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RESEARCH ARTICLE

Impact Investment for BRICS Cooperation on Sustainable Development

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Abstract: A sustainable development agenda has always been at the core of BRICS cooperation. However, the progress has been limited for many reasons, including economic diversity, over-reliance on Western technologies and capital, lack of own sources of financing, and common strategy. At the same time, accounting for over 40% of the global population, over 20% of the world's GDP, and contributing to more than 40% of global CO₂ emissions, BRICS countries are among the world's most important players in sustainability and climate. Therefore, finding organic ways of sustainable growth in these countries is crucial to global efforts in achieving sustainable development goals (SDGs). Using a qualitative data analysis, a review of the literature and reports of international organizations, this paper aims to analyze the current trends, risks, and opportunities in the advancement of BRICS cooperation on SDGs while placing a special emphasis on impact investment as a way to bring additional finance to BRICS countries.

Keywords: sustainable development, impact investment, BRICS, COVID-19

The topic of sustainable development has dominated the BRICS multilateral agenda since the establishment of the union. The first Joint Statement of the BRIC Countries' Leaders issued in Yekaterinburg in 2009 when the world was fighting the consequences of 2007–2008 financial crisis, said: "The implementation of the concept of sustainable development, comprising, *inter alia*, the Rio Declaration, Agenda for the 21st Century and multilateral environmental agreements, should be a major vector in the change of paradigm of economic development" (BRICS Joint Statement,

2009, p. 1) In the latest joint statement issued in Brazil in 2019, the countries once again proclaimed: "We reiterate the importance of the implementation of the 2030 Agenda for Sustainable Development and call for redoubled efforts for its timely implementation" (Brasília Declaration, 2019, p. 2). Now, while the world is fighting the effects of an even more severe coronavirus crisis, which has been compared to the Great Depression, financing for sustainable recovery could become the agenda uniting the countries. There are already cases that support this idea: for example,

in May 2020, the BRICS New Development Bank (NDB) extended a USD 1-billion loan to India to fight COVID-19.

Accounting for over 40% of the global population and 20% of the world's GDP, BRICS countries largely determine the global patterns of production and consumption. Additionally, they contribute to more than 40% of global CO₂ emissions, making them potential key players in terms of global climate action. Finally, as the largest economies in their respective regions, these countries are often seen as "role models" for the developing world and its SDG efforts (Nayyar, 2016). At the same time, the progress towards the sustainable development goals (SDGs) in these countries has been limited. This is partly because of the challenge in finding a balance between the social, environmental, and economic interests in these countries, and partly because of the need to bridge the investment gap.

According to the UN, attaining SDGs in developing countries calls for an additional USD 2.5 trillion annually (United Nations Development Operations Coordination Office [UNDOCO] & Dag Hammarskjöld Foundation, 2018), which can be partially achieved with an impact investment market that mobilizes public, private, and international finance for SDGs. However, the main sources of capital are located in developed countries, which is a challenge for two reasons.

First, it makes developing countries over-reliant on capital and technologies from the West, which is especially relevant during the current (fourth) industrial revolution. Some experts even raise concerns over "digital colonialism," comparing the modern digital infrastructure developed in the West with the railroads that were built in India and other countries by the British Empire to serve its needs, but not the needs of the local people (Kwet, 2019).

Second, there are also trust and standardization issues—the impact investment of developed countries into emerging markets has often been hampered by a lack of transparency in impact measurement, the high perceived risk, the lack of accepted common standards, undeveloped capital markets, and the lack of context-specific knowledge (Organization for Economic Co-operation and Development [OECD], 2019, p. 107; CBI [Climate Bonds Initiative] & CCDC [China Central Depository & Clearing Co. Ltd.], 2019). These issues suggest that it is vital to

create impact investment landscapes in developing countries to reduce reliance on the developed world, as well as targeting investments into priority areas. It is also important to improve social and environmental standards alongside improving the means of carrying out impact assessments in developing countries to solve trust issues and remove obstacles that prevent impact finance flows.

With this in mind, this paper aims to address the following problem: How can impact investment strengthen cooperation on sustainable development in BRICS?

As a part of this problem, we will seek answers to the following questions:

- What are the main challenges and opportunities of the sustainability-related agenda in the BRICS countries?
- What is the current state of the sustainable development agenda in the BRICS countries, and are there any successful examples?
- What are the main risks and opportunities of impact investment in the BRICS countries?

The rest of the paper will be structured as follows. The second chapter will review the relevant literature on the topic. The third chapter will highlight the main sustainability challenges of the BRICS countries, as well as multilateral initiatives to address these challenges and new opportunities that have presented themselves. The fourth chapter will focus on the impact investment market, providing both a theoretical overview of this concept and successful examples of its use in the BRICS countries and further steps for development. The final chapter will present our conclusions.

Literature Review

Impact Investment and Sustainable Development

Although the importance of impact investing for attaining sustainable development goals has been reiterated in multiple reports and policy papers (OECD, 2019; Global Impact Investing Network, 2018), academic research on impact investment remains a relatively nascent field, having only emerged around 2017 (Kubátová & Kročil, 2020). However, the number of studies has been increasing in recent years.

Currently, the most important challenge that the research literature seeks to solve is how to measure, quantify, and assess the impact of the investments. One of the common approaches in literature is the theory of change, which is developed by individual companies and used to identify and test causality between investments and the impact. We argue that this methodology can be useful. However, it should be accompanied by the processes of standardization and harmonization (Verrinder et al., 2018). For social impact analysis, there are several toolboxes and methodologies, including, among others, the Acumen Scorecard and Measuring Impact Framework (Maas & Liket, 2011). Another emerging approach to impact measurement is the implementation of digital technologies (satellites, IoT, and others), which is particularly relevant for environmental infrastructure projects (Shadrin et al., 2020).

