

# BRICS and Climate Change Law: An Opportunity to Save the Planet

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## Abstract

Climate change is a global problem requiring the cooperation of different states to cope with it. It has been a major concern for the international community, which has responded mainly through several United Nations treaties and other international bodies, for example the *United Nations Framework Convention on Climate Change*. Despite having a huge appeal to all countries, the implementation of climate change interventions has yet to produce the desired results. The BRICS+ initiative presents an opportunity for further cooperation with like-minded countries that are at the forefront of driving the global economy. BRICS+ also presents an opportunity for cooperation to address climate change. This paper analyses how countries' cooperation under the BRICS contributes to developing the international climate change regime. BRICS is a bloc of top emerging economies - Brazil, Russia, India, China, and South Africa - which has been growing since January 2024 by adding new member states such as Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates (UAE). This paper evaluates relevant provisions of the Johannesburg II Declaration of 2023 and the climate pledges of original and new BRICS members expressed in their Nationally Determined Contributions (NDCs) under the *Paris Agreement*. Based on this evaluation, the article concludes with a common vision for the development of climate change policy by the bloc and an assessment of how the differences and similarities of approaches of the BRICS members contribute to cooperation in addressing the climate change challenge.

## Keywords

BRICS; BRICS+; climate change; climate change law; nationally determined contributions; NDC; fossil fuels.

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## 1 Introduction

BRICS (an acronym for Brazil, Russia, India, China, and South Africa) is a forum of major developing economies – countries that play a significant role in the world market environment and in formulating the global agenda and response to critical issues of our time, such as sustainability.<sup>1</sup> The bloc is expanding. In the Johannesburg Summit in the summer of 2023 BRICS invited six countries to join the bloc (Argentina, Egypt, Ethiopia, Iran, Saudi Arabia and the United Arab Emirates (UAE) (paragraph 91 of the *Johannesburg II Declaration*).<sup>2</sup> Although Argentina decided not to join the bloc,<sup>3</sup> the remaining states invited have enjoyed full BRICS membership since January 2024, thus enlarging the bloc to ten countries.<sup>4</sup> Despite Argentina's non-membership of BRICS, we will analyse the experience of this country in addition to those of the others, because it received an invitation from BRICS and could potentially join the group in future. Since its expansion in January 2024, the bloc has been informally called BRICS+.<sup>5</sup> In this article, we will use the abbreviation BRICS, but we mean the extended version.

One of the crucial issues of our time is climate change, which is caused primarily by greenhouse gas (GHG) emissions. GHGs absorb infrared radiation that is released from the Earth's surface and turn it back to Earth, thus contributing to the greenhouse effect.<sup>6</sup> One of the most important GHGs is carbon dioxide (CO<sub>2</sub>).<sup>7</sup> Globally the top ten CO<sub>2</sub> emitting countries are the following: China (11336 MtCO<sub>2</sub>), USA (5032 MtCO<sub>2</sub>), India (2674

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<sup>1</sup> BRICS Information Portal date unknown <http://infobrics.org/page/history-of-brics/>; Ruppel 2014 <https://www.youtube.com/watch?v=YXgIRcBvtoY>.

<sup>2</sup> XV BRICS Summit *Johannesburg II Declaration. BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development and Inclusive Multilateralism* (Sandton, 23 August 2023) (*Johannesburg II Declaration*). Also see Ismail 2023 <https://www.aljazeera.com/news/2023/8/24/analysis-wall-of-brics-the-significance-of-adding-six-new-members>.

<sup>3</sup> See Plummer 2023 <https://www.bbc.com/news/world-latin-america-67842992>.

<sup>4</sup> *Johannesburg II Declaration* para 91.

<sup>5</sup> Jütten and Falkenberg 2024 [https://www.europarl.europa.eu/thinktank/en/document/EPRS\\_BRI\(2024\)760368](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2024)760368).

<sup>6</sup> Mann 2023 <https://www.britannica.com/science/greenhouse-gas>.

<sup>7</sup> Britannica 2023 <https://www.britannica.com/science/carbon-dioxide>.

MtCO<sub>2</sub>), Russia (1712 MtCO<sub>2</sub>), Japan (1012 MtCO<sub>2</sub>), Iran (688 MtCO<sub>2</sub>), Germany (679 MtCO<sub>2</sub>), Saudi Arabia (631 MtCO<sub>2</sub>), South Korea (616 MtCO<sub>2</sub>), and Indonesia (616 MtCO<sub>2</sub>).<sup>8</sup> Five of these countries are BRICS countries, including new members. They account for 68,17% of the emissions from the top ten emitters. Other BRICS countries took the following positions in terms of CO<sub>2</sub> emissions: 12th place - Brazil (497 MtCO<sub>2</sub>), 15th place - South Africa (426 MtCO<sub>2</sub>), 26th - Egypt (247 MtCO<sub>2</sub>), 27th - United Arab Emirates (237 MtCO<sub>2</sub>), 31st - Argentina (190 MtCO<sub>2</sub>), and 92nd - Ethiopia (19 MtCO<sub>2</sub>).<sup>9</sup>

Considering the significant share of GHG emissions from the BRICS countries, the bloc's role in mitigating climate change is critical. However, BRICS consists of emerging developing economies whose historical contribution to climate change was marginal or at least debatable, depending on how one calculates historical emissions. Excluding land use from the calculation, among the largest emitters historically are the United States of America (USA) and the European Union (EU), for example.<sup>10</sup> However, if land use emissions are included, the contributions of Brazil and Indonesia will increase.<sup>11</sup> Also, if one calculates emissions per capita, the contribution of Brazil will increase while the contribution of the EU decreases.<sup>12</sup>

Different forms of GHG emissions calculations serve different purposes. Thus, calculating emissions in terms of the percentage of gross domestic product allows a comparison of similar-sized economies concerning their climate change impact.<sup>13</sup> Presumably the purpose of the BRICS's climate policy is to contribute positively to climate change mitigation and adaptation while simultaneously addressing the needs of emerging economies and facilitating climate justice. In that case, calculating the total emissions of all nations including their historical emissions sounds like the most reasonable approach. It is expected that emissions from developing countries will increase as their economies improve.<sup>14</sup> However, for the international climate regime to be just and not inhibit the eradication of poverty and the economic progress of the Global South, it should tolerate some degree of

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<sup>8</sup> Global Carbon Atlas date unknown <https://globalcarbonatlas.org/emissions/carbon-emissions/>.

<sup>9</sup> Global Carbon Atlas date unknown <https://globalcarbonatlas.org/emissions/carbon-emissions/>.

<sup>10</sup> Ekholm and Lindroos 2015 <https://publications.vtt.fi/julkaisut/muut/2015/VTT-R-00139-15.pdf> 1.

<sup>11</sup> Ekholm and Lindroos 2015 <https://publications.vtt.fi/julkaisut/muut/2015/VTT-R-00139-15.pdf> 1.

<sup>12</sup> Ekholm and Lindroos 2015 <https://publications.vtt.fi/julkaisut/muut/2015/VTT-R-00139-15.pdf> 1.

<sup>13</sup> Hargrove, Qandeel and Sommer 2019 *Global Transitions* 194.

<sup>14</sup> Hargrove, Qandeel and Sommer 2019 *Global Transitions* 191.

an increase in emissions. At the same time, BRICS cooperation should facilitate a climate-friendly mode of development and a reduction of GHG emissions in the bloc wherever possible. Hargrove, Qandeel and Sommer<sup>15</sup> claim that the participation of a nation in multiple multilateral environmental agreements has a cumulative effect and reduces emissions over time. As of now, BRICS does not have legally binding climate instruments. However, BRICS' further focus on climate change mitigation and adaptation could contribute positively towards the formation of such a cumulative effect together with the fulfilment of the other climate commitments of the BRICS nations.

Climate justice considerations require drawing attention to the following. Many of the BRICS countries suffer more from it while contributing less than non-BRICS countries to the climate problem. These include the new BRICS members from the most water-scarce region in the world - Egypt, Ethiopia, Saudi Arabia and the UAE.<sup>16</sup> The Intergovernmental Panel on Climate Change (IPCC)<sup>17</sup> notes that the largest adverse impact of climate change takes place in Africa, Asia, Central and Southern America, least developed countries, small islands, and the Arctic. The IPCC<sup>18</sup> also states that the negative impacts of climate change can impede economic growth in developing and least developed states and be a constraint to successful climate change adaptation.

In this article we will identify differences and similarities in the nationally determined contributions (NDCs) of the BRICS countries committed to implementing the *Paris Agreement*<sup>19</sup> - a key international treaty for coping with the climate crisis. In doing this we will articulate key elements for common climate policy and probably common legal instruments of the bloc on climate change that could enhance BRICS' integration and contribute to climate change mitigation and adaptation. The addition of the Middle Eastern countries to BRICS could be taken as an indication of the bloc's energy-centric policy.<sup>20</sup> While modifying energy production is a critical element in coping with the climate crisis, an evaluation of the energy policy of the bloc and its development is pivotal for understanding the bloc's role from a climate perspective.

Besides the NDCs of the BRICS nations and the literature on climate law, we will assess the situation pertaining to the energy sources of the

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<sup>15</sup> Hargrove, Qandeel and Sommer 2019 *Global Transitions* 193, 195.

<sup>16</sup> Terink, Immerzeel and Droogers 2013 *Int J Climatol*.

<sup>17</sup> IPCC "Summary for Policymakers" para A.2.2.

<sup>18</sup> IPCC "Summary for Policymakers" para A.3.6.

<sup>19</sup> *Paris Agreement* (2015).

<sup>20</sup> Ismail 2023 <https://www.aljazeera.com/news/2023/8/24/analysis-wall-of-brics-the-significance-of-adding-six-new-members>; Baskaran and Cahill 2023 <https://www.csis.org/analysis/six-new-brics-implications-energy-trade>.

countries. In 2021 the BRICS Energy Research Cooperation Platform (ERCP) prepared the BRICS Energy Report, which, according to the Minister of Mines and Energy of the Federal Republic of Brazil Albuquerque,<sup>21</sup> is a "valuable tool to understand the landscape in which we operate." This is not the only source for getting BRICS' views on energy issues. Others include, for example, the BRICS Energy Technology Report,<sup>22</sup> the Annual Report of the BRICS Business Council,<sup>23</sup> and the BRICS Plus Youth Energy Outlook.<sup>24</sup>

First this paper will provide an overview of the international climate legal regime. Then it will integrate BRICS into the climate agenda by discussing recent developments in the bloc, based on the *Johannesburg II Declaration*. We will evaluate the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC) as one of the key elements of the international climate regime which BRICS also supports. Then the paper will assess these countries' NDC commitments and outline a comparative perspective on the climate laws and policies of the BRICS countries. The article then provides recommendations specific to the BRICS countries and concludes that BRICS cooperation can contribute positively to climate change mitigation and adaptation. However, the implementation of the NDCs of the BRICS countries and the further development of common climate law and policy are needed for this opportunity to be used productively.

## 2 International climate change law

In 1992 the *United Nations Framework Convention on Climate Change* (UNFCCC) was adopted. This was the first global treaty on the issue. The UNFCCC enshrines principles that guide parties towards achieving the stabilisation of the concentration of GHGs in the atmosphere. These principles include, among others, the precautionary principle and the CBDR-RC principle. The latter will be discussed in more detail in Section Four of this article.

