

## »»» BETWEEN ECONOMIC GROWTH AND CLIMATE CHANGE: Supporting developing countries reach sustainable, climate-smart development

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### Executive Summary

Climate change is profoundly affecting ecology, humans and all life on earth. Responding to climate change is of vital importance. Stimulating sustainable economic growth is an essential way to improve living standards and well-being. In tackling both challenges, international communities agreed on two ambitious agendas: the 17 Sustainable Development Goals (SDGs) cover a wide range of development goals and the Paris Agreement (with National Determined Contributions, NDCs, - national action plans to combat climate change) bears a clear focus on climate protection. The two agendas have been developed in parallel and they are content-wise interlinked: many climate actions identified to achieve SDG targets can also contribute to meeting the NDC commitments and vice versa. But there is limited synchronization between the two agendas. Countries need to align NDCs with their SDG implementation strategies to achieve synergies and assure both agendas become reality.

Developing countries are most vulnerable to climate change. At the same time, they are least able to afford mitigation and adaption measures due to, among others, limited technical and financial resources. Achieving sustainable economic growth while reducing emissions is a big challenge, but it bears also lots of opportunities. This paper discusses four key factors, which lead developing countries to a sustainable and climate-smart development: (1) policy adaptations for developing countries, (2) business opportunities in the new nature economy (3) technology-enabled green growth and (4) climate finance.

Policy adaptations allow developing countries (especially Least Developed Countries, LDCs) to catch up economic growth while limiting their climate footprint to a certain extent. In order to achieve global climate goals, international communities need to provide policy and technical guidance to LDCs to put them on a green development track. Developed countries have the obligation to share technological and financial resources with developing countries to support them build a clean and climate-resilient future.

New nature economy bears huge business potentials to generate revenue and decent jobs. The World Economic Forum estimates that opportunities add up to USD 10.1 trillion in annual business value and could create 395 million jobs by 2030<sup>1</sup>. The basis for a new nature economy is the decoupling of well-being from resource consumption and resource extraction from negative impact on ecosystems. It has the aim to reduce the resources needed, thus sparing ecosystems and to better share with nature what oceans and land there are.

Technological advances enable developing countries to grow on a much greener way than the advanced economies did. Clean energy has not only become affordable, but even more competitive than fossil energy. The transition to renewable energy sources can provide enormous emission reduction and cost-saving potentials for developing countries. Digitalization and the use of smart-climate technologies can help reduce emissions and mitigate climate risks. Technology transfer and capacity building helps developing countries manage the climate challenge more efficiently.

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<sup>1</sup> WORLD ECONOMIC FORUM (2020). [The Future of Nature and Business](#).

Significant financial resources are needed in order to reduce emissions, mitigate and adapt the adverse effects of climate change. Developed countries have the obligation to transfer resources to developing countries and help them closing the financing gap. Commitments have been made, but progress still lags behind. DFIs are playing an essential role here by providing climate financing, mobilizing private investors and enabling capacity building.

The COVID-19 pandemic painfully demonstrated how vulnerable human beings and societies are. In the post-COVID recovery, a sustainable, climate-smart development is the only way to harmonize climate protection with joint economic prosperity, and to give future generations a world, which is safe and better for all.

## 1. Introduction

Climate change and its consequences are a comprehensive threat to our planet. It affects all parts of the world, already today. Sea levels are rising, glaciers are melting, and periods of drought and heat are increasing. According to a World Economic Forum study<sup>2</sup>, climate change is responsible for around 11-16% of biodiversity loss. Rising sea levels endanger the habitats of coastal ecosystems. Based on current projections, climate change will lead to an increase in tree mortality and forest dieback in many regions.<sup>3</sup> Further, it results in a variety of risks for the human population. Extreme weather conditions reduce crop production and put food security at risk. The amount of people suffering from water scarcity and large river floods is increasing; climate change affects the raw water quality and degrades the quality of drinking water, thus posing major danger for human health and society.<sup>4</sup> In addition, according to the Intergovernmental Panel on Climate Change (IPCC) projections, climate change will challenge economic growth and make poverty reduction more difficult.<sup>5</sup>

In light of the challenges and the fundamental threats, the international community agreed on two ambitious agendas: the United Nations Agenda 2030, with its 17 Sustainable Development Goals (SDGs), and the Paris Agreement, under which the National Determined Contributions (NDCs) are defined. The SDGs aim to end poverty, eradicate hunger and achieve a better, more sustainable future. Through the Paris Agreement, an ambitious pathway for achieving sustainable development with the main aim to keep global warming well below 2 °C has been set.<sup>6</sup> 196 parties committed to reduce greenhouse gas emissions and strengthen resilience to climate change.<sup>7</sup>

There are only eight years left to reach the SDGs and no country is on track to do so. German Development Minister Svenja Schulze declared in the Bundestag: “none - none! – of the 17 Sustainable Development Goals will be achieved by 2030 if we continue at the current pace.”<sup>8</sup> The same holds true for the Paris Agreement. The transition to carbon free economies is far slower than it should be and the funding gap is tremendous: an additional USD 6 to 10 trillion in global investments, both public and private, are needed in the next decade to mitigate climate change. This amounts to a cumulative 6-10 percent of annual global GDP.<sup>9</sup> But so is the potential of the transitions that lays before the world, a new nature-positive economy approach promises opportunities that “add up to USD 10.1 trillion in annual business value and could create 395 million jobs by 2030”<sup>10</sup>. Development Finance Institutions have a crucial role to play in closing the funding gap and directing funds towards these new nature-positive business models, thus contributing to turn the dual agendas into reality.