Some research papers also analyzed the influence of various sustainable finance instruments on specific sectors of the economy. For example, Rode et al. (2019) concluded that “blended” sustainable finance instruments (a combination of private and public finance) are quite efficient for Amazon rainforest conservation projects because philanthropic resources with the backing of private investors can reap financial returns alongside focusing on environmental benefits. Similarly, Havemann et al. (2020) found that private finance can significantly contribute to sustainable agriculture by filling the investment gap from the lack of public finance.

There has also been some research on the impact of green bonds on sustainable economic growth. In some studies, green bonds have been highlighted as an innovation that can foster investments from institutional investors into sustainable infrastructure by improving asset liquidity (Maltais & Nykvist, 2020; Della Croce & Yermo, 2013; Bhattacharya et al., 2015; OECD, 2016). Other studies have revealed that green bonds generally correlate with better environmental footprints of issuing companies (Flammer, 2020). Some researchers also pointed out that engaging in sustainable finance creates a good business case for the issuing company, thus helping to retain clients (Du et al., 2007; Dangelico & Vocalelli, 2017).

Some studies also examined impact investments at a micro-level to analyze investment strategies of different impact-aligned venture capitalists [VCs]

(Kovner & Lerner, 2015; Gray et al., 2016). There were also revealing studies on impact investment returns; for example, it was highlighted that they could be influenced by reporting on the impact of the use of proceeds (Cochrane, 2005). However, very few studies have researched implications of impact investment on a macro level or at the level of international cooperation. At the same time, the topic of multilateral cooperation for sustainable development is gaining more importance in the agenda of international and regional organizations, many of which name “consolidation of efforts for sustainable development” as one of their key priorities (Brasilia Declaration, 2019; Arapova, 2015), which makes the current study particularly relevant.

Sustainable Development in BRICS

Research on sustainable development in BRICS can be roughly divided into two categories. The first group of researchers has explored the nexus between economic, social, and environmental indicators in the BRICS countries using econometric methods to understand how they are interlinked and how they influence one another. Some have studied the links between environmental technologies, renewable energy, economic growth, and CO₂ emissions (Baloch et al., 2019; Khan & Ulucak, 2020), whereas others have included health and social well-being variables in their research. Still, other studies specifically explored the impact of ICT on sustainable development in BRICS (Yao, et al., 2009). The second group of researchers have looked at the problem from a policymaking point of view and explored, among other topics, the environmental management practices in the BRICS countries (Pinto et al., 2018) and the joint approach within BRICS to renewable energy cooperation (Gu et al., 2018).

However, there has been surprisingly little research on the financing of SDGs in BRICS, be it impact or green finance. To the best of our knowledge, there have only been a couple of studies that have focused on some aspects of impact finance in BRICS (Lissovolik & Vinokurov, 2019; Rao et al., 2017).

Therefore, the overarching purpose of this paper is to make the first step towards covering the research gap regarding impact finance and digital technologies as a means to achieving SDGs in BRICS. Although it does not aim to cover all the aspects of these broad topics, this paper will highlight the main points of interest and

cooperation opportunities, thus opening the door for further and more comprehensive studies.

The BRICS Sustainable Development Landscape

Sustainability Challenges in the BRICS Countries

It would be no exaggeration to suggest that the BRICS countries hold the key to global success in fulfilling the Paris Agreement and achieving the Sustainable Development Goals. First, since 2000, their share in global GDP and CO₂ emissions has been steadily increasing (Basile & Cecchi, 2019), which is why the world is particularly attentive to their climate policies, “pushing” them to develop and follow low-carbon strategies and even expecting them to become role models for other developing economies (Nayyar, 2016). Second, having large populations and economies, these countries put a large amount of pressure on the world’s production and consumption patterns, which also raises concerns (Basile & Cecchi, 2019). However, green growth in the BRICS countries cannot be the same as in developed countries. In

addition to the climate challenge, these countries also need to deal with the issues of poverty, hunger, and access to basic goods. These challenges require a deep transformation of economies and the mobilization of larger financial resources for SDGs.

The COVID-19 crisis has placed an even greater focus on these challenges and has raised public support for sustainable recovery. An Ipsos study (Gray & Jackson, 2020) conducted among members of 14 countries in mid-April (Table 1) revealed that the BRICS countries support “green” economic recovery to a far greater extent than the developed world (Brazil – 66%, Russia – 60%, India – 81%, and China – 80%; compared to Australia, Germany, and the United States at 57% each).

In another survey, 84% of South Africans agreed that the government “would be failing them” if it did not embrace a climate policy (see Table 2; Gray & Jackson, 2020, p. 28). China and Brazil were also among the countries where the majority stood against “economic recovery at all costs, even if it means harm to the environment” (Gray & Jackson, 2020, p. 7). In general, these figures indicate that a large share of

Table 1

BRIC Countries on COVID-19 Recovery

	Brazil	Russia	India	China
Support for a “green” economic recovery from Covid-19	66%	60%	81%	80%
Focus on economic recovery from Covid-19 first and foremost?	37%	55%	63%	38%
Views on whether Covid-19 will lead to increased environmental activism	60%	44%	77%	74%

Note: Data sourced from Ipsos Survey on April 16–19 (Gray & Jackson, 2020)

Table 2

BRICS Countries on Climate Change

	Brazil	Russia	India	China	SA
Desire for government action to combat climate change	74%	35%	81%	66%	84%

Note: data sourced from Ipsos survey, Feb–March 2020 (Gray & Jackson, 2020)

the population in the BRICS countries are ready to embrace the sustainable transformation of economies, sometimes even more than in developed countries.