Despite its significance as a milestone in forging an international legal framework for coping with the climate change challenge, the UNFCCC did not provide specific measures to address climate change. That is why the next step in developing a legal mechanism for climate change was needed.

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<sup>21</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf>.

<sup>22</sup> BRICS Energy Research Cooperation Platform 2021 <https://yeabrics.org/wp-content/uploads/2022/02/getdocu-40.pdf>.

<sup>23</sup> BRICS Business Council 2023 <https://brics2023.gov.za/wp-content/uploads/2023/08/SABBC-AR-30-Aug.pdf>.

<sup>24</sup> BRICS YEA 2022 [https://yeabrics.org/wp-content/uploads/2022/09/Executive-Summary\\_BRICS-Youth-Energy-Outlook-2022.pdf](https://yeabrics.org/wp-content/uploads/2022/09/Executive-Summary_BRICS-Youth-Energy-Outlook-2022.pdf).

The expectations that there would be such an instrument materialised in the *Kyoto Protocol* of 1997.

The success of the *Kyoto Protocol* was limited, on the one hand by the fact that it had binding emission reduction targets not for the whole community of states but only for developed countries, and on the other hand because even the participation of developed states was not overarching. Thus, the United States did not ratify the Protocol<sup>25</sup> and Canada decided to withdraw from the treaty when it realised that it would not be able to fulfil its commitments under the agreement.<sup>26</sup>

Currently the legal hopes of the international community concerning climate change are focussed on the *Paris Agreement* of 2015. This treaty is equally binding for developed and developing nations, and all of them have made pledges under the Agreement. Article 3 of the *Paris Agreement* establishes one of the key elements of the international legal regime on climate change - NDCs - ambitious efforts that all parties to the Agreement are to undertake and publish.<sup>27</sup>

The formation of climate change law is complex. It concerns legal arrangements such as the transition from the idea of the top-down binding norms for developed countries of the *Kyoto Protocol* to the more inclusive bottom-up approach of the *Paris Agreement*. Complexity is visible in the uneasy relationships of this legal domain with other fields of law such as with its counterpart, environmental law.<sup>28</sup> Also, the dynamic nature of climate change law can be observed in the role of the different actors in the formulation of its norms and principles.

At the time of the adoption of the *Kyoto Protocol*, the USA was the main emitter and it was critical to have them on board.<sup>29</sup> However, its unwillingness to ratify the agreement turned attention to the attitudes of other actors such as the EU countries or Russia, whose ratification was the final act that entered the Protocol into force.<sup>30</sup> Later, China surpassed the USA as the leading global GHG emitter, and while developing countries were still reluctant to make legally binding commitments under the international climate legal regime, it became obvious that without China and other developing countries, the evolution of international climate change law would not be satisfactory.<sup>31</sup>

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<sup>25</sup> See Hovi, Skodvin and Andresen 2003 *Global Environmental Politics* 1-23.

<sup>26</sup> See The Guardian 2011 <https://www.theguardian.com/environment/2011/dec/13/canada-pulls-out-kyoto-protocol>.

<sup>27</sup> Article 3 of the *Paris Agreement* (2015).

<sup>28</sup> See Zahar "Climate Law, Environmental Law, and the Schism Ahead" 488-500.

<sup>29</sup> Carlarne, Gray and Tarasofsky "International Climate Change Law" 8.

<sup>30</sup> Carlarne, Gray and Tarasofsky "International Climate Change Law" 8.

<sup>31</sup> Carlarne, Gray and Tarasofsky "International Climate Change Law" 8.

Not only single states but groups of states, international organisations and non-state actors played critical roles in the development of climate change law. Among them were small island developing states, civil society activists, the IPCC, courts and tribunals, for example.<sup>32</sup> Considering its rising influence and scope, BRICS could play a critical role in the implementation of the NDCs of its member states and the development of strategies, policies and climate-sensitive collaborations.

### 3 Johannesburg II Declaration

The consideration of the role of BRICS in climate change law leads to a discussion of the relevant scholarly literature.<sup>33</sup> Despite the diversity of their approaches to climate change mitigation and adaptation among the BRICS countries and the lack of anything like a synchronisation of their behaviour in this matter,<sup>34</sup> researchers believe that the bloc should exhibit a sense of communality in its climate change agenda and try to develop a legally obligatory climate change framework – and also try to unify domestic legislation on these matters.<sup>35</sup> The *Johannesburg II Declaration* encapsulates the recent developments relating to climate change in the BRICS bloc.

The *Johannesburg II Declaration* illustrates, among other things, that there is currently a common vision of climate change law and policy in the bloc.<sup>36</sup> The Declaration refers to multilateral cooperation as a critical part of coping with climate change (paragraph 28), highlights the fact that addressing climate change is a crucial aspect of sustainable development for Africa (paragraph 34) and is an integral part of the effort to achieve the Sustainable Development Goals (SDGs) (paragraph 53), reemphasises the CBDR-RC principle (paragraph 56), calls on developed countries to lead the economic transition and assist developing countries with this and other aspects concerning the climate challenge (paragraphs 57-59, 61), calls for a scaling-up of climate finance and investments (paragraph 62), welcomes a study on the available technology to address climate data gaps in the financial sector (paragraph 51), opposes trade barriers as means of coping with climate change (paragraph 63), highlights the importance of all energy sources and

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<sup>32</sup> Carlarne, Gray and Tarasofsky "International Climate Change Law" 20-23.

<sup>33</sup> See Gladun and Ahsan 2016 *BRICS Law Journal* 8-42; Kiprizli and Köstem 2023 *TWQ* 1192-1210; Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 196-239; Leal-Arcas *et al* "BRIC and Climate Change Mitigation" 229-280; Petrone 2019 *Ethics and Global Politics* 19-30; Rinaldi and Martuscelli 2016 *Meridiano* 47; Ruppel and Ruppel-Schlichting "The BRICS Partnership" 549-570; Tripathi and Bhattacharya 2023 *Env Pol'y & L* 181-196.

<sup>34</sup> Rinaldi and Martuscelli 2016 *Meridiano* 47.

<sup>35</sup> Gladun and Ahsan 2016 *BRICS Law Journal* 9, 38, 41; Petrone 2019 *Ethics and Global Politics* 26, 27.

<sup>36</sup> *Johannesburg II Declaration*.

recognises the role of fossil fuels in supporting energy security (paragraph 70), states that climate change adaptation initiatives are critical for disaster risk reduction (paragraph 72), and emphasises the role of climate change education and training (paragraph 73).

This vision is backed by the iteration of general principles shared by the BRICS countries such as the importance of inclusive multilateralism (paragraphs 1, 3, 14, 90 of the *Johannesburg II Declaration*), fair international governance (paragraphs 2, 6), the right to development (paragraph 6), and the need for the greater representation of emerging markets and developing countries (paragraph 90). Such ideas attract countries of the Global South to BRICS membership (paragraph 90).

Back in 2001, when O'Neill coined the term "BRIC", his approach was to integrate the emerging economies of Brazil, Russia, India and China into the G7 or other Western settings.<sup>37</sup> However, at the heart of the BRICS cooperation is the creation of an alternative global order. BRICS tries to contribute to the formation of a multipolar world which is not ruled by the hegemony of one state and its allies.<sup>38</sup> Thus far BRICS does not provide a comprehensive institutional and legal framework for this.<sup>39</sup> However, there is progress in forging the BRICS instruments. Examples include the establishment of the New Development Bank<sup>40</sup> and the adoption of the *Agreement Between the Governments of the BRICS States on Cooperation in the Field of Culture* in 2015. Documents such as the *Johannesburg II Declaration* discussed in this article could be a source of the common vision of the bloc's policy on various significant issues, including climate change. They could also be a source for developing other and probably more legally binding instruments. Despite their differences and the territorial separation of the BRICS countries, which might be seen as a disadvantage militating against closer cooperation, the same factors could contribute to the development of a unique law and policy framework accepting and synthesising such differences, which would be critical for the development of the multipolar world.<sup>41</sup>

#### **4 The principle of common but differentiated responsibilities and respective capabilities (CBDR-RC)**

Article 3(1) of the *UNFCCC* states that Parties to the Convention should protect the climate system in accordance with their common but differentiated responsibilities and respective capabilities (CBDR-RC). The

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<sup>37</sup> O'Neill 2001 <https://www.goldmansachs.com/pdfs/insights/archive/archive-pdfs/build-better-brics.pdf>.

<sup>38</sup> See Naik 2018 *Comparative Politics Russia* 100-108.

<sup>39</sup> Neuwirth 2019 *BRICS Law Journal* 17, 18.

<sup>40</sup> New Development Bank 2023 <https://www.ndb.int/about-ndb/>.

<sup>41</sup> See Neuwirth 2019 *BRICS Law Journal* 6, 25.

Article then adds that the developed country Parties should take the lead in combatting climate change and the adverse effects thereof. Articles 3(2) and 4(1) mention the specific needs and special circumstances of developing country Parties and specific national and regional development priorities, objectives and circumstances.

Acknowledging the dichotomy between the developed and developing countries the *UNFCCC* establishes two lists of parties as Annex I and Annex II. Annex I includes developed country parties, countries that are undergoing the process of transition to a market economy and the European Economic Community (currently the EU). Annex II is a list of developed country parties and the European Economic Community that have enhanced financial commitments towards assisting developing countries. Russia is included in Annex I as a country with an economy in transition. Annexes do not include other BRICS countries. The *Kyoto Protocol* also clearly distinguishes between the commitments of developed and developing countries.

In the 1990s when the *UNFCCC* and the *Kyoto Protocol* were adopted such a dichotomy was quite clear and the group of developing countries was quite homogeneous.<sup>42</sup> Later the economies of many developing countries, first of all China, surpassed the economies of some other parties included in the Annexures to the *UNFCCC*.<sup>43</sup> Against this backdrop, the approach towards the CBDR-RC started to evolve.<sup>44</sup> The *Paris Agreement* still retains the CBDR-RC principle but makes it more nuanced by adding the words "in the light of different national circumstances" (Preamble, Articles 2(2), 4(3), (4), (19)). Also, as discussed previously, the *Paris Agreement* blurs the line between the commitments of developed and developing countries by establishing that all of them are to adopt NDCs.

The *Johannesburg II Declaration* uses the wording of the *Paris Agreement* and reemphasises the CBDR-RC principle that national obligations are expected to relate to "different national circumstances" (paragraphs 56-63). The Declaration uses the CBDR-RC principle not only in relation to climate change but also relative to states' biodiversity commitments (paragraph 55). Most of the provisions of the related paragraphs concern financial and technical support by developed countries to the energy transition in developing countries and other means of implementing states' climate commitments.

However, there is a difficulty that arises from the categorisation of BRICS members such as China and India as on the one hand they are rising powers, but on the other hand they wish to express solidarity with the other

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<sup>42</sup> Hey and Paulini "Common but Differentiated Responsibilities".

<sup>43</sup> Hey and Paulini "Common but Differentiated Responsibilities".

<sup>44</sup> Hey and Paulini "Common but Differentiated Responsibilities".

countries of the Global South.<sup>45</sup> Probably, the CBDR-RC principle needs further development and differentiation in relation to BRICS. The evolving interpretation of the principle should foster South-South cooperation and the provision of assistance by rising powers to other developing states that still need such assistance for their energy transition and adaptation to climate change.