The challenges for developing countries are far greater and very different from those faced by the developed countries on this path. On the one side, they already suffer heavily from the impact of climate change and have fewer capacity and abilities to adapt to climate change. On the other side, they have historically contributed far less to the total amount of carbon emissions in the

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<sup>2</sup> WORLD ECONOMIC FORUM (2020). [The Future of Nature and Business](#).

<sup>3</sup> WORLD ECONOMIC FORUM (2020). [ibid.](#)

<sup>4</sup> WORLD ECONOMIC FORUM (2020). [ibid.](#)

<sup>5</sup> WORLD ECONOMIC FORUM (2020). [ibid.](#)

<sup>6</sup> BAUER ET AL. (2021). [DIE Working together to achieve the Paris climate goals and sustainable development](#).

<sup>7</sup> UNITED NATIONS (2018). [Climate Change Key Aspects of the Agreement](#).

<sup>8</sup> BUNDESREGIERUNG (2022). [Speech of Minister Svenja Schulze](#). (Own Translation)

<sup>9</sup> JAUMOTTE & SCHWERHOFF (2021). [IMF Blog. Reaching Net Zero Emissions](#).

<sup>10</sup> WORLD ECONOMIC FORUM (2020). [The Future of Nature and Business](#), Page 10.

atmosphere and still have a long way to go to eradicate poverty, hunger and inequality for their populations.

This paper starts with looking at the link between the dual agenda of the global community and how SDGs and climate goals (as defined by the NDCs) can be brought together. It then explores the special role of developing countries and the opportunities offered in the new nature economy, followed by how Development Finance Institutions (DFIs) can contribute to sustainable, climate-smart development. It concludes with possible recommendations for future actions.

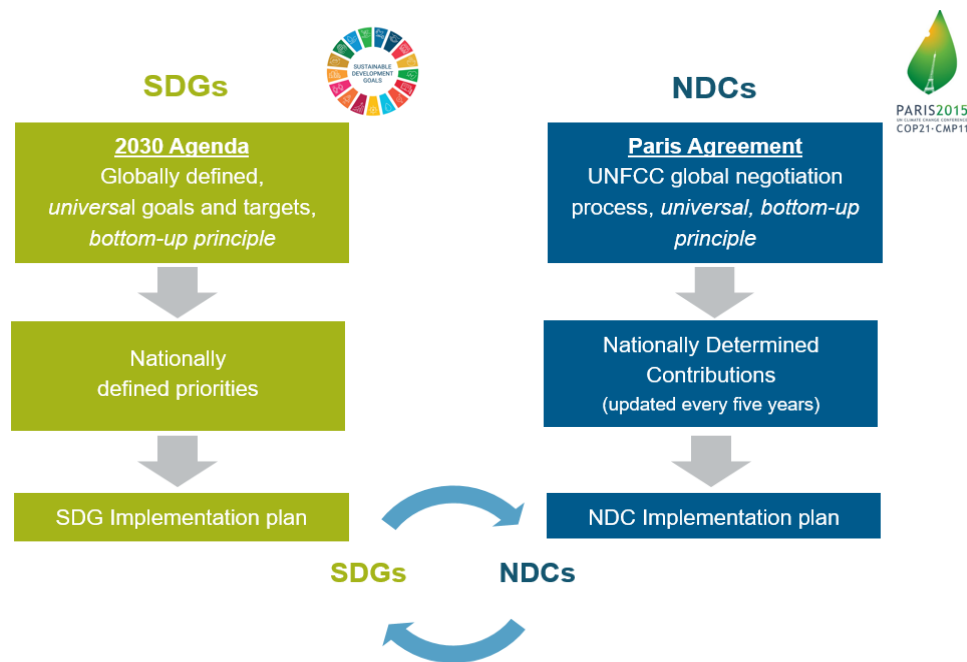
## 2. Agenda 2030 and Paris Agreement - Why is it so difficult to align SDGs and NDCs?

The Agenda 2030 with its SDGs and the National Determined Contributions under the Paris Agreement have important aspects in common, such as climate action (SDG 13) and clean energy (SDG 7). Both agendas are particularly relevant for vulnerable groups and both call for bottom-up implementation, as countries set their own priorities and ambitions based on their needs and capacities. And, most importantly, they can only be achieved together.

The 17 SDGs cover a wide range of development goals, from ending hunger and poverty, over health and education, to peace and justice. Around a third of the SDG goals aim at environmental protection and nature conservation. The international community wants to create access to affordable and sustainable energy, combat climate change and stop loss of species.<sup>11</sup> Although the SDGs are not legally binding, all governments, developing and developed countries alike, are expected to work on national frameworks to achieve them.<sup>12</sup>

The Paris Agreement set the global goals for fighting climate change. Therefore, countries are expected to submit Nationally Determined Contributions (NDCs), which outline their commitments to reduce greenhouse gas emissions and strengthen resilience to climate change. The NDCs often indicate priorities and ambitions in areas such as climate adaptation and finance, as well as related actions in a range of policy areas. Countries need to update their NDCs every five year, making them successively more ambitious.

