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SCIENCE DIPLOMACY AS ASSESSED BY HEADS OF REPRESENTATIVE OFFICES OF THE RUSSIAN FEDERATION IN SWITZERLAND

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Abstract. *Introduction.* The article analyses the relevant content of the "science diplomacy" concept and describes the key trends of its implementation, taking into account the points of view of current Russian diplomats on the problem. Science diplomacy is becoming a relevant area of diplomatic activity under the conditions of modern globalization processes. As an important area of the activity of the state, it implies not only the establishment of effective science cooperation with other countries but also optimal use of its own scientific potential with a view to upholding the national interests and improving the image of the state. *Methods and materials*. The authors have reviewed a number of expert points of view from modern researchers. Based on the use of general and special scientific methods, some important conclusions have been drawn concerning the specifics of the development and relevant content of science diplomacy. By comparing and systematising the empirical data obtained from a number of sources, some scientifically significant directions of state activity in this area have been determined. *Analysis.* By summarising cases from diplomatic practice, the authors seek to determine the role of science diplomacy in the implementation of the current foreign policy tasks of the Russian Federation. According to the results of interviews with S.V. Garmonin, Ambassador Extraordinary and Plenipotentiary of the Russian Federation in the Swiss Confederation, and A.B. Dorovskikh, Consul General of Russia in Geneva, the basic principles of the practical filling of the "science diplomacy" concept in the activities of the Ministry of Foreign Affairs are formulated. *Results.* The authors come to the conclusion about the consistent improvement of the forms and methods of implementing the scientific direction of Russian diplomacy. At the same time, against the background of a deterioration of the international environment and the politicisation of many areas of international cooperation by the countries of the collective West, there exists the task of further improving the effectiveness of the activities of Russian diplomatic structures to defend the scientific and technological sovereignty of the country. *Authors' contribution*. E.A. Antyukhova wrote the sections "Introduction" and "Results," participated together with V.D. Olshanskaya in writing the section "Materials and Methods," and prepared the final scientific edition of the text of the work. I.V. Kuznetsov developed the concept of the article and the questionnaire for the interview. V.D. Olshanskaya and E.A. Antyukhova wrote the sections "Analysis" and "Materials and Methods" and also acted as an interviewer.

Key words: science diplomacy, diplomacy for science, science in diplomacy, diplomacy in science, "soft power", public diplomacy, second track.

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НАУЧНАЯ ДИПЛОМАТИЯ В ОЦЕНКЕ ГЛАВ ПРЕДСТАВИТЕЛЬСТВ РОССИЙСКОЙ ФЕДЕРАЦИИ В ШВЕЙЦАРИИ

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Аннотация. *Введение.* В статье анализируется актуальное содержание понятия «научная дипломатия» и характеризуются основные направления ее реализации с учетом точек зрения по проблеме действующих российских дипломатов. В условиях развития глобализационных процессов научная дипломатия становится актуальным направлением дипломатической деятельности. В качестве важного компонента политики государства она предполагает не только налаживание эффективного научного сотрудничества с другими странами, но и оптимальное использование собственного научного потенциала в целях обеспечения национальных интересов и повышения имиджа государства. *Методы и материалы.* Авторами были рассмотрены экспертные точки зрения ряда современных исследователей. На основе использования общенаучных и специальных научных методов были сделаны важные выводы относительно специфики развития и актуального содержания научной дипломатии. С помощью сопоставления и систематизации полученных из источников эмпирических данных были определены значимые с научной точки зрения направления деятельности государства в данной сфере. *Анализ.* Путем обобщения конкретных примеров из дипломатической практики авторы пытаются определить роль научной дипломатии в реализации внешнеполитических задач Российской Федерации. По результатам интервью, взятых у Чрезвычайного и Полномочного посла Российской Федерации в Швейцарской Конфедерации С.В. Гармонина и Генерального консула России в Женеве А.Б. Доровских, сформулированы принципы практического наполнения понятия «научная дипломатия» в деятельности МИД. *Результаты.* Авторы приходят к выводу о последовательном совершенствовании форм и методов реализации научного направления российской дипломатии. Вместе с тем на фоне осложнения международной обстановки и политизации странами коллективного Запада многих сфер международного сотрудничества констатируется задача дальнейшего повышения эффективности деятельности российских дипломатических структур по отстаиванию научно-технологического суверенитета страны. *Вклад авторов.* Е.А. Антюхова написала разделы «Введение» и «Результаты», участвовала совместно с В.Д. Ольшанской в написании раздела «Материалы и методы», подготовила итоговую научную редакцию всего текста работы. И.В. Кузнецов разработал концепцию статьи и опросник для интервью. В.Д. Ольшанская написала раздел «Анализ» и совместно с Е. А. Антюховой – раздел «Материалы и методы», а также провела интервью.