## 5 The BRICS countries

In this section we will outline key features of the BRICS and we will illustrate that the problems that the BRICS countries face in setting and implementing their climate change mitigation laws and policies are diverse, which is why establishing a common response of the bloc to the climate change challenge is a complex task that requires consideration different from and sometimes contradicting the priorities of the bloc's member states.

Understanding the composition of the sources of energy in the BRICS countries is critical to setting their climate goals and implementing their NDCs. In 2019 the share of the BRICS nations in world energy consumption was 38,25%: China - 24.27%, India - 5.83%, Russia - 5.11%, Brazil - 2.12%, and South Africa - 0.92%.<sup>46</sup> Starting from 2 000 BRICS countries reduced their CO<sub>2</sub> emissions as follows: Russia by 41.10%, China by 35.48%, India by 20.69%, Brazil by 7.14%, and South Africa by 5.00%.<sup>47</sup> Brazil produces the lowest CO<sub>2</sub> emissions per unit of gross domestic product (GDP) among the BRICS nations.<sup>48</sup>

We have already mentioned that Argentina is not a BRICS country. However, Argentina's government has been invited to join the bloc, so we include Argentina in our analysis. Argentina's economy depends on natural resource extraction.<sup>49</sup> Dorn, Hafner and Plank<sup>50</sup> note that the commodity extractivism of the 2000s is now turning to climate extractivism. This means that extracting natural resources such as lithium to build renewable energy infrastructure is legitimised by the "saving the planet" discourse.<sup>51</sup> In this context, opposition to a new wave of extractivism in the country is characterised as being not just against social programmes and

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<sup>45</sup> See Cooper 2021 *TWQ* 1945-1962.

<sup>46</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 45.

<sup>47</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 46.

<sup>48</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 46.

<sup>49</sup> Dorn, Hafner and Plank 2022 *Extractive Industries and Society*.

<sup>50</sup> Dorn, Hafner and Plank 2022 *Extractive Industries and Society*.

<sup>51</sup> Dorn, Hafner and Plank 2022 *Extractive Industries and Society*.

development but also as against coping with climate change, which is inextricably linked with sustainable development transition in Argentina.<sup>52</sup>

The Brazilian energy sector is one of the least carbon-intensive in the world, with a share of renewables of almost half of the total energy supply (48.4% in 2020).<sup>53</sup> Although this is significant, the growing population of the country requires more energy consumption.<sup>54</sup> Also, the largest contribution to Brazil's emissions historically was not from the energy sector but was driven by deforestation and unsustainable agricultural practices.<sup>55</sup>

China is the largest developing country in the world.<sup>56</sup> On the one hand, it is the world's largest GHG emitter, and on the other hand, it is one of the leaders in multilateral climate change cooperation.<sup>57</sup> New Chinese international projects such as the Belt and Road Initiative draw attention in terms of their climate change impacts.<sup>58</sup> China believes that addressing climate change is critical and, as President Xi Jinping<sup>59</sup> notes, China does so not at others' request but on its own initiative. President Xi Jinping<sup>60</sup> highlights the link between how people address the climate change challenge and the construction of global governance. China works successfully on poverty alleviation and ensuring the provision of an electricity supply.<sup>61</sup> It promotes the consumption of renewable energy and the construction of clean energy projects.<sup>62</sup> It is expanding this competency globally by exporting renewable energy capacity in both goods and services.

Egypt is a developing country with a fast-growing population.<sup>63</sup> In its NDC it notes that the historic quantity of GHG emissions of the country is

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<sup>52</sup> Dorn, Hafner and Plank 2022 *Extractive Industries and Society*.

<sup>53</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 6.

<sup>54</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 204.

<sup>55</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 202, 204.

<sup>56</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 38.

<sup>57</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 216, 219.

<sup>58</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 224.

<sup>59</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 1.

<sup>60</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 2.

<sup>61</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 38.

<sup>62</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 38.

<sup>63</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%E2%80%99s%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 4.

marginal.<sup>64</sup> However, it is committed to the reduction of its GHG emissions and adaptation to climate change.<sup>65</sup> Egypt relies on international finance for the implementation of its NDC.<sup>66</sup>

Ethiopia is one of the least developed countries in the world,<sup>67</sup> with a marginal share of emissions (0.04%).<sup>68</sup> However, a negative climate change impact on Ethiopia and its development could be devastating and the country commits to reducing its emissions and adapting to climate change.<sup>69</sup> Ethiopia's NDC makes a clear distinction between unconditional contributions, which the country will make relying on its own finances, and conditional contributions, which are contingent on international support.<sup>70</sup> The domestically financed share of Ethiopia's contributions is 20% and the internationally/donor-financed share is 80%.<sup>71</sup>

India focusses on the rapid economic growth which is needed for poverty eradication.<sup>72</sup> Its energy demand has increased while the country is also focussing on energy efficiency.<sup>73</sup> The energy consumption from coal and lignite is higher than that from other energy sources (43,86%).<sup>74</sup> India is the world's largest producer of coal after China.<sup>75</sup> It imports crude oil and

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<sup>64</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 45.

<sup>65</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 45.

<sup>66</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 8.

<sup>67</sup> UNCTAD 2022 <https://unctad.org/topic/least-developed-countries/list>.

<sup>68</sup> Federal Democratic Republic of Ethiopia 2021 [https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission\\_.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pdf) 31.

<sup>69</sup> Federal Democratic Republic of Ethiopia 2021 [https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission\\_.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pdf) 31

<sup>70</sup> Federal Democratic Republic of Ethiopia 2021 [https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission\\_.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pdf) 8.

<sup>71</sup> Federal Democratic Republic of Ethiopia 2021 [https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission\\_.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pdf) 8.

<sup>72</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 33.

<sup>73</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 21, 22-25.

<sup>74</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 23.

<sup>75</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 24.

exports refined oil.<sup>76</sup> Currently it has the fourth largest renewable energy capacity in the world after China, the United States and Brazil.<sup>77</sup> India's specific prospect of mitigation lies in its megacities' accumulating growing population and economy, which could mobilise resources for the energy transition.<sup>78</sup>

Iran is one of the largest CO<sub>2</sub> emitters globally.<sup>79</sup> Energy and waste are the sectors that contribute most heavily to increasing GHG emissions in Iran.<sup>80</sup> The growing urbanisation also leads to increased emissions.<sup>81</sup> The review of various sources on climate predictions conducted by Mansouri Daneshvar, Ebrahimi and Nejadsoleymani<sup>82</sup> posits that the negative impacts of climate change in Iran will be the most severe among the countries of the Middle East. This is due to the significant increase in temperature and the decline in precipitation.<sup>83</sup> On 22 April 2016 Iran signed the *Paris Agreement*.<sup>84</sup> However, the country has not ratified it yet.<sup>85</sup> Thus, Iran is the only BRICS member that has not yet ratified the Agreement, which is why it has not adopted a NDC.

Russia is a country with vast hydrocarbon resources.<sup>86</sup> Its economy relies on them both domestically and internationally.<sup>87</sup> Its climate mitigation law and policy are considered insufficiently ambitious, for various reasons. Among them are the unwillingness of the elites to recognise the anthropogenic causes of climate change, ignorance of climate change issues among the general population, and even the belief that climate change could benefit the country.<sup>88</sup> It is carrying out joint projects including climate projects with the Commonwealth of Independent States (CIS)

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<sup>76</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 25, 26.

<sup>77</sup> Statista 2023 <https://www.statista.com/statistics/267233/renewable-energy-capacity-worldwide-by-country/>.

<sup>78</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 216.

<sup>79</sup> Global Carbon Atlas date unknown <https://globalcarbonatlas.org/emissions/carbon-emissions/>.

<sup>80</sup> Mansouri Daneshvar, Ebrahimi and Nejadsoleymani 2019 *Environmental Systems Research* 7.

<sup>81</sup> Mansouri Daneshvar, Ebrahimi and Nejadsoleymani 2019 *Environmental Systems Research* 1, 7.

<sup>82</sup> Mansouri Daneshvar, Ebrahimi and Nejadsoleymani 2019 *Environmental Systems Research* 3.

<sup>83</sup> Mansouri Daneshvar, Ebrahimi and Nejadsoleymani 2019 *Environmental Systems Research* 3.

<sup>84</sup> UN Climate Change date unknown <https://unfccc.int/node/61084>.

<sup>85</sup> On the reasons for not ratifying the *Paris Agreement* see for example Mahoozi date unknown <https://www.aljazeera.com/news/2022/11/10/irans-climate-efforts-derided-as-mena-nations-take-action>; McGrath 2021 <https://www.bbc.com/news/science-environment-59242986>.

<sup>86</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 226.

<sup>87</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 226.

<sup>88</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 227.

countries, BRICS, and the Association of Southeast Asian Nations (ASEAN).<sup>89</sup> Russia is contributing to developing nuclear energy in such countries as Egypt, Jordan, Nigeria, Uzbekistan, Bangladesh, Armenia, Iran, India and China.<sup>90</sup> Russia's share of pipeline gas exports is the largest in the world.<sup>91</sup> It is also one of the largest producers of coal.<sup>92</sup> Among the recent developments in its energy sector is the development of hydrogen energy.<sup>93</sup> Russia considers it unacceptable to use climate policies as tools for creating barriers to the socio-economic development of countries.<sup>94</sup>

Saudi Arabia is a developing country with historically low GHG emissions contributions.<sup>95</sup> In terms of climate change policy, the implementation of Saudi Arabia's NDC is not contingent on international financial support.<sup>96</sup> Moreover, the country launched the Middle East Green Initiative to facilitate climate change mitigation and adaptation in the Middle East, in North Africa (MENA), and beyond the region.<sup>97</sup>

South Africa is one of the world's most fossil fuel-dependent countries.<sup>98</sup> The share of fossil fuels in energy consumption is more than 90%.<sup>99</sup> The share of coal is around 70%,<sup>100</sup> which makes South Africa one of the most coal-dependent economies in the world.<sup>101</sup> Mpumalanga province is the region in the country that produces the most coal.<sup>102</sup> In its NDC, South Africa references as factors to consider when assessing its contributions, its slow

<sup>89</sup> Russian Federation 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/NDC\\_RF\\_eng.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/NDC_RF_eng.pdf) 4.

<sup>90</sup> Russian Federation 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/NDC\\_RF\\_eng.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/NDC_RF_eng.pdf) 4.

<sup>91</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 15; Statista 2023 <https://www.statista.com/statistics/217856/leading-gas-exporters-worldwide/>.

<sup>92</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 16.

<sup>93</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 20.

<sup>94</sup> Russian Federation 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/NDC\\_RF\\_eng.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/NDC_RF_eng.pdf) 10.

<sup>95</sup> Kingdom of Saudi Arabia 2021 <https://unfccc.int/sites/default/files/resource/202203111154---KSA%20NDC%202021.pdf> 11.

Kingdom of Saudi Arabia 2021 <https://unfccc.int/sites/default/files/resource/202203111154---KSA%20NDC%202021.pdf> 10.

<sup>97</sup> Saudi and Middle East Green Initiatives 2022 <https://www.greeninitiatives.gov.sa/about-mgi/>.

<sup>98</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 231.

<sup>99</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 41.

<sup>100</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 41.

<sup>101</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 4.

<sup>102</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 4.

economic growth, the negative impacts of climate change such as increasing numbers of forest fires, the COVID pandemic, and its status as a developing country.<sup>103</sup> The climate law and policy of the country and its institutional structures for their implementation are quite fragmented.<sup>104</sup> However, there are signs that these obstacles are being overcome. Among them is the fact that in October 2023 the National Assembly passed South Africa's *Climate Change Bill*, which aims to establish a comprehensive legal framework and synchronise the activities of different actors towards achieving common climate goals.

