

ARTICLES

BRICS COUNTRIES' POLITICAL AND LEGAL PARTICIPATION IN THE GLOBAL CLIMATE CHANGE AGENDA

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DOI: 10.21684/2412-2343-2016-3-3-8-42

The article presents an overview and analysis of international legal regulations on climate change. The authors examine how the international regime related to climate change has evolved in multilateral agreements. A special focus is put on the principle of common but differentiated responsibilities which became the basis of discord among states in discussing targets and responsibilities in climate change mitigation. The authors note that in 2015 the international climate change regime entered a new stage where the most important role is determined for developing countries, both in the legal and in the financial infrastructure, and in the formation of an international climate change policy.

The importance of the participation of Brazil, Russia, India, China, and South Africa (BRICS) in an international climate change regime has been recognized for some time. The article describes the policy and regulations on climate-related issues in BRICS. The authors compare the key actions and measures BRICS have taken for complying with international climate change documents. They highlight that global climate change action cannot be successful without BRICS countries' involvement. BRICS must therefore make adequate efforts in emissions reduction measures and significant commitments in respect of the international climate change regime. The authors propose three major steps for BRICS to take the lead in dealing with climate change. First, BRICS need to foster further discussion and cooperation on climate issues and work out an obligatory legal framework to fight climate change collectively as well as unified legislation at their

domestic levels. Second, Russia and other BRICS countries have the potential to cooperate in the field of renewable energy through the exchange of technology, investment in the sector, and the participation of their energy companies in each other's domestic market. Assuming Russia will support the development and enhancement of renewable technologies in BRICS countries, it can take a leadership position in the group. Third, in the international process of tackling climate-related issues BRICS should act as a bloc. Russia's distancing itself from its partners is considered a deficiency in strengthening the BRICS countries' role in global governance. BRICS are capable of serving as a vigorous platform in driving climate change negotiations leading to effective binding regulations in 2020–2030 and, provided that the countries cooperate successfully, BRICS will carry the combined weight of the entire group in the global arena.

Keywords: BRICS countries; climate change; emissions reduction; international agreements; common but differentiated responsibilities.

Recommended citation: Elena Gladun & Dewan Ahsan, *BRICS Countries' Political and Legal Participation in the Global Climate Change Agenda*, 3(3) BRICS Law Journal 8–42 (2016).

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1. Introduction

One of the global objectives of sustainable development set forth by the international community is to improve the quality of life within the constraints of the natural environment. The primary way to achieve this is to mitigate global

climate change. The global problem of climate change is addressed in the plethora of international documents which have formed the legal framework governing the activities of states to reduce greenhouse gas (GHG) emissions, to create and implement the best technologies, and to cooperate in the area of protecting the ozone layer. By the mid-1980s, the accumulating observed evidence of actual ozone layer depletion was a key factor leading countries into the era of climate change.

The politics of global climate change are as complex as the science underpinning the debate. State, regional and multilateral efforts to address climate change differ in scope, focus and style.¹ There is also great diversity in the social and legal systems in the states that have undertaken to regulate climate issues. Different countries have widely divergent histories, levels of wealth, economic conditions, cultures, and systems of government and laws, hence, they regulate environmental protection according to their own conceptions, legal instruments, and national norms. Some countries are more experienced in regulating efficiently matters related to the natural environment, while others have little experience in using regulatory instruments in respect of this question.

The problem of climate change, however, cannot be solved by the efforts of any one country acting alone. Successful climate change mitigation, firstly, will require global consensus and efficient global environmental agreement on the appropriate response to climate change. The effectiveness of such an agreement depends on the participation of both developed and developing nations. All countries acknowledge the need to reduce ozone-depleting emissions though some developed countries are reluctant to ratify climate change agreements, for instance the Kyoto Protocol,² and developing countries lack adequate commitment to reduce their emissions. It is crucial that all governments comply with international agreements and not set emissions reduction targets with ambiguous sustainability goals, which only undermines long-term efforts at the domestic level, i.e. replacement of state policy, extensive amendments in legislation, and special judicial or administrative measures.³

This paper analyzes the efforts of Brazil, Russia, India, China, and South Africa (BRICS) in complying with the existing international climate change regime as well as the transformation in their domestic policy and regulations addressing climate change in the last decade. The objective of the research is to determine the role of the

¹ Cinnamon Carlarne, *Risky Business: The Ups and Downs of Mixing Economics, Security and Climate Change*, 10 Melb. J. Int'l L. 439 (2009).

² The rationale for the previous United States Administration's not ratifying the Kyoto Protocol was partly based on the lack of commitment to GHG emissions reduction by developing nations. See Philippe Tulkens & Henry Tulkens, *The White House and the Kyoto Protocol: Double Standards on Uncertainties and Their Consequences*, FEEM Working Paper 89.2006 (2006) (Jun. 12, 2016), available at <http://ageconsearch.umn.edu/bitstream/12063/1/wp060089.pdf>.

³ Michael Burger et al., *Rethinking Sustainability to Meet the Climate Change Challenge*, 43 Envtl. L. Rep. News & Analysis 10342, 10345 (2013).

BRICS countries in the future global response to climate change and to propose steps that Russia needs to adopt in order to be capable of taking the lead in this area.

2. The Evolution of Multilateral Environmental Agreements on Climate Change

The Vienna Convention for the Protection of the Ozone Layer (1985) became the first document establishing the duty of state Parties to

adopt appropriate legislative or administrative measures and cooperate in harmonizing appropriate policies to control, limit, reduce or prevent human activities under their jurisdiction or control should it be found that these activities have or are likely to have adverse effects resulting from modification or likely modification of the ozone layer (Article 2).⁴

The Convention provided a list of chemical substances which have the potential to modify and deplete the properties of the ozone layer. In addition, the document required participating countries to adopt legislative measures to control and limit the behavior of individuals within a state's jurisdiction to prevent them from conducting activities which are shown to cause further depletion of the ozone layer. The participants also agreed to cooperate in the research effort to determine which human activities effect the depletion of the ozone layer, although individual participating countries had the latitude to exploit their own resources in accordance with their own environmental policies.⁵ Generally speaking, this document was of a framework nature and imposed no specific obligations on the signatory countries in reducing consumption and production of ozone-depleting substances (ODS). In 1987, the Montreal Protocol⁶ amended the Vienna Convention by specifically providing for the Parties' gradual reduction in the production and consumption of chlorofluorocarbons (CFCs) and other ozone-depleting chemicals. The Montreal Protocol also set controls on the trade of such chemicals with non-Parties. In 1990, the London Amendment to the Montreal Protocol strengthened these control measures by requiring the Parties to phase out the production of CFCs by the year 2000, and to gradually phase out other controlled substances by 2005.⁷ Subsequently,

⁴ Vienna Convention for the Protection of the Ozone Layer (with Annexes I & II), UNEP Doc. IG.53/5, 26 I.L.M. 1529 (1987).

⁵ Jeffrey M. Pollock & Jonathan S. Jemison, *The Emerging of International Environmental Law*, 195-Feb. New Jersey Lawyer 25 (1999).

⁶ Montreal Protocol on Substances that Deplete the Ozone Layer, 26 I.L.M. 1550 (1987).

⁷ The Evolution of the Montreal Protocol, Amendments, Ozone Secretariat (UNEP) (Jul. 28, 2016), available at <http://ozone.unep.org/en/handbook-montreal-protocol-substances-deplete-ozone-layer/27608>.

a number of amendments were adopted extending the list of banned substances,⁸ banning the import of the controlled substances from any state not a Party to the Protocol as well as establishing and implementing a system for licensing the import and export of controlled substances,⁹ and establishing deadlines for the production and consumption of these substances.¹⁰

The Montreal Protocol divides its Parties into categories – developed and developing countries, but only countries under the latter category have special rights. This mechanism is based on the principle of common but differentiated responsibilities and has a crucial meaning for international cooperation. Article 5, paragraph 1 of the Protocol provides delayed compliance for developing countries; it reads:

Any Party that is a developing country and whose annual calculated level of consumption of the controlled substances in Annex A is less than 0.3 kilograms per capita on the date of the entry into force of the Protocol for it, or any time thereafter until January 1, 1999, shall, in order to meet its basic domestic needs, be entitled to delay for ten years its compliance with the control measures set out in Articles 2A to 2E.¹¹

This means that every developing country is granted a grace period if its emissions are below a certain threshold (making them “Article 5, paragraph 1 Parties”).¹² The 10-year grace period that was arranged made it possible to require developing countries to meet the same obligations as developed countries.¹³ The Montreal Protocol accordingly provides another mechanism for developing countries – a special fund to facilitate implementation. This emphasizes that developing

⁸ The Copenhagen Amendment (1992): The Amendment to the Montreal Protocol Agreed by the Fourth Meeting of the Parties, Ozone Secretariat (UNEP) (Jul. 28, 2016), available at <http://ozone.unep.org/en/handbook-montreal-protocol-substances-deplete-ozone-layer/27610>.

⁹ The Montreal Amendment (1997): The Amendment to the Montreal Protocol Agreed by the Ninth Meeting of the Parties, Ozone Secretariat (UNEP) (Jul. 28, 2016), available at <http://ozone.unep.org/en/handbook-montreal-protocol-substances-deplete-ozone-layer/27611>.

¹⁰ The Beijing Amendment (1999): The Amendment to the Montreal Protocol Agreed by the Eleventh Meeting of the Parties, Ozone Secretariat (UNEP) (Jul. 28, 2016), available at <http://ozone.unep.org/en/handbook-montreal-protocol-substances-deplete-ozone-layer/27612>.

¹¹ Montreal Protocol, Art. 5, para. 1.

¹² Pieter Pauw et al., *Different Perspectives on Differentiated Responsibilities: A State-of-the-Art Review of the Notion of Common but Differentiated Responsibilities in International Negotiations*, German Development Institute / Deutsches Institut für Entwicklungspolitik Discussion Paper 6/2014 (2014) (Aug. 8, 2016), available at https://www.die-gdi.de/uploads/media/DP_6.2014.pdf.

¹³ Sarah Davidson Ladly, *Border Carbon Adjustments, WTO-law and the Principle of Common but Differentiated Responsibilities*, 12 International Environmental Agreements 63 (2012).

countries are minor contributors to current global climate problems, have lower capacities, and still have high levels of poverty that need to be addressed first.¹⁴

In 1992, the United Nations Framework Convention on Climate Change was adopted and signed by most of the countries of the world. The ultimate objective of this Convention

is stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.¹⁵

The Convention divides countries into three main groups according to differing commitments. Annex I Parties include the industrialized countries that were members of the Organization for Economic Co-operation and Development (OECD) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic states, and several central and eastern European states. Annex II Parties consist of the OECD members of Annex I, but not the EIT Parties. The countries in Annex II are obliged to assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation to those adverse effects. They are required to “take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention.”¹⁶

Thus, the developed countries that are Parties to the Convention obligate themselves to take the lead in dealing with this problem by promising to implement national policies and to take the corresponding measures to assist in the reduction of greenhouse gases.

