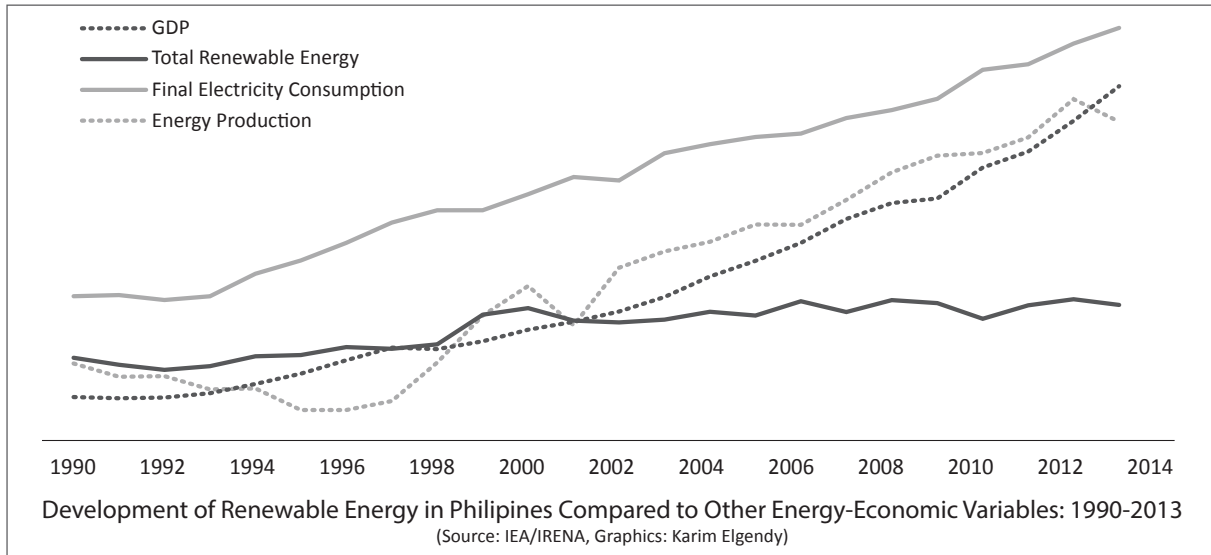
150. <https://www.doe.gov.ph/philippine-power-statistics> (last accessed: 3.10.2017).

151. See: <https://www.doe.gov.ph/coal-0> (last accessed: 3.10.2017).

152. South East Asia Energy Outlook, IEA 2015, p. 67.



Figure 16: Development of Renewable Energy in The Philippines Compared to Other Energy-Economic Variable



several fiscal and monetary incentives for the sector in an effort to achieve the targets under the NREP.

The Renewable Act 2008 forms the basis of these incentives. Apart from introducing a feed-in tariff and tax holidays for the first seven years for the solar, wind, biomass and hydro sectors, the Act also includes non-fiscal incentives. Among them are net-metering, open access purchase of RE and renewable purchase obligations for the utilities.

The Philippines would require annual investments of USD 1.3 billion (at 2010 prices) in order to meet the RE targets for the period 2015–2025. As shown above, the government has introduced corresponding fiscal and monetary policies, but reliable data are not yet available to assess the impact of these initiatives on the RE sector.

The Philippines' NDC

The NDC of the Philippines can be summarized with the following main points:

The Philippines aim at reducing GHG emissions by 70 per cent by 2030 compared to the BAU scenario, targeting the energy, transport, waste, industrial and forestry sectors. The reduction is subject to the availability of financial and technological support.

The actions on mitigation are contingent on national circumstances such as the climate vulnerability and the capacity of the country to implement them. The Philippines will follow the IPCC 2006 guidelines to calculate and account for the reductions in emissions of various GHG gases.

Actions on adaptation will focus on reducing vulnerability. The main focus will be on implementing the National Framework on Climate Change and the resulting National Climate Change Action Plan. The latter envisages the integration of disaster risk reduction and adaptation action into the development planning undertaken by the government. Financial, technological and capacity-building support is required.

The NDC aims to minimize climate induced loss and damage and therefore prioritizes adaptation over mitigation. To address loss and damage, rehabilitation and reconstruction are deemed to be especially relevant and to require additional resources.

External assistance is also required in the field of climate and natural hazard modeling, science-based risk and vulnerability assessment and risk management measures, including risk sharing and risk transfer mechanisms.



Just transition assessment (score of 20 – medium)

Climate Ambition (medium)

The CAT analysis concludes that the emission reduction targets of the NDC are in line with science-based requirements, but that there is a high degree of uncertainty regarding implementation.¹⁵³ The uncertainty derives from the country's reliance on coal-fired power plants to meet future electricity demands. It also remains unclear how the government plans to reduce this dependence and how to shift from coal to Renewable Energy sources.

NDC-SDG alignment (medium)

Only 60 per cent of the MDG targets have been achieved by the Philippines so far. Thus the challenge posed by SDG implementation is correspondingly greater. For this reason, the Philippines launched an extensive stakeholder participation process from the very beginning. With regard to the specific targets under the SDGs, stakeholders expressed concerns about the reliability and availability of data, the lack of agreed definitions of terms and the measurement methods for some of the goals – e.g. SDGs 6 (clean water and sanitation), 10 (reduced inequality), 12 (responsible consumption and production) and 14 (life below water).¹⁵⁴ However, the NDC targets are aligned with the SDGs.¹⁵⁵ The only area in which both the NDC and the SDGs remain unclear is financing. To successfully implement the NDC as well as the SDGs, the government must specify clearly defined financial requirements and allocate corresponding budgets.

Decent work and resilience (poor)

Workers face extreme forms of violence, as noted in the ITUC Global Rights Index 2015 (ITUC Index). There is widespread repression against trade unions, including by the government, and against those who protest against the submission of fake industrial peace reports.¹⁵⁶ Ac-

ording to studies, the high unemployment rate is one of the main reasons for the failure to ensure a decent working environment in the country.¹⁵⁷ The ILO observes that salaried, wage and self-employed workforce have long weekly working hours.¹⁵⁸

In terms of jobs, the Renewable Energy agency IRENA estimates that 9700 people were employed in the bioenergy sector in 2015.¹⁵⁹ According to other calculations, approximately 100,000 people were employed in the construction of RE plants in 2015.¹⁶⁰

In terms of climate vulnerability, the country is currently taking measures to reduce vulnerability and to make the most vulnerable economic sectors more resilient. The UN Food and Agriculture Organization and the UNDP have joined hands with the ministries of agriculture, planning and finance to develop and strengthen climate risk management strategies, to adjust planning and budgeting processes to incorporate climate change risks and to support farmers, especially women.¹⁶¹

Social equity (poor)

Persistent poverty is the main reason for social inequality. The Philippines has the highest rate of social inequality in Southeast Asia.¹⁶² The GINI Index has increased over the period 1985–2014 from 41 to 43.¹⁶³

The NDC reflects an attempt to be at least sensitive to equity concerns by trying to capture and incorporate social equality measures indirectly in sector-specific programs: Societal resilience has been identified as the main intervention to address negative impacts of climate change.

153. <http://climateactiontracker.org/countries/philippines.html> (last accessed: 3.10.2017).

154. <https://sustainabledevelopment.un.org/hlpf/2016/philippines> (last accessed: 3.10.2017).

155. Philippines NDC, p. 1.

156. https://www.ituc-csi.org/IMG/pdf/survey_global_rights_index_2015_en.pdf, p. 77 (last accessed: 3.10.2017).

157. <http://business.inquirer.net/180034/employment-situation-in-ph-still-bad-despite-high-economic-growth-adb-ilo> (last accessed: 3.10.2017).

158. www.ilo.org/wcmsp5/groups/public/---dgreports/---/wcms_167677.pdf (last accessed: 3.10.2017).

159. www.se4all.org/sites/default/files/IRENA_RE_Jobs_Annual_Review_2016.pdf (last accessed: 3.10.2017).

160. <https://energytransition.org/2016/07/a-struggle-between-coal-and-renewable-energy-in-the-philippines/> (last accessed: 3.10.2017).

161. See: <http://www.undp.org/content/undp/en/home/presscenter/pressreleases/2015/12/08/undp-fao-to-scale-up-assistance-to-countries-on-addressing-climate-change-risks-in-agriculture.html> (last accessed: 3.10.2017).

162. See: <https://www.childfund.org/Content/NewsDetail/2147489041/> (last accessed: 3.10.2017).

163. See: <http://data.worldbank.org/indicator/SI.POV.GINI?end=2012&locations=PH&start=1985&view=chart> (last accessed: 3.10.2017).



This implies strengthening the most vulnerable sections of the society in particular by providing sustainable livelihoods. Secondly, the commitment to empower women in decision making can be seen as another means by which the NDC addresses equity concerns.

Gender Equality (good)

The Philippines ranks first in Asia and seventh in the world in terms of gender equality according to the Gender Gap Report 2016 of the World Economic Forum.¹⁶⁴ The Gender Development Index of the Philippines is one of the highest in the group of countries with a medium HDI ranking.¹⁶⁵ The ILO states that more women have joined the workforce in recent years. However, there is also an increasing trend toward more women suffering from longer working hours. With the increase in the number of households headed by women, a more sustained use of Renewable Energy sources in rural areas can be observed.¹⁶⁶ Increased participation by women may contribute to achieving clean or Renewable Energy goals under the SDG and NDC implementation plans.

Due participation (medium)

Civil society and other non-state actors were involved in the development of the NDC from the very beginning. The same participatory approach has also been practiced by the government with regard to the development of policies and programs at the national level. Recently, the government has involved civil society in the development of specific targets under the SDGs as well as of an effective monitoring system. In addition to national NGOs based in the capital Manila, international NGOs, donor agencies and multilateral institutions are active in the country. This approach facilitates the incorporation of international best practices. However, there has also been criticism that stakeholders from the regions and provinces are not sufficiently involved.¹⁶⁷

164. See: <http://www.philstar.com/headlines/2016/10/26/1637479/philippines-no.-1-gender-equality-asia-7th-world> (last accessed: 3.10.2017).

165. See: <http://hdr.undp.org/en/composite/GDI> (last accessed: 3.10.2017).

166. See: www.ceap.org.ph/upload/download/20109/27101929289_1.pdf (last accessed: 3.10.2017).

167. See: www.ids.ac.uk/ids/civsoc/final/philippines/phl9.doc (last accessed: 3.10.2017).

Good governance (poor)

According to the Transparency International Corruption Perceptions Index (CPI) in 2016, the country is ranked 101st out of 176 countries – meaning that it is a highly corrupt country. Corruption is closely related to inequality: The IMF concludes that the country's lackluster economic performance is rooted in the high levels of corruption resulting from the major disparities in income.¹⁶⁸ In recent years, the government took steps to improve governance with the Philippine Government Action Plan, which focused on bottom-up budgeting with more power to the people so that government action becomes more participatory, accountable and transparent.¹⁶⁹ Another report has observed that community participation is crucial to the expansion of REs in the Philippines.¹⁷⁰ Thus community participation can help to scale up REs through decentralized power generation.¹⁷¹

Human rights (very poor)

According to the NDC, human rights constitute an important basis for achieving the climate goals, for protecting natural resources and for protecting the people against climate risks. The NDC acknowledges the importance of inclusiveness and participation and of the »Do No Harm« principle. However, the reality is different and the human rights situation is extremely worrying, as is shown by the Human Rights Risk Index 2016: The country is ranked as a high-risk country plagued by massive human rights violations. Thus, there is a huge gap between aspiration and reality which must be closed in order to meet the commitments made in the NDC.

168. See: <http://themanilareview.com/issues/view/philippine-development-good-governance-and-the-pork-scandal-in-context> (last accessed: 3.10.2017).

169. See: <http://asiafoundation.org/2013/05/29/is-aquino-moving-the-philippines-closer-to-good-governance/> (last accessed: 3.10.2017).

170. See: www.energia.org/cms/wp-content/uploads/2015/02/08.-Case_Study_Philippines.pdf (last accessed: 3.10.2017).

171. See: <https://www.adb.org/printpdf/projects/44132-012/main> (last accessed: 3.10.2017).



Policy recommendations resulting from the just transition assessment

1. **Participation of communities:** The Philippines has successfully included various stakeholders and institutions in the SDG and NDC process. With a view to a just transition approach, it is recommended that vulnerable communities or their representatives should also be involved in this process. The invitation to nominate delegates for government committees and task forces would strengthen bottom-up approaches and help to institutionalize them.
2. **Strengthen institutional coordination and accountability:** The only partial achievement of the MDGs is also a result of the lack of coordination within the government. Strengthening coordination and accountability is a prerequisite of a just transition process.
3. **Long-term low carbon development planning:** All current climate and development policies have only a medium-term horizon until 2030. Long-term plans are required in order to avoid lock-in effects, in particular with regard to the dependency on coal, and to set the scene for more ambitious and more innovative planning and policy making, leading to a more equitable and resilient society with lower levels of poverty.
4. **Create an environment conducive to decent work conditions:** If it is to achieve just transition in the future, the country must improve the working condition of its people. Respect, protection and fulfillment of workers' rights, as well as decent salaries and an adequate work-life balance, are fundamental to achieving socio-economic sustainability and thereby long term well-being and prosperity. This requires the government to undertake and enforce the necessary reforms.



Nepal

By Raju Pandit Chhetri

Abstract

As a country which is vulnerable to the impacts of climate change, Nepal has formulated a climate change policy and submitted its Nationally Determined Contribution (NDC). It is currently preparing a low carbon strategy and a national adaptation plan. Climate change is also being taken into consideration in development and economic planning. Nepal has attached a high priority to climate change issues in its fiscal policies and has begun to implement international frameworks such as the Sendai Framework on Disaster Risk Reduction and the SDGs with a view on climate change. While the justice discourse is relevant in the country in general, the government has not yet adopted a just transition approach to energy policies.

Introduction

Nepal is making efforts to progress from a least developed country to a middle-income country by 2030. As a landlocked country between the two large and fast-growing economies, India and China, Nepal aims to take advantage of the opportunities presented by its geographical position as a land link between two giant neighbors. However, the country's geography and topography make it extremely challenging to move forward. It is also hindered by domestic political instability and by an extended transition to a new political system. Unprecedented disasters such as the earthquake in 2015 and climate and hydrological disasters such as floods and landslides are also hindering the country's sustainable development agenda.

According to the World Bank, Nepal exhibits modest economic growth but brisk poverty reduction. The country has cut its poverty rate in half in just seven years and has witnessed an equally significant decline in income inequality. However, Nepal continues to be one of the least developed countries in the world. Its economy is heavily dependent on remittances from abroad that account for nearly 30 per cent of the country's GDP. According to the Nepal Living Standards Survey (2011), one fourth of the population (25.16 per cent) lives below the poverty line.

Only 75 per cent of the population has access to electricity (World Bank, 2017). Its energy consumption is one of the lowest in South Asia with 160 kWh of per capita annual electricity consumption. Although Nepal has huge potential to develop Renewable Energies, traditional fuels such as firewood and agricultural residues remain the primary energy sources. Nepal aims to reap the benefits from its huge hydropower potential and to move toward a low carbon economic development.

Nepal's sustainable development profile

Sustainable development has featured prominently on Nepal's policy agenda. The mantra of sustainable development continues to be built into Nepal's socio-economic policy and agenda. Although plagued by persistent political conflicts, difficult geographical terrain and remoteness, Nepal made efforts to achieve many of the MDGs. Overall, most targets such as the eradication of extreme poverty and hunger, achieving universal primary education, promoting gender equality, reducing child mortality, providing access to safe drinking water and fulfilling certain health-related indicators have been successfully achieved. Some have been achieved in part and there are some unfinished agendas that the country plans to address in the context of the implementation of the SDGs.

Extreme poverty fell from 33.5 per cent in 1990 to 16.4 per cent in 2013, thereby achieving the target of halving the poverty rate by 2015 (NPC, 2016). Nepal also made good progress in reducing hunger and malnutrition. Although Nepal is making efforts to address poverty and raise the living standard of its people, challenges remain. The annual rate of growth in GDP in 2012 was 4.6 per cent, but it fell to 2.3 per cent in 2015. Many development goals have not been fully achieved and will have to be addressed in the course of implementing the SDGs. As the country's economy is driven largely by remittances from abroad, it needs to acknowledge that this may not be a lasting solution.

Energy and climate policy

Many efforts have been made to increase the use of RE in the country; however, the rate of consumption of traditional fossil energy sources is still high and Nepal's enor-



Figure 17: Nepal's Just Transition Scorecard Breakdown

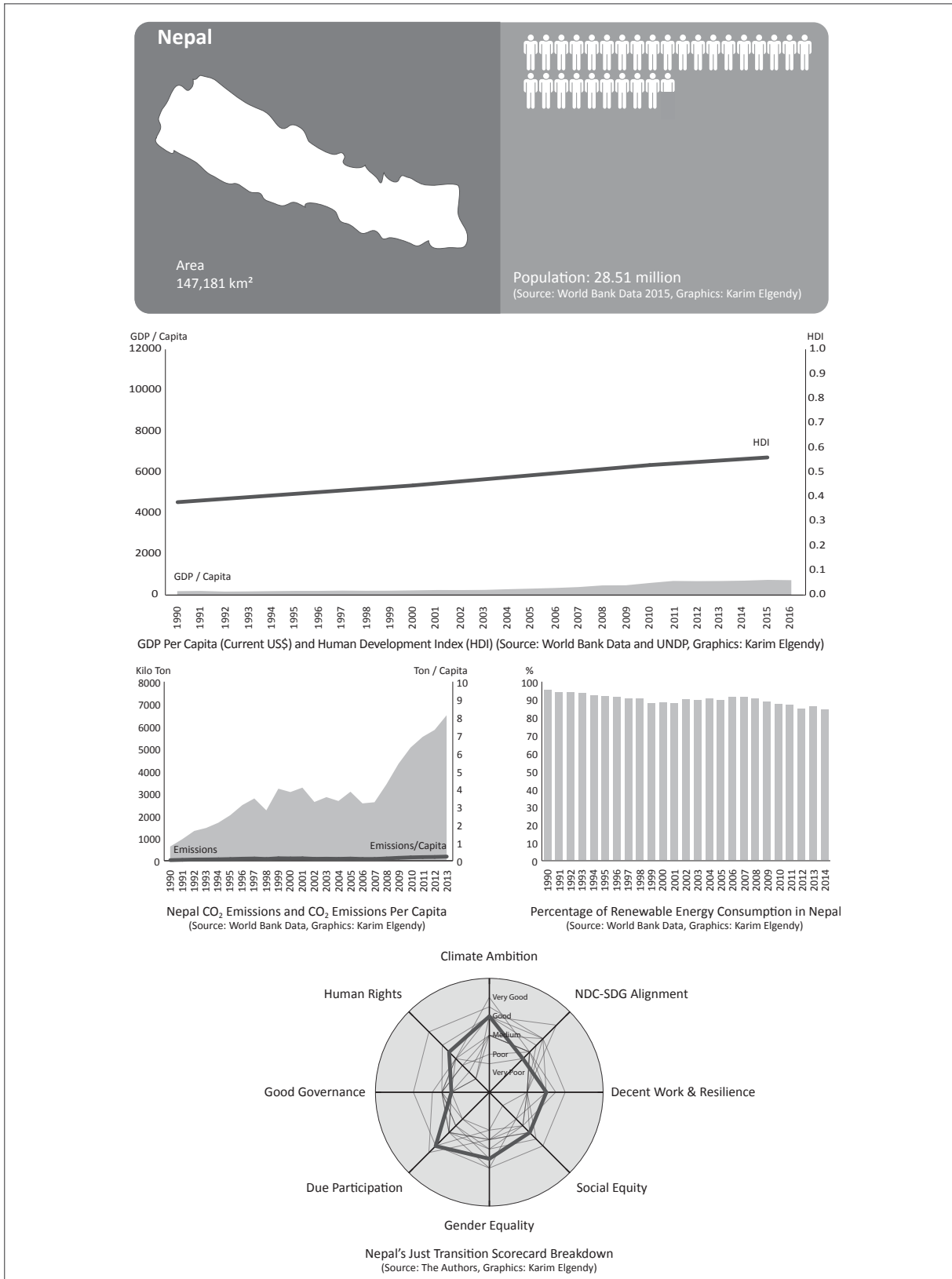
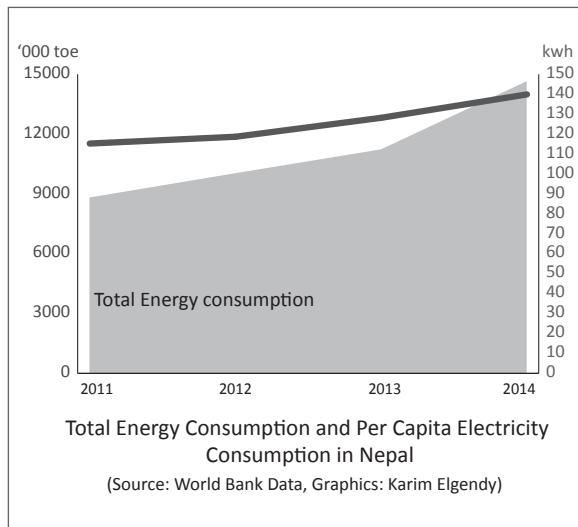




Figure 18: Total Energy Consumption and Per Capita Electricity Consumption in Nepal



mous potential for developing RE, mainly hydropower and solar, remains largely untapped.

Firewood is the primary fuel used for cooking in the rural parts of the country. According to the census results, 3.47 million households rely on firewood and 563,126 on cow dung for cooking (Central Bureau of Statistics, 2012). The consumption of traditional, commercial, and Renewable Energy sources stood at 55.33 per cent, 42 per cent and 2.67 per cent, respectively in the first eight months in Fiscal Year 2015/16 (Ministry of Finance, 2016).

Diesel, petrol, aviation turbine fuel and liquefied petroleum gas (LPG) account for a major share of the petroleum products consumed in Nepal.

Although on a smaller scale, Nepal has made significant progress in the field of RE, mainly in the areas of biogas, solar home system and hydropower. Nepal Electricity Authority (NEA) and the World Bank have signed a framework agreement to construct a 25 MW utility-scale solar power project for grid connection (NEA, 2016). Nepal has the potential to generate around 1830 MW of capacity from concentrating solar energy and about 2100 MW from grid-connected photovoltaic systems, considering that two per cent of the land area is suitable for power generation (Alternative Energy Promotion Center, 2008). Attempts to use waste and small-scale wind power as energy sources have been made in some areas, but are still in their infancy.

Nepal's NDC

Nepal prepared and submitted its NDC to the UNFCCC in February 2016. On account of its high level of vulnerability to climate change, Nepal focuses primarily on the importance of adaptation in its NDC. However, it also mentions several carbon emission reduction targets to put the country on a low carbon development path. The NDC prioritizes the generation and utilization of clean energy, in particular through hydro-electricity on a larger scale. Under its National Rural and Renewable Energy Program, Nepal has been focusing on solar, biogas and improved cooking stoves.

Nepal's NDC emphasizes that by 2050 it will achieve 80 per cent electrification through Renewable Energy sources with an appropriate energy mix. It includes specific targets for mini- and micro-hydropower, solar home systems and biogas systems, among others. It also aims to reduce its dependency on fossil fuels by 50 per cent. In addition, by 2040, it plans to develop an electric rail network to support mass transportation of goods and public commuting. As another important target, it aims to maintain the country's forest cover at 40 per cent of the total land area.

Just transition assessment (score of 26 – medium)

Climate ambition (good)

Nepal prepared its national Climate Change Policy in 2011 to enhance action on climate in the country. This policy envisions a country spared from the adverse impacts of climate change by taking into consideration climate justice and by promoting environmental conservation, human development and sustainable development – all contributing toward a prosperous society. Based on this policy, Nepal is formulating a Low Carbon Economic Development Strategy (LCEDS) designed to promote economic development through low carbon emission solutions for the energy, transportation, agriculture and industrial sectors, among others. Similarly, Nepal is also in the process of preparing a National Adaptation Plan to address mid- and long-term climate adaptation needs. In recent times, Nepal has shown sensitivity to cross-sectoral planning and policies.



Nepal's NDC target level on electrification through RE with an appropriate energy mix is quite high. On various occasions, the government has unveiled plans to enhance energy production from renewables.

NDC-SDG alignment (poor/medium)

Although Nepal has submitted its NDC with various sector-specific targets, it has not specified a target for emission reduction. After all, it is a very low emitting country and relies on international finance to achieve any ambitious targets. The NDC has adopted a strong sustainable development and climate resilience narrative. In addition, Nepal is taking the SDG implementation process very seriously, incorporating it into its three-years-plans and annual fiscal budget. These targets are likely to contribute to achieving the targets of the NDC as well. However, Nepal must strengthen its NDC and align it better with the SDG targets.

Decent work and resilience (medium)

Due to its topography, Nepal's climate is extremely complex and the impacts of climate change are severe. Hydrological disasters claim over 300 lives every year. Climate-related impacts have affected Nepal negatively in a number of ways, including increased floods, landslides, droughts, risks of glacial lake outburst, floods and loss of biodiversity. Nepal's poverty, low income levels, and lack of infrastructure, among other things, make it extremely vulnerable to the impacts of climate change. The country is working to build its adaptive and resilience capacity through policy interventions, plans and programs, such as the National Adaptation Program of Action and the National Adaptation Plan.

With the support from International Labour Organization, Nepal is implementing a program called the Nepal Decent Work Country Program (2013–2017). It aims to promote employment-centered and inclusive growth through improved labor market governance, industrial relations and labor rights. Nepal has a National Employment Policy that was prepared and approved by the Government in March 2015. Nepal also has a Labor Act. It is expected that these policy and legal instruments will be adhered to in the implementation of low carbon and climate resilient work.

Social equity (medium)

The Nepalese constitution acknowledges the right to social justice and equality for all. It guarantees the right to social security for the poor, the marginalized, single women, old people, differently abled people and children.

These constitutional rights are codified in the Social Welfare Act and the Labor Act and are institutionalized in the Human Rights Commission. With its low-income levels, Nepal must make greater progress toward achieving social equity in the country. Despairing of finding employment, large numbers of people, especially from rural areas, migrate to India and the Middle East each year in search of work.

Gender equality (medium/good)

Nepal's constitution enshrines women's rights in a separate article and guarantees the equal participation of women in the national bodies. Similarly, it has also ensured equal access to property. Nepal strongly supports the implementation of the fifth SDG to achieve gender equality and empower all women and girls. The Gender Development Index score for Nepal for 2011 was 0.534. Despite the progress achieved in recent years, in practice Nepal still has a long way to go in terms of gender equality. Although the situation is improving, the level of education for girls still lags far behind the rate for boys. Gender and caste discrimination also remains prevalent in many parts of the country. Though the NDC does not refer to gender issues, they have received major consideration in the preparation of climate change plans such as the National Adaptation Plan.

Due participation (good)

There are mechanisms to ensure wider civil society participation in deliberations on plans, programs and policies related to climate change. Nepal has adhered participatory, inclusive and transparent processes in preparing its climate change policy and when drafting the low carbon strategy and the National Adaptation Plan.



Good governance (poor)

Nepal is currently undergoing major political and structural change. Political instability has marred the governance situation in the country. The government's ability to spend its budget is very low in the current situation. For the fiscal year 2016/2017, Nepal was able to spend only eleven per cent of the total budget in the first six months.¹⁷² Corruption and institutional failure is also rampant in the country. The Constitution of Nepal includes rights to information to help promote good governance in the country. The country's experiences in the field of implementing programs and projects related to climate change have been mixed. Some interventions such as the Local Adaptation Plan for Action have gained international recognition while others are struggling to be effective.

