BRICS 2022 CHINA

BRICS Business Council

BRICS BUSINESS COUNCIL ANNUAL REPORT

Foster High-quality BRICS Partnership
Usher in a New Era for Global Development

CHINA | 2022


BRICS
RDEM E PROGRES

CONTENTS

FOREWORD

BRICS

After the prolonged impact of the pandemic, the global economy is showing signs of recovery, yet the process is very fragile and fraught with multiple challenges in the forms of high inflation, supply chain bottlenecks and geopolitical situations. Moreover, as the economic recovery varies between the developed and developing worlds, the development gap between the Global North and the Global South is widening, and problems such as technological divide and fractured development are increasing.

The BRICS Business Council considers that it is important to work together to build resilience through solidarity and cooperation for sustainable development. As a crucial force to drive the global economic recovery, the BRICS countries need to stay resolutely committed, brave storms and unite to fulfill responsibilities and push for achievement of sustainable development goals.

The business community is a key participant and driver of cooperation among the BRICS countries. Since the beginning of this year, under the BRICS Business Council framework, the BRICS business communities have formulated recommendations that support the implementation of the Strategy for BRICS Economic Partnership 2025, BRICS Action Plan 2021-2024 for Innovation Cooperation, BRICS Action Plan 2021-2024 for Agricultural Cooperation and other important initiatives, and proposed concrete actions to advance the UN 2030 Agenda for Sustainable Development.

Under the theme of "Foster high-quality partnership and usher in a new era of global development", the BRICS Business Council focuses on economic and trade cooperation as the core, remains committed to keeping development as the main agenda, which focuses on enhancing the living standards of people, while emphasizing environmental protection and innovative development to promote deep, wide-ranging and high-level BRICS cooperation. This will reinforce connectivity among BRICS and make new and greater contributions to the reform of the global economic governance system.

We have taken the following actions:

Firstly, strengthening cooperation in the energy and food sectors. With BRICS accounting for 42% of the world's population, it is crucial for them to ensure food and energy security. The BRICS countries has prioritized sustainable economic development and strengthened cooperation in the energy and food sectors to achieve balanced economic growth, welfare of community, energy conservation and emission reduction.

To ensure stable supply, we have exhanged views on protecting agricultural biodiversity, enhancing food production and supply, and shared experiences on cooperation throughout the chain of food "production, collection, storage, processing and consumption", to facilitate food saving and loss

reduction. We have also agreed that it is important to encourage agricultural and food enterprises to formulate sustainable development plans to speed up energy conservation, pollution mitigation, carbon reduction and resources recycling and develop a more sustainable model for grain production.

To strengthen strategy alignment and policy coordination, we have discussed establishing a platform for technical communications to advance smooth cooperation in energy trade and investment and new energy industries, so as to better implement the member countries' energy strategies. With the complementary advantages of capital, industry and technology in BRICS, we have made deliberations about bilateral, multilateral and third market cooperation in the energy sector to enrich the content.

To enhance financial support, we have discussed the role of the financial institutions of the BRICS partner nations to leverage financial resources to clean energy projects and energy transition. We have also worked with the New Development Bank to deliberate on the Clean Energy Fund and a proposal to support clean energy transportation and sustainable infrastructure.

Secondly, advancing cooperation in technological innovation. Technological innovation is the driving force of economic and social growth, and a key area of BRICS cooperation. The BRICS members are endeavoring to utilize technological revolution and industrial transformation by strengthening cooperation in the technological innovation of key sectors, promoting full integration of new technologies with the real economy, and speeding up innovation incubation.

To give full play to invigorating new technologies, we have formulated proposals in intelligent manufacturing, to take advantage of digital technologies to transform the manufacturing industry in all aspects, as well as promote the transformation and upgrading of manufacturing industries in BRICS. We have deliberated on working together in building smart cities and promote the application of new technologies in the infrastructure sector. We are also working together to propose ways to advance the digital transformation of cross-border trade and build reliable digital trade channels to improve trade facilitation.

To tackle bottlenecks in core technologies, we have proposed to jointly work on technological solutions in such sectors as new energy vehicles, carbon capture, usage and storage and carbon-neutral flights, conduct R&D and promote extensive applications of new technologies to facilitate energy conservation, emission reduction and sustainable transition in BRICS.

To build innovation platforms, we have advocated to consolidate the BRICS Partnership on New Industrial Revolution to promote cooperation in skills R&D, technological information exchange and innovation incubation. A pilot project for the BRICS Digital Innovation Platform for Cross-Border Trade is

under consideration to provide enterprises with integrated services for commerce, trade, customs and logistics in the future.

Thirdly, boosting cooperation to improve welfare of community. The BRICS business communities attach great importance to welfare of community. This year, we have discussed cooperation in poverty alleviation, benefiting farmers, health care, training and education, development of SMEs and other key areas .

In terms of targeted measures, we have discussed to promote developing e-commerce in rural areas, which enhanced the sales and distribution efficiency of agricultural products and raised farmers' income.

In terms of public health, medical enterprises discussed integration between public health, medical and elderly care, encouraged joint research and development of vaccines to build public health and social systems with stronger resilience.

In terms of skills empowerment, the BRICS business communities held deliberations on establishing the Future Skills Training Base, formulating BRICS future skills standards, developing courses on future skills training and holding skills competitions to accelerate training for professionals in various sectors for BRICS.

In terms of inclusive development, we have discussed releasing the Joint Declaration on Supporting the Development of SMEs to provide them with stronger financing support, and building cross-border cooperation platforms to provide SMEs with online and offline cross-border matchmaking services to boost their sustainable development.

Fourthly, promoting interconnectivity on all fronts. In terms of "hard connectivity", we have agreed with the importance to deepen investment cooperation in railway, road, port, bridge, tunnel and other transport infrastructure projects to optimize trade routes and promote broader connectivity in the region. We have also exchanged views to advance building full-cycle and smooth international logistics and supply chains, simplify customs clearance procedures and improve the efficiency of cross-border commodity trade in BRICS. We have also discussed how the financial institutions in the BRICS countries and the New Development Bank can provide greater financial support for sustainable infrastructure.

In terms of "soft connectivity", we will coordinate work and make suggestions on the formulation of standards and rules in line with the development needs of BRICS. Deliberation has been initiated on subjects such as design, assessment and implementation standards for green infrastructure, management and assessment standards for green supply chains, standards for industrial software

and digital interfaces and the environmental, social and governance methodology framework for the financial industry of BRICS. We have also taken the initiative to share best practices and organize international exchanges and training programs in BRICS on trade digitalization, industrial application of new technologies, green infrastructure, green finance, precision agriculture, food conservation and loss reduction and rural e-commerce to learn from one another and progress together.

To advance pragmatic BRICS cooperation, this year the BRICS Business Council has built up on previous issues with consensus and come up with the following suggestions for the BRICS governments:

- **Deepening cooperation in natural resources on all fronts.** By leveraging their diverse and complementary strengths in resource endowment and industrial structure, the BRICS countries can advance resource partnerships that are more equal, balanced, credible and reliable.

- **Seizing the opportunities in digital, green and low-carbon transition.** BRICS intends to step up cooperation on technological innovation in the agriculture, energy, manufacturing, civil aviation, infrastructure and finance industries, and jointly explore paths of economic transition compatible with the realities of developing countries, injecting new momentum for economic growth.

- **Scaling up financial support for economic transition.** The financial institutions of BRICS should strengthen exchanges and cooperation, innovate their financial products and services, provide incentives to support digital and green transition, and enhance the role of finance to boost mutually beneficial cooperation among them.

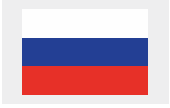
- **Advancing cooperation in standard formulation**. The BRICS governments may explore cooperation in the field of standardization.

- **Enriching cooperation on social development.** BRICS attaches great importance to all-round individual development. They should promote social development on all fronts and continue to enhance their citizens' well-being and sense of security and gains.

We, the Chairpersons of the BRICS Business Council, are honored to present to the distinguished leaders of the BRICS countries the 2022 Annual Report of the BRICS Business Council, in which we have outlined 39 key suggestions and initiatives for different sectors.

We treasure the consensus reached in this report and look forward to discussing the suggestions made in this report with the BRICS leaders and promoting their implementation.

Jackson Schneider (The Federative Republic of Brazil)



Sergey Katyrin (The Russian Federation)

Onkar S Kanwar (The Republic of India)

Chen Siqing (The People's Republic of China)

Busi Mabuza (The Republic of South Africa)

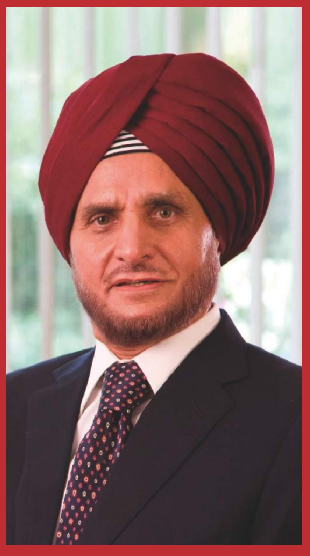
Beijing, 8 June, 2022

01 RECOMMENDATIONS TO THE BRICS GOVERNMENTS

金砖国家工商理事会 2022 年度会议

BRICS Business Council Annual Meeting 2022




#AGRI-BUSINESS

1. Promote sustainable agricultural development
2. Enhance agricultural biodiversity for food security and nutrition
3. Reduce food loss and waste to promote the quality and efficiency of the whole food chain
4. Implement targeted poverty alleviation and sharing rural e-commerce development experiences

#AVIATION

5. Promote the recovery of BRICS civil aviation markets
6. Conduct BRICS aviation market forecasts

#DEREGULATION

7. Promote cross-border trade facilitation of the BRICS countries through digitalization
8. Strengthen cooperation on industrial and supply chains and to facilitate micro, small and medium enterprises (MSMEs) development through digitalization

#DIGITAL ECONOMY

9. Explore cooperation on AI technology in BRICS
10. Accelerate the realization of equity and universal benefits of digital education
11. Improve interconnectivity of digital infrastructure among BRICS

#ENERGY AND GREEN ECONOMY

12. Establish a platform for technical communications

13. Establish a BRICS Nationally Determined Contributions (NDCs) entrepreneur dialogue mechanism for emission reduction
14. Strengthen energy cooperation between BRICS and third-party markets
15. Develop low-carbon and green transportation according to local conditions
16. Promote the development of renewable energy
17. Share the energy conservation standard system and best practice in BRICS
18. Share typical cases of decentralized, decarbonized and digitized (DDD) distributed energy development
19. Promote joint research on carbon capture, utilization and storage (CCUS) technology and sharing CCUS and direct air capture demonstration project

#FINANCIAL SERVICES

20. Improve the regular cooperation mechanism with New Development Bank (NDB)
21. Promote collaboration in BRICS in the insurance and reinsurance sector
22. Enhance cooperation in Fintech

#INFRASTRUCTURE

23. Promote green and low-carbon development of infrastructure, including railways, through innovation
24. Enhance connectivity in BRICS
25. Promote synergistic development of smart cities and connectivity of social resources through digital infrastructure
26. Promote the development of sustainable infrastructure projects with financial support
27. Strengthen investment and cooperation in infrastructure development and supply chain stabilization in the post-pandemic era

#MANUFACTURING

28. Improve the overall intelligence level of the manufacturing industry with the high-end digital factory solution
29. Promote cooperation in industrial software to improve smart manufacturing operations management
30. Promote cooperation on Internet Plus Smart Factory Collaborative Design Cloud Platform to build smarter factories
31. Strengthen exchanges and cooperation to set an example of green manufacturing
32. Promote green supply chain management
33. Promote a green cooperation mechanism
34. Strengthen cooperation in public health and the integration of medical and elderly care services

#SKILLS DEVELOPMENT

35. Set up the BRICS Skills Standardization Working Committee under the BBC SDWG to formulate vocational skills standards and issue skills certificates
36. Carry out cooperation towards BRICS Future Skills Training Base in BRICS countries to cultivate skills talents
37. Establish a long-term mechanism for the BRICS Remote Auditorium (Virtual or Physical Venue) of Skills Development and Technology Innovation for theoretical and technical discussions as well as skills training
38. Establish the BRICS Academy of Skills Development and Technology Innovation to provide service for skills development among BRICS countries
39. Continue organizing BRICS Future Skills Challenge and Future Skills Training Camp to improve the challenge-and-training mechanism

02 ABOUT THE BRICS BUSINESS COUNCIL

The BRICS Business Council (BBC) was launched during the Fifth BRICS Summit held in Durban, South Africa, on March 27, 2013.

The BBC is an important communication and cooperation mechanism among the business communities of BRICS. It arranges dialogues between the BRICS heads of states and its own members during each year's summit. Comprised of 25 senior industry leaders, five from each member country, the BBC represents a wide range of industries. Each year, two plenary meetings are organized by the BBC rotating chairship: the mid-term meeting during which work progress is reviewed, and the annual meeting, which is usually held before the BRICS Summit to review and finalize the BBC Annual Report. The tenure of the BBC rotating chairship is the same as that of the BRICS chairship, from January to December.

BBC working groups have been set up in nine focus sectors: agribusiness, aviation, deregulation, digital economy, energy and green economy, financial services, infrastructure, manufacturing and skills development.

In 2022, China is the BBC chair. In January 2023, South Africa will assume the chairship.