Non-Annex I Parties (the third group) are mostly developing countries. Certain groups of developing countries are recognized by the Convention as being especially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and drought. Others (such as countries that rely heavily on income from fossil fuel production and commerce)

¹⁴ Joanna Depledge & Farhana Yamin, *The Global Climate Change Regime: A Defence in The Economics and Politics of Climate Change* 433 (D. Helm & C. Hepburn, eds., Oxford University Press, 2009).

¹⁵ United Nations Framework Convention on Climate Change, Art. 2 (Aug. 1, 2016), available at <https://unfccc.int/resource/docs/convkp/conveng.pdf>.

¹⁶ *Id.* Art. 4, paras. 4, 5.

feel more vulnerable to the potential economic impacts of climate change response measures. The Convention emphasizes activities that promise to answer the special needs and concerns of these vulnerable countries, such as investment, insurance, and technology transfer.¹⁷ Funding provided by Annex II Parties is channeled mostly through the Convention's financial mechanisms.

Despite the commitments declared by the Convention on Climate Change, it places no legally binding requirements on the Parties. The Kyoto Protocol of 1997, however, amended the Convention by imposing the specific legal requirements that the initial agreement lacked.¹⁸ In particular, the Kyoto Protocol's major feature is that it has mandatory targets on GHG emissions for the world's leading economies that have accepted it.¹⁹ Thus, it requires industrialized and developed countries to reduce the emissions of greenhouse gases to 5% below 1990 levels between 2008 and 2012, although it specifically declines to extend the reduction of emissions requirement to developing countries. Further, based on the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC),²⁰ industrialized countries need to achieve aggregate emissions cuts of 25%–40% by 2020 in order to limit global warming to 2°C. To achieve these objectives, the Kyoto Protocol provides three mechanisms for countries to control their emissions through flexible arrangements. For trade with developing countries, the Kyoto Protocol created a Clean Development Mechanism (CDM) that accepts contributions from industrialized countries, invests in emissions abatement in developing countries, and obtains certified emissions reductions in return, which it credits to the industrialized investor countries' targets. The CDM can be seen as a vehicle for "joint implementation with credit," but potentially through a centralized fund rather than through decentralized bilateral investments.²¹

A Joint Implementation (JI) mechanism enables industrialized countries to invest in climate-friendly projects in other industrialized countries and earn carbon credits in exchange. Lastly, an emissions trading system creates a market for trading carbon credits with countries that are over their target.²²

¹⁷ Parties and Observers, United Nations Framework Convention on Climate Change (Aug. 1, 2016), available at http://unfccc.int/parties_and_observers/items/2704.php.

¹⁸ Pollock & Jemison 1999, at 27.

¹⁹ A Summary of the Kyoto Protocol, United Nations Framework Convention on Climate Change (Aug. 1, 2016), available at http://unfccc.int/kyoto_protocol/background/items/2879.php.

²⁰ Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Core Writing Team, R.K. Pachauri & A. Reisinger, eds., Geneva: IPCC, 2007) (Aug. 1, 2016), also available at https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_full_report.pdf.

²¹ Jonathan Baert Wiener, *Global Environmental Regulation: Instrument Choice in Legal Context*, 108 Yale Law Journal 677 (1999).

²² *The Global Climate Change Regime*, US Council on Foreign Relations (Aug. 1, 2016), available at <http://www.cfr.org/climate-change/global-climate-change-regime/p21831>.

The Protocol's first commitment period started in 2008 and ended in 2012, and at that time the need for a new international agreement on climate change became evident. The global community admitted that the first phase of the Protocol had failed to slow global carbon emissions.²³ One of the main reasons for this was that it was not well thought out enough to make it a realistic way for developed countries to reduce their emissions levels. As *The New Yorker* magazine put it in one article, "[T]he best way for a Kyoto signatory to cut its carbon output has been to suffer a well-timed industrial implosion..."²⁴ No developed country has succeeded in cutting emissions levels unless its economy completely crashed. That does not bode well for future attempts to lower GHG emissions.²⁵ The Copenhagen Climate Summit, which took place in 2009, raised climate change policy to the highest political level and made an effort to negotiate for effective global climate change cooperation, including improvements to the Clean Development Mechanism of the Kyoto Protocol.²⁶ Even though this 15th session of the Conference of the Parties (COP) produced the Copenhagen Accord, which clearly expressed the political intent to constrain carbon emissions and respond to climate change, in both the short and the long term, again the states failed to establish a comprehensive international climate change regime.²⁷ The unilateral pledges under the Copenhagen Accord would limit warming to some 3°C by 2100. The document was not legally binding; however, it placed the issue on the agenda of future climate change negotiations.²⁸

One evident reason for the international climate change regime's deficiency is the debate among states over the principle of common but differentiated responsibilities, which was created by the Rio Declaration on Environment and Development²⁹ and articulated in the Montreal Protocol and the UN Framework Convention on Climate Change with Kyoto Protocol Annexes. Many researchers have noted that international

²³ See in detail *Has the Kyoto Protocol Made Any Difference to Carbon Emissions?*, The Guardian, Environment Blog (Aug. 1, 2016), available at <https://www.theguardian.com/environment/blog/2012/nov/26/kyoto-protocol-carbon-emissions>; see also Пискулова Н.А. и др. Климатическая политика основных торговых партнеров России и ее влияние на экспорт ряда российских регионов [Natalia A. Piskulova et al., *Climate Policy of the Main Trade Partners of Russia and Its Impact on Exports in a Number of Russian Regions*] (Moscow: WWF, 2013).

²⁴ David Owen, *Economy vs. Environment*, The New Yorker, March 30, 2009 (Aug. 1, 2016), available at <http://www.newyorker.com/magazine/2009/03/30/economy-vs-environment>.

²⁵ Romain Morel & Igor Shishlov, *Ex-Post Evaluation of the Kyoto Protocol: Four Key Lessons for the 2015 Paris Agreement*, 44 Climate Report (2014).

²⁶ Copenhagen Climate Change Conference (December 2009) (Jul. 20, 2016), available at http://unfccc.int/meetings/copenhagen_dec_2009/meeting/6295.php.

²⁷ *Id.*

²⁸ Anna Korppoo, *Russia's Climate Commitments: Which GDP Growth Contributes to Emissions?*, International Association for Energy Economics, Fourth Quarter 2010, at 23.

²⁹ Rio Declaration on Environment and Development, 31 I.L.M. 874 (1992), Principle 7.

instruments in the field of climate change are highly politicized.³⁰ The principle creates tension between developing and developed countries fueled by ongoing disagreements over how to interpret it, particularly when it comes to establishing and achieving meaningful mitigation targets.³¹ To begin with, some developing countries blame the developed world for having created the global warming crisis in the first place, because it was the developed countries that emitted most of the carbon dioxide during the 20th century, and vulnerable countries perceive that it should be the developed countries that ought to pay to address the challenge.³²

In addition, a delay in compliance with international obligations on the production and consumption of ozone-depleting substances in developing countries cannot be reconciled with the interests of humanity and future generations, because it allows developing countries to increase this production. The fact that the developed countries emitted large amounts of ODS previously does not necessarily mean that developing countries should now be allowed to emit an equal amount over a similar time frame. This would not be sustainable in terms of protecting the climate system for the present and future generations, because the concentration of greenhouse gases in the atmosphere is already high.

Moreover, developing countries have resisted adopting verifiable carbon dioxide targets for fear of the impacts on their economies and have chosen not to accept commitments under the international documents. On the other hand, as efforts to mitigate climate change require the reduction of emissions by all major emitters, industrialized countries argue that the dichotomy between developed and developing countries is no longer tenable to the extent that emerging economies still fall under the category of developing countries without clear and binding responsibilities. Emerging economies, such as Brazil, China, India, South Africa and major oil producers, still have an interest in not taking the same responsibilities as traditional developed countries.³³

³⁰ See Devian K. Harris, *The Politicization of Climate Change*, Thesis, Georgia State University, 2012 (Jul. 20, 2016), available at http://scholarworks.gsu.edu/political_science_theses/49; Соловьянов А.А. Озоновый кризис и Монреальский протокол [Alexander A. Solovyanov, *Ozone Crisis and the Montreal Protocol*] (May 1, 2016), available at http://www.rus-stat.ru/stat/9531998_4.pdf.

³¹ *The Global Climate Change Regime*, *supra* note 22.

³² India's foreign minister warned in 2007 that "attempts to secure uncompensated GHG abatement commitments from developing countries is not the way forward." He instead pressed for "a constructive response recognising common but differentiated responsibilities for the developed and developing countries." Mukherjee also argued that "the mitigation (of GHG) regime must not reduce the prospects for economic growth and poverty alleviation" in developing countries. See in detail Julio Godoy, *G8 Makes Room at Table for Emerging Five*, Global Policy Forum, June 1, 2007 (Jul. 15, 2016), available at <https://www.globalpolicy.org/component/content/article/209/42852.html>; see also Karl Mathiesen, *Climate Talks: Should Rich Countries Pay for Damage Caused by Global Warming?*, The Guardian, Environment, November 20, 2013 (Jul. 20, 2016), available at <https://www.theguardian.com/environment/2013/nov/20/climate-talks-rich-countries-pay-damage-global-warming>.

³³ Clara Nobbe, *Universality, Common but Differentiated Responsibilities and the Sustainable Development Goals*, SWP Working Paper 7 (Berlin, 2015).

