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An International Research and Educational Dialogue with BRICS Countries

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Международный научно-образовательный диалог со странами БРИКС

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The importance of BRICS countries in the global economy is well known. Maritime trade has the primary influence on the development of the world economy and largely determines both the success of development and the sovereignty of countries.

The functioning of the fleet is based on a regulatory and legal framework, including international agreements. Training of national personnel is important; therefore, in modern shipbuilding and training of pro-

fessionals the assessment of the state and prospects of maritime transport development should be comprehensive.

In terms of the capacity of the national maritime merchant fleet, the BRICS countries are non-uniform. According to the results of the UN Conference on Trade and Development, in 2023, 18.6 % of the 2.25 billion tonnes DWT of the world fleet was controlled by the PRC, including 5.2 % by companies based in Hong



Fig. 1. Comparison of sea routes from Europe to South-East Asia via the Suez Canal and sailing along the Northern Sea Route

Kong. The share of India is 1.4 %, the share of the Russian Federation is 1.0 %, and that of Brazil is 0.6 %. South Africa is not in the list. China is the only country with a maritime fleet fully diversified in terms of transporting any foreign trade cargoes and participates in the export of maritime transport services. It should be taken into account that Russia, India, and Brazil are traditional maritime countries and until 30 years ago, they had a much larger share of participation in maritime trade.

The BRICS maritime transport market is operating under sanctions and restrictions imposed by unfriendly countries. Despite the fact that such actions are mainly directed against the Russian Federation, they affect other BRICS countries as well. Overcoming the sanctions barriers is primarily in the sphere of resolving issues related to financing, international settlements, and insurance of marine vessels and shipping.

The statistics on Russia's foreign trade show that it remains at the same level in terms of volumes but changes geographically. BRICS countries account for a significant share of trade. It is obvious that under the sanctions, most cargo is transported by vessels of companies of friendly countries. But as a result of globalisation, since the mid-1990s, there have been mass mergers and acquisitions of liner companies, and an oligopoly of several large container operators from unfriendly countries has emerged. As the events of the recent years have shown, these companies are a reliable instrument of the policy of unfriendly countries and pose a certain threat to all BRICS countries.

Thus, cooperation with BRICS countries in the maritime industry should follow several interrelated

directions. It requires bringing the regulatory and legal framework in line with the current and future needs; modernization of intergovernmental agreements in the field of shipping; cooperation in the form of joint pools, services and enterprises; qualitative and quantitative development of the fleet in different segments with account of the needs of trade; digitisation of processes on the basis of technological algorithms with account of the geography of maritime trade. The solution of these tasks requires the availability of trained personnel, including both sailing specialists and those having the necessary legal, financial, and technical knowledge, well-versed in the algorithms of transport processes and maritime shipping technology.

Russia is actively reorienting its transport and logistics flows towards reliable foreign partners, including those from BRICS countries. Our flagship projects include the Northern Sea Route (NSR) and the new North-South International Transport Corridor (ITC). These two through arteries are designed to provide the shortest and most economically optimal trade routes connecting major industrial, agricultural and energy hubs with consumer markets.

The Resolution of the Government of the Russian Federation dated August 01, 2022 approved the Northern Sea Route Development Plan until 2035. The NSR infrastructure development involves the construction of fuel terminals, hub ports for linking with road and railway lines; the icebreaker fleet is being expanded, primarily by nuclear-powered vessels which are unparalleled in the world.

Other Asian countries (Japan, South Korea, the Philippines, Taiwan and ASEAN countries), as well as many

European countries, are also interested in turning the NSR into a real transport link between the Asia-Pacific region and Europe. This is related to the expected growth of cargo flows between Europe and Asia. It is assumed, for example, that by 2040 the volume of container traffic between the two continents will triple. The Northern Sea Route may become an alternative to traditional sea routes between Europe and Asia.

The North-South Transport Corridor will connect Russian ports on the northern seas and the Baltic Sea with sea terminals on the Persian Gulf and Indian Ocean coasts, and in future it will be able to ensure the annual transit of up to 30 million tonnes of cargo. Russia, together with its BRICS partners, is working on accelerated development of the North-South transcontinental corridor.

Russian President Vladimir Putin proposed to establish a permanent transport commission within the BRICS framework to deal both with the North-South project and, in a broader sense, with issues of the development of logistics and transport corridors, both interregional and global.

The North-South ITC (an alternative to the Suez Canal) provides a link: European Russia — southern Russia, southern Russia — southern Iran, and southern Iran — access to the Persian Gulf.

The State University of Maritime and Inland Fleet is the oldest transport university in Russia. In 2025, we will celebrate our 245th anniversary. The structure of the university includes 4 institutes: the Maritime Academy, the Institute of International Transport Management, the Institute of Water Transport, and the Institute of Advanced Professional Education, as well as 6 branches, most of them located in the Arctic and sub-Arctic zones of the Russian Federation. About 12 thousand cadets and students study at the University. The number of the teaching staff is more than 700 people, 66 % of them are doctors and candidates of sciences.