03 BRICS BUSINESS COUNCIL MEMBERS

Brazil Chapter

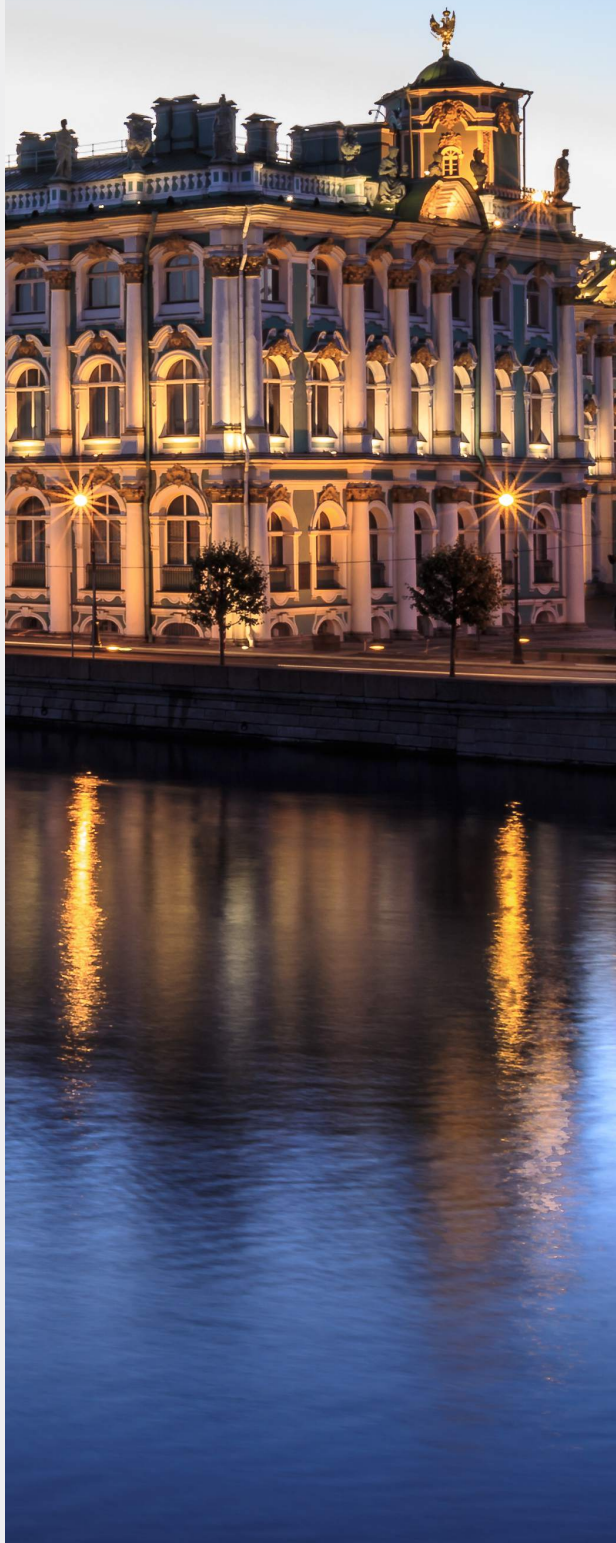
Mr. Jackson Schneider
President & CEO of Embraer Defense & Security
Chairperson of Brazil Chapter

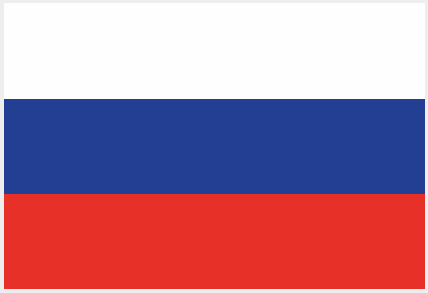
Mr. Alexandre Winicius da C. Machado
Executive Manager of Banco do Brasil S.A

Mr. Pedro Parente
CEO of BRF

Mr. Eduardo Bartolomeo
President of Vale SA

Mr. Harry Schmelzer Jr.
President & CEO of WEG





Russia Chapter

Mr. Sergey Katyrin

President of the Chamber of Commerce and Industry of the Russian Federation
Chairperson of Russia Chapter

Mr. Oleg Belozerov

CEO - Chairman of the Executive Board, JSC Russian Railways.

Mr. Kirill Dmitriev

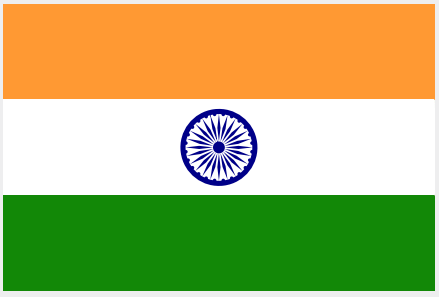
CEO of Russian Direct Investment Fund (RDIF)

Mr. Sergey Chemezov

Director General of Rostec State Corporation

Mr. Igor Shuvalov

Chairman of the State Development Corporation VEB.RF



India Chapter

Mr. Onkar S Kanwar
Chairman & Managing Director of Apollo Tyres Ltd.,
Chairperson of India Chapter

Mr. Jai Shroff
Global CEO of UPL Ltd.

Mr. Pankaj Patel
Chairman of Zydus Lifesciences Ltd.

Mr. Sanjiv Puri
Chairman and Managing Director of ITC Ltd.

Mr. Dinesh Kumar Khara
Chairman of State Bank of India

China Chapter

Mr. Chen Siqing
Chairman of Industrial and Commercial Bank of China,
Chairperson of China Chapter

Mr. Wan Min
Chairman of China COSCO Shipping Corporation Ltd.

Mr. Lyu Jun
Chairman of COFCO Corporation

Mr. Lu Yimin
President of China General Technology (Group) Holding Co. Ltd.

Mr. Dai Houliang
Chairman of China National Petroleum Corporation

South Africa Chapter

Ms. Busi Mabuza
Chairperson of Industrial Development Corporation,
Chairperson of South Africa Chapter

Dr. Ayanda Ntsaluba
Group Executive Director of Discovery Holdings

Mr. Elias Monage
President of the Black Business Council

Ms. Phuthi Mahanyele-Dabengwa
South Africa CEO of Naspers Ltd

Dr. Stavros Nicolaou
Group Senior Executive
of Aspen Pharmacare Holdings Limited

04 BRICS BUSINESS COUNCIL WORKING GROUPS STOCKTAKING

ISSUES WITH CONSENSUS

#AGRI-BUSINESS

1. Promote sustainable agricultural development

■ **Context**

According to a report released by the UN Food and Agriculture Organization at the COP26 Climate Change Conference in 2021, greenhouse gas emissions from global agriculture and food production have increased by 17% in the past 30 years. In 2019, global anthropogenic emissions were 54 billion tons of carbon dioxide equivalent, of which 17 billion tons, or 31%, came from agrifood systems, including farm-gate activities, pre- and post-production processes, and land-use change.

Given the above context, the BRICS countries, which are all major agricultural countries should promote sustainable agriculture. It can not only eradicate hunger and malnutrition, but also contribute to the progress of all 17 sustainable development goals in the UN 2030 Agenda for Sustainable Development.

■ **Actions**

Decarbonization of agriculture requires more profound adjustments and changes, which demands a series of comprehensive solutions rather than a single, one-dimensional one.

- Precision agriculture: According to the Agribusiness Working Group, precision agriculture can be a way for the BRICS to improve agricultural productivity, reduce production costs and environmental impact, and share best practices. It is suggested that governments, academia, private sectors, policy research institutions and farmers continue to exchange experiences and share cases to achieve the goal of a "measurable environmental impact, controllable production process and traceable product quality" in agriculture.

- Agri-biotechnology: Agri-biotechnology is an important tool to meet and sustain the global food and nutrition requirements, and will require continuous evolution of the regulatory policies towards allowing and encouraging investment in biotech research. This will help farmers improve crop yields, particularly for those crops where conventional technologies have not helped in raising productivity to a level that meets demand. It can improve the utilization efficiency of nitrogen fertilizers, reduce crop losses, and save land and water resources in a climate changing environment. It is suggested that the BRICS countries continue to deepen cooperation in this field.

- Sustainable production: Sustainable production systems should be adopted and maintained to strengthen agricultural productivity and food supplies. Energy transition in value chains and efficient use of resources such as water and agricultural areas should be promoted.

- Soil health: Soil pollution and degradation and loss of biodiversity need to be addressed extensively. Management practices that improve soil health should be shared among BRICS members.

■ **Benefits**

Sustainable development of agriculture will help in eradicating hunger and malnutrition, and also contribute to the progress of Sustainable Development Goals.

2. Enhance agricultural biodiversity for food security and nutrition

■ **Context**

Efforts to meet the growing demand for food, livestock feed and bio-energy have led to unsustainable farming practices, such as deforestation and urbanization, which is taking a terrible toll on natural resources. Biodiversity is indispensable to food security, sustainable development and many vital ecosystem services. It enables production systems and livelihoods to be more resilient to shocks and stresses, including the effects of climate change. Biodiversity conservation while limiting negative impacts on the environment is important to increase food production. Many traditional communities rely on biodiversity.

■ **Actions**

China hosted the UN Biodiversity Conference COP15 in 2021, where it proposed to foster "a community of life" on earth. BRICS countries can further explore cooperation and priorities in biodiversity by:

- Strengthening exchange of ideas, experiences and mechanisms for the management of agricultural biodiversity.
- Emphasizing the role of nurturing multiple species or integrating crop, livestock, forest and aquatic resources to promote resilience, and support food security and nutrition.
- Improving knowledge of the best way to combine existing practices and new approaches to increase productivity in a sustainable way.

■ **Benefits**

Biodiversity and ecosystem services, closely interlinked, support agriculture in multiple ways, benefiting farmers' well-being.

3. Reduce food loss and waste to promote the quality and efficiency of the whole food chain

■ **Context**

Food loss and waste is a widespread phenomenon worldwide. According to The State of Food and Agriculture 2019 report issued by FAO, food losses in the supply chain from post-harvest to pre-retail

accounts for about 14% of total production. The loss in developing countries is higher than in developed countries. According to a report by the United Nations Environment Programme in 2021, global food waste in 2019 reached 931 million tons, accounting for 17% of the total amount of food available for consumers.

If the annual global grain production is about 3 billion tons, every 1 percentage point reduction in global grain loss and waste will be equivalent to an increase of 30 million tons of grain, which can feed about 70 million people.

■ Actions

The BRICS countries are promoting co-operation on scientific storage mechanisms, technologies to enhance the shelf life of perishables and traceability solutions for agriculture and food supply chains. To promote a long-term mechanism for reducing food loss and waste, cooperation can be deepened along the whole food chain of "production, purchase, storage, processing, transportation and consumption" by sharing the latest technologies and best practices.

- Production: Efforts should be intensified to breed superior seeds, green prevention and control, scientific fertilization, precision irrigation, and efficient management, which will improve the professional skills of producers.
- Harvest: Mechanization should be improved as far as possible so that "each grain can reach the warehouse".
- Storage: The "four-in-one" new grain storage technology (combining mechanical ventilation, grain cooling, circulation fumigation, and grain situation measurement and control) should be widely used. Farmers should be provided technical training and scientific grain storage services. The use of new grain storage equipment should be encouraged among small farmers to improve the quality of grain.
- Processing: Moderate processing should be advocated, the utilization potential of processing by-products should be explored, and the rate of finished grain rate as well as the comprehensive utilization rate of by-products should be improved.
- Transportation: Implement programs to recover and improve the routes and flow of production.
- Consumption: Sustainable consumption should be promoted.

■ Benefits

The organic integration and effective convergence of storage, transportation, processing and consumption should be promoted through technology research and development, setting standards and norms, and providing investment guidance and public awareness. This will reduce food loss and waste in the whole process after production. If food waste can be reduced it will increase production without the cultivation of additional land.

4. Implement targeted poverty alleviation and sharing rural e-commerce development experiences

■ Context

The eradication of extreme poverty for all people everywhere is one of the UN 2030 Sustainable Development Goals. The BRICS countries account for more than 40% of the global population and have a large agricultural population. Achieving poverty reduction for the agricultural population will help eradicate global hunger and poverty by 2030.

By the end of 2020, China, which accounts for nearly one-fifth of the world's population, had fully eliminated extreme poverty and achieved the UN 2030 Agenda for Sustainable Development 10 years ahead of schedule. Rural e-commerce can be an important driver of revitalization, by integrating and connecting rural populations and agricultural activities with urban markets and consumers.

The BRICS countries are exchanging information on utilizing Digital Farmer Service Platforms and application of digital technologies in agriculture.

China's experience:

(1) Scale of rural e-commerce

In 2020, online retail sales in 832 Chinese state-level poverty-stricken counties reached 301.45 billion RMB, up 26% year-on-year, of which the sales of agricultural products was 40.66 billion RMB, up 43.5% year-on-year. By the end of 2020, the number of online merchants in the state-level porverty-stricken counties topped 3.06 million, 366,000 more than that in 2019, up 13.7% year-on-year.

(2) Business innovation model

In the traditional e-commerce model, the relationship between sellers and consumers is based on transactions. With the development of social e-commerce and live streaming e-commerce in China, agricultural products can be traded anytime and anywhere. The integration of social behavior and shopping behavior is a remarkable feature in the innovation of the current rural e-commerce mode.

In addition, on some e-commerce platforms, the integration of "social media + algorithm" matches product information with customer needs so that "products can find people". Consumers can also share information about quality agricultural products by group buying. The model improves the scale and efficiency of agricultural products, and agricultural products in different regions of the country can break through the restrictions of the traditional circulation mode to directly connect to the national market.

(3) The role of the private sector

Private companies have invested extensively in establishing inclusive digital payment methods to increase the efficiency of trading. They are investing in logistics systems to facilitate the delivery of products and services and are working on last-mile logistics to increase the penetration rate.

To attract more start-ups and small-scale producers and suppliers, a number of e-commerce platforms

are designing user-friendly tools and innovative mechanisms. Public-private partnerships are emerging as a major force to create an enabling ecosystem for digital agriculture.

India's experience:

The e-commerce in rural India has been growing significantly. The wide expansion of internet facilities across rural regions of India has enabled rural population including farmers, artisans, craftsmen, etc. to get greater market access for their products. It has also created opportunity for the rural customers to benefit from online purchases through e-commerce platforms. Most of the big e-commerce platforms in India are increasingly targeting small towns and rural areas in India and these segments are seeing immense growth in e-commerce transactions. Companies are increasingly utilising social media platforms for greater awareness, education and market expansion.

Going ahead, there is a huge potential for expansion of rural e-commerce in India as the number of internet users is further set to rise, especially with initiatives such as Digital Village providing internet access to more people as well as widespread access to digital payments.

■ **Benefits**

Digital technology through public-private partnerships can promote inclusive development and online trading can become an important tool for poverty reduction and rural revitalization. E-commerce is creating opportunities for diversification and new markets for rural people and communities, including women and youth.

#AVIATION

5. Promote the recovery of BRICS civil aviation markets

■ **Context**

With the new variants and flare-ups now and then, the Covid-19 pandemic is still prolonging with many uncertainties. BRICS countries have taken initiatives to deal with the pandemic and build resilience in the aviation industry and have shared their experiences and practices.

The pandemic's immense impact on the international trade system and supply chain has caused international airlines' bellyhold capacity -- the freight/cargo capacity of aircraft -- to decline dramatically. In order to ensure a smooth industrial and supply chain, the Chinese aviation industry has taken various measures, such as turning passenger aircraft into cargo aircraft to alleviate the pressure of insufficient cargo transportation capacity. It has been working to ensure cross-border transportation of pandemic prevention and control equipment, thereby contributing to the global efforts to combat the pandemic. The innovative "Fly as you wish on weekends" deal, a phenomenal product launched by a Chinese airline, quickly caught the market's attention in the post-pandemic era and greatly improved product operation capabilities, subsequently winning travel and tourism outlet Travel Daily's 2020 Digital Tourism

Innovation Gold Award, and the China Travel Consumption Pioneer Award for the Best Cultural and Tourism Brand Marketing Promotion Case in 2020.

The Indian aviation industry has taken the following actions:

Developing the "Air Suvidha" online portal: Developed by the Indian Civil Aviation Ministry, the online portal "Air Suvidha" enables international passengers traveling to India to submit the mandatory self-reporting form declaring their health status on the portal and be exempted from institutional quarantine, thereby streamlining the travel process.