The architecture for global climate governance looked particularly shaky after the 15th COP failed to overcome entrenched differences among the major Parties and deliver targeted emissions cuts. Following Copenhagen, COP-16, held in Cancun, Mexico, made some strides towards effective multilateral action, but the regime still fell well short of promoting needed action to effect positive change, including committing to a post-Kyoto framework. At the launch of the UN Framework Convention on Climate Change, 17th session of the Conference of the Parties (COP-17) in Durban, South Africa, many climate change experts were concerned that the Kyoto Protocol could expire in 2012 with no secondary legally binding accord on limiting global emissions in place. This fear, however, was somewhat assuaged as the nearly two hundred countries present at COP-17 approved an extension of the Protocol through 2017, and potentially 2020. A decision was also reached at the conference to draft a successor accord to the Kyoto Protocol by 2015, which would ultimately come into force in 2020. Delegates also envisioned that the new accord should include GHG emissions targets for all countries, regardless of their level of economic development. This framework notably contrasted with that of the Kyoto Protocol, which primarily focuses on reducing emissions emanating from developed countries.³⁴

Hence, at the end of 2012 the climate change policy of the international community entered a new stage. COP-18, which took place in Doha, Qatar (November–December 2012), delivered significant results. Going into the conference, all the major Parties had clearly signaled that they were unlikely to move beyond existing pledges. Countries were seeking to conclude negotiations on a second Kyoto Protocol commitment period, terminate parallel Convention talks on how to enhance collective climate change action by all countries, and give shape and direction to the new process for agreeing to a new international climate change treaty in 2015.³⁵

The old approach, as described above, was based on a strict division of responsibilities between developed and developing countries. The new approach provides unified action by all countries, where the most important role is for developing countries, both in the financial infrastructure and in the formation of a global climate policy. This approach is characterized by very active actions by the countries themselves to develop market-based and non-GHG emissions regulation mechanisms. Big emitters, including the BRICS countries, put forward their own complementary initiatives.³⁶ For example, the environment ministers from each of the BRICS countries met in April 2015 to discuss the crisis of climate change. The success

³⁴ *The Global Climate Change Regime*, *supra* note 22.

³⁵ Dalia Štreimikienė, *The 18th Session of the Conference of the Parties to the United Nations Convention on Climate Change (UNFCCC)* (Aug. 1, 2016), available at <https://www.mruni.eu/upload/iblock/3ee/IE-13-7-2-09.pdf>.

³⁶ Кокорин А.О. Современная климатическая политика мирового сообщества и ее значимость для России [Alexey O. Kokorin, *Modern Climate Policy of the International Community and Its Importance for Russia*] (Moscow: WWF, 2013).

of the BRICS Environment Ministers meeting lay in its decision to launch cooperation on environmental issues by setting up a steering committee to coordinate efforts and by sharing technologies and best practices. The ministers discussed proposals of mutual cooperation to tackle issues of water, air, industrial pollution, waste management, and sewerage treatment. In this context, the BRICS Bank, with a \$100 billion corpus, could play a constructive role, investing in the promotion of green technology, and providing financial aid to help reduce air pollution.³⁷

The new climate change regime was eventually established in December 2015 in Paris where, after 20 years of fraught meetings, negotiators from nearly 200 countries signed on to a legal agreement that set ambitious goals to limit temperature rises and to hold governments to account for reaching those targets.³⁸ Parties to the UN Framework Convention on Climate Change adopted the Paris Agreement at the 21st session of the Conference of the Parties. The purpose of the Agreement is formulated in its Article 2 as “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.”³⁹ The goal of limiting the global temperature increase to 1.5°C is a big leap *below* (thus, more stringent than) the 2°C that nearly 200 countries had agreed to as a limit six years earlier in Copenhagen.⁴⁰ The Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.⁴¹ Developing countries are determined with a special status expressed in Article 4 of the Agreement, which says:

Developed country Parties shall continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances. Support shall be provided to developing country Parties for the implementation of this Article, in accordance with Articles 9, 10 and 11, recognizing that enhanced

³⁷ Debidatta Aurobinda Mahapatra, *BRICS to Push Cooperation on Climate Change*, Russia and India Report, April 29, 2015 (Jul. 1, 2016), available at https://in.rbth.com/economics/2015/04/29/brics_to_push_cooperation_on_climate_change_42893.

³⁸ *Paris Climate Deal: Nearly 200 Nations Sign In End of Fossil Fuel Era*, The Guardian, December, 12, 2015 (Jul. 1, 2016), available at <https://www.theguardian.com/environment/2015/dec/12/paris-climate-deal-200-nations-sign-finish-fossil-fuel-era>.

³⁹ Paris Agreement to the United Nations Framework Convention on Climate Change, Art. 2, para. 1(a) (Aug. 1, 2016), available at http://unfccc.int/paris_agreement/items/9485.php.

⁴⁰ *Paris Climate Deal*, *supra* note 38.

⁴¹ Paris Agreement, Art. 2, para. 2.

support for developing country Parties will allow for higher ambition in their actions.⁴²

Thus, the Agreement sustains the principle of common but differentiated responsibilities as articulated in the UN Framework Convention on Climate Change.

The Agreement introduces a new committing instrument – Intended Nationally Determined Contributions (INDC). Parties, according to Article 4, will

prepare, communicate and maintain successive nationally determined contributions that... [they] intend to achieve... [and] pursue domestic mitigation measures with the aim of achieving the objectives of such contributions... Each Party shall communicate a nationally determined contribution every five years... [and inform COP] about the outcomes of the global stocktake referred to in Article 14.

Before the conference in Paris started, more than 180 countries had submitted pledges to cut or curb their carbon emissions through INDCs. The INDCs are recognized under the Agreement, but are not legally binding. A Party may at any time adjust its existing nationally determined contribution with a view to enhancing its level of ambition, in accordance with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.

The Paris Agreement will enter into force in 2020.⁴³ The documents inaugurate a new era in international climate change regulation with a more ambitious objective and a special role for each country Party that clearly defines its targets and formulates its implementation action plan.

3. BRICS Countries' Domestic Policies and Regulations Related to Climate Change

BRICS countries are not an exception in respect of the global climate change agenda. All of them are signatory parties to the major international instruments governing the impact on the ozone layer and the climate, but BRICS countries are given a different status that determines their different roles and responsibilities in the climate change regime. In particular Brazil, China, India and South Africa are in the list of Parties categorized as operating under Article 5, paragraph 1 of the

⁴² Paris Agreement, Art. 4, para. 4.

⁴³ As of August 3, 2016, there are 180 signatories to the Paris Agreement. Of these, 22 states have also deposited their instruments of ratification, acceptance or approval accounting in total for 1.08% of the total global GHG emissions.

Montreal Protocol,⁴⁴ which means they are granted a grace period as to the Protocol's commitment, because their level of consumption of the controlled substances is less than 0.3 kilograms per capita. Russia is in the list of Parties categorized as operating under Article 2 of the Montreal Protocol, meaning the country has the imposed obligation to reduce the production and consumption of ozone-depleting substances by different means, including:

- cooperate by means of systematic observations, research and information exchange in order to better understand and assess the effects of human activities on the ozone layer and the effects on human health and the environment from modification of the ozone layer;
- adopt appropriate legislative or administrative measures... and policies to control, limit, reduce or prevent human activities under their jurisdiction or control should it be found that these activities have or are likely to have adverse effects resulting from modification or likely modification of the ozone layer;
- cooperate in the formulation of agreed measures, procedures and standards for the implementation of... [the Vienna Convention and the Protocol];
- cooperate with competent international bodies to implement effectively... [the Convention and the Protocol].⁴⁵

Accordingly, the Russian Federation is the only one of the BRICS countries included in Annex I of the UN Framework Convention on Climate Change (as an EIT Party),⁴⁶ i.e. the country assumes special obligations to take all possible measures for abatement of GHG emissions.

Brazil, China, India and South Africa are non-Annex I Parties to the UN Framework Convention on Climate Change and do not have a formal obligation under the Convention and the associated Kyoto Protocol to reduce their GHG emissions. However, they are still required to take actions to encourage such reductions. The state of their domestic GHG emissions policies may indicate their readiness to undertake further binding commitments.

The BRICS nations have undertaken very different role behaviors within the international climate change regime. For example, at Copenhagen (COP-15) in 2009 Russia distanced itself from the other BRICS countries.⁴⁷ For a long period of time the

⁴⁴ Article 5 Parties Status, Ozone Secretariat (UNEP) (Aug. 1, 2016), available at <http://ozone.unep.org/en/article-5-parties-status>.

⁴⁵ Vienna Convention for the Protection of the Ozone Layer, Art. 2.

⁴⁶ List of Annex I Parties to the Convention, United Nations Framework Convention on Climate Change (Aug. 1, 2016), available at http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php.

⁴⁷ Niall Duggan, *BRICS and the Evolution of a New Agenda Within Global Governance* in *The European Union and the BRICS. Complex Relations in the Era of Global Governance* 16 (M. Rewizorski, ed., Springer International Publishing Switzerland, 2015).

country remained largely irrelevant in international negotiations on climate change and positioned itself as reluctant to set clear-cut targets and change domestic climate-related legislation.⁴⁸ In contrast, the other BRICS countries have been playing a crucial role in international discussions and meetings since 2007.⁴⁹

3.1. Brazil

Brazil produces 2.8% of the world's greenhouse gases and it is considered the seventh largest emitter of greenhouse gases according to 2014 World Resources Institute figures.⁵⁰ However, the majority of its power comes from hydroelectricity. Consequently, Brazil's energy sector contributes little to its GHG emissions. Unsustainable land use, large livestock numbers, large-scale use of fossil fuels in its mineral processing industries and deforestation are the major emission sources. Conversely, Brazil is the world's largest producer and consumer of ethanol, which it has added to gasoline, or used as a fuel in its own right, since the 1970s. This has reduced both GHG emissions and pollution in urban centers.⁵¹

Since early 2000, Brazil has employed significant political effort to adopt climate change legislation and policies. As a result, the Brazilian emissions decreased by 41% between 2005 and 2012 from the highest reported level in 1996. This is mainly due to significant emissions reductions in the forestry and land use sector. Brazil is home to the largest part (about 60%) of the Amazon rainforest where alarming levels of deforestation in the early 2000s contributed to very high emissions.⁵² However, as a result of strong policies to fight deforestation in the Amazon, Brazil has turned this trend around.

In 2007, the Brazilian government began to reformulate its response to climate change. The result was the National Plan on Climate Change finalized in December 2008. Its overall goal was to achieve sustainable economic and social development. Its main points included:

⁴⁸ For more information see Liliana B. Andonova & Assia Alexieva, *Continuity and Change in Russia's Climate Negotiations Position and Strategy*, 12(5) Climate Policy 614 (2012).

⁴⁹ See in detail Fang Rong, *Understanding Developing Country Stances on Post-2012 Climate Change Negotiations: Comparative Analysis of Brazil, China, India, Mexico, and South Africa*, 38(8) Energy Policy 4582 (2010).

⁵⁰ Mengpin Ge et al., *6 Graphs Explain the World's Top 10 Emitter*, World Resources Institute, November 25, 2014 (Aug. 1, 2016), available at <http://www.wri.org/blog/2014/11/6-graphs-explain-world%E2%80%99s-top-10-emitters>.