Ключевые слова: научная дипломатия, дипломатия для науки, наука в дипломатии, дипломатия в науке, «мягкая сила», публичная дипломатия, второй трек.

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Introduction. The complex processes of transformation of the modern international architecture have heightened scientific interest in the theoretical and methodological aspects of diplomatic activity. At the same time, one of the basic determining trends in the development of the modern international system is the increasing role of non-state actors as well as non-state channels of international interaction, which considerably determine the degree of effectiveness of the implementation of the domestic and foreign policies of the state. This

trend has a direct impact on the evolution of the institution of diplomacy, contributing to the emergence and development in recent decades, along with the traditional diplomatic mechanisms, of the so-called "Track Two Diplomacy".

Science diplomacy, as a tool closely related to the methods of the so-called "Track Two," one of the components of which is the "diplomacy of the expert community," provides an opportunity to develop a dialogue with foreign partners even in cases of significant disagreements on political issues.

The "Track Two" methods imply the use of a certain set of practices for political purposes that go beyond the informal interaction of state structures as well as the contacts of non-state actors. Despite the fact that the relations between unofficial actors are not able to fully replace the official diplomatic relations, they are able to facilitate resolving some controversial and conflict situations in state-to-state relations, as well as the realisation of the national interests of the state in the foreign arena [24, p. 153].

The interrelation between the methods of diplomacy and science in addressing issues of interest to a number of countries or the entire world community has become a subject of active study relatively recently, but science diplomacy has already become authoritative as a separate area of diplomatic practice aimed at the realisation of state goals within the framework of promoting global scientific and technological progress.

More and more often, the issues of concluding new international agreements are solved with the involvement of expert groups, and intercountry and global scientific cooperation, in turn, is largely regulated with the involvement of the diplomatic departments of the countries affected [1, p. 105].

Despite the fact that elements of science diplomacy in international relations first appeared at the turn of the 19th and 20th centuries, the formation of its concept is largely connected to the development of the "Track Two"[1] [4] diplomacy phenomenon against the background of globalisation processes of the late 20th century. Its main task is to build a trusted background of communication and create new dialogue formats that act as additional tools to increase the efficiency of the negotiation process [38].

The emergence of new channels of government-to-government cooperation, primarily in the fields of culture and scientific research, contributes to the formation of a parallel to the traditional diplomacy mechanism for resolving controversial issues and conflict situations in government-to-government relations [11, p. 665].

Science diplomacy, which was previously often regarded as one of the components of public diplomacy or the so-called "Track Two," has finally grown into a separate field in the early 21st century due to its scale and diversity and is one of the important phenomena characterising the current stage of international interaction.

At the same time, in the era of global transformations and digital transition, the primary task of science diplomacy is to distinguish scientific trends and their impact on the lives of the international community, as well as to work out in diplomatic ways collective responses to global challenges facing the entire planet.

The active development of science diplomacy is closely associated with the emergence of a sustainable system of scientific relations at the international level, due to which it has recently become a relatively independent direction of the foreign policy activities of modern state and non-state actors.