The UAE hosted the 28th Conference of the Parties (COP-28) to the *UNFCCC* in November 2023.<sup>105</sup> The UAE is a non-Annex I country and relies on domestic efforts to fulfil its NDCs.<sup>106</sup> Nevertheless, it reserves the right to use the voluntary contributions of donors.<sup>107</sup> The UAE conducts mitigation and adaptation projects not only domestically but also globally.<sup>108</sup> Examples include the hydrogen project on pioneering decarbonised air corridors between the United Kingdom (UK) and the UAE.<sup>109</sup>

## 6 Mitigation of climate change

In this section we will discuss the specific commitments and developments of old and new BRICS members concerning climate change mitigation. Firstly, we will observe the mitigation targets expressed in the NDCs of the BRICS countries. Secondly, we will outline the processes of energy transition in the bloc. Finally, we will briefly express the role of forests, afforestation and reforestation in climate change mitigation in the countries discussed.

### 6.1 Mitigation targets of the BRICS countries

This section will examine how the BRICS countries articulate in their NDCs their targets to decrease their GHG emissions. The NDC Synthesis Report

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<sup>103</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 3, 30.

<sup>104</sup> Leal-Arcas *et al* "Climate Change Mitigation Law and Policy in the BRICS" 239.

<sup>105</sup> UN Climate Change 2023 <https://www.cop28.com/>.

<sup>106</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 11, 15, 68.

<sup>107</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 68.

<sup>108</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 12, 22.

<sup>109</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 23.

observes NDCs of the various parties to the *Paris Agreement* and identifies common features in their approaches towards fulfilling their climate commitments.<sup>110</sup> According to paragraph 10 of the Report, the total GHG emissions of the parties in 2019 were 45.6 GtCO<sub>2</sub>-eq. Paragraph 10 states that if the NDCs were implemented, the estimated level of GHG emissions in 2025 would be around 46.4 GtCO<sub>2</sub>-eq and in 2030 - around 45.6 GtCO<sub>2</sub>-eq. Compared with the previous NDCs, these emission levels are lower: for 2025 - about 3.8% lower, and for 2030 - about 9.5% lower.<sup>111</sup> According to paragraph 64(a) of the Report, some parties (37%) use absolute emissions reduction targets related to the emissions of a specified year. Paragraph 64(b) states that many parties (46%) express their targets as reductions from the "business as usual" (BAU) emission model. The Synthesis Report considers that parties to the *Paris Agreement* express the implementation of their NDCs based on conditional or unconditional elements.<sup>112</sup> The highest levels of emission reductions need the implementation of both groups of elements.

In December 2020 Argentina communicated its second NDC<sup>113</sup> and in October 2021 it updated its NDC.<sup>114</sup> The total net emission of GHGs reached 369 MtCO<sub>2</sub>-eq by 2016.<sup>115</sup> In its second NDC Argentina committed not to exceed the net emission of 359 MtCO<sub>2</sub>-eq in 2030.<sup>116</sup> Its updated goal is to not exceed the net emission of 349 MtCO<sub>2</sub>-eq in 2030.<sup>117</sup> Its neighbour Brazil adopted an NDC which is considered one of the most ambitious in the world.<sup>118</sup> According to the NDC, Brazil is committed to reducing its GHG

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<sup>110</sup> Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement *Nationally Determined Contributions Under the Paris Agreement: Synthesis Report by the Secretariat* FCCC/PA/CMA/2022/4 (4th session, Sharm el-Sheikh, 26 October 2022).

<sup>111</sup> Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement *Nationally Determined Contributions Under the Paris Agreement: Synthesis Report by the Secretariat* FCCC/PA/CMA/2022/4 (4th session, Sharm el-Sheikh, 26 October 2022) para 10.

<sup>112</sup> See for example Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement *Nationally Determined Contributions Under the Paris Agreement: Synthesis Report by the Secretariat* FCCC/PA/CMA/2022/4 (4th session, Sharm el-Sheikh, 26 October 2022) paras 15, 16.

<sup>113</sup> Argentina 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/Argentina\\_Segunda%20Contribuci%C3%B3n%20Nacional.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Argentina_Segunda%20Contribuci%C3%B3n%20Nacional.pdf).

<sup>114</sup> Argentina 2021 <https://unfccc.int/sites/default/files/NDC/2022-05/Actualizaci%C3%B3n%20de%20emisiones%202030.pdf>.

<sup>115</sup> Argentina 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/Argentina\\_Segunda%20Contribuci%C3%B3n%20Nacional.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Argentina_Segunda%20Contribuci%C3%B3n%20Nacional.pdf) 9.

<sup>116</sup> Argentina 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/Argentina\\_Segunda%20Contribuci%C3%B3n%20Nacional.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Argentina_Segunda%20Contribuci%C3%B3n%20Nacional.pdf) 9.

<sup>117</sup> Argentina 2021 <https://unfccc.int/sites/default/files/NDC/2022-05/Actualizaci%C3%B3n%20de%20emisiones%202030.pdf> 2.

<sup>118</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 13.

emissions in 2025 by 37% compared to 2005; in 2030 by 50% compared to 2005.<sup>119</sup>

Among China's NDC goals are to have CO<sub>2</sub> emissions peak before 2030 and achieve climate neutrality before 2060; before 2030 to lower CO<sub>2</sub> emissions per unit of GDP by over 65% from the 2005 level.<sup>120</sup> China's carbon intensity (CO<sub>2</sub> emissions per unit of GDP) in 2019 was 51.9% of that in 2005, a decrease of about 48.1% from 2005.<sup>121</sup> China has also improved the statistical system for GHG emissions.<sup>122</sup> In its five-year plans, China has set different carbon intensity targets for different regions (provinces, autonomous regions, municipalities), taking into account their specific features and needs.<sup>123</sup> Various regions in China have launched carbon emission markets.<sup>124</sup> The Hong Kong Special Administrative Region (HKSAR) aims to reduce its carbon intensity by 65% to 70% between 2005 and 2030, the equivalent of an absolute carbon emission reduction of 26% to 36%.<sup>125</sup> The Macao SAR target for 2030 is a 60% to 65% reduction in carbon intensity compared to 2005.<sup>126</sup>

The reference year for Egypt is 2015; the reference period is 2020 to 2030.<sup>127</sup> Egypt uses 2030 as the BAU projection year and then articulates its mitigation commitments concerning the estimated BAU emissions for

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<sup>119</sup> Federative Republic of Brazil 2022 <https://unfccc.int/sites/default/files/NDC/2022-06/Updated%20-%20First%20NDC%20-%20%20FINAL%20-%20PDF.pdf>.

<sup>120</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 2.

<sup>121</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 4.

<sup>122</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 26.

<sup>123</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 6.

<sup>124</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 6.

<sup>125</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 49.

<sup>126</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 55.

<sup>127</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 35.

2030.<sup>128</sup> Egypt's commitments embed three sectors: electricity, oil and gas (associated gases), and transport.<sup>129</sup> These sectors represented about 43% of the total GHG emissions of the country in 2015.<sup>130</sup> Egypt's neighbour Ethiopia has a mitigation commitment to a reduction of at least 68.8% in its economy-wide emissions by 2030, as against the 2030 BAU projection.<sup>131</sup>

In its NDC, India commits to reducing the emissions intensity of its GDP by 45% by 2030 from the 2005 level.<sup>132</sup> Its long-term goal is net-zero by 2070.<sup>133</sup> Russia plans to reduce its GHG emissions by 2030 to 70% relative to the 1990 level.<sup>134</sup> South Africa has two corresponding periods for its mitigation targets: (1) 2021-2025, and (2) 2026-2030.<sup>135</sup> For the first corresponding period, the target is annual GHG emissions by 2025 in a range from 398-510 MtCO<sub>2</sub>-eq.<sup>136</sup> For the second corresponding period, the target is annual GHG emissions by 2030 in a range from 350-420 MtCO<sub>2</sub>-eq.<sup>137</sup>

Saudi Arabia aims to reduce, avoid, and remove GHG emissions by 278 million tons of CO<sub>2</sub>-eq annually by 2030.<sup>138</sup> The Kingdom's neighbour, the UAE, has adopted an NDC which uses a base-year and fixed-level target to

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<sup>128</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 35.

<sup>129</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 35.

<sup>130</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 35.

<sup>131</sup> Federal Democratic Republic of Ethiopia 2021 [https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission\\_.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pdf) 25.

<sup>132</sup> Government of India 2022 <https://unfccc.int/sites/default/files/NDC/2022-08/India%20Updated%20First%20Nationally%20Determined%20Contrib.pdf> 2.

<sup>133</sup> Government of India 2022 <https://unfccc.int/sites/default/files/NDC/2022-08/India%20Updated%20First%20Nationally%20Determined%20Contrib.pdf> 3.

<sup>134</sup> Russian Federation 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/NDC\\_RF\\_eng.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/NDC_RF_eng.pdf) 1.

<sup>135</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 15.

<sup>136</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 15.

<sup>137</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 15.

<sup>138</sup> Kingdom of Saudi Arabia 2021 <https://unfccc.int/sites/default/files/resource/202203111154---KSA%20NDC%202021.pdf> 11.

<sup>139</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 15.

ensure maximum transparency and measurability.<sup>139</sup> The previous version of the NDC was based on the GHG emission reduction in the BAU scenario.<sup>140</sup> Also, the current target is economy-wide.<sup>141</sup> The UAE's NDC covers all national GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O), except for fluoridated gases.<sup>142</sup> The UAE has resolved to reach a net-zero target by 2050.<sup>143</sup>

There is a great diversity in the measurement of GHG emissions and approaches towards climate mitigation targets among the BRICS members. However, if the bloc aims to have a common climate policy, it would be beneficial to synchronise the climate goals of the countries.<sup>144</sup> While the diversity in measurement can be based on the level of development of each country and the priorities in their climate policies, establishing the linkages between the climate efforts of the countries would enhance equity-efficiency synergies and contribute to the overall implementation of the *Paris Agreement*.<sup>145</sup>

Table 1 showcases the key points of current commitments and approaches that could be starting points for such synchronisation. Iran has not adopted an NDC, thus the further analysis will concern all BRICS country members except this country. Nevertheless, Iran's admission to BRICS paves the way for the inclusion of Iran to develop an approach to climate in accordance with the general BRICS policy. By doing this, Iran joins in the existing global climate mitigation endeavours even if it is not a *Paris Agreement* party, which in turn could increase the significance of the bloc in the global climate regime.

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<sup>140</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 7.

<sup>141</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 58.

<sup>142</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 58.

<sup>143</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 68.

<sup>144</sup> This article suggests that the UAE target formulation and measurement could be a synchronisation model. The country uses a base year and fixed-level target in MtCO<sub>2</sub>-eq. For synchronisation, for example, Egypt and Ethiopia should reformulate their targets from the BAU model to base year and fixed-level targets.

<sup>145</sup> See Pan *et al* 2023 *Advances in Climate Change Research* 13-22.