⁵¹ E.L. La Rovere & A.S. Pereira, *Brazil & Climate Change: A Country Profile*, SciDev.Net, February 14, 2007 (Jul. 20, 2016), also available at <http://www.scidev.net/en/policy-briefs/brazil-climate-change-a-country-profile.html>.

⁵² Climate Action Tracker (Jul. 20, 2016), available at <http://climateactiontracker.org/countries/brazil.html>. The "Climate Action Tracker" is an independent science-based assessment, which tracks the emission commitments and actions of countries. The website provides an up-to-date assessment of individual national pledges, targets, and intended nationally determined contributions (INDCs) and currently implemented policy to reduce their GHG emissions.

- increasing energy efficiency leading to a decrease in electricity consumption by 10% in 2030, compared to current levels,
- maintaining a high proportion of Brazil's electricity supply from renewable sources (Brazil sourced about 77% of its electricity from renewable sources, mainly hydropower, in 2007),
- encouraging the increased use of biofuels in the transport sector (the proportion of biofuel use was already high) and work towards a sustainable international market for such fuels,
- sustained reduction in de-forestation rates, particularly in the Amazon region; the aim is to reduce the rate of de-forestation by 70% by 2017 in gradual stages,
- increasing research and development to precisely identify environmental impacts and minimize the costs of adaptation, and
- eliminating net loss of forest cover by 2015 through re-forestation and establishment of forest plantations.⁵³

Brazil has identified the Kyoto Protocol's Clean Development Mechanism (CDM) as the main avenue for international cooperation on climate change matters, though the National Action Plan noted that changes to the CDM regime may need to be made. This strategy comes on top of extensive existing measures that are either aimed at mitigating climate change or have that outcome.⁵⁴

The National Plan on Climate Change was updated after the consultation process ended in December 2014. In the updated plan, the country voluntarily establishes an emissions reduction target of 36.1% to 38.9% by 2020 with 2005 as a baseline. Emissions reduction targets are presented for four designated strategic areas: deforestation (24.7%), agriculture and livestock (4.9% to 6.1%), energy (6.1% to 7.7%) and the steel sector (0.3% to 0.4%). The policy leaves specific implementation measures to be either established by decree or determined by the Second Brazilian Inventory on GHG Emissions and Reductions. It also incorporates all laws, measures, and policies pertaining to climate change.⁵⁵

In 2010, the President passed a Decree establishing a nationwide target for annual GHG emissions of 2.1bn tons of CO₂e by 2020, as compared to the current 2020 projection of 3.2bn tons of CO₂e. This Decree made Brazil the first developing country to institute an absolute limit on its GHG emissions. The Decree also requires the elaboration of sectoral plans outlining mitigation actions for key economic sectors, with targets to be revised on a tri-annual basis. Currently there are eight

⁵³ Leslie Nielson, *Climate Change Policy: Brazil, China, India and Russia*, Parliament of Australia, Parliament Library, February 25, 2009 (Jul. 20, 2016), available at http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BN/0809/ClimateChange#_Toc222285937.

⁵⁴ *Executive Summary: National Plan on Climate Change: Brasília*, at 14 (Jul. 20, 2016), available at http://www.mma.gov.br/estruturas/imprensa/_arquivos/96_11122008040728.pdf.

⁵⁵ *Id.*

sectoral plans, in different phases of implementation: the Action Plan to Prevent and Control Deforestation in the Amazon; the Action Plan to Prevent and Control Deforestation and Fire in the Cerrado; the Low-Carbon Agriculture Plan; the Ten-Year National Energy Expansion Plan; the Plan for Climate Change Mitigation for the Consolidation of a Low-Carbon Economy in the Manufacturing Industry; the Low-Carbon Mining Plan; the Plan on Transportation and Urban Mobility for Climate Change Mitigation; and the Health Mitigation and Adaptation Plan. The agriculture, manufacturing industry, mining, and health plans are new plans especially prepared in response to the climate legislation, while the other four plans pre-existed the National Policy on Climate Change and were taken as sectoral plans.⁵⁶

In September 2015, Brazil submitted its Intended Nationally Determined Contribution (INDC), with a target to reduce net GHG emissions, including land use, land use change, and forestry, by 37% below 2005 levels by 2025. In addition, it mentioned an “indicative contribution” to reduce emissions by 43% below 2005 levels by 2030. The country intends to achieve these targets through a series of measures, including reaching a share of 45% renewables in the total energy mix by 2030.⁵⁷

In this way, Brazil becomes one of the first major developing countries that has set a high emissions reduction target and emphasizes its willingness to do more in the context of an international environmental agreement.⁵⁸ However, Brazil characterizes its actions as conditional on financial support.⁵⁹

Additionally, policymakers in Brazil argue that investing in a green economy that takes the environment and climate into consideration would slow down Brazil’s economic growth rate and undermine objectives for social inclusion. This clearly illustrates the “prioritization tension” created by the emergence of environmental policy issues in the context of poverty reduction. Furthermore, Brazilian policymakers are wary of the possibility of developed countries imposing export barriers on other countries based on non-adherence to mandates for action on environmental and climate issues.⁶⁰

⁵⁶ Michal Nachmany et al., *Climate Change Legislation in Brazil: An Excerpt from the 2015 Global Climate Legislation Study: A Review of Climate Change Legislation in 99 Countries*, at 3 (Jul. 20, 2016), available at <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/BRAZIL.pdf>.

⁵⁷ Climate Action Tracker, *supra* note 52.

⁵⁸ *Executive Summary*, *supra* note 54, at 20.

⁵⁹ Climate Action Tracker, *supra* note 52.

⁶⁰ Lesley Wentworth & Chijioke Oji, *The Green Economy and the BRICS Countries: Bringing Them Together*, SAIIA Occasional Paper No. 170 (2013) (Jul. 20, 2016), available at <http://www.saiia.org.za/occasional-papers/479-the-green-economy-and-the-brics-countries-bringing-them-together/file>.

3.2. Russia

Russia's share in global emissions of greenhouse gases is 5.2%,⁶¹ making the country the fifth biggest emitter in the world.⁶² Russia, unlike other BRICS countries, has obligations for systematic reduction of the production and consumption of ODS under international agreements.

The history of the Russian Federation's compliance with the international climate change regime was rather difficult in the 1990s. The Russian Federation, classified as a non-Article 5 Party to the Montreal Protocol, submitted a statement to the Meeting of the Parties to the effect that it might not meet compliance requirements for the phaseout of halons by 1994, and CFCs by 1996, due in part to the country's domestic conditions. This submission was treated by the Secretariat as a submission under paragraph 4 of the non-compliance procedure and referred to the Implementation Committee.⁶³

At the Conferences of the Parties, the Implementation Committee of the Ozone Secretariat noted the situations of non-compliance in the Russian Federation with the Montreal Protocol.⁶⁴ Through Decision VII/18 it "allowed" the Russian Federation to export to the non-Article 5 Parties of the former USSR, which had traditionally depended on Russia for all of its supply of ODS. This implicitly suspended the right of the Russian Federation to export to other non-Article 5 Parties, or to Article 5 Parties, to meet their basic domestic needs as provided in Articles 2A-2F and 2H. In response to this development, on 9 December 2000 the Prime Minister signed the Appeal to the Parties to the Vienna Convention and the Montreal Protocol, confirming Russia's intention to phase out production of ODS as from 20 December 2000 and followed this with a set of domestic regulations.⁶⁵ In 2003, the 15th COP recognized

⁶¹ UNFCCC Country Brief 2014: Russian Federation, United Nations Climate Change Secretariat (Jul. 20, 2016), available at <http://newsroom.unfccc.int/media/262717/profile-russia.pdf>.

⁶² Ge et al., *supra* note 50.

⁶³ Parties to the Montreal Protocol have issued a number of cautions to non-compliant Parties in accordance with paragraph B of the Indicative List of Measures that might be taken in case of non-compliance and threatened to consider other measures such as trade restrictions in order to ensure that the supply of ozone-depleting substances which are the subject of non-compliance is ceased and the exporting Parties are not contributing to the non-compliance situation. *See in detail The Montreal Protocol: Celebrating 20 Years of Environmental Progress: Ozone Layer and Climate Protection* 88 (D. Kaniaru, ed., London: Cameron May, 2007).

⁶⁴ Decision VII/18: Compliance with the Montreal Protocol by the Russian Federation, Ozone Secretariat (UNEP) (Aug. 1, 2016), available at <http://ozone.unep.org/es/node/27158>; Decision IX/31: Compliance with the Montreal Protocol by the Russian Federation, Ozone Secretariat (UNEP) (Aug. 1, 2016), available at <http://ozone.unep.org/en/handbook-montreal-protocol-substances-deplete-ozone-layer/1749>.

⁶⁵ Русакова Ю.А. Климатическая политика Российской Федерации и решение проблем изменения глобального климата, 1(40) Вестник МГИМО-Университета 170 (2015) [Julia A. Rusakova, *Russian Climate Policy and Addressing Global Climate Change*, 1(40) Herald of the MGIMO-University 170 (2015)].

and stated its appreciation for the return to full compliance by the Russian Federation in 2002.⁶⁶

The ratification of the Kyoto Protocol by Russia in 2004 was crucial for the entry into force of this international treaty. The Protocol was ratified by Federal law No. 128-FZ of November 4, 2004,⁶⁷ but unfortunately was not followed by any action plan or subsequent climate-related legislation. The main legislation on climate and emissions mitigation rested mainly on various laws on establishing the domestic compliance instruments as required by the Protocol. An important component of the Protocol's framework, the "joint implementation mechanism," was adopted in Russian legislation in 2009 in accordance with Article 6 of the Protocol.⁶⁸ Regrettably, only a few of the joint implementation projects have been approved, as they were not considered by the special commission established in the Ministry of Economic Development of Russia with the participation of other federal executive bodies and were not approved by the relevant ministries.⁶⁹

The evolution of the Russian emissions limitation pledge for the future climate change regime since summer 2009 has been intriguing. In June 2009, Russian President Dmitry Medvedev announced a 2020 emissions reduction target of 10%–15% below 1990 levels.⁷⁰ At the EU-Russia Summit in Stockholm in November 2009 he pledged a deeper target of 22%–25% over the same period;⁷¹ in Copenhagen (at COP-15) the negotiation process never reached the stage of bargaining over emissions reduction commitments due to fundamental differences between the developed and developing country groups. After the summit, the UNFCCC Secretariat invited pledges under the Copenhagen Accord by the end of January 2010. This time, the Russian government took a step back, offering a 15%–25% limitation only from

⁶⁶ K. Madhava Sarma, *Compliance with the Montreal Protocol in Making Law Work: Environmental Compliance & Sustainable Development Volume 1* 287 (D. Zaelke at al., eds., London: Cameron May, 2005).