Science diplomacy found its conceptual and institutional design as a relatively independent direction of state policy only in the 2000s and 2010s. Thus, within the EU in 2008, the European Strategy for Cooperation in Science and Technology was approved, and the European Strategic Forum for International Scientific and Technological Cooperation began to function [25]. In 2017, the government of the People's Republic of China, within the framework of the project "One Belt and One Road," initiated a special programme involving the development of international cooperation by the Chinese state in the field of innovation cooperation [23, p. 113].

In the Russian Federation, the conceptual definition of science diplomacy as one of the priority directions of state activity in the foreign arena was first formulated in the provisions of the Strategy for International Scientific and Technical Cooperation, approved by the Decree of the President of Russia on December 1, 2016 [32].

Nowadays, in Russian science, the problem of the role and significance of science diplomacy in the modern system of international relations is

at the initial stage of its comprehension. The scientific sphere is one of the priority areas of development of the globalisation trend, which is connected with the universal character of the basic values underlying scientific activities: rationality, objectivity, and universality. The interaction between science and international politics is characterised by a certain duality.

Scientific activity, on the one hand, should be independent from the influences of the political situation. At the same time, in modern conditions, scientific potential acts as one of the key elements of the "soft power" toolkit, with the help of which the state is able to more effectively realise its goals in the foreign arena. The universal nature of the problems solved within the framework of the scientific sphere of activity creates a favourable basis for building new formats of interaction between both state and non-state actors, contributing to the optimal establishment of political dialogue. In the context of the new polycentric architecture of the international order, science diplomacy performs an important function in harmonising and bringing together the interests of international political and scientific institutions.

In the current context of growing international tension, geopolitical changes and the politicisation of traditionally neutral aspects of international cooperation, the fact that the state possesses an effectively constructed model of scientific diplomacy that allows it to respond flexibly to both technical and political challenges is becoming more and more relevant [2, p. 97]. The importance of science diplomacy for the Russian Federation is enshrined in its national development strategy [35], which assumes the country's entry into the top 10 leading states in scientific development by 2030.

Despite the growing importance of science diplomacy in the system of modern international relations, domestic studies now lack a common understanding of its content. Within the concept of "soft power," more and more attention is paid to the analysis of the role of scientific and technological potential in the toolkit of the state's foreign policy influence [8].

Methods and materials. The formulation of the basic principles of science diplomacy began after World War II and was associated with the creation of a number of interregional and global initiatives designed to ensure that scientists worked together for the benefit of progress. However, the theoretical understanding of the basic tools of science diplomacy came much later.

The conceptual report "New Horizons of Science Diplomacy" [6], made in 2010 by the British Royal Society together with the American Association for the Advancement of Science, presented the main "dimensions" of this area of the diplomatic activity: "science for diplomacy," understood as an apolitical in its nature scientific cooperation, which is an instrument for improving bilateral and multilateral relations; "science in diplomacy," which involves the use of scientific expertise in solving foreign policy issues; and "diplomacy for science," which provides the support of representatives of the scientific community and their initiatives with diplomatic tools [20, p. 199].

The London Report became an important basis for further study of various aspects of science diplomacy and its role in modern world politics. However, its definitions reflect the complex nature and certain eclecticism of this concept.

One of the most common definitions of science diplomacy is its understanding as a set of practices that emerge at the intersection of science, technology and foreign policy.

This definition was given in February 2019 in the Madrid Declaration on Science Diplomacy, which is a basic document related to the interpretation of the content of this concept in modern conditions [31]. It formulated a general vision of the role of science diplomacy in solving modern global problems as well as made an attempt to determine promising areas for its development within the framework of the transformational processes of the international system. The provisions of the Madrid Declaration imply the approval and dissemination of certain basic principles for the development of scientific cooperation, based on the recognition of science and technology as the most important aspects of international relations and the foreign policy of modern states. At the current stage, science diplomacy goes beyond exclusively scientific cooperation and is focused to a large extent on solving diplomatic problems. It is associated with various forms of activity at the intersection of the scientific and political spheres of society.