**Figure 1: SDG-NDC Connection**



Source: DIE

<sup>11</sup> BUND (2021). [Sustainable Development Goals \(SDG\)](#).

<sup>12</sup> UNDP (2017). [Aligning NDCs and SDGs](#).

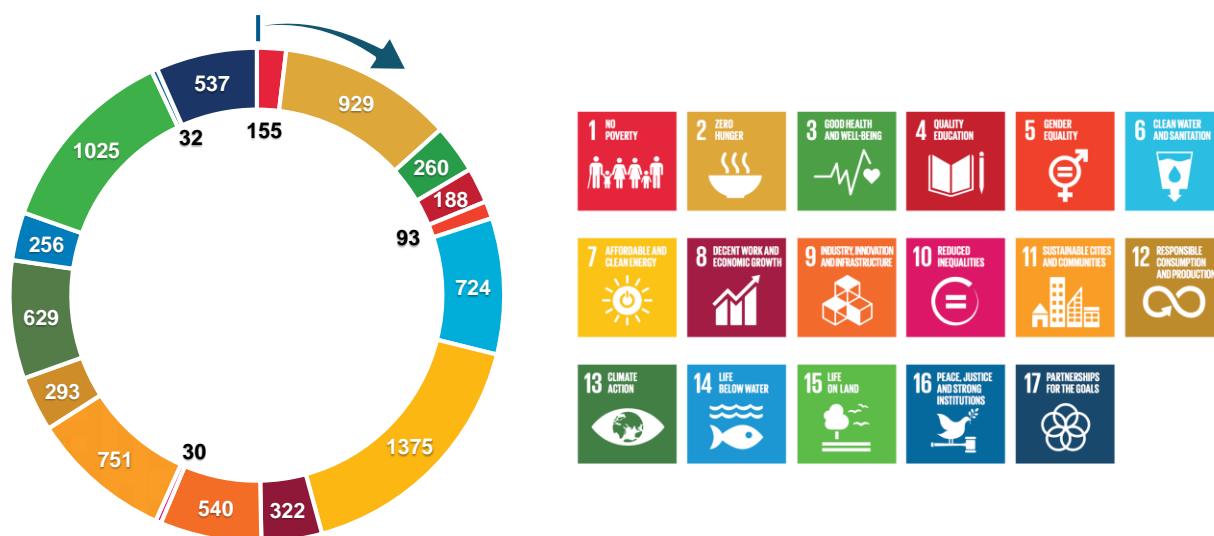
The SDGs localization process and the NDC implementation plans are developed in parallel, but there has been only limited (if any) communication or interfaces between them.<sup>13</sup> More and more countries recognize the inevitable need for aligning the two agendas to reduce duplication and increase efficiency. Already in 2016, the working paper of the World Resource Institute highlighted that many of the climate actions defined in the NDCs also have great potential to generate reciprocal advantages across the 17 SDGs.<sup>14</sup> At the same time, actions identified to achieve SDG targets can also contribute to meeting the NDC commitments.

In preparation of the 2021 COP26 in Glasgow, the UNFCCC prepared a review of the state of the NDCs and matched them with the SDGs. The result shows that the two agendas have common targets, for example:

- In the area of climate change *mitigation*, countries focus on land use, land-use change and forestry, which creates synergies with SDG 15 that aims to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”.<sup>15</sup>
- In the area of climate change *adaptation* as laid out in the NDCs, the management of freshwater resources is one priority that closely links to SDG 6, aiming to ensure availability and sustainable management of water and sanitation for all. Similar links can be drawn for SDG 2 (Zero Hunger) with the NDC priority on “food production and nutrition security”.<sup>16</sup>

A similar work was conducted by the German Development Institute (DIE). The 8139 climate activities as defined in the NDCs have been matched to the SDG goals. Synergy effect between NDCs and SDGs exists in all areas, with the greatest potential in SDG 7 (affordable land and clean energy), SDG15 (life on land) and SDG 2 (zero hunger).

**Figure 2: Matching NDC climate activities with SDGs**



Source: DIE GDI (2021), Klimalog NDC-SDG Connections

At the same time, the SDGs and NDCs can also seem contradictory, development goals seem to conflict with climate targets. There is for example cement, a high emission construction material to build roads, houses and production plants in countries all over the world. In developing countries in particular, this infrastructure is the basis for economic growth (SDG 8 – economic growth) and alternatives are scarce and technologies expensive to limit carbon emissions in the production

<sup>13</sup> UNDP (2017). Aligning NDCs and SDGs.

<sup>14</sup> NORTHROP ET. AL. (2016). Examining the Alignment Between the Intended NDCs and SDGs.

<sup>15</sup> UNFCCC (2021a). Nationally determined contributions under the Paris Agreement.

