



27 October, 2015

BRICS SCIENCE, TECHNOLOGY AND INNOVATION

WORK PLAN 2015-2018

1. The Ministers and their representatives for Science, Technology and Innovation of the Federative Republic of Brazil, the Russian Federation, the Republic of India, the People's Republic of China and the Republic of South Africa, met in Moscow, on October 28, 2015, to endorse the BRICS Science, Technology and Innovation Work Plan 2015-2018 based on the Memorandum of Understanding on Cooperation in Science, Technology and Innovation between the Governments of the Federative Republic of Brazil, the Russian Federation, the Republic of India, the People's Republic of China and the Republic of South Africa (hereinafter - MoU) and the Strategy for BRICS Economic Partnership (hereinafter - Strategy).
2. This Work Plan focuses on the main areas of cooperation with reference to Article 3 of the MoU. Ensuring further collaboration on the basis of mutual benefit of the BRICS countries the Work Plan also provides new research and innovation initiatives.
3. The BRICS countries responsible for implementation of the activities focused on the five thematic leadership areas as previously stated in the Brasilia Declaration decided to appoint contact institutions for collaboration within the BRICS Research and Innovation Networking Platform developing direct communication channel between stakeholders:
 - Prevention and Mitigation of Natural Disasters (Monitoring & Early Warning): Brazil (leads through the National Center for Monitoring and Early Warning of Natural Disasters – Cemaden);
 - Water resources and pollution treatment: Russia (leads through the Technology Platform for Sustainable Ecological Development);
 - Geospatial technology and its Application for development: India (leads through the National Spatial Data Infrastructure, DST); development of ICT and geospatial technology based Decision Support Systems (DSSs) for multi-hazard and climate risk management and appropriate resilient development planning for sustainable habitat;

- New and renewable energy, and energy efficiency (Solid-state lightning as a sub-area (SSL)):

China (leads through the Ministry of Science and Technology – MOST);

- Astronomy: South Africa (leads through the National Research Foundation).

3.1 In addition to the five thematic areas the new potential initiatives include:

- Creation of BRICS Young Scientists Forum (India as coordinating country);

▪ Cooperation on Biotechnology and Biomedicine including Human Health and Neuroscience (Russia and Brazil as coordinating countries);

▪ Cooperation on Information Technologies and High Performance Computing (China and South Africa as coordinating countries);

▪ Cooperation on Ocean and Polar Science and Technology (Brazil and Russia as coordinating countries);

▪ Cooperation on Material science including Nanotechnology (India and Russia as coordinating countries);

- Cooperation on Photonics (India and Russia as coordinating countries).

4. Following the principles of the MoU and the Strategy the coordination of the activities within the main areas of cooperation will be implemented by BRICS Research and Innovation Networking Platform (BRICS RINP) aimed at facilitation of research collaboration. Establishment of the BRICS RINP will contribute to the increasing participation of business, academia and other relevant stakeholders for BRICS STI development focused on the five thematic leadership areas.

5. Establishment of the Working Groups (WG): WG on the BRICS STI funding, WG on the BRICS research infrastructures, including mega-science projects. Each WG shall have a designated national focal point from each of the BRICS countries. The lead country is responsible for maintaining regular coordinating meetings of the national focal points to monitor, coordinate and implement activities. WGs shall meet at least once a year under the current BRICS Chair country in order to coordinate activities.

6. In order to foster STI cooperation the BRICS Research and Innovation Initiative (hereinafter – BRICS R&I Initiative) will be implemented providing the following mechanisms and levels of cooperation:

6.1. Promotion of the coordination within large-scale research infrastructure to support initiatives leading to efficient use and development of mega-science projects. Relevant Working Group should elaborate appropriate mechanisms, such as BRICS Global Research Advanced Infrastructure Network (BRICS GRAIN).

6.2. Coordination of existing large-scale national programmes of the BRICS countries.

6.3. Promotion research in the main areas of cooperation through implementation of a BRICS Framework Programme for funding multilateral joint projects for research, technology commercialization and innovation, considering following actions:

- Establishment of the WG on the BRICS STI funding (includes at least one representative from each participating funding party);
- Development of the BRICS Framework Programme for funding multilateral joint projects for research, technology commercialization and innovation and the Road Map for its implementation;
- Launch of multilateral joint STI calls in the main areas of cooperation stated in Article 3 of the MoU with corresponding funding from each partner, including a special focus on cooperation with enterprises/ and industry, generating new knowledge and innovative products, services and processes in the BRICS countries;
- Exploring the potential of attracting resources of the New Development Bank as an additional funding mechanism of multilateral joint projects within the BRICS Framework Programme;
- Development of a special funding tools for researchers mobility to support human capital in STI and promote involvement of youth.

6.4. Establishment of the BRICS RINP to facilitate research collaboration, BRICS technology transfer: to support MSMEs in technology and innovation activities; to develop innovation and technology clusters, high-tech zones / science parks and incubators; to create the BRICS research and innovation centers.