**Table 1 Key features of the mitigation targets of the BRICS countries**

Country	CO <sub>2</sub> / CO <sub>2</sub> -eq	Economy- wide/ Sectoral	Net-zero	Years of reduction	Emissions in absolute numbers	Emissions reduction in % to a defined year	Reduction based on BAU model	Emissions intensity of GDP reduction	Funding
Brazil	CO <sub>2</sub> -eq	economy- wide	2050	2025 2030	-	2025 - by 37% compared to 2005;  2030 - by 50% compared to 2005	-	-	domestic, but international funding is also an option
Russia	CO <sub>2</sub> -eq	economy- wide	-	2030	-	70% to 1990	-	-	domestic
India	CO <sub>2</sub> -eq	economy- wide	2070	2030	-	-	-	by 45% from 2005	reliance on international finance
China	CO <sub>2</sub>	economy- wide	2060	2030	-	-	-	by 65% from 2005	mainly domestic
South Africa	CO <sub>2</sub> -eq	economy- wide	-	2025 2030	2025: 398-510 MtCO <sub>2</sub> -eq;  2030: 350-420 MtCO <sub>2</sub> -eq	-	-	-	contingent on international finance
Argentina	CO <sub>2</sub> -eq	economy- wide	-	2030	349 MtCO <sub>2</sub> -eq	-	-	-	domestic
Egypt	CO <sub>2</sub> -eq	sectoral	-	2030	electricity: 80 520 GgCO <sub>2</sub> - eq;  oil and gas: 1 682 GgCO <sub>2</sub> - eq;  transportation: 124 360 GgCO <sub>2</sub> -eq	-	electricity: by 37%;  oil and gas: by 65%;  transportat ion: by 7%	-	contingent on international funding
Ethiopia	CO <sub>2</sub> -eq	economy- wide	-	2030	-	-	68%	-	20% - domestic;  80% - international
Iran	-	-	-	-	-	-	-	-	-
Saudi Arabia	CO <sub>2</sub> -eq	economy- wide	-	2030	278 MtCO <sub>2</sub> -eq	-	-	-	domestic
UAE	CO <sub>2</sub> -eq (fluorida- ted gases are excluded)	economy- wide	2050	2030	182 MtCO <sub>2</sub> -eq	19% below 2019	-	-	domestic, but international is also an option

Table 1 illustrates that all BRICS countries except China use CO<sub>2</sub>-eq (GHG emissions) in defining their climate targets while China expresses its

commitment in carbon dioxide. The UAE also clarified that its climate target concerns CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O except for fluoridated gases. All countries except Egypt express their commitments in economy-wide terms, while Egypt defines its targets separately for electricity, oil and gas, and the transportation sectors. Some countries set their net-zero targets. Brazil and the UAE aim to achieve their climate neutrality by 2050, China by 2060, and India by 2070.

All BRICS countries define 2030 as the year by which they hope to achieve their emission reduction targets. Brazil and South Africa also set their preliminary targets for 2025, which increases their transparency and makes it easier to measure the progress of these countries. South Africa, Argentina, Egypt, Saudi Arabia and the UAE express their emissions in the reference year in absolute numbers rather than in percentages, or in addition to percentages, which also increases transparency and clarity. Brazil, Russia and the UAE express their commitments in the percentage of reduction concerning a previous year. Thus, for Brazil, the reduction by 2030 should be 50% compared to 2005; for Russia it is 70% compared to 1990, and for the UAE it is 19% below 2019. This suggests the possibility of developing synergies, but the countries use different years as base years, which makes comparison difficult.

Egypt and Ethiopia articulate their targets in relation to BAU scenarios. The UAE used this model in the past but transferred from this model to a reduction in absolute numbers using a base year emissions calculation, which is a welcome development for the sake of clarity and transparency. India and China set their targets as the reduction of the emissions intensity of their GDPs. A comparison of the goals of these two countries is possible. However, it is worth considering that China expresses its targets in CO<sub>2</sub> emission reduction while India calculates it for all GHG emissions.

The various states also note whether they are going to consider asking for international finance for the implementation of their NDCs. Thus, for example, South Africa, Egypt and Ethiopia's programmes are contingent on receiving international finance. The approach of Ethiopia in this regard seems to be a welcome development. Ethiopia commits to achieving 20% of its climate targets based on its domestic finance (unconditional), while 80% will depend on international support (conditional). Such a distinction would help in measuring the progress of the country as well as for calculating overall progress under the *Paris Agreement* regime.

The New Development Bank (NDB), an institution established by the bloc, could play a critical role in the implementation of the BRICS nations' NDCs. Thus, according to the NDB General Strategy for 2022-2026, 40% of its approvals should be for projects contributing to climate change mitigation

and adaptation.<sup>146</sup> The Bank and AXA Climate,<sup>147</sup> an entity of the French insurance company dedicated to climate challenges, draw the attention of investors to the need for integrating knowledge on climate change and its impacts into their projects. The NDB and AXA Climate<sup>148</sup> state that in the long run such integration leads to monetary and non-monetary benefits such as job creation.

## 6.2 Energy transition

Paragraph 70 of the *Johannesburg II Declaration* highlights the importance of all energy sources and recognises the role of fossil fuels in supporting energy security. The balancing of climate change mitigation targets with this principle is one of the key features of BRICS. Nevertheless, cooperation on energy issues in the bloc, while critical for BRICS, has its obstacles. Thus, countries have different positions in the energy market. For example, Russia, South Africa and Brazil are mainly energy-exporting countries while India and China are energy-importing countries.<sup>149</sup> They have different national development priorities and are involved in different integration processes aside from BRICS.<sup>150</sup>

The improvement of the use of energy sources in a way that reduces GHG emissions requires complex measures including developing new laws and regulations. The energy sector involves multiple interactions between energy producers, consumers and authorities at different levels. Their interests sometimes differ. Thus, investor-owned energy utilities have an interest in increasing energy consumption, while the reduction of GHG emissions requires the consumption of less energy by increasing energy efficiency.<sup>151</sup> The shift towards using electric cars, which produce zero GHG emissions, is a climatically beneficial movement. However, the way the electricity for these cars is produced remains a critical issue. If this is electricity produced by the combustion of fossil fuels, the impact of this on climate needs additional consideration.<sup>152</sup> The construction of buildings and the use of gas for cooking, heating and air conditioning systems are important for climate policy.<sup>153</sup> Increasing the climate requirements for

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<sup>146</sup> New Development Bank date unknown <https://webapp-newwebsite-prod-hk.azurewebsites.net/about-ndb/general-strategy/> 20.

<sup>147</sup> New Development Bank and AXA Climate 2024 <https://www.ndb.int/wp-content/uploads/2024/03/Building-Climate-Resilience-in-Infrastructure-Projects-A-Brief-for-Investors.pdf>.

<sup>148</sup> New Development Bank and AXA Climate 2024 <https://www.ndb.int/wp-content/uploads/2024/03/Building-Climate-Resilience-in-Infrastructure-Projects-A-Brief-for-Investors.pdf>.

<sup>149</sup> Barykina, Chernykh and Na 2022 *IOP Conference Series*.

<sup>150</sup> Barykina, Chernykh and Na 2022 *IOP Conference Series*.

<sup>151</sup> Rábago and Valova "Introduction to Energy Law" 52-71.

<sup>152</sup> Rábago and Valova "Introduction to Energy Law" 61.

<sup>153</sup> Rábago and Valova "Introduction to Energy Law" 63-65.

buildings could, in turn, increase the cost of buying such buildings and lead to social tensions.<sup>154</sup> Maintaining and improving the resilience of existing and newly constructed energy utilities in the light of the increasing risks of drought, hurricanes, flooding and other climate change-related weather events is another critical aspect for the energy system.<sup>155</sup>

Although the shares of renewable energy in the energy production and consumption of the BRICS countries are increasing, hydrocarbons remain dominant in 2040.<sup>156</sup> In future the overall energy consumption in the BRICS nations (with the possible exception of Russia) will increase.<sup>157</sup> Finding the right balance between increasing energy consumption and achieving climate goals is a priority for BRICS.<sup>158</sup> The transition to renewable energy, a more efficient use of traditional energy sources, and the development of new energy sectors such as hydrogen energy are critical to BRICS.<sup>159</sup> As the previous data discussed in the text illustrate and the media observe,<sup>160</sup> except for South Africa and Russia the BRICS countries are on the way to becoming solar- and wind-powered.

The Indian Government is taking steps towards achieving a smooth energy transition.<sup>161</sup> Among China's NDC goals are to increase the share of non-fossil fuels in primary energy consumption to around 25% and to increase wind and solar power generation.<sup>162</sup> China has made progress in controlling GHG emissions. Examples include launching low-carbon development models,<sup>163</sup> a new model of green poverty alleviation in a "photovoltaic village" in Sichuan,<sup>164</sup> development of rural biogas projects in the same

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<sup>154</sup> Rábago and Valova "Introduction to Energy Law" 63-65.

<sup>155</sup> Rábago and Valova "Introduction to Energy Law" 68-69.

<sup>156</sup> Barykina, Chernykh and Na 2022 *IOP Conference Series*.

<sup>157</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 53.

<sup>158</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 53.

<sup>159</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 53.

<sup>160</sup> Hedley 2023 <https://www.capetalk.co.za/articles/473373/brics-moving-towards-renewable-energy-but-sa-and-russia-are-lagging-behind>.

<sup>161</sup> BRICS Energy Research Cooperation Platform 2021 <https://brics2021.gov.in/brics/public/uploads/docpdf/getdocu-41.pdf> 33.

<sup>162</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 2.

<sup>163</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 8.

<sup>164</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 9.

province,<sup>165</sup> control over total coal consumption in Beijing-Tianjin-Hebei Region,<sup>166</sup> the promotion of green building,<sup>167</sup> the development of a low-carbon transportation system (Shenzhen is the first city in China to rely totally on purely electric buses),<sup>168</sup> and the promotion of shared transportation.<sup>169</sup> Poderati and Ou<sup>170</sup> claim that increasing public participation in Chinese climate law and policy would benefit the climate regime in the country.

South Africa emphasises its development challenges and the need for a just transition to renewables, which means a transition which leaves no one behind.<sup>171</sup> The implementation of the NDC requires massive investments in renewable energy sources.<sup>172</sup> The decarbonisation of South Africa's economy will be done in the following stages: (1) in the 2020s - decarbonisation of the electricity sector, (2) in the 2030s - deeper transition in the electricity sector and transportation, (3) in the 2040s - the decarbonisation of the hard-to-mitigate sectors.<sup>173</sup>

One of the examples of international cooperation on just transition is the *Political Declaration on the Just Energy Transition in South Africa* adopted in 2021 by the governments of South Africa, the UK, the USA, France, Germany and the EU.<sup>174</sup> Paragraph 18 of the Declaration states that the entities involved have resolved to mobilise the initial amount of \$8.5 billion over the next three to five years to support a just transition. According to paragraph 17(2) of the document, just transition in South Africa means,

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<sup>165</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 16.

<sup>166</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 12.

<sup>167</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 17.

<sup>168</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 19.

<sup>169</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 19.

<sup>170</sup> See Poderati and Ou 2021 *CJEL* 141-171.

<sup>171</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 3, 5.

<sup>172</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 5.

<sup>173</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 5.

<sup>174</sup> UN Climate Change Conference UK 2021 in Partnership with Italy 2021 <https://webarchive.nationalarchives.gov.uk/ukgwa/20230106144924/https://ukcop26.org/political-declaration-on-the-just-energy-transition-in-south-africa/>.

among other things, the support of workers in fossil fuel industries and communities affected by such a transition. Paragraph 8 of the Declaration identifies mining, energy, manufacturing and transport as sectors that may be negatively affected by the transition. Also, the other states that adopted the Declaration recognise the unprecedented opportunity for South Africa to become a leader in the just energy transition. Similar actions in BRICS would be beneficial both for BRICS member states and for developing the climate policy and identity of the bloc as such.