<sup>16</sup> UNFCCC (2021a). ibid.

process (NDCs). This explains to a certain degree why only 35% of the Paris Agreement Parties set NDC targets on absolute emission reduction; 43% of the Parties plan to do business as usual; 22% of the Parties set NDC targets partially including policies and measures that even intensify emission.<sup>17</sup> There are, however, approaches to resolve this contradiction. For one there are intense efforts within the cement industry to find a path to decarbonize, based on operational advances, technological innovation and new growth horizons across a sustainable construction value chain.<sup>18</sup> The new-nature economy model offers further perspective towards nature-positive connecting infrastructure and infrastructure design that “are energy and resource efficient, maximize biodiversity and ecosystem services, and build resilience to climate change”.<sup>19</sup>

To ensure that the dual agenda still has a chance to become reality, countries must align NDCs with their SDG implementation strategies, while taking synergies and trade-offs between economic development and climate protection into account.<sup>20</sup> There can be no sustainable development without climate action.

### 3. Special case developing countries – Where are the opportunities for developing countries?

Reducing greenhouse gas emission is a global issue. While developed countries have historically high emissions, the emissions from developing countries have risen rapidly in the past two decades, driven by their economic dynamics, rising populations and correspondingly steadily increasing energy demands<sup>21</sup>. Based on a DIE Study, developing countries currently contribute “around two thirds of annual global GHG emissions”<sup>22</sup>. On the other hand, developing countries are most vulnerable to climate change: rising sea level endangers the existence of coastal regions; extreme weather conditions destroy harvest where agriculture is the economic pillar of many developing countries, for example.

Due to limited awareness, technical expertise and funding, developing countries are least able to afford mitigation and adaption measures. Given many other pressing challenges, emission reduction has limited priority in many developing countries. National commitments are often conditional and subject to international financial and technical support. And the COVID-19 pandemic certainly intensified this trend. “Government budgets are tightened by sinking revenues and rising expenditures. Health care, social protection and economic recovery became primary issues. Funding is clearly seen as an obstacle for green investments”.<sup>23</sup>

In this context, developed countries have a special responsibility. They need to lead the way by transforming their own societies as well as create incentives for transformative policies in the developing world. This can happen through mobilization of financial resources, technology transfer and technical cooperation as well as strengthening capacity building.<sup>24</sup> Further, international cooperation should be consistently guided by implementation of the SDGs as well as the Paris Agreement with its NDCs.<sup>25</sup>

The challenge therefore is to identify the opportunities for developing countries in realizing sustainable and climate-smart development. We take a closer look at four aspects here that play a key role: (1) policy adaptations for developing countries, (2) business opportunities in the new nature economy, (3) technology-enabled green growth and (4) climate finance.

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<sup>17</sup> UNFCCC (2021a). [Nationally determined contributions under the Paris Agreement](#).

<sup>18</sup> CZIGLER ET. AL. (2020). MC KINSEY. [Laying the foundation for a zero-carbon cement industry](#).

<sup>19</sup> WORLD ECONOMIC FORUM (2020). [The Future of Nature and Business](#). Page 59.

<sup>20</sup> UNDP (2017). [Aligning NDCs and SDGs](#).

<sup>21</sup> BAUER ET. AL. (2021). DIE [Working together to achieve the Paris climate goals and sustainable development](#).

<sup>22</sup> BAUER ET AL. (2021). DIE [ibid](#).

<sup>23</sup> KFW (2021) Trendmonitor Entwicklungs- und Schwellenländer (Internal Publication).

<sup>24</sup> BAUER ET AL. (2021). DIE [Working together to achieve the Paris climate goals and sustainable development](#). and UNITED NATIONS (2018). [Climate Change Key Aspects of the Agreement](#).

<sup>25</sup> BAUER ET AL. (2021). DIE [Working together to achieve the Paris climate goals and sustainable development](#).

### 3.1 Policy adaptations for developing countries

The Paris Agreement set a first milestone in undertaking ambitious efforts to fight against climate change and adapt to its effects. It applies for both developed and developing countries. However, developing countries face special challenges and need a great deal of support in implementing climate goals. Taking into account the different national circumstances, the Agreement specified:

*“Developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances.”*<sup>26</sup>

“Developing countries” are not a homogenous group. While larger emerging market countries’ emissions are increasing rapidly, the LDCs contribute only little to global emission. Based on estimations of the United Nations, as of 2019, the 46 LDCs with 14% of the world population contributed only about 1.1% of the total CO<sub>2</sub> emissions.<sup>27</sup> In per capita terms, “in 2019, the carbon footprint of an average person in a developed country was more than 23 times larger than that of an average person in a LDC, the carbon footprint of an average person in a developing country was still eight times higher than that of an average person in a LDC.”<sup>28</sup> The “polluter pays” principle ensures a “fair” transition, in which developed and emerging market countries take major responsibility in emission reduction, while the LDCs are given more time (e.g. until they reach middle-income status) to catch up economic growth. In order to achieve global climate goals, policy and technical guidance must be provided to LDCs to put them on a green development track. To do so, the Paris Agreement reaffirms the obligations of developed countries to support developing countries in building a clean and climate-resilient future. The Agreement establishes a financial mechanism, a technology framework and strengthens capacity-building activities in developing countries<sup>29</sup>.