Human rights (medium)

The constitution of Nepal enshrines 33 fundamental rights to be exercised by the citizens of the country. The human rights situation has improved significantly since the end of the civil war in 2006. Nepal has a functioning and active Human Rights Commission. There are also several human rights organizations working in the country. Freedom House has observed that freedom of the press is realized in part in Nepal with the score of 55 (0+ Best, 100: Worst).¹⁷³ Nepal's NDC does not mention human rights issues explicitly.

National Development Vision

According to the 14th Three-Year Plan (2017–2019), Nepal aspires to develop an inclusive, equitable and prosperous middle-income country by 2030 on the model of a welfare state (NPC, 2016). This plan is formulated as one of the milestones in meeting the targets set by the SDGs by 2030. Hence, Nepal also aims to graduate from its low-income status to middle-income status over the same period by increasing its economic growth rate and per capita income. The plan includes a strategy to transform the agricultural sector and to increase produc-

tion from small and cottage industries. It also includes a strategy to build infrastructure for the transport, energy and information and technology sectors.

Similarly, the plan involves a strategy for improving high levels of sustainable human development focusing on social development and social security. Improving and building the institutional capacity for gender equality, environmental conservation, science and technology is also a priority. When it comes to the energy sector, the 14th Plan has set specific targets for hydropower generation, energy efficiency and solar power, among others.

Among the 17 SDGs, SDG 7 aspires to promote access to affordable, reliable, and sustainable modern energy for all. By 2030, Nepal has set the target of ensuring that 99 per cent of households have access to electricity, that only ten per cent of households use firewood for cooking, that at least 10,000 MW of electricity are generated and that energy intensity is decreased by 0.8 per cent per annum (NPC, 2015). Similarly, SDG 12 aims to ensure sustainable consumption and production patterns. The proposed target for 2030 under this goal includes limiting fossil fuel consumption to 15 per cent of total energy consumption.

Policy recommendations resulting from the just transition assessment

Nepal has formulated the range of policies, plans and strategies to enable its move toward low carbon and resilient development and has translated them into sector policies. The Nepal Climate Change Policy highlights the need to integrate climate change into sectoral plans and policies. This includes, for example, the Low Carbon Economic Development Strategy, the National Energy Policy, Forestry Sector Policies and Strategies, National REDD Strategy, and the Environment-Friendly Vehicle and Transport Policy. Accordingly, and in spite of its low level of development and high levels of poverty, Nepal is making some progress toward a Renewable Energy and a low carbon future. Exerting undue pressure would be unfair in the case of a least development country like Nepal. Nevertheless, we would suggest the following recommendations:

172. See: <http://kathmandupost.ekantipur.com/news/2017-01-17/low-capital-expenditure.html> (last accessed: 3.10.2017).

173. <https://freedomhouse.org/report/freedom-press/2015/nepal> (last accessed: 3.10.2017).



1. Flexibility for a low-income country: Considering Nepal's overall development situation (such as poverty, literacy rate, per capita emissions, etc.), sufficient flexibility should be shown when calling for ambitious climate action.

2. Financial technology and capacity building support: Nepal's NDC is contingent on receiving international support for its implementation. Hence, Nepal should receive support in the areas of finance, technology and capacity building to help it to implement its NDCs and other plans and programs. This will encourage the country to be more progressive when it comes to climate action.

3. Encouragement of low carbon and resilient development: The international community should continue to encourage Nepal to adopt an ambitious low carbon and resilient development pathway and should stress that investing in this development pathway will also generate many co-benefits in terms of social, economic and environmental values.

4. Ambition for Renewable Energy: Nepal has huge potential in the area of Renewable Energy. It should continue to invest in Renewable Energy sources such as hydropower and solar power as a means of addressing energy poverty and replacing fossil fuel-based energy for cooking, housing, transport, etc. Nepal should work toward reducing its dependency on imported fossils. This will save money than can be invested in other socio-economic sectors.



Fiji

By Dr. Susanne Hildebrandt and Thomas Hirsch

Abstract

Fiji is a very climate-vulnerable small developing island state with an ambitious climate policy. It has made a commitment, as enshrined in its NDC, to achieve 100 per cent Renewable Energy sources in the electricity sector by 2030. The NDC also places a strong emphasis on resilience building and it is well aligned with the domestic green growth framework. In order to achieve its ambitious aspirations, the country will need (i) to strengthen stakeholder participation, (ii) to revise and adopt its legal and technical frameworks and (iii) to attract investors. Further requirements of a just transition are ensuring that human rights are respected and taking measures to create decent work.

Introduction

Fiji is classified as a middle-income country with characteristics typical for the Pacific islands, such as a small and remote island geography, limited natural resources, a narrowly based economy, large distances to major markets and very high vulnerability to the effects of climate change and natural disasters, especially through cyclones, the rise in the sea level and ocean acidification.

Fiji is endowed with a variety of natural resources – forests, minerals, fisheries, seascapes and pristine beaches. The tourism sector is Fiji's main source of foreign exchange earnings and the service sector's share in GDP increased to 68 per cent in the period 2010–2014. Although the contribution of agriculture to GDP has declined, it remains one of the key sectors of the economy, accounting for 44 per cent of total employment in Fiji. Sugar cane is the single most important crop, although its share in agriculture output has declined. Manufacturing in Fiji consists of apparels, beverages, cosmetics (e.g. skin care products), fabricated metals, food processing and paint manufacturing. The garment industry boomed in the 1990s as a result of trade preferences and investment incentives but subsequently declined as preferential incentives expired. In recent years, however, claimant in the garment industry has picked up as manufacturers

have shifted into low-volume, high-value niche products. Mineral water emerged as a growth sector in the 1990s and has become one of Fiji's key exports.¹⁷⁴

Fiji's sustainable development profile

Fiji's population has doubled in the last 50 years, rising from 451,200 to 902,400 in the period 1965–2017.¹⁷⁵ Its ethnic composition¹⁷⁶ has been a source of political tensions in the last few decades. The country is one of the most developed and well-connected of the Pacific island economies. In recent years the economy has witnessed robust growth (four per cent in 2015), driven by growth in tourism, remittances from Fijians working abroad and increasing investment. More than 150 years of specialization in sugar cane has created excessive dependency on a single export crop. Fiji's trade imbalance continues to widen with increased imports and sluggish performance of domestic exports. GDP per economic sector shows the preeminent position of tourism.¹⁷⁷ But subsistence agricultural underscores urban-rural disparities¹⁷⁸ and points to the structural problem of underemployment.¹⁷⁹

Since independence from Britain in 1970, rivalry between the indigenous Fijian and the ethnic Indian communities has been at the root of much of the political upheaval in the country. The coups¹⁸⁰ and a 1990 constitution that cemented native Melanesian control led to heavy Indian emigration and resulted in economic difficulties. Following years of political turmoil, and eight years under military rule, long-delayed legislative elections were held in September 2014.

Fiji's HDI is 0,736 so that it ranks 91 out of 188, qualifying it as a middle-income country. Nevertheless, the proportion of the population living below the poverty

174. Asian Development Bank 2016.

175. With a population growth of 0,63 per cent or a fertility rate of 2.44 children per woman in 2016.

176. Native iTaukei 56.8 per cent, Indian 37.5 per cent, Rotuman 1.2 per cent, other 4.5 per cent

177. Agriculture 10.6 per cent (sugar cane, ginger, rice, cacao, pineapple, tobacco, timber), industry 18.4 per cent (textile, sugar) and services 71 per cent (tourism) in 2016.

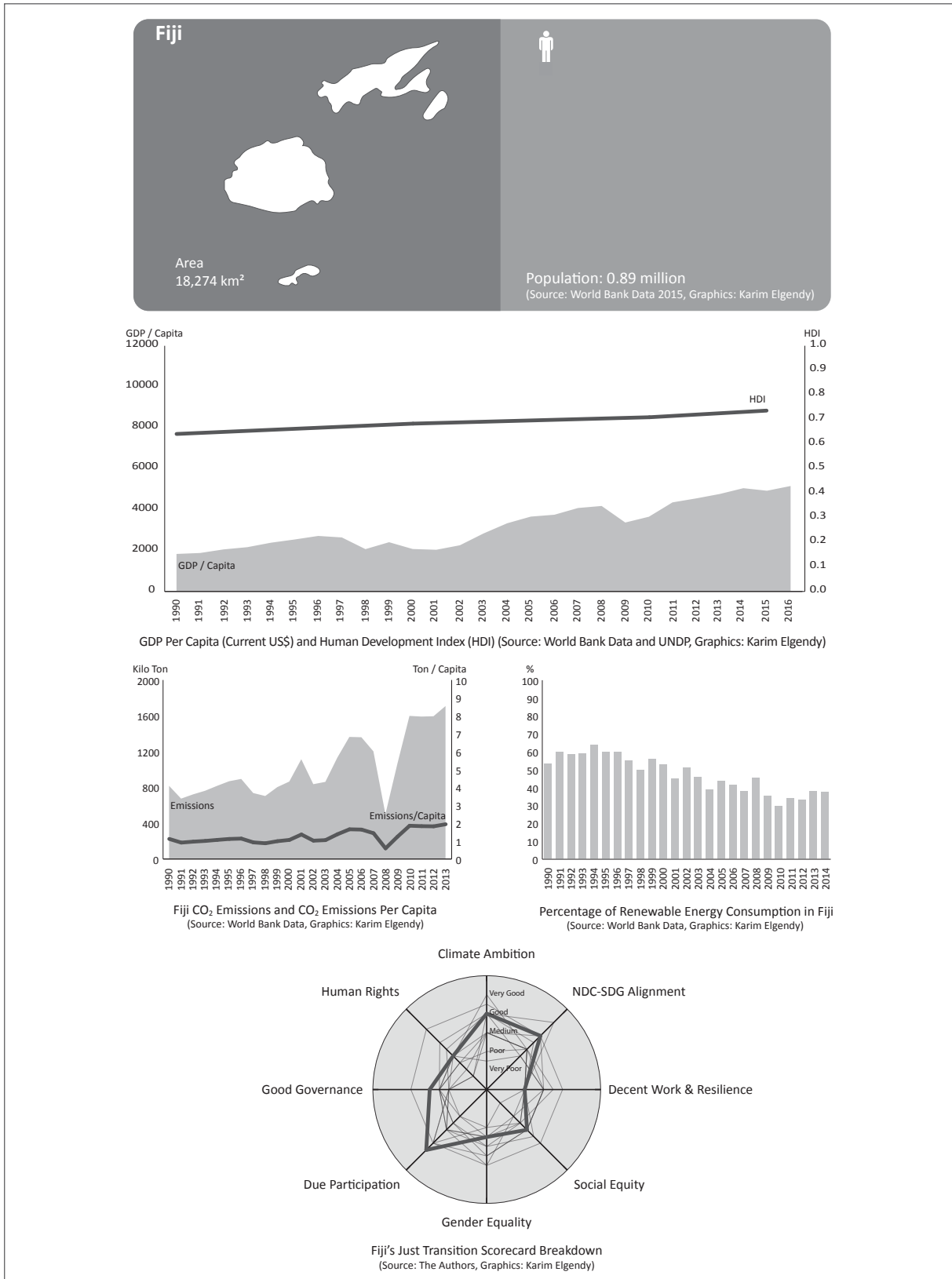
178. In 2010/11, around 44,2 per cent of employment was based in the agriculture sector, 14.3 per cent in industry and 41,6 per cent in services.

179. Unemployment among young people is officially 18,2 per cent, informal employment rate is of 60 per cent, which are push factors for emigration (-6,6 per cent).

180. Military coups twice in 1987 and 2006, civilian-led coup in 2000.



Figure 19: Fiji's Just Transition Scorecard Breakdown





line was estimated at 28 per cent in 2014 despite recent declines,¹⁸¹ and if corrected for inequality the IHDl is 0,624. Malnutrition exists side-by-side with an adult obesity rate of 35.9 per cent (2014).

Energy and climate policy

While Fiji's total share of global emissions (excluding LULUCF) is only a marginal 0.04 per cent (rank 164 out of 196 countries), its average per capita GHG emissions, according to World Bank data, were at 2.9 tons in 2010 and are forecast to increase by a further 21 per cent to 3.5 tons by 2030.¹⁸²

In 2010, the emissions produced by the energy sector represented 51 per cent of total GHG emissions (excluding LULUCF). They are predicted to fall sharply on account of the 100 per cent Renewable Energy target for the electricity sector. Meanwhile, the agricultural sector as the second-largest emitter (39 per cent in 2010) will increase in relevance and needs additional focus in the future. Because of its country profile with large forest and agricultural sectors, non-CO₂ emissions play quite an important role (accounting for 47 per cent of all GHG emissions in 2010), and will continue to do so in the future.¹⁸³

From a more comprehensive perspective, the data indicate that future GHG trajectories still leave room for improvements by comparison with past developments.¹⁸⁴ From an energy only perspective, however, the transition to a low carbon energy system has begun and is proceeding rapidly, with Renewable Energy sources replacing fossil fuels step by step, putting into practice the domestic 2014 Green Growth Framework. Ensuring access to sustainable energy for all, also through decentralized solutions such as solar home systems and Renewable Energy mini grids, is part of the strategy.¹⁸⁵ The same approach is

reiterated in the Fiji's NDC, which stresses the high potential of hydro, wind, biogas and solar power. Systematic use of these resources would also have positive long-term macro-economic effects by reducing dependency on imported fuels and improving the negative foreign trade balance (see above), respectively; finally, energy security could be improved and access to electricity ensured for the entire population, in line with the Sustainable Energy for All (SE4ALL) initiative, as stated in the NDC.¹⁸⁶ Data concerning electrification is inconsistent. According to different sources, between 60 and 90 per cent of all households have access to electricity.

In terms of climate and energy policy development, Fiji ratified the UNFCCC in 1993. Its first National Climate Change Policy was developed in 2008 and was ultimately adopted in 2012. Since then the country has conducted a number of assessments, including vulnerability assessments of its rural communities. It is currently undergoing a phase of sectoral and institutional climate and energy policy reviews and reforms, including the draft Energy Policy (2013), the draft Energy Strategic Action Plan (2013) and the Clean Development Mechanism Guideline (2010). Guided by the above-mentioned Green Growth Framework, Fiji is attempting to ensure a low carbon climate resilient sustainable and socially inclusive development. According to this framework, as well as the NDC, the government is seeking to improve the legal and technical framework conditions and to attract more investment in Renewable Energy sources.

Fiji's Nationally Determined Contribution (NDC)

Fiji submitted its Intended Nationally Determined Contribution (INDC) on November 5, 2016. With the ratification of the Paris Agreement on April 22, 2016, the INDC became its NDC and is available on the UNFCCC website.¹⁸⁷ The main commitments, to be achieved by 2030, include:

- Ten per cent unconditional emission reduction target, and a further 20 per cent conditional emission reduction target (conditional on external financing of up to USD

181. Fiji Bureau of Statistics : rural poverty has declined significantly from 43 per cent in 2009 to 37 per cent in 2014, but urban poverty has increased slightly from 19 per cent to 20 per cent during the same period.

182. See: http://climate-energy-college.org/files/site1/factsheets/Fiji_IND-CFactsheet_UoM-PRIMAP_GWPAR4.pdf (last accessed: 3.10.2017). According to Fiji's NDC, per capita emissions in 2013 have only been 1.5 tons CO₂e.

183. Ibid.

184. Ibid.

185. See: http://prdrse4all.spc.int/system/files/green_growth_framework_for_fiji_16_sept_2014_lowres_1.pdf (last accessed: 3.10.2017).

186. Ibid

187. See: http://www4.unfccc.int/ndcregistry/PublishedDocuments/Fiji%20First/FIJ_iNDC_Final_051115.pdf (last accessed: 3.10.2017).



500 million), as compared to business as usual, not taking the agricultural and forest sectors into account

- The sector-specific emission reduction target is expected to be achieved by (i) scaling up the current 60 per cent Renewable Energy share in electricity generation to 100 per cent by 2030, and by (ii) reducing CO₂ emissions by ten per cent through energy efficiency gains
- Reducing vulnerability and enhancing the climate resilience of Fiji's communities to the impacts of climate change and disasters, including through improved early warning systems, building cyclone-resistant homes, protecting coastlines and critical infrastructure and relocating communities living in high risk zones.

Fiji's NDC builds on a set of either already elaborated or drafted domestic policies and measures (see above) relating to both mitigation (including the Green Growth Framework), and adaptation (including country-wide Vulnerability and Adaptation Assessments). It identifies key challenges in a systematic manner, and includes a tentative working plan with milestones and timelines for meeting the mitigation and adaptation commitments. The alignment of the NDC with national development plans and achieving the main goals from the global Sendai Framework for Action on Disaster Risk Reduction is a further strength of Fiji's NDC. The only structural weaknesses are the exclusion of land use-related emissions and the relative superficial cost-analysis. The lack of detailed data makes it relatively difficult to make a robust assessment of the level of fairness of the NDC.¹⁸⁸ However, the 100 per cent Renewable Energy goal, coupled with the concreteness of committed adaptation action, indicates a high level of climate ambition and the willingness of Fiji to champion and show leadership. This coincides with its very early PA ratification (Fiji was among the first countries to ratify the PA) and its successful application to take over the COP presidency at COP23 in Bonn in 2017.

188. See: http://climate-energy-college.org/files/site1/factsheets/Fiji_IND-CFactsheet_UoM-PRIMAP_GWPAR4.pdf (last accessed: 3.10.2017).

Just transition assessment
(score of 29.5 – medium)

Climate ambition (good)

Fiji aspires to be a climate leader, championing with both energy transition and resilience building. The 100 per cent Renewable Energy target for 2030 and the successful candidacy for the COP presidency in 2017 underscore its high climate ambition. As a next step, the country must demonstrate effective implementation and should extend its high level of ambition beyond the electricity sector. Given its great potential, Fiji could become one of the global leaders on a pathway to zero carbon climate resilient sustainable development.

NDC-SDG alignment (good)

The NDC is well aligned with the domestic Green Growth Framework, the SE4All initiative, and the Sendai Framework for Action on Disaster Risk Reduction. In terms of SDG alignment, particular emphasis is placed on SDG 14 (oceans) and the related SDG 13 (climate change), SDG 12 (sustainable production and consumption), SDG 2 (food security), SDG 3 (health), SDG 8 (decent work and economic growth) and SDG 16 (governance and rule of law). Here again, the country needs to demonstrate the effectiveness of its implementation process.

Decent work and resilience (poor)

In 2015, a tripartite agreement was signed addressing breaches of ILO Convention 87,¹⁸⁹ following a complaint lodged by workers' delegates relating to Fiji non-compliance with its obligations under the Freedom of Association and Protection of the Right to Organize Convention. This commits the government to restoring check-off facilities for paying union dues. Indeed, the Electoral Decree 2014 explicitly prohibited trade unions from engaging in political activities as well as any organization that would receive foreign funding. Since many civil society organizations receive funding or assistance from overseas sources, this provision would have had the effect of muting almost all critical voices in the country. Around 60 per cent of Fiji's workers were in informal employment

189. ITUC Global rights Index 2015.



in 2010/11. The proportion of informal employment in the agriculture sector was at 95.4 per cent and working conditions leave much room for improvement.

Fiji ranks 27th in the global Germanwatch Climate Risk Index, with an average annual reduction in GDP of approximately one per cent due to extreme events.¹⁹⁰ The immense destruction caused by the category five tropical cyclone Winston in 2016 serves as a tragic reminder of the country's vulnerability to natural disasters and environmental shocks. The country's vulnerability to environmental crisis and extreme weather hazards will weigh down its long-term development efforts.

Social equity (medium)

Tourism plays a preeminent role in income generation, but most Fijians work in and live from agriculture. Since poverty is predominantly rural, agriculture policy has a major impact on social equity. This is especially true for women who constitute the overwhelming majority of rural subsistence laborers. The GINI Index of 42.8 for 2016 puts Fiji on a similar level to Kenya (42.5) and Iran (43). However, public investment in education and health has paid off, since mean years of schooling of the young and life expectancy have improved steadily since independence.¹⁹¹ The bottleneck preventing greater social equity is quality employment. Demographic pressure, the sinking profitability of sugar cane exports, virtually no employment perspective, combined with recurrent devastation of livelihoods by cyclones – with an equally determined effect on tourism – force many young people to emigrate.

Gender equality (poor/medium)

Fiji has made a number of specific international and national commitments to gender equality, including the Convention on the Elimination of All Forms of Discrimination against Women, the Convention on the Rights of the Child, the revised Pacific Platform for Action, and the national gender policy. Despite these commitments, gender bias remains a challenge across various sectors and gender-based violence is prevalent. Gender inequal-

ity is rooted in traditional norms, customs and models of decision making that give more power to men than to women. Inequality is perpetuated by discriminatory practices, legislative and policy biases and unequal access to resources and services.¹⁹² A Gender Development Index is not available, but the female labor participation rate reflects sizeable gender inequalities in the labor market. There is evidence that the gender gap has been worsening with women being more likely to enter informal work and subsistence activities.¹⁹³ Domestic violence against women is widespread.¹⁹⁴ The gender inequality index of 0.358 confirms that women are more vulnerable to poverty than men.

Due participation (very good)

Multi-stakeholder approaches and civil society participation in climate policy development, for instance in the formulation of the NDC and the design and implementation of the national vulnerability assessment process, have been consistently conducive to Fiji's fight against climate change. With regard to the latter, the Climate Change Division of the national government, the provincial environmental offices, NGOs, churches and local communities with their own traditional structures and bodies have closely cooperated.¹⁹⁵ At the international level the upcoming Fijian COP presidency has made due participation at COP 23 one of its priorities.

Good governance (medium)

The NDC process has been quite transparent and the document itself provides certain baselines, information on the main challenges and a tentative roadmap for implementation including timelines and milestones. Even preliminary information on the costs and benefits of implementing the national commitments is part of the NDC. However, the more general framework conditions concerning good governance are less favorable: After eight years of military rule, the 2014 general elections

190. Global Climate Risk Index 2017, Germanwatch

191. hdr.undp.org/en/countries/profiles/FJI (last accessed: 3.10.2017).

192. Country Gender Assessment 2015, Asian Development Bank.

193. ILO Fiji Labor Market Update, April 2016.

194. Violence against women by intimate partner is reported 64 per cent (HDI Report 2016).

195. See: https://www.brot-fuer-die-welt.de/fileadmin/mediapool/2_Downloads/Fachinformationen/Profil/Profil19_E_LossAndDamage.pdf, pp. 23ff. (last accessed: 3.10.2017).



opened up the path back to democracy, but incidents like the 2016 suspension of the opposition National Federation Party (NFP) indicate that democracy has not yet been restored.

Human rights (poor/medium)

Neither Fiji's NDC nor the Green Growth Framework makes any specific reference to human rights. Despite improvements of the general human rights situation in Fiji after the 2014 elections, according to Amnesty International the human rights situation remains a source of concern, in particular with regard to civil and political human rights.¹⁹⁶

Policy recommendations resulting from the just transition assessment

Overall, Fiji has demonstrated a high level of climate ambition and a strong commitment to align climate and development action toward low carbon climate resilient pathways. This ambition is also reflected in Fiji's expectations regarding its COP presidency, which is the first presidency by a South Pacific island state. Leading by example, Fiji has the potential to become a sustainable energy leader with extensive appeal, especially among island states. In terms of justice in transition, however, the picture is mixed: On the one hand, the country has a strong resilience agenda and has already demonstrated its intention to address the needs of vulnerable communities as a matter of priority. Participation is a further strength, but its human rights track record is not up to the mark, workers' rights have been violated frequently in previous years and social equity as well as gender equality and governance leave room for improvement. Therefore, in order to bring more justice to the transition process and to implement it smoothly, we recommend:

- Setting up a permanent steering group to guide the implementation process of the NDC, aligned with the SDGs and the Green Growth Framework, with full participation of all relevant national ministries, provincial governments, and other stakeholders from the energy sector, business and civil society.

- Developing an NDC implementation plan with annual progress reports: The implementation plan should provide a cost-benefit analysis, all necessary legal, budgetary and technical details. The relevant document could also represent a good basis for attracting investment in the energy transition. The implementation plan should build explicitly on a human rights approach, i.e. include both a human rights and gender impact assessment.
- Developing an outreach strategy with regular stakeholder consultation to foster stakeholder participation and broad public ownership of the energy transition process, seeking citizen involvement and keeping the public well informed.
- Taking measures to ensure decent work, new jobs & affordable energy in the transition process.

196. See: <https://www.amnesty.org/en/documents/asa18/1257/2015/en/> (last accessed: 3.10.2017).



Morocco

By Dr. El Mostafa Jamea

Abstract

Morocco has an ambitious energy transformation plan and wants to convert to a greener and more sustainable economy. However, social inclusiveness and just transition mechanism are not explicitly highlighted in the Moroccan NDC and it is not clear how such principles could be reflected in the sectorial policies. In order to make the transition to a green economy and low carbon development work, as outlined in the NDC, justice issues should be brought to the forefront of the transition agenda, including income creation and distribution, decent employment and broader engagement of key stakeholders.

Introduction

Morocco is a constitutional monarchy with an elected parliament. The head of government is nominated by the party that won the elections. The revised constitution of 2011 consolidates democracy, individual liberty rights, the accountability of government, transparency and the rights of citizens to a sound environment and to access to resources based on sustainable development strategies.

In 2002, Morocco began to focus more on integrated and environmentally friendly socio-economic development. The country launched a human development initiative, in addition to several sector and cross-sector plans such as the Emergency Plan. In 2009, it launched the energy strategy that enacted both the expansion of Renewable Energy sources in power generation and the promotion of energy efficiency. In 2011, an environment protection chapter was incorporated into the Moroccan Constitution.

Morocco's sustainable development profile

In 2014, Morocco's population reached 33,304,000 according to Haut-Commissariat au Plan (HCP) [High Commission for Planning].¹⁹⁷ The National GDP is estimated

197. See: <http://www.hcp.ma/> (last accessed: 3.10.2017).

to be USD 100,593 billion.¹⁹⁸ The rate of access to clean drinking water increased from 81 per cent in 2006 to 100 per cent in urban areas and 94.5 per cent in rural areas. The electrification rate increased to 99 per cent in 2015 (97 per cent in rural areas¹⁹⁹).

In 2014, Morocco's HDI value was of 0.628, which ranks the country in the medium human development category, placing the kingdom at 126 out of 188 countries and territories.²⁰⁰ Extreme poverty decreased significantly since 1990 and could be eliminated by 2014. Food poverty dropped to 0.1 per cent in the same year. Morocco has stated that the SDGs will play a leading role in national development policies until 2030. On the other hand, Morocco has achieved its commitments under MDGs almost entirely, except that, at almost 25 per cent of adults, the country still has a relatively high rate of illiteracy.

Energy and climate policy

Electricity consumption was 30.93 TWh²⁰¹ in 2014, and CO₂ emissions²⁰² were 53.11 million tonnes (Mt) with the energy sector being the main emitter. The TPES grew significantly since the 1990s, with oil still representing over 60 per cent of the energy consumed in the country, followed by coal, biomass and waste. Total CO₂ emissions from combustion fuels in Morocco grew continuously from 1973, reaching 51.8 MtCO₂ in 2012. Oil remains the main source of CO₂ emissions in Morocco, with a 72.6 per cent share of total emissions, followed by coal (22.6 per cent) and natural gas (4.8 per cent).