At the turn of the 20th and 21st centuries, scientific works began to pay growing attention

to the study of various aspects of the impact of science on the development of international diplomacy, as well as the role of scientific programmes as tools of the foreign policy influence of the state. The role of the scientific factor was given a prominent place in the studies devoted to analysing the phenomenon of "soft power" in the foreign policy of modern states.

According to one of the points of view present in the scientific literature, it also seems possible to designate science diplomacy as an independent direction of modern diplomatic activity, the goals of which correspond to the foreign policy goals of the state [12].

German researchers T. Flink and U. Schreiter attempted a comprehensive analysis of the role and place of science diplomacy in the system of realisation of the foreign policy goals of the state and also identified the key goals of state policy in this sphere. From their perspective, the factor of influence of scientific achievements on mass public opinion is of particular importance and can be effectively used in the implementation of the strategy of "soft power" [11, p. 675].

The Belgian researcher L. Van Langenhofe [21, p. 9] presented his view on the tools of science diplomacy, dividing its methods into strategic (programme documents), supportive and operational (distribution of resources and access to infrastructure, advisory councils, joint funding of projects).

The works of P.-B. Ruffini [23], J. Copeland [9], and L.S. Davis [5] are of particular interest within the framework of foreign studies. They attempt to come up with a detailed analysis of the role of science diplomacy as one of the topical areas of modern international relations, within which scientific and political activities are closely interlinked. A special place is given to the consideration of the evolution of the forms of interaction between diplomacy and science in the history of international relations.

The key aspects analysed by foreign authors are the problems of increasing the effectiveness of mechanisms of cooperation between scientific and diplomatic institutions, as well as the possibilities of using the scientific sphere of international cooperation in order to implement the objectives of state policy in the foreign arena. The role and place of science diplomacy in the system of "soft power" mechanisms, as well as the correlation between the categories of "science diplomacy" and "culture diplomacy," is a separate discussion issue relevant within the framework of modern scientific research.

The research of the French scientist and diplomat P.B. Ruffini, "Science and diplomacy: a new dimension in international relations," points at the variability of the existing approaches to determining the place of science diplomacy in the system of foreign policy tools of the state. Analysing the phenomenon of science diplomacy, the author expresses his view about its role as a relatively independent direction of international interaction [23, p. 15].

The Canadian researcher D. Copeland, pointing out the insufficiency of traditional diplomacy in the conditions of the development of the modern international system, characterises science diplomacy as an important and promising direction of "Track Two" diplomacy, contributing to the implementation of the potential of "soft power" [9, p. 4].

The monograph "Science Diplomacy: New Day or False Dawn?" edited by L. Davis and R. Patman underlines the important role of science diplomacy as a means of confronting new threats and challenges that humanity faced in the early 21st century, including the threat of international terrorism. At the same time, the work contains a widespread research point of view on the need to improve the mechanisms of science diplomacy as a promising means for the development of bilateral and multilateral relations among international actors [5, p. 12].

In the Russian Federation, research in the field of science diplomacy is closely associated with the urgent problems of various aspects of "soft power" and its relay channels in the field of foreign policy.

The most complete definition of the notion of "science diplomacy" is given in the Concept of International Scientific and Technical Development, adopted in 2019. It is characterised as "a special form of scientific and technical cooperation, which refers to public diplomacy and is a system of interaction between scientists, scientific teams and organizations, as well as the activities of the authorities related to it" [18]. At the same time, modern experts note the need to clearly distinguish between the content of public and science diplomacy.

As the Russian researcher I.N. Vasilyeva notes, public diplomacy "...is primarily aimed at forming public opinion with a certain audience." In this respect, "the sphere of science diplomacy goes beyond public diplomacy, because public diplomacy uses such a common tool as mass media" [36, p. 72].