### 3.2 New nature economy

A different way to look at the path for developing countries is laid out in the “new nature economy report” by the World Economic Forum (2020). The idea is based on a societal and economical reset, where well-being is decoupled from resource consumption and resource extraction is decoupled from negative impact on ecosystems with the aim to reduce the resources needed, thus sparing ecosystems and to better share with nature what oceans and land there are. The report requires “a critical shift towards nature-positive models in three key socio-economic systems: (1) food, land and ocean use; (2) infrastructure and the built environment; (3) and extractives and energy.”<sup>30</sup>

The idea of a new nature economy does not only require transitions but offers a wide array of new business opportunities. There are business models driven by innovative technology that are already operating successfully and that attract private capital, such as technologies to save food waste or the creation of alternative proteins. Blended capital, social enterprises and more impact-oriented investors are active in areas of sustainable fisheries and land restoration. Even though nature-based solutions (e.g. water purification via constructed wetlands)<sup>31</sup> attract the interest of large corporations, regulatory development is needed to realize the full potential of nature-based solutions in the public and private sector.<sup>32</sup>

The World Economic Forum expects that these “opportunities add up to USD 10.1 trillion in annual business value and could create 395 million jobs by 2030 – around one-fifth of the total projected increase in the global labor force between now and 2030. These jobs are also more likely to be resilient and offer the opportunity for better livelihoods than jobs in business-as-usual business models.”<sup>33</sup>

<sup>26</sup> UNFCCC (2015). [Paris Agreement](#), Article 4.4. Page 3.

<sup>27</sup> UNCTAD (2021). [Smallest footprints, largest impacts: LDCs need a just sustainable transition](#).

<sup>28</sup> UNCTAD (2021). [ibid.](#)

<sup>29</sup> UNITED NATIONS (2018). [Climate Change Key Aspects of the Agreement](#)

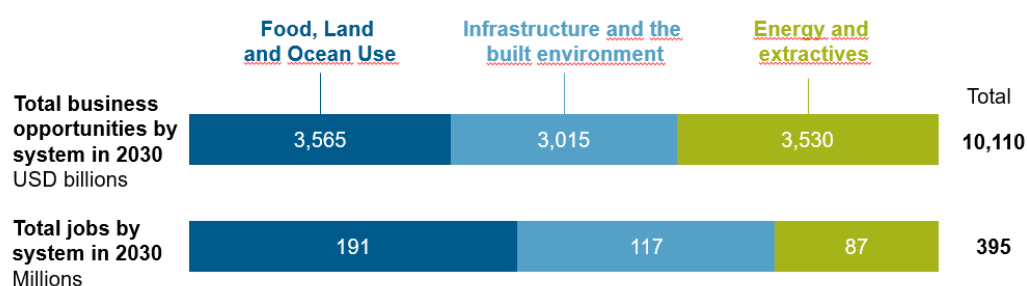
<sup>30</sup> WORLD ECONOMIC FORUM (2020). [The Future of Nature and Business](#).

<sup>31</sup> CONTI ET. AL. (2019). [Strategies for Operationalizing Nature-Based Solutions in the Private Sector](#).

<sup>32</sup> CONTI ET. AL. (2019). [ibid.](#)

<sup>33</sup> WORLD ECONOMIC FORUM (2020). [The Future of Nature and Business](#). Page 10.

**Figure 3: 15 transitions in the three socio-economic systems could deliver USD 10.1 trillion of annual business opportunities and 395 million jobs by 2030.**



Source: World Economic Forum (2020), [The Future of Nature and Business](#), page 9.

Even though politics set regulations and the framework for a sustainable transformation for economy, it is necessary that businesses use their resources and fulfill their responsibility. Possibilities for businesses to move forward are voluntary commitments, which go ahead of policy regulations, build alliances and networks to create transformation plans for specific sectors or regions. Appropriate voluntary corporate policies should be promoted along the value chains to the supplier, customer and other business partners. Achieving a critical mass of businesses with ambitious corporate policies is key to move the goalpost of “what is possible and desirable and changes the decision-making calculus for regulatory choices”<sup>34</sup> New networks amongst sectors but also across different sectors will help to achieve this critical mass of change agents to implement nature-positive models.

### 3.3 Technology enabled green growth

In the transformation to new nature economy, technology is an important enabling factor. One major advantage and opportunity for developing countries to grow in a greener way is the technological advances we enjoy nowadays. While developed countries went through industrial revolution at the costs of environment, developing countries can build their growth on improved technologies.

#### Renewable energy sources

The rapid increase of emissions in developing countries is primarily due to their rising energy demands<sup>35</sup>, which are mainly provided by fossil energy sources. For a long time, high transition costs were a major obstacle for developing renewable energy. However, the costs of renewable energy generation have fallen significantly over the past decade, “driven by steadily improving technologies, economies of scale, competitive supply chains and growing developer experience”<sup>36</sup>. The IRENA Renewable Cost Database shows that the costs for electricity from utility-scale solar photovoltaics fell by 85% between 2010 and 2020, while that of concentrating solar power fell by 68%, onshore wind by 56% and offshore wind by 48%<sup>37</sup>. The trend is expected to continue in the foreseen future. Clean energy does not only become affordable, but even more competitive than fossil energy. The transition to renewable energy sources can provide enormous emission reduction and cost-saving potentials for developing countries.

<sup>34</sup> WORLD ECONOMIC FORUM (2020). [The Future of Nature and Business](#). Page 14.

<sup>35</sup> BAUER ET AL. (2021). [DIE Working together to achieve the Paris climate goals and sustainable development](#).