Argentina articulates the principles it will follow in achieving its mitigation and adaptation goals.<sup>175</sup> The principles include just transition, in terms of which none of its citizens will be left behind, and environmental education and energy security will be promoted, among other things.<sup>176</sup> Argentina points out that the implementation of its NDC is not contingent on international support, but assistance from developed countries would bring benefits globally.<sup>177</sup>

Saudi Arabia is ambitious in developing its renewable energy potential, including blue and green hydrogen technologies, and energy efficiency.<sup>178</sup> One of the country's most ambitious projects in terms of urban climate sustainability is the construction of NEOM city, which is to be based entirely on renewables.<sup>179</sup> Saudi Arabia follows the circular carbon economy approach based on the "4Rs" model (reduce, reuse, recycle, and remove to manage GHG emissions) including developing the carbon capture, utilisation and storage technologies.<sup>180</sup>

The UAE will focus on new developments such as low-carbon hydrogen (blue, green and pink), and carbon capture and storage.<sup>181</sup> The Emirates promotes ideas of just transition, the participation of public and private entities, youth, women, and other people of determination in climate

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<sup>175</sup> Argentina 2021 <https://unfccc.int/sites/default/files/NDC/2022-05/Actualizacio%CC%81n%20meta%20de%20emisiones%202030.pdf> 2.

<sup>176</sup> Argentina 2021 <https://unfccc.int/sites/default/files/NDC/2022-05/Actualizacio%CC%81n%20meta%20de%20emisiones%202030.pdf> 10.

<sup>177</sup> Argentina 2021 <https://unfccc.int/sites/default/files/NDC/2022-05/Actualizacio%CC%81n%20meta%20de%20emisiones%202030.pdf> 10.

<sup>178</sup> Kingdom of Saudi Arabia 2021 <https://unfccc.int/sites/default/files/resource/202203111154---KSA%20NDC%202021.pdf> 4,5. On grey, blue and green hydrogen see DW Planet A 2022 <https://www.youtube.com/watch?v=AGTjKJHu99c>.

<sup>179</sup> NEOM 2023 <https://www.neom.com/en-us/about>.

<sup>180</sup> Kingdom of Saudi Arabia 2021 <https://unfccc.int/sites/default/files/resource/202203111154---KSA%20NDC%202021.pdf> 5,9.

<sup>181</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 5, 22, 23.

actions.<sup>182</sup> The UAE government involved the youth in the formal proceedings of COP-28.<sup>183</sup>

The energy transition from fossil fuels to renewable energy sources is a complex issue. While it is a morally correct policy aiming to mitigate climate change and improve air quality, it is difficult to implement in countries dependent on fossil fuels.<sup>184</sup> Against this background, it is critical that such a transition be just and consider equity issues in a global environmental context. It would be unjust to impose the burden of such a transition entirely on developing countries. While they have to reduce the use of coal, the support of the Global North is critical. The transition in the Global North from oil and gas to renewables is also pivotal for the overall success of the transition.<sup>185</sup>

In the Preamble to the *Paris Agreement*, the parties to the treaty 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 defined development priorities. The legal meaning of the concept of a just transition is still emerging.<sup>186</sup> The debate about it includes whether the concept is exclusively an internal state matter or should reflect a broader vision of cross-border equity and the CBDR-RC principle under the international climate regime.<sup>187</sup> BRICS could contribute to the development of the concept by clarifying the meaning of the concept and implementing it in the BRICS community as an example for other countries. This process could reflect the ideas and practices of just transition in the BRICS countries, based on the transition in such coal-dependent countries as South Africa.

An energy transition requires the integration of new technologies, including those that have emerged as an outcome of the fourth industrial revolution ("Industry 4.0" or "I4.0").<sup>188</sup> This revolution, which has to do with connecting material things with artificial intelligence, big data and other information technologies, leaves room for developing more efficient energy systems based on fossil fuels as well as the better construction and use of renewable

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<sup>182</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 51, 61.

<sup>183</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 52.

<sup>184</sup> Nazareth *et al* *Equity Dimensions of Anti-Fossil Fuels Norms* 4.

<sup>185</sup> Nazareth *et al* *Equity Dimensions of Anti-Fossil Fuels Norms* 11.

<sup>186</sup> Johansson 2023 *JEL* 231.

<sup>187</sup> Johansson 2023 *JEL* 235.

<sup>188</sup> Onu, Pradhan and Mbohwa 2023 *Heliyon*.

energy sources.<sup>189</sup> However, financial constraints, geographical limitations, and technological difficulties are obstacles to overcome in this process.<sup>190</sup>

### 6.3 Forests

It is not only the transition to renewables that is critical for mitigation of climate change, but also developments in other areas such as land use and agriculture or waste management.<sup>191</sup> In their NDCs the BRICS countries explicitly mention the role of forests as carbon sinks.<sup>192</sup> Russia considers the maximum possible absorption rate of its forests in its calculation of the mitigation of its GHG emissions.<sup>193</sup> India is going to create additional carbon sinks through cultivating forests and further tree cover.<sup>194</sup> Among China's NDC goals is to increase the volume of its forest stock.<sup>195</sup> One of China's examples of increasing carbon sinks is the Saihanba Afforestation Project.<sup>196</sup> The UAE launched the Mangrove Alliance for Climate (MAC) in partnership with Indonesia.<sup>197</sup>

The development of the common policy of the BRICS countries on forestry in climate change mitigation requires the consideration of different factors, including the different ways of using forests. They can be used, for example, primarily as carbon sinks or as a way of bioenergy production.<sup>198</sup> In the latter option forests do not remove but instead release carbon into the atmosphere.<sup>199</sup> In this case the development of such technologies as producing bioenergy with carbon capture and storage is critical.<sup>200</sup> The BRICS countries are geographically diverse and their use of forests could vary significantly. Thus, the bloc has to consider different national

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<sup>189</sup> Onu, Pradhan and Mbohwa 2023 *Heliyon*.

<sup>190</sup> Onu, Pradhan and Mbohwa 2023 *Heliyon*.

<sup>191</sup> See, for example, Verschuuren "Agriculture, Forestry and Other Land Use (AFOLU)" 433-456.

<sup>192</sup> About the role of forests in climate change mitigation see Moomaw, Law and Goetz 2020 *Environmental Research Letters*.

<sup>193</sup> Russian Federation 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/NDC\\_RF\\_eng.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/NDC_RF_eng.pdf) 1.

<sup>194</sup> Government of India 2022 <https://unfccc.int/sites/default/files/NDC/2022-08/India%20Updated%20First%20Nationally%20Determined%20Contrib.pdf> 2.

<sup>195</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 2.

<sup>196</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 20, 21.

<sup>197</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 43.

<sup>198</sup> See Romppanen 2020 *Journal of Energy and Natural Resources Law* 261-287.

<sup>199</sup> Romppanen 2020 *Journal of Energy and Natural Resources Law* 284, 285.

<sup>200</sup> On bioenergy and climate neutrality see Romppanen 2020 *Journal of Energy and Natural Resources Law* 261-287.

circumstances and priorities. In doing so, learning from other jurisdictions, for example from the EU and its member states, would be beneficial.<sup>201</sup>

## 7 Adaptation to climate change

The impacts of climate change could be either positive or negative, depending on the region. The IPCC<sup>202</sup> states that climate change could affect physical water availability, animal livestock health, and productivity globally not only negatively but also in a positive way. However, the impacts are mostly negative and include such things as displacement, excessive heat, malnutrition and harm from wildfire, inland flooding and the associated damage, and flood and storm-induced damage in coastal areas.<sup>203</sup> Adaptation to different impacts is critical.

The BRICS countries consider climate change adaptation in their NDCs. Besides the negative impact of climate change, Russia sees positive features for the country, such as a reduction of energy consumption during winter, the development of the Arctic including the development of sea routes, a greater potential for agriculture, and the increasing productivity of boreal forests.<sup>204</sup>

China promotes proactive adaptation to climate change, including the creation of sponge cities (urban areas with abundant trees, lakes and parks intended to absorb rain and prevent flooding),<sup>205</sup> increasing the provision of finance, public participation and policy support,<sup>206</sup> and promoting international cooperation on climate change, including South-South cooperation, for example with African countries.<sup>207</sup>

South Africa's NDC articulates that it is not only the mitigation endeavours of the country that are critical but also the adaptation measures, and is

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<sup>201</sup> See Romppanen 2020 *Journal of Energy and Natural Resources Law* 261-287.

<sup>202</sup> IPCC "Summary for Policymakers" 7.

<sup>203</sup> IPCC "Summary for Policymakers" 7.

<sup>204</sup> Russian Federation 2020 [https://unfccc.int/sites/default/files/NDC/2022-06/NDC\\_RF\\_eng.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/NDC_RF_eng.pdf) 18.

<sup>205</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 22, 25; Harrisberg 2022 <https://climatechampions.unfccc.int/what-are-sponge-cities-and-how-can-they-prevent-floods/>.

<sup>206</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 29, 30.

<sup>207</sup> China 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf> 45.

expecting international cooperation and financial and other facilitation from developed countries to help it achieve its climate goals.<sup>208</sup>

In its NDC, Egypt highlights the critical role of adaptation, which is especially significant for water issues.<sup>209</sup> It includes water scarcity related to the growing population of the country and the rise in the level of the Mediterranean Sea, which could lead to the salination of fresh water and the erosion of coastal zones in the northern regions of the country.<sup>210</sup>

Saudi Arabia deals with the topic of adaptation as it is an arid country vulnerable to climate change.<sup>211</sup> The UAE is vulnerable to climate change due to its low-lying coastal areas, and is vulnerable to drought and desertification.<sup>212</sup> In its adaptation commitments it proposes restoring coral reefs and planting mangroves, among other things.<sup>213</sup>

For a long time, climate change adaptation was considered to be less important than mitigation. However, as actual changes in the climate occur and GHG emissions continue to rise, adaptation is becoming more important in academia and among policymakers.<sup>214</sup> The adoption of the *Paris Agreement* was a milestone in international law in drawing attention to adaptation while the *Kyoto Protocol* focussed on mitigation.<sup>215</sup> As one can see in the NDCs of the BRICS countries, adaptation is currently a significant part of national climate change commitments.

The development of climate change adaptation law and policy in general and in BRICS more specifically is a complex and not an easy task. While mitigation law and policy focus on specific fields of law more or less limited to energy law, forestry and agriculture regulation, climate change adaptation requires pertaining not only to energy, forestry and land use law but also to biodiversity, tourism, city planning, the regulation of marine and coastal

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<sup>208</sup> South Africa 2021 <https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf> 28-30.

<sup>209</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 4, 22, 25, 45

<sup>210</sup> Egypt 2023 <https://unfccc.int/sites/default/files/NDC/2023-06/Egypt%20Updated%20First%20Nationally%20Determined%20Contribution%202030%20%28Second%20Update%29.pdf> 22, 25.

<sup>211</sup> Kingdom of Saudi Arabia 2021 <https://unfccc.int/sites/default/files/resource/202203111154---KSA%20NDC%202021.pdf> 3,6.

<sup>212</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 11.

