Trade and sustainable development: challenges for BRICS

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Abstract. International trade plays a significant but contradictory role in the sustainable development. It increases impact on the environment with the growing demand for natural resources, and the scale of production and transportation. At the same time, trade serves as an important tool of realization of the sustainable development/green economy strategies. It may contribute to every dimension of the sustainable development – economic, social and environmental, by increasing economic efficiency (thus, reducing resources consumption) and diversification, employment, social stability and environmental performance. Trade development may facilitate the spread of environmental goods and services, clean technologies, as well as environmental standards, subject to responsible national and international environmental policy. It may facilitate access to water, energy and other vital resources. Aid for Trade plays an important role for the developing countries to expand their trade. BRICS countries are committed to the sustainable development path, which could contribute to solving issues of poverty, health, social security, rapid economic growth and environment. They may use the potential of international trade and investment cooperation to realize this target, given that some BRICS countries are becoming global players on the environmental markets.

Key words: international trade, environment, sustainable development, green economy, environmental market, BRICS.

The Role of International Trade in Sustainable Development

International trade plays an important and increasingly growing role in the international economic development, becoming deeply intertwined with the challenges of the social and ecological issues. During the entire second half of the XXth century world exports grew almost twice the rate of the global GDP, playing a growing role in the economy and featuring as a factor of its development. The highest growth rates were observed in the countries with high export volumes and inflows of foreign direct investments (FDI), such as EC, China, Newly Industrialized Countries.

During the last years the difference in the growth rates of the international trade and GDP almost levelled out (in 2015 the numbers were practically equal), based on which experts drew the conclusion that the role of the foreign trade in the economy is on the decline. However, the trend of growing interdependence of the international trade and FDI becomes more apparent (according to UNCTAD estimates, up to 80% of the global trade is associated with the international production chains, other sources estimate this number to be at least 50%); it allows to speak about the maintained or even increased role of the

international trade in the development and restructuring of the global economy. Through the trade via global value chains (GVC) consumers and producers are linked with each other in the entire word, which has long-term ecological and social consequences. The share of world exports of goods and services in global GDP in 2015 amounted to 29.5% (1960 г. – 12%), foreign direct investment net inflows – 2.8%,[1] FDI stock – 33.6% (9,6% in 1990).[2]

An increasingly important role in the international trade is played by the trade between developing countries, or "South-South" trade, which has recently been assessed as "the most dynamic segment of global trade in the last decade".[3] The share of developing economies in other developing economies' exports rose from 41 per cent in 2005 to approximately 52 per cent in 2014,[4] and realized potential of these ties may contribute to the fulfillment of the sustainable development concept.

At the same time, international trade may have a negative impact on the environment, aggravating environmental issues. This is due to increased burden on the environment due to higher demand on the resources and expanded scale of production (which is one of the most acute problems of the sustainable development) as well as due to higher pollution.

According to the UN Report, materials extraction from 1970 to 2015 increased heavily – almost fourfold, from 22 to 84 billion of tons. Since 2000, material extraction appears to have grown at a faster rate than GDP. A third of land on Earth is now cultivated to meet human needs and wants. Globally already in 2005 humans consumed 25 per cent of the biomass produced on land in that year. An estimated 61 per cent of commercial fish populations are fully fished, and 29 per cent are overfished. Rich countries consume 10 times more of the existing resources than poor countries and twice as much as global average. Under existing trends, natural resource extraction will increase from 85 to 186 billion tons over the next years to 2050. Of the 17 Sustainable Development Goals (SDGs), 12 directly depend on the sustainable economy-wide management of a whole range of natural resources.