<sup>36</sup> IRENA (2021a). [Renewable Power Generation Costs in 2020](#). Page 11.

<sup>37</sup> IRENA (2021a). [ibid.](#)

### Example: Renewable energies in Brazil

Among developing countries, Brazil stands out with 83%<sup>38</sup> electricity coverage through renewable energy and ranks no. 3 worldwide (after China and the USA) in renewable energy power capacity as well as electricity generation<sup>39</sup>. Between 2011 and 2020, Brazil ramped up its total renewable energy capacity by over 60%<sup>40</sup>. Besides strongly developed hydropower segment thanks to its natural resources, Brazil succeeded in increasing wind energy capacity from 1,426 MW in 2011 to 17,198 MW in 2020<sup>41</sup> through “developing a competitive wind turbine-manufacturing sector by leveraging pre-existing domestic capabilities in aircraft manufacturing”<sup>42</sup>. Solar energy capacity was built-up from 2 MW in 2010 to 7,881 MW in 2020<sup>43</sup>. Solar price averaged at USD 0.021/kWh in 2019<sup>44</sup>, which is among the lowest in the world<sup>45</sup>.

The climate effect of this development was obvious. After a peak in 2014, the CO<sub>2</sub> emission of Brazil fell back to the level of 2011/2012 with around 430m. tons in 2018<sup>46</sup>. The replacement of fossil energy source through renewables avoided 320m tons<sup>47</sup> CO<sub>2</sub> emissions in 2018.

To ensure that renewable energy is also sustainable, there are a couple of points to watch out for. The production of construction elements for renewable energy infrastructure requires a lot of energy and materials. It is important to make sure this process leaves a CO<sub>2</sub> footprint as small as possible. Since the performance of renewable energy power plants rely heavily on weather conditions, innovation and technological development are essential to further improve power storage efficiency and diversify energy mix to mitigate the volatility in power production due to unfavorable weather conditions. While planning and implementing renewable power plant projects, social and environmental aspects must be taken into account to align the interests of all stakeholders. For example, providing fair compensation to residents in case they need to be relocated due to the construction of a hydropower plant; or, do no harm to the marine natives in case an offshore wind farm or tidal power plant is to be built.

### Digitalization and smart climate technologies

Besides transformation of energy sources, a further technological factor in favour of a green growth is the digitalization and the use of smart climate technologies to reduce emission and mitigate climate risks. A study of the German digital association Bitkom in 2020 shows that “digital technologies can save up to 20% of global greenhouse gas emissions, ... with the highest potential in sectors of energy, buildings, mobility and transportation as well as agriculture and industry”<sup>48</sup>. Innumerable innovations are already on the way. Here are two examples:

- In the logistic sector, electric driverless trucks may increase goods transportation efficiency while reducing emissions. Thanks to fast-growing network capacity and available big data, driverless trucks can find the best route for transportation, analyze the traffic situation and communicate with other vehicles to avoid traffic jams and accidents, thus deliver the goods in a more efficient way. Not only using electric vehicles to replace internal combustion engine vehicles can reduce the consumption of fossil energy, but better traffic flow can also improve life quality, safety, and reduce emission.
- Smart farming already is a reality. Digital devices can analyze weather conditions, monitor crop growth, improve irrigation efficiency and reduce ground water usage. Using fertilizer drones can increase the dosage accuracy and cut the amount of use, thereby reducing emission from fertilizer production.

However, a cautious approach is also required here. According to the Bitkom study mentioned above, “1.8 to 3.2 percent of global greenhouse gas emission” are caused by the manufacture of digital devices and the operation of digital infrastructure<sup>49</sup>. Thus, it is vital to find a healthy balance

<sup>38</sup> ALVES, B. (5. July 2021). STATISTA. [Electricity in Brazil - Statistics & Facts.](#)

<sup>39</sup> IRENA (2021b). [Renewable capacity Statistics 2021.](#)

<sup>40</sup> IRENA (2021b). [ibid.](#) (Own calculation).

<sup>41</sup> IRENA (2021b). [ibid.](#)

<sup>42</sup> IRENA (2020). [Global Renewables Outlook: Energy Transformation 2050.](#)

<sup>43</sup> IRENA (2021b). [Renewable Energy Statistics 2021.](#)

<sup>44</sup> IRENA (2020). [Global Renewables Outlook: Energy Transformation 2050.](#)

<sup>45</sup> IRENA (2020). [ibid.](#)

<sup>46</sup> IRENA (2021c). [Avoided Emissions Calculator.](#)

<sup>47</sup> IRENA (2021c). [ibid.](#)

<sup>48</sup> BITKOM e.V. (2021). [How digital technologies can limit CO<sub>2</sub>-emission.](#)

<sup>49</sup> BITKOM e.V. (2021). [How digital technologies can limit CO<sub>2</sub>-emission.](#)



in digital solutions through climate friendly hardware production and optimized energy mix to cover high-energy demand of data centers and networks.