Electricity generation accounted for 36.7 per cent of total emissions in 2012, followed by transport with 27.9 per cent. Industry accounted for 14.7 per cent of CO₂ emissions, followed by the commercial and residential sectors, representing 10.6 and 7.6 per cent, respectively. Morocco emitted 0.25 tons of carbon per USD 1,000 of gross do-

198. See: <http://databank.worldbank.org/data/download/GDP.pdf> (last accessed: 3.10.2017).

199. See: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Morocco_-_Country_Strategy_Paper_2017-2021.pdf (last accessed: 3.10.2017).

200. See: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/MAR.pdf (last accessed: 3.10.2017).

201. See: <https://www.iea.org/statistics/statisticssearch/report/?year=2014&country=Morocco&product=Indicators> (last accessed: 3.10.2017).

202. See: <https://www.iea.org/statistics/statisticssearch/report/?year=2014&country=Morocco&product=Indicators> (last accessed: 3.10.2017).



Figure 20: Morocco's Just Transition Scorecard Breakdown

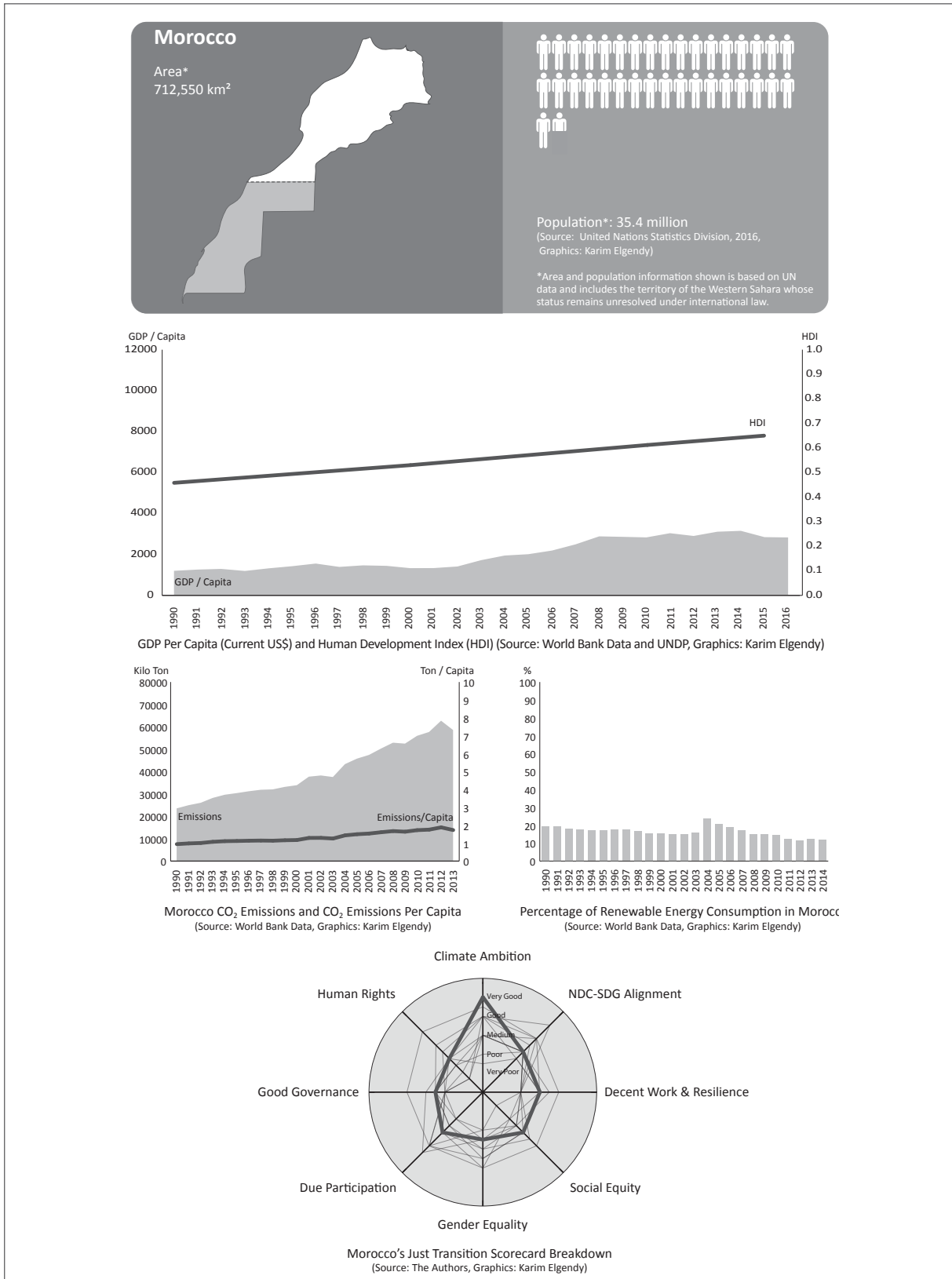
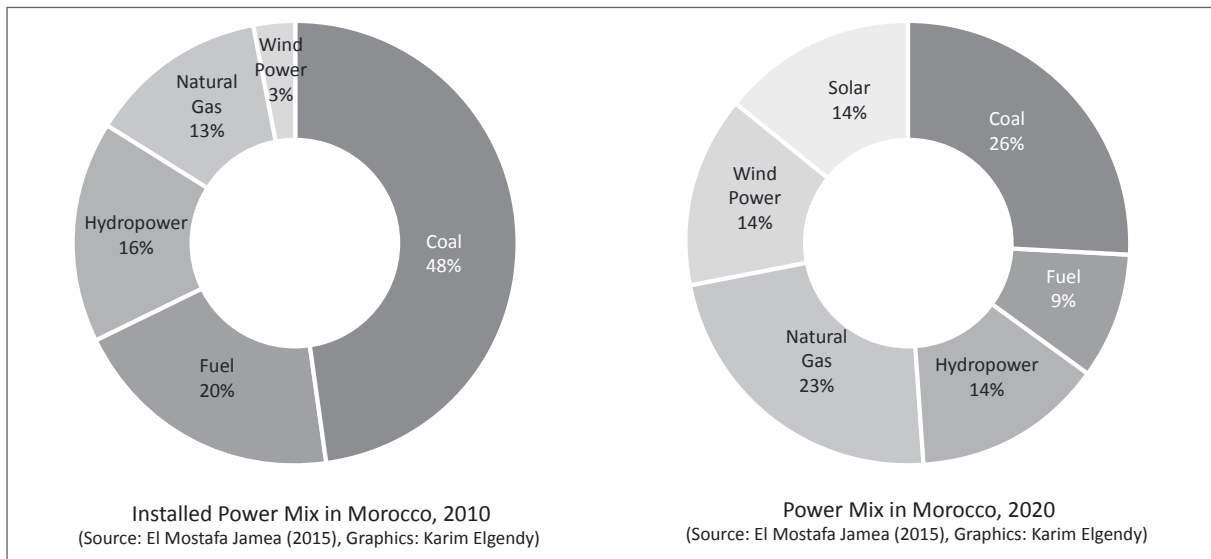




Figure 21: Power Mix in Morocco in 2010 and 2020



mestic product in 2012. The carbon intensity in Morocco declined by 2.5 per cent between 2002 and 2012, while the global average dropped by 19.1 per cent.

Morocco is heavily dependent on external markets to meet its energy needs. According to the energy ministry,²⁰³ over 93 per cent of the fossil energy supply currently comes from imports. Over 99 per cent of the households in Morocco have access to electricity.

The 2009 National Plan for Combating Climate Change focuses on accelerating the Renewable Energy program, promoting energy efficiency (including through reduced energy subsidies), improving clean coal combustion and increasing the share of natural gas in the energy mix. In 2009 an energy strategy was developed that formulates precise targets²⁰⁴ and covers five areas:

- Establishing an optimized fuel mix in the power sector;
- Increasing the deployment of renewable technologies in power generation;
- Promoting private investments in the power sector;
- Promoting energy saving and use efficiency; and,
- Promoting the integration of regional power grids.

203. See: <http://www.connaissancesdesenergies.org/tribune-actualite-energies/le-maroc-et-lenergie-quelle-contribution-en-vue-de-la-cop21> (last accessed: 3.10.2017).

204. 3IEA (2014), Energy Policies Beyond IEA Countries: Morocco 2014, IEA, Paris; available at: <http://www.one.ma/FR/pages/interne.asp?esp=2&id1=4&id2=52&id3=161&t2=1&t3=1> (last accessed: 3.10.2017).

Morocco launched a Renewable Energy program with a target for installed capacity of 2,000 MW wind energy, 2,000 MW solar energy and an increase in the hydro-power capacity to 2,000 MW by 2020. On this basis, the installed capacity of renewables will account for 42 per cent of the total installed power capacity in 2020. Morocco also announced that by 2030, the Renewable Energy installed power capacity will account for 52 per cent of the power mix.

Morocco's NDC

Morocco submitted its NDC to the secretariat of the UNFCCC, in parallel to the ratification of the Paris Agreement, on September 21, 2016. In elaborating its contribution, Morocco led a broad process of consultation with all parties involved over a period of two years with the support of the UNDP and of German development cooperation. Concerning mitigation, Morocco pledged to slash its greenhouse emissions by 42 per cent compared to forecasted emissions by 2030. This objective can be achieved only with new and additional funding. Morocco's vulnerability to climate change was highlighted and resilience objectives and the costs of implementation were identified for the most vulnerable sectors. Adaptation strategies have been elaborated for the latter, notably in



the areas of agriculture, water, forestry and fisheries.²⁰⁵ The investments required to implement these strategies between 2020 and 2030 are calculated to be at least USD 35 billion.

Morocco considers its NDC to be ambitious and fair for three main reasons:

- For the first time, Morocco has made a formal commitment to limit the growth of its GHG emissions, in spite of the fact that it accounted for just 0.2 per cent of global GHG emissions in 2010;
- Achieving the conditional target would mean that Morocco's per capita emissions would not exceed 2.6 t CO₂e in 2030, including agriculture, forestry, and other land uses (AFOLU) (3 t CO₂e per capita without AFOLU actions) and the GHG intensity in relation to the GDP would improve by 4.1 per cent over the period 2010–2030; and, finally,
- Morocco must focus on minimizing the risks of climate change impacts above and beyond mitigation actions. Certain economic activities, such as agriculture, fisheries, aquaculture, forestry and tourism, are significantly vulnerable, as are certain ecosystems, such as oases, the coastal zones and mountainous regions.

Morocco's GHG emission reduction targets will be achieved through economy-wide actions. Morocco is committed to reducing its GHG emissions by 42 per cent below business as-usual by 2030, leading to a reduction of 527 Mt CO₂e between 2020 and 2030. The total cost of reaching this goal is USD 50 billion, of which USD 24 billion is conditional on international support.

- Morocco's NDC relies largely on the energy transition, with the following underlying goals:
 - Reaching over 52 per cent of installed electricity production capacity from renewables by 2030;
 - Reducing energy consumption by 15 per cent by 2030 compared to BAU scenarios;
 - Substantially reducing fossil fuel subsidies; and
 - Substantially increasing the use of natural gas, through infrastructure projects allowing liquefied natural gas imports, and building the distribution infrastructure.

205. <https://www.morocoworldnews.com/2016/09/197374/morocco-submits-ndc-secretariat-un-framework-convention-climate-change/> (last accessed: 3.10.2017).

Morocco's NDC adaptation targets include, among others:

- Enhanced efficiency in the irrigation systems by changing sprinkle and flooding irrigation systems to localized irrigation systems in 550,000 ha;
- Introducing more drought resilient varieties for 1 million ha with cereals and vegetables;
- Irrigating new areas of 260,000 ha and modernizing irrigation systems for 290,000 ha;
- Substituting the use of ground water by newly mobilized surface water;
- Construction of new sea water desalinization stations to mobilize up to 500 million m³;
- Reforestation of 200,000 ha and protecting 1,5 million hectares against erosion.

Just transition assessment
(score of 28.5 – medium)

Climate Ambition (very good)

Morocco's per capita emissions are still well below the global average.²⁰⁶ Its share of Global GDP is 0.24 per cent and its share of global CO₂ emissions is only 0.16 per cent.²⁰⁷ Morocco ranks 10th on the Climate Change Performance Index in 2016, improving one position compared to 2015. Morocco is relying on the transformation of its energy sector in order to meet its GHG mitigation targets. The country sets an unconditional target of reducing its GHG emissions by 17 per cent compared to BAU by 2030, and by 42 per cent compared to BAU conditional on international financial support. The announced energy transition strategy set a target of a 52 per cent share of renewables in the power mix, reducing energy consumption by 15 per cent compared to BAU through energy efficiency measures, and substantially reducing subsidies to fossil fuels and increasing the consumption of natural gas.

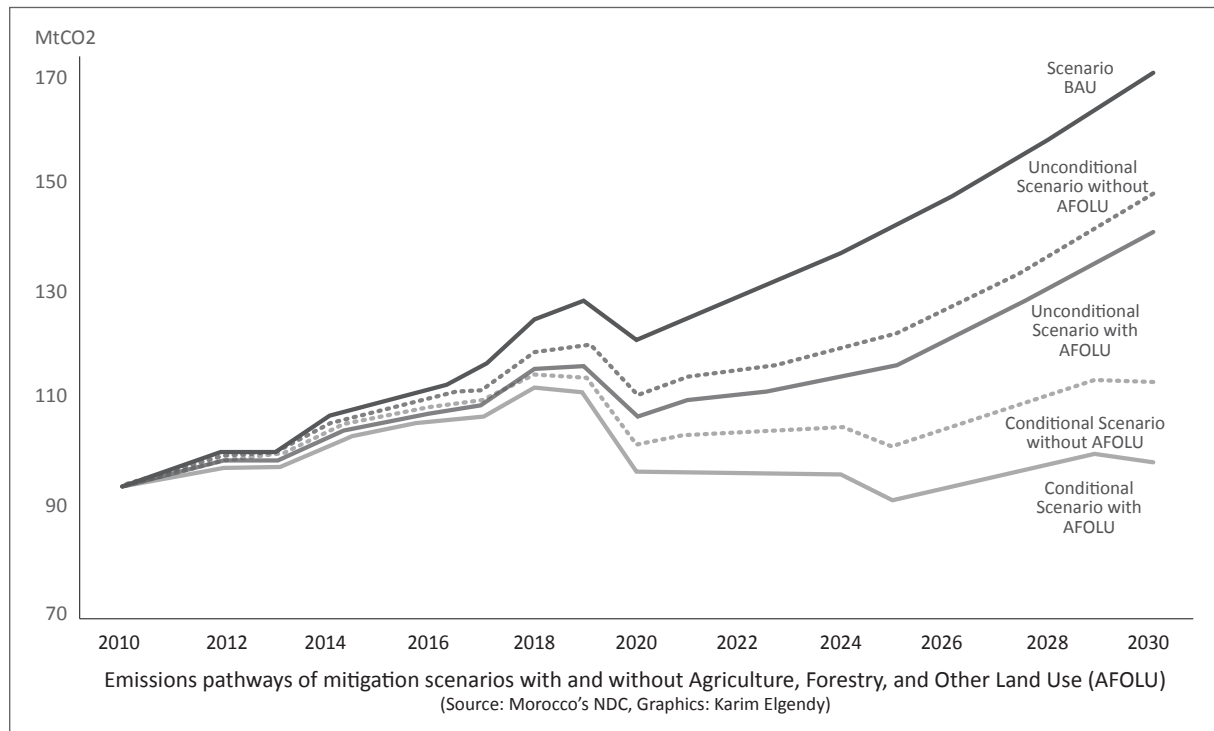
Meanwhile, it is planned to orient industry, agriculture and transportation developments to increased ecological sustainability. This includes switching to Renewable Energy sources and introducing higher energy efficiency standards for new industrial parks and buildings. Agri-

206. See: <https://germanwatch.org/en/download/13626.pdf> (last accessed: 3.10.2017).

207. See: <https://germanwatch.org/en/download/13626.pdf> (last accessed: 3.10.2017).



Figure 22: Emission Pathways of Mitigation Scenarios



culture should enhance the use of renewables, introduce more water efficient and soil conserving practices, and increase energy efficiency in processing. The public transportation sector should become more sustainable, building on co-operation between the government and city councils, e.g. electric trams and electric buses. It is planned to enhance energy efficiency in big cities through rapid bus systems.

NDC-SDG alignment (medium)

Morocco's NDC states that it has its institutional roots in the National Strategy for Sustainable Development (NSSD) and outlines a vision of Morocco in 2030. As a result, the implementation of Morocco's NDC is part of an integrated approach that goes beyond climate change to cover respect for human rights and gender equality, to create the legal and administrative framework for integrated and sustainable development and to align the country's climate change with the SDGs.

Decent work and resilience (medium)

The NDC includes actions that will support farmers and cooperatives in maintaining their incomes. The NDC leaves it up to the sector policies to develop the details of managing the transition toward more sustainable energy use and land-use patterns in terms of skill development and jobs creation. The focus on the agricultural sector is well chosen, since it employs more than 35 per cent of the workforce and is the most vulnerable to climate change. For this sector, a just transition and resilience building mean protecting one third of the Moroccan workforce against the threat of losing their livelihoods due to climate change.

With the focus on deploying more renewables as part of the energy transition by 2030, it is estimated that the country will gain more jobs: A Renewable Energy plant will create three to five jobs where a conventional plant of the same capacity creates only one job.

The ITUC Global Rights Index 2016 rated 141 countries on a scale from one (irregular violation of rights of workers) to five (five as no guarantee of rights). Morocco re-



ceived a rating of three with regular violation of rights.²⁰⁸ Morocco ranked 102nd out of 181 countries in the world in the Germanwatch Global Climate Risk Index (CRI) for 1996–2015.

Social equity (medium)

Poverty in all forms has largely been eradicated in urban centers and has been greatly reduced in rural areas as a result of an increase in people's living standards and efforts to reduce social disparities. The national poverty rate²⁰⁹ dropped sharply from 15.3 per cent to 4.2 per cent in 2014. Extreme poverty has also dropped significantly since 1990.

Morocco scored 40.9 on the GINI index²¹⁰ in 2007 exhibiting a high level of inequality in income distribution. In fact, Morocco has considerable disparities (urban vs. rural areas; large vs. small cities; South-East vs. North-West and West) related to education levels.

Gender equality (poor/medium)

Morocco is ranked 113th in GII²¹¹ with a score of 0.494, indicating that the country still has a long way to go to achieving gender equality, despite the fact that gender equality is enshrined in the 2011 constitution. Morocco's NDC, rooted in the NSSD as stated above, elaborates Morocco's vision for 2030 which cause for gender sensitive development. Accordingly, a system has been put in place to monitor and assess vulnerability and resilience building, while taking gender issues into account.

Due participation (medium)

In order to increase the effectiveness of climate action, the government is encouraging and empowering regional institutions to demonstrate more leadership, e.g.

208. See: <https://www.ituc-csi.org/ituc-global-rights-index-2016?lang=de> (last accessed: 3.10.2017).

209. HCP, 2015. Haut-Commissariat au Plan : Le Maroc entre Objectifs du Millénaire pour le Développement et Objectifs de Développement Durable : Les acquis et les défis.

210. See: <https://www.cia.gov/library/publications/the-world-factbook/fields/2172.html> (last accessed: 3.10.2017).

211. See: <http://hdr.undp.org/en/composite/GII> (last accessed: 3.10.2017).

regarding local and regional adaptation programs. In addition, Morocco is offering capacity building for decision makers and stakeholder groups (e.g. young people and workers), in order to ensure that adaptation and mitigation programs are successfully implemented.

Good governance (poor/medium)

The NDC firmly states that Morocco's commitment to protecting the climate and its policies to combat climate change are part of global efforts and that Morocco's achievements should therefore be subject to international transparency rules. On the other hand, according to the Transparency International corruption perception index,²¹² Morocco ranks 90 of 176 with a score of 37 points. Furthermore, the Ibrahim Index of African Governance (IIAG) ranks Morocco in 14th place out of 54.

Human rights (poor/medium)

As noted above, the NDC states that Morocco's NDC finds its institutional roots in the NSSD and outlines a vision of Morocco in 2030. As a result, the implementation of Morocco's NDC is part of an integrated approach that includes respect for human rights, as enshrined in Morocco's 2011 Constitution. On the other hand, a human rights assessment is not foreseen in the NDC. Reality is still lacking behind: Morocco ranks 101 out of 149 in the Legatum Prosperity Index for 2016.²¹³

Policy recommendations resulting from the just transition assessment

1. Strengthen just transition elements in the NDC implementation, i.e. participation, job creation, contribution to poverty alleviation, knowledge transfer and community resilience. This could be facilitated by adopting best practices in cross-sector policies related to adaptation and mitigation with the aim of achieving high efficiency.

2. Improve coordination of NDC implementation efforts and ensure strong governance to maximize the impacts

212. See: http://www.transparency.org/news/feature/corruption_perceptions_index_2016 (last accessed: 3.10.2017).

213. See: <http://www.prosperity.com/globe/morocco> (last accessed: 3.10.2017).



of NDC implementation on sustainable development and a just and inclusive transition to a green economy.

3. Strengthen the focus on gender equality and social inclusion, which are not explicitly highlighted in the NDC but are crucial to the success of a just transition process. Especially in energy transition projects, which create jobs and opportunities, specific policies should be established to improve gender equality and social inclusion.

4. Establish a permanent dialog platform engaging all stakeholders to discuss NDC implementation, ensuring effectiveness and efficiency, leading to a strong social consensus and engagement of all stakeholders and finally resulting in a higher level of acceptance.

5. Create jobs for young people in the energy transition by implementing vocational and specialized trainings in cooperation with key stakeholders.

6. Accompany the energy transition and NDC implementation with research on its socio-economic impacts to provide the necessary information for meaningful monitoring and evaluation.



South Africa

By Richard Worthington

Abstract

South Africa has not translated its proactive stance on climate change²¹⁴ into an adequate national response or international commitment. The mitigation provisions in the National Climate Change Response White Paper of 2011, which is overdue for review, need to be amended to be compatible with the goal of limiting global warming to 1.5°C, as does the country's NDC.

Introduction

South Africa gained independence from British rule in 1910 and was declared a parliamentary republic in 1961 following a whites-only referendum. Since the formal end of apartheid in 1994, major advances have been made in reducing extreme poverty and improving access to education, healthcare and electricity, but social welfare payments are insufficient. GDP growth has been maintained at a low level of 1.6 per cent in 2014 (and 0.5 per cent in 2016), whereas in recent years it has barely kept pace with the population growth rate of 1.6 per cent in 2015.²¹⁵

Political unrest is being aroused by shortcomings in the performance of the government and the declining legitimacy of the ruling party, especially within the dominant faction of the African National Congress (ANC) associated with President Zuma. This may be seen as a symptom of the failure of the neoliberal economic paradigm, compounded by patronage politics and outright corruption. A key question is whether self-correction is imminent, either by the ANC or by society as a whole, or whether an increasingly autocratic elite will perpetuate the current concentration of wealth regardless of climate change.

214. The Constitution adopted in 1996 set a new global standard for environmental rights and an admirable body of policy and legislation has been developed, but implementation and mainstreaming across government departments is still lacking. SA has made positive contributions to the development of the African Union's Agenda 2063 (adopted in 2013) and the process of developing and adopting SDGs (2015).

215. I.e. a fertility rate of 2.3 children per woman in 2016.

South Africa's sustainable development profile

Unemployment, poverty and inequality – among the highest in the world with a GINI Index of 63.38 in 2011 – remain a challenge. Official unemployment is roughly 26 per cent of the workforce and is significantly higher among black youth. Even though the country's modern infrastructure supports a relatively efficient distribution of goods to major urban centers throughout the region, unstable electricity supplies retard growth. Nevertheless, South Africa is a middle-income emerging market with an abundant supply of natural resources, well-developed financial, legal, communications, energy and transport sectors, and a stock exchange that is Africa's largest and among the top 20 in the world.

Official policy has embraced the imperatives of sustainability but has not succeeded in making major changes to patterns of poverty and ecological degradation. Prolonged droughts and the lack of important arterial rivers or lakes make extensive water conservation and control measures imperative. The increase in water usage is outpacing the increase in supply. Water and air pollution, soil erosion and desertification are posing increasing problems.

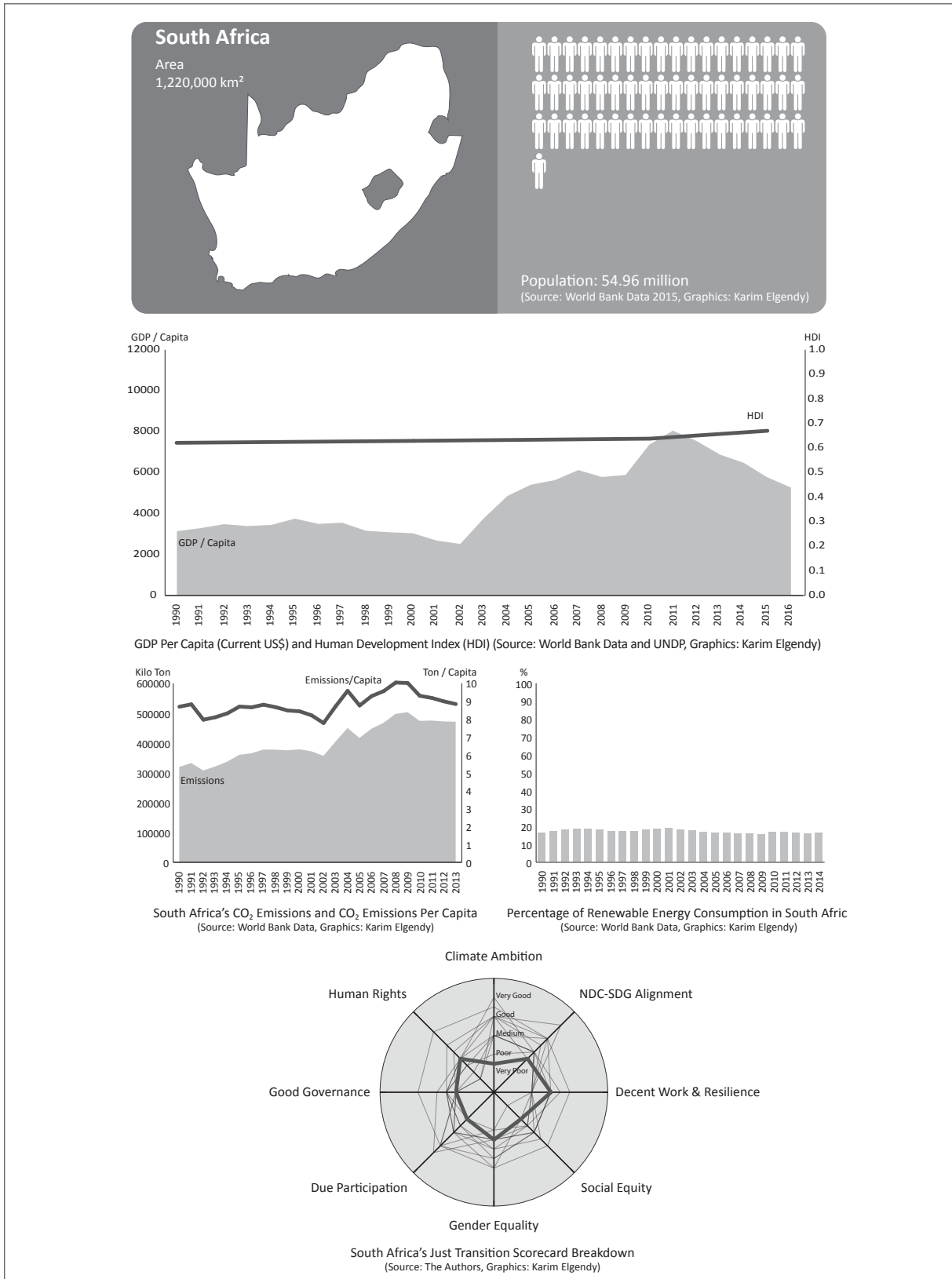
Achievements of the MDGs

Over the past two decades, South Africa has grappled with the triple challenges of poverty, unemployment and inequality. South Africa fulfilled three of the nine MDG indicators, marking some progress toward achieving reductions in poverty and hunger. With regard to extreme poverty and hunger, the level of achievement is disappointing with unemployment representing the biggest threat to achieving universal poverty reduction. South Africa's fiscal and social policies are widely acknowledged to be pro-poor and to contribute to reduced poverty headcounts.²¹⁶ Slight improvements in the HDI in the period 1990–2015 from 0.621 to 0.666 are dominated by the impact of HIV/AIDS, which first resulted in a sharp decline in life expectancy in 2005 that has recovered slowly in the meantime thanks to the introduction of an extensive public treatment program. If we consider the inequality adjusted HDI (IHDI) of 0.435, it is apparent

216. The coverage of social grants increased from just over 2.5 million in 1997 to approximately 16.6 million beneficiaries in February 2015.