<sup>213</sup> UAE Ministry of Climate Change and Environment 2023 [https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) 35, 41, 43, 45.

<sup>214</sup> Verschuuren "Introduction to Climate Change Adaptation" 3.

<sup>215</sup> See Verschuuren "Introduction to Climate Change Adaptation" 3.

areas, insurance, loss and damage mechanisms, the adaptation of law firms to climate litigation, and compensations from extreme weather events.<sup>216</sup>

Mitigation action can run counter to climate change adaptation. Thus, building dams for hydropower may negatively affect agriculture and lead to the need for resettlements. The same effect can arise from afforestation and reforestation as climate change mitigation measures.<sup>217</sup> Building infrastructure for wind and solar energy can affect biodiversity negatively.<sup>218</sup> The complexity is increased by the fact that climate change impacts not only our physical environments but also our social structures. It can increase inequalities and lead to exacerbating injustice.<sup>219</sup> Maladaptation is another issue to consider. Thus, constructing roads that are more resilient to flooding can lead to the attraction of human migration to these places, which may well be prone to natural disasters.<sup>220</sup> Also, the situation with adaptation is even more complex, considering the uncertainties in our understanding of the impacts of climate change and our uncertainties concerning natural disasters, i.e. when and where they will happen and how severe they will be.<sup>221</sup>

What BRICS could do in this context is to become a platform that raises awareness of the challenges of adaptation and shares best practice in the bloc and with other countries, that assists in the distribution of finance, technology and capacity building to the places that are most in need of this, and that becomes an example of a successful adaptation that enhances the livelihoods of people and cares for the ecosystems in BRICS countries and beyond, and that gains political benefits for the bloc as well.

What is critical in this process is to connect local needs with the BRICS strategies.<sup>222</sup> Climate agenda should not compete with other needs such as poverty eradication, reducing inequalities, enhancing transportation, agriculture and other sectors, but should be integrated with them.<sup>223</sup> The involvement of local, sub-national and national public and private actors in developing and implementing the BRICS climate change mitigation and adaptation strategies would make the policy more effective.<sup>224</sup> Also,

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<sup>216</sup> Verschuuren "Introduction to Climate Change Adaptation" 6.

<sup>217</sup> Verschuuren "Introduction to Climate Change Adaptation" 8.

<sup>218</sup> Verschuuren "Introduction to Climate Change Adaptation" 8.

<sup>219</sup> Verschuuren "Introduction to Climate Change Adaptation" 2, 3, 13.

<sup>220</sup> Verschuuren "Introduction to Climate Change Adaptation" 7.

<sup>221</sup> Verschuuren "Introduction to Climate Change Adaptation" 9.

<sup>222</sup> On integration of local needs in climate policy see Buck, Sturzaker and Mell 2022 *Journal of Environmental Planning and Management* 2540.

<sup>223</sup> See Buck, Sturzaker and Mell 2022 *Journal of Environmental Planning and Management* 2538-2555.

<sup>224</sup> On modes of engagements see Buck, Sturzaker and Mell 2022 *Journal of Environmental Planning and Management* 2538-2555.

adaptation to climate change can be spontaneous or planned.<sup>225</sup> Being proactive and developing planned adaptation laws and policies instead of reacting spontaneously to climate events would make BRICS countries more resilient towards climate challenges.

## **8 Notes on further research on the BRICS countries' climate laws and policies from a comparative perspective**

Because this article aims to define the features of national approaches critical to developing a common BRICS attitude to climate change at present, it focusses mainly on the NDCs' commitments rather than on domestic laws and policies. However, the necessary next step is to look beyond the NDCs. Comparative analysis of the BRICS countries' climate laws and policies would contribute to defining the differences and similarities among these countries' approaches, would lead to better mutual understanding and perhaps to deeper, long-term cooperation in climate matters. Below, we will identify possible pathways for further research on the topic.

Further research could include (1) the role of legislative and executive powers in defining climate laws and policies in the BRICS countries, (2) climate litigation, (3) the role of national and sub-national authorities, (4) specific domestic policy instruments for climate change mitigation and adaptation and their nexus, (5) the integration of doctrinal studies with socio-legal and policy research. The following are a few preliminary thoughts on these issues.

Gundlach and Gerrard<sup>226</sup> note that Brazil is an example of a country with comprehensive climate legislation, while China and India rely primarily on regulation adopted by their executive powers, and Argentina combines both approaches. Besides these states' reliance on their legislative and executive powers, their judges play an increasing role in climate law. While the quantity of climate litigation is increasing rapidly in the Global North, it is also proliferating in the Global South.<sup>227</sup> However, in the latter references to climate commitments, targets and policies usually constitute not the core of the cases but additional and supplementary arguments.<sup>228</sup>

As of 2023, Medici-Colombo and Berros<sup>229</sup> identified twelve pending climate cases in Argentina. The number of cases in Argentina is higher than in most other Global South countries except for Brazil and South Africa.<sup>230</sup> Medici-

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<sup>225</sup> Verschuuren "Introduction to Climate Change Adaptation" 6.

<sup>226</sup> Gundlach and Gerrard "Climate Change and Energy Transition Policies" 534.

<sup>227</sup> See Medici-Colombo and Berros 2023 *CJEL* 173-199.

<sup>228</sup> Medici-Colombo and Berros 2023 *CJEL* 176, 177, 188.

<sup>229</sup> Medici-Colombo and Berros 2023 *CJEL* 176, 177.

<sup>230</sup> Medici-Colombo and Berros 2023 *CJEL* 190.

Colombo and Berros<sup>231</sup> point out that the development of political support for climate action in Argentina is in its decline as the country relies on fossil fuel extraction and export and its leadership shows some climate denialism. At the same time, legal avenues for climate litigation in the country are more promising than political ones.<sup>232</sup> Argentina's legal system provides multiple options for climate litigation, and procedural standing is not a problem in the country, in comparison with the situation in some other jurisdictions.<sup>233</sup> Against this backdrop, climate litigation in Argentina could increase in years to come.<sup>234</sup>

South Africa is a country where a rights-based approach in climate litigation dominates and leads to victories for the plaintiffs in court.<sup>235</sup> China has a unique approach to climate litigation.<sup>236</sup> In this country climate change is predominantly not a matter of rights and environmental protection but a developmental issue.<sup>237</sup> Economic calculations, the development of new technologies and the transition towards new energy sources constitute climate policy in the country.<sup>238</sup> The Chinese approach to the challenge of climate change in the normative context relies predominantly on policy documents, not laws.<sup>239</sup> The role of judges in these settings is the continuation of climate policy and its sophistication through judicial means.<sup>240</sup>

The role of sub-national authorities in developing and implementing climate change laws and policies is also critical. Thus, as Gundlach and Gerrard<sup>241</sup> note, in India states such as Gujarat lead and stimulate such development while others such as Orissa avoid climate change mitigation and energy transition policies.

Additionally, further comparative analysis of specific climate policies is needed. Thus, the transition to renewables constitutes a specific challenge because solar and wind energy production, for example, depends on not always predictable natural forces and requires building specific infrastructure. In this context, the relationship between different authorities on the same governmental level or between national and sub-national

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<sup>231</sup> Medici-Colombo and Berros 2023 *CJEL* 194.

<sup>232</sup> Medici-Colombo and Berros 2023 *CJEL* 199.

<sup>233</sup> Medici-Colombo and Berros 2023 *CJEL* 195.

<sup>234</sup> Medici-Colombo and Berros 2023 *CJEL* 199.

<sup>235</sup> See Wadiwala 2023 *CJEL* 227-244.

<sup>236</sup> See Zhu 2023 *CJEL* 200-213.

<sup>237</sup> Zhu 2023 *CJEL* 200.

<sup>238</sup> Zhu 2023 *CJEL* 203.

<sup>239</sup> Zhu 2023 *CJEL* 203.

<sup>240</sup> Zhu 2023 *CJEL* 211.

<sup>241</sup> Gundlach and Gerrard "Climate Change and Energy Transition Policies" 540.

authorities in the process of developing and implementing the relevant policies is critical.<sup>242</sup>

In this context, the further cooperation and sharing of best practices among the BRICS countries' legislative, executive and judicial branches is pivotal. This cooperation should occur not only on the national level but also on sub-national levels. The relevant comparative research should contribute to the stimulation of such cooperation and simultaneously provide critical observations on the advantages and disadvantages of the relevant climate laws and policies in BRICS and in a global context.

Moreover, as Mehling<sup>243</sup> notes, legal research can reveal the expression of the collective wills of particular societies related to the climate change problem, as these wills are formally reflected in the laws of their states. The identification from a comparative perspective of legal barriers against and incentives towards achieving NDCs' targets in specific jurisdictions could contribute to our collective understanding of the role of law in the climate change context.<sup>244</sup> A focus on the laws of the BRICS countries would be especially valuable not only due to the economic and political rise of the bloc and its cumulative share of GHG emissions but also due to the diversity of the legal systems in the bloc. Despite each BRICS country's legal system having unique features, the civil law tradition predominantly impacted such countries as Argentina,<sup>245</sup> Brazil,<sup>246</sup> China,<sup>247</sup> Ethiopia<sup>248</sup> and Russia,<sup>249</sup> while the English common law system influenced the development of India's modern law.<sup>250</sup> The MENA countries' law is a mixture of civil law and Islamic law.<sup>251</sup> The South African legal system is rooted in Roman-Dutch law and combines traditions of the civil law and common law systems.<sup>252</sup>

Interdisciplinarity can provide the necessary insights for further research on BRICS and climate change law. Not only doctrinal but also socio-legal study and the integration of legal knowledge with political science are needed. Thus, not only legally defined but also the factual allocation of powers among institutions at the domestic level matters are apt for research. For

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<sup>242</sup> Gundlach and Gerrard "Climate Change and Energy Transition Policies" 540-543, 554-571.

<sup>243</sup> See Mehling 2015 *RECIEL* 341-352.

<sup>244</sup> See Mehling 2015 *RECIEL* 341-352.

<sup>245</sup> Merryman and Pérez-Perdomo *Civil Law Tradition* 1.

<sup>246</sup> Merryman and Pérez-Perdomo *Civil Law Tradition* 1.

<sup>247</sup> Wang "People's Republic of China" 128-148.

<sup>248</sup> Hailegebriel 2009 *Int'l J Not-for-Profit L* 9.

<sup>249</sup> Maggs, Schwartz and Burnham *Law and Legal System of the Russian Federation* 1, 7, 8, 15.

<sup>250</sup> See Pal Singh and Kumar *Indian Legal System* 1-22, 79.

<sup>251</sup> Elsaman "Middle East and North Africa" 331-342; Aboueleid 2019 [https://www.academia.edu/38243878/Legal\\_system\\_in\\_Egypt\\_Taher\\_Aboueleid\\_pdf?sm=b](https://www.academia.edu/38243878/Legal_system_in_Egypt_Taher_Aboueleid_pdf?sm=b) 2.

<sup>252</sup> Glazewski "South Africa" 315.

example, considering that the Parliament in Russia is a much weaker authority than the President, Harrison and Sundstrom<sup>253</sup> concluded that the decision to ratify the *Kyoto Protocol* was the decision of the Russian President. In addition, research into the implementation of international commitments would have to take into account that the processes of the ratification of international treaties and the processes of their implementation involve different institutions and centres of power.<sup>254</sup>

Purdon<sup>255</sup> believes that to provide correct recommendations, research should not be limited to the role of institutions but should also focus on the real, material interests of powerful actors and various entities at international, national and subnational levels. Moreover, understanding ideas and their role in environmental politics is critical.<sup>256</sup> For the further development of the bloc's positive climate agenda, it is pivotal to ask whether the ideas and interests that forge BRICS and influence its member states and various actors at their national and subnational levels align with the climate change mitigation and adaptation targets formally expressed in the NDCs of the BRICS countries.