⁶⁷ Российская газета от 9 ноября 2004 г. № 3624 [Russian Newspaper, November 9, 2004, No. 3624].

⁶⁸ Постановление Правительства РФ от 15 сентября 2011 г. № 780 "О порядке утверждения и проверки хода реализации проектов, осуществляемых в соответствии со статьей 6 Киотского протокола к Рамочной конвенции ООН об изменении климата" [Decree of the Government of the Russian Federation No. 780 of September 15, 2011. On the Procedure for the Approval and Inspection of Projects Implemented under Article 6 of the Kyoto Protocol to the UN Framework Convention on Climate Change] (Aug. 1, 2016), available at http://www.consultant.ru/document/cons_doc_LAW_119466/.

⁶⁹ *Позиция РСПП по вопросу реализации в Российской Федерации проектов совместного осуществления (статья 6 Киотского протокола)* [Position of the Russian Union of Industrialists and Entrepreneurs on the Issue of Joint Implementation Projects in the Russian Federation] (2009) (Aug. 1, 2016), available at <http://www.rspp.ru/position/view/10?year=2009>.

⁷⁰ *Conversation between Dmitry Medvedev and Director of News Programmes at Russia's Channel One, Kirill Kleimenov* (Aug. 1, 2016), available at http://www.kremlin.ru/eng/speeches/2009/06/18/1241_type82916_218210.shtml.

⁷¹ *Пресс-конференция по итогам 24-го саммита Россия–ЕС [Press Conference Following the 24th EU–Russia Summit]* (Jul. 10, 2016), available at <http://kremlin.ru/events/president/transcripts/6034>.

1990 levels.⁷² Further, at a meeting of domestic stakeholders in February 2010, President Medvedev confirmed the Russian commitment to the 25% below 1990 levels target.⁷³

The Climate Doctrine, approved in 2009,⁷⁴ marks a crucial step in Russia's recognition of the potential benefits of mitigation measures and its willingness to engage with the international community. Although it is not legally binding, the Doctrine is a strong statement of intent. It sets strategic guidelines and targets as well as serves as a foundation for developing and implementing future climate policy, covering issues related to climate change and its consequences. The Doctrine may be characterized as a blueprint with which to harmonize domestic climate-related legislation with international standards, improve climate monitoring, and stimulate the adoption of stronger environmental standards and energy-efficiency and energy-saving measures as well as greater use of alternative (including renewable) energy sources. Although the Climate Doctrine recognizes the potential of Russia's vast forests as a carbon sink and recommends their use, it does not set up any major forestry action.

In 2013, the Russian President issued a decree setting out the national domestic target for reducing emissions by 2020 to 25% below 1990 levels, and in March 2014 the Ministry of Economic Development rolled out a draft action plan to deliver the 2020 goal. In November 2014, the government also presented a general concept for a measuring, reporting, and verification (MRV) system for businesses as one of the measures to help attain the 2020 goal. A first set of scenarios on Russia's emissions trajectory until 2020 and beyond (2030) has been elaborated within the Ministerial document Projection of long-term social and economic development until 2030 (March 2013), with projected GHG emissions peaking beyond 2020 and then declining again to 70% of 1990 levels by 2030.⁷⁵

On March 31, 2015, the Russian Federation submitted to the United Nations its INDC, proposing to reduce its emissions of net greenhouse gases by 25% to 30% below 1990 levels by 2030. This official climate action plan was submitted well in advance of the Paris COP.⁷⁶ "After accounting by experts for forestry this is a reduction of only

⁷² *Russian submission to the UNFCCC*, January 29, 2010 (Jul. 10, 2016), available at http://unfccc.int/files/meetings/application/pdf/russiacphaccord_app1.pdf.

⁷³ Dmitry Medvedev, *Opening Remarks at Meeting on Climate Change*, February 18, 2010 (Jul. 10, 2016), available at <http://en.kremlin.ru/events/president/transcripts/48584>.

⁷⁴ *Climate Doctrine of the Russian Federation*, December 17, 2009 (Jul. 10, 2016), available at <http://en.kremlin.ru/supplement/4822/print>.

⁷⁵ Michal Nachmany et al., *Climate Change Legislation in Russia: An Excerpt from the 2015 Global Climate Legislation Study: A Review of Climate Change Legislation in 99 Countries*, at 4 (Jul. 20, 2016), available at <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/RUSSIA.pdf>.

⁷⁶ Quentin Buckholz, *Russia and Climate Change: A Looming Threat*, *The Diplomat*, February 4, 2016 (Jul. 20, 2016), available at <http://thediplomat.com/2016/02/russia-and-climate-change-a-looming-threat/>.

6% to 11% below 1990 levels of GHG emissions excluding land use, land use change and forestry... and an increase of 30% to 38% compared to 2012 levels.”⁷⁷ However, the ambitious goals announced by the Russian Federation are not supported by the current federal legislation. The Climate Doctrine of 2009 and the Comprehensive Plan for the implementation of the Climate Doctrine for the period up to 2020 adopted in 2011 do not contain effective tools to reduce GHG emissions. Moreover, the Comprehensive Plan is financially provided for neither by the federal budget nor by regional budgets and extra budgetary sources.⁷⁸ State Policy of the Russian Federation in the Field of Environmental Development for the period until 2030⁷⁹ was approved by the Russian president on 30 April 2012. It declared a number of global environmental problems associated with the loss of biodiversity, desertification, and other adverse environmental processes alongside the problem of climate change. But this document, in comparison with the Climate Doctrine, lacks practical measures, and the ways to achieve the targets are not set out. Targets and funding for the implementation of climate change goals are dependent on future plans for socio-economic development and the federal and regional programs to be adopted. Environmental legislation in Russia has not changed to a large extent in the wording of climate change. A few articles have been supplemented to the Federal law “On Environmental Protection” defining ozone-depleting substances (Article 1) and setting the goal of ozone-layer protection and the powers of federal authorities in regards to this issue (Article 54).⁸⁰ These provisions cannot be considered sufficient in terms of establishing a legal framework for climate change mitigation in the country.

The basic document regulating the development of the Russian energy sector is the “Energy Strategy of Russia for the period up to 2030.” The main objective of the energy policy is stated as the transition from a fuel and raw material economy model to an innovative model of development. However, the Strategy assumes that “Russia will remain a major actor on the world hydrocarbon market and will actively participate in the development of electricity markets and coal, as well as the country will strengthen its position in the global nuclear power industry.” Some provisions of the Strategy outline priorities in nuclear technology and the hydropower sector. Development of

⁷⁷ Climate Action Tracker (Jul. 20, 2016), available at <http://climateactiontracker.org/countries/russianfederation.html#Footnote2>.

⁷⁸ Ларсен А.Х. и др. Изменение климата и возможности низкоуглеродной энергетики в России [A.H. Larsen et al., *Climate Change and the Possibility of Low-Carbon Energy in Russia*] (Moscow: RSEU, 2012).

⁷⁹ Основы государственной политики в области экологического развития Российской Федерации на период до 2030 года [Basic Principles of State Environmental Development Policy of the Russian Federation through to 2030] (Jul. 20, 2016), available at <http://kremlin.ru/events/president/news/15177>.

⁸⁰ Федеральный закон от 10 января 2002 г. № 7-ФЗ “Об охране окружающей среды” [Federal law No. 7-FZ of January 10, 2002. On Environmental Protection] (Jul. 20, 2016), available at http://www.consultant.ru/document/cons_doc_LAW_34823/.

new renewable energy sources plays a certain role in the country's energy policy, in overall terms of production and consumption of electricity from renewable energy sources, excluding hydropower plants whose role is secondary, as the relative volume of renewable sources is estimated to be between 0.5% and 4.5%.⁸¹

There are two facts that make the climate change policy of the Russian Federation divergent from the policies of other BRICS countries.

First, the possible positive effects of climate change that Russia predicted in its Climate Doctrine. The positive effects are associated with a significant potential for effective sectoral and regional economic development, including:

- reduction in energy consumption during the (e.g., home) heating season;
- improving ice conditions and, consequently, cargo transportation conditions in the Arctic seas, which would facilitate access to the Arctic shelf and its development;
- improving the structure and expansion of land devoted to the growing of crops, as well as increasing the efficiency of livestock;
- increasing the productivity of boreal forests.⁸²

According to some projections, countries far north of the Equator such as Canada and Russia could benefit from warmer temperatures as enormous swathes of perpetually frozen, barren territory are transformed into arable land and the extraction of mineral resources farther north of the Arctic Circle becomes possible.⁸³

Second, compared to other regions and countries of the planet, Russia has a higher adaptive capacity owing to its large territory, significant water resources, and a relatively small proportion of the population living in areas vulnerable to climate change.⁸⁴

Together, these two facts may be one reason for the country not being ambitious in setting targets for ozone-depleting emissions reductions and standing aside from active discussion of climate issues. Another possible reason is that Russia is a major fossil fuel producer, and the fact that the country's economy is heavily based on this underlies Russia's historically skeptical attitude regarding the necessity of international action on climate change and its slow movement in domestic legislation on climate issues.⁸⁵ However, this limited and optimistic view appears misguided. It

⁸¹ Распоряжение Правительства РФ от 13 ноября 2009 г. № 1715-р "Об Энергетической стратегии России на период до 2030 года" [Decree of the Government of the Russian Federation No. 1715-р of November 13, 2009. On the Energy Strategy of Russia for the Period Up to 2030] (Jul. 20, 2016), available at http://www.consultant.ru/document/cons_doc_LAW_94054/.

⁸² *Climate Doctrine of the Russian Federation*, *supra* note 74, para 28.

⁸³ Buckholz, *supra* note 75.

⁸⁴ *Climate Doctrine of the Russian Federation*, *supra* note 74, para 29.

⁸⁵ For more on this see Eva Hartog, *Won't Change Russia's Attitude to Climate Change*, The Moscow Times, December 2, 2015 (Jul. 20, 2016), available at <https://themoscowtimes.com/articles/less-fur-more-oil-why-paris-wont-change-russias-attitude-to-climate-change-51051>.

is increasingly clear that climate change is likely to adversely affect Russia in several ways, from severe weather events to territorial loss to growing instability in the country's southern periphery and in its major cities.