Figure 23: South Africa's Just Transition Scorecard





that income inequality still remains unacceptably high. With a Gender Development Index of 0.962, South Africa ranges in the medium category, while the Gender Inequality Index shows that poverty is essentially female and South Africa is ranked 90th out of 159 countries.

SDG alignment with development plans and policies

The National Development Plan is by and large aligned with the SDGs, but the goals are based on a classical neoliberal agenda which stresses the need for economic growth to exceed five per cent per year on average and calls for increased exports (e.g. from mining), while the strategy for sustainable development remains vague.

Environmental management capacity has improved substantially from a low base, and robust regulatory frameworks are gradually being put in place. According to the 2013 Budget Review,²¹⁷ spending on social development, health, education, housing and local amenities – referred to as the »social wage« – has more than doubled in real terms over a decade and accounts for almost 60 per cent of public expenditure, but these efforts are being undermined by rampant inflation.²¹⁸

Energy and climate policy

South Africa's energy system is on the cusp of transformation, or degeneration, having changed remarkably little over the last three decades in terms of the role of coal, supply-side orientation and alignment with the mineral-industrial complex. Despite a lack of reliable recent energy data, there is no question about the continuing dominance of fossil fuels. According to the Integrated Energy Plan,²¹⁹ coal accounts for 71 per cent of the primary energy supply (including about a quarter of the feedstock for liquid fuels), with imported oil accounting for 15 per cent. Natural gas makes a small contribution, including to liquid fuels production, with a growing role as a substitute for coal in industry. In 2010,²²⁰ 90 per

cent of electricity was generated from coal, followed by five per cent from nuclear and 4.5 per cent from hydro, mostly imported.

A key feature of SA's energy profile over the past decade has been the lack of demand growth, in particular for electricity. Among the reasons for this are improvements in energy efficiency, the decline in energy-intensive industries and a sharp increase in electricity prices.

After much prevarication over Renewable Energy strategies, a procurement program for Renewable Energy from independent power producers (REIPP) started in 2011 and by 2015 wind and solar PV generation provided over two per cent of the national electricity supply.

Reform of the electricity supply industry is mandated by the 1998 Energy Policy, but the REIPP program is the first provision made for private sector participation in the electricity supply and has thus met with some opposition as »back-door privatization«. Eskom, a state-owned corporation, generates over 90 per cent of the electricity supply, distributes to about 40 per cent of customers and retains complete control over transmission, because there has been no progress on the policy commitment to unbundling. It has recently challenged the government's commitments under the REIPP program, placing many USD billions of foreign investment at stake, and has blamed the program for considering the early retirement of some of its dirtiest old plants (which would involve major job losses), even as is bringing on-line two new coal-fired power stations of roughly 4800 MW each.

The Department of Energy (DOE) continues to run protracted energy planning processes, but they are increasingly disconnected from decision-making, which revolves around major infrastructure projects. The 2010 Integrated Resource Plan remains the prevailing mandate for new electricity generation capacity and proposals to update this include an absolute cap on Renewable Energy development into coming decades. In 2017, the DOE accepted a court judgement that the procurement process for a fleet of nuclear power plants had been unlawful, but it has not indicated whether the new minister will honor her predecessor's commitment to conclude formal planning processes this year.

It is possible that technological advances and market dynamics will prove to be a better driver of the energy

217. See: <http://www.treasury.gov.za/documents/national%20budget/2013/review/chapter%206.pdf> (last accessed: 3.10.2017).

218. Inflation of 6.5% in 2016.

219. Government Gazette No. 40445, November 25, 2016.

220. Ibid.



transition than political will or good governance. Recent positive developments include a much-improved understanding of SA's Renewable Energy potential on the national scale (wind and solar resources both far exceed total energy demand), including the potential for long-term cost-savings.²²¹ This is in danger of being obscured by short-term conflicts over control of the electricity system and the treatment of coal as a »strategic resource« for black economic empowerment that has seen labor intensity increase recently.

An »Integrated Energy Plan« (IEP) published in November 2016 focused on a long-term pathway for the entire energy system and consists of four scenarios, none of which can be reconciled with the energy vision in the National Development Plan or with the goal of limiting global warming, much less with the African position requiring stabilization at 1.5°C. All scenarios envisage increasing domestic coal consumption until 2035, with varying degrees of reduction in its relative contribution to the total supply mix on the back of strong demand growth. They also foresee virtually no electrification of transport. Unless there is much improved governance and long-term planning, there will be less chance of managing a just transition to sustainable energy.

South Africa's greenhouse gas emissions are a little less than double the global per capita average, while emissions per unit of economic activity are more than double the global average. Most sources put South Africa's emissions of all GHG at between 1.1 and 1.2 per cent of the global total and rank the country as the twelfth largest emitter. SA's share of Africa's total emissions has declined from about 50 per cent to about 40 per cent since the turn of the century, for less than five per cent of the African population. The emission intensity of the South African economy is one of the highest globally.

Emissions growth leveled off from about 2007 onward, primarily as a result of a decline in electricity generation, which accounts for around 45 per cent of total national emissions, but a longer-term growth trend is expected to resume. The extent of the increase in emissions since 2012 is contested, with current emissions generally estimated to be around 550 Mt CO₂ per annum, although

electricity use has continued to show a slight decline and economic growth has been slow. National emissions are expected to reach 600 Mt in the early 2020s due to an increase in coal-fired power supply and planned economic growth, including rebuilding the manufacturing sector and strong growth in demand for liquid fuels. Eskom is building Medupi and Kusile, two of the world's largest super-critical power stations of about 4800 MW each, which will add almost 10 per cent (over 50 Mt per annum) to national emissions, of which the first units have come on-line. There is also a commitment to procure 2500 MW of independent coal-fired generation, although a recent court ruling setting aside an environmental impact assessment approval of a 1200 MW plant pending more rigorous assessment of climate impacts and project risks may derail this plan.

South Africa has developed a progressive profile in international climate change negotiations and developed a comprehensive national policy that was adopted prior to hosting COP17 of the UNFCCC at the end of 2011. However, subsequent elaboration of policy on mitigation has been resisted by calls for extensive macro-economic and socio-economic analysis and the Nationally Determined Contribution under the Paris Agreement sets out the same very broad range for anticipated emissions as the National Climate Change Response White Paper (NCCRP) promulgated in 2011. Neither is compatible with the global mitigation goal.

A case could be made that in the past five years South Africa has changed from a climate leader to a climate laggard. However, a more optimistic reading would be that progressive forces are biding their time, quietly entrenching the gains achieved, while resisting calls that have come from organized business and industry that the top of the range is too low and »unrealistic« – based on growth projections and cost assumptions that are increasingly outdated. Part of the shifting political landscape has seen a breakaway from the largest labor federation, COSATU, which remains allied to the ANC, resulting in a new federation established in April 2017 that may soon be equal in size to what remains of COSATU and includes many who have previously advanced the just transition agenda.

South Africa is not on schedule for the elaboration of climate change response policies and measures set out in the NCCRP. There has been substantial progress in

221. Dr. Tobias-Niemz et al. (2016), CSIR Energy Centre, Pretoria – work by the Council for Scientific and Industrial Research, a state agency, available at www.csir.co.za (last accessed: 3.10.2017) includes: »Comments on the Integrated Resource Plan 2016 Draft.«



the development of the National Adaptation Strategy, which is expected to be finalized in 2017. There has also been significant work in supporting provincial and local tiers of government to develop response strategies and to include climate resilience in integrated development planning.

South Africa's NDC

The NDC reflects South Africa's insistence that adaptation should be given equal weight in climate change response to mitigation and asserts that domestic spending on adaptation should be recognized as part of the national contribution to climate change response. The mitigation component consists of the portion of the 'Peak, Plateau and Decline (PD) Range' that is set out in the NCCRP (2011) covering the period 2025 to 2030 »in which emissions will be in a range between 398 and 614 Mt CO₂-eq.« Effectively this sets an upper bound on emissions, because there has been no analysis of the prospects of achieving the lower bound even well after 2030, despite submissions by civil society that the range does not go low enough in 2030 to be commensurate with the global mitigation goal. The NDC invokes unreferenced analysis by »South African experts« to assert that the mitigation commitment is fair and ambitious. It effectively claims the right, on the basis of national circumstances including low HDI, to a carbon budget that must assume enormous negative emissions being achieved by developed countries. An assessment by CAT²²² concludes: »The »inadequate« rating indicates that South Africa's commitment is not in line with interpretations of a »fair approach to reach a 2°C pathway.«

The NDC's commitment explicitly excluded extensive mitigation potential within the electricity supply system, which had been identified in previous studies. As with the NCCRP, the document was developed with stakeholder consultation, though such engagements have become less participatory or transparent than they were a decade ago and provide no assurance that civil society input will be accorded any weight. The most noticeable response to submissions was the removal of an explicit reference

to nuclear power under the itemized mitigation actions, which instead refers generically to decarbonization of the electricity supply. Government's position continues to be that the ambition of the commitment is a compromise between positions advanced by civil society and by organized business.

One statement in the mitigation section of the NDC may be helpful to avoid roll-back of provisions also contained in national policy: »The policy instruments under development include a carbon tax, desired emission reduction outcomes for sectors, company level carbon budgets, as well as regulatory standards and controls for specifically identified GHG pollutants and emitters.« The first two instruments are under threat through a proposal favored by organized business that envisages the carbon tax being translated into a compliance mechanism for carbon budgets. Although the NDC makes explicit reference to a just transition, it does not focus on vulnerable workers.

Just transition assessment (score of 14 – poor)

Climate ambition (very poor/poor)

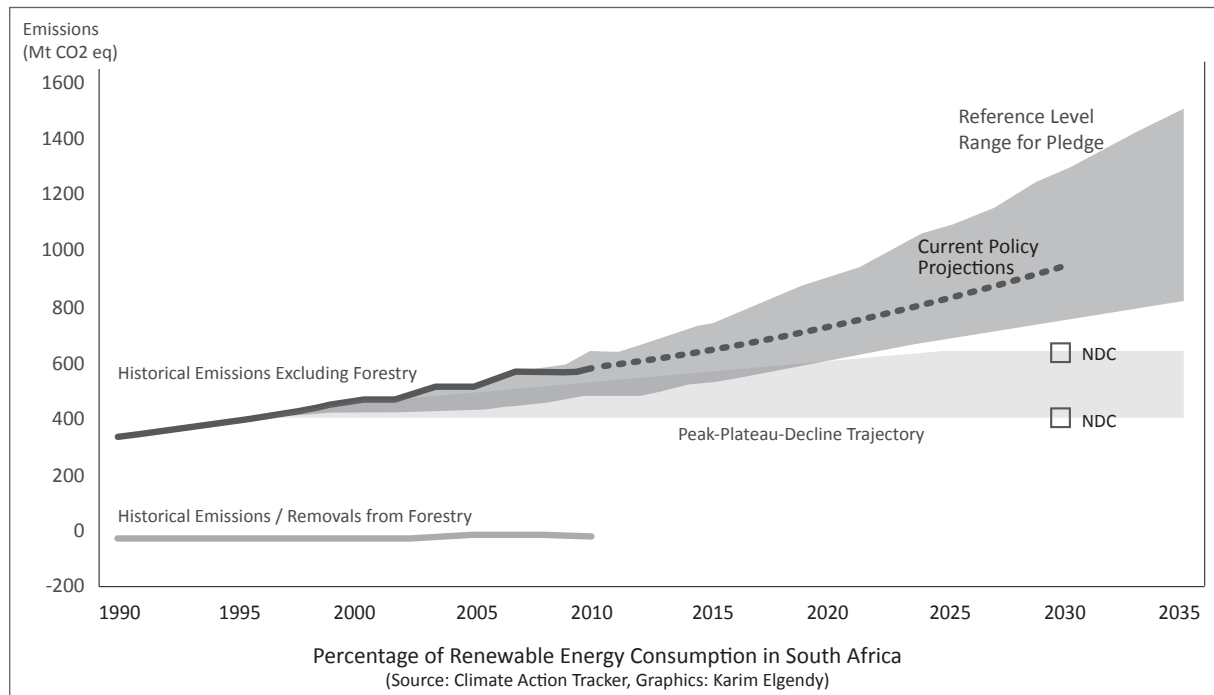
The low mitigation ambition of the NDC, rated »inadequate« by CAT, is compounded by an apparent denial of the full mitigation potential – the potential referred to in the NDC as identified is far less than the technically feasible potential.

The national share of global emissions is between 1.1 per cent and 1.2 per cent. The short-term trend is to stabilize emissions but this is not a result of climate change response and absolute growth is expected to resume, with a commitment for emissions to peak by 2025. Per capita emissions are almost double the global average. There is no Renewable Energy roadmap and targets were last set for the ten years to 2014; the Integrated Resource Plan 2010 for electricity supply does call for a growing share for renewable generation capacity by 2030, but at a level well below the national potential and there is no industrial strategy to optimize development and domestic benefits.

222. <http://climateactiontracker.org/countries/southafrica.html> (last accessed: 3.10.2017) shows in graphic form using a colour bar, with the yellow-to-green portion denoting emissions levels that would be consistent with and sufficient for a high probability of achieving the global goal, with emissions modelled from 2010):



Figure 24: Percentage of Renewable Energy Consumption in South Africa



NDC-SDG alignment (poor/medium)

The NDC lacks the necessary mitigation ambition to drive or guide an energy transition, but national planning and policy, as written, are well aligned with the SDGs and give consideration to co-benefits. There is a lack of implementation of the National Climate Change Response Policy (2011)²²³ and elaboration of mitigation provisions has been effectively stalled, although efforts continue at the part of the government lead agent – the Department of Environmental Affairs. South Africa’s solar and wind resources both exceed total national energy use and should be central to implementation of the SDGs, with particular relevance for water security; but their potential is not effectively recognized and there is a powerful lobby seeking to cast nuclear power in this role. There is still extensive »traditional« biomass use, much of which is not from sustainable production.

The NDC does not mention the SDGs per se and poverty and decent work feature more in the Context section than in the discussion of implementation. The international dimensions of equity are emphasized and inequal-

ity at the national level is invoked as an imperative that weighs against mitigation ambition, as well as in support of recognition for investments in adaptation.

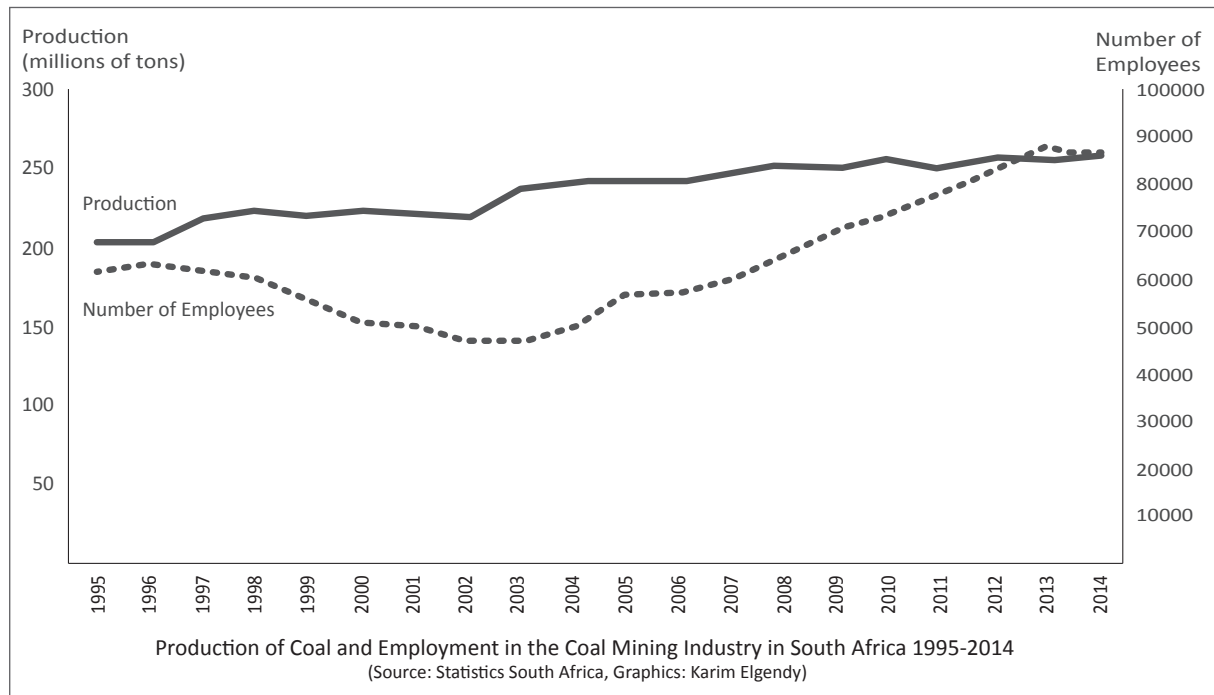
Decent work and vulnerability (medium)

South Africa receives the second highest rating – two out of five – in the ITUC Global Rights Index 2015; a poorer scoring than in 2014. There is no tracking of net job gains or losses related to energy transition, though recent job creation under the RE procurement program could soon be offset by retirement of some old coal-fired plants. The IRENA jobs dashboard dating from April 2016 shows 27,600 Renewable Energy jobs in South Africa. The labor-intensity of coal production has increased by more than 70 per cent since 2013, after a long period of decline. While there are government initiatives to develop skills in clean energy technologies, there is no national program for reskilling workers of carbon-intensive industries and no transition framework or dedicated effort to address the vulnerability of communities.

223. As detailed in: <http://resourceirena.irena.org/gateway/dashboard> (last accessed: 3.10.2017).



Figure 25: Production of Coal and Employment in the Coal Mining Industry of South Africa 1995 – 2014



About 85 per cent of people have access to the grid electricity, but high energy prices are a major challenge.²²⁴ Policy provides for a free »basic« allocation of 50 kWh per month for poor households, but even this meager provision is not implemented in all areas or by all electricity distributors. The government recently resumed a program to provide solar home systems in remote rural areas, with a target of 30,000 households per annum.

In the Climate Risk Index of Germanwatch (2017), South Africa is ranked at 33 for 2015 or seventh in the list of Africa’s ten most affected countries. In the Index for 1996–2015 the over-all ranking is 89, and 35 for financial losses. The NDC does not have a strong focus on risk per se, but it does address vulnerability and adaptation needs in some detail. Financial risks associated with on-going investment in coal are not recognized, while »... two new high-efficiency coal-fired power stations« are referred to as climate change mitigation, though there is no assurance that they will replace older, more carbon-intensive plants.

Social equity (poor)

The current national situation could be described as very poor, since inequality is generally assumed to have increased this century. However, there is some attention to addressing inequality by way of climate change response, as reflected in the NDC text: »...any policy-driven transition to a low carbon and climate resilient society must take into account and emphasize its overriding priority to address poverty and inequality.« However, addressing inequality is presented as a constraint on mitigation ambition, ignoring the benefits and avoided costs of limiting climate change impacts, such that the inadequate mitigation ambition of the NDC means that its net impact, despite provisions for adaptation, is likely to exacerbate poverty and inequality. The GINI index²²⁵ for 2013 is 62.5. The MDG Country Report for 2015 specifies a GINI coefficient of 0.69. NDP has set a target of reducing the GINI coefficient to 0.6 by 2030.

224. Sustainable Energy Africa (2014) Tackling Urban Energy Poverty In South Africa; Heinrich Böll Foundation.

225. See: <https://www.cia.gov/library/publications/resources/the-world-factbook/rankorder/2172rank.html> (last accessed: 3.10.2017).



Gender equality (poor/medium)

Overall policy efforts to address gender inequality would merit a medium to good rating, but when it comes to climate change responses gender is not taken into consideration. The UNDP's Gender Inequality Index²²⁶ gives a value for 2015 of 0.394 for SA, which is ranked 90th, compared to an HDI ranking of 119.²²⁷

Due participation (poor)

The NDC design process was not very participatory and did not include dialog with stakeholders on the challenges of a just transition. Extensive stakeholder input on the INDC had not impact on the mitigation ambition.

Good governance (poor)

If rated for developments following the adoption of the NDC, i.e. the immediate context, the rating would be very poor, particularly on account of corruption at state-owned enterprises and failure to honour commitments to RE procurement. However, governance efforts and the independence of the judiciary deserve recognition. The NDC does not contribute anything substantial to the prospects for greater transparency or accountability.

Human rights (poor/medium)

South Africa's human rights protection places some constraints on predatory practices among the elite, e.g. environmental management principles are respected by the courts. But the prospects for advancing human rights are currently deteriorating. In the Human Rights Risk Index of ReliefWeb²²⁸ South Africa is listed under High Risk.

Policy recommendations resulting from the just transition assessment

1. Renewed efforts are needed to counter those who portray climate change response as detrimental to »economic development«: Development planning needs to be liberated from the use of GDP as the primary indicator of economic success, because this does not properly address inequality. Monitoring progress toward fulfillment of the SDGs will have little traction unless the primacy of GDP is addressed. Equally, the idea that transition to a low-carbon economy has negative implications for the poor needs to be challenged. In fact it is the on-going concentration of wealth that makes a just treatment of workers impossible by exacerbating short-termism and self-interest. If justice is not a byproduct of business, the prospects for advancing justice within disruptive change appear even more remote, obscuring the potential synergies of an integrated climate change response.
2. Eskom needs to change from an obstacle to a driver of a just transition: The state-owned electricity company Eskom has been a major obstacle to a just transition, most notably in opposing Renewable Energy. Trade unions call for de-corporatization. This would be a reversal of the corporatization process of the last 20 years and would allow local government to regain control. Transmission and grid expansion planning should be in the public domain and under the control of a participatory democratic process. In other words, principles of energy democracy should be laid down. Declining costs of solar photovoltaic should benefit poor households.²²⁹
3. The mitigation provisions should be amended to be compatible with the goal of limiting global warming to 1.5°C.
4. The potential for electricity for transport energy and to displace fossil-based liquid fuels should be embraced in energy and infrastructure planning.

226. See: <http://hdr.undp.org/en/composite/GII> (last accessed: 3.10.2017).

227. A relatively high share of females in parliament somewhat off-sets a relatively high maternal mortality ratio.

228. See: http://reliefweb.int/sites/reliefweb.int/files/resources/2016_ITF_Human_Rights_Index_2016-01.pdf (last accessed: 3.10.2017).

229. DEA 2015: Aitken et al, Sustainability Of Decentralised Renewable Energy Systems, p. 74.



Tanzania

By Dr. Susanne Hildebrandt

Abstract

A Tanzanian version of »just transition« is not only from »brown to green«, but also from »poverty to life«, for humans and nature alike. A sustainable development model based on Renewable Energy would open the way for a virtuous circle for improving living conditions. The Tanzania Five Year Development Plan from 2012 recommends mitigation and adaptation measures. Tanzania's energy transition agenda comes in response to the severe climate change impacts on agriculture. Frequent and prolonged droughts have drastically reduced large-scale hydropower energy output since 1992. The national energy policy stresses the use of renewable and alternative energy sources. The use of alternative energy sources is also encouraged to offset the use of charcoal and firewood for cooking associated with deforestation.

Introduction

Tanzania is one of the world's poorest economies in terms of per capita income, and the vast majority of Tanzanians are rural poor. Given the substantial population growth of nearly three per cent per year, the number of poor has increased by 1.3 million (2013),²³⁰ in spite of high GDP growth rates of 6–7 per cent per year in the period 2009–15.²³¹

Shortly after achieving independence from British rule in 1961, the United Republic of Tanzania was founded in 1964. Tanzania is a presidential republic and was governed by one-party rule until 1992. Then political pluralism was enacted. The latest elections were held in October 2015. In 1997, Tanzania adopted a National Environmental Policy, followed in 2004 by the Environmental Management Act. Both seek to establish a framework on environmental issues guidelines in order to address climate change issues. The 2012 Long Term Perspective

Plan (LTPP) is designed to guide the implementation of the Tanzania Development Vision 2025 and strives to build a »roadmap to a middle income country«.²³²

Tanzania's sustainable development profile

The economy depends on agriculture, which accounts for over 25 per cent of GDP, provides 85 per cent of exports and employs about 80 per cent of the workforce. Tanzania has a dual agricultural economy: most producers are small farmers who cultivate rain-fed plots for subsistence and only five per cent are large-scale, export-oriented farms that produce cash crops. Nevertheless, Tanzania is considered to have a high potential for agriculture production that is underused.

The service sector, particularly tourism, accounts for 50 per cent of GDP. Other growth sectors are construction, manufacturing and mining. Although the poverty rate fell from 60 per cent in 2007 to an estimated 47 per cent in 2016, based on the USD 1.90 per day global poverty line, about twelve million Tanzanians still live in extreme poverty earning less than USD 0.60 per day.²³³ Many hover just above the poverty line and risk falling back into poverty in the event of socio-economic shocks. According to the 2014 National Nutrition Survey, stunting was found at 34.7 per cent at the national level. It reflects the existence of chronic malnutrition in the country.

Tanzania's 2015 HDI value is 0.531, which ranked the country in the low human development category at position 151 out of 188. The gradual improvement of HDI over the last 25 years reflects improvement in life expectancy, mainly by declining infant mortality and better education. The years of primary school enrolment has been increasing, but the quality of the education system is low.

Achievements of MDGs

Tanzania has made progress and is on track to achieving the MDGs related to primary education, gender equality, some targets on combating the spread of HIV and AIDS

230. Scaling-up Renewable Energy programme SREP, Investment Plan for Tanzania, United Republic of Tanzania, Ministry of Energy and Minerals, May 2013.