## 9 Recommendations

Table 2 summarises the recommendations made in this paper regarding climate change mitigation and adaptation specific to the BRICS countries.

**Table 2 Recommendations**

Aspects of climate change law and policy	Recommendations	Related actors
Climate change law and policy in general, including mitigation and adaptation	The establishment of unity in the climate change agenda	BRICS as a bloc
	The adoption of a legally binding document on climate change	BRICS as a bloc
	Unification of domestic climate laws and policies	BRICS as a bloc and its member states
	The development and promotion of the bloc's vision of the CBDR-RC principle globally	BRICS as a bloc
	Raising awareness of the challenges and sharing the best practices among the BRICS member states on balancing climate change mitigation and adaptation initiatives with the need for nature conservation. Probably, the adoption of guidance on these issues at the bloc level	BRICS as a bloc (focus on Argentina's experience)
	Raising awareness of the challenges and sharing the best practices among the BRICS member states on balancing climate change mitigation and adaptation initiatives with the need for poverty eradication, inequalities reduction and	BRICS as a bloc (focus on the experiences of China,

<sup>253</sup> Harrison and Sundstrom 2007 *Global Environmental Politics* 9.

<sup>254</sup> Harrison and Sundstrom 2007 *Global Environmental Politics* 12-17.

<sup>255</sup> Purdon 2015 *Global Environmental Politics* 12, 13.

<sup>256</sup> Purdon 2015 *Global Environmental Politics* 14.

	sustainable development. Probably, the adoption of guidance on these issues at the bloc level	India and South Africa)
	The synchronisation of climate change mitigation and adaptation initiatives in the bloc with other relevant projects involving the BRICS countries such as China's Belt and Road Initiative, Saudi Arabia's Middle East Green Initiative, and Russia's support of the development of nuclear energy	BRICS as a bloc
	Developing legal and policy frameworks for financial, technical and other forms of support of the BRICS countries in implementing their NDCs	BRICS as a bloc (focus on the needs of Egypt, Ethiopia, and South Africa)
	Raising awareness of the challenges and sharing the best practices among the BRICS member states on the role of urbanisation in climate change mitigation and adaptation. Probably, the adoption of guidance on these issues at the bloc level	BRICS as a bloc (focus on the experiences of India, Iran and China)
	Analysis of the development of the climate change legislation of the BRICS countries	BRICS as a bloc (focus on South Africa's <i>Climate Change Bill</i> )
	The international promotion of the bloc and its member states as responsible climate change actors	BRICS as a bloc (examples include the UAE as the <i>UNFCCC</i> COP host country)
	Cooperation among the legislative, executive and judiciary powers of the BRICS countries as well as sub-national authorities on climate change issues. Facilitation of such cooperation by the bloc.	BRICS as a bloc and its member states
	Facilitation research on climate change laws and policies including research on specific sectors and initiatives and legal challenges specific to civil law, common law, Islamic law and mixed legal systems	BRICS as a bloc, its member states and academic communities
	The identification of institutions, interests and ideas that promote or constitute obstacles to developing and implementing the BRICS climate agenda. Monitoring such institutions, interests and ideas and creating a common approach of the bloc towards them.	BRICS as a bloc and academic communities of its member states
Climate change mitigation	Developing a policy or legally binding document on energy security which considers the climate change mitigation commitments of the BRICS countries	BRICS as a bloc
	Developing guidance on GHG emission reduction from deforestation and unsustainable agriculture practices	BRICS as a bloc (focus on Brazil's experience)
	Cooperation in the bloc on the development of renewable energy sources such as solar, wind and hydrogen energy	BRICS as a bloc (focus on initiatives of China, India, Saudi

		Arabia and Russia)
	Raising awareness of the challenges and sharing the best practices among the BRICS member states on energy efficiency. Probably, the adoption of guidance on these issues at the bloc level	BRICS as a bloc (focus on the experiences of India and China)
	The synchronisation of climate change mitigation targets among the BRICS countries, for example by using absolute emissions reduction targets related to emissions of a specified year. Probably, the adoption of guidance on these issues at the bloc level	BRICS as a bloc and its member-states (the UAE can be used as an example)
	Set a year for achieving the bloc's climate neutrality	BRICS as a bloc
	The promotion of the bloc's global leadership in just energy transition and the facilitation of the just energy transition by the bloc in its member states	BRICS as a bloc and its member states
Climate change adaptation	The adoption of a policy document at the bloc level that identifies positive and negative climate change impacts on the BRICS countries and facilitates the climate change adaptation of its member states.	BRICS as a bloc
	The promotion of proactive climate adaptation and cooperation on adaptation among the BRICS countries	BRICS as a bloc (focus on China's initiatives)
	The development of sector-specific adaptation policies in the bloc, i.e. on water scarcity issues	BRICS as a bloc (focus on Iran, Egypt, Ethiopia, Saudi Arabia and the UAE)

When establishing the common normative framework at the bloc level is required, the adoption of a declaration or another form of soft law or a policy document should be prioritised because BRICS currently does not have an effective legal framework and a mechanism for its implementation. If the bloc develops in the direction of closer cooperation among its member states, the adoption of legally binding documents would be a welcome development.

The role of law in developing the legal response of BRICS to climate change is not limited by the level of the bloc. Marshall and Sterett<sup>257</sup> note that climate change as a common problem requires the legal mobilisation of various actors at various levels. Such actors use multiple avenues, including climate litigation, to bring the climate laws and policies to bear.<sup>258</sup> These actors are creative in formulating their claims, and they build communities for climate

<sup>257</sup> Marshall and Sterett 2019 *Oñati Socio-Legal Series* 267.

<sup>258</sup> Marshall and Sterett 2019 *Oñati Socio-Legal Series* 270, 271.

action.<sup>259</sup> Such communities include academics who amplify the climate decisions and facilitate the development of the emerging climate jurisprudence.<sup>260</sup> In the BRICS context, the enhancement of the climate agenda of the bloc requires continuous cooperation among the BRICS countries' authorities, academia, non-governmental organisations and private entities for the creation and implementation of climate laws and policies in these countries.

The diversity of the needs, priorities and resources of BRICS countries means that the creation of a unified approach towards specific mitigation and adaptation policies in the bloc is not always possible and desirable. Thus, as has already been mentioned in the article, the shift towards using electric cars as a climatically beneficial movement requires that attention be paid to the way the electricity for these cars is produced. The implications of such a shift in South Africa would be different from those in Brazil.<sup>261</sup> In this context, what the bloc can do is facilitate cooperation and research, raise awareness of the challenges, share best practices and provide the necessary normative framework for resource mobilisation and transfer within the bloc where it is possible.

## 10 Conclusion

We called this article "BRICS and Climate Change Law: An Opportunity to Save the Planet". The cooperation of the ten countries in the bloc indeed constitutes an opportunity to cope with the challenges of climate change. It is critical to highlight that it is only an opportunity. There is no certainty that BRICS will take and use it to its full potential.

The main takeaways from this article are the following. First, the creation of BRICS took place without climate change mitigation and adaptation in mind. Other factors, particularly the desire to enhance the economies of the BRICS countries, were the driving force for cooperation. However, as the bloc has evolved climate change has become more visible on its policy horizon, and the *Johannesburg II Declaration* is one of the proofs of this development.

Second, the evolution of BRICS climate change law and policy could both support the implementation of commitments of the BRICS countries under the existing international climate regime and complement it. On the one hand, enhancing cooperation in the bloc could support actions towards the implementation of the NDCs of the individual countries through mutual support, awareness raising and the transfer of technologies, finance and

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<sup>259</sup> Marshall and Sterett 2019 *Oñati Socio-Legal Series* 270, 271.

<sup>260</sup> Marshall and Sterett 2019 *Oñati Socio-Legal Series* 270.

<sup>261</sup> The authors of this article are grateful to an anonymous reviewer for drawing their attention to this.

capacity building. On the other hand, BRICS has visualised its approach to critical issues in the climate change regime. Thus, it holds that all energy sources are important and notes the role of fossil fuels, which is not a common position held by many actors outside the bloc.

Third, BRICS countries are diverse in terms of their status under the *UNFCCC* regime, their pace of development, their share of historical and current GHG emissions, their abundance of natural resources, their reliance on coal and other fossil fuels and their local needs. This diversity could be both an obstacle and an opportunity for developing the bloc's common climate change framework. We assume that if such a framework develops, this could lead to constructing a unique law and policy framework which could reconcile the different domestic agendas for achieving the same goal, and in this regard become another positive achievement not only for the climate regime but also for creating a better multipolar world where no one is left behind.

In this article we have outlined possible trajectories for the development of political cooperation and academic endeavours in such areas as the climate change mitigation targets of the BRICS countries, increasing the energy efficiency and energy transition based on just transition, and the role of forests, agriculture and land use for the climate regime and climate change adaptation. We believe that the cooperation of researchers from different BRICS countries as well as from different disciplines would enhance our understanding of climate law and policy in the bloc and in broader international settings, and would contribute to finding solutions to the existential threat of our times.

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*Accelerating Action Towards a Green, Inclusive and Resilient Economy: Third Update of Second Nationally Determined Contribution for the UAE*  
[https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE\\_v15.pdf](https://unfccc.int/sites/default/files/NDC/2023-07/Third%20Update%20of%20Second%20NDC%20for%20the%20UAE_v15.pdf) accessed 23 October 2023

## List of Abbreviations

ASEAN	Association of Southeast Asian Nations
BAU	business as usual
BRICS	Brazil, Russia, India, China, South Africa
CBDR-RC	the principle of common but differentiated responsibilities and respective capabilities
CIS	Commonwealth of Independent States
CJEL	Chinese Journal of Environmental Law
CH <sub>4</sub>	methane
COP	Conference of the Parties
COVID	Coronavirus disease
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> -eq	carbon dioxide equivalent
Env Pol'y & L	Environmental Policy and Law
ERCPC	Energy Research Cooperation Platform
EU	European Union
GDP	gross domestic product
GHG	Greenhouse gas

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GgCO <sub>2</sub> -eq	Carbon dioxide equivalent (in gigagrammes, Gg)
Industry 4.0 (I4.0)	Fourth industrial revolution
Int J Climatol	International Journal of Climatology
Int'l J Not-for-Profit L	International Journal of Not-for-Profit Law
IPCC	Intergovernmental Panel on Climate Change
JEL	Journal of Environmental Law
MAC	Mangrove Alliance for Climate
MENA	Middle East and North Africa
MtCO <sub>2</sub>	metric tonnes of carbon dioxide
MtCO <sub>2</sub> -eq	Metric tonnes of carbon dioxide equivalent
NDB	New Development Bank
NDC	Nationally determined contribution
N <sub>2</sub> O	Nitrous oxide
RECIEL	Review of European, Comparative and International Environmental Law
SDGs	Sustainable Development Goals
UAE	United Arab Emirates
TWQ	Third World Quarterly
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNCTAD	United National Conference on Trade and Development
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
YEA	Youth Energy Agency