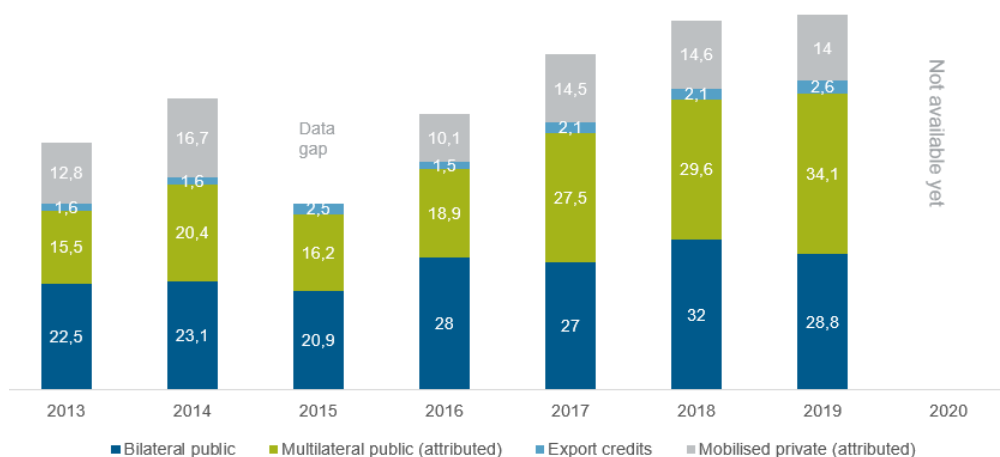
Technology transfer and capacity building helps developing countries manage the climate challenge more efficiently. At COP26 in November 2021, Parties agreed to further strengthen international cooperation and coordination in capacity building such as support developing countries to identify capacity building gaps and find solutions; submit annual technical progress reports for the Paris Committee on capacity building or renew the memorandum of understanding with United Nations Environment Program to host the Climate Technology Centre and Network for a further five-year period.<sup>50</sup> Progress has been made and goals are set. Further implementation is the key to success.

### 3.4 Climate finance

There is no sustainable development outside of the context of climate change. In order to achieve these twin goals, significant financial resources are needed to reduce emissions, mitigate and adapt the adverse effects of climate change. According to OECD estimations, “around USD 6.3 trillion a year of investment in infrastructure is required on average between 2016 and 2030 to meet development needs globally. Making these investments climate compatible will cost an additional USD 0.6 trillion a year over the same period. Incremental costs could be offset by fuel savings of up to USD 1.6 trillion per year through 2030”.<sup>51</sup>

The challenges that the developing countries are facing are tremendous. One major obstacle is the insufficient financing of energy transition and other actions to tackle the climate change. The United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement call for financial assistance from Parties with more financial resources to those that are less endowed and more vulnerable.<sup>52</sup> Developed countries have obligations to transfer resources to the developing countries and support climate action through different channels: multilateral development banks, bilateral development agencies, various green climate funds etc. Already with the Cancun Agreements in 2010, developed country Parties committed - in the context of meaningful mitigation actions and transparency on implementation - to a goal of mobilizing jointly USD 100 billion per year by 2020 to address the needs of developing countries.<sup>53</sup>

**Figure 4: Climate finance provided and mobilized (USD billion)**



Source: OECD 2021, [Climate Finance Provided and Mobilized by Developed Countries](#), page 6.

Climate finance provided and mobilized by developed countries for developing countries had increased from USD 52.4 billion in 2013 to USD 79.6 billion in 2019<sup>54</sup>, but remains USD 20 billion short of meeting the 2020 goal of mobilizing USD 100 billion per year. (At COP26, Parties agreed to achieve the goal “by 2023 at the latest”.<sup>55</sup>) While the amount of public climate finance provided

<sup>50</sup> COP26 (2021). [The Climate Pact](#), and COP26 (2021). [The Negotiation Explained](#).

<sup>51</sup> OECD (2017). [Investing in Climate, Investing in Growth](#).

<sup>52</sup> UNFCCC (2021b). [Introduction to Climate Finance](#).

<sup>53</sup> UNFCCC (2021b). [Introduction to Climate Finance](#).

<sup>54</sup> OECD (2021). [Statement from OECD Secretary-General Mathias Cormann on Climate Finance in 2019](#).

<sup>55</sup> COP26 (2021). [The Climate Pact](#), Page 5.

by multilateral institutions had more than doubled from 2013 to 2019, the amount mobilized from private sources has barely increased. Reasons of this development may vary from country to country, but in general, lack of bankable projects as well as unpredictable political and economic environment often scare off private investors.

Here, developing financial institutions (DFIs) have an indispensable role to play. As financial institutions specialized to foster private sector development in developing countries, DFIs have the financial resources, experiences and know-how in investing in developing countries. DFIs act as anchor investors to encourage private investment in projects, which are not (yet) commercially viable. Where the risks are too high for private investors, DFIs step in, provide first round financing and improve risk profile of the investments. Private investments are looking for a stable and predictable (macroeconomic) investment climate. DFIs share their expertise in the developing markets with private investors and participate political dialogues to improve investment climate, so that more private investments can be mobilized. There are large amount of private financial resources, held both in developed and developing economies. DFI can help unlock those resources and broaden private investor's participation in the green economy.