The Russian government has developed a number of non-climate-specific laws that could benefit efforts to reduce GHG emissions, which is a constructive political initiative that sends a strong signal of intent, although Russia should improve its standing in international climate negotiations by strengthening the climate-specific legislation. The implementation of the regulations in place should also be strictly controlled.⁸⁶

3.3. India

India is now the world's fourth largest emitter of greenhouse gases.⁸⁷ Between 1990 and 2004 emissions increased by 97% – one of the highest rates of increase in the world.⁸⁸

India's compliance with climate change agreements in 2000–2011 is quite difficult to assess, as the data underlying the target is not available.⁸⁹ Under the National Fuel Policy issued in 2003 the following measures were implemented:

- new four-wheel vehicles to meet European emissions standards by 2010,
- conversion of public transport and taxis to compressed natural gas fuel,
- expansion of urban mass-transport systems, and
- expansion of ethanol-blended gasoline sales.

In addition, the government made efforts to expand the amount of forest cover in India by 1%.⁹⁰

A new policy in India was given life in June 2008, when the Indian Prime Ministers Council on Climate Change released India's National Action Plan on Climate Change (NAPCC).⁹¹ This document primarily offers a list of eight technological efforts, the pride of place being given to research and development of solar energy, but it does not set any numerical goals for emissions reductions or for energy intensity. The Plan

⁸⁶ Alina Yablokova, *Russia at COP21: An Opportunity to Reengage with the West*, Russian International Affairs Council, November 27, 2015 (Jul. 20, 2016), available at http://russiancouncil.ru/en/inner/?id_4=6910.

⁸⁷ Ge et al., *supra* note 50.

⁸⁸ *Human Development Report 2007/08*, United Nations Development Program, at 42 and 152 (Jul. 20, 2016), available at http://hdr.undp.org/sites/default/files/reports/268/hdr_20072008_en_complete.pdf.

⁸⁹ Climate Action Tracker (Jul. 20, 2016), available at <http://climateactiontracker.org/countries/india/2011.html>.

⁹⁰ *Climate Change Mitigation Measures in India*, Pew Centre on Global Climate Change, International Brief 2, September 2008 (Jul. 12, 2016), available at <http://www.pewclimate.org/docUploads/India-FactSheet-09-08.pdf>.

⁹¹ *National Action Plan on Climate Change*, Government of India, Prime Minister's Council on Climate Change (2008) (Jul. 25, 2016), available at http://www.moef.nic.in/sites/default/files/Pg01-52_2.pdf.

outlines eight national missions: the National Solar Mission, the National Mission for Enhanced Energy Efficiency, the National Mission for a Green India (focusing on increasing India's forest cover), the National Mission on Strategic Knowledge (aiming at establishing a research fund), the National Water Mission, the National Mission on Sustainable Habitat, the National Mission for Sustaining the Himalayan Ecosystem (aiming at helping protect India's water supply), and the National Mission for Sustainable Agriculture.⁹²

The focus of the NAPCC is on promoting understanding of climate change and action on adaptation, mitigation, energy efficiency, and the conservation of natural resources while pursuing overall economic growth.⁹³ Four new missions were announced under the NAPCC in 2014 – the National Wind Energy Mission, the National Human Health Mission, the National Coastal Resources Mission, and the National Waste-to-Energy Mission.⁹⁴

In addition, the country introduced energy efficiency and conservation measures with the National Mission on Enhanced Energy Efficiency, which was approved in 2010. A number of regulations and incentives promote energy efficiency and the use of renewable energy at the federal and state levels. These include a revision in 2007 of the Energy Conservation Building Code that sets minimum requirements for building envelope components, lighting, electrical systems, and water heating and pumping systems. In August 2014, the government approved the National Mission on Enhanced Energy Efficiency (NMEEE). This effort enhances investments for better technology, the creation of venture capital with a partial risk guarantee fund, an appliance rating system, and notification of a new building code for energy conservation. Energy legislation also includes the Electricity Act of 2003, which sought to better coordinate the development of the power sector and to promote efficient and environmentally benign policies. The Act recognizes the role of renewable energy in the country's National Electricity Policy (issued in 2005) and contains key provisions relating to renewable energy. The 2006 Integrated Energy Policy that received Cabinet approval in 2008 aims to meet energy demand "at the least cost in a technically efficient, economically viable and environmentally sustainable manner." It contains a number of policies that contribute to avoiding GHG emissions.⁹⁵

India is a non-Annex I country under the Kyoto Protocol and thus has no binding target for emissions reduction. Nonetheless, it is an active participant in the Clean Development Mechanism (CDM) established by the Kyoto Protocol. The country

⁹² *National Action Plan on Climate Change*, *supra* note 91.

⁹³ Michal Nachmany et al., *Climate Change Legislation in India: An Excerpt from the 2015 Global Climate Legislation Study: A Review of Climate Change Legislation in 99 Countries*, at 2 (Jul. 25, 2016), available at <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/INDIA.pdf>.

⁹⁴ *Id.* at 3.

⁹⁵ *Id.* at 4.

had more than 1,479 registered CDM projects as of February 2014. In 2010, India released a GHG inventory for 2007 and stated that it would be the first developing country to publish its emissions inventory in a two-year cycle going forward. Efforts by India include improved energy efficiency, increased use of renewable and nuclear power, expanded public transportation, and energy pricing reform. Rather than integrative binding legislation, India is developing a policy process to specifically target climate change.

On October 1, 2015, India submitted its INDC, including the targets to lower the emissions intensity of GDP by 33% to 35% below 2005 levels by 2030, to increase the share of non-fossil-based power generation capacity to 40% of installed electric power capacity by 2030 (equivalent to 26%–30% of power generation in 2030), and to create an additional (cumulative) carbon sink of 2.5–3 GtCO₂e through additional forest and tree cover by 2030. For 2020, India earlier put forward a pledge to reduce the emissions intensity of GDP by 20% to 25% below 2005 levels by 2020. According to expert analysis, with the policies it already has in place India will achieve an emissions intensity reduction of around 41.5% below 2005 levels by 2030.⁹⁶ It is obvious that this ambitious goal is in line with the country's current policies.

3.4. China

China is the world's number one emitter of greenhouse gases⁹⁷ and the country that has officially identified that climate changes due to global warming are already occurring in its territory.⁹⁸

China's actions to tackle climate change have focused mainly on energy production and energy efficiency. Climate change was first officially referred to in legislation and regulations in China's National Climate Change Program released in June 2007.⁹⁹ The Program outlined activities both to mitigate GHG emissions and to adapt to the consequences of potential climate change. Within the Program, perhaps most challenging was China's goal to lower its energy intensity. Related goals include more than doubling renewable energy use by 2020, expansion of nuclear, gas, and renewable generated power to displace the use of coal-fired power, closure of inefficient industrial facilities, tightened efficiency standards for buildings

⁹⁶ Climate Action Tracker, *supra* note 89.

⁹⁷ Ge et al., *supra* note 50.

⁹⁸ Gorild Heggelund, *China's Climate Change Policy: Domestic and International Developments*, 31(2) *Asian Perspective* 166 (2007); *China's National Climate Change Program*, People's Republic of China, National Development and Reform Commission, at 4–6 (Jul. 25, 2016), available at <http://en.ndrc.gov.cn/newsrelease/200706/P020070604561191006823.pdf>.

⁹⁹ Michal Nachmany et al., *Climate Change Legislation in China: An Excerpt from the 2015 Global Climate Legislation Study: A Review of Climate Change Legislation in 99 Countries*, at 2 (Jul. 25, 2016), available at <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/CHINA.pdf>.

and appliances, and forest cover expansion of 20%.¹⁰⁰ However, it is a notable feature of this Program that it rejected mandatory limits on emissions.

Recent political and legislative reforms by the country in the area of climate change have included:

- The renewable energy law has been effective since February 2005 and mandates that 16% of all energy is to come from wind, biomass, solar, and hydropower energy by 2020.

- One of China's main concerns is to promote the development of nuclear power as part of its national energy strategy. In 2008, the National Energy Administration raised its target to 5% of installed capacity by 2020.

- China has ambitious goals to improve power sector efficiency by decommissioning small, inefficient power generators and accelerating the deployment of very advanced power plant technology (e.g., "supercritical" and "ultra-supercritical" combustion technology).

- The coal-bed methane industry is being actively developed because capturing methane (CH₄) released during coal production and using it as a fuel both reduces emissions and substitutes for other fuel use and emissions.

- The Top-1000 Enterprise Efficiency Program was established in 2006 and aims to reduce energy use by China's 1,000 most energy-intensive enterprises. These enterprises consume one-third of the country's energy and emit the bulk of China's GHG pollution.

- The non-military building sector accounts for some 28% of national energy consumption. New buildings constructed between 2006 and 2010 were subject to a design standard that improved energy conservation by 50%; in major cities (e.g., Beijing) buildings are subject to a 65% energy-saving standard.

- China makes more consumer appliances than any other country. In order to cut electricity growth and GHG emissions, China established energy efficiency standards and labels for lighting, air conditioners, and home appliances. The standards set a target of reducing residential electricity use by 10% by 2010.

- In 2006, China announced the decommissioning of hundreds of small, old industrial plants. Many of the plants were in the cement and steel sectors, but other chemical, refining, and manufacturing facilities were slated for closure as well.¹⁰¹

These measures are repeated in China's Policies and Actions for Addressing Climate Change (2008). In 2009, the National People's Congress passed a comprehensive Climate Change Resolution. Technically, this is not a set of laws, but policy documents

¹⁰⁰ Jane A. Leggett et al., *China's Greenhouse Gas Emissions and Mitigation Policies*, CRS Report for Congress, September 10, 2008, at 18 (Jul. 20, 2016), available at http://assets.opencrs.com/rpts/RL34659_20080910.pdf.