Building AI-based RT-PCR testing labs: Following the COVID protocol laid down by the central government, airports have established RT-PCR testing facilities where passengers can obtain PCR test reports on the spot.

Promoting contactless commerce: Airports have installed self-ordering kiosks and launched app-based food ordering services, integrating food menus and contactless payment solutions. Passengers can either pick up the food they order from a dedicated counter or have it delivered at the gates in a completely contactless manner.

Simplifying security checks: For example, Indian multinational GMR has deployed a flow management solution to provide real-time alerts on the waiting time through digital displays and digital physical distance indicators at security check gates. The alerts help to ensure a safe distance between the passengers. Additionally, self-boarding card readers have been deployed at the boarding gates to facilitate contactless boarding.

Sharing information: Airports are taking various measures to proactively share information regarding COVID protocols to reduce passengers' stress. For example, GMR launched a "FlySafe" campaign to encourage COVID-appropriate behavior. Communication signage and floor markers were put up to help maintain social distancing across all passenger contact points. The campaign was complemented with intense sanitization and fumigation activities.

Brazil's Ministry of Infrastructure and the National Civil Aviation Agency (ANAC) have implemented multiple measures to support the aviation sector during the pandemic, including temporary waivers of certain regulations, temporary suspension of tariffs collection and bringing flexibility in procedures. In addition to that, the government of Brazil proposed to the National Congress a legislative matter of simplification and modernization of various regulations for aviation, in the so-called "simple flight" program.

■ Benefits

The recovery measures will provide the flying public with inclusive and convenient aviation service products, simultaneously generate a new round of travel demand by passengers, help speed up recovery of social activities and business operations, boost consumption in aviation tourism, and enable consumers, airlines, tourism services and other related industries to benefit from one another.

6. Conduct BRICS aviation market forecasts

■ **Context**

In 2021, due to the pandemic, the global air travel demand (revenue passenger kilometers or RPKs) for the full year was down 58.4% compared to 2019[1]. To promote aviation cooperation among BRICS countries and assist the recovery of the aviation industry, the BBC Aviation Working Group has conducted aviation market forecasts for BRICS countries and at the same time suggested establishing regular dialogue mechanisms for relevant aviation departments of BRICS. Taking into consideration the complicated situation of this year, the BRICS forecast for this year does not include the fleet forecast for the Russian market.

According to the forecast, by 2040, China, India, South Africa and Brazil are expected to have air fleets with 9,957, 1,453, 353 and 784 aircraft respectively; the compound annual growth rate of the fleets in the next two decades will be 5.2%, 5.5%, 7.6% and 4.7% respectively[2].

In the next two decades, aircraft deliveries to BRICS will be driven by new aircraft programs and rapid growth of the regional market. The deliveries to China and Russia deserve attention in terms of the turboprop regional airliners. India's air transport market is mainly driven by domestic demand and its single-aisle aircraft will account for a major part of the deliveries, while the twin-aisle aircraft will maintain a slow growth. Growth in China's domestic passenger traffic will also boost the demand for single-aisle aircraft. The aviation markets of South Africa and Brazil will grow steadily in the next 20 years, with aircraft delivery to South Africa accounting for 19.5% of that to Africa (1,425 aircrafts) and delivery to Brazil accounting for 27.6% of that to Latin America (2,786 aircrafts).

■ **Benefits**

Exchanging information will result in an accurate understanding of the dynamics of the BRICS aviation market, forecast the future market demand in BRICS countries, and foster pragmatic suggestions for the future development of aviation market-related fields.

#DEREGULATION

7. Promote cross-border trade facilitation of the BRICS countries through digitalization

■ **Context**

With the development of a new round of scientific, technology revolution, the deep adjustment of the

[1] Data source: official website of International Air Transport Association, IATA)
[2] Data source: official website of International Air Transport Association, IATA)

international industrial chain, and the impact of the pandemic and geopolitical situation and other facts, digital applications is highly valued globally.

The WTO Agreement on Trade Facilitation (TFA) entered into force in 2017. It commits countries to the development and implementation of Single Windows, logistics, trade facilitation and other relevant provisions. This provides legal compliance at international level for exploring the establishment of a channel of trusted trade modes. The feasibility study of Authorized Economic Operator (AEO) also further promotes cross-border trade facilitation within the BRICS, which makes it possible to explore other viable solutions to trade facilitation and elimination of trade barriers, such as E-port inter-connectivity among BRICS countries.

■ Prospects

Trade digitialization has promoted trade facilitation, and the wide application of digital technology has greatly reduced the cost of international trade. Digital empowerment has revitalized global trade growth, and online export has become a general trend. On the global market, the global B2B e-commerce transaction volume reached about 7 trillion US dollars in 2020, and the compound growth rate from 2020 to 2027 is expected to reach 17.5%, accounting for about 80% of global e-commerce transactions. Since the outbreak of the pandemic, international trade and supply chains have suffered serious impacts, but cross-border B2B has bucked the trend and accelerated the digitialization of cross-border trade.

The pandemic reinforced the urgency of adjustments in the way documents are transmitted and the need for government bodies and agencies to use electronic formats as an alternative for monitoring and supervising foreign trade and relieving the pressures associated with paper documents.

■ Actions

- Based on the actual development demand of the BRICS countries on either a bilateral or multilateral basis, the BRICS countries may explore various approaches on structuring a digital and trusted trade channel[3] to promote trade flows and efficiency of customs clearance of goods, as well as to increase transparency and professionalism of customs and compliance environment. This will help to achieve a paperless and electronic customs clearance and digitalization of trade financing, as well as to increase efficiency and reduce time and costs in their exchange of goods and services, and to further promote the volume of trade among the BRICS countries and sustainable development of the regional economy.

- It is also encouraged for the BRICS countries to share best experiences and exchange information on cross-border trade regulatory practices, time release study, emerging digital tools, etc. For example, given that the BRICS countries have E-ports in operation, countries could summarize and refine their successful typical cases of promoting cross-border trade facilitation through E-ports and show other member countries the actual results and benefit of E-port operations.

[3] A digital and trusted trade channel is meant to build a trusted digital public service platform for trade based on blockchain and other technologies.

- Also, the countries should keep on working in the efforts towards a paperless business, mutual recognition of standards, digitalized finance and financing mechanism, consumer protection and digitalization of phytosanitary certificates. Such as mutual recognition of e-documents of cross-border trade and using blockchain technology to express custom clearance and document release.

■ **Benefits**

Simplification of goods customs clearance procedures; trade barriers elimination; time and cost reduction; increasing in efficiency, value growth and structural optimization of traditional goods trade.

8. Strengthen cooperation on industrial and supply chains and to facilitate micro, small and medium enterprises (MSMEs) development through digitalization

■ **Context**

The COVID-19 pandemic has limited the logistics transportation and labor supply, hence seriously affected the industrial chain of regional and global industries. At the same time, the growing global uncertainty has brought challenges on supply chain network. In the post pandemic era, ensuring the security and stability of the supply chain is a common task faced by all the BRICS countries.

Meanwhile, the supply chain network after the pandemic presents new characteristics, such as greater flexibility, redundancy, exponential growth of E-commerce, improvement of digitalization level, etc. Though the BRICS enterprises are making efforts on adapting to the new normal, the BRICS, as a whole, should continue to commit themselves to cooperation at industrial, commercial and government levels and to strengthen cooperation and exchange on industrial supply chains.

■ **Prospects**

With the rapid development of digital technology, global trade and the reduction of the threshold of international division of labor, MSMEs can participate more widely in global trade and international supply chain cooperation and are becoming important participants in digital supply chains.

By continuously improving digital cross-border service trade and the whole cross-border supply chain system to support trade digitalization, providing the majority of MSMEs with integrated services, more MSMEs will integrate into global inclusive trade and participate in global supply chain competition. Meanwhile, it helps the BRICS countries to increase the added value of export products, and move upstream in the value chain, thus playing an important role in enhancing the efficiency and resilience of the industrial supply chain of MSMEs.

■ **Actions**

- Jointly discuss the key tasks of regional supply chains, enhance the interconnection of supply chains,

maintain the openness, stability and smoothness of global and regional industrial chains, and help member countries to fight the COVID-19 pandemic and to achieve economic recovery.

- Make full use of digital economy and information platform to explore ways to achieve industrial upgrading and gradually extend to the upstream of the value chains.
- Fully recognize the key role of MSMEs in the industrial chains and supply chains; work together to create an open and fair business environment; encourage the sharing of best practices and experience exchange; provide policy support to help MSMEs better integrate into global industrial chains.

■ **Benefits**

Gradually improving the industrial chain supply chain through digital economic tools effectively promotes facilitation of goods, investment and services in the BRICS countries, lower the threshold for MSMEs to integrate into the global supply chain, achieve connectivity, and helps to build a stable, safe and mutually beneficial industrial and supply chain cooperation framework, so as to promote global industrial chains to the high-end of the value chain and accelerate the economic recovery globally.

#DIGITAL ECONOMY

9. Explore cooperation on AI technology in BRICS

■ **Context**

Artificial intelligence (AI) is a new science that studies and develops theories, methods, technologies and application systems used to simulate, extend and expand human intelligence. AI is to study the laws governing intelligent human activities, construct an artificial system with certain level of intelligence, and study how to let the computer achieve the work that previously required human intelligence, in one word, to study the basic theories, methods, technologies and facilities of how to use the software and hardware of computers to simulate certain intelligent human behaviors.

Since the beginning of the 21st century, with the new breakthroughs of technology, AI technology has ushered in a new round of booming development. In fact, AI is regarded as the leading technology of the fourth industrial revolution. The wide application of AI will have a great impact on many social fields such as transportation, medical treatment, education, legislation, finance and the media. In recent years, AI innovation has vertically formed a technology ecosystem represented by computing chips, data platform technology and open source algorithms, and horizontally an application ecosystem represented by intelligent security, intelligent manufacturing, intelligent medical treatment and intelligent retail.

As a high-tech product, AI integrates cutting-edge discoveries in cognitive science, linguistics, computer science and neuroscience. The application of AI technology will bring about common breakthroughs in

innovation and progress in multiple fields. AI will not only directly promote the progress of science and technology and enhance productivity, but also lead to the transformation of labor-intensive innovation of enterprises to one that is largely leveraged by extensive use of data science. In order to reduce the overall cost of innovation, we should enhance the compatibility and extensibility of innovation with intelligence, and improve the innovation frequency and success rate of enterprises. The BRICS countries attach great importance to the R&D and application of AI. They are in different phases of development in this field and adopt different development modes, offering vast opportunities for cooperation and experience sharing.

■ **Actions**

- To strengthen cooperation in open source AI. While currently open source AI technology mainly focuses on basic development, most training models and databases are yet to be shared. There is great space for the BRICS countries to cooperate in this area.
- The BRICS countries have different strength in computing power, algorithms and data, and cooperation will maximize their complementary advantages in the field of AI.
- To strengthen academic exchanges and mutual visits in BRICS in the field of AI, encouraging the exchange of foreign students and job opportunities among the BRICS countries.

■ **Benefits**

With the help of AI technology and its spillover effect, BRICS countries can improve production efficiency and finally break through the diminishing marginal returns from a macro and micro perspective to drive economic development. Basic and common AI technologies will be deeply integrated into different industries and scenarios, constantly expanding the potential applications of AI and the depth of integration with the real economy, promoting the spread of technologies with AI as the core, thereby increasing economic benefits and wealth.

10. Accelerate the realization of equity and universal benefits of digital education

■ **Context**

Digital education uses digital infrastructure to carry out educational tasks, including the use of network facilities to carry out online education, as well as the use of digital technology to optimize educational methods and improve educational effects.

Education is the cornerstone of revitalization and social progress. The BRICS countries are fully aware that the key to the development of the digital economy in the future depends on talent and education. BRICS must give priority to education and accelerate the modernization of education. The development of today's education should not only be based on the transmission of human knowledge and skills from

the past but also addressing the actual needs of the current economy and society, or even the future development of humankind. BRICS faces challenges to develop digital education, such as insufficient resources, lack of means and channels, low efficiency and sometimes even the "digital divide".

The regional inequality of digital education in the BRICS countries has a long history. The uneven resource allocation caused by regional disparity is the inevitable outcome of unbalanced social development, further resulting in the biggest problem confronting education: education inequity. Digital education lays the foundation for both addressing the development needs of the digital economy and solving the unemployment problem caused by the lack of digital skills.

In recent years, both digital education recipients and the environment have undergone great changes. With the popularity of the Internet and intelligent devices, those being educated are evolving in a new social environment, and individual learning is gradually becoming "networked, digitalized and personalized". Intelligent learning environments and autonomous learning activities are to become a new form of learning in the future. Developing digital education is an essential need for BRICS.

■ Actions

- To strengthen the construction of digital education infrastructure and eliminating digital illiteracy. This includes construction of teaching environments, software and hardware support, and multiple application scenarios, and using intelligent technology (especially big data, artificial intelligence and cloud computing) to promote intelligent education and practical and inclusive use of educational applications to advance the revolutionary transformation of education.

- Establishing digital libraries in BRICS as a public welfare measure.

■ Benefits

Propelling massive application of digital education infrastructure, and promoting rapid development of digital education by taking advantage of the marginal cost of information production through digital education will enable the citizens of the BRICS countries to have access to good education resources as much as possible, and more sustainable and equitable education.

11. Improve interconnectivity of digital infrastructure among BRICS

■ Context

Digital infrastructure is the physical network supporting the digital development of human society. At the current level of scientific and technological development, it generally includes three parts, namely: 1) the communication network infrastructure represented by fixed broadband networks, the Internet of Things, the industrial Internet and satellite Internet; 2) the new technology infrastructure represented by artificial intelligence, cloud computing, blockchain and big data; and 3) the computing infrastructure represented by data centers, intelligent computing centers and algorithms.

Digital economy is becoming an important driving force and accelerator for world economic development, improving labor productivity of the existing industries, cultivating new markets and new industrial growth points. Digital economy has become a vital factor in promoting the sustainable transition of economies and societies, and its emergence, development and growth require strong digital infrastructure. The BRICS countries are in different development stages in terms of digital infrastructure, digitalized knowledge dissemination and degree of digitalization, and they are witnessing the great potential of the digital economy.

BRICS has made great progress in digital infrastructure development, though there are still some challenges and difficulties that require our cooperation, such as insufficient funds, protection of personal data privacy, cyber security of enterprises and countries, network coverage, service quality and the digital divide. Cooperation among the group is needed to address these problems.