Now DFIs are taking traditional development financing to the next level by combining sustainable development and climate financing. While building up pipelines, more and more DFIs are focusing on green projects, while capping high emission projects. Almost all DFIs have "committed to stretching green finance targets of between 30% and 50%."<sup>56</sup> At COP26, 26 DFIs from developed as well as developing countries "committed to a new higher climate finance mobilization target of USD 1.3 trillion for the 2019 to 2025 period"<sup>57</sup>. European Development Finance Institutions committed to "exclude new coal and fuel oil financing, and limit other fossil fuel financing to Paris-aligned projects until generally excluding them by 2030 at the latest"<sup>58</sup>. Integrating climate risk into investment decision-making process, risk assessment and risk management is being mainstreamed.

On the quest to support developing countries on their path to climate neutrality, DFIs are faced with challenges themselves. DFIs as institutions need to find a path for themselves to transition into a low carbon economic environment and balance out what it means to move towards a net-zero portfolio, while at the same time supporting clients on their path. On the other hand DFIs need to balance the dual agenda of SDGs and NDCs, take on the challenge and be frontrunners in transforming our economies and societies towards a better future for all – one that is carbon neutral and nature-positive. DFIs have a crucial role to play as an agent of transformation to reach climate-smart development in developing countries. DFIs can explore the ways in which "doing good" equals "doing well" in a world where decarbonization efforts and good business sense complement each other. In that case, economic growth does not contradict climate protection.

## 4. Conclusion

Climate change is profoundly affecting ecology, human and society. Responding to climate change is of vital importance. Stimulating sustainable economic growth is an essential way to improve living standard and well-being. In tackling both challenges, international communities have agreed on two ambitious agendas: the 17 SDGs cover a wide range of development goals and the Paris Agreement (with NDCs) bears a clear focus on climate protection. Although the two agendas have been developed in parallel, they are content-wise interlinked: many climate actions identified to achieve SDG targets can also contribute to meet the NDC commitments and vice versa. Countries need to align NDCs with their SDG implementation strategies, to achieve synergies and assure both agendas become reality.

Developing countries are most vulnerable to climate change. At the same time, they are least able to afford mitigation and adaption measures due to, among others, limited technical and financial resources. Achieving sustainable economic growth while reducing emission is a big challenge, but it bears also lots of opportunities.

- Policy adaptations allow developing countries (especially LDCs) to catch up economic development while limiting their climate footprint to a certain extent. In order to achieve

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<sup>56</sup> COP26 (2021). [The Climate Pact](#). Page 5.

<sup>57</sup> COP26 (2021). [The Climate Pact](#). Page 20.

<sup>58</sup> EDFI (2020). [Statement on Climate and Energy Finance](#). Page 1.

global climate goals, international communities need to provide policy and technical guidance to LDCs to put them on a green development track. Developed countries have the obligation to share technological and financial resources with developing countries to support them build a clean and climate-resilient future.

- New nature economy bears huge business potentials to generate revenue and decent jobs. The approach promises opportunities that “add up to USD 10.1 trillion in annual business value and could create 395 million jobs by 2030”.<sup>59</sup>
- Technological advances enable developing countries to grow on a much greener way than the advanced economies did. Clean energy does not only become affordable, but even more competitive than fossil energy. The transition to renewable energy sources can provide enormous emission reduction and cost-saving potentials for developing countries. Digitalization and the use of smart climate technologies can help reduce emission and mitigate climate risks. Technology transfer and capacity building helps developing countries manage the climate challenge more efficiently.
- Significant financial resources are needed in order to reduce emissions, mitigate and adapt the adverse effects of climate change. Developed countries have the obligation to transfer resources to developing countries and help them closing the financing gap. Commitments have been made, but progress still lags behind. DFIs are playing an essential role here, in providing climate financing, mobilizing private investors, enabling capacity building and promoting the ideology.

The COVID-19 pandemic painfully demonstrated how vulnerable human beings and societies are. In the post-COVID recovery, how can we “build back better”? A sustainable, climate smart development is the only way to harmonize climate protection with joint economic prosperity, and to give future generations a world which is safe and better for all. “The window to act is finite and shrinking.”<sup>60</sup> There is no time to waste. As stated by Sir David Attenborough: "We are at a unique stage in our history. Never before have we had such an awareness of what we are doing to the planet, and never before have we had the power to do something about that. Surely we all have a responsibility to care for our blue planet. The future of humanity and indeed, all life on earth, now depends on us."

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<sup>59</sup> CONTI ET. AL. (2019). Strategies for Operationalizing Nature-Based Solutions in the Private Sector.

<sup>60</sup> CARNEY, M. (2021). Value(s): Building a Better World for All.

## List of Figures

|   |   |
|---|---|
| Figure 1: SDG-NDC Connection (Source: DIE) .....  | 3 |
| Figure 2: Matching NDC climate activities with SDGs: Matching 8139 Climate Activities as defined in the NDCs to the 17 SDGs (Source: KLIMALOG DIE SEI NDC-SDG).....   | 4 |
| Figure 3: 15 transitions in the three socio-economic systems could deliver USD 10.1 trillion of annual business opportunities and 395 million jobs by 2030 (Source: WEF, NNER II, the Future of Nature and Business, page 9, 2020)..... | 7 |
| Figure 4: Climate finance provided and mobilized (USD billion) (Source: OECD, Climate Finance Provided and Mobilized by Developed Countries, page 6, 2021).....   | 9 |

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