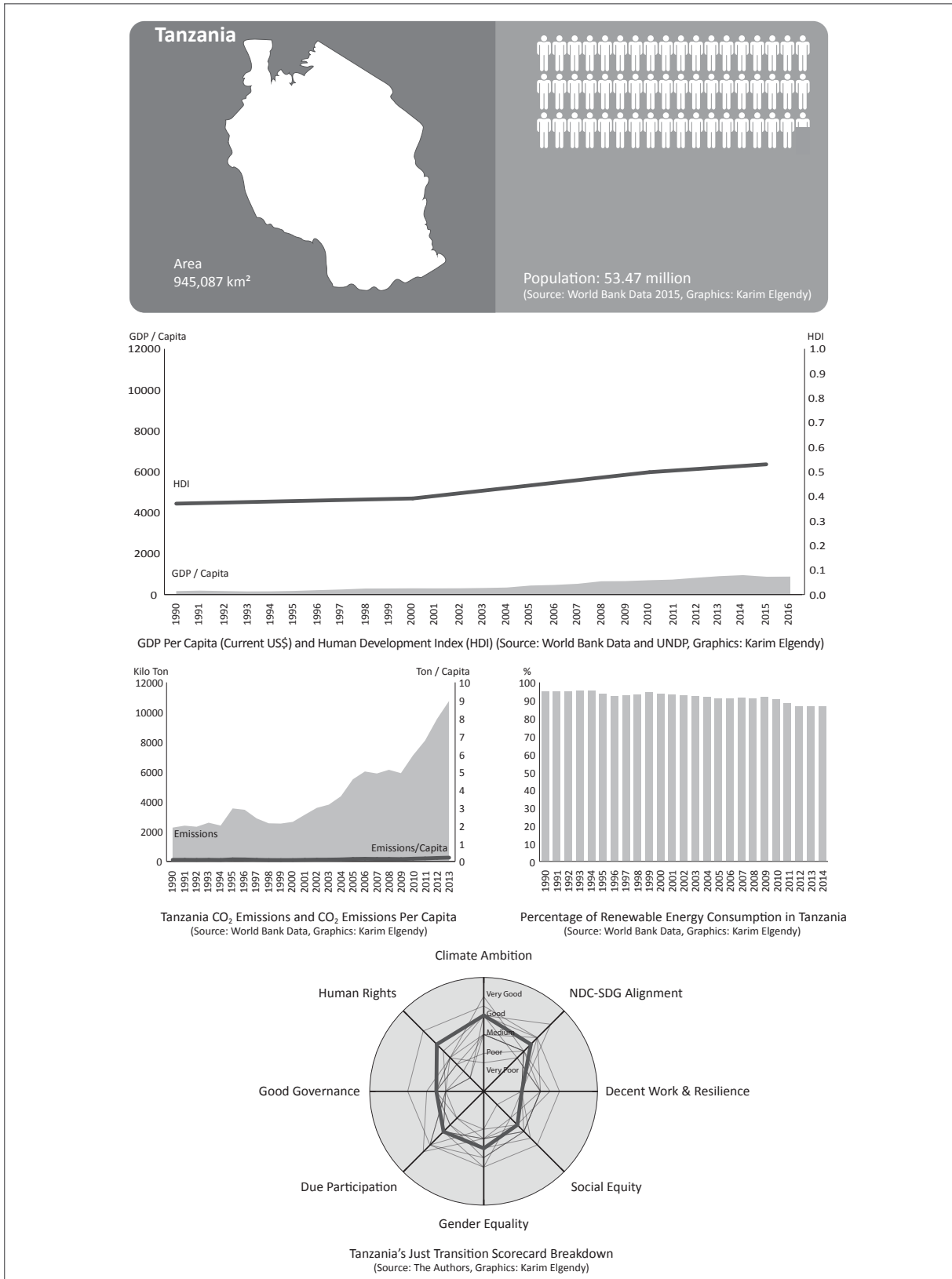
231. <http://data.worldbank.org/country/tanzania> (last accessed: 3.10.2017).

232. <http://www.lse.ac.uk/GranthamInstitute/> (last accessed: 3.10.2017).

233. See: <http://www.worldbank.org/en/country/tanzania/overview> (last accessed: 3.10.2017).



Figure 26: Tanzania's Just Transition Scorecard Breakdown





and a few indicators under the environmental sustainability goal. However, the country is lagging behind on many other indicators: extreme poverty and hunger is still a major concern (MDG1), maternal health is poor (MDG5) and aid transparency and accountability is lacking (MDG8). The key policy challenge that remains is how to make growth pro-poor, to improve education, to reduce corruption and to boost off-grid Renewable Energy solutions in order to eradicate extreme poverty and hunger. The fact that the vast majority of the poor are dependent on agriculture for their livelihoods means that a meaningful reduction in poverty requires reinvigorated attention to agriculture. Although considerable gains have been achieved in health and education, more investments are needed to enhance quality. The country should develop the capacity for local expertise in technical and managerial competence. Government spending needs are likely to expand further. Scaled up aid should be matched with evidence of effective and accountable use of aid and the capacity to raise domestic resource generation and mobilization.

Outlook on Sustainable Development Goals

The most important SDGs that still await realization are: SDG 1, eliminating poverty, SDG 2, zero hunger, and SDG 3, health and well-being. These goals cannot be achieved without SDG 7, affordable and clean energy, and SDG 13, climate action. Tanzania is on the right track with its Scaling Up Renewable Energy Program (SREP), which focuses on Renewable Energy and includes the target of providing access to electricity to 70 per cent of population. This achievement is a precondition for reducing deforestation, exacerbating adverse climate change, which is also at the origin of poor agriculture productivity and hunger.

Alignment of climate policies with sustainable development policies

Since the Rio Conference in 1992, the United Republic of Tanzania has made progress in various areas to ensure that the country follows sustainable development pathways.²³⁴ Tanzania has adopted the UN 2015 Sustainable

Development Goals, making commitments to eliminate hunger and malnutrition by 2030. These include the formulation and implementation of the national environmental policies (1994, 1997, 2004). Tanzania's development vision integrates environmental and sustainable development issues: the long-term development targets and goals, as well as MEAs, have been translated into strategies such as the National Strategy for Growth and Reduction of Poverty (NSGRP) I and II. But the achievement of such efforts has been constrained by a variety of factors, including, among others, inadequate environmental management awareness among stakeholders, insufficient resources as well as a lack of alternative sources of energy to reduce dependency on forest resources as the main source of energy, and inadequate awareness of sustainable agriculture and livestock keeping practices. Awareness rising among the local communities regarding environmental management is thus of crucial importance.

Energy and climate policy

Tanzania's electricity sector has been heavily dependent on hydropower energy which cannot be generated in times of drought. The effects of droughts in several years from 1992 onward have reduced reserve capacity and increased the costs of power production. Total electricity production of 6219 GWh is very low and per capita electricity consumption of 0,1 MWh is negligible. Total primary energy consumption in Tanzania is 0,45 tons of oil equivalent (toe) per capita, one of the lowest in the world and only two-third of the average consumption of developing countries in Sub-Saharan Africa. The residential sector accounts for most of the energy used, the vast majority of which consists of biofuels and agricultural waste; 80 per cent of the biomass used in the residential sector is for cooking, as a main source of emissions and deforestation.²³⁵ Only about 24 per cent of the country's population has access to grid electricity. But regional distribution is extremely heterogeneous with 71 per cent of urban population and only four per cent of rural population having access to electricity.²³⁶ Some people obtain access through stand-alone solar photovoltaic systems

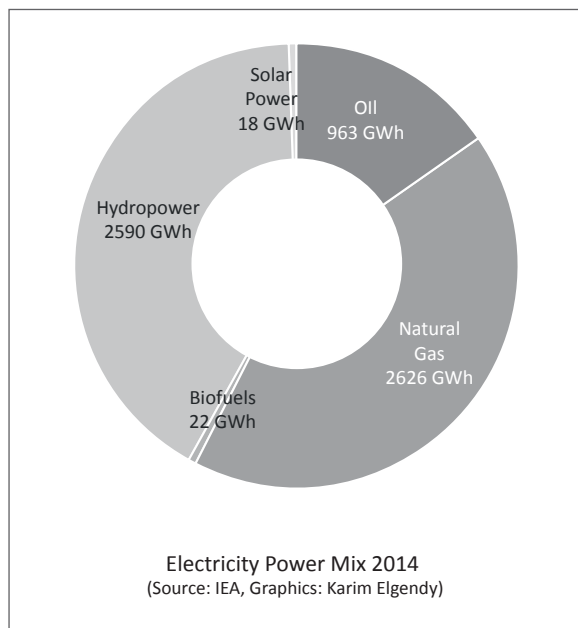
234. See: <https://sustainabledevelopment.un.org/content/documents/980tanzania.pdf> (last accessed: 3.10.2017).

235. SREP, p. 26.

236. CIA World Fact Book Tanzania 2014.



Figure 27: Electricity Power Mix



and mini-hydro grids operated by NGOs.²³⁷ Electricity consumption is as low as 77.85 kWh per capita.²³⁸

The country's installed electricity generation capacity is 1.564 MW (2013).²³⁹ Diversification of generation sources is essential to avoid the risk of supply disruptions and price increases, particularly in the face of increasingly unpredictable hydroelectric power resulting from changing weather patterns. Large hydropower as a share of total capacity declined by nearly two-thirds (from 98 to 40 per cent), and now stands at 35 per cent of available capacity.

Tanzania has abundant renewable resources, which are largely untapped. Currently, the country's total generation capacity from Renewable Energy (excluding large hydro) is about 4.9 per cent. The government expects this share of the electricity mix to increase to 14 per cent.²⁴⁰ Tanzania has significant geothermal potential, mainly hot springs, that are not yet fully quantified. Several areas of Tanzania are known to have promising wind resources. A wind resource assessment is under way. Tanzania has high potentials for solar energy. To date there exist off-

grid solar photovoltaic with about 6 MW of PV that has been installed countrywide. The potential for grid-tied solar in 2025 could be around 800 MW. The Power System Master Plan (PSMP) envisages 120 MW of solar in the power expansion plan by 2016. So far, biomass is Tanzania's single largest energy source with residues amounting to 15 million tons per year.

As result of climate change, Tanzania has witnessed increasingly unreliable rainfall patterns and more frequent and prolonged droughts, which, in turn, have paralyzed the country's power sector due to its heavy dependency on hydropower. This situation has induced power crises and increased dependency on expensive, environmentally polluting fossil fuels, which have to be imported. These experiences provide a strong impetus to diversify the energy mix to attain a more robust, resilient energy supply that is less subject to oil price shocks. Tanzania has enacted a number of policies and legislative acts that either directly address climate change issues or indirectly support these objectives through environmental conservation in the related areas of alternative energy, protection of forest lands and disaster response. The country's approach to climate change runs parallel to its goals of social and economic development. The government envisages future economic development as dependent on how the country responds to climate change challenges, as well as its institutional capacity to implement climate change sectorial and cross-sectorial activities. The limited institutional and technical capacity has a significant impact on the ability to mobilize climate funding.

The Government of Tanzania has decided that the Scaling-up Renewable Energy Program (SREP) will focus on geothermal and solar/wind energy development. The total estimated project cost is about US\$183 million, of which US\$25 million is sought from the SREP, \$50 million from the WB, and about \$47 million from other development partners. With regard to government spending in Renewable Energy sources, there is only an indicative Financing Plan.²⁴¹

237. SREP, p. 27.

238. World Bank data 2010.

239. SREP, p. 27.

240. MEM, Medium Term Strategic Plan (2012-16), December 2011.

241. SREP, p. 77, Table 9 SREP Indicative Financing Plan.



Tanzania's Nationally Determined Contribution (NDC)

Tanzania submitted its INDC²⁴² in September 2015. It acknowledged that the country is already experiencing adverse impacts of climate change even though it has negligible emissions of GHG. Climate change projections in Tanzania point to a consistent change in key climate variables. Therefore, Tanzania will embark on a climate resilient development pathway. Major intended contributions to adaptation and mitigation are, among others:

- Enhancing carbon sinks through forest conservation, afforestation and reforestation;
- Embarking on enhanced use of natural gas with 53.28 trillion cubic feet discovered reserves;
- Expanding the use of Renewable Energy sources such as geothermal (with a potential of five GW), solar, hydro (with a potential of 4.7 GW) and wind;
- Enhancing waste-to-energy approaches, waste recycling and re-use;
- Reducing GHG ten to 20 per cent by 2030 relative to the BAU scenario of 138–153 Mt CO₂e;
- Prioritizing the following adaptation sectors: Agriculture, livestock, coastal and marine environment, fisheries, water, forestry, health, tourism, settlement and energy;
- Enhancing stakeholder participation: The INDC was prepared in a consultative and inclusive manner through technical and policy dialog; and
- Ensuring that the climate resilient development pathway is »poor-friendly« – e.g. achieving increased yields through climate-smart agriculture will help to reduce poverty and malnutrition, and promoting rural electrification will improve rural living-conditions.

Just transition assessment (score of 27 – medium)

Climate ambition (good)

There is no rating by any international climate change index for Tanzania. The country's GHG emissions are very low but have been increasing since 1990. GHG emissions in Tanzania are primarily from the land-use change and forestry (LUCF) and agriculture sectors, whereas emissions from waste and industrial processes are negligible.

242. Intended Nationally determined contributions, United Republic of Tanzania, p. 7, Fig. 1: Projected emission reduction from BAU3 with low and high ambition by 2030.

In Tanzania forested land covers 37.3 per cent of total surface, but deforestation rates are considered quite high.

Tanzania released a National Climate Change Strategy in 2012, to address both adaptation and mitigation. The focus is on improving energy availability to reduce deforestation by developing Renewable Energy sources such as geothermal, solar and wind. Tanzania's ability to address the current and projected impacts of climate change is strongly hindered by a number of non-climate-related factors such as poverty, inadequate institutional arrangements and a lack of sufficient human resources and technological capacities. Addressing climate change in Tanzania will largely depend on financial support from the international community.²⁴³

NDC-SDG alignment²⁴⁴ (medium/good)

Tanzania has put in place a well-articulated and high-quality policy framework for climate resilient agriculture. Agriculture is also included in the country's NDC. In fact, small-scale farmers are at the center of Tanzania's climate change adaptation policies. Some contradictions between NDC and the SDGs are apparent: National shortcomings such as the lack of professionalism and probity of the administration, poor budgetary planning and implementation, the absence of monitoring and evaluation and top-down government-donor policymaking based on a modernization concept for agriculture. There are important reasons to believe that the deterioration of Tanzania's food security over the past decades has been, at least in part, self-inflicted. Some of the policy implementation measures not only fail to address the needs of the small-scale and women farmers, but are also even making their situation worse.

Decent work and vulnerability focus (poor)

Although Tanzania's labor code is in line with ILO norms,²⁴⁵ the state's ability to ensure labor law compliance is limited. The ITUC Global Rights Index rates Tan-

243. SREP 2013.

244. Tanzania FNS CCR Policy Analysis.

245. National Employment Policy 2008, Ministry of Employment, Labour and Youth Development, United Republic of Tanzania.



zania with a score of three among the countries with regular violations of workers' rights. With 80 per cent of the workforce being self-employed in subsistence agriculture, working and living conditions depend crucially on environmental and climatic conditions. Although the Climate Risk Index²⁴⁶ ranks Tanzania in the group of countries that are less affected by extreme weather events, it is undeniable that the long-term decline in precipitation, together with anthropogenic deforestation, make the country especially vulnerable to the adverse effects of climate change, with consequences for food security. Climate risks are at the core of the NDC, one of its main strategies being to promote clean technologies for power generation and (rural) electrification.²⁴⁷

Social equity (poor/medium)

Given that the overwhelming majority of Tanzania's population derives its livelihood from agriculture and poverty is predominantly rural, the importance of agriculture policy is paramount for social equity. Unfortunately, we find that agricultural policies follow a traditional »green revolution« top-down, capital-intensive approach that privileges the interests of (foreign) big private investors and local elites. The GINI Index of 37.78 for 2011 places the country a middle position with regard to inequity, but the proportion of the population below the poverty line of 67.9 per cent illustrates the extent of poverty.²⁴⁸ Government investment in high-cost, capital-intensive geothermal energy production may come at the expense of agriculture and the poor.

Gender equity (medium)

Tanzania is adhering to all relevant global and regional gender commitment policies. However, implementation poses the main challenge. Here again, the situation of women as the agricultural workforce is decisive. We cannot fail to note with regret that almost no significant gender-specific policies are being promoted by the government to facilitate women's access to land, household income, credit or legal advice. Customary laws and tribal

246. Global Climate Risk Index 2017, Germanwatch.

247. According to the Multidimensional Energy Poverty Index (MEPI) classification, Tanzania's energy-deficiency score is 0,84 suggesting a large majority of the population is energy poor, SREP 2015.

248. CIA World Fact book Tanzania.

norms only serve to confirm the overall anti-women bias as shown by Tanzania's ranking in the Gender Inequality Index of 125 out of 143 countries with a score of 0,547. Some progress has been made, however, with a good score for school life expectancy of eight years for both sexes in 2013.²⁴⁹

Due participation (medium)

According to CSOs as well as official documents,²⁵⁰ the NDC was prepared in a consultative and inclusive manner. Broad-based national and sub-national consultative workshops with stakeholders were held with CSOs academic and research institutions and representatives from the private sector and government during the process. However, despite official commitments to enhance the inclusiveness of policymaking, in practice the participation of the CSOs in policy processes is often inconsistent. In particular, local communities are often underrepresented in the decision-making processes.

Good governance (poor/medium)

Tanzania ranked 116th out of 176 countries in the Transparency International Corruption Perception Index (CPI) in 2016. According to SREP, Tanzania plans to define and implement a monitoring and evaluation system for energy transition programs. In the past, however, there have been complaints about a general lack of financial transparency at the local level in Tanzania.²⁵¹ The situation seems to be more promising with regard to the Renewable Energy focus of SREP.

Human rights (medium/good)

Tanzania has ratified all important international human rights treaties.²⁵² The country is not listed in the Human Rights Risk Index 2016. However, the UNCCPR 2009²⁵³ enumerates human rights concerns, among them

249. CIA World Fact book Tanzania.

250. SREP 2013.

251. In late 2014, a highly-publicized scandal in the energy sector involving senior Tanzanian officials resulted in international donors freezing nearly USD 500 million in direct budget support for the government.

252. See: www.hrw.org/world-report/2016 (last accessed: 3.10.2017).

253. UN International Covenant on Civil and Political Rights.



violence against women, genital mutilation, human trafficking, sexual exploitation of woman and children and customary attitudes detrimental to women's rights, as well as ethnical minority land rights and intimidation of journalists. A human rights impact assessment is not part of the NDC.

Policy recommendations resulting from the just transition assessment

Over the past 40 years, the living conditions of the majority of the population have not improved or have even worsened, among other things due to the adverse effects of climate change on agriculture. However, the country has never experienced a period of industrialization based on fossil energy and therefore could leapfrog to a low and ultimately zero carbon future. The NDC targets seem to be well adapted to addressing these problems. Nevertheless, there are several constraints on RE development, such as inadequate data and unavailable power planning tools and methods, limited expertise in undertaking feasibility studies, a lack of quality information and technical know-how and a lack of finance for RE projects with high capital costs.

The success of energy transition depends on circumventing these constraints in an unconventional manner. The Government of Tanzania decided to focus on three priority choices: geothermal power development, Renewable Energy for rural electrification (RERE) and alternative biomass supply. Geothermal is a typical high-capital-cost project with corresponding high financial risk. In contrast, off-grid solar electricity, and especially solar cookers, are by their very nature decentralized and are easily adaptable to local use and control with minimal financial input.²⁵⁴ Building on these conclusions, it is recommended:

1. To exit the growth-cum-debt logic and reduce external debt: Renewable energy projects should be supported by providing concessional financial conditions adapted to the contractor's ability.
2. To develop a comprehensive and durable domestic policy framework for a just energy transition: Existing energy policies should be reviewed and reformed with the aim of providing access to sustainable Renewable

Energy for all, ensuring multi-stakeholder participation, strengthening the role of local governments in implementation and advancing financial instruments.

3. To make a strategic use of the transformative potential of off-grid Renewable Energy solutions to propel local economic development, job creation, thereby reducing dependence from imported fuels and strengthening value chains in rural areas.
4. To endorse and work toward the implementation of the Climate Vulnerable Forum's vision of 100 per cent Renewable Energy for all and combine it with regional cooperation opportunities under the African Renewable Energy Initiative (AREI), with special attention to rural areas that lack access to energy and suffer from poverty, building on enhanced multi-stakeholder cooperation and public private partnerships at the local, regional and national levels.

²⁵⁴ For information on solar cookers <https://www.teog.ngo/energie/>.



Mexico

By Daniela Gavaldón Eichelmann

Abstract

Since 2012 Mexico has been building an ambitious legal and institutional framework regarding climate change. Prior to the Paris Agreement and its NDC, Mexico approved a General Climate Change Law, created a Climate Change Fund, established a Long-term Climate Change Strategy and installed the National System for Climate Change. Nevertheless, the litmus test for Mexico's climate change action is implementation. Also, the continuity of the country's climate plan depends heavily on the political will of the current administration.

Introduction

Mexico is a leading economy in Latin America, but is economically highly dependent on the United States. Following trade liberalization via NAFTA in 1994,²⁵⁵ Mexico has become the United States' second-largest export market and third-largest source of imports. The global financial crisis in late 2008 caused a severe economic downturn in Mexico, although growth resumed quickly in 2010. Ongoing economic and social concerns include low real wages, high underemployment, inequitable income distribution and few opportunities for advancement for the largely indigenous population in the impoverished southern states. Since 2007, Mexico's powerful drug-trafficking organizations have engaged in bloody feuding, resulting in approximately 100,000 drug-related homicides. After 70 years of one-party rule, elections held in 2000 marked the first time since the 1910 Mexican Revolution that an opposition candidate – Vicente Fox of the National Action Party (PAN) – defeated the party in government, the Institutional Revolutionary Party (PRI). Mexico is a presidential republic with regular elections, but the rule of law is not guaranteed. Severe human rights violations, *desaparecidos* and *impunidad* are a major concern. Population growth is of 1.15 per cent in 2016²⁵⁶ which means that Mexican population has doubled in the last 40 years. Overpopulation is a

255. NAFTA North Atlantic Free Trade Agreement.

256. That is, a fertility rate of 2.25 children per woman.

structural reason for a variety of social, economic and ecological problems. Mexico is extremely vulnerable to climate change and has witnessed atypical heat waves, prolonged drought, devastating precipitations and tropical hurricanes, as well as water scarcity in the last 30 years.

Mexico's Sustainable Development Profile

Mexico's GDP in 2015 was USD 1.44 trillion. Meanwhile, the average GDP for the G20 countries was over three trillion US dollars in the same year,²⁵⁷ placing Mexico in 14th place on the list. Mexico's share of global GDP in that year was 1.9 per cent.²⁵⁸ The average GDP per capita of G20 members was reported in the World Bank database for 2015 as USD 25,000 per year, whereas Mexico's GDP per capita was USD 9,005, or less than one quarter of the highest GDP (Australia and the United States), ranking Mexico in 15th place on the list.

The proportion of the population living below poverty line is 54 per cent, so that poverty afflicts 64 million people. Because of its gender bias, women are more vulnerable to poverty. One major reason for this is that women earn on average less than half of their male counterparts, which is reflected in the gross national income (GNI) per capita by gender.²⁵⁹

Structural heterogeneity is reflected in the abysmal gap between high-income and low-income groups among the Mexican population and in the striking contrast between a relatively high per capita GDP of USD 9,005 and a surprisingly low HDI of 0.762.

As seen with the poverty rates and the per capita GNI, women in Mexico have the lowest Human Development Index. This also reflects the fact that gender equality still does not exist among Mexico's population.

Currently, Mexico is plagued by problems of malnutrition, anemia, overweight and obesity. At least ten per cent of the total population suffers from inadequate food access,

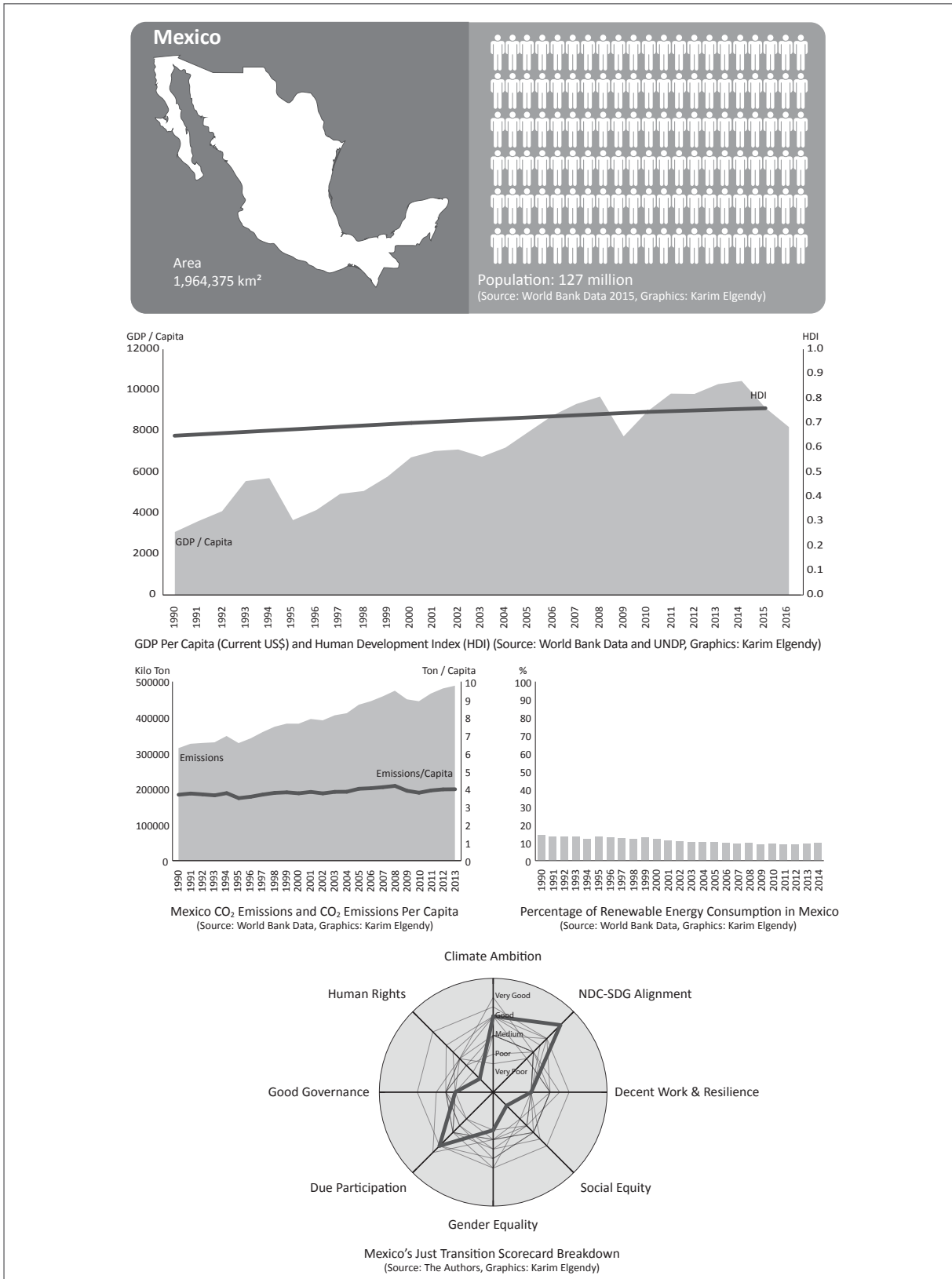
257. See: <http://www.worldbank.org/en/country/mexico> (last accessed: 3.10.2017).