¹⁰¹ *Id.* at 19; see also *Climate Change Mitigation Measures in the People's Republic of China*, Pew Centre on Global Climate Change, International Brief 1, April 2007 (Jul. 12, 2016), available at <http://www.pewclimate.org/docUploads/International%20Brief%20-%20China.pdf>.

guiding legislation. Although there is not yet a comprehensive climate change law in China, in 2010 the government announced that China would begin work on climate change legislation.¹⁰²

China's domestic climate-related laws are dominated by a focus on saving energy, reflecting the need to improve energy efficiency to enable the country to keep pace with energy demand as the economy grows strongly. China has passed an Energy Conservation Law and the 2005 Renewable Energy Law and is planning a new Energy Law, the official draft of which contains 14 chapters totaling 140 articles. The chapters are: General Principles, Energy Comprehensive Management, Energy Strategy and Planning, Energy Exploration and Transfer, Energy Supply and Service, Energy Conservation, Energy Reservation, Emergency Supplies, Energy in Suburban Areas, Energy Price and Taxes, Energy Technology, International Co-operation, Monitoring and Investigation, and Legal Responsibilities. The goals are relatively vague, with clearer targets to be set by ministries, including the National Development and Reform Commission (NDRC), Ministry of Construction, Ministry of Agriculture, Ministry of Transportation, and the Bureau for Tax. China's 12th Five-Year Plan, published in 2011, includes the target to reduce the carbon intensity of the economy by 17% of 2010 levels by 2015, which is in line with the 40%–45% from the 2005 target by 2020 committed to under the Copenhagen Accord.¹⁰³ Experts believe that further reductions could be possible if financial resources are made available.¹⁰⁴

In July 2013, to strengthen top-level planning on climate change, the State Council adjusted the composition and personnel of the National Leading Group for Addressing Climate Change. All provinces established their own leading groups to address climate change, with the provincial governors chairing the groups. To underpin China's top-level planning on climate change, the NDRC developed a National Plan to Address Climate Change (2014–2020) that outlines the framework for addressing climate change in China, including targets, tasks, and safeguarding measures. Under this framework, all provinces and municipalities must develop their own plans. The future of China's climate policy will be heavily influenced by the 13th Five-Year Plan (2016–2020), which was endorsed in March 2016.¹⁰⁵

It is important to note that China is an active participant in the Clean Development Mechanism, accounting for over 40% of the global emissions credits arising from such projects.¹⁰⁶ This may be a pointer as to its preferred way of participating in any new international GHG emissions-control agreement.

¹⁰² Nachmany et al., *supra* note 99, at 2.

¹⁰³ *Id.* at 2–3.

¹⁰⁴ Climate Action Tracker (Jul. 25, 2016), available at <http://climateactiontracker.org/countries/china/2011.html>.

¹⁰⁵ Nachmany et al., *supra* note 99, at 3.

¹⁰⁶ *Climate Change Mitigation Measures*, *supra* note 101.

On June 30, 2015, China submitted its INDC, which includes the following targets: peak CO₂ emissions by 2030 at the latest, lower the carbon intensity of GDP by 60% to 65% below 2005 levels by 2030, increase the share of non-fossil energy carriers of the total primary energy supply to around 20% by that time, and increase its forest stock volume by 4.5 billion cubic meters compared to 2005 levels. However, the emissions resulting from the 2030 carbon intensity targets if taken in isolation are significantly higher. China's INDC actions and non-fossil energy target lead to GHG emissions levels of around 13.6 GtCO₂e in 2030 and to an improvement of carbon intensity of 70%. The INDC carbon intensity target, if it dominates other elements of the INDC, national policies, and actions, would lead to much higher 2030 emissions levels.¹⁰⁷

3.5. South Africa

South Africa joined BRICS in December 2010, at the invitation of China.¹⁰⁸ As a developing country with high levels of poverty and perhaps the world's most serious crisis of unemployment, South Africa needs its economy to grow as rapidly as possible. In light of this, the country continuously measures how its economic development goals are compatible with climate change commitments.

South Africa is undertaking mitigation actions which will result in a deviation below the current emissions baseline of around 34% by 2020 and by around 42% by 2025. This target was proposed during the Copenhagen negotiations and submitted to the Copenhagen Accord on 29 January 2010. This level of effort enables South Africa's emissions to peak between 2020 and 2025, plateau for approximately a decade, and decline in absolute terms thereafter. This undertaking is conditional on a fair, ambitious, and effective agreement in the international climate change negotiations under the Climate Change Convention and the Kyoto Protocol and the provision of support from the international community.¹⁰⁹ To achieve the target, South Africa has launched an ambitious African Renewable Energy Initiative (AREI). The launch of the initiative, which aims to produce 300 gigawatts of electricity for the continent by 2030, is a demonstration of Africa's willingness to cooperate in the UN climate negotiations. The initiative's goals are to help achieve sustainable development, enhance well-being, and foster sound economic development by ensuring universal access to sufficient amounts of clean, appropriate, and affordable energy. The project also aims to help African countries leapfrog towards renewable

¹⁰⁷ Climate Action Tracker, *supra* note 104.

¹⁰⁸ *The Response of China, India and Brazil to Climate Change: A Perspective for South Africa* 1 (University of Oxford: Smith School of Enterprise and the Environment, 2012).

¹⁰⁹ Climate Action Tracker (Jul. 25, 2016), available at <http://climateactiontracker.org/countries/southafrica/2011.html>.

energy systems that support their low-carbon development strategies while enhancing economic and energy security.¹¹⁰

South Africa considers the growth of a competitive renewable energy sector a key element for developing a green economy. South Africa's rationale for investing in renewable energy is mainly the creation of "green jobs" through small- and medium-sized enterprises, while maintaining the environment by reducing carbon emissions and diversifying its energy mix to ensure energy security. South Africa showed its dedication to transitioning to low-carbon technologies and the development of a green economy in its National Development Plan which was released in 2011. The Plan detailed the country's strategy for national growth until 2030 and called for a tax on carbon by 2015.¹¹¹

On September 25, 2015, South Africa submitted its INDC, which includes the target of reducing its GHG emissions to a 20%–82% increase on 1990 levels.¹¹² According to experts' analyses, South Africa will need to implement additional policies to reach its proposed targets.¹¹³

4. Conclusion – The Increasing Role of the BRICS Countries in the Implementation of Global Climate Change Goals

Brazil, Russia, India, China, and South Africa, due to their rapid economic growth and high rates of energy consumption, are among the top GHG emitters in the world. The economic growth and increased energy demands of BRICS countries will continue to have significant impact on climate change.

The international climate change regime has sustained the principle of common but differentiated responsibilities from the time of the adoption of the Montreal Protocol to the signing of the Paris Agreement by a majority of the world's countries. Though developing countries, including four of the BRICS countries, are not legally bound to take measures and have the right to financial support in their mitigation and adaptation process, an effective climate change regime should bring on board and place responsibility on all major GHG emitters in an equitable manner "without ignoring the historical responsibilities on the part of developed countries."¹¹⁴ While the

¹¹⁰ AfDB to Support Electricity Access for All by 2030 with African Renewable Energy Initiative, African Development Bank Group, December 2, 2015 (Aug. 1, 2016), available at <http://www.afdb.org/en/news-and-events/article/afdb-to-support-electricity-access-for-all-by-2030-with-african-renewable-energy-initiative-15119>.

¹¹¹ Wentworth & Oji, *supra* note 60.

¹¹² Climate Action Tracker, *supra* note 109.

¹¹³ *Id.*

¹¹⁴ Rafael Leal-Arcas, *BRICS and Climate Change*, 4(1) International Affairs Forum 1 (2013).

substance of the climate actions to be taken by developed and developing countries may differ, they should be enshrined in a single international legal instrument.

One of the reasons for BRICS countries to take more active part in the international climate talks is their exposure to high climate change risks. The record shows a close connection between a country's economic well-being and the extent of its vulnerability to the risk of catastrophic losses from climate change.¹¹⁵ Like many other developing countries, Brazil, India, and South Africa face frequent financial and material losses from natural hazards, and anthropogenic climate change exacerbates old hazards and generates new ones, affecting their assets, including human, physical, and socioeconomic assets, and causes widespread indirect losses.¹¹⁶ The leaders of these countries understand that their national ambitions and the stability of their societies are threatened by climate change. The "rich world" can – for a while at least – afford to adapt. Developing countries, with much lower per capita incomes, have much less room to maneuver.¹¹⁷

Another reason to foster climate change policy and related legislation in BRICS states is the hope of acquiring a range of financial mechanisms to achieve their climate goals. For example, the BRICS countries (excluding Russia) have demanded that the developed countries provide funds to the proposed Green Climate Fund and technology to developing countries for better adaptation and mitigation in response to climate change.¹¹⁸ The governments of Brazil, India, and China have been successful in encouraging the operation of the Clean Development Mechanism in their countries. At the same time, Russia has demonstrated its unwillingness to use this or other financial instruments proposed by the international climate change regime, and there remains the inability of international instruments to overcome bureaucratic obstacles at the domestic Russian level.

As illustrated above, the BRICS nations have undertaken very different role behaviors in the realm of climate change governance. Additionally, on the theme of climate finance, it is important to bear in mind the divergent approach taken by Russia and the BASIC bloc (Brazil, South Africa, India, and China). While all countries agree on strongly demanding the application of "Common but Differentiated

¹¹⁵ See in detail *Storm Alert: Natural Disasters Can Damage Sovereign Creditworthiness*, Standard & Poor's Ratings Services, September 10, 2015 (Aug. 1, 2016), available at <http://uneptf.org/pdc/wp-content/uploads/StormAlert.pdf>.

¹¹⁶ *Mechanisms to Manage Financial Risks from Direct Impacts of Climate Change: Technical Paper*, United Nations Framework Convention on Climate Change (2008), at 28 (Aug. 1, 2016), available at <http://unfccc.int/resource/docs/2008/tp/09.pdf>.

¹¹⁷ *Could China and Its Fellow BRICS Nations Lead the Way on Climate Change?*, The Guardian, Environmental Sustainability, Poverty Matters Blog (Aug. 1, 2016), available at <https://www.theguardian.com/global-development/poverty-matters/2013/jan/28/china-brics-lead-climate-change>.

¹¹⁸ See Li Xing, *The BRICS and Beyond: The International Political Economy of the Emergence of a New World Order* (Routledge, 2014).

Responsibilities and Respective Capabilities” (CBDR-RC) as well as a right-to-develop approach, Russia aligns itself with the position of its own negotiating scheme.¹¹⁹

Until 2012, four BRICS countries (excluding Russia), as developing economies, were not obliged to comply with the Kyoto Protocol directive of the UN Framework Convention on Climate Change to reduce GHG emissions. But, with the Protocol having ended in 2012, and a new global agreement needed to curb emissions, BRICS countries have taken up voluntary emissions reduction targets in recent years. For instance, Brazil has committed to reduce its emissions by 36%–39% below 1990 levels by 2020. India has pledged to reduce its emissions by 20%–25% below 2005 levels by 2020; China’s pledge is to reduce its emissions by 40%–45% per unit of GDP by 2020 compared to 2005 levels; while South Africa has committed to reduce its GHG emissions by 34% by 2020 and 42% by 2025. The emissions targets are, however, not subject to a legally binding instrument, and this means that countries may opt out. Russia’s position is interesting in this group. It did not support the Kyoto Protocol second commitment period and always stated the position that both developed and developing countries should have binding obligations. Nevertheless, the country has made voluntary pledges under the Paris Agreement to reduce its emissions to 25%–30% below 1990 levels by 2030 and in 2015 showed its willingness in committing to the targets.