Population has continued to contribute to the rising material demand but not to the same extent as rising per capita income and the emergence of a new middle class in the developing countries. Material efficiency mitigated some of the growth of material use driven by increasing population and world economy between 1970 and 1990. Since 1990, there has not been much improvement in global material efficiency, which actually started to decline around 2000.[5]

Mining and the burden on the natural resources are mainly stimulated by international demand, in the last decades especially from the developing countries. In 2010, 30 billion tons of materials extracted globally were required to produce 10 billion tons of directly traded goods. With an average growth of 3.5% per year, global trade in materials has grown even faster than global materials extraction, surpassing the rate of GDP growth. In

1 Worldbank.org [Electronic data]: — Mode of access: http://data.worldbank.org/

2 UNCTAD.org [Electronic data]: — Mode of access: http://unctad.org/

3 World Bank. (2013). Global Economic Prospects: Assuring growth over the medium term. Volume 6, January 2013. Mode of access: http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1322593305595/8287139-1358278153255/GEP13AFinalFullReport_.pdf

4 World Trade Statistical Review 2016. — Electronic data. — Mode of access: www.wto.org.statistics.

5 Ekins P., Hughes N., et al. Resource Efficiency: Potential and Economic Implications. A report of the International Resource Panel. — UNEP, 2017.

1970, 2.7 billion tons of materials (11% of global materials) were traded between countries. By 2010, the amount of traded materials had risen to 10.9 billion tons, or 16% of the global materials. Trade in materials has a far greater impact than directly traded volumes may suggest, because of large upstream material requirements along the production chains, which create waste and emissions in the country that produces the traded goods. In 2010, the material requirement for trade was 2.5 times the direct trade. That means that more than one third of all materials extracted in the global economy are destined to produce goods for trade.[6]

Dependence on the global market for delivering vital commodities is increasing substantially around the world. All material categories witnessed an increase in import dependency, but the most significant rise was seen in such resources as fossil fuels and metals. In 2008, more than 100 countries imported more than half of their fuel requirements (85 countries in 1980) and 97 countries imported more than half of their metals requirements (75 countries in 1980). Fossil fuels and metals are special cases in terms of dependence: in 2008, 24 countries exported more than half of their fossil fuel extraction (20 countries in 1980) and six countries exported more than half of their metal extraction (10 countries in 1980).[7]

Due to unsustainable methods of consumption the contamination of air, water and ground is on the increase world-wide. Increased production and transportation scales mainly due to trade development have led to higher greenhouse gases emissions. Emissions from international maritime and aviation transport, for example, have increased by 88 per cent over a period of 25 years.[8]

Some types of trade, for example of hazardous materials, rare animals and plant, lead to the deterioration of the environment. Biodiversity is on the accelerated decline. The rapid loss of species we are seeing today is estimated by experts to be between 1,000 and 10,000 times higher than the natural extinction rate.[9] Excluding invasive species, 30% of global species threats are due to international trade.[10]

In this context international trade (first of all within the GVCs) under certain conditions can play a key role in the transition to sustainable development/green economy, contribute to the improvement of all their components: economic, ecological and social.

Sustainable development Agenda 2030 considers trade and investments as key and interlinked vehicles to realize sustainable development goals. The important role of trade in the implementation of sustainable development goals is also acknowledged in the second chapter of the Agenda 21, in the fifth and tenth chapters of the Johannesburg action plan,

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6 UNEP (2016). Global Material Flows and Resource Productivity. An Assessment Study of the UNEP International Resource Panel. H. Schandl, M. Fischer-Kowalski, J. West, S. Giljum, M. Dittrich, N. Eisenmenger, A. Geschke, M. Lieber, H. P. Wieland, A. Schaffartzik, F. Krausmann, S. Gierlinger, K. Hosking, M. Lenzen, H. Tanikawa, A. Miatto, and T. Fishman. Paris, United Nations Environment Programme.

7 International Trade in Resources: A Biophysical Assessment, Report of the International Resource Panel. — UNEP, 2015.

8 Green Economy and Trade – Trends, Challenges and Opportunities. — Electronic data. — UNEP, 2013. P.18. — Mode of access: http://www.unep.org/greeneconomy/GreenEconomyandTrade.

9 WWF.org [Electronic data]: — Mode of access: http://wwf.panda.org/about_our_earth/biodiversity/biodiversity/. 24.04.2017.