Table 3 shows indicators of progress towards several SDGs in the BRICS countries calculated by the United Nations Sustainable Development Solutions Network (UN SDSN) in 2019. From the table, it is evident that even though there has been progress on many SDGs, significant challenges remain. The main conclusions that can be derived from this data are that even though the countries are diverse, they face some common challenges with which they could cooperate.

A classical study by Ullman (1957) cited in Ren et al. (2020) pointed out that key prerequisites for international cooperation include regional complementarity and interference factors. BRICS countries largely match these criteria.

For example, regarding agricultural cooperation, these countries largely complement one another with Brazil being a leader in biotechnologies: China and Russia as net food importers, India as a net food exporter, and with South Africa having a large unrealized potential for fruit and vegetable exports (Ren et al., 2020). Also, as Brazil, India, and South Africa have broadly similar climatic and geographic conditions, they can successfully cooperate on cultivating new crops (Research and Information System for Developing Countries, 2008, p. 17), potentially through the BRICS Agricultural Research Platform (Ren et al., 2020).

Clean energy has also always been seen as one of the crucial areas for BRICS cooperation, given the overall high CO₂ emissions of the BRICS countries due to their reliance on coal (South Africa, China, and

Table 3

SDG Progress in BRICS Countries

	Brazil	Russia	India	China	SA
Overall score	70.6	70.9	61.1	73.2	61.5
SDG 1: No poverty	86.2 ↓	100 ↑	71.4 ↑	97.4 ↑	49.9 →
SDG 2: Zero hunger	62.1 ↗	45.6 ↗	42.6 ↗	71.9 ↗	52.5 ↗
SDG 3: Good health and well-being	76.9 ↗	78.1 ↗	58.8 ↗	81.1 ↗	48.7 ↗
SDG 6: Clean water and sanitation	79.4 ↑	89.0 ↗	56.6 ↗	71.8 ↗	67.0 ↗
SDG 7: Affordable and clean energy	94 ↑	91.2 ↗	65.4 ↗	76.8 ↗	79 ↗
SDG 9: Industry, Innovation and Infrastructure	48.8 ↗	50.1 ↗	28.7 →	61.9 ↑	45 ↗
SDG 11: Sustainable cities & communities	78.3 ↗	82.3 ↗	51.1 →	75.1 ...	77.9 →
SDG 13: Climate action	91.7 →	82.2 →	94.5 ↑	92.0 →	87.0 →
SDG 15: Life on land	60.9 →	66.2 →	51.1 ↓	62.7 →	59.1 ↗

Legend

- ↑ On track to achieve goal by 2030
- ↗ Score moderately increasing, insufficient to attain goal
- Score stagnating or increasing at less than 50% of required rate
- ↓ Score decreasing
- ... Trend data unavailable
- Goal achieved
- Challenges remain
- Significant challenges remain
- Major challenges remain

Note: data sourced from SDSN Sustainable Development Report Dashboards 2019 (Sachs et al., 2019).

India), China's technological leadership in the wind and solar power, the need to ensure energy security in India and China, and the potential supply of cleaner energy, namely biofuel from Brazil and natural gas from Russia. This potential was being explored and tapped into even before the creation of BRICS. In 2002, for example, India and Brazil signed a memorandum of understanding on technology sharing in blending petrol and diesel with ethanol; and India had shared experience in solar energy with Brazil and South Africa (Research and Information System for Developing Countries, 2008, p. 17).

Table 4 demonstrates public opinion on the most pressing sustainability challenges in BRICS countries and also shows that the countries have similar priorities when it comes to a number of global challenges, such as deforestation in Brazil and Russia and the depletion of natural resources in Russia and China.

Andruseac and Hertug (2015) pointed out that economic cooperation is crucial to address the problems related to sustainable development (environmental protection, access to natural resources, food products, unequal development, and more). Indeed, this cooperation is crucial because, in terms of environmental protection, all countries are interdependent, and there is no point in competition

as created environmental goods are beneficial for everyone. Despite this, the countries with the most similar challenges also have more incentives to cooperate as they can share experience and best practices.

Realizing this fact, many of the BRICS countries' officials have called for extended cooperation on environmental protection. For example, India's Environment Minister Harsh Vardhan said that BRICS countries should cooperate on similar concerns such as air pollution control and climate change through technology transfer and requisite capacity building; also noting that these countries complement one another quite well (Press Trust of India, 2018). Mr. Alexei Kudrin, Chairman of the Accounts Chamber of the Russian Federation, went even further by proposing a joint BRICS clean air and forest management audit. He pointed out that more than a third of the world's forests are located in BRICS countries, which is a prerequisite for cooperation (BRICS Russia, 2020).

Acknowledging this potential and the fact that they share many goals, the BRICS countries have developed a number of multilateral mechanisms for cooperation over the years that will be explored in the section below.

Table 4

Top-Three Important Environmental Issues for BRICS Countries

	Brazil	Russia	India	China	SA
Climate change	31%	13%	38%	36%	36%
Air pollution	28%	35%	53%	45%	24%
Dealing with the amount of waste we generate	18%	39%	22%	25%	26%
Deforestation	59%	51%	29%	13%	9%
Water pollution	37%	37%	30%	28%	35%
Depletion of natural resources	10%	22%	16%	22%	19%
Future energy sources and supplies	10%	6%	11%	16%	33%
Wildlife conservation	22%	16%	10%	23%	14%
Flooding	31%	5%	8%	5%	6%
Poor quality drinking water	12%	15%	18%	12%	30%
Emissions	8%	29%	11%	21%	9%
Overpopulation	7%	3%	31%	14%	30%

Note: Data sourced from Ipsos survey held in Feb–March 2020; indicators were put included the table if the response for at least one BRICS country was > 20% (Gray & Jackson, 2020).