It is evident that all the BRICS countries position themselves as active actors in the international climate change arena, setting goals according to their economic possibilities and political willingness. However, ensuring compliance with international commitments is one of the main challenges for the BRICS countries. Proper implementation of many of the new climate targets will involve a great deal of commitment from the states. It is unrealistic, however, to assume that all BRICS states have the same institutional and financial capacity to implement these goals at once or within the same period. The differences in the domestic policies and regulations related to climate issues is stark.

To summarize the efforts and results in changing the domestic policy and legislation in the BRICS countries, it would be reasonable to mention that climate change has undoubtedly become a key concern for the governments of all the countries as they endeavor to align climate change issues as a priority for state development. All BRICS countries have adopted climate change strategies in which they outline the steps necessary to achieve the emissions reduction goals. With regard to the legislation without which climate change policies are unlikely to be realized, it is clear that Brazil, India, and China have been quite successful in adopting new laws and regulations. The three countries are taking action on many fronts to regulate environmental issues, natural resource management, agriculture, forest regulations, and climate

¹¹⁹ Alice Amorim, *BRICS Analysis: Climate Finance and INDC commitments*, Nivela, November 21, 2015 (Aug. 1, 2016), available at <http://www.nivela.org/articles/brics-analysis-climate-finance-and-indc-commitments/en>.

change mitigation. On the contrary, Russian domestic climate-related legislation (laws on environmental protection, forest management, and agriculture) remains weak due to the lack of efficient legal instruments, economic incentives, and political will. While Brazil, India, and China also address a number of other sustainability issues, such as pollution, energy efficiency, and the use of non-fossil fuel sources of energy, Russia, in its Energy Strategy, confirms priorities in the hydrocarbon, nuclear, and hydropower sectors. Russian plans on the development of new renewable energy sources are vague. At the same time, India and China are becoming global leaders in the renewable energy sector, developing legislation on alternative sources (solar energy, wind energy). The same is true for Brazil, which has proven to be a world leader in low carbon agriculture and biofuels. However, with the boom in Brazil's oil and gas industry, its GHG emissions from fossil fuels are projected to increase rapidly.

For better implementation of climate change targets it is crucial to enact regional programs, which are on the rise in China's provinces and India's states, while in Russia funding for the implementation of climate change goals is dependent on future plans for socio-economic development and government programs still to be adopted.

One of the main areas and the topic of dialogue among the BRICS countries is sustainable development, environmental protection, and the climate change problem.¹²⁰ This means that all BRICS countries need to foster further discussion and cooperation on climate change regulations and work out a unified legislation at their domestic levels. They could strive for developing an obligatory legal framework to fight climate change collectively. This possibility was mentioned, for example, at the Environmental Ministers meeting where they discussed proposals of mutual cooperation to tackle issues of water, air, industrial pollution, waste management, and sewerage treatment.¹²¹ Especially for Russia, it could be beneficial to borrow from its BRICS partners' experience in effective regulations on energy efficiency, industry standards, and best available technology, which could help in effective implementation of climate change targets.

As clearly seen from the analysis above, the BRICS countries are already doing much in the area of the green economy. The executive director of the United Nations Environmental Program, Achim Steiner, at the BRICS Environmental Ministers meeting in Moscow, highlighted some of the progress made in renewables among BRICS countries. He mentioned that in recent years China has had the biggest renewable energy investments, at US \$83.3 billion; South Africa had a 5% increase in renewable energy investment equal to US \$5.5 billion in 2014; Brazil's investments in renewables

¹²⁰ See in detail Трифонов В.И. Взаимодействие стран БРИКС в международных структурах [Victor I. Trifonov, *Interaction of the BRICS Countries in International Structures*] in Стратегия России в БРИКС: цели и инструменты [Russia's Strategy in BRICS: Objectives and Instruments] (V.A. Nikonov, G.D. Tolorai, eds., Moscow: PFUR, 2013).

¹²¹ Mahapatra, *supra* note 37.

amounted to US \$7.4 billion, with wind attracting 84% of that investment. India's renewable energy investment reached US \$2.4 billion in 2014, with wind attracting nearly half of the total investment; and India pledges to raise solar production to 100 gigawatts by 2022.¹²²

Energy has featured in the declarations of the BRICS group since its inception, as has reference to the green economy and climate change. Individually, there have been areas where BRICS have become leaders in technologies: three of the top five solar photovoltaic firms are Chinese, while in the wind sector Indian and Chinese companies are also among the leaders.¹²³ At the same time, Russia is a major fossil fuel producer and South Africa has vast deposits of coal. The main challenges for renewable energy development in Russia are the lack of financial support mechanisms and a deficit of related legislation. Research in the area does not receive proper state support, and there is no system of special industrial standards.

Clearly, the commitment of the BRICS countries largely depends on developed countries taking action first and providing funding to developing countries for mitigation and adaptation measures, which include renewable technologies. Considering that Russia is an Annex I Party to the UN Framework Convention on Climate Change and a powerful leader within its region, any contributions on finance and means of implementation would be expected to place Russia in a donor position rather than in a position as a recipient, as most of BRICS countries' cohorts posit themselves. Exact figures on national climate finance contribution are scant in Russia, but the country does arguably provide support to former soviet countries and other allies.¹²⁴ For instance, Russia made a unique contribution towards supporting the Sustainable Development Goals in countries in Europe, the CIS, and beyond in April 2016 in the framework of the Russia-UNDP Trust Fund established in June 2015, which launched with initial funding of US \$25 million. The Fund was designed to help "mitigate the negative effects of climate change," according to a Russian government decree of April 2016.¹²⁵

Also, cooperation between Russia and India in the energy sector is on the rise, and though more evident in sectors such as oil, gas, and nuclear power, the renewable sector is slowly gaining momentum. While Russia has participated in a number of

¹²² Agathe Maupin & Elizabeth Sidiropoulos, *BRICS and Climate Change*, South African Institute of International Affairs, July 6, 2015 (Aug. 1, 2016), available at <http://www.saiia.org.za/opinion-analysis/brics-and-climate-change>.

¹²³ *BRICS Environment Ministers Discuss Green Economy, Climate Change*, Climate Change Policy and Practice, News, April 22, 2015 (Aug. 1, 2016), available at <http://climate-l.iisd.org/news/brics-environment-ministers-discuss-green-economy-climate-change/>.

¹²⁴ Amorim, *supra* note 118.

¹²⁵ *Russia Pledges \$10 Million to Help Mitigate Climate Impact in Developing Countries*, United Nations Development Programme in Europe and Central Asia, April 22, 2016 (Aug. 1, 2016), available at <http://www.eurasia.undp.org/content/rbec/en/home/presscenter/pressreleases/2016/04/22/russia-pledges-10-million-to-help-mitigate-climate-impact-in-developing-countries.html>.

hydropower projects across India, the promising solar sector lags behind. The Russian Energy Agency and Solar Energy Corporation of India signed a Memorandum of Understanding for several large-scale solar photovoltaic power plants in December 2015. The initial pilot project of up to 500 MW is, however, just at the “initial planning stage.”¹²⁶ Thus, Russia and the other BRICS countries have the potential to cooperate in the field of renewable energy through the exchange of technology, investment in the sector, and the participation of their energy companies in each other’s domestic market. Initiating joint renewable energy projects with other BRICS states, Russia will be able to fulfill its commitment obligations under Article 4 of the UN Framework Convention on Climate Change and Article 9 of the Paris Agreement, i.e. “take all practicable steps to promote, facilitate and finance the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention.”¹²⁷ On the assumption that Russia will support the development and enhancement of endogenous capacities and technologies of BRICS countries, it can take a leadership position in the group.

In the various international discussions and meetings on climate change (including COP processes) BRICS countries do not negotiate as a group. All the BRICS countries (barring Russia) are part of a larger group, the G77 + China group, which includes smaller groups such as the Least Developed Countries (LDC), among others. In addition, four of the five BRICS countries are members of the informal grouping created at the Copenhagen Summit in 2009, the BASIC group. These countries have been meeting on the margins of various global gatherings, with their most recent meeting and ministerial statement taking place in June 2015 at the UN headquarters in New York City.¹²⁸ At the Copenhagen Climate Conference in 2009, Russia distanced itself from the other BRICS countries.¹²⁹ This might be considered a deficiency in strengthening the BRICS role in global governance. What is clear though is that the BRICS countries have a responsibility to play a central role together with players from the industrialized world in driving climate change negotiations, leading to effective binding regulations in 2020–2030. Moreover, it is important for the Russian Federation to show more leadership in this area so as to maintain credibility on the world stage. In any event, the BRICS countries cannot afford to ignore this issue, because one of them, Russia, is the world’s largest producer of energy resources and another, China, is the world’s greatest consumer of these resources.

To change the situation, the BRICS Environment Ministers at their first meeting in 2015 in Russia decided to: establish a Working Group on the environment to

¹²⁶ *From Russia with Solar Energy*, BRICS, July 18, 2016 (Aug. 1, 2016), available at <http://infobrics.org/russia/news/2016/07/18/8942/>.

¹²⁷ United Nations Framework Convention on Climate Change, Art. 4.

¹²⁸ Maupin & Sidiropoulos, *supra* note 122.

¹²⁹ Duggan 2015, at 16.

identify and discuss priority areas of cooperation; explore the potential of the BRICS New Development Bank for funding environmental projects; explore the possibility of establishing a collaborative platform of the BRICS countries, intended to share best environmental practices and facilitate the exchange of environmentally sound technologies and know-how with the participation of public and private stakeholders; and hold regular meetings of the Environment Ministers of BRICS.¹³⁰ BRICS is capable of serving as a useful platform in two ways: first, to seek convergence among its members (given their different priorities and approaches) and, second, to prepare and present a common position, which would carry the weight of the entire group in the global arena.¹³¹ The climate change issue could be a key issue enabling the BRICS countries, acting as a bloc, to take the lead in the discourse on sustainable development and climate change, the format of which will undergo inevitable changes in the coming decades.

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¹³⁰ See more BRICS Environment Ministers, *supra* note 123.

¹³¹ W.P.S. Sidhu, *BRICS: Shaping a New World Order, Finally*, Geneva Center for Security Policy, July 28, 2015 (Aug. 8, 2016), available at <http://www.gcsp.ch/News-Knowledge/Global-insight/Brics-shaping-a-new-world-order-finally>.

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