10 Lenzen, M., Moran, D., Kanemoto, K., Foran, B., Lobefaro, L. and Geschke, A. International trade drives biodiversity threats in developing nations. — Nature 486:109–112. 2012. doi:10.1038/nature11145.

in the Addis Ababa 2015 Action Agenda on the financial development, also in other important documents and statements.

Trade-related elements are integrated across the SDGs. Trade can contribute to the implementation of the Sustainable development goals in different areas. For example, the decreased disturbance to market mechanisms on the international agricultural market is directly tied up with target Goal 2 on ending hunger, achieving food security, improving nutrition and promoting sustainable agriculture; Goal 15.7 provides for reducing illegal trade of protected species of flora and fauna; Goal 17 acknowledges trade as a means of achieving the sustainable development through promoting a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, significantly increasing the exports of developing countries and providing duty-free and quota-free market access on a lasting basis for all least developed countries.

International trade, according to the theories (including the theory of comparative advantages), contributes to the higher production efficiency due to lower costs, including reduced specific usage of resources. It also stimulates the diversification of the economy, which in the end boosts its development, creates employment opportunities, reduces poverty and improves livelihoods subject to responsible governmental policies in this sphere. Between 2000 and 2008, GDP per capita increased from $325 to over $625 in Least-Developed Countries. Much of this can be attributed to an increase in trade and foreign investment.

Participation in the international trade and GVCs promote technology transfer, which also stimulates economic growth and has the multiplicative effect, facilitating economy and export diversification. India cut import duties from an average of 90% in 1991 to 30% in 1997, which gave Indian manufacturers access to a variety of intermediate and capital goods. Imports of intermediate goods increased by 227% over the period. Two thirds of the intermediate goods imported were products Indian producers could not buy before 1991. As a result, industrial output grew by 50% with new products accounting for 25% of the total.[11] Another example is the Paris agreement, which stimulates the mass-production of clean energy technologies, making it more affordable and leading to better usage of energy resources.Wider participation in the international exchanges stimulates the acceptance of stricter labor and environmental standards through increased competition, which helps developing countries to diversify their economies and exports, entering global markets. As example, through its Aid for Trade, the EU has helped South Asian countries like Bangladesh and Sri Lanka to benefit from the improvement of quality standards for the textiles and other exports. Over the last decade, Bangladesh has increased its exports by over 80%.[12]

Foreign trade can contribute to the provision of countries with necessary resources, for example, water, which recently becomes a scarce resource, as well allows access to water supply and water treatment technologies.

Environmental Market

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11 10 benefits of trade for developing countries. — Electronic data. — European Commission, 2012. — Mode of access: http://trade.ec.europa.eu/doclib/docs/2012/january/tradoc_148991.pdf.

12 10 benefits of trade for developing countries. — Electronic data. — European Commission, 2012. — Mode of access: http://trade.ec.europa.eu/doclib/docs/2012/january/tradoc_148991.pdf.

The opportunities to diversify the economy and to develop its green sector became possible largely due to expansion of the environmental goods and services market, which grows quicker than many other world markets. For example, in 2007–2011 the growth of the world imports of environmental goods and services substantially surpassed the increase of the total goods imports, while key environmental goods (renewable energy, waste management and treatment, water management, etc) grew even faster, first of all due to the renewable energy (solar photocells, solar panels and other).

International trade in environmental goods and services stimulates employment in these areas. For example, the U.S. industry for environmental technologies employed approximately 1.6 million people.[13]

Global trade in environmental goods is estimated at nearly $1 trillion annually, and growing fast. In 2002–2012, just the world trade in clean energy technologies tripled.[14] By 2020, according to different forecasts, it will increase to US $2–3 trillion.[15]

Besides the substantial global market of the environmental goods and services, green products and services have become part of other, traditional markets, creating supply opportunities for the developing countries. This is relevant first of all for such industries as agriculture, fisheries, forests, manufacturing, renewable energy and tourism – which are particularly promising in a transition to a green economy.