258. German Watch Climate Change Performance Index 2015; available at: <http://germanwatch.org/en/download/10407.pdf> (last accessed: 3.10.2017).

259. World Bank (2016), IMF (2016) and United Nations Statistical Division (2016a).



Figure 28: Mexico's Just Transition Scorecard Breakdown





with malnutrition reaching between 25 and 35 per cent in the southern states. In addition, one in four children is overweight or obese, and that number increases to one in three for teenagers. Nationally, over 65 per cent of the adult population is overweight or obese.

The main strategies of the National Development Plan have many points of convergence with the SDG's (SDG 1: No poverty, SDG 2: Zero hunger, SDG 3: Health and well-being, SDG 4: Quality education, SDG 5: Gender equality, SDG 7: Affordable and clean energy, SDG 8: Decent work and economic growth, SDG 9: Industry, innovation and infrastructure, SDG 10: Reduce inequalities, SDG 16: Peace, justice and strong institutions, SDG 17: Partnerships for the goals).

Energy and climate policy

Mexico has established a strong framework for climate action. Since 2000 it has published three National Strategies on Climate Change and nine years later adopted its first Special Program on Climate Change. In 2012, the Congress approved the General Law on Climate Change, which makes Mexico the first developing country to have this type of law.

Mexico belongs to the group of moderate performers according to the Climate Change Performance Index. It was ranked in 28th position in the 2017 report, compared to the 26th position in 2016. In the past year, emissions have been diminished, but Renewable Energy performance was low.²⁶⁰ According to the IEA, Mexico's CO₂ emissions in 2016 were 3.95 tons of CO₂ per capita, which is less than the G20 average. Unfortunately, Mexico's emission trend is unfavorable.

The IEA report for 2014 showed the Mexican TPES were 188 million toe. The share of coal was 6.7 per cent, while renewables, considering hydro, geothermal, solar, biofuels, wind and others, accounted for 8.5 per cent.

In 2016, according to World Bank data, almost everybody in Mexico (99.2 per cent) had access to electricity;²⁶¹ but

the electricity supply is unreliable and not affordable for all. Alternative research data²⁶² show that 36.7 per cent of Mexican households are in a situation of energy poverty. As a result, the development strategies, being based on poor information, have not yet prioritized energy poverty in the country.

In 2013, per capita electricity consumption was 2.057 kWh. Consumption patterns are distributed unequally among Mexico's population, and industry accounts for over 56 per cent of final electricity consumption.²⁶³

Mexico's Renewable Energy performance is rather poor, which stands in contrast with the huge but underused potential. In 2014, Mexico's energy mix was still dominated by oil and natural gas.²⁶⁴

According to IRENA, Mexico has only established a target for electricity generation with renewables, which does not take into account total primary and final energy supply, transport, heating and cooling. This shows that the country's ambition for transitioning to renewables remains low. In this regard, Mexico's current administration has now set targets for electricity generation with clean energy sources (including nuclear) for the next 33 years. The objective is to achieve 35 per cent clean energy already by 2024, 37.7 per cent by 2030, and 50 per cent by 2050.²⁶⁵ The table below shows the share of renewables, classified by technologies, in 2016 for the electricity sector. Achieving this target will help to reduce CO₂ emissions from the energy sector.

Mexico's Renewable Energy potential is still severely underused. Nevertheless, Mexico's Energy Ministry (*Secretaría de Energía SENER*) established a Renewable Energy Roadmap 2030, which aims at significantly increasing the RE share in total final energy consumption. The most significant growth is projected for solar and wind, although biomass will prevail as the largest source of Renewable Energy.

260. Climate Change Performance Index. Results 2017. Available at: <https://germanwatch.org/en/download/16484.pdf> (last accessed: 3.10.2017).

261. See. <http://datos.bancomundial.org/indicador/EG.ELC.ACCS.ZS?view=map> (last accessed: 3.10.2017).

262. *Economía Sociedad y Territorio*, »Spatial characterization of fuel poverty in Mexico« by Dr. Rigoberto García Ochoa and Dr. Boris Graizbord, researchers at Colegio de México.

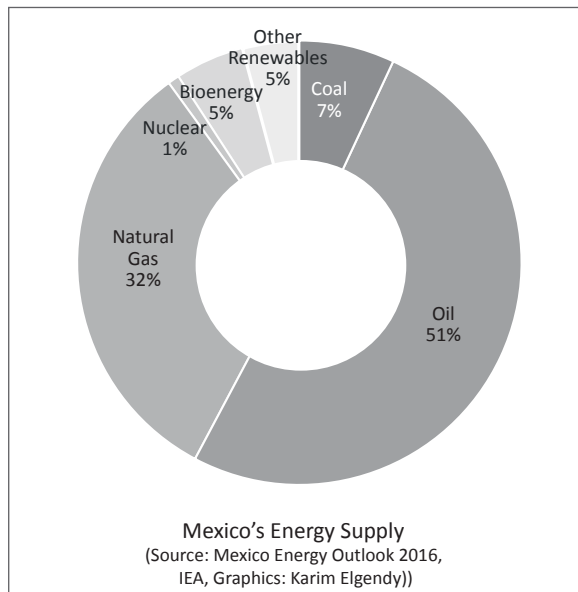
263. Mexico Energy Outlook 2016, International Energy Agency; available at: <https://www.iea.org/publications/freepublications/publication/MexicoEnergyOutlook.pdf> (last accessed: 3.10.2017).

264. International Energy Agency, 2014.

265. Executive summary of the Energy Reform. Mexico's Energy Secretariat.



Figure 29: Mexico's Energy Supply



Mexico has enacted several laws such as the General Law on Climate Change, Energy Reform, Electricity Industry Law, Geothermal Energy Law and Renewable Energy Law within the Climate Policy and Renewable Energy Framework. Suitable institutions have been created, such as the Climate Change Council (C3), the Inter-Ministerial Commission on Climate Change and others, which are responsible for implementation.²⁶⁶

Investments in Renewable Energy sources have been rather disappointing in the last two years. In 2015, the investment was around USD 600 million. By 2016, investment had even decreased by 73 per cent, which represents a major setback.²⁶⁷ As an oil-producing country, which is ranked in the sixth position worldwide, Mexico has always subsidized fossil fuels since the early development of the industry. This pro-fossil bias has ignited distributional conflicts and has had environmental costs. Among others, fiscal spending on fossil subsidies has crowded out alternative expenditures with higher social returns. In 2015, fiscal costs for fossil subsidies amounted to 0.6 per cent of government spending or 0.2 per cent of GDP. Total fossil fuel subsidies amounted to USD five

266. National Climate Change Strategy: Mexico; available at: https://www.transparency-partnership.net/sites/default/files/encc_englishversion.pdf (last accessed: 3.10.2017).

267. Global trends in Renewable Energy investment 2017. UN Environment and Bloomberg New Energy Finance.

billion in 2014, making Mexico's subsidy bill the 24th highest in the world in absolute terms.²⁶⁸

Due to the unexploited Renewable Energy capacity in Mexico, the number of jobs in this sector is still low. By 2017, PEMEX had over 116,601 employees and CFE (*Regulatory Commission of Electricity*) 72,154. This represents a total of 188,755 jobs in the fossil fuel and energy sector, compared to the 45,500 jobs in the Renewable Energy sector.

Mexico's NDC

Mexico has shown itself to be a very committed country, addressing climate change at international negotiations. Prior to the NDC, Mexico had already established various policies at national level. This high level of awareness is a consequence of Mexico's extraordinary high vulnerability to the adverse effects of climate change. Since 2000, three National Strategies on Climate Change have been published, in 2009 a Special Program on Climate Change was adopted and in 2012 the Mexican Congress approved the General Law on Climate Change. In addition, the country has established other policy instruments, such as carbon taxing, the National Emission Reduction Registry and the energy reform. This robust framework supports Mexico's NDC.

The country's commitments include reducing all GHG emissions, but the reduction targets refer to BAU scenarios. All climate change related policies include a cross-cutting human rights and gender perspective. The mitigation and adaptation strategies include conditional and unconditional measures. Unconditional reduction measures will be self-financed, and Mexico is committed to reducing GHG and short-lived climate pollutants (SLCPs) emissions by 25 per cent by 2030. However, before the absolute reduction begins, a net emissions peak is forecasted for 2026, with a subsequently decoupling of GHG emissions from economic growth, which means a reduction of emissions intensity per GDP unit of around 40 per cent by 2030. Conditional emission reduction is dependent on international financial support. If finance is provided, Mexico would increase its ambition to 40 per cent GHG and SLCPs emissions reduction compared to BAU.

268. Fossil Fuel Subsidy Reform in Mexico and Indonesia. By IEA.



Mexico's NDC has spelled out adaptation measures in three areas: in the social sector, in terms of ecosystem-based adaptation and by strengthening the resilience of strategic infrastructure and productive systems. Regarding the social sector, the focus is on eradicating poverty and resilience building for the most vulnerable groups. Ecosystem-based adaptation means conserving and protecting the diversity of ecosystems. Regarding strategic infrastructure and productive systems, the focus is on enhancing productivity and competitiveness, building on environmentally sound technologies. Unfortunately, concrete plans for the implementation of these measures are lacking.

Mexico's National Long-term Climate Change Strategy

In 2013, Mexico issued a National Climate Change Strategy that is based on the legal framework established by the General Law of Climate Change. Its ten guiding principles include, among others, sustainability, the precautionary principle, responsible production and consumption patterns, citizenship participation and transparency, environmental liability and access to information and justice.

Similar to the NDC, the National Climate Change Strategy does not formulate concrete short-term actions or establish institutional responsibility. The special Climate Change Program defines in six-year-terms detailed actions, objectives and the responsibilities for every actor.

Just transition assessment (score of 27 – medium)

Climate ambition (good)

Mexico has shown itself to be very ambitious regarding climate change policies and political efforts. Since 2000, the country's legislative branch has established several plans and laws to tackle climate change as an important national issue.

Mexico's rating in the CCPI this year was 28th, which places it in sixth position among the G20 countries. The level of ambition of both its NDC and LTS is good, although the implementation process is not yet especially clear. In none of the documents it is specified how the

country is going to achieve a 50 per cent reduction in emissions by 2050, especially since the trend for CO₂ emissions has shown an increase in the last years. Nevertheless, Mexico's share of global GHG emissions is still low at 1.35 per cent. In the Renewable Energy field the country has had a poor performance. This is expected to improve once the energy reform, approved in 2013, begins to show tangible effects.

NDC- SDG alignment (very good)

Mexico exhibits a high level of NDC-SDG alignment with common priorities. The MDGs, NDC, LTS, National Development Plan, General Climate Change Law and the National Climate Change Strategies all mention explicitly or implicitly all selected SDGs for this analysis: SDG 1 (Poverty reduction), SDG 2 (Overcoming hunger), SDG 6 (Access to water), SDG 7 (Access to affordable and sustainable energy), SDG 8 (Decent work), SDG 9 (Resilient infrastructure), and SDG 12 (Sustainable production and consumption). Both the NDC and the LTS have a mitigation and adaptation orientation that includes as a priority a just transition, without using the term explicitly. The implementation of both of these commitments could have a tangible positive impact on SDG achievement.

Decent work and resilience (poor)

According to the National Institute for Geography and Statistics (INEGI), 60 per cent of the population of a productive age has a job. On the other hand, nearly 58 per cent of the workforce is employed in the informal sector, which means that these workers do not necessarily have regular working conditions. Since the formal labor market is far from providing the required number of jobs, jobseekers join the informal labor market. Unemployment insurance or any other social safety net is non-existent and retirement schemes are rudimentary. Only 9.4 per cent of workers have higher education and they earn 34.4 Mexican Pesos on average, which is the equivalent of USD 1.7 per hour.²⁶⁹ The IUC Global Rights Index 2016 rated Mexico at level four out of five with systematic violations of workers' rights. The government and companies often collaborate in silencing the collec-

269. INEGI (National Institute for Geography and statistics); available at: <http://www3.inegi.org.mx/sistemas/temas/default.aspx?s=est&c=25433&t=1> (last accessed: 3.10.2017).



tive voice of workers, and fundamental rights are severely threatened.²⁷⁰

Social equity (very poor)

Inequality is one of the most serious issues in Mexico. The country belongs to the group of nations with the highest levels of inequality. This is illustrated by the fact that one per cent of the population receives 21 per cent of the total national income. Just four Mexicans account for 9.5 per cent of GDP. Inequality begins with education, which exhibits a huge difference between private and public schools. Public schools educate almost 91 per cent of pupils, but they are poorly equipped and teachers' wages are low.²⁷¹ An environmentally focused, just and responsible development strategy like the one proposed by NDC and LTS could have a tangible positive impact on improving equitable opportunities.

Gender equality (poor)

Gender equality or inequality can be assessed in many different dimensions. The HDI for women in Mexico is lower (0.737) than the country's average (0.762). The Mexican GII (Gender Inequality Index) of 0.345 reflects the fact that women are paid less than their male counterparts and are more vulnerable to extreme poverty. Although women's participation in economic activities has increased significantly in recent decades, their labor conditions have not improved. Female representation was 33.6 per cent in national congress for 2012, but only 6.8 per cent of the mayors were women in 2014. Inequality has a severe impact on the domestic environment, with violence against women being a major problem. Apart from other policy and legal approaches, Mexico has made commitments to address these issues also through climate and sustainable development policies. It has stressed gender equality as a priority in the NDC, the MDGs, the National Development Plan and the National Climate Change Strategy. Achieving all these goals could have a major positive impact on gender inequality in the country.

270. ITUC Global Rights Index 2016.

271. Una economía para el 99% (An economy for the 99%) Oxfam inform 2017; available at: <http://www.oxfam.mx/wp-content/uploads/2017/01/bp-economy-for-99-percent-160117-es.pdf> (last accessed: 3.10.2017).

Due participation (good)

Mexico's government has created a National System for Climate Change in order to improve cooperation. It is composed of six organs: the Inter-Ministerial Commission on Climate Change (ICCC), the National Institute of Ecology and Climate Change (INECC), the Climate Change Council (C3), Federal Congress, the States and National Federation of Municipalities.

Mexico's NDC was elaborated by all main actors from the National System for Climate Change. A participatory public process was conducted as well as a web-based public survey to elaborate the NDC. It is important to note that policy formulation has enjoyed high levels of participation by civil society. But when it comes to implementation, the responsibilities are not well defined in any of the documents.

Good governance (poor)

Mexico is one of the most corrupt countries in the world. In recent years this historically bad situation has significantly worsened. According to the Transparency International CPI (Corruption Perception Index), Mexico is ranked 123rd out of 167. This is reflected in an opinion poll in which people were asked about their level of confidence to public bodies: 60 to 77 per cent of respondents had little or no confidence in any institution. Notwithstanding a robust transparency law, the evil of corruption is deeply rooted. Political efforts on climate change in Mexico have the potential to reduce inequality, decrease corruption and develop a more participatory style of governance. This would mean shifting the priority away from the interests of large private corporations and focusing on the population's needs.

Human rights (very poor)

In 2016, Mexico was ranked as a high-risk country in the Human Rights Risk Index. Mexico has a poor social equity performance in all dimensions, including nutrition, education, poverty and gender. All of these aspects affect human rights. This general panorama was exacerbated by the outbreak of a profound social crisis in 2006 when President Felipe Calderón declared a »war on drugs«. Since then, the violence has become excessive and has



claim by official estimations 185,000 victims in the period 2006–2016. As a result, the social fabric is disintegrating. Public security in Mexico is a tremendous problem and the situation is so critical that human rights are hardly ever respected, especially in some of the most deeply affected areas of the country. These areas also tend to be the poorest and the most vulnerable. Most human rights violations in recent years were related to organized crime. Mexico's NDC does not explicitly mention human rights.

Policy recommendations resulting from the just transition assessment

Mexico has a very good performance on formulating climate policy, and both its NDC and the long-term National Climate Strategy are ambitious and coherent. However, they don't include detailed implementation plans. They explicitly state that concrete actions depend on the current administration. Mexico's climate change action plans need to have continuity and a strong line of action.

1. Mexico needs an NDC implementation plan that includes defined responsibilities and obligations for all major actors. This includes an assigned budget and a body in charge of measurement, reporting and verification.
2. Mexico needs to establish a strong set of incentives both for companies and civil society. For companies, there should be tougher fines and vigorous enforcement of punishments in the case of environmental law violation. It is also strongly recommended to implement a solid communication plan to publicize Mexico's commitments.
3. Mexico needs a bold outreach strategy on just transition: The country has an enormous potential for improving living conditions if a just transition to a low carbon, resilient sustainable development is achieved. The outreach of the successful implementation could mean the democratization of energy, and consequently the chance to reduce inequality and poverty. It could induce job creation in new technologies, beginning with the state-owned oil company PEMEX, the biggest employer in Mexico.
4. Mexico needs to invest in Renewable Energy: Mexico would be able to develop a strong energetic infrastructure with local capital. The vast potential of Renewable

Energy and the competitive prices could stimulate economic growth.

5. Mexico should stop subsidizing fossil fuels and instead invest in its people: Mexico should mobilize its abundant human and environmental resources and shift away from fossil fuels.



Costa Rica

By Alexander Ochs and Dean Gioutsos *

Abstract

Costa Rica is one of the few countries worldwide whose electricity sector is already almost entirely based on renewables: in 2015, the country met 99 per cent of its electricity demand with renewable resources.²⁷² The country has also proven itself to be highly successful in terms of development. It is now considered an upper middle-income country and has experienced steady economic growth over the past 25 years.²⁷³ Through its National Climate Change Strategy »Estrategía Nacional de Cambio Climático« (ENCC), Costa Rica has set the ambitious and globally unique goal of achieving carbon neutrality by 2021.²⁷⁴ The country is often regarded, and rightly so, as a global leader on climate and development. This is true for the electricity sector as well as land-use and forestry sectors. But to be considered as an indisputable climate leader, Costa Rica will need to address its emissions in the transport sector more vigorously.²⁷⁵ Costa Rica serves as a good example for a just energy transition, though there are still some possibilities for further progress in relation to gender equality, indigenous rights and labor rights.

* The authors thank Maria Jose Gutierrez and Ana Maria Majano for a critical review and important suggestions.

272. See: <http://global-climatescope.org/en/country/costa-rica/#/details> (last accessed: 3.10.2017).

273. See: <http://www.worldbank.org/en/country/costarica/overview> (last accessed: 3.10.2017).

274. See: <http://www.namacafe.org/en/costa-ricas-climate-change-strategy> (last accessed: 3.10.2017).

275. For an in-depth discussion of Costa Rica's and other Central American countries' sustainable energy transitions, see Alexander Ochs et al., *The Way Forward for Renewable Energy in Central America*, Washington D.C.: Worldwatch Institute 2013; for a discussion of remaining market barriers and potential enablers all across Latin America and the Caribbean, see Alexander Ochs et al., *Study on the Development of the Renewable Energy Market in Latin America and the Caribbean*, Washington DC: IDB 2014.

Costa Rica's sustainable development profile

In 2015, Costa Rica's GDP (current USD) was 54.14 bn, equating to a per capita GDP of USD 11,255.²⁷⁶ The country's HDI (2015) is rated at 0.776, which places it in the high human development category.²⁷⁷ Poverty has remained largely unchanged over the last two decades. In 2015, the poverty headcount ratio was 21.7 per cent of the population at national poverty lines, and 1.6 per cent at USD 1.90 per day (2011 PPP).²⁷⁸ The malnutrition prevalence in Costa Rica was 1.1 per cent of children under five years of age (2008).²⁷⁹ In 2015, Costa Rica effectively reached all targets of the Millennium Development Goals.²⁸⁰ Costa Rica has set the target of fully achieving the SDGs by 2030, and as such has made the fulfillment and implementation of the SDGs part of its broader development strategy.²⁸¹

Energy and climate policy

Costa Rica's greenhouse gas (GHG) emissions constitute a mere 0.03 per cent of global emissions.²⁸² Its total emissions have been growing slightly; however its net emissions have marginally decreased due to an increase in the carbon sequestration of its forests.²⁸³ Costa Rica's per capita CO₂ emissions have also been increasing, in close step with its total GHG emissions.

Costa Rica's Total Primary Energy Supply (TPES) was 4.91 million toe and electricity consumption was 9.32 TWh

276. See: http://databank.worldbank.org/data/Views/Reports/ReportWidgetCustom.aspx?Report_Name=CountryProfile&Id=b450fd57&tbar=y&dd=y&inf=n&zm=n&country=CRI (last accessed: 3.10.2017).

277. See: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/CRI.pdf (last accessed: 3.10.2017).

278. See: http://databank.worldbank.org/data/Views/Reports/ReportWidgetCustom.aspx?Report_Name=CountryProfile&Id=b450fd57&tbar=y&dd=y&inf=n&zm=n&country=CRI (last accessed: 3.10.2017).

279. See: <https://knoema.com/WBWDIGDF2013Dec/world-development-indicators-wdi-december-2013?tsId=1892000> (last accessed: 3.10.2017).

280. See: http://interwp.cepal.org/perfil_ODM/perfil_Pais.asp?Pais=CRI&Id_idioma=2 (last accessed: 3.10.2017).

281. <http://www.indepthnews.net/index.php/the-world/latin-america-the-caribbean/644-costa-rica-setting-its-sights-on-sustainable-development> (last accessed: 3.10.2017).

282. <http://www.wri.org/resources/data-sets/cait-historical-emissions-data-countries-us-states-unfccc> (last accessed: 3.10.2017).

283. Ibid.



Figure 30: Costa Rica's Just Transition Scorecard Breakdown

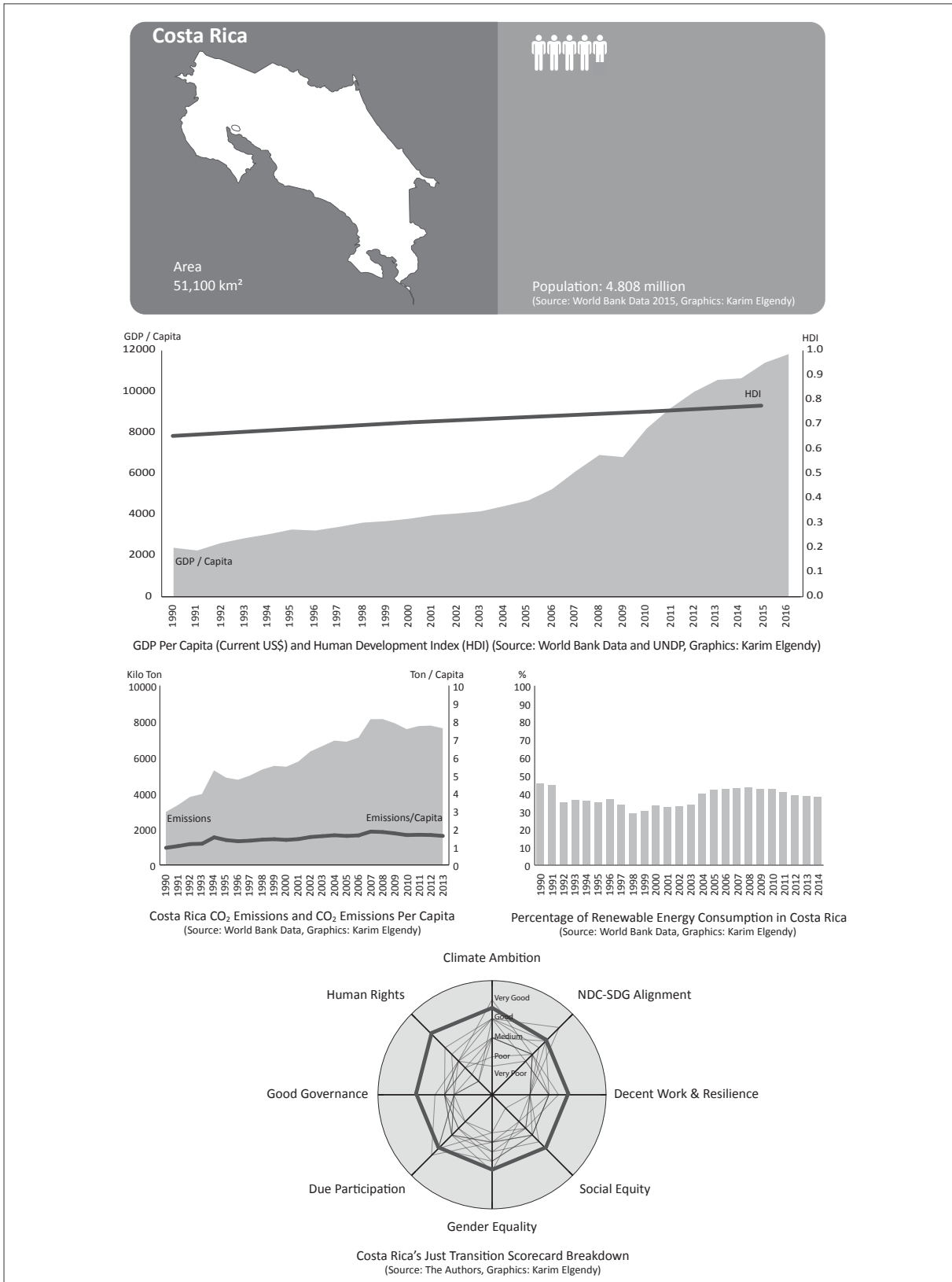
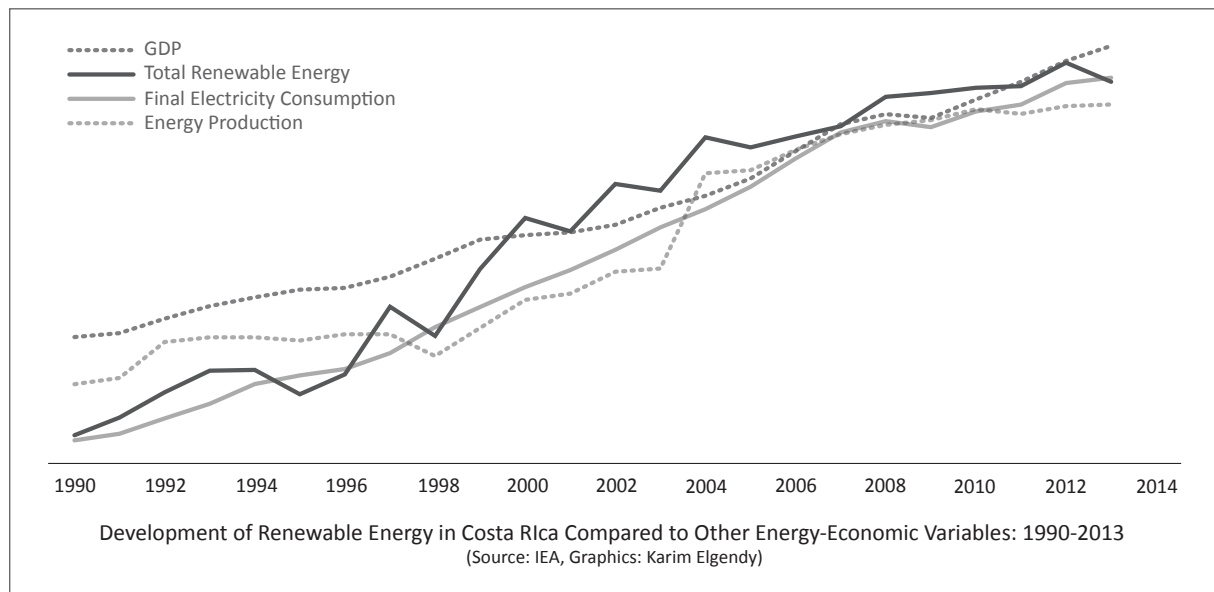




Figure 31: Development of Renewable Energy in Costa Rica Compared to Other Energy-Economic Variables



in 2014.²⁸⁴ This equates to 1.96 MWh of electricity per capita. Coal constituted a mere 1.3 per cent of Costa Rica’s TPES, while hydro, geothermal, solar, biofuels and waste accounted for 50 per cent.²⁸⁵ The energy sector is responsible for 47 per cent of total GHG emissions, predominantly related to the transport sector.²⁸⁶

In 2016, the country was powered entirely by renewables for more than 250 days.²⁸⁷ Renewables supplied 98.1 per cent of its electricity in that year, with 74.4 per cent from hydropower, 12.7 per cent from geothermal, 10.3 per cent from wind, and 0.7 per cent from biomass and solar.²⁸⁸ Access to electricity in Costa Rica is very high, with 99.4 per cent of its citizens being served, and total per capita CO₂ emissions equate to 1.67 tons.²⁸⁹ Despite this, Costa Rica’s transport sector remains heavily reliant on petroleum fuels, meaning overall renewables make up only a quarter of the nation’s total energy use. A pressing need exists to find solutions in the transportation sector

that not only decrease GHG emissions, but also improve mobility in the country. Traffic congestion is a considerable problem in Costa Rica, especially for people living in the San José metropolitan area.