■ Actions

- To strengthen cooperation in digital infrastructure development. In terms of new technologies such as Internet of Things, as well as network coverage in remote areas, there is broad basis for cooperation and room for knowledge exchange among the BRICS countries.
- To encourage BRICS to cooperate in the activities sponsored by other international organizations to safeguard our interests.
- To strengthen cooperation in investment. BRICS should hold deliberations on the investment environment, entry-exit management and financial control to facilitate the smooth implementation and operation of digital infrastructure investment projects.
- To strengthen technical exchanges and mutual assistance in education in digital infrastructure, reducing the digital divide and promoting the progress of the BRICS countries. This includes organizing the BRICS international forum, setting up the BRICS expert teams on information infrastructure, recruiting volunteers for information infrastructure construction and information education, and exchange of scholars.

■ Benefits

Cooperation and communication to advance the implementation of proposed actions will help strengthen digital infrastructure construction in BRICS. It will also ensure the rapid and steady development of digital economy.

#ENERGY AND GREEN ECONOMY

12. Establish a platform for technical communications

■ Context

With the acceleration of global green and low-carbon energy transition, BRICS members have formulated energy development strategies linked to their national conditions.

Brazil's Ten-Year Energy Expansion Plan (PDE 2022-2031) forecasts maintaining its clean energy matrix, around 50% of renewables, despite around 28% growth in internal consumption by 2031.

In 2020, Russia approved the Energy Strategy of the Russian Federation until 2035 which aims to increase primary energy production by 25% by 2035, expand exports to achieve strategic goals such as export diversification, infrastructure modernization and digital transition of the energy industry.

India released its National Electricity Plan in 2017. It set the target of installing 175 million kilowatts of renewable energy capacity by 2022, while non-fossil fuel installed capacity will account for more than half of the total installed capacity by 2027.

In 2020, China put forward the goal of reaching "carbon peaking and carbon neutrality" and is on track to release a document, The Opinions on Completely, Accurately and Comprehensively Implementing the New Development Concept and Doing a Good Job of Carbon Peaking and Carbon Neutralization. The document will guide policies and plans in key areas to support the "1+N" policy system (in which 1 denotes the overarching guidance and N the various policies).

South Africa released the Integrated Resource Plan in 2019, proposing to increase the proportion of renewable energy installed capacity from 8% in 2019 to 34% by 2030.

Due to differences in the natural resource reserves and advantages in energy industries and technologies, the BRICS countries have their own energy transition strategies and policies. Based on the strategic goals and priorities of each country's energy development, it is crucial to further detail their common issues and needs in energy and green economy in terms of policies, industries and technologies to promote practical cooperation.

BRICS play a pivotal role in the global energy sector. According to the statistics from BRICS Energy Report 2021, the member countries account for 41% of the world population, consume 40% of energy and produce 42% of world renewable energy. Based on International Energy Agency (IEA) forecasts, the total primary energy consumption of BRICS will remain at approximately 40% of the world in 2040 under the given policy scenario. The proportion of total renewable energy installed capacity will rise to more than 50%. The development potential is huge. But BRICS also face many challenges in the process of energy transition and development. Building a technical communications platform will promote cooperation among member countries in energy trade, energy investment, clean energy industrial chain and energy technology application.

■ **Actions**

To carry out cooperative research under the BRICS energy cooperation research framework in energy policy, strategy and technology and better interpret energy regulations and planning documents.

■ **Benefits**

With the technical exchanges, companies will be able to better understand the cooperation prospects, opportunities and whom they can work with. This will help strengthen practical cooperation in energy and green economy in BRICS and to achieve strategic goals .

13. Establish a BRICS Nationally Determined Contributions (NDCs) entrepreneur dialogue mechanism for emission reduction

■ **Context**

In response to climate change, BRICS members have put forward their NDCs and medium to long-term goals based on their national conditions.

At the COP26 in 2021, Brazil announced that it will cut greenhouse gas emissions by 50% by 2030 compared with 2005 levels and achieve carbon neutrality by 2050.

In 2021, Russia released the Social and Economic Development Strategy of Low Greenhouse Gas Emissions by 2050, which proposes to reduce emissions by 60% by 2050 against 2019 levels, and achieve carbon neutrality by 2060.

In 2021, India also proposed to cut emissions by 45% by 2030 against 2005 levels. By then, 50% of its power supply shall come from renewable energy and the installed capacity of non-fossil fuel power stations shall reach 500 million kilowatts, attaining the zero emission goal by 2070.

China announced in 2020 that it aims to achieve carbon emissions peaking by 2030, carbon neutrality by 2060, and further announced in 2021 to cut emission by 65% by 2030 against 2005 levels and increase the share of non-fossil fuel in energy consumption to around 25%.

South Africa updated its NDC in 2021 and the country target range for 2025, changed from its original value of 398 to 614 million tons of carbon dioxide equivalent, to a range of 398 to 510 million tons for 2025. The 2030 mitigation target range changed from 398 to 614 million tons of carbon dioxide equivalent to a range of 350 to 420 million tons of carbon dioxide equivalent. The year in which emissions are due to decline has been brought forward from 2035 in the initial NDC, to 2025 in the updated NDC.

To achieve emission targets, BRICS will introduce a package of policy measures on energy, taxation, finance, technological research and emission standards. Through policy adjustments and administrative measures, they will lead enterprises to a green and low-carbon development path. As the main body of the market, the realization of NDC depends on the specific implementation at the enterprise and project

levels. Faced with major challenges of emission reduction and low-carbon transition opportunities, strengthening dialogue and cooperation between energy businesses in BRICS and promoting cooperation in clean and low-carbon projects to achieve national emission reduction targets will be of great significance. So will be sharing the best practices in adaptation measures including building climate-resilient energy systems.

The BRICS countries have complementary advantages in low-carbon energy, such as bio-fuels, biomass, nuclear, solar, hydro, wind and technologies, such as carbon capture and storage, to reduce emissions from oil and gas industries. Some of them, such as China and Brazil, have started to develop a green hydrogen economy to support energy transition. Enterprises, as both supporters of low-carbon industries and users of advanced technology, play an important role in promoting cooperation in technological projects. The establishment of a BRICS NDC entrepreneur dialogue mechanism will help to lay a solid foundation for enterprises to share opportunities, achieve complementary advantages and carry out mutually beneficial cooperation. This mechanism will also help to promote social and economic development and the realization of NDCs goals at business and project levels.

■ Actions

The BRICS NDC entrepreneur dialogue mechanism will be established in stages. The first stage will be done by the BRICS Business Council Working Group on Energy and Green Economy this year together with the First BRICS Energy Cooperation Forum that includes a dialogue session for entrepreneurs. Moreover, seminars, round table meetings and webinars are good ways to create platforms for BRICS enterprises to directly interact with each other and collaborate.

■ Benefits

As entrepreneurs are the ones who follow the national policies, building an entrepreneur dialogue mechanism will facilitate pragmatic cooperation at the project level and bring opportunities for climate-resilient, green and low-carbon transition at the enterprise level, thus supporting the realization of the BRICS NDC goals.

14. Strengthen energy cooperation between BRICS and third-party markets

■ Context

The BRICS countries enjoy rich natural resources and huge energy markets. According to bp energy statistics, by the end of 2020, the proven reserves of coal, natural gas and oil in BRICS account for 40%, 25% and 9% of the world's total respectively. In 2020, the productions were 69%, 23% and 22% of the world. In 2020, the BRICS countries consumed 70% of the world's coal, 22% of natural gas, 29% of oil and 38% of non-fossil energy. With the deepening of cooperation, BRICS is increasingly focusing on promoting economic development and participating in global energy governance. The member countries are fully tapping their complementary advantages and shared demands, and gradually promoting energy

trade and cooperation among themselves.

In terms of energy trade, according to the bp Statistical Review of World Energy 2021, China and India are the world's largest importers of fossil energy, with imports of oil, natural gas and coal accounting for 36%, 17% and 34% of the world's total imports respectively. Russia and Brazil are the world's largest oil exporters. Russia exported 83.45 million tons to China and 2.63 million tons to India, accounting for 15% and 1.3% of the total imports of the two countries.

In terms of energy projects, the BRICS countries have carried out comprehensive and in-depth bilateral cooperation. Russia and China have cooperated on oil and gas, coal, nuclear power and electricity; China and Brazil on oil and gas, hydropower and power grids; India and Russia on energy transition, oil refining and nuclear power; South Africa and China on wind power and civil nuclear energy; Brazil and India on renewable energy research and development and second-generation bio-fuels. Russia and Brazil intend to expand dialogue on offshore hydrocarbon, hydrogen and nuclear development. Overall, the BRICS countries currently have greater cooperation in bilateral energy projects, less cooperation in multilateral energy projects and limited cooperation in third-party markets.

As representatives of developing countries and emerging economies, the BRICS countries have a high level of consistency in terms of their development stage, energy demand and interests. With their advantages in natural resources, energy market shares and advanced technology, they have ample scope for bilateral and multilateral cooperation in energy trade, investment and technology. In addition, after years of bilateral trade and cooperation amongst members of BRICS grouping, effective cooperation models and a foundation of mutual trust have been formed. Oil and gas trade plays a dominant role in energy trade in BRICS. On the premise of consolidating and strengthening the oil and gas trade, seizing the opportunities for green energy transition, strengthening the industrial chain and technical and third-party cooperation in the wind and solar power to maximize their financial, industrial and technological advantages will have a profound impact on leveling up their position in global energy governance.

■ Actions

To focus on the priority areas of energy cooperation specified in the Road Map for BRICS Energy Cooperation up to 2025, cooperation paths in energy efficiency, renewable energy and sustainable transportation should be further detailed. Joint research and cooperation in energy security should be bolstered.

■ Benefits

In-depth energy-related bilateral and multilateral cooperation will contribute to the economic and social development of BRICS and third-party countries, especially in key areas such as decentralized generation, smart grids and green and low-carbon transport.

15. Develop low-carbon and green transportation according to local conditions

■ Context

According to IEA Report Net Zero by 2050: A Roadmap for the Global Energy Sector, carbon dioxide emissions in the transportation sector account for approximately one-fourth of global emissions. Promoting clean and low-carbon energy consumption in the transportation sector is crucial for dealing with climate change problems.

As a major producer and consumer of bio-fuels, Brazil has a global leading role in this field. It includes the production of flex-fuel vehicles (run by gasoline and ethanol), representing 78% of the light vehicles fleet in the country. In addition, Brazil's gasoline has a blend of 27% ethanol. In 2021 it launched the Future Fuels Program to develop policies to increase the use of sustainable fuels, including aviation, in the transition to a low-carbon economy.

Russia, India, China and South Africa are promoting the development of electric vehicles (EVs). India and Brazil are already formally cooperating with each other, aiming at a more ambitious ethanol program, an initiative that could be expanded to other BRICS countries. Russia and India promulgated the Concept for the Development of Production and Use of Electric Motor Transport and the National Electric Mobility Mission Plan respectively to promote the development of the EV industry and the construction of supporting facilities.

China issued the New Energy Vehicle Industry Development Plan (2021-2035) and proposed a strategy to promote battery electric vehicles.

South Africa released the South African Green Transport Strategy (2018-2050) in 2018, proposing to developing a world-class transport system to reduce transport costs and greenhouse gas and other pollutants emitted by the industry. In May 2021, it released the Auto Green Paper on the Advancement of New Energy Vehicles, covering hybrid vehicles, pure EVs and fuel cell EVs.

In addition, vehicles powered by natural gas, a low-carbon fossil energy, have comparative advantages in long-distance transportation and operation in cold regions. China, India and Brazil are the major owners of natural gas vehicles. Russia has also issued the Russian National Energy Development Plan to promote the production and promotion of natural gas vehicles. The development of other energy sources for EVs, such as hydrogen and fuel cells, should also be considered in BRICS. India has great interest in renewable natural gas, green hydrogen and bio-compressed natural gas. Gas-fueled light-weight commercial vehicle are prevalent in India and have economic, environmental and ecological advantages.

In addition to vigorously developing public transportation, diversified low-carbon development in the automotive field is also an important trend in green and low-carbon transportation. Bio-fuel, electric and natural gas vehicles all have their limitations. For example, bio-fuel vehicles are affected by each country's agricultural policies. In this sense, Brazil is growing its production of second-generation ethanol from wastes. EVs have limited use in cold regions and long-distance heavy-duty transportation.

Natural gas vehicles lack comparative advantages in passenger transporting. Therefore, it is necessary to develop low-carbon and green transportation according to local competitive advantages and conditions.

Based on the BRICS Joint Statistical Publication 2020 issued by the National Bureau of Statistics of China, the number of vehicles in BRICS reached 430 million in 2020. They included about 5 million new energy vehicles[4], accounting for less than 1.2%. According to IEA forecasts, vehicle ownership in BRICS will exceed 650 million, and ownership in China and India is about to increase rapidly. The number of vehicles in China will reach 360 million, with approximately 110 million EVs, accounting for 30% of the total. Based on IEA 2021 statistics, the number of vehicles in India will reach 370 million in 2030. It is estimated that India could realize EV sales penetration of 30% in private cars, 70% in commercial cars, 40% in buses and 80% in two and three-wheelers by 2030, demonstrating great potential for the development of new energy vehicles.

■ Actions

- To strengthen intra-BRICS joint research and technical exchanges among think-tanks in transportation and promote communication among electric, bio-fuel and natural gas vehicles industries in BRICS.
- To encourage the establishment of sister provinces and cities and strengthen exchanges and cooperation in green transportation at the local government level according to local conditions.

■ Benefits

The development of low-carbon and green transportation according to local conditions will give full play to the advantages of different types of new-energy vehicles, and promote economic transformation and the development of emerging pillar industries.

16. Promote the development of renewable energy

■ Context

BRICS has continued to strengthen measures to address global climate change challenges and build an efficient and green energy system. Solar power and wind power today account for the largest share in power generation increments worldwide. From 2016 to 2020, increases in China, India and Brazil's installed renewable energy power capacities were among the highest in the world. The rapid increase of renewable energy power generation will foster a new power system with renewable energy taking a principal position. Technologies such as ultra-high voltage (UHV), micro-grid and energy storage will become the pillars of the new power system.

[4] New Energy vehicles (NEVs) is a term used by the Chinese government to designate plug-in electric vehicles eligible for public subsidies, and includes only battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs) and fuel cell electric vehicles (FCEV).

UHV technology can effectively transmit wind and solar power bases to long-distance load centers, solving the problem of unbalanced spatial distribution between renewable energy demand and supply. Micro-grid and energy storage technologies are effective solutions to the volatility, intermittency and randomness of renewable energy and will promote renewable energy consumption. With the acceleration of electrification in BRICS and the demand for electrical energy replacement, power systems with a high proportion of renewable energy will become increasingly volatile. Therefore, it is imperative to achieve a deep level integration between renewable energy and the power grid.