Overview of Current SDG-Aligned BRICS Initiatives

Since 2009, the BRIC(S) countries have come up with several ideas for cooperation on the environment, society, and innovations. By 2019, the list included these and many more initiatives:

- ***BRICS Agricultural Research Platform***

The BRICS Agricultural Research Platform was established to promote strategic cooperation on food security, sustainable agriculture, and poverty alleviation. With the general level of food sufficiency of the BRICS countries being relatively high, there are certain structural food security problems, including low per capita cereal output and a big difference in self-sufficiency between different types of food. This creates incentives to speed up research and development cooperation on sustainable food security technologies.

- ***Clean Rivers Umbrella Program***

Introduced by the Russian Federation, the program is aimed at improving the condition of river basins. Under the program, the New Development Bank is sponsoring a large-scale national project on rehabilitation of the environmental situation of the longest European river, the Volga. South Africa, which has developed its “Clean Rivers” national program, has expressed the willingness to develop and implement a joint project within the program.

- ***BRICS Environmentally Sound Technology (BEST) Cooperation Platform***

The platform is designed to advance public-private partnerships in innovations, knowledge sharing, and capacity building on environmental issues and is intended to include partners, scientific organizations, civil society, the private sector, financial institutions, and international organizations. Tentative agreements have been made on future support for the implementation of specific projects under this initiative by the NDB.

- ***BRICS Vaccine Research and Development Centre***

The BRICS countries preliminarily agreed to develop cooperation on vaccine research and development in Johannesburg in 2018. However, as the COVID-19 pandemic has undeniably brought

healthcare cooperation to the top of the agenda, the negotiations on the establishment of the joint Research and Development Centre have been accelerated.

- ***BRICS Energy Research Cooperation Platform***

Initiated in 2017, the platform is aimed at promoting energy efficiency by conducting joint research and analysis, implementing investment projects in the energy sector, and developing technological cooperation. The official decision to launch the IT Platform was made a year later, during the meeting of BRICS Ministers of Energy in Johannesburg. Topics of interest for cooperation include natural gas and green energy, and the members also wish to reduce the dependence on energy equipment imports.

- ***BRICS Smart Cities Conference***

In 2016, India launched a new format of cooperation among BRICS cities for the purpose of regional development (the BRICS Smart Cities international workshop), stating that member countries can cooperate in the development of smart cities and other infrastructure, and that the countries can learn from one another. This initiative was supported by Russia in 2019, which insisted that the list of areas in which the BRICS countries plan to develop joint initiatives also include smart cities.

- ***Memorandum of Understanding on Collaborative Research on Distributed Ledger and Blockchain Technology in the Context of the Development of the Digital Economy***

The development banks of the BRICS member countries have signed a memorandum on jointly studying the prospects for using DLT and blockchain as part of the development of the digital economy. In 2019, the Russian Direct Investment Fund (RDIF) proposed the idea of creating a single payment system for settlements between the member countries of the union, which was supported by the BRICS Business Council. The parties have also discussed the possibility of creating a single cryptocurrency for such a payment platform.

- ***Innovation BRICS Network (iBRICS)***

The latest concept is aimed at creating more hi-tech hubs and startup incubators where entrepreneurs can grow their business by attracting investment from VC firms and inexperienced business founders can make

quick progress through consultations with industry professionals. The positive impact of high technologies is acknowledged, for example, by the BRICS Agriculture Ministers, who reached a consensus at the 2019 meeting to promote technology-driven startups to increase international trade, reduce costs, and ensure food security. The Minister of Foreign Affairs of Brazil, Eduardo Araújo, also suggested that the Network could also be used to jointly fight terrorism and international organized crime by developing face recognition technologies (CGTN, 2019).

Assessment of efficiency of these initiatives turns out to be quite complicated because of lack of transparent publicly accessible data (none of the initiatives produce any reports or have websites). Therefore, it is not obvious whether some real progress is being made or these initiatives just remain declared “on the paper.” From the fact that so many initiatives are created, it is apparent that there is a high level of mutual interest in many spheres and a large untapped potential for cooperation. However, from the fact that the progress and outcomes are barely visible in the public space, it is also clear that there are some challenges.

One way to understand the reasons for the low efficiency of these formats is to look at other similar initiatives which have achieved better results. A good example is ASEAN Smart Cities Network - a collaboration platform between ASEAN member states aimed at accelerating the development of smart and sustainable cities. Even though the network was only established in 2018, it has already shown significant progress, with several pilot projects going on. The efficiency of the network is underlined by several factors, including existing deep cooperation between ASEAN countries, large support from other countries (China, Japan, Australia), but probably one of the most important features is strong public-private partnerships between high tech companies and cities, which enable pilot projects (Martinus, 2020). The BRICS countries are looking in a similar direction (the BEST platform was also designed as a public-private partnership platform); however, as of now, private sector engagement is relatively low, and more importantly, there are not enough private investments to support these initiatives. Therefore, while taking into account the ASEAN Smart Cities network example, a more efficient way to increase the efficiency of initiatives in BRICS would be to put emphasis on engaging the

most successful companies from relative sectors and mobilizing private impact finance.