By 2015, the global market for organic food and beverages, according to estimates, grew to US$ 105 billion, from the total value of US$ 62.9 billion in 2011. Aquaculture production that has been certified against various types of sustainability standards is estimated to cover five per cent of total production. The total value of the demand for seafood that has been farmed according to certified sustainability standards, according to estimates, increased from US$ 300 million in 2008 to US$ 1.25 billion by 2015.

In the forest industry due to higher demand from the importers the "green" sector of the market is on the increase. As of early 2013, the total area of certified forest worldwide stands at close to 400 million hectares, amounting to approximately ten per cent of the global forest resources. Sales of certified products are worth over US$ 20 billion per annum.[16]

In the manufacturing, there is also the trend of complying with the sustainability standards for products and processes, many suppliers are doing that in order to secure their positions within international supply chains. This is illustrated, for example, by the 1,500 per cent increase in global ISO 14001 certifications on environmental management awarded between 1999 and 2009.

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13 2016 Top Markets Report. Environmental Technologies. U.S. Department of Commerce. International Trade Administration. — Mode of access: www.trade.gov/industry.

14 Office of the United States Trade Representative, Environmental Goods Agreement. — Electronic data. — Mode of access: https://ustr.gov/trade-agreements/other-initiatives/environmental-goods-agreement

15 Incl. Trade in Environmental Goods and Services: Opportunities and Challenges. Geneva: ITC, 2014. V. (Technical Paper). Doc. No. DMD-14-255.E.; Environmental Goods Agreement (EGA). The Technology -Trade Nexus: A Key Enabling Force for Achieving the SDGs. UNEP Workshop. 16 September 2016. http://staging.unep.org/energy/Portals/50177/documents/Session%203%20-%20Claudia%20Weiss.pdf

16 Green Economy and Trade – Trends, Challenges and Opportunities. UNEP, 2013. P. 20. http://www.unep.org/greeneconomy/GreenEconomyandTrade

Currently the biggest opportunities for the exports are on the alternative energy supply market, firs of all the renewables one. Since 1990, annual global growth in solar PV, wind and biofuel supply capacity has averaged 42, 25 and 15 per cent respectively, compared to the rate of only 1.3 per cent for oil. By 2020 the global market in low-carbon and energy efficient technologies, which include renewable energy supply products, is projected to nearly triple to US$ 2.2 trillion. Developing countries have significantly increased their exports of renewable energy equipment such as solar panels, wind turbines and solar water heaters.

Ecological tourism is developing at a high rate. So far, its market share of the overall tourism industry in developing countries has increased from 30 per cent in 1980 to 47 per cent in 2011. It is expected to reach 57 per cent by 2030.[17]

Until now the environmental sector has not taken the dominant position on the traditional markets, however, there is a clear trend of its dynamic growth.

Aid to developing countries, and particularly least developed countries, to expand their opportunities to use trade ties to make their economies more "green" is provided, i.e. within the framework of WTO Initiative Aid for trade, which provides for the mobilization of resources to achieve those goals.

It should be noted, that international trade could contribute to achieving sustainable development goals only subject to certain conditions, including responsible national policies (i.e. setting specific targets of governmental policies, stricter environmental rules, stimulating demand for environmental products, environmental education, introducing environmental standards into GVCs and regional trade agreements, etc).

In the last years within the framework of some international organizations, negotiations are carried out on the liberalization of the environmental goods and services trade. In recent years, groups of WTO members have engaged in negotiations aimed at reducing or eliminating import tariffs for lists of environmental goods, building on the Asia-Pacific Economic Cooperation (APEC) List of Environmental Goods and exploring a broad range of additional goods. 21 APEC economies pledged that, by the end of 2015, applied tariffs for environmental goods would be reduced to 5 percent or less (not all countries fulfilled their obligations, which were of a non-binding character). Those measures allowed reducing prices, for example, on solar panels, wind turbines and equipment for the air quality control.[18]

An important impetus for the environmental change of the economy and trade could become the expansion of the areas of the Regional trade agreements (RTA) and other international associations, in particular BRICS. Some RTA – North American Free Trade Agreement (NAFTA), Mercosur, the planned Trans-Pacific Partnership Agreement (TPP) contain provisions aimed at the fulfillment of sustainable development targets, in particular, covering conflicts between the trade and sustainable development, on measures to monitor the international or national environmental and labor legislation, environmental protection and social development goals obligations.