India's installed renewable energy capacity has exceeded 150 million kilowatts. It is highly likely that by 2030 its non-fossil fuel energy generation capacity will reach 500 million kilowatts, with renewable energy power constituting 450 million kilowatts. India has been taking steps to reduce air pollution and meet the climate commitments made under the Paris Agreement, including developing clean power generation, ethanol, green transportation and battery storage technology. It plans to reduce the carbon intensity of its economy by less than 45% by 2030. By then, India will meet 50% of its power generation needs through non-fossil energy generation.

For Brazil, hydropower accounts for 65.2% of its energy sources, biomass 9.1%, wind power 8.8% and natural gas 8.3%. With the cost of solar and wind power decreasing, Brazil has seen a huge increase in these renewables sources recently. It also expects solar and wind, together with gas, to meet the main growth in the domestic electricity demand. It has also been showing a great potential for offshore wind. There are more than 100 million kilowatts in projects to be developed, awaiting environmental licensing.

By 2024, Russia's cumulative installed capacity of wind, solar and small hydropower plants (below 25,000 kilowatts) will reach 3.6 million kilowatts, 15,200 kilowatts and 7,500 kilowatts respectively. The total incremented installed capacity of these three types of renewable energy will reach 5.87 million kilowatts by 2024.

In China, the 14th Five-Year Plan for Scientific and Technological Innovation in the Energy Field (2021-2025) proposes specific goals for constructing a new power system.

South Africa's newly updated Integrated Resource Plan envisions the total installed generation capacity to reach 89.532 billion kilowatts by 2030. Coal power will account for approximately 43%, renewable energy 34%, nuclear power 2.36%, gas and diesel 8%, hydropower 6% and storage 6%.

■ Actions

- To establish an information-sharing platform to collect and share new power system construction projects and renewable energy cases in BRICS with interfaces with the BRICS Working Group on Energy Saving and Energy Efficiency whenever possible.
- Under the BRICS cooperation framework, carry out cooperation and exchange, collect and share best practice cases, and promote the sustainable development of the power industry in BRICS.

■ **Benefits**

Sharing best practices in promoting renewable energy will facilitate mutual exchange in BRICS, help formulate plans for new power system construction according to local conditions and promote green and low-carbon energy development.

17. Share the energy conservation standard system and best practice in BRICS

■ **Context**

Energy conservation and energy efficiency improvement is the best way for the utilization of energy resources. It is also one of the key measures for countries to address climate change challenges. An energy conservation standard is the basis for constructing a national energy conservation system and strengthening energy conservation and emission reduction. The standards will also promote the construction of a green, low-carbon and circular economic system.

Since 2017, BRICS has been holding the BRICS Energy Conservation and Energy Efficiency Working Group annual meetings, as required in the memorandum of understanding on energy efficiency cooperation. They have also been holding annual ministerial meetings on the standardization cooperation mechanism since 2019 to give play to the fundamental role of standardization in interconnection. In addition, a BRICS standardization information sharing and service platform has been established for sharing the energy conservation standard system and energy conservation practices.

BRICS has also accumulated a good number of typical cases of energy conservation. The Brazilian Ministry of Mines and Energy organized exchanges on energy conservation management among enterprises to share successful stories of energy efficiency actions and management. The Brazilian Energy Research Office (EPE) issued the Atlas of Energy Efficiency in Brazil 2021, which presents the progress in energy conservation and energy efficiency in Brazil in recent years. In Russia, the Skolkovo Innovation Center promotes innovation and industrialization of energy conservation and energy consumption reduction.

In 2017, India released Good Practice and Success Stories on Energy Efficiency in India jointly compiled with the Copenhagen Centre on Energy Efficiency, the state-owned Energy Efficiency Service Limited and the Indian Institute of Management. The report contains detailed presentations and assessments of 11 successful cases from more than 70 case studies.

China launched a demonstration project National Energy Conservation Standardization Demonstration in 2017. The Chinese Ministry of Industry and Information Technology issues the National Industrial Energy Conservation Technology Application Guidelines and Cases every year, with a large number of energy conservation and consumption reduction practices and cases.

South Africa also attaches great importance to sharing energy conservation cases. The South African Industrial Energy Efficiency Project (SA IEE Project), jointly funded by the Global Environment Facility

and the South African Department of Trade and Industry, has been in operation since 2010. The SA IEE Project shares many enterprise-level energy conservation cases and they play an important role in improving energy efficiency in the industrial sector.

Energy conservation is "the No. 1 green and low carbon energy". According to the IEA sustainable development scenario analysis, emission reduction achieved by improving energy efficiency will account for more than 40% of total reduction in 2040. The data suggest that energy conservation is one of the fastest and most cost-effective ways to reduce carbon emissions globally in a short time. The average energy consumption intensity of BRICS is 0.148 kg oil equivalent per dollar, which is 1.3 times the global average level. There is significant room for energy conservation and energy efficiency improvement. Given the huge energy consumption and energy efficiency improvement potential of BRICS, sharing best practices will play an important role in the construction of the energy conservation standard system and improving energy efficiency. Practice sharing will also provide a broad stage for leading companies with advanced energy conservation and energy-efficient technologies and solutions.

■ Actions

- To build an information-sharing platform to collect and share projects and cases on energy conservation and energy consumption reduction with the help of the BRICS Working Group on Energy Conservation and Energy Efficiency.
- To encourage exchanges on the energy conservation standard system and best practices in a targeted manner and promote the formulation of international unified standards in energy conservation and energy efficiency improvement based on the BRICS Standardization Information Sharing and Service Platform.

■ Benefits

Sharing the energy conservation standard system and best practices of energy conservation in key industries will help the BRICS countries to learn from one another, formulate energy conservation standard systems and adopt suitable energy conservation measures according to local conditions. This will facilitate green and low-carbon energy transition.

18. Share typical cases of decentralized, decarbonized and digitized (DDD) distributed energy development

■ Context

Distributed renewable energy, with its advantages such as high flexibility, high utilization efficiency, small environmental impact and sound economic benefits, represents the future sustainable energy development trend. Synergies between technologies of distributed renewable energy with mini/micro-grid and EVs will help meet the twin goals of decarbonization and green mobility.

BRICS attaches great importance to the development of distributed energy. Brazil makes full use of its abundant wind, solar and water resources develop distributed power generation projects. According to statistics from the Brazilian National Institute of Clean Energy, the installed capacity of distributed power plants in Brazil was 8 million kilowatts by the end of 2021, including 781,000 distributed photovoltaic (PV) power generation participating units with an installed capacity of 7.1 million kilowatts.

According to the report Distributed Energy Resources in Russia: Development Potential, Russia's distributed energy consists mainly of small-scale hydropower, PV and wind power. By the end of 2017, Russia's total installed capacity of distributed power plants was about 23.5 million kilowatts, accounting for 9.5% of the country's total.

In recent years, India has vigorously promoted distributed renewable energy projects including rooftop solar projects (RTS) and off-grid solar projects (OGS). According to the report The Future of Distributed Renewable Energy in India released in May 2021, the installed capacity of RTS and OGS will reach 40 million kilowatts by 2022, accounting for 23% of the installed capacity of renewable energy.

Based on the 2021 PV Installation and Operation statistics released in March 2022 by the Chinese National Energy Administration (NEA), China's distributed PV installed capacity reached 107.5 million kilowatts by the end of 2021, accounting for about one-third of all solar power generation grid-connected installed capacity. The NEA recently issued the Guidance on Energy Work in 2022, proposing to continue the implementation of RTS throughout counties and implement the “Wind and Solar in Thousands of Households and Townships” project to vigorously develop distributed energy.

By the end of 2020, the total PV installed capacity in South Africa reached 4.17 million kilowatts, of which distributed PV accounted for 43%. While promoting distributed energy, BRICS have accumulated a number of successful commercial cases which provide effective solutions to energy poverty and lay solid foundation for sharing best practices.

The development of distributed energy in BRICS holds tremendous promise. The installed capacity of distributed power in Brazil is expected to reach 40 million kilowatts in 2031, a fivefold increase from 2021.

According to a forecast by the Moscow Business School, Russia will witness an increase of 36 million kilowatts of distributed installed capacity from 2020 to 2035.

India plans to increase its installed capacity of non-fossil energy to 500 million kilowatts in 2030, with renewable energy power constituting 450 million kilowatts as against the 2022 target of 175 million kilowatts. Under the 2030 target for renewable energy power, it is anticipated that distributed solar, as rooftops and under KUSUM scheme[5], will reach about 80 million kilowatts.

In China, the incremented installed distributed PV capacity will exceed 100 million kilowatts in the 14th Five-Year Plan period (2021-2025).

[5] The KUSUM Scheme was launched by the Government of India to provide energy and water security to farmers and enhance their income, de-dieselise the farm sector and reduce environmental pollution

■ **Actions**

Under the BRICS cooperation framework, carry out cooperation and exchange, collect and share best practice cases and promote the development of renewable energy industry in BRICS countries.

■ **Benefits**

Sharing best practices of distributed energy will facilitate mutual learning in BRICS in energy transition and energy poverty relief, realizing sustainable economic development. It will also help gather new ideas and develop new engines for energy cooperation.

19. Promote joint research on carbon capture, utilization and storage (CCUS) technology and sharing CCUS and direct air capture demonstration projects

■ **Context**

CCUS, an important path for both low-carbon utilization of fossil fuels and carbon emission reduction in heavy industries, has developed rapidly in recent years. According to IEA CCUS unit statistics, the number of new officially announced CCUS projects worldwide reached about 100 in 2021 alone. As many as 25 countries have CCUS projects up and running or under development. If all projects operate well, the global carbon capture capacity will quadruple by 2030.

Carbon emissions by the BRICS countries account for 45% of the world's total, and their energy consumption is still dominated by fossil energy with coal and oil accounting for 48%. Clean utilization of traditional energy will have a huge impact on the global energy transition, BRICS in particular. CCUS is one of the most important technological methods for carbon emission reduction in heavy industries such as steel and cement. It is also the most economical way for carbon emission reduction in industrial sectors such as natural gas processing and fertilizer production.

China has established the China Technology Strategic Alliance for Carbon Dioxide Capture, Utilization and Storage Technology Innovation to promote the commercialization of CCUS and direct air capture through research and development and demonstration.

Implementing CCUS in traditional energy infrastructure is an essential path for the development of traditional energy. However, CCUS technology still faces many challenges, such as high cost, requiring large investments, the low level of technology and business maturity and limited application scope, etc. It is imperative that technical research and industrial demonstration be carried out to deal with such challenges.

The CCUS technology is bound to play an important role in the global low-carbon energy transition. According to IEA forecasts, the reduction in carbon dioxide emissions in the power and industrial sectors will contribute to 70% of total reductions in 2030. In 2070, over 15% of the global carbon emission reduction will come from CCUS which will make crucial contributions for BRICS to achieve their

intended NDCs.

■ **Actions**

BRICS enterprises can undertake sharing industrial practices and case studies through joint research and technical exchanges.

■ **Benefits**

Joint research and sharing of demonstration projects will help BRICS cut emissions in key industrial fields and achieve indented NDC goals.

#FINANCIAL SERVICES

20. Improve the regular cooperation mechanism with NDB

■ **Context**

In 2017, the BRICS Business Council (BBC) signed a Memorandum of Understanding on Strategic Cooperation with the NDB after it was proposed by the Chinese chapter of the Financial Services Working Group (FSWG). It aimed to enhance cooperation in economic and financial research, activities in BRICS local markets, knowledge exchange, cooperation between financial institutions and human resources development. To implement the MoU and simplify dialogue with the NDB, the BBC introduced a communication mechanism in 2018. Under Russia's chairmanship in 2020, a financial experts' panel was set up. The FSWG Russian chapter suggested the main definitions and scope of the projects and initiatives and the order of interaction with the NDB.

In June 2022, the Chinese chapter of the FSWG took the initiative to organize two cooperation dialogues between the BBC working groups and the NDB, where the FSWG discussed the scope and model of financing and investment cooperation with the NDB, and presented the EGT financing program and suggestions, an intellectual property pledge financing (IPPF) methodology, as well as a proposal for a Clean Energy Fund (made by the Energy and Green Economy Working Group), and another (made by the Infrastructure Working Group) to support green and sustainable infrastructure programs.

■ **Actions**

To improve the regular cooperation mechanism with the NDB, promote cooperation of development strategies and financial priorities; to enhance public-private cooperation in various areas; to pool the financial strengths of the NDB, BRICS state development institutions, commercial banks and insurance companies for development in an open, practical, mutually rewarding and sustainable manner; to provide financial support for key fields such as environmental, social and governance (ESG) and green development, small and medium-sized enterprises (SMEs), infrastructure, digitalization and cross-border trade.

■ Benefits

Promoting cooperation between the BBC and NDB will help develop investment and financing projects denominated in local and foreign currencies for BRICS countries, complement the servicing capacity and improve access to business projects to create a bigger pool of financial resources from both the public and private sectors.

21. Promote collaboration in BRICS in the insurance and reinsurance sector

■ Context

In 2017 under China's chairmanship, a Memorandum of Understanding Regarding Insurance and Reinsurance Collaboration in Support of Mutual Investment and Business Cooperation in BRICS Countries was signed. From 2019 to 2021, India initiated the BRICS Reinsurance Pool and the BRICS Insurance Connect, and held meetings to exchange views on the format, structure and benefits of both mechanisms, as well as the steps necessary to establish them.

In 2022, the FSWG organized a case-sharing and discussion session with the theme of the insurance sector's support and practice for ESG, green and sustainable development. China Pacific Insurance from the Chinese chapter presented ESG-related insurance products and services, followed by other chapter members, including the Brazilian chapter, who introduced the new regulation proposed by the local insurance regulator on sustainability requirements for insurers and reinsurers, as well as updates on the adoption of TCFD Recommendations[6] in Brazil. The taskforce completed the BRICS White Paper on the Insurance and Reinsurance Sector at the initiative of the Indian chapter, to be used for discussing and reviewing the landscape of the insurance and reinsurance sector in BRICS, including the policy framework and market updates. The white paper enhanced common understanding on the insurance and reinsurance market in BRICS and contributed to future collaboration agendas.

■ Actions

- To give prioritized approval for local market access to insurance and reinsurance companies in BRICS countries subject to applicable law.
- Insurance and reinsurance companies in BRICS countries will enjoy flexibility in carrying forward bilateral or multilateral business cooperation following the principle of voluntary participation and enjoy cooperation priority; to discuss the feasibility of and detailed arrangements for

[6] TCFD Recommendations refers to the framework developed by Task Force on Climate-Related Financial Disclosures (TCFD) established by the Basel-based Financial Stability Board to help public companies and other organizations more effectively disclose climate-related risks and opportunities through their existing reporting processes.

establishing mechanisms such as the BRICS Reinsurance Pool and the BRICS Insurance Connect to enhance BRICS insurance and reinsurance inter-connectivity;

- To focus on the unique role of the insurance and reinsurance sector in mitigating and hedging ESG-related risks such as climate risks, and allocating capital market resources; to explore new cooperation areas including standard coordination, product innovation and risk sharing, as well as organize regular exchanges on policy and market updates, practices and insurance and reinsurance sector cases in BRICS countries.