Risks and Opportunities for BRICS Sustainable Development

Thus far, the implementation of the joint sustainability agenda has been challenging for BRICS as a union. The main reasons for this lay on the surface – notwithstanding the fact that BRICS countries have many common sustainability challenges, their economies, social systems, and strategic geopolitical interests are very different and, in many ways, contradict one another.

China is the leading BRICS country in terms of GDP, which is more than 40 times larger than that of South Africa. This economic inequality, coupled with the rising geopolitical ambitions and territorial tensions between members, serves to threaten the sustainable development of the BRICS format itself (Beeson & Zeng, 2018). Thus, “technological colonialism” may very well come not only from the West but also from some of the BRICS members themselves.

Potential barriers to the advancement of cooperation on the sustainable development agenda include, among other things, the fact that the BRICS countries occupy different positions in the global energy system (the BRICS countries include both importers and exporters of energy), intra-group competition for market influence, contradictions with established partners, and alternative integration processes. The cooperation on the sustainable energy agenda within BRICS has been hampered by different economic conflicts. For example, back in 2018, India hiked solar import duties from China and Malaysia to protect its industry (Kenning, 2018). Although this is understandable from an economic standpoint, this and other similar cases illustrate the potential challenges of industrial cooperation within BRICS.

However, there are also opportunities that can help overcome these risks. One of the largest strengths of BRICS is that it unites countries that are leaders in their respective regions (Lissovolik, 2018), which means they are capable of driving development in terms of capital, technologies, standards, and more.

Therefore, BRICS can be seen not only as a closed group but also as a club of influential leaders who can become a transformational force for the developing world. Just one of the factors underlying this assumption is that BRICS trade with Africa far exceeds

intra-African trade itself (United Nations Economic Commission for Africa, 2014). This idea of BRICS being a leader of the developing world has been further promoted within the BRICS+ concept suggested by China in 2017, which implies the creation of a platform that would bring together other integration blocks (namely, the EAEU, SAARC, ASEAN–China FTA, Mercosur, and SACU).

This format creates promising opportunities both for overcoming economic discrepancies and for creating common standards which could solve many of the challenges related to sustainability cooperation. At the same time, BRICS+ is not mature enough at this time, and cooperation within this format would require great efforts in terms of harmonizing tariffs and creating non-tariff barriers (Arapova, 2019).

Finally, one of the biggest challenges is the lack of finance. This could largely be solved by advancing joint impact investment mechanisms, which will be discussed in the next section.

Financing Sustainable Development with Impact Investment

The State of the Global Impact Investment Market: Main Trends and Challenges

In 2015, global leaders made two decisions that would change the global economy and adjust it in such a way that would address the threats facing current and future generations. These were the signing of the Paris Climate Agreement, which aims to reduce global CO₂ emissions to meet the 1.5–2-degree threshold, and the adoption of the Sustainable Development Goals, which are meant to ensure that economic growth is inclusive and accommodates environmental and social values. However, it also became clear that such an unprecedented global transformation needs a strong financial engine and the mobilization of private capital from non-state actors.

This has spurred the growth of the impact investment market, where the investor seeks not only financial but also non-financial returns. Since then, the market has seen rapid growth – from USD 35.5 billion in 2015 to more than USD 500 billion in 2018 (Mudaliar & Dithrich, 2019), turning it into one of the fastest-growing asset classes. Sustainability and ESG-focused funds have outperformed the market during the latest economic shock caused by the

COVID-19 pandemic (Paun, 2020). Many countries and business leaders around the globe have called for SDG-aligned financing to be included in economic recovery packages, using the current momentum to make a transformational shift (OECD, 2020).

However, even before the coronavirus crisis, developing countries faced an annual investment gap of USD 2.5 trillion in terms of investments in SDG-related sectors (UNDOCO & Dag Hammarskjöld Foundation, 2018). This calls for the immediate mobilization of private investments, public finance, and international development funding. Subsequently, experts have noted that the world needs to invest more in new technologies and projects to recover from the upcoming downturn and increase resilience in the face of biohazards and the consequences of climate change (Brzozowski, 2020).

The OECD Social Impact Investment report pointed out numerous tools for impact investment, dividing them into three categories: private equity, private debt, and real assets (OECD, 2019). Among these, private debt in the form of loans and tradable securities has become the largest class in terms of assets under management, being less risky and providing a stable return, at 41% in 2018, compared to 18% in private equity (Global Impact Investing Network, 2018). The most notable tools in this category are green bonds and social bonds, which are finance environment-related and socially aligned projects, respectively. First issued in 2007 by the World Bank, green bonds reached a record USD 257 billion in 2019. Meanwhile, social impact bonds reached just USD 13 billion that year (Hurley, 2020), yet 2020 promises a big increase in this type of securities due to COVID-19.

Social bonds might become more popular as a tool for subsidizing pharmaceuticals, medical supplies, as well as essential infrastructure, including water and energy supplies, in light of the global recovery from COVID-19. There have already been cases of social bonds being issued, with the International Finance Corporation [IFC] issuing a USD 1 billion bond to support the production of medical supplies in emerging markets and the African Development Bank issuing a USD 3 billion bond to rebuild the essential food and water infrastructure in Africa (Chandran, 2020). In total, HSBC expected social bond issuances to reach approximately USD 100–125 billion in 2020. The green bond market appeared to have fallen in March

2020. However, given the strong push for green recovery from the United Nations and the European Union, as well as the upcoming United Nations Climate Change Conference (the 26th session of the Conference of the Parties, or COP26), HSBC still gave positive forecasts in terms of the market rebounding in the upcoming months. The current projection for 2020 is USD 225–275 billion, compared to pre-crisis estimates of USD 300 billion (Hurley, 2020).