The main state bodies responsible for the implementation of Russian science diplomacy are the Ministry of Foreign Affairs (represented by the Department for New Challenges and Threats supervising the issues of scientific cooperation), Rossotrudnichestvo, and the Ministry of Science and Higher Education [19, p. 20].

The key goal of the agencies is formulated in the Strategy for Scientific and Technological Development of Russia [32, p. 20] in the following way: "protecting the identity of the Russian sphere of scientific research in the context of internationalisation of scientific research and increasing the efficiency of the scientific process through mutually beneficial international profile interaction" (Clause 29, Subparagraph "e"; Clause 35, Subparagraph "d").

The Federal Agency for the Commonwealth of Independent States, Compatriots Living Abroad and International Humanitarian Cooperation (Rossotrudnichestvo) acts as the key state structure in the sphere of ensuring international humanitarian cooperation of the Russian Federation and the implementation of the main directions of the state policy of international humanitarian relations. One of the priority areas of the activities of this federal agency is the popularisation of the achievements of Russian science. The report based on the results of Rossotrudnichestvo's activities in 2022 notes that more than 300 events of various formats, the geography of which covered 82 countries in different regions of the world, were held with its participation [7].

In the research literature, there exists a point of view about the possible classification of science diplomacy tools according to their goals. Within its framework, the following stands out: "science for foreign policy," which includes directly scientific goals on a global scale; science as a strategic driver of the country's attractiveness, which presupposes increasing the attractiveness of the prospects for scientific cooperation of the state; and the legal framework of international scientific activities, which includes treaties, cooperation agreements and other international legal acts regulating international scientific activities [41].

From the perspective of the nature of its content, science diplomacy differs from scientific cooperation, which has a predominantly commercial content and is largely independent of state actors. At its core, science diplomacy combines, on the one hand, the interests of states aimed at achieving their foreign policy goals and, on the other hand, the needs of representatives of the scientific community seeking to expand cooperation within their professional sphere. Within the framework of the activities of state institutions interacting with institutions in the fields of education, science, diplomacy and economics, science diplomacy is primarily an instrument for the realisation of national interests in the foreign arena [39, p. 61].

Taking into account mainly the practical nature of science diplomacy, the team of authors conducted interviews with the heads of the Russian diplomatic missions in Switzerland: the Extraordinary and Plenipotentiary Ambassador S.V. Garmonin and the Russian Consul General in Geneva, A.B. Dorovskikh. The consultations conducted made it possible to create an idea of the main actors, tools and strategies of Russian diplomacy, as well as its similarities with and differences from the Swiss approach. For convenience, the materials obtained from the interviews were divided into thematic blocks.

Analysis. The analysis of the content and main directions of science diplomacy is based on the predominant application of the empirical approach, which implies the description and generalisation of the aspects that determine its difference from other forms of international scientific and scientific-technical interaction.

According to S.V. Garmonin, during any discussion on the formation and prospects for the development of science diplomacy, it is necessary to proceed from the fact that the vast majority of global challenges of our time inevitably have a scientific aspect; they are characterised by interdisciplinarity and transboundariness. It is obvious to a diplomat that science is closely connected with modern international relations. Thus, science diplomacy emerged from the need to solve scientific problems through diplomatic

methods and the recognition of the impact of scientific aspects on political trends.

Today, the fight against global warming, issues of international supply chains, the problem of energy security and many others can be attributed to the problems that both diplomats and representatives of the scientific community have to address.

According to the Russian Consul General in Geneva, A.B. Dorovskikh, the main driver of scientific diplomacy as a trend is the processes of globalisation, which entailed not only the intensification of traditional international relations and the creation of new ones but also the emergence of challenges of a radically new character, including issues of ensuring strategic security, economic stability, climate change and anthropogenic impact on the environment.