7. The realization of the present Work Plan is to be defined in the BRICS Action Plan 2015-2016. The Action Plan accumulates the activities in the defined areas, mechanisms and levels of cooperation. The Action Plan is to be followed up, reviewed and revised by the BRICS Chair country to monitor and coordinate the activities, and prepare reports to the BRICS STI Ministers' and Senior Official's Meetings.

8. The BRICS national research institutions are encouraged to consider collaboration under BRICS thematic leadership in Biomedicine and life sciences such as:

- integrated telemedicine systems in the regions of BRICS;
- international consortium and center of transfer of technology in the field of Biomedicine (BRICS Biomed);
- systems of pharmacological consortiums with the aim to resolve the problem of "medicinal safety", anti microbial resistance and response to epidemic and emerging diseases.

9. Funding for any initiative established under this Work Plan shall be pursued by the BRICS countries in accordance with Article 6 of the MoU.

Action Plan 2015-2016:

1. Activities in the defined main areas of cooperation:

- Appointment of a designated national focal points for WGs from each of the BRICS countries by December 2015;
- Establishment of BRICS Water Forum to exchange experiences and practices in water management and pollution treatment in the context of green economy and post-2015 sustainable development goals (Russia);
- Establishment of BRICS Prevention and Mitigation of Natural Disasters Strategic Plan, which will include short term exchange of scientists, researchers, technical specialists and students, capacity building training programmes, organization of workshops, seminars and conferences, information and database sharing, formulation and implementation of joint research programmes and projects, establishment of joint funding mechanisms for support of research programmes and large scale research infrastructure and facilitation of access to science and technology infrastructure among BRICS countries (Brazil);
- Holding BRICS Working Group on Geospatial Technology Application for Development (March 2016, India);
- Holding the 2nd Meeting of the BRICS SSL Working Group (November 2015, China);
- Holding the first Meeting of the BRICS Astronomy Working Group (December 2015);
- Creation of experts network from BRICS countries to support the development of compatible telemedicine systems in BRICS regions (Russia);
- Holding annual conference “Innovative materials for energy and water saving and environmental protection, new trends in the technological development” (Russia);
- Development of ICT and geospatial technology based Decision Support Systems (DSSs) for multi-hazard and climate risk management and appropriate resilient development planning for sustainable habitat
- Holding annual BRICS Young Scientists Forum (in 2016 by March), including scientific international workshops for young researchers on the priority topics, including lectures, hands-on tutorial sessions and round-table discussions.
- Holding BRICS Young Scientists Forum driven regional scientific activities, including BRICS Young Scientist Conclave (India, 2016); BRICS Young Scientist Website (2016) and scientific international workshops for young researchers on the priority topics, including lectures, hands-on tutorial sessions and round-table discussions;

- Creating a BRICS Young Scientist Website with an interactive online component to broadcast opportunities and initiative for young STI community in the BRICS Region;

- Holding topical workshops to discuss priority areas for joint collaboration with representatives of BRICS countries involving scientific community, business and other interested parties in order to establish new collaboration partnerships.

- Holding the meeting to discuss potential collaboration between BRICS countries in photonics area.

- Organizing and publishing a bibliography on history of science in BRICS countries.

2. Implementation of the BRICS R&I Initiative:

2.1. Establishment of the WG of the BRICS research infrastructures by January, 2016 co-led by Russia and South Africa until the next STI SOM and Ministerial meetings to:

- Delegate participants from each BRICS country to the established WGs
- Compile a list of major research infrastructures projects from each BRICS country
- Develop of an Operation Plan on BRICS research infrastructures including mega-science projects;
- Launch pilot projects within the BRICS framework of global research infrastructures such as NICA and others;
- Attract the resources of the New Development Bank as an additional funding mechanism of projects within the Action Plan of the development of global research infrastructures;
- Organize of a kick-off meeting – first meeting of the WG of the BRICS research infrastructures;
- Create registry centers of collective use and unique research facilities in the main areas of cooperation.

2.2. Holding the joint workshop on BRICS STI policies by mid-2016 and series of short-term training programmes on exchange of STI policies in the BRICS countries in 2016-2017 to support coordination of existing large-scale national programs of the BRICS countries.

2.3. Promoting the BRICS Framework Programme for funding multilateral joint projects for research, technology commercialization and innovation by launch of multilateral joint STI calls that includes the following:

- Meeting of the WG on the BRICS STI funding in January 2016;

• Decision of the funding parties from the BRICS countries to launch multilateral joint calls in 2016 in the mutually agreed 5 priority areas with a co-investment of resources including funds available in the respective BRICS countries. An indicative allocated budget for the 1st call is \$ 2 mln from different sources from each BRICS country. Final commitments of the call will be written in the Memorandum of Understanding.

• The Memorandum of Understanding (MoU) for organization of the BRICS multilateral joint call to be signed till the end of 2015;

• Establishment of the Joint Call Secretariat and other joint call structures, including Panel of Experts.

2.4. Activities to facilitate collaboration within the BRICS Research and Innovation Networking Platform:

• Development of a concept note (White Paper) on the BRICS Research and Innovation Networking Platform;

• Identification of relevant BRICS stakeholders and partners;

• Holding an international workshop “BRICS Research and Innovation Networking Platform” and building a Road map for its development;

• Creation of a BRICS STI Information Exchange System.