Despite market growth and similar achievements, a number of challenges continue to prevent the growth of these financial instruments to a level that would be sufficient to achieve their mission. Today, these challenges include insufficient market maturity and a lack of funding sources. In developed countries, the impact investment market has grown out of the venture capital market and has a relatively developed ecosystem of intermediaries, including accelerators and impact funds. In developing countries, however, the most prominent players are development finance institutions (DFIs), and local ecosystems are quite undeveloped, which prevents an efficient capital allocation. Finally, in both cases, there is a funding gap, as well as a lack of partnerships between public and private actors (OECD, 2019).

Another set of major challenges is related to the methodology of impact measurement, reporting, and verification. There are still no universally accepted standards and metrics, which prevents the transparent and accurate evaluation of impact finance. For example, there are still many cases where green bonds are not issued on the “use-of-proceeds” model, such as funding a particular project, and they are generally linked to the ESG (environmental, social, and corporate governance) rating of the issuer, which somewhat defies the purpose of the bond and gives no idea of the extent to which the green bond contributes to climate (Hurley, 2020).

Similarly, the lack of common metrics for social bonds and the new COVID-19 bonds reduces trust in these market mechanisms. Aiming to solve those problems, IFC recommends that social bonds be linked to particular outcomes, for example, the number of jobs created (IFC, 2020). As for green bonds, an increasing number of actors are calling for the measurement challenge to be solved through the use of digital technologies for impact assessment and monitoring, including satellites, drones, and the Internet of Things (IoT), as well as for a distributed ledger as a way to

keep data transparent and prevent tampering (Shadrin et al, 2020).

Impact Finance in the BRICS Countries: Current State and Successful Examples

Table 5 shows that BRICS countries have been actively exploring various financial instruments for sustainable development, from carbon trading and renewable energy certificates to green bonds. For the purpose of brevity, we will not explore all the instruments in great detail but will rather focus primarily on green bonds as the most important and actively used tool. However, the BRICS countries have launched some interesting mechanisms that are worth mentioning briefly.

China is a leader in carbon trading, having developed a voluntary carbon standard that is now accepted by the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) of the International Civil Aviation Organization (ICAO). The country is expected to launch its own national emissions trading scheme (ETS) in 2020, which will become the largest in the world. India has also carried out interesting experiments in emissions trading schemes, launching a pilot system in one of its states (Gujarat). However, instead of CO₂, it focused on particulate matter (PM). India and South Africa have also launched carbon taxes, and all the BRICS nations have launched, piloted, or planned to launch renewable energy certificates markets aimed at supporting clean energy.

In Brazil, the impact investment market has existed since the early 2000s. A nationwide strategy for impact investment was adopted in 2017, and its implementation was entrusted to several ministries, as well as the National Bank for Economic and Social Development (BNDES) and the Intra-American Development Bank (IADB). The market has grown significantly after that, from USD 68.9 million in 2014/15 to USD 131 million in 2016/17 (OECD, 2019, p. 21). In terms of green bonds, a number of interesting projects have been launched. For example, Brazil’s Suzano Pulp and Paper S.A. issued the first forestry-based green bond after Scandinavia for USD 500 million in local currency (Patzdorf, 2016). Bonds were also issued for agriculture, renewable energy, and other forestry projects. The Climate Bonds Initiative sees great potential in issuing bonds for sustainable agricultural projects, which could make Brazil a

global sustainable food producer and supplier, as well as contribute to solving challenges of food security and reducing CO₂ emissions (CBI, 2017). However, the development of Brazil's green bond market is hampered by methodological challenges. For example, in 2019, a beef producer raised USD 500 million for so-called "transition" bonds to accelerate sustainable

ranching practices. Nevertheless, according to research, beef production leads not only to increasing CO₂ emissions but also to deforestation in Brazil. There were additional concerns related to inflating the outcomes of forestry projects (Cox, 2019). This indicates that more stringent standards are required for the successful development of green bonds and to

Table 5

Indicators of Impact Investment Market Readiness in BRICS.

	Type of policy / asset	Brazil	Russia	India	China	SA
Carbon trading	Emission trading scheme	—	To be launched in pilot mode on Sakhalin in 2022	Two schemes for trading emissions operating in pilot mode (but no carbon trading)	Nationwide ETS launched in 2021	—
	National carbon credit standard	—	—	—	Voluntary, accepted by CORSIA	—
	Carbon tax	—	—	INR400/ton (USD 5.61) on coal production and import	—	about USD 8.30/ton
Green bonds	Green bond issuance 2012-19	USD 5,425.8 million	USD 590 million	USD 10,897.6 million	USD 142,901 million	USD 2162 million
	National green bond standard (framework)	No	Yes	Green Bond Guidelines by SEBI	China Green Bond guideline	DBSA Green Bond Framework
Renewable energy certificates (REC)	REC market	Yes	Planned for 2021	Yes	No, Pilot Green Electricity Certificate system	Yes
	National REC standard	—	—	Yes	—	Voluntary

Note: data sourced from Carbon Pulse (2021a, 2021b), Bandyopadhyay (2016), International Carbon Action Partnership (2021), International Institute for Sustainable Development (2020), International Finance Corporation (2020), Re100 Climate Group (2020), Vedomosti (2020), Latham & Watkins (2020), Energy Policy (2020), Renewables Now (2018).

increase trust among local and international investors as robust and reliable tools to track the implementation and results of funded projects.