■ **Benefits**

Promoting knowledge and information exchange between insurance and reinsurance companies in BRICS countries will enhance mutual understanding and cooperation in the sector. It will also create possibilities for BRICS insurance and reinsurance companies to choose cooperation mechanisms freely and strengthen the general capacity of the sector in BRICS countries.

New cooperation space has been outlined in ESG insurance including the carbon market, given the unique role of risk mitigation by the insurance and reinsurance sector, which can enhance resilience against natural disaster risks such as typhoons, and credit risks of renewable energy projects. It can also support the low-carbon transition of buildings and constructions, and the establishment and development of carbon markets.

22. Enhance cooperation in Fintech

■ **Context**

The science and technology boom and its wide application are providing diversified, easy and efficient solutions for all industries. For the financial sector, achieving successful transition needs intensive and intelligent operation. The urgent need for better technology application and effective empowerment by science and technology has formed a reciprocal and benign interaction cycle.

Under Russia's presidency in 2020, the establishment of the BRICS Artificial Intelligence (AI) Development Alliance was initiated. In 2021, India set up the Fintech Cooperation Taskforce under its presidency, focusing on the study and usage of Central Bank Digital Currency (CBDC) for faster digitization of financial services and greater financial inclusion, leveraging the role of fintechs in driving access to finance for micro and SMEs through innovative credit solutions, and sharing experiences in digital KYC and AML/CFT processes to support innovation while maintaining the highest standards of security.

In 2022, the FSWG Fintech Cooperation Taskforce organized a case study session for fintech application in financial scenarios, presenting cases including the application of AI in bank customer due diligence, cross-selling and credit solutions, the use of blockchain in trade finance, and the use of satellite remote sensing in approving loans to rural areas and agriculture.

Member institutions from the Russia and Brazil chapters exchanged views on the advantages of the CBDC and blockchain technology. They also discussed digital instruments and how to improve the transparency of transactions, facilitating transaction monitoring and data collection, and enhancing the segregation of bank deposits and reducing commingling risk in project finance transactions. Also discussed were regulatory rules for virtual financial assets and other types of digital assets, trading, turnover, CBDC and local currency exchanges, possible cross-border virtual financial and other assets trading and exchange platforms, and payment solutions in BRICS.

The India chapter drafted three BRICS white papers on the CBDC, SME Credit Solutions and KYC/AML, analyzing the current state of these areas in each BRICS country, thereby laying the foundation for discussing cooperation in the next step.

■ Actions

- To strengthen case and experience sharing to facilitate mutual learning and pragmatic promotion and application, as well as to promote the application of ABCDI (AI, blockchain, cloud, big data and the Internet of Things) technologies in the financial sector; to strengthen the use of virtual assets and digital currencies, benefiting all parties on the financial service chain; and mitigating and managing the potential risks that might rise from financial technologies.
- To continue discussions on the feasibility of cross-border cooperation in digital assets trading platforms.

■ Benefits

The application of key fintechs in financial products and services plays a vital role in improving efficiency, providing targeted marketing, promoting competition and increasing transparency. It also reduces costs, enhances customer experience, and helps prevent and manage risks and resolve urgent problems in the payments sector.

#INFRASTRUCTURE

23. Promote green and low-carbon development of infrastructure, including railways, through innovation

■ Context

In today's new round of industrial development, priority is given to energy conservation and new energy, environmental protection, carbon peaking and carbon neutrality as well as new materials and intelligent operation and maintenance. Green and low-carbon development plays an indispensable role in overcoming resource and environment constraints, accelerating the transformation of the economic development pattern and optimizing the industrial structure. Infrastructure must be sustainable if it is to

benefit the coming generations and the development of sustainable infrastructure calls for innovations in designs, techniques, products and management and efficient resource utilization.

■ **Actions**

- To promote green infrastructure through green design standards; innovation in smart infrastructure ideas, passive design technology in construction, active technology in low-carbon energy; full utilization of natural resources including solar and wind energy; use of high-performance materials and products and reduction of energy demand.
- To enhance the efficacy and reliability of infrastructure with energy-saving techniques, green construction solutions, smart construction technology and system and improved building structure.
- To utilize advanced AI technology to support multidisciplinary collaboration for green and low-carbon development, implement the concept of "digital + infrastructure", enhance rationality in technical decision-making and optimize the smart operation, maintenance and management system.
- To improve the sustainable management of construction wastes and promote a circular economy. Construction wastes are misplaced resources that can be reused after being sorted and treated. Recycling construction wastes will improve resource utilization.
- To deepen intra-BRICS cooperation in sustainable infrastructure development. BRICS should share innovative technological solutions and organize expert visits to major infrastructure facilities, construction sites and projects to facilitate knowledge and experience exchanges. The best practices in upgrading existing infrastructure into green infrastructure can be shared. These efforts would promote low-carbon, green, sustainable and eco-friendly infrastructure.
- To promote developing environmentally friendly and reliable modes of transport, with railways being accorded priority. Conditions for building green infrastructure projects should be created, including basic infrastructure, equipment and transportation vehicles, development of human resources and staff training and infrastructure management.

■ **Benefits**

Intra-BRICS cooperation in green and low-carbon infrastructure will set an example for the international infrastructure industry. It will facilitate international exchanges to create a healthy living environment and promote the sustainable development of green infrastructure.

24. Enhance connectivity in BRICS

■ **Context**

Connectivity is critical to social and economic development, which includes both "hard" and "soft" connectivity. BRICS should explore new measures to enhance connectivity.

■ Actions

- To bring into full play the comparative advantages of each country in technology, capital and labor to promote the sustainable development of the BRICS countries. They should collaborate more in investing transportation infrastructure including railways, highways, ports, bridges and tunnels, taking into account prospective increase in trade and transportation it will generate.
- To improve the intra-BRICS connectivity of technical and legal standards is an important way to achieve green and low carbon infrastructure, as well as carbon peaking and carbon neutrality. BRICS should work together to develop green infrastructure design standards, an assessment system and execution standards that answer to development needs. Mutual recognition of existing standard systems should be promoted to facilitate their implementation. Opportunities to jointly develop railway traffic management systems should be explored.
- To promote more extensive academic exchange and cooperation, human resources development and young professionals training programs. To develop internship and career opportunities through joint training programs and college-enterprise cooperation programs, co-training and university-enterprise cooperation.

■ Benefits

Connectivity and a stable supply chain can strengthen economic, political and cultural exchanges, shared development results and rewarding cooperation.

25. Promote synergistic development of smart cities and connectivity of social resources through digital infrastructure

■ Context

Accelerated urbanization has given rise to environmental, traffic, energy and housing problems. Digital infrastructure including AI and industrial Internet can contribute new solutions to develop smart cities and integrate resources. The construction of smart cities will not only alleviate prevalent urban problems, but also bring about the rapid development of satellite navigation, computer-integrated manufacturing (CIM), the Internet of Things (IoT), cloud computing and other related industries, forming a virtuous city development model driven by technology.

■ Actions

- To take further steps to cooperate in resolving technological barriers, i.e. introducing and discussing about technologies with comparative advantage and their integration in BRICS.
- To expand the application of advanced cyber security facilities and technologies in infrastructure projects.

- To promote discussion on unifying digital interface standards to facilitate the connectivity of smart cities and social resources in BRICS.
- To establish an online information resources platform for knowledge sharing and information exchange covering possible areas of cooperation, best practices and success stories.
- To exchange experiences in developing digital infrastructure, improve the management of the whole life cycle of digital infrastructure and share best practices related to management standards.
- To deepen cooperation and sharing between upstream and downstream parties along supply chains in shipping digitalization. To leverage digital tools to improve efficiency and synergy, strengthen BRICS digital shipping cooperation and build convenient channels for intra-BRICS trade.

■ Benefits

The integration of digital infrastructure technologies among the BRICS countries will help build a solid foundation for sharing social resources such as medical technology, supplies and educational resources. Accelerating the synergistic development of smart cities in BRICS can help establish a platform for closer cooperation and shared development in technology and economy.

26. Promote the development of sustainable infrastructure projects with financial support

■ Context

Since infrastructure projects usually require heavy capital investment, the development of infrastructure is dependent upon funding support from the financial system, and the financial system will not have balanced development without the wide participation of financial institutions.

■ Actions

- To enhance collaboration with the Financial Services Working Group of the BRICS Business Council for a facilitative partnership with the New Development Bank (NDB).
- To establish a cooperation mechanism with Financial Services Working Group and the proposed BRICS Environmental, Social and Governance (ESG) Association to enhance sharing the best ESG practices, developing a common ESG index or a unified action plan and to introduce ESG and Green Financing in infrastructure to attract more private and institutional investments in BRICS.
- To extend cooperation with the NDB and work more closely with new member countries of the NDB such as Bangladesh, the UAE, Uruguay and Egypt. To promote multilateralism and practice it to enhance experience exchange and knowledge sharing among member countries to contribute to the growth of the world economy. To create conditions under the BRICS Business Council framework to

optimize project procedures to obtain funds from the NDB.

- To enhance the funding mechanism for BRICS infrastructure projects, including strengthening cooperation with financial organizations and institutions specialized in sustainable development.

■ **Benefits**

An efficient mechanism for stable financial capital investment and a diversified green financial system will help implement jointly executed infrastructure projects and sustainable development.

27. Strengthen investment and cooperation in infrastructure development and supply chain stabilization in the post-pandemic era

■ **Context**

Infrastructure is the backbone of the economy. The COVID-19 pandemic has strengthened the need to building more resilient and adaptable infrastructure that can operate effectively during times of crisis. It is imperative for the BRICS countries to jointly explore how infrastructure can contribute to an inclusive and sustainable post-COVID economic recovery and to strengthen cooperation in infrastructural development in the post-pandemic era.

■ **Actions**

- To increase investments and strengthen cooperation in medical and public health infrastructure in BRICS to build more resilient health and social systems.
- To explore opportunities for creating sustainable urban transport systems that will have a safe and environmentally friendly transport model to provide mobility and accessibility to all urban residents. This may include investment planning and cooperation among the BRICS countries for initiatives such as transit oriented development, personal rapid transit, pedestrian and bicycle infrastructure, railways, suburban rail and light rail transit . It is also imperative to improve the last-mile connectivity solutions for metros and high-speed rail and build accessible facilities for the physically challenged.
- To expand collaboration among all parties involved in supply chains, and participate in building a more efficient and collaborative operation model. BRICS should have shared missions and responsibilities to ensure the smooth running of global supply chains and promote a healthy development of the world economy and trade.
- To provide more effective supply chain services, improve the resilience of supply chains to better respond to pandemic impacts, and build a more stable and efficient international logistics system.

■ **Benefits**

Enhanced cooperation to build resilient and adaptable infrastructures, stable supply chains, reliable and efficient logistics systems will help BRICS cope better with the ongoing crisis and boost economic recovery in the post-pandemic era.

#MANUFACTURING

★ SMART MANUFACTURING

28. Improve the overall intelligence level of the manufacturing industry with the high-end digital factory solution

■ **Context**

The traditional manufacturing industry faces multiple challenges today, from increasingly diversified customer needs and complex manufacturing processes to a rising demand for quality and efficiency. Manufacturers must respond to such challenges with a shorter product design period and manufacturing cycle, faster product iteration, higher production efficiency and more flexible production methods.

The digital factory is an important solution to such challenges. Powered by digital technologies such as collaborative data management, 3D modeling and virtual simulation, it promotes data synergy between product design and development through a unified data platform and fills the gap between design and production. It also simulates the physical manufacturing system in a virtual environment against the real-life production process so that the manufacturing process can be verified, adjusted and optimized in advance in digital virtual space before being put into use.

■ **Actions**

- To advocate for policies and financial support to promote industrial digital transformation.
- A comprehensive digital transformation in key industries should be deepened against the characteristics and needs of the industries. Such transformation includes an all-round digital transformation of traditional industries to improve total factor productivity. Companies should be encouraged to strengthen digital thinking, promote digital transformation in design, research and development, production and processing, operation and management and sales and services. Moreover, digital transformation of industrial parks and clusters should be promoted.
- To advocate for policies to deal with the negative impacts digitalization have on employment: re-skilling/education and training for the unemployed, setting minimum income standards, etc.

- To develop a digital transformation service ecosystem, which should be driven by both private and public services and supported by multiple factors such as technology, capital, data and talents to help companies undertake the digital transformation journey.

- To seek opportunities for exchange with outstanding industrial companies in BRICS in high-end technologies. As industrial interconnection accelerates the upgrade of industrial manufacturing, the Manufacturing Working Group could conduct in-depth discussion and analysis of the COSMO Plat[7] and work to develop a new digital platform that enables intelligent upgrading of the industry.

■ Benefits

The layout, process planning, simulation and optimization of the digital factory has overturned the traditional concept of industrial production and ushered in a new technological revolution in the modern industry. A digital factory benefits pre-planning and flexible production, simulating new product designs easily and quickly, thereby shortening the time for the product to be released to the market. In addition, virtual design and verification of products enabled by the digital factory technology minimizes the production and modification of physical prototypes, which reduces resource waste and product development costs.

29. Promote cooperation in industrial software to improve smart manufacturing operations management

■ Context

Industrial software is a general term for all software used in industrial processes. It is essentially the digitalization of industrial knowledge and the accumulation of experience and knowledge acquired in specific industrial scenarios in the form of digital models or specialized software. With industrial knowledge as its core, industrial software operates as a cyber-physical system, bringing high value-addition to industrial products. It is a key driver for smart manufacturing and Industrial Internet of Things (IoT), and the efficiency of the manufacturing industry is predicated according to the sophistication level of industrial software. Therefore, industrial software is an important breakthrough for developing countries to realize the transformation and upgrade of the manufacturing industry.

Industrial software also features high technical barriers. The global industrial software industry is in general an oligopoly dominated by a few top players, with close connections between the upstream and downstream companies, clear trends towards intelligent, cloud-based and integrated development and high levels of government involvement.

[7] COSMO Plat is an innovation on smart manufacturing proposed by Chinese businesses. It allows users to experience the industrial Internet platform throughout the process. It covers the construction and operation of the industrial Internet platform, the research and application of smart industrial technologies, industrial software and applications development, smart factory construction, integrated service of soft and hardware and the digital resource allocation in purchase, supply and sales.

■ **Actions**

- To promote industrialization and accelerate the development of industrial software.
- To break technical barriers of high-end industrial software products, such as the high degree of specialization, powerful functions and strong correlation among modules to enhance product competitiveness.
- To promote software application and establish an industrial software cooperation ecosystem.
- To develop industrial software professionals and industrial software-related inter-disciplinary fields.
- To promote discussions on the industrial software standard system and a conducive industrial software development environment within the framework of BRICS cooperation.