The issue annually faced by the University is the enrolment campaign for foreign applicants. The University actively attracts foreign students to study under its Bachelor and Master Degree programmes. About 300 students from 32 countries, including BRICS countries, are currently studying at the University. For example, the number of students from Egypt under higher professional education programmes is 33. Since 2020, 17 specialists from Egypt have undergone a competence development programme for ship crew members at the University's Institute of Advanced Professional Education.

The key priorities and areas of development of international activities at the University for the effective development of international cooperation are as follows:

- promotion of priorities and interests of Russian transport education in BRICS countries;



Fig. 2. Cadets in sailing practical training

- expansion of cooperation with leading Russian and foreign organisations, educational institutions, scientific schools, companies, foundations, and business entities;
- training of qualified personnel for enterprises and organisations of water transport and BRICS development.

The State University of Maritime and Inland Fleet uses its resources to fulfil a wide range of tasks, from training maritime personnel for work at sea to training of specialists in navigation.

The University carries out a number of scientific studies in the field of maritime and river transport. Based on the scientific competences formed over the many years, it is possible to identify the key areas for scientific and technical cooperation:

- research of the NSR marine transport system;
- development of autonomous navigation technologies;
- modelling of the process of vessel movement in confined areas using navigation simulators;
- research of the speed performance and seaworthiness of designed vessels;



Fig. 3. Trial basin of the University



Fig. 4. Research wind tunnel of the University

- assessment of the technical condition of navigation and harbour hydraulic structures;
- economic feasibility of investment projects for inland waterways infrastructure development.

BRICS countries appear to be able to identify relevant topics and determine the formats for cooperation in one or more of these areas.

Based on the experience of cooperation with India with regard to research to ensure growth of inland waterway traffic, the key areas of cooperation have been identified. In order to achieve sustainable growth of traffic, it is necessary to systematically address a set of issues related to ensuring the guaranteed dimensions of navigable channels, removal of infrastructure constraints, optimisation of the fleet composition and structure, introduction of digital technologies, use of environmentally friendly fuels, etc. Another topical issue is the development of transport and logistics schemes for cargo delivery to increase the competitiveness of water routes. The university staff has extensive experience in carrying out scientific research. In our

opinion, these topics may be of interest for colleagues from Brazil.

The University has extensive laboratory research and simulator facilities, including for laboratory research of the seaworthiness of vessels, technology for repair of machines and mechanisms, and a hydraulic engineering laboratory.

A set of measuring instrumentation for speed, manoeuvrability and sea trials of vessels along with parameter sensors for data collection, processing and analysis allows for comprehensive delivery and research full-scale trials of ships with the presentation of test results in the course of trials.

The State University of Maritime and Inland Fleet has many years of experience in cooperation with BRICS countries both in the fields of education and science, and in the cultural and humanitarian sphere.

The State University of Maritime and Inland Fleet has been cooperating with the Shanghai Maritime University since 2016. More than 20 students of the Makarov University have undergone short-term internships at the University of the People's Republic of China.

The University has been a member of the Association of Rectors of Transport Universities of Russia and China since 2019. The results of the University's participation in the Forum of Rectors of Transport Universities of Russia and China were the signing of a memorandum of understanding with Dalian Ocean University. With a view to further joint work with China, a number of agreements with multilevel transport universities of China in the field of education and research cooperation in the transport sector have been identified.

The work to establish cooperation with India is carried out through interactions with the Embassy of India in Moscow and the Consulate of India in St. Pe-



Fig. 5. Experimental vessel with a solar power source

tersburg in the cultural and humanitarian sphere: in spring 2023, the Embassy of the Republic of India in Moscow held a working meeting with representatives of the Directorate General of Shipping and the Ministry of Shipping of India on training Indian sailors to work in polar waters.

Today, the University cooperates with shipping companies of the Middle East: cadets of the University undergo practical training in sailing on vessels of Koban Shipping LLC within the framework of an international cadet programme.

The professional competence of students and graduates of the State University of Maritime and Inland Fleet allows them to successfully undergo practical training and work in research and design organisations, sea and river ports, brokerage and forwarding companies, as well as in federal government bodies

and administrative agencies of constituent entities of the Russian Federation.

We offer our foreign partners the following areas of cooperation:

- use of scientific potential for the development of Brazil's inland waterway systems, design of hydraulic facilities of the port infrastructure;
- development of cooperation with universities of BRICS countries in the field of training personnel for the maritime industry;
- organisation of sailing practical training for cadets on vessels of companies from India and the UAE;
- organization of advanced training courses for specialists from BRICS countries to work in the polar waters of the NSR;
- expansion of the geography of students from BRICS countries.

Bionotes

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