Russia has been less active than the other BRICS countries in issuing green bonds, with Russian Railways issuing the first certified Climate Bond in 2019. However, VEB.RF, Russia's national economic development institution, is currently developing a national green bond standard that is meant to accelerate the sustainable transition in Russia and support the "Ecology" national project. The project's goal is to raise over four trillion rubles for clean air, waste, and water management projects. Although the government is only funding a share of the project, the new green bond standard is expected to help mobilize the remaining funds from private capital. Coupon subsidies, tax breaks, verification process subsidies, and other measures will be introduced to increase the attractiveness of the project for companies and investors (Miroshnichenko, 2020).

India is the second-largest issuer of green bonds among BRICS countries, with the largest share of certified green bonds. The bonds have been issued mostly for renewable energy projects. However, the country is currently eyeing up diversification into other areas, including disaster management, agriculture and agroforestry, water management, clean transportation, and more (The Energy and Resources Institute, 2018; Guha, 2019). Interestingly, green bonds have also been used as a way to develop international cooperation. For example, India's Power Finance Corporation has listed bonds on the London Stock Exchange to fund renewable energy projects in the United Kingdom (India Inc. Staff, 2017). This method could likely be used as a way to enhance cooperation within BRICS, for example, between India, China, and South Africa. Asian giants could use the power of their presence in the African country to raise funds for sustainable development, which is an important step when considering that their current relations are dominated by coal and oil imports (Arapova & Mujumdar, 2016).

Having issued its first green bond in 2015, China quickly became the second-largest issuer of this financial instrument in the world, with USD 31.3 billion in 2018 (CBI & CCDC, 2019). The highest number of bonds have been issued for renewable energy, followed by clean transportation. However, as of 2018, approximately 26% of green bonds issued by China were not accepted by international investors

because they failed to comply with global standards, namely: they were used to fund "clean coal" or other fossil fuel projects; the number of bonds issued as a "working capital," with no particular underlying project was too high; and, finally, there was a lack of sufficient information on the projects funded (CBI & CCDC, 2019). Even though the share of "noncompliant" bonds is decreasing, it is still a challenge in terms of attracting international funds.

The first South African green bonds were issued by municipalities of Johannesburg in 2014 and Cape Town in 2017. They were used for various climate adaptation and mitigation projects, including, among others, electric buses, water management, and sewage treatment. In 2020, Standard Bank sold green bonds to the IFC for USD 200 million, the largest green bond deal on the continent. The proceeds are renewable energy and clean transportation projects. According to the World Bank, the potential for investment in climate-friendly projects in South Africa by 2030 is USD 588 billion. However, it is also vital for South Africa to provide climate funding to other countries in the region. This is why South Africa has been calling for the inclusion of other developing countries in NDB finance plans (Ngounou, 2020).

In addition to these individual efforts, the BRICS countries have been united by a financial institution set up specifically to fund sustainability-aligned projects, namely the New Development Bank. Created to bridge the financing gap in the BRICS countries, the New Development Bank has often been named "the most solid thing" that unites BRICS (The Economist, 2018). Experts have noted that, although it has received much less attention in the media than the Asian Infrastructure Investment Bank launched by China, the NDB has gained a reputation as a more "innovative" institution, issuing loans in local currencies, holding a small share of co-financed loans, and not excluding any of the BRICS countries (The Economist, 2018). At the same time, the BRICS New Development Bank has not yet become a leading force in financing sustainable development in emerging economies.

The first bond that NDB ever issued was a green bond placed on the China Interbank Bond Market, for a total of RMB 3 billion (NDB, 2016). The bond was issued in accordance with the Green Bond Principles published by the International Capital Market Association (ICMA) and the Green Bond regulations in China and was used to fund several

clean energy and environmental protection projects in China, Brazil, and Russia (NDB Investor relations, 2020). No impact-aligned bonds have been issued by the bank since then. However, the Coronavirus crisis gave new impetus to these instruments. In April 2020, NDB approved a new Coronavirus Combating Bond aimed at providing support to Chinese economy in the fight against COVID-19, which raised RMB 5 billion. At the same time, the global discussion of the NDB's reaction to the crisis is still dominated by the economic agenda (Telesur, 2020).

Summing up the initiatives of various BRICS countries, we can see that each of them has made some progress on the sustainable finance landscape. However, cooperation remains limited and relatively poor because each country mainly focuses on the development of national standards. To understand whether cooperation is required here, it would also be useful to look at the example of ASEAN. According to the Climate Bonds Initiative statistics, after the launch of the ASEAN Green Bond Standard in 2017, the overall volume of green bond issuance in these countries increased exponentially (2017: USD 1bn, 2018: USD4.1 bn, 2019: USD 8.1bn) (Climate Bonds Initiative, 2020). One of the main reasons for this progress is that the existence of a common regional standard facilitates mutual investment, as well as raises the credibility of the issued green financial instruments for external foreign investors. This observation, therefore, implies that by collaborating in green finance, the countries can achieve better results than by pursuing their "nationalist" strategies.

In the case of BRICS countries, the development of common standards and frameworks could also lead to the same results, solving several challenges. First, it would help to overcome investors' mistrust of national standards (such as those of China and Brazil) because, as an international block, the BRICS countries have much more power for lobbying their interests. Second, it would allow keeping the money required for standardization in BRICS countries' economies instead of paying foreign auditors. Third, it would enable BRICS countries to develop methodologies and investment frameworks that better match the economic, environmental, and geographic conditions of their own countries, which are largely similar (which is shown in the previous sections of the paper). It is also important to add that international collaboration is at the heart of the economic strategies of BRICS countries (Huaigao

& Kaisheng, 2020), so stronger collaboration on green finance could help them better realize their goals.