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17 Green Economy and Trade – Trends, Challenges and Opportunities. UNEP, 2013. Pp. 20-22. http://www.unep.org/greeneconomy/GreenEconomyandTrade

18 Vossenaar, Rene. 2016. Reducing Import Tariffs for Environmental Goods: The APEC Experience. Geneva: International Centre for Trade and Sustainable Development (ICTSD).

BRICS Countries' Intra Trade and Sustainable Development

BRICS countries may use trade and investment ties with other countries as well as intra-bloc economic relations in order to reorient their economies towards sustainable development/green economy path. Existing model in most BRICS countries affects their environment, people's health and well-being unfavorably. As example, over the period 1970-2010, material productivity[19] growth in the BRICS countries increased at a rate of 1.2 per cent per/ year on average, which is substantially lower compared to that in G7 countries, where it increased steadily at an average rate of 1.9 per cent per year.[20]

Stricter requirements to imported products and to the suppliers within GVCs will require BRICS countries to introduce more stringent international standards. The forest industry is an example of the pressure from the foreign customers, where importers impose ISO requirements to "sustainability" of the forest products while there are not enough incentives to make this industry more environmentally sound in individual countries. However, the acceptance of stricter rules can stimulate the environmental change of the production and increase the competitiveness of the products, although at the initial stage acceptance of such standards can lead to the decrease of the competitive advantages, for example in Russia for some types of products from the oil and gas industries, chemical, forest, wood processing industries. Some of the measures will not require substantial investments. For example, the transfer to energy saving technologies, according to some estimates (including those by the World Bank), will not lead to substantial costs for the Russian companies: at the same time, this will require changes in the management process.

Expansion of BRICS' countries participation in the international trade and GVCs can contribute to the economic growth and exports diversification due to the inflow of new environmentally sound technologies.

The sustainable development goals in all countries could be realized by the participation in the world exports of environmental products and services.

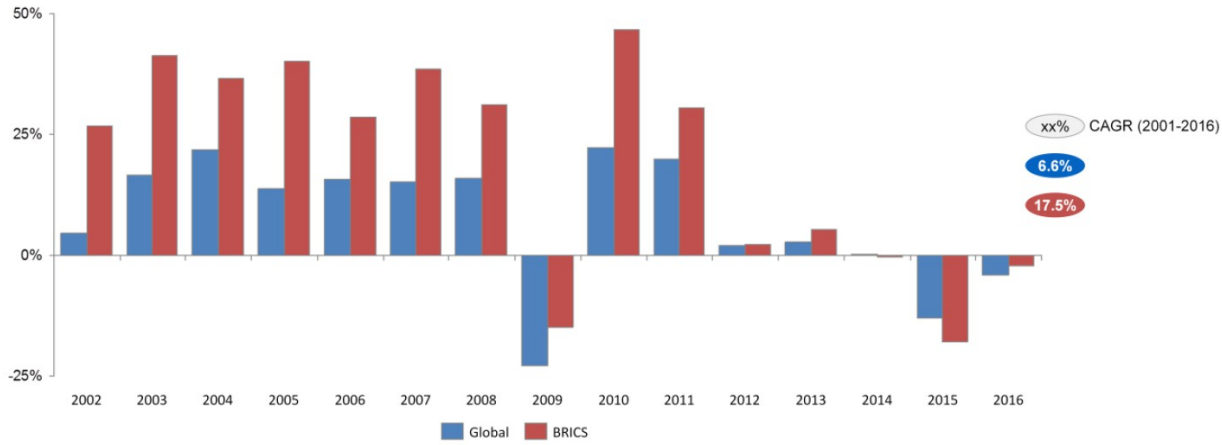
In 2000-s, intra-BRICS trade was growing at high rates (Graph 1).