The factors mentioned above have led to the strengthening of the role of science in the international policy of states. Thus, according to the diplomat, science diplomacy is any contact between the interests of science and diplomacy when it is in the interests of the state, for example, promoting international technical cooperation, which is reflected in the so-called "megascience" projects, which are expensive scientific and research complexes on an international scale.

If there exist scientific ties conditioned by objective need or general scientific interest, it may be necessary to improve diplomatic interaction between states to address issues of an applied nature. In addition, scientific expertise often forms the documentary basis of many international negotiations.

A.B. Dorovskikh proposes to initially divide the trend of "diplomacy for science" into two main levels: "large," including large-scale government programmes developed by the government to promote domestic science, attract international specialists and expand scientific ties, and a more "applied" level aimed at fulfilling the programmes of scientific policy laid down and financed by the government, as well as ensuring the uninterrupted work of representatives of the domestic scientific community abroad.

The implementation of "diplomacy for science" implies the use of the diplomatic mechanism of the state in the interests of increasing the effectiveness of international scientific and scientific-technical cooperation, aimed at joint resolutions in respect of the global threats and challenges facing modern society, as well as the implementation of scientific projects that are considered to be costly from the point of view of a single state. In order to solve these problems, various formats of diplomatic interaction are used under present-day conditions, the ultimate goal of which is the signing of intergovernmental agreements on joint implementation of scientific projects and promotion of scientific research in a certain area.

An important legal basis for the practical implementation of the direction of "diplomacy for science" in the context of the development of modern Russian-Swiss relations was the intergovernmental agreement on scientific and technical cooperation concluded in December 2012, which was the result of the active efforts of the representatives of the Russian diplomatic corps in Switzerland.

Article 3 of the document defines a list of specific directions of bilateral cooperation in the scientific field, including "the implementation of joint research and technological projects and exchange of devices and research materials; exchange of scientists and specialists, including young researchers, in order to implement scientific and technical programmes, projects and other activities related to the development of scientific and technical cooperation; organization and holding of seminars, symposia, conferences, exhibitions and other meetings of a scientific nature; exchange of scientific and technical information and promotion of creation of scientific and/or innovative infrastructure and information networks to support them" [29].

The "diplomacy for science" direction provides for a set of efforts aimed at developing interstate interaction in the scientific field. One of the typical examples of this kind of activity is the implementation of the international project for the construction of the Large Hadron Collider by the European Organization for Nuclear Research (CERN).

With regard to Russian diplomatic practice, as an important result of the implementation of the "diplomacy for science" direction, one can note the agreement on strengthening the international Arctic scientific cooperation aimed at developing the coordination of scientific activities in the study of the Arctic region concluded in 2017 [20].

Facilitating the implementation of the main tasks within the framework of the direction "diplomacy for science" implies the implementation by the foreign policy department in coordination and with the assistance of other relevant structures of a set of measures aimed at promoting the active participation of domestic scientists in the realisation of international scientific projects, as well as the integration of domestic science into the emerging global scientific space.

Among the key objectives of Russia's scientific and technical development, A.B. Dorovskikh singles out the task of increasing the contribution of domestic science to determining the global scientific agenda and its implementation. It is assumed that this area of activity should be implemented mainly through the participation of the Russian Federation in major international science clusters or "megascience" projects, as well as the promotion of such initiatives within the country, one of the most vivid examples of which is the functioning of the federal territory "Sirius".

The development of ways to achieve these goals is carried out at the inter-ministerial level and is further transferred to the intergovernmental level. Thanks to this process, despite unfavourable political conditions, Russia makes a significant intellectual and financial contribution to the implementation of international scientific programmes within the framework of the European Organization for Nuclear Research (CERN) [37, p. 515], the Facility for Antiproton and Ion Research (FAIR), the International Thermonuclear Experimental Reactor (ITER) [3], etc.

These examples show that important "applied" tasks that should be implemented within the framework of the track "diplomacy in science" can include