Possible areas of cooperation include:

a) Inviting more businesses and investments into this area, spearheaded by an increase of capital investments in the industrial software industry.

b) Establishing an intra-BRICS promotion mechanism to popularize industrial software designed and developed independently by the BRICS countries and expanding the market for such industrial software. Working together in the research and development of digital industrial software platforms. Organizing intra-BRICS competitions to promote research exchanges. Encouraging cooperation between universities, research institutions and enterprises.

c) Exploring an industrial software investment fund to promote sound development of the industry.

d) Formulating policies to encourage talent exchanges within BRICS in the area of industrial software.

e) Launching international cooperation pilot projects among the BRICS countries to jointly develop key software.

■ **Benefits**

Strengthening industrial software development capabilities within BRICS and improving self-reliance in this area.

30. Promote cooperation on the Internet Plus Smart Factory Collaborative Design Cloud Platform to build smarter factories

■ **Context**

Major economies around the world have been promoting the revival of the manufacturing industry. With the rise of Industry 4.0, industrial Internet, the IoT and cloud computing, a good number of outstanding manufacturers around the world have dedicated themselves to the construction of smart factories.

In this new context, BRICS promoted smart manufacturing technologies. For example, China National Machinery Industry Corporation has developed a set of digital and smart industrial software, service platforms and solutions in smart manufacturing and the industrial Internet platform. It has also established an Internet Plus Smart Factory Collaborative Design Cloud Platform, which has accumulated big data on designs, algorithms and experiences beneficial for the whole industry and can provide software and hardware resources and online services for new product designs, process designs, production simulation and operations management.

■ **Actions**

To promote cooperation on the Internet Plus Smart Factory Collaborative Design Cloud Platform as well as the digital transformation of industries.

■ **Benefits**

Promoting the Internet Plus Smart Factory Collaborative Design Cloud Platform among BRICS can help factories' modern transformation, standardize management and improve work efficiency.

★ GREEN MANUFACTURING

31. Strengthen exchanges and cooperation to set an example of green manufacturing

■ **Context**

Green manufacturing is a modern manufacturing model that incorporates environmental impacts and resource efficiency. Thanks to the fewer resources required and the growing efficiency of such model, it has become an advanced production technique valued by all countries. In addition, green manufacturing is effective in resource utilization, reducing waste of resources and environmental pollution and in the end promoting sustainable development.

■ **Actions**

- To promote discussion on jointly establishing green manufacturing standards in BRICS, which shall serve as guidelines for manufacturing transformation. To formulate incentive policies for technology research and development and promote technological transformation and clean production under the BRICS cooperation framework.
- To set up a BRICS green manufacturing review panel to evaluate green projects in the BRICS countries and select a list of model green factories for promotion.
- To encourage building BRICS green industrial parks to promote the commercialization and

application of green technology innovations.

- To establish an intra-BRICS green manufacturing promotion platform. To institute awards for green design products to improve public awareness.

■ **Benefits**

The promotion of green manufacturing projects and development of exemplary green design products, green industrial parks, green factories and green supply chains will help transform and upgrade manufacturing industries in BRICS. It will also help promote energy conservation and emission reduction, improve resource utilization and reduce production costs.

32. Promote green supply chain management

■ **Context**

The green supply chain (GSC) is a modern management model that comprehensively incorporates environmental impacts and resource efficiency in the entire supply chain which involves suppliers, manufacturers, dealers and users. The purpose of the GSC is to integrate environmental protection and resource conservation into the entire process from product design to raw material procurement, production, transportation, storage, sales, use and disposal, facilitating coordination between enterprises' economic activities and environmental protection.

Actions

- To explore the incorporation of GSC management (GSCM) into corporate strategic development planning, specify GSCM objectives, set up management departments and promote their GSCM.
- To strengthen green production. Companies should form a green design awareness throughout the life of the product, integrate environmental data resources, establish databases of basic processes and products, build assessment models and carry out a whole life cycle assessment in the research and design.
- To promote a green recycling system with focus on recycling and reuse of resources from disposed products.
- To build a platform for the collection, monitoring and disclosure of green information. Companies should establish an online monitoring system for energy consumption and an emission reduction monitoring database, regularly publish corporate social responsibility reports and disclose information including energy conservation and emission reduction results, pollutant emissions and policy violations data.
- To encourage various industries to introduce GSCM assessment standards that meet their characteristics so that companies can effectively evaluate their GSCM level, and build a green supply

chain business pool in BRICS.

■ **Benefits**

The purpose of GSCM is to give full play to the principal role of core enterprises in the supply chain. Companies will take the initiative in energy conservation, emission reduction and environmental protection of their own company and keep expanding supplies to society. Moreover, they will lead the upstream and downstream enterprises along the supply chain to improve the efficiency of resource and energy utilization, boost environmental performance and promote green development.

33. Promote a green cooperation mechanism

■ **Context**

Green development is the long-term strategy for the world's economic development. Working together to promote green development has long become the consensus of BRICS. Sustainable development has also been included as a key cooperation area in the Strategy for BRICS Economic Partnership 2025.

The BRICS countries have a large manufacturing industry, making up nearly 40% of the world's total. As a traditional industry with significant carbon emissions, the manufacturing industry bears heavy responsibilities for energy conservation, emission reduction and environmental protection.

■ **Actions**

- To establish a policy exchange mechanism. The BRICS countries could have ministerial-level dialogues on industrial cooperation on green manufacturing and formulate relevant memorandums.
- To build an industrial cooperation execution platform under the government communication framework to promote intra-BRICS industrial cooperation.
- To develop international cooperation projects in an orderly manner. BRICS should establish close cooperation ties in photovoltaic and other renewable energy infrastructure to create a friendly market environment. International cooperation projects could be jointly developed and coordinated and green industries developed and promoted in BRICS. The construction of green parks should also be encouraged to serve as a vehicle for industrial cooperation.
- To strengthen comprehensive multilateral and bilateral exchanges and cooperation. To implement training programs for knowledge and talents exchanges, hold conferences, exhibitions and forums and conduct extensive exchanges and discussions on green industry issues.

■ **Benefits**

Promoting green cooperation in BRICS will contribute to the transformation and upgrading of traditional manufacturing enterprises, the development of low-carbon industries and a higher level of mutually beneficial cooperation.

★ HEALTH INDUSTRY

34. Strengthen cooperation in public health and the integration of medical and elderly care services

☆ Public Health

■ Context

The BRICS countries adhere to the spirit of "openness, inclusiveness and mutual respect and understanding" and work closely together to address development challenges. The BRICS Summit in 2011 was the first time that the BRICS grouping unanimously agreed to strengthen dialogue in the field of public health, especially in the prevention and treatment of contagious diseases. BRICS has held annual health ministers' meetings, which marks the inclusion of health officially in the BRICS agenda. With the COVID-19 pandemic posing severe challenges to public health, it is imperative for BRICS members to work together to address them.

■ Actions

- To establish an early warning system for pandemic outbreaks by building a more timely and effective surveillance network. BRICS should increase cooperation and innovation in biotechnology, jointly carry out vaccine research and development, promote the accessibility of necessary medicine and enhance infrastructure building for pandemic prevention.
- Member countries can explore new business models and provide effective solutions to combat the pandemic such as advanced medical equipment, transportation and storage of vaccines and rapid test for virus infection.

■ Benefits

Strengthening cooperation in public health will enhance BRICS' ability to combat the pandemic, improve accessibility to vaccines and medicines and close the immunization gap.

☆ Medical and Elderly Care

■ Context

BRICS, which is a grouping of major developing economies, has a large and rapidly growing elderly population. The BRICS population over 60 years will reached 630 million by 2030 and 940 million by 2050; by then, BRICS' elderly population will account for 45% of that of the world. Addressing the medical and elderly care problems of the aging population is an important issue that calls for cooperation and discussion in BRICS.

■ **Actions**

To broaden the sources of funds for combined medical and elderly care services. Financial institutions should be encouraged to innovate financial products and services and expand diversified investments and financing channels.

■ **Benefits**

Through cooperation and joint support among BRICS, an international consensus on healthy aging can be reached. The negative effects of population aging can be overcome or minimized with human intervention or proper mechanisms.

#SKILLS DEVELOPMENT

35. Set up the BRICS Skills Standardization Working Committee under the BBC SDWG to formulate vocational skills standards and issue skills certificates

■ **Context**

In recent years, the BBC SDWG has been carrying out skills development, training, competition and talents exchange activities around future skills, digital skills, agriculture skills and artificial intelligence with positive results. To adapt to new technologies and their influence on skills, the BBC SDWG proposes to formulate vocational standards and develop curricula on future skills for reference and advisory to talents training and cultivation.

■ **Actions**

- To explore establishing the BRICS Skills Standardization Working Committee under the BBC SDWG, and call on the BRICS Alliance for Skills Development and stakeholders who are interested and willing to formulate vocational standards as reference and develop curricula together. To also explore and identify the specific vocations to be considered.
- The Brazil, Russia, South Africa and China sections of the BBC SDWG have started on vocational standards formulation and curricula development focused on machine learning and big data, industrial design technology, industrial internet of things, robot system integration, blockchain-based solutions, building information modeling and additive manufacturing in 2021.
- The Russia and China sections of the BBC SDWG are working on the BRICS Future Skills Joint Education Program, which will develop curricula and vocational standards and provide advanced training in space systems engineering, industrial design, unmanned aerial vehicle operations, aerial

robotics, machine learning and big data, blockchain-based technologies, web technologies and renewable energy.

- In order to better integrate competition and talents training, the BBC SDWG proposes transforming the achievements of the BRICS Future Skills Challenge by converting technical descriptions, scoring standards, equipment platform standards and expert team requirements into contents of group standards, and converting competition designs, tasks, test projects and training methods into contents of curricula, both of which are applied for skills training and talents cultivation.
- The yet to be explored BRICS Skills Standardization Working Committee may formulate the reference standards for future skills level certification and issues the skills passports to participants who meet such standards.

■ Benefits

The setting-up of BRICS Skills Standardization Working Committee under BBC SDWG will be conducive to formulate the skills reference standards so as to promote the harmonization of vocational skills standards among participating institutions from BRICS countries, also be conductive to effectively develop future skills curricula to solve the bottleneck of current skills training, improve the quality of education & training and cultivate future skilled talents.

36. Carry out cooperation towards BRICS Future Skills Training Base in BRICS countries to cultivate skills talents

■ Context

During the Russian presidency in 2020, the BRICS future skills training base, as one of the continuing cooperation projects within the BRICS skills development area, was written into the annual report. From April 2020, the China section of the BBC SDWG and BRICS Alliance for Skills Development started conducting the BRICS International Training Base for Future Technical Skills and People-to-people Exchange Talents project.

■ Prospects

The BRICS future skills training bases will be the platform for talents cultivation and people-to-people exchanges. BRICS future skills training bases are expected to be the remote standardized platforms for skills training, certification, competition and communication, which will enable enterprises and training organizations (including colleges, universities and skills training centers) to cultivate international skilled talents.

■ Actions

- To organize training camps and conduct united training via a hybrid format (online and offline).

- To explore BRICS future skills training bases in each BRICS country.
- The China section of the BBC SDWG and the BRICS Alliance for Skills Development are willing to cooperate and share experience with other BBC SDWG to establish BRICS future skills training bases in other BRICS countries.
- To call on multinational enterprises and training organizations (including colleges, universities and skills training centers) in BRICS to join in establishing BRICS future skills training bases for localized talents training.

■ **Benefits**

BRICS Future Skills Training Base will facilitate future skills development, future skills training and joint talents cultivation, making it a reality for BRICS countries to jointly conduct training, certification, competition and talents exchanges.

37. Establish a long-term mechanism for the BRICS Remote Auditorium (Virtual or Physical Venue) of Skills Development and Technology Innovation for theoretical and technical discussions as well as skills training

■ **Context**

Since 2017, the BBC SDWG has held a series of forums, seminars, symposiums and training, both online and offline, on future skills development and technology innovation, talents cultivation, think-tank construction, skills research and development, and BRICS vocational education and training. This work has established expert and channel resources.

To strengthen ties and cooperation among the BBC SDWG, and to promote knowledge exchange and experience sharing, an online platform called "Notion" has been established during Russia's presidency in 2020. It was further developed during India's presidency in 2021 by publishing various exchange activities, best practices, initiatives and talents resources.

■ **Prospects**

The pandemic has deeply affected international exchanges. The long-term mechanism of remote auditoriums (virtual or physical) will provide a communication platform for experts, scholars and technical personnel and strengthen ties among BRICS countries. Adopting a hybrid format combining online and offline, it can better adapt to the current conditions and future demands, facilitate exchanging views and sharing best practices among BRICS countries as most of them have developed hybrid platform for training and knowledge dissemination.

■ **Actions**

- To regularly hold forums, seminars and symposiums at virtual or physical venues and conduct other activities through online and offline format.
- The BBC SDWG will jointly organize and invite experts, scholars, school teachers and business representatives from BRICS countries to participate in different kinds of activities.
- Each session of the auditorium will invite experts to speak on the given topics and take part in panel discussions.
- The auditorium will focus on current urgent issues, development of innovative technologies, sustainable and green development, education development, pandemic prevention and control, application of advanced technology in teaching, intelligent manufacturing skills, artificial intelligence, digital skills and future skills.
- The chief experts of BRICS Future Skills Challenge are invited to give special lectures on certain skills.

■ **Benefits**

The BRICS Remote Auditorium of Skills Development and Technology Innovation will help to share the best practices in skills development and technology innovation and successful examples of the BRICS Future Skills Challenge, to strengthen exchange of skills talents among BRICS countries, and to implement the theoretical and technical training to improve the soft skills of personnel among BRICS countries.

38. Establish the BRICS Academy of Skills Development and Technology Innovation to provide service for skills development among the BRICS countries

■ **Context**

The initiative of establishing a BRICS Skills Academy has been discussed frequently at the BBC SDWG working meetings and a preliminary consensus has been reached. For example, during the BRICS Summit in Brasilia in 2019, the BBC SDWG agreed to the proposal of constructing “certified BRICS colleges” at the BRICS Future Skills Seminar led by the Brazil section of the BBC SDWG to narrow the skills gap among BRICS countries. In the minutes of the BBC SDWG meeting on May 20, 2021 under India's Chairship the issue was deliberated and it was agreed to identify one or two skills from other working groups under the BRICS Business Council for setting up of BRICS Skills Academy. To deepen research in future skills, the Russia section of the BBC SDWG organized Sessions on Future Skills 2.0: Transforming and Emerging Skills in 2020s, and published a research report in 2020.