Its Nationally Determined Contribution (NDC) reaffirms its aspiration to achieve carbon neutrality by 2021, but only commits the country to limiting its net GHG emissions to a maximum of 9,374,000 tons of CO₂ by 2030, leading to carbon neutrality in 2085.

More than just contributing to the global goal of creating a climate-compatible anthropogenic footprint on the planet, Costa Rica sees its carbon neutrality strategy as an opportunity to address multiple societal challenges well beyond solely environmental motives. From health care and the general wellbeing of its citizens to poverty alleviation and gender equality, Costa Rica is attempting to achieve a low-emissions future in the interest of its people’s social and economic aspirations.

Costa Rica’s Nationally Determined Contribution (NDC)

Costa Rica’s NDC formalizes its balanced ambitions and commitments to low emission development and GHG mitigations, as well as adaptation, to ensure the resilience of communities vulnerable to the unavoidable

284. <https://www.iea.org/statistics/statisticsearch/report/?year=2014&country=COSTARICA&product=Indicators> (last accessed: 3.10.2017).

285. <https://www.iea.org/statistics/statisticsearch/report/?year=2014&country=COSTARICA&product=Balances> (last accessed: 3.10.2017).

286. https://unfccc.int/files/ghg_data/ghg_data_unfccc/ghg_profiles/application/pdf/cr_ghg_profile.pdf (last accessed: 3.10.2017).

287. <http://mashable.com/2017/01/01/costa-rica-renewable-energy-2016/#NE5XYzXBvOqF> (last accessed: 3.10.2017).

288. <http://mashable.com/2017/01/01/costa-rica-renewable-energy-2016/#NE5XYzXBvOqF> (last accessed: 3.10.2017).

289. <http://cait.wri.org/profile/Costa%20Rica> (last accessed: 3.10.2017).



impacts of climate change. Costa Rica aims to achieve its goals by becoming a laboratory for the world's economic de-carbonization process, cooperating with civil society, academics and the international community at large.

Costa Rica's mitigation contributions are centered on limiting its 2030 net GHG emissions, although an ambition for achieving carbon neutrality by 2021 is also stated. The commitments of its NDC are supposed to be achieved through four broad policy objectives: Reducing energy demand and GHG emissions, decarbonizing its energy supply, fuel switching in end uses and enhancing its carbon sinks.

Its adaptation actions will be covered by a National Adaptation Plan to be delivered before 2018. It will continue to pursue its green and inclusive development policy through actions such as strengthening conservation efforts and environmental management, promoting Renewable Energy sources, land use planning, and enhancing food security and infrastructure resilience.

The implementation of its NDC will be performed by a range of entities, such as: The Inter-Ministerial Council for Climate Change, Joint Commissions for inter-sectoral agendas under the National Climate Change Strategy, the Ministry of Environment and Energy's Climate Change Department, the Climate Change Scientific Council and the Climate Change Citizen Consultation Council, together with a number of other institutes. The key policies for this implementation include the ENCC (2009) and the ENCC Action Plan (2013), the National Energy Plan (2015–2030), the National Development Plan (2015–2018), the National Adaptation Plan and the National Biodiversity Strategy (2016–2025).

Just transition assessment (score of 38 – good)

Climate ambition (good/very good)

Costa Rica's NDC restates its national aspiration of achieving carbon neutrality by 2021. However, the quantitative commitment made is to limit net GHG emissions in 2030 to a total of 9,374,000 tons of CO₂e. This commitment alone would see the country achieve carbon

neutrality by 2085,²⁹¹ and not reach its 2021 ambition. This suggests the country will need to implement further actions to meet its ambition, but preferred to be more conservative in its international commitment. The GHG emissions commitment outlined per capita emissions of 1.73 net tons by 2030, 1.19 net tons by 2050 and -0.27 net tons per capita by 2100. The successful achievement of this commitment would result in a reduction of GHG emissions by 44 per cent by 2030 relative to a BAU scenario, and is consistent with the necessary global path to meet the 2°C target set out in the Paris Agreement.²⁹¹ Due to the small volume of its emissions, Costa Rica is not ranked by some other climate indices like the WRI-CAIT²⁹² or Germanwatch's CCPI.²⁹³ CAT has given Costa Rica a »sufficient« rating, meaning the country's climate goals are consistent with limiting warming to below 2°C.²⁹⁴ A concluding assessment of Costa Rica's climate ambition is difficult at this time because it is not yet clear how committed the government really is to implementing additional measures to further reduce emissions – particularly in the high-emissions transport sector – and to approaching zero net climate emissions in the 2020s.²⁹⁵ The announcement of the »carbon neutrality« target earned Costa Rica enormous approval and admiration, but the government will now need to walk the walk if it is to retain the reputation of setting an example for others to follow by creating a truly sustainable society built on the country's unofficial motto »pura vida«, or pure life.

291. Government of Costa Rica, Ministry of Environment and Energy (2015) Costa Rica's Intended Nationally Determined Contribution.

292. See: <http://cait.wri.org/equity/> (last accessed: 3.10.2017).

293. See: <https://germanwatch.org/en/ccpi> (last accessed: 3.10.2017).

294. See: <http://climateactiontracker.org/countries/costarica.html> (last accessed: 3.10.2017).

295. Many observers believe that, on a global scale, it might be even more challenging to reduce GHG emissions in the transport sector than in electricity generation. Costa Rica has a long tradition of importing old, inefficient »gas guzzlers« – private cars as well as business trucks – from the United States. To get these off the streets will be difficult and will take time. Costa Rica's per capita emissions in the transport sector are about twice those of other countries in the region, such as Jamaica and Honduras; to be fair, transport-related per capita emissions in the United States are about six times those of Costa Rica. See, e.g., <https://www.wec-indicators.enerdata.eu/transport-co2-emissions-per-capita.html> (last accessed: 3.10.2017).

290. Government of Costa Rica, Ministry of Environment and Energy (2015) Costa Rica's Intended Nationally Determined Contribution



NDC-SDG alignment (good)

Costa Rica has set the target of fully achieving the SDGs by 2030, and as such has made their fulfillment and implementation part of its broader development strategy.²⁹⁶ The SDGs are being included in budgets and internal planning, and the government is offering guidance and support to various public, private, academic, scientific and social institutions and organizations, as well as UN agencies on strategy-building and mobilizing resources for their implementation.²⁹⁷ Costa Rica's 2015–2018 National Development Plan is built upon three pillars, two of which are directly related to the achievement of SDGs.²⁹⁸ The first pillar »Promote economic growth and quality employment« closely resembles SDG 8, and the second pillar »fight poverty and inequality« embodies SDGs 1, 5 and 10.

Costa Rica's NDC is strongly tied to the achievement of the SDGs. Naturally, the pursuit of its ambition to become carbon neutral and the achievement of its commitment to reduce GHGs (in which sustainable energy is a key cornerstone), will contribute to realizing SDGs 7, 11 and 13. Costa Rica also cites the integration of its historical commitment to universal human rights and gender equality principles in the NDC-associated policies and actions that will be developed,²⁹⁹ toward the achievement of SDGs 5 and 10. Furthermore, as part of its adaptation plan, Costa Rica's NDC identifies the vulnerability of its water supply particularly in agriculture, and highlights a focus on this with the intention of developing a national adaptation plan based on at least ten sectors, of which water is a priority.³⁰⁰ Community-based adaptation in terms of increasing the resilience of agricultural producers and developing safeguards for securing water supply are also set out, contributing toward SDGs 6 and 12.

296. See: <http://www.indepthnews.net/index.php/the-world/latin-america-the-caribbean/644-costa-rica-setting-its-sights-on-sustainable-development> (last accessed: 3.10.2017).

297. Ibid.

298. OECD (2015) Public Governance Reviews, Costa Rica – Highlights 2015.

299. Government of Costa Rica, Ministry of Environment and Energy (2015) Costa Rica's Intended Nationally Determined Contribution.

300. Government of Costa Rica, Ministry of Environment and Energy (2015) Costa Rica's Intended Nationally Determined Contribution.

Decent work and resilience (good)

The ITUC Global Rights Index 2015 rated Costa Rica at level 2 on a scale of 1 to 5+, where 1 represents irregular violation of rights and 5+ represents no guarantee of rights due to the breakdown of the rule of law. The ranking of 2 suggests that there are repeated violations of working rights in the country.³⁰¹

Costa Rica's main employment sectors are tourism,³⁰² trade and repair of vehicles, agriculture and livestock, manufacturing and teaching.³⁰³ The electricity and natural gas supply sector in 2011 employed around 25,000 people, constituting 1.5 per cent of the labor force. Costa Rica's already high reliance on renewables for power supply seems at first sight to leave limited room for future employment in the electricity sector; however future demand growth will create new jobs. Opportunities also exist with regard to energy efficiency measures, and, most importantly, in making the transport sector more sustainable.

Costa Rica is among the top 45 per cent of countries most vulnerable to the impacts of climate change. It has been ranked 78th out of 182 countries in the Germanwatch Global Climate Risk Index (CRI) for 1996–2015.³⁰⁴ Its climate change vulnerability is mostly related to temperature alterations, rainfall variance and the increased frequency of natural disasters.³⁰⁵ The country is already experiencing climatic change: longer and hotter dry seasons, more intense precipitation, increased temperature extremes, more floods, landslides, heavy rains and the rise in sea level.³⁰⁶

A national climate change strategy has been in place since 2006, but this strategy has not yet been translated into a concrete National Adaptation Plan. In addition,

301. ITUC (2015) The 2015 ITUC Global Rights Index.

302. World Economic Forum (2013) The Travel & Tourism Competitiveness Report 2013; available at: http://www3.weforum.org/docs/WEF_TT_Competitiveness_Report_2013.pdf (last accessed: 3.10.2017).

303. <https://knoema.com/CREMS2014/employment-statistics-of-costa-rica-2011?location=1000020-san-jos%C3%A9-canton> (last accessed: 3.10.2017).

304. Germanwatch (2016), Global Climate Risk Index 2017, Bonn, Germanwatch e.V., November 2016; available at: <https://germanwatch.org/en/download/16411.pdf> (last accessed: 3.10.2017).

305. See: <http://www.premiodmc.com/vulnerable-climate-change-costa-rica-works-become-carbon-free-economy/> (last accessed: 3.10.2017).

306. See: <http://www.premiodmc.com/vulnerable-climate-change-costa-rica-works-become-carbon-free-economy/> (last accessed: 3.10.2017).



Costa Rica's National Disaster Risk Management Policy 2016–2030 has been launched. Further developments are under way for a national ecosystem-based adaptation strategy and a National Climate Change Measuring System (Sistema Nacional de Métrica de Cambio Climático, SINAMECC) is being developed to accompany and monitor the country's actions.

Costa Rica also acknowledges that negative climate change impacts will continue to have greater adverse effects on the more vulnerable groups in society, namely women, children and people in extreme poverty. Thus, it is stated in its NDC that its climate actions »will be based on balanced efforts of adaptation to ensure that communities, especially vulnerable communities, become resilient to the unavoidable impacts of climate change.«³⁰⁷

Social equity (good)

Costa Rica's GINI coefficient is 48.5, where 0 represents absolute equality and 100 absolute inequality. A concerning fact is that Costa Rica's GINI coefficient has risen slightly since 1990, with labor income inequality³⁰⁸ and low high school graduation rates cited as the most important reasons for this trend.³⁰⁹ However, social equity and opportunity and poverty alleviation are key stated goals in the National Development Plan and the NDC. While the NDC reaffirms the plight of the most vulnerable and the entire nation to climate change, the ENCC outlines the economic benefits of a low-emissions society for all citizens in each section.

Gender equality (good)

Costa Rica's Gender Inequality Index (GII) rating is 0.308, where 0 represents complete gender equality and 1 complete inequality. Costa Rica's score has improved steadily over the last century and is among the highest in Latin America. The country's Gender Development Index score is 0.969, which represents a ratio of female to male human development index (HDI) values, with 1.0 reflecting

307. Government of Costa Rica, Ministry of Environment and Energy (2015) Costa Rica's Intended Nationally Determined Contribution.

308. See: <https://www.oecd.org/countries/costarica/costa-rica-towards-a-more-inclusive-society.pdf> (last accessed: 3.10.2017).

309. See: <http://www.ticotimes.net/2013/11/12/costa-rica-s-rising-inequality-outpaces-other-latin-american-countries> (last accessed: 3.10.2017).

full parity between female and male HDI values. These values are very positive but some inequalities still remain, for instance a gender pay gap.

Costa Rica has identified gender as a crucial factor in its climate change strategy. Costa Rica's NDC highlights the important role of women for the future fate of the country. Gender perspectives are further elaborated in the National Climate Change Action Plan. Costa Rica specifies gender as an important consideration in reforming transportation policy and emphasizes both the role that women can play as agents of change in household energy use and the risks women in poverty face particularly with regard to water.³¹⁰

Due participation (good)

Participation of major stakeholder groups and citizens at large is a defining characteristic of Costa Rica's National Climate Change Action Plan and its NDC. The former includes an objective »to foment action against global climate change through citizen participation.« While acknowledging that the participation of all relevant parties is of greatest importance to successful climate mitigation and adaptation, Costa Rica's ENCC was a real team effort and the result of cooperation between several stakeholders, including public, private, and non-governmental organizations and their representatives.

Costa Rica's NDC not only follows a similar inclusive approach to tackling the challenges at hand, it also calls for two non-governmental councils to be established: A Climate Change Scientific Council and a multi-stakeholder Climate Change Citizen Consultation Council. The latter is supposed to be a permanent citizen forum on climate change, with private sector, NGO and academic representatives advising the government on its activities. The Climate Change Scientific Council, together with the Inter-Ministerial Council, will provide input on climate policy formation to the Climate Change Department, the sector's ministers and for the ultimate decisions by the President. It will also feed into the implementation of the National Climate Change Action Plan, among other policies and measures.

310. See: http://cambioclimaticocr.com/biblioteca-virtual/cat_view/2-publicaciones-sobre-cambio-climatico (last accessed: 3.10.2017).



Good governance (good)

To most observers, Costa Rica has been a positive example of successful democratization since its independence in 1821. To many Latin American neighbors, it still sets standards for good governance. Since 1949, the country has been without an army. In Transparency International's Corruption Perception Index (CPI) of 2016, Costa Rica ranks 41st out of the 176 countries, with a total score of 58 (where 100 is most transparent and 0 is the least).³¹¹ That represents a slight improvement over the average for the period 2012–2015 when it received scores of between 53 and 55. The country has the same score as Spain, for instance.

In line with its CPI ranking, Costa Rica has included transparency in its NDC as part of the adoption of an open governance policy. As such, the Ministry of Environment and Energy plans to promote an open data policy for all relevant and available climate information. As part of Costa Rica's accountability efforts, the government's climate policy planning and management will include the two participatory, non-governmental councils mentioned above. Furthermore, the ENCC Action Plan considers transparency to be an essential aspect of the future domestic carbon market and plans to establish a Committee on Accountability and Transparency that monitors the market.

Human rights (good/very good)

Among the 198 countries assessed in Verisk Maplecroft's Human Rights Risk Index for 2016,³¹² Costa Rica has a medium risk of human rights abuse, equivalent to that which people face in countries like Japan, the United States, Argentina and Italy. Unlike those countries, Costa Rica did not merit a section in the 2016/17 Amnesty International Report on yearly human rights abuses.³¹³ Costa Rica was among the few nations advocating the

inclusion of human rights language in the Paris Agreement.³¹⁴

However, Costa Rica's impressive electricity production from renewables is predominantly comprised of hydroelectric generation, which has been associated with negative environmental impacts and infringements on the human rights of indigenous people.³¹⁵

Policy recommendations resulting from the just transition assessment

Overall, Costa Rica is a country with high ambition to become a climate and sustainable energy leader. However, there are still several opportunities for further improvement:

- The high share of hydropower in the country's electricity generation mix is vulnerable to the occurrence of droughts. The impacts of El Niño and more extreme drought periods can become a severe problem in the future. This drives a need to further diversify the country's energy sources and reduce the dependence on hydropower. Adding more modern renewables like solar, wind, bioelectricity and geothermal (while not putting pristine ecosystems in danger)³¹⁶ to their mix – all of which have tremendous and plentiful resource potential in Costa Rica – would address this. Instead of new large-scale hydroelectric dams, smaller run-of-the river applications and other alternatives should also be considered to protect the environment, particularly for indigenous populations living and/or dependent on the land for subsistence in these areas.
- The transport sector looms as the main challenge ahead, with transportation accounting for the lion's share (70 per cent) of total GHG emissions from fuel combustion. A strategy for sustainable mobility, which includes improving public transportation, and large-scale deployment of low emission transport options such as electric vehicles, is a logical next step toward the 2021 carbon

311. See: https://www.transparency.org/news/feature/corruption_perceptions_index_2016 (last accessed: 3.10.2017).

312. See: <http://reliefweb.int/report/world/human-rights-risk-index-2016-q4> (last accessed: 3.10.2017).

313. See: <https://www.amnesty.org/en/documents/pol10/4800/2017/en/> (last accessed: 3.10.2017).

314. See: <https://www.amnesty.org/en/documents/ior51/3028/2015/en/> (last accessed: 3.10.2017).

315. See: <http://www.worldwatch.org/finding-sustainable-alternatives-large-hydropower-central-america-0> (last accessed: 3.10.2017).

316. Geothermal potential is predominantly found in protected areas. 25 per cent of Costa Rica's land consists of national parks and around 51 per cent of forested areas. There is currently a debate on the exploitation of geothermal potential in national parks because of the risk of damage to these parks. This creates a »climate change mitigation dilemma«, as forestry achievements may conflict with Renewable Energy diversification.



neutrality ambition. A sustainable transportation sector strategy needs to be holistically designed and to go well beyond low emission vehicles.³¹⁷

- Costa Rica has made significant headway in recent years on labor and women's rights. Further development could be made by paying greater attention to formalizing working agreements and reducing entry barriers for micro/small firms, facilitating greater inclusion of women in the workforce to achieve gender equality in the more vulnerable sectors of construction, agriculture and domestic work, and improve working conditions up to the complete fulfillment of labor rights.
- Work needs to continue to ensure the protection of indigenous rights in general, but also in relation to hydro-power projects, and the diversification of the energy mix can contribute to energy projects with reduced negative social and environmental impacts.

317. The existing transportation situation is problematic well beyond GHG emissions. Heavy traffic jams affect the quality of life of Costa Ricans and reduce the country's productivity.



Jamaica

By Alexander Ochs and Dean Gioutsos*

Abstract

Jamaica has committed to the target of sourcing 20 per cent of its primary energy mix from renewables by 2030, and has established a National Climate Change Policy Framework, Climate Change Division (CCD) and Climate Change Advisory Board. The energy sector accounts for 71 per cent of the country's total GHG emissions, making it the obvious sector to concentrate its current efforts. An enormous opportunity exists for Jamaica to increase its climate ambition and use this as a stimulus for achieving other development goals, such as improving fair work, social and gender equality, good governance and transparency.

Introduction

Jamaica is currently working to achieve its national development vision, as well as the remaining UNDP's MDGs and newly adopted SDGs. To this end, the country has developed its National Development Plan, »Vision 2030« and the Medium Term Socio-Economic Policy Framework (MTF). Given Jamaica's fragile position – with limited economic growth, high public debt and other developmental challenges – a highly ambitious climate and energy transformation is understandably not the only item near the top of the country's agenda.³¹⁸

Jamaica's sustainable development profile

In 2015, Jamaica's GDP (current USD) was 14.26 bn, equating to a per capita GDP of USD 5,106.³¹⁹ The coun-

* The authors wish to thank Arthur Sprogis for providing valuable research support as well as the Government of Jamaica for providing a critical review.

318. Jamaica's alternative pathways to an energy systems that is affordable, reliable and sustainable are extensively discussed in Alexander Ochs et al, *Jamaica Sustainable Energy Roadmap*, Washington, DC: Worldwatch Institute, 2013. For a discussion of remaining market barriers and potential enablers all across Latin America and the Caribbean, see Alexander Ochs et al., *Study on the Development of the Renewable Energy Market in Latin America and the Caribbean*, Washington DC: IDB 2014.

319. See: <http://data.worldbank.org/country/jamaica> (last accessed: 3.10.2017).

try's HDI (2015) is rated at 0.730, which places it in the high human development category.³²⁰ The prevalence of poverty has been declining since the 1990s, when it peaked at 44.6 per cent (at national poverty rates), although some growth was observed between 2007 and 2012, when it rose from 9.9 to 19.9 per cent.³²¹ It is expected that the poverty rate will have decreased to 18.7 per cent in 2016.³²² The prevalence of malnutrition in Jamaica for children under five years of age (2012) was 2.1 per cent.³²³ By 2015, Jamaica had achieved three of its 16 MDG targets, and had made good progress on six of them.³²⁴ The areas in which it is »lagging behind« are gender equality and women's empowerment, and environmental sustainability. Vision 2030 is strongly aligned with the SDGs, and most of the targets deemed relevant for the country are mentioned both in it and the MTF.

Energy and climate policy

Jamaica's GHG emissions constitute a mere 0.02 per cent of global emissions. Total emissions (including land-use change and forestry) in Jamaica increased by 0.63 megatons from 9.67 to 10.30 million tons of CO₂e between 1990 and 2013.³²⁵ Jamaicans' per capita CO₂ emissions have fluctuated between 2.0 and 4.5 tons since 1970, and in 2015 amounted to 3.29 tons.³²⁶

Jamaica's electricity sector is primarily dependent on petroleum-based generation, which constitutes 81.5 per cent of the generation mix, with renewables making up 10.5 per cent and liquefied natural gas (LNG) the remaining eight per cent.³²⁷ Wind energy has been the most prevalent Renewable Energy technology utilized,

320. See: <http://hdr.undp.org/en/composite/HDI> (last accessed: 3.10.2017).

321. See: <http://data.worldbank.org/country/jamaica> (last accessed: 3.10.2017).

322. World Bank Group (2015) *Laying the Foundations for Growth and Debt Sustainability*; available at: <http://documents.worldbank.org/curated/en/558411474020643292/pdf/101175-REVISED-PUBLIC-JAMFORWEB.pdf> (last accessed: 3.10.2017).

323. See: <https://www.indexmundi.com/facts/jamaica/malnutrition-prevalence> (last accessed: 3.10.2017).

324. See: http://www.pioj.gov.jm/Portals/0/Social_Sector/Comprehensive%20Assessment%20of%20Progress%20Towards%20MDGs%20-%20FINAL%20Dec%202016.pdf.

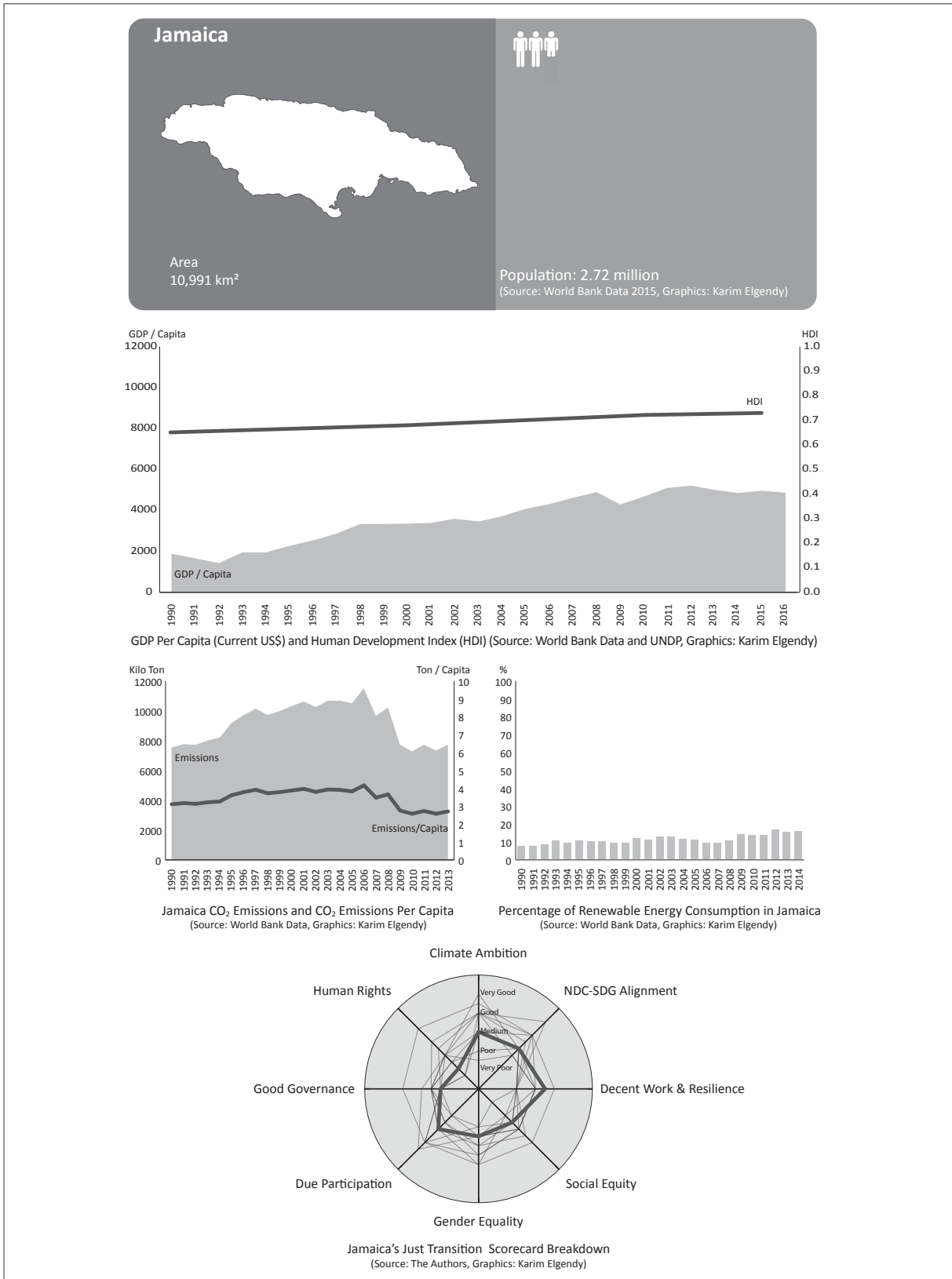
325. CAIT Climate Data Explorer (<http://cait.wri.org/historical>)

326. <https://knoema.com/atlas/Jamaica/CO2-emissions-per-capita> (last accessed: 3.10.2017).