Graph 1. External trade growth rates (2002-2016), %

19 Material productivity is measured as the amount of economic output per weight of domestic material consumption.

20 Ekins P., Hughes N., et al. Resource Efficiency: Potential and Economic Implications. A report of the International Resource Panel. — UNEP, 2017. P. 58.

External trade growth rates (2002-2016), %



Source: processed on the basis of data from COMTRADE database.

In 2001-2016, the intra BRICS trade grew substantially. Despite the difficulties of the recent years, the growth rates of the mutual trade did not fall below the world average. The only decrease was noted in 2009, during the financial crisis, and also starting 2014 until now, during the period when many countries were experiencing different problems.

The growth of the intra BRICS trade provides for the opportunities to expand the supply of environmental goods. Currently the intra trade between BRICS countries in such products is rather limited and includes only few positions from APEC list of environmental goods (using 6-digit Harmonised Commodity Description and Coding Systems (HS) Code[21]) - photosensitive semiconductor devices (854140), wind powered electric generating sets (850231), and other optical devices, appliances and instruments (901380), i.e. is mostly limited by the supplies of goods for the renewable energy sources. However, last years it grew rapidly. As example, the overall value of intra trade within BRICS in photosensitive semiconductor devices in 2016 was 17.3 times greater than that in 2010.[22]

Particular environmental sectors (such as the photovoltaic industry) frequently outsource parts of the production process to other countries, thereby creating regional or global value chains. Some developing countries have already successfully linked into these environmental value chains,[23] which play a special role in the growth of foreign trade and economy by stimulating productivity due to higher specialization and savings on the production scale, foreign investments inflows, which bring in new technologies. Those sectors have good potential and require special attention from the BRICS countries.

The opportunities of the expansion of mutual exports had been stated in declarations and other documents accepted at BRICS summits. For example, in the first complex report on the opportunities of strengthening economic ties between BRICS countries - "The BRICS Report" raised by the science community in 2012, "best practices" were pointed out, i.e. areas, where the countries have competitive advantages, that have made significant differences to these economies, and contributed to their high growth rates. Many of these

21 The Harmonized System is an international nomenclature for the classification of products.

22 Calculated on the basis of data from COMTRADE database.

23 Trade in Environmental Goods and Services: Opportunities and Challenges. Geneva: ITC, 2014. V. (Technical Paper). Doc. No. DMD-14-255.E. P. 20.

practices have relevance within the BRICS bloc for enhancing cooperation and creating synergies. In particular, for Russia as such were pin-pointed high-technology sectors, both 'traditional', where it already possesses some competitive edge (in nuclear and space technology and high-level programming), and 'new' (in nano- and bio-technology); for Brasil – agricultural research (which has transformed the country into a major exporter), the use of bio-fuel for road transport, and the high-technology aircraft; for India – information technology sector; for China - FDI attraction and utilization, and infrastructure financing, among others; for South Africa – raising employment in the industries of innovation manufacturing and reducing inequality, support of direct investments into the innovation sectors of foreign countries in order to transfer technologies .[24]

Practical use of any of those practices can contribute to the development of the mutual trade and at the same time to the achievement of the goals of sustainable development. Amongst the promising trade areas can be noticed, for example, the markets of the environmental agriculture, fish, forest industries as well as ecological tourism, which also can be of interest for the Russian suppliers. Re-orientation of Russian trade ties towards the Asian markets creates opportunities for the supplies of environmental goods and services, having in mind the growing demand for environmental goods in those countries.

In this context, a special attention should be paid in the national and international policies of the BRICS countries towards the achievement of environmental security, counteracting negative environment protection and social consequences of trade and simulating the positive ones. Such measures could, in particular, include advanced development of environmental goods and services certification, liberalization of environmental goods trade, stimulation of environmental content of GVCs processes, which will allow increasing the competitiveness of BRICS countries products, including Russian ones, on the global markets.

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