At the 12th BRICS Summit in November 2020, China announced that it will work with other parties to

hasten the construction of the BRICS Partnership on New Industrial Revolution by establishing a BRICS Partnership on New Industrial Revolution Innovation Center in Xiamen, Fujian Province.

■ **Prospects**

The BRICS Academy of Skills Development and Technology Innovation is expected to provide the platform and carrier for implementation of the deliverables of BBC SDWG. The BRICS Academy sets up the BRICS skills development service centers so as to accurately serve the project cooperation among BRICS countries. On the basis of the BRICS Academy, BBC SDWG are expected to strengthen cooperation on the skills research & development and standards formulation, the international skills training & talents platform construction, the international cooperation on research, technical and information communication, the transformation, incubation and exhibitions of research achievements.

■ **Benefits**

The BRICS Academy of Skills Development and Technology Innovation will help BBC SDWG strengthen their contact and communication and carry out pragmatic cooperation in skills research, technical exchange, construction of training bases, talents training, achievements transformation and future skills development. This will deepen the BRICS Partnership on New Industrial Revolution and serve the economic and social development of the BRICS countries.

39. Continue organizing BRICS Future Skills Challenge and Future Skills Training Camp to improve the remote challenge-and-training mechanism

■ **Context**

The long-term mechanism of BRICS Future Skills Challenge is a significant milestone reflecting the importance of future skills development, innovative technology exchanges, skilled talents training and educational reform for the development of BRICS countries.

■ **Prospects**

- Combining online training and remote challenge is an effective way of international exchanges during the era of observing COVID-19 prevention and control. It will also become a major way of BRICS skills cooperation.
- Taking competition as the starting point can help future skills development and technological achievements transformation.

■ Actions

The BRICS Future Skills Challenge and Future Skills Training Camp

- The online training camps were jointly organized in April-May 2022, followed by others in June to September for theoretical knowledge explanation and practical training for the Challenge skills. Besides, a training camp for some skills will be completed in coordination with the Russia section of the BBC SDWG.
- In August or September, BRICS Future Skills Challenge will be held in Xiamen, China, with the theme of intelligent manufacturing skills, artificial intelligence skills, digital skills, future skills and agricultural skills. There will be about 20 skills (with taking into account Enterprise Information Systems Security, IT Solutions for Business, Life-cycle Management, Quantum Technology, Agricultural Biotechnology, City-farming, Digital Farming coordinated by the Russia section of the BBC SDWG).
- The BRICS Future Skills Challenge will be held in September in Foshan in South China for 10 skills, focusing on practical operation in intelligent manufacturing and future skills.

The BRICS Skills Competition

- The BRICS Skills Competition Kick-Off was held in Xiamen from May 23-28, 2022, concurrently with the BRICS Education Ministers' Meeting. It included web application development, machine learning and big data, and rail vehicle technology. The Chinese teams joined it on site in Xiamen, and the teams from the other BRICS countries participated remotely.
- The BRICS Skills Competition will be held in November for about 20 skills, including additive manufacturing, industrial design technology blockchain and etc.

■ Benefits

The Challenge is a special form of training to promote international exchange of skilled talents and best practice sharing. It also helps improve the ability of experts, competitors and trainers to solve practical problems, as well as their soft skills of creativity, communication and coordination, organization and risk management. The Challenge plays a leading role in curricula development and group standards formulation for future skills, construction of the BRICS future skills training bases, skills training and certification. It helps optimize major settings, curricula innovation, cultivation of teaching staff, updating teaching modes and constructing training centers for education system development in cooperation with the leading enterprises in the industry.

ISSUES UNDER DISCUSSION

#AGRI-BUSINESS

1. Leverage digital technology to improve the efficiency of international agricultural trade operation

International trade in agricultural commodities and processed foods has always been vital to global food security. At present, international agri-trade operation is complex and inefficient due to lack of standards, limited visibility, reliance on paper/email, inefficient manual processes and repeated need for paper documents. BRICS countries should continue to explore application of digital technology and take coordinated and effective joint actions to improve the efficiency of international agricultural trade.

#AVIATION

2. Explore cooperation in science and technology innovation and decarbonization of the civil aviation industry

The civil aviation industry is an important sector of any economy and is characterized by features like high-tech, high investment, high return, and long lifecycle. The international competitiveness of future aviation industry is largely dependent on research investment, the number of researchers and industry rules. Cooperation among BRICS countries should be strengthened in basic scientific research, applied technology development, and professionals training for core technologies. Integration of scientific and technological R&D resources will promote innovation and sustainable development of aviation industry in the BRICS countries.

#DEREGULATION

3. Explore the Feasibility of Establishing a BRICS Cross-border Trade Digital Innovation Platform

Trade can be an engine of growth and having deeper and balanced trade engagement is important for all BRICS countries. Covid-19 pandemic has highlighted importance of using digital tools across all spheres of business including trade. Technology can be leveraged for improving the efficiency of trade transactions, better delivery of financial services to businesses, reducing the turnaround time at ports and airports etc. To promote cooperation in the area of trade related digitisation and improve integration of BRICS enterprises, especially MSMEs, in global and regional value chains, BRICS countries may

explore the feasibility of establishing a cross-border trade digital innovation platform.

4. Consolidate the BRICS PartNIR

BRICS Partnership for New Industrial Revolution - PartNIR – is an important cooperation mechanism of the BRICS countries. BRICS PartNIR Innovation Centre in China signifies progress towards cooperation within the PartNIR framework. To be able to fully capitalize on emerging opportunities in trade, investments and economic cooperation, BRICS PartNIR mechanism can play an important role and should be further developed jointly by all countries. New Innovation Centres can also be developed in other BRICS countries in line with their own strengths and through closer cooperation promote sustainable development across BRICS countries.

#DIGITAL ECONOMY

5. Promote application of advances in industrial technologies across sectors in BRICS countries

Industrial technologies are evolving at a fast pace. The advances seen in technologies across the spectrum – manufacturing, agriculture, services and infrastructure – offer opportunities to accelerate the pace of digital transformation, control costs, minimize downtime, improve production efficiency and promote sustainable practices. Greater cooperation amongst BRICS countries should be considered in the area of emerging industrial technologies and their applications across sectors. Sharing of experiences and best practices can help BRICS countries accelerate their pace of economic development.

#FINANCIAL SERVICES

6. Deepen cooperation in ESG and green financing

Green and sustainable development plays a vital role in giving momentum to the post-pandemic socio-economic recovery, promoting growth and achieving the UN Sustainable Development Goals. As representatives of developing countries and emerging markets, BRICS countries in general are facing challenges such as having less comprehensively developed industrial product systems; non-high value-added products comprising their top export and import items such as such as industrial raw materials, agricultural products, and energy; as well as their pillar industries being carbon-intensive. Shared understanding, enhanced experience sharing, capacity-building and collaborative actions on standards, methodologies and product development will contribute to developing diversified and flexible ESG and green financing solutions to support green and sustainable development, and achieving a fair and just transition for BRICS.

7. Strengthen financial support for SMEs

To help the SMEs with quick recovery and propel economic globalization, BRICS should establish more comprehensive SME servicing mechanisms, and strengthen exchange and cooperation among SMEs in different countries in the fields of trade, investment and digital economy. A digital cross-border servicing mechanism for SMEs in BRICS co-built by BBC members and partners will be conducive for business organizations in BRICS to leverage their industry expertise, pool resources, broaden cooperation channels, and improve their capabilities and levels for SME servicing. This will make it easier for BRICS SMEs to expand in their domestic and overseas markets, and promote cross-border economic and trade cooperation. The application of the IPPF methodology will help expand funding channels, leveraging the limited resources of the SMEs, and facilitate IP transfers among BRICS countries.

8. Promote BRICS payment cooperation

Common payment services for BRICS countries can improve the inter-connectivity, security and resilience of cross-border payment transactions. Possibilities have been explored in conventional and innovative payment services in multilateral and bilateral formats for a unified approach to providing a seamless connection of local payment components. The key point here is the application of a new unit of account to convert national currencies. A common BRICS payment service will significantly contribute to cross-border transactions and the economic security of the participating countries, while reducing their dependency on external payment systems. Implementing the BRICS Pay project will, in addition to ensuring net profit for its participants, encourage new payment solutions, promote retail payments, facilitate e-commerce and reduce the cost of cross-border money transfers. This will contribute to inclusive financial development of the whole region.

9. Explore to establish the BRICS Credit Rating Agency (CRA) Alliance

Setting up the CRA Alliance will pool the capacity of credit rating agencies in BRICS countries and provide a platform for further exchange of technical methodologies, practices and cases. It will help better address the investor audience especially in case of any negative impacts caused by potential external international rating actions. The CRA Alliance process will be gradual, based on voluntary participation. The creation of a credit risk assessment methodology commonly recognized by BRICS issuers, investors and regulatory authorities will enhance cross-border funding capacity and increase resilience against external interference. Once the Alliance Platform is established and gains credibility amongst the investor community, the need for a supranational BRICS RA could be re-evaluated.

#MANUFACTURING

10. Promote the construction of emergency medical facilities and the mutual recognition of their designs and standards

BRICS has shared interest in developing new strategies for global pandemic prevention and control and enhancing accessibility and affordability of pharmaceutical products, etc. The design and construction of emergency medical facilities and the mutual recognition of their standards in the BRICS countries will improve emergency response efficiency and capacities.

11. Strengthen cooperation in traditional medicine to develop effective tools against COVID-19

In order to cope with public health challenges, the traditional and practical value of traditional medicine should be further explored with an emphasis on its comparative advantages relative to modern medicine. Enhancing the communication and certification of traditional medicine is conductive to further exploring its value, giving full play to its complementary role with modern medicine and contributing new ideas to address COVID-19 and other global public health challenges.

05 ANNEXURE

BRICS 2022 to Foster High-Quality BRICS Partnership, Usher in a New Era for Global Development

Joint Statement of the BRICS Business Council on Working Together to Build a Sustainable Partnership

BRICS represents a crucial force in advancing global governance. Faced with unprecedented shock and hardship caused by the COVID-19 pandemic, a changing international landscape and governance and uncertainties in economic recovery, the international community looks to BRICS to fight the pandemic, promote economic recovery and maintain peace and stability. BRICS should work together and take the responsibility to build a closer, more comprehensive, pragmatic, inclusive and mutually beneficial partnership. With dedicated efforts, the BRICS cooperation can be taken to a deeper and more substantive level. This would contribute to a recovery featuring stability and positive prospects, as well as foster sustainable development.

As chairpersons of the BRICS Business Council, we think the BRICS business community should work together to fully deliver on trade facilitation measures, promote mutually beneficial economic, trade and financial cooperation, and seek groundbreaking and landmark collaboration. BRICS should also continue to make efforts to expand cooperation with other emerging markets and developing economies and provide constructive solutions for improving global economic governance. To this end:

We note that the world economy may become increasingly fragile because of the inadequate and unbalanced recovery and international situation.

We recognize that the booming green economy and digital economy have been playing an increasingly crucial part in reshaping the global economic structure and competition pattern.

We reiterate the importance of the Joint Statement on Promoting Business Cooperation to Achieve Sustainable Development Goals, the Joint Declaration of the BRICS Business Council on Fighting the Pandemic Together and other documents issued by the BRICS Business Council in recent years. We resolve to help accelerate the implementation of the 2030 Agenda for Sustainable Development of the United Nations and the Strategy for BRICS Economic Partnership 2025.

We stress the importance of deriving lessons from cooperation, building consensus and drawing up a blueprint for partnership. We will consolidate the intra-BRICS cooperation framework through economic partnership and people-to-people exchange. This will contribute to building a mutually beneficial partnership.

We advocate strengthening macroeconomic policy coordination, developing new engines for economic growth and maintaining the stability of global supply and value chains so as to inject fresh impetus into the global economic recovery.

We appreciate the endeavors to build a climate-resilient, low-carbon and circular economy, and remain fully committed to the implementation of the United Nations Framework Convention on Climate Change and its Paris Agreement based on the principle of common but differentiated responsibilities and respective capacities so as to promote green development.

We agree to ensure the availability of safe, efficacious, accessible and affordable diagnostics, medicines, vaccines and essential medical products to people from different countries, especially developing countries, and equitable distribution of vaccines and expeditious vaccination, to fill the immunization gap globally.

We, as representatives of the business community, call on the BRICS heads of state to work closely and highlight the importance of the following actions:

◎ To consolidate the BRICS strategic partnership, enhance communication and intra-BRICS cooperation and fully deliver on the agreements and consensus of the previous summits so as to take the BRICS cooperation to more substantive levels.

◎ To carry out dialogue and cooperation with other emerging markets and developing economies as well as international organizations to broaden South-South cooperation.

◎ To foster pragmatic cooperation in food security. This includes improving the BRICS Basic Agriculture Information Exchange System, enhancing the capacity to ensure the supply of grain and other key agricultural products and boosting agricultural biodiversity. This will serve to promote sustainable agricultural and rural development, alleviate poverty and achieve zero hunger.

◎ To deepen economic and trade cooperation, work together to protect a rule-based multilateral trading system with the World Trade Organization at its core, remove trade barriers and improve the trade environment.

◎ To expand interconnectivity cooperation in infrastructure projects.

◎ To support building e-commerce, logistics and warehousing facilities, advance the intra-BRICS connectivity of customs and settlement data and enhance trade facilitation.

◎ To seize digital economy development opportunities and exchange of industrial policies among the BRICS countries. We encourage boosting the development of smart manufacturing and promoting a more substantive integration of digital technologies into the real economy.

◎ To facilitate the BRICS Innovation Cooperation Action Plan 2021-2024 to play a larger role, and strengthen cooperation in flagship programs.

◎ To accelerate green transformation and development by building a platform for technical communications, promoting green energy and manufacturing cooperation, enhancing green supply chain management and boosting green and low-carbon development in agriculture, civil aviation,

transportation and infrastructure.

◎ To promote cooperation in environmental, social and governance and green finance, improve fintech capabilities, strengthen efforts in AML/CTF and boost the development of inclusive finance and trade finance.

◎ To provide key liquidity and trade finance support to micro, small and medium enterprises, and expand their development potential.

◎ To stay committed to creating jobs opportunities and promote the reemployment of the unemployed by making policy adjustments in accordance with local pandemic and economic conditions.

◎ To provide training and introduce supportive measures for the working population, pay close attention to the employment opportunities, develop digital education and improve education accessibility.

◎ To strengthen labor skills upgrading in the BRICS countries, improve infrastructural support that facilitates the development of the professionally trained, and encourage skills training and competition.

Jackson Schneider (The Federative Republic of Brazil)

Sergey Katyrin (The Russian Federation)

Onkar S Kanwar (The Republic of India)

Chen Siqing (The People's Republic of China)

Busi Mabuza (The Republic of South Africa)

Beijing, 8 June, 2022


BRICS
2022 CHINA


BRICS
Business Council