327. Betsy Bandy, Director of Ministry of Science, Energy and Technology, Jamaica



Figure 32: Jamaica's Just Transition Scorecard Breakdown





followed by solar and hydropower.³²⁸ The electrification rate in Jamaica is 98 per cent³²⁹ meaning two per cent of the nation's population does not have access to electricity, equating to around 50,000 people in absolute terms. Jamaica's energy sector is the primary contributor to its GHG emissions. Manufacturing and construction make up around 26 per cent of total emissions, electricity and heat generation 24 per cent and transport 18 per cent.³³⁰ Jamaica's NDC outlines the adaptation measures and policies that are to be implemented, as well as the frameworks for achieving its target. Furthermore, the government is currently seeking funding of over USD 300 million to accelerate its transition to Renewable Energy.³³¹

Just transition assessment (score of 21 – medium)

Climate ambition (medium)

Jamaica's climate ambitions are embodied in its NDC, which only covers the energy sector. Specifically, Jamaica commits to increasing its share of Renewable Energy resources to at least 20 per cent of its primary energy mix by 2030. This target is outlined in its 2009–2030 National Energy Policy (NEP)³³² and Vision 2030.³³³

Full implementation of Jamaica's NDC would result in 7.8 per cent reduction in GHG emissions by 2030 compared to a BAU scenario. Jamaica has stated its intention to increase its commitment to a reduction of ten per cent below BAU conditional upon receiving international support. Furthermore, some adaptation activities, such as reforestation programs, will likely also further reduce net emissions.

Because of the small volume of its absolute emissions on a global scale, Jamaica is not ranked by many climate in-

dices such as CAT, WRI-CAIT or Germanwatch's CCPI. At first glance, Jamaica's 2030 target appears underwhelming in the transition toward decarbonization by 2050, considering its enormous potentials and the economic mandate for a swift phase-out of fossil fuels. In-depth research has shown that Jamaica's climate and sustainable energy ambition could be much higher, with a recent study suggesting that the country could achieve a 94 per cent RE share in the electricity mix by 2030 with net economic, social and environmental benefits.³³⁴ However, Jamaica justifies its target as being fair and ambitious.

NDC-SDG alignment (medium)

Despite being launched in 2009, the goals and outcomes of Vision 2030 are closely aligned with the SDGs. From the total of 169 SDG targets, Jamaica has deemed 115 of these targets to be relevant to its country. 89 of these 115 targets (77 per cent) are fully or partially reflected in Vision 2030 and the MTF.³³⁵

Jamaica's NDC is aligned with multiple SDGs. Its target for 20 per cent renewables in its primary energy mix by 2030 will have a positive impact on the achievement of all SDGs.

Decent work and resilience (medium/good)

Jamaica's main economic sectors measured by share of GDP are: gas, electricity and water, financial and insurance services, and mining and quarrying. The primary employment sectors in Jamaica are wholesale and retail, repair of motor vehicles and equipment, agriculture/hunting/forestry/fishing, construction; and hotel and restaurant services.³³⁶ Some regulations aiming at workplace safety in Jamaica's main economic sectors

328. <https://www.mona.uwi.edu/physics/sites/default/files/physics/uploads/RE%20Development%20MSTEM.pdf> (last accessed: 3.10.2017).

329. Alexander Ochs, et al., *Jamaica Sustainable Energy Roadmap*, Washington, DC: Worldwatch Institute, 2013

330. https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_GHG%20Emissions%20Factsheet_Jamaica.pdf (last accessed: 3.10.2017).

331. <https://www.pv-magazine.com/2017/04/28/jamaica-targets-300-million-renewable-energy-investments/> (last accessed: 3.10.2017).

332. The Ministry of Energy and Mining (2009) *Jamaica's National Energy Policy 2009-2030*

333. Planning Institute of Jamaica (2009) *Vision 2030 Jamaica National Development Plan*

334. »A largely (94%) Renewable Energy system with initial investment in natural gas could save Jamaica more than USD 12 billion in electricity generation costs versus BAU by 2030.« Alexander Ochs et al., *Jamaica Sustainable Energy Roadmap*, Washington, DC: Worldwatch Institute, 2013.

335. See: <http://www.cepal.org/sites/default/files/events/files/sii-seminadpalccaso-epxyvisiones2030-casojamaica-24-11-16.pdf> (last accessed: 3.10.2017).

336. Statistical Institute of Jamaica (2017), *Labor Force By Industry Group 2012-2014*; available at: <http://statinja.gov.jm/LabourForce/LabourForceByIndustryGroup.aspx> (last accessed: 3.10.2017).



date back half a century or even more.³³⁷ Efforts are being made by the Jamaican government to improve the employment prospects and working conditions in the country. In 2016, the ILO Convention C189 (Domestic Workers Convention) was signed and ratified.³³⁸ Furthermore, the government is engaged in ongoing efforts to combat human trafficking, and the promulgation of its Occupational Safety and Health (OSH) Act.³³⁹ While the impacts of these renewed efforts to support the rights of the workforce have not yet been evaluated (though they should be), the ITUC Global Rights Index 2015 rated Jamaica at level 3, reflecting regular violations of working rights throughout the country.³⁴⁰ Further action seems to be required to monitor, report, and verify progress, and if necessary, reinforce the programs.

Renewable energy has been identified as a prospective employment sector in Jamaica³⁴¹ with 525 jobs being created in Renewable Energy since 2015.³⁴² Transitioning to an almost completely renewables-based electricity system could create an additional 4,000 jobs relative to the BAU scenario.³⁴³

There is a clear mismatch between the key economic sectors and primary employment sectors, with jobs in gas, electricity and water as well as mining and quarrying representing only a very small portion (1.3 per cent) of the total labor force. To move toward the goal of a decarbonized and sustainable society, employment opportunities in the 'green economy' need to expand.

337. See: http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=18440&p_country=JAM&p_count=217&p_classification=14.02&p_classcount=5; also: http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=18441&p_country=JAM&p_count=217&p_classification=14.02&p_classcount=5; and: http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=31431&p_country=JAM&p_count=217&p_classification=14.02&p_classcount=5 (last accessed: 3.10.2017).

338. See: <http://jis.gov.jm/jamaica-ratifies-domestic-workers-convention/> (last accessed: 3.10.2017).

339. <http://www.jamaicaobserver.com/news/Labour-Ministry-preparing-for-OSH-Act> (last accessed: 3.10.2017).

340. The International Trade Union Confederation (ITUC) (2015) The * The authors wish to thank Arthur Sprogis for providing valuable research support as well as the Government of Jamaica for providing a critical review.

2015 ITUC Global Rights Index.

341. Ministry of Labour and Social Security (2015) Labour market trends and prospects for employment opportunities in Jamaica.

342. See: <http://mstem.gov.jm/20-billion-invested-renewable-energy-sector/>; also: <http://jamaica-gleaner.com/article/lead-stories/20150710/400-jobs-solar-farm> (last accessed: 3.10.2017).

343. Alexander Ochs et al, Jamaica Sustainable Energy Roadmap, Washington, DC: Worldwatch Institute, 2013

As a small island developing state, Jamaica is in the top 30 per cent of countries most vulnerable to the impacts of climate change. It has been ranked 53rd out of 182 countries in the Germanwatch Global Climate Risk Index (CRI) for 1996–2015, which analyses the extent to which countries have been affected by the impacts of weather-related loss events (including storms, floods and heat waves).³⁴⁴

Jamaica's Climate Change Policy Framework and Action Plan³⁴⁵ identifies climate change adaptation as a salient feature of its objectives. Jamaica has adopted a »hybrid approach« with regard to adaptation, developing specific sectoral plans and strategies under the coordination of the CCD, as well as the simultaneous integration of adaptation in national policies where possible. The ultimate aim is to merge the sectoral plans into one national adaptation strategy and action plan for Jamaica.³⁴⁶ A number of policies and plans have already been adopted to address climate change adaptation.

Social equity (poor – medium)

Jamaica's GINI coefficient for the distribution of income is 45.5, where 0 represents absolute equality and 100, absolute inequality. Jamaica's GINI coefficient has risen slightly in the last 27 years, from 41.1 in 1990. However, social equity and opportunity and poverty elimination are at the center of Vision 2030,³⁴⁷ as a guiding overall principle and also in setting the goal of effective governance. Jamaica's NDC touches on the need for adaptation to climate change for the most vulnerable portions of the population, and the impacts of the implementation of the NDC on social equity can be rated as positive given that they will positively impact the SDGs. However, implementation remains the litmus test.

344. Germanwatch (2016), Global Climate Risk Index 2017, Bonn, Germanwatch e.V., November 2016: available at: <https://germanwatch.org/en/download/16411.pdf> (last accessed: 3.10.2017).

345. Ministry of Water, Land, Environment and Climate Change (2013) Green Paper No. 1/2013 Climate Change Policy Framework and Action Plan.

346. NAP Global Network (2016), sNAPshot: Jamaica's Approach to Initiating Sector Integration of Adaptation Considerations – Country Brief 1A.

347. Planning Institute of Jamaica (2009) Vision 2030 Jamaica National Development Plan.



Gender equality (poor/medium)

Jamaica's Gender Inequality Index (GII) rating is 0.422,³⁴⁸ where 0 represents complete gender equality and 1 complete gender inequality. Jamaica's score has improved over the last 20 years, from 0.480 in 1995 to 0.422 in 2015. The country's Gender Development Index (GDI) score is 0.975, which is a ratio of female to male human development index (HDI) values, with 1 representing full parity between female and male HDI values. These values are quite encouraging, yet inequalities and gender discrimination still exist, in terms of participation in the labor market or in politics, as well as a gender pay gap. Also, violence against women and girls remains a problem in the country, with local NGOs deeming the national legislation to address these inadequate.³⁴⁹

Jamaica does not mention any gender-related considerations in its NDC. However, its Strategic Program for Climate Resilience (SPCR) refers to enabling effective planning and design of gender-sensitive adaptation initiatives as a means of achieving the objective of improving the quality of climate information for effective planning at the local and national levels.

Due participation (medium)

Vision 2030 cites citizen participation in governance as being historically low. The government has begun to take steps to change this. Information on the participatory process employed specifically in Jamaica's NDC determination is limited.³⁵⁰ Its NDC submission coheres with Vision 2030, NEP and the SPCR – which mention the participation of wide stakeholder input, from local communities, private sector, non-governmental organizations and public sector entities, among others.

Jamaica's NDC submission refers to the establishment of the CCD and the Climate Change Focal Point Network (CCFPN) (comprising representatives from key ministries, departments and agencies), as well as a Climate Change Advisory Board (CCAB) (to be made up of representatives

348. See: <http://hdr.undp.org/en/content/income-gini-coefficient> (last accessed: 3.10.2017).

349. See: <https://www.amnesty.org/en/documents/pol10/4800/2017/en/> (last accessed: 3.10.2017).

350. ICF International (2016) Analysis of Intended Nationally Determined Contributions (INDCs).

of the public and private sectors, as well as academics and non-governmental organizations). Over time, it is envisaged that representation in the CCFPN will be expanded to the sub-national level, to include representation from local government, civil society groups, community organizations and the private sector, in order to increase the reach and participation.³⁵¹

Finally, on the implementation and, in particular, the adaptation side, Jamaica has already assisted the public and private sectors, community-based and non-governmental organizations in implementing adaptation efforts through a number of initiatives and projects. Overall, it appears work is being done to ensure that such processes become more inclusive.

Good governance (poor)

Now 55 years an independent state, Jamaica is still facing challenges in relation to weak institutions, with »inadequate transparency and accountability in governance, and a high perception of corruption permeating public and private sectors.«³⁵² In Transparency International's Corruption Perception Index (CPI) from 2016, Jamaica ranks 83rd out of the 176 countries with a score of 39 (where 100 is most transparent and 0 is the least).³⁵³

There is no mention of improving transparency and data quality in Jamaica's NDC submission. This is a source of concern given Jamaica's score in the CPI, although its NEP³⁵⁴ does highlight transparency as a key action in establishing regulatory regimes in both the renewable and Non-Renewable Energy procurement processes, markets and pricing. Transparency is also identified as a key factor in the effective governance section of Vision 2030.³⁵⁵

351. UNFCCC (2015) Intended Nationally Determined Contribution of Jamaica.

352. Planning Institute of Jamaica (2009) Vision 2030 Jamaica National Development Plan.

353. See: https://www.transparency.org/news/feature/corruption_perceptions_index_2016 (last accessed: 3.10.2017).

354. The Ministry of Energy and Mining (2009) Jamaica's National Energy Policy 2009-2030.

355. Planning Institute of Jamaica (2009) Vision 2030 Jamaica National Development Plan.



Human rights (very poor/poor)

Compared to the 198 countries assessed in Verisk Maplecroft's Human Rights Risk Index for 2016, Jamaica has a »high risk« of human rights abuse (on a scale of low, medium, high, extreme). Amnesty International's 2016/17 report on yearly human rights abuse reveals the possible reasons for this ranking, detailing that Jamaica has one of the highest rates of homicide in the Americas, along with the persistence of extrajudicial killings, violence against women, discrimination of LGBTI people, and child detainment in violation of international standards.³⁵⁶

There is no mention of – or reference to – human rights in Jamaica's NDC, nor is a human rights impact assessment part of the implementation process. Vision 2030 sets out four strategic goals for the country's development, with the second goal being: »The Jamaican Society is Secure, Cohesive and Just.« This entails the establishment of an environment in which human rights are respected and there is consensus around a set of common values. Overall, it appears there is significant opportunity for improvement in the human rights domain, both within and definitely beyond Jamaica's NDC implementation.

Policy recommendations resulting from the just transition assessment

Jamaica has significant room for improvement in a number of aspects in relation to the just transition principles. Its NDC submission is effectively silent on the issues of gender and social equity as well as human rights. Furthermore, governance and citizen participation remain as areas for concern. It is obvious that the NDC commitment is not a panacea for all of these far-reaching problems; however, an opportunity exists to address them more actively and simultaneously in the implementation phase and to exploit synergies between them, apart from the generally positive impacts of mainstreaming and harmonizing policies and administration. A focus on fostering decent and gender balanced employment opportunities as a result of Renewable Energy project developments could be an appropriate starting point. Facilitating greater inclusion from society at large in the NDC implementa-

tion process (and the design of new commitments over the coming years), and concentrating on transparency in progress and reporting could also have a positive impact.

- Stakeholder participation: The development of Vision 2030 identified and included extensive participation from citizens; however, this was more limited in the case of the NDC submission. An opportunity exists to use the NDC implementation and climate change adaptation plans to stimulate the involvement of citizens in their rollout and in governance in general, an area that has been persistently low.

- Increasing climate ambition: An increase in the ambition of Jamaica's climate and energy goals could see this industry grow, providing opportunities for fairer employment, as well as the potential for improving the balance between genders in the labor force.

- Enhance outreach and transparency: The provision and publication of information on the country's progress and performance in relation to its NDC target provides a clear opportunity to demonstrate the openness and transparency of the government on this issue. Thus, the NDC performance tracking, information and data availability could represent a step in the right direction in demonstrating the government's commitment in this area.

- Mainstream gender, equity and human rights concerns in the NDC: Jamaica's NDC submission is effectively silent on the issues of gender and social equity, as well as on human rights, and incorporating these in the NDC and implementation process could make them a more central focus and consideration, and potentially bring easily attained benefits in these domains.

356. See: <https://www.amnesty.org/en/documents/pol10/4800/2017/en/> (last accessed: 3.10.2017).



5. Conclusions and Policy Recommendations

The just energy transition country assessments have shown interesting results:

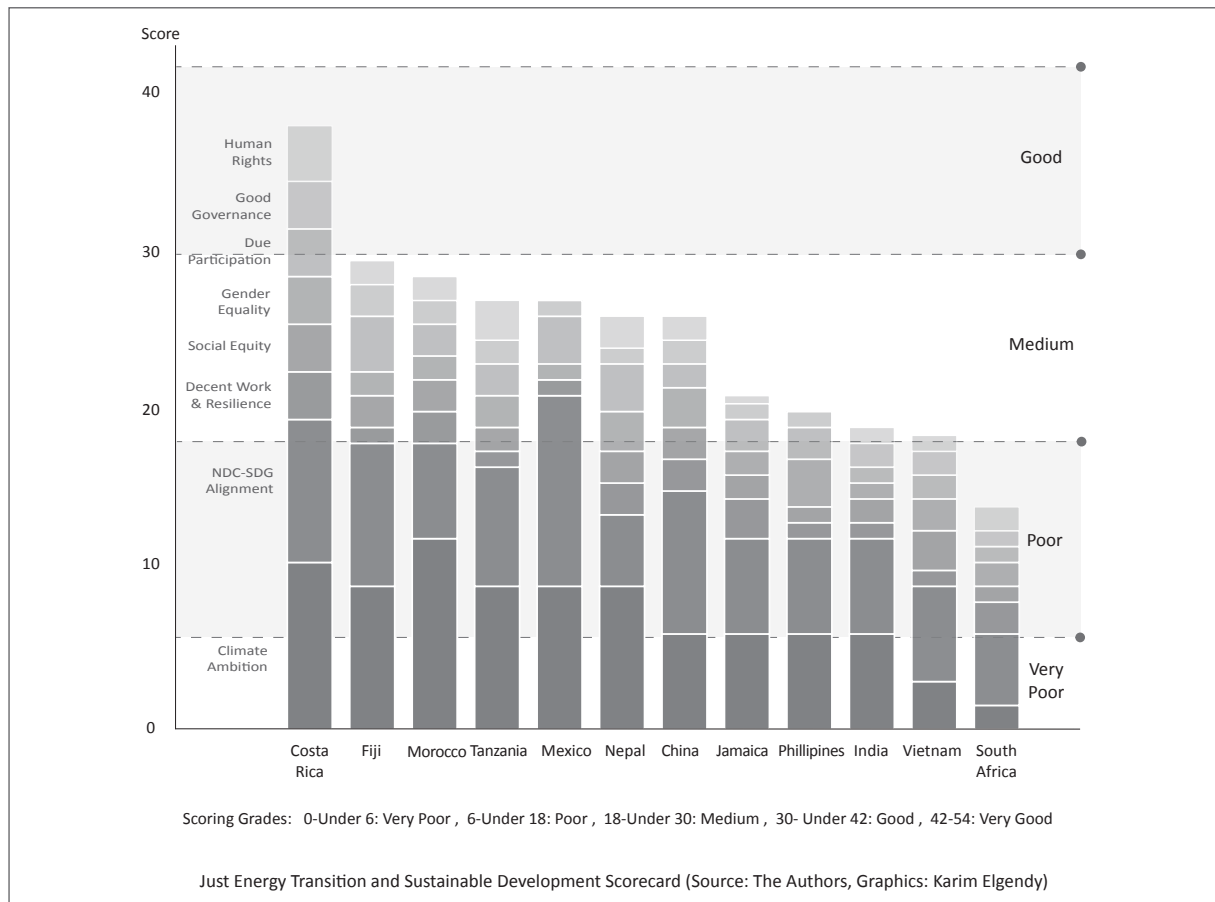
Neither are countries who internationally claim to be climate champions and forefront runners in terms of energy transition necessarily performing well in terms of the social and political dimension of a just transition, nor are those who claim to pioneer justice automatically in the lead in transforming their energy systems in a way that is consistent with a 1.5/2 °C pathway.

The just energy transition scoring indicates that country performance is generally strongest in terms of the climate and energy dimension of the transition, i.e. with regard to the »climate ambition« and »NDC-SDG alignment« principles and respective indicators. The average score indicates a good to medium performance. Countries are

doing less well in terms of addressing the socio-economic dimension of a just energy transition, i.e. ensuring or fostering decent work, climate resilience, social equity and gender equality. The average performance here is only »medium«, which indicates that most if not all of the countries assessed still have important justice gaps to be addressed, and that the potential of a climate ambitious energy transition to mobilize developmental co-benefits is not adequately identified or used. Country performance with regard to a just energy transition is weakest with regard to the political dimension of a just energy transition, i.e. in terms of due participation, good governance and human rights: The average score indicates a performance that is poor to medium, meaning that many countries are performing even worse in these categories.

This shows us that there is still a long way to go to make the energy transition not only environmentally successful but also beneficial for all people – leaving no

Figure 33: Just Energy Transition and Sustainable Development Scorecard





one behind – and politically successful, too – namely, demonstrating policymakers’ and elites’ political will and capacity to provide enabling frameworks to move toward »the future we want.« It is clearly not enough, as can be inferred from this assessment, to *declare and commit* to climate or Renewable Energy ambition on paper only: To achieve high goals, discourse needs to turn into action that brings real change. The real litmus test is implementation, which in turn depends heavily on enabling political and legal frameworks, durable institutional commitment and enforcement power, and the delivery of co-benefits, making work more decent, communities more resilient, and societies more equitable, with human rights being widely respected, and women enjoying similar rights than men.

We conclude that it is very important to make a broad assessment, extending far beyond the typically narrow focus on measuring the climate and energy ambition of NDCs and national climate and energy policies, if the goal is to really factor in the sustainable development, justice and human rights dimensions. These dimensions are of equal importance, and an energy transition is not likely to succeed and be sustained if it does not also address the socio-economic and political context: The energy transition is so far-reaching in its implications, and is so deeply interwoven with socio-economic development, power structures, and people’s livelihoods, that a steep emission cut cannot be achieved without a transition that also brings to bear socio-economic progress, as discussed in this study.

Comparing the scorecards with the country results (see graph) gives us reason for hope: With Costa Rica we have a country that is doing quite well in all dimensions of a just energy transition (»good«), proving that change is possible, albeit with remaining room for improvement. Looking at the second and third rank countries, we have Fiji and Morocco, the holders of the current and the previous COP presidencies, and geographically representing the two other world regions (Asia-Pacific, Africa-MENA) of the Global South, even though these countries are very different from each other and from Costa Rica in terms of national circumstances. We interpret their good performance (»medium« at the upper end) as an indication that a just energy transition is possible everywhere, but that there are different ways to make it happen.

The two best-performing G20 countries in our assessment are Mexico and China (ranking 4th and 10th, respectively), both of which also earn a »medium« rating. They are ahead of India (which also earns a »medium« rating, but with lower scores), despite India’s ambitious solar mission, what shows us once again that justice is broader than climate and RE ambition. However, each of these three countries has significant room for improvement to make its transition processes just.

Human rights provide the most serious cause for concern. The average score for human rights performance is »poor«, closely followed by an almost equally bad average scoring (»poor«) for good governance. From this we can conclude that the fulfillment of human rights and good governance needs to be approached much more pro-actively in the implementation of NDCs, LTS, SDGs and climate and energy action plans. Cooperating partners and investors should also work toward that end in order to avoid another type of »stranded assets«: The long-term success of the energy transition, including RE and energy efficiency projects, can hardly be guaranteed if projects lead to social unrest, human rights violations and severe corruption.

It is regrettable that South Africa achieves the lowest scoring (»poor«) in our assessment, mindful of the fact that South Africa has long pioneered a just transition in international negotiations. However, neither has the energy transition in South Africa shown much progress, nor is its NDC such rated as »climate ambitious«, and its performance with regard to most of the other just transition principles in the socio-economic and political sphere is also lagging behind. South Africa, however, has the potential to turn into a real just energy transition champion who puts discourse into action.

Our approach of taking many factors of »justice« into consideration and combining different concepts of justice used by a wide range of stakeholders proved to be comprehensive, conceptually sound and pragmatic. Our hope is that it will help to move the debate forward, breaking down silos of different discourse communities and stimulating alliance building.

From this comprehensive perspective, the approach of further operationalizing »justice« by developing a set of just energy transition principles and related indicators, and using the same to score countries, has proved to



be viable – although, of course, it always confronts the challenge to walk a fine line between showing adequate sensitivity to different national circumstances and measuring with the same yardstick. In this regard, we look forward to constructive criticism. We are convinced that the methodology can be further developed and fine-tuned.

We conclude the study with the following eight policy recommendations:

»Just energy transition« could be a progressively enabling concept for shifting the energy system from brown to green sources, protecting the climate, backing SDG implementation, boosting growth in employment, securing livelihoods, enhancing people's wellbeing and contributing to saving the planet for future generations – provided that enabling policy frameworks and a pro-active approach are developed that realize justice both for those in the old economy who are facing a difficult phase-out or restructuring of their means of livelihoods and for those whose livelihoods depend on fast and steep changes of the energy system. We recommend that these components should be reflected in conceptualizing just energy transition pathways in a comprehensive way and in developing respective visions, policies, paradigms, narratives and values. A just energy transition should be tackled in a twin-track approach by mainstreaming it through the fields of development, social, education, finance and energy policies, as well as by developing distinct just energy transition programs, e.g. as part of rural development and social protection programs.

NDCs, Long-term strategies, and NDC implementation plans, where appropriate, should cover just transition. With a view to the necessary NDC-SDG alignment, parties should outline in their NDC and SDG implementation plans the precise targets and expected benefits of alignment, how they reflect the underlying just transition principles, and what are the distinct institutional roles and responsibilities, means of implementation, budgets, processes and actions.

To ensure decent work and to foster the resilience of the vulnerable, the just energy transition discourse should become an integral part of social dialogs, moreover, social impact assessments for the energy transition should be undertaken, providing robust information on possible effects and, building on the results, structural change

should be prepared and accompanied by programs targeting those in need, and ensuring that the necessary skills are provided to those who suffer negative effects so that they do not feel left behind but ultimately benefit from the transition.

To increase social justice in the energy transition, equal opportunity programs should be launched and, where appropriate, marginalized people who are at high risk of being left behind in the transition should benefit from targeted programs.

Fostering gender justice should become an explicit principle of a just energy transition. Gender impact assessments should become an integral part of energy policies and, building on that, equal opportunity and non-discrimination programs should be developed to address the special vulnerability of women in the transition.

Due multi-stakeholder participation is a prerequisite for a successful transition and the necessary broad ownership of and support for the transition throughout society. Relevant stakeholders should be identified and invited to national just energy transition forums to engage in inclusive discussion of the relevant issues from the very beginning, and the results of consultations should be published and communicated widely.

Good governance is another prerequisite for a just energy transition. Accountability and transparency of action should be strengthened and independently monitored in the NDC and LTS processes and, beyond that, in all relevant domestic policy fields.

To respect, protect and fulfill human rights is another imperative of a just energy transition. This should be highlighted, and translated into action through commitments to undertake human rights impact assessments in the course of NDC and LTS processes, as well as for energy policies, laws and programs. A commitment to apply the »Do No Harm« principle in the energy transition process is another indispensable element.



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