Another way of international cooperation in sustainable development is expertise exchange, which is becoming quite popular. One example is Kazakhstan which asked for consultancy with South Korea to extend its expertise on green technologies and investments (Lee, 2018). The BRICS countries could also act in a similar way by sharing expertise on various types of green finance instruments (India and South Africa could advise on carbon taxation, Brazil and India could help Russia shape its REC market, and China could share insights on the nationwide emissions trading scheme). Cooperation on knowledge sharing could become an essential first step before proceeding to a deeper level of cooperation and the development of joint standards.

Risks and Opportunities of Impact Investment in the BRICS Countries

The OECD Social Impact Investment report identifies several challenges in the markets of developing countries, many of which are applicable to the BRICS countries as well (OECD, 2019). First, most investors are international players and are driven by DFIs. Although this is not necessarily a bad thing, for the markets to mature, local resources are still needed, and local ecosystems of actors and intermediaries need to be created. Another significant challenge is the tough business environment, which makes it difficult to attract private capital, both from national and international sources. Finally, major challenges remain in terms of common standards and transparency, as well as in reporting and access to data, which prevents international cooperation.

Another challenge is that these countries continue to rely on international capital. It is recommended that emerging economies look more closely at developing their domestic capital markets because international finance tends to migrate quickly during crises (Oxford Business Group, 2020). At the same time, it is not possible to reject international financing, as the countries still need to fill a large investment gap. These challenges could be solved by developing common standards that are in line with international standards. Also, many barriers can be overcome by investing in impact investment ecosystems and systems that provide accurate impact assessment, including digital monitoring, reporting, and verification. In addition, the

NDB could issue more green and social bonds, which could help raise more funds from abroad.

COVID-19 creates another challenge. The “green recovery” discussed on the EU agenda might still be seen as a luxury by many countries in the developing world. However, multiple reports say that, on the contrary, the green path might be the most sustainable. The International Renewable Energy Agency (IRENA) promises that renewable energy investments will add almost USD 100 trillion to GDP by 2050 and bring a return of USD 3–8 for every USD 1 invested (Oxford Business Group, 2020). Similarly, the World Bank indicated that clean technology projects might create far more jobs than fossil fuel projects while at the same time providing long-term benefits such as lower air pollution, which will lower mortality rates and support labor productivity (Oxford Business Group, 2020). There is also strong evidence to suggest that investing in more resilient infrastructure, including education, healthcare, innovations, and digital technologies, may increase economic resilience in the long term, thus preventing vulnerability to further crises (Davisson & Losavio, 2020). This suggests that green recovery is not only a challenge but also an opportunity that could help BRICS countries reach their goals much faster.

It would be wise for BRICS, and for the NDB in particular, to take advantage of the political opportunity to become the main impact investment force for the entire developing world. This indeed has always been a driving purpose of the bank’s creation, as was stated in the Fortaleza Declaration at the Sixth BRICS Summit in 2014, where the NDB was established:

BRICS, as well as other EMDCs, continue to face significant financing constraints to address infrastructure gaps and sustainable development needs. With this in mind, we are pleased to announce the signing of the Agreement establishing the New Development Bank (NDB), with the purpose of mobilizing resources for infrastructure and sustainable development projects in BRICS and other emerging and developing economies. (par. 11)

However, the NDB has not yet funded any other projects outside BRICS countries, although South Africa has repeatedly called for it (Ngounou, 2020).

Currently, the same idea is being discussed within the BRICS+ format, which implies not only bringing

integration blocks together, but also uniting regional development banks where BRICS countries play an important role: the Eurasian Development Bank (EDB), the Development Bank of South Africa (DBSA), the SAARC Development Fund (SDF), the Mercosur Structural Convergence Fund (FOCEM), the China Development Bank (CDB), the China–ASEAN Investment Cooperation Fund (CAF), and finally the New Development Bank as an “umbrella” to bring them together (Lissovolik, 2018). If the countries succeed in uniting under the aegis of BRICS, it will be possible both to reduce reliance on foreign capital and to start developing common standards that accommodate the needs of these countries.

Conclusion

Many studies have revealed that impact investments from the private sector can play an essential role in attaining sustainable development goals because there is an existing finance gap that cannot be solved merely by public finance. However, to make the most of the impact investment potential, it is necessary to develop common standards and frameworks, which calls for a strong level of multilateral cooperation. International cooperation is also beneficial because it helps countries share experiences, achieve a synergistic effect, and increase efficiency by reducing the gap between the potential investors and investment volume.

By being both simultaneously similar and complementary to one another, BRICS countries have all the prerequisites for cooperation. Realizing this potential, BRICS countries have established a number of important initiatives in the sectors where cooperation can actually add value to all of them, which shows good progress. However, the efficiency of cooperation has been so far limited, which might be improved by increased cooperation between the public and private sector, as well as establishing monitoring and reporting frameworks based on common standards.

Regarding the impact investment landscape, the analysis shows that the countries are on very different stages but could help one another by sharing knowledge and experience (China on emissions trading schemes, Brazil and India on REC markets, India and South Africa on carbon taxation, and so forth). However, to get the maximum benefit from cooperation and to accelerate the development of green finance markets, it

would be highly advisable to work on developing joint standards, which would both increase the credibility of green and sustainable bond issuances in these countries. This would also help the BRICS countries to develop methodologies that take into account specific economic and geographic features of their countries. Finally, by being leading economies in their respective regions and by deepening cooperation BRICS, countries can become true drivers of green growth agenda in the developing world, and the New Development Bank can play a crucial role in this area.

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Conflict of interest

None.

Ethical clearance

This study was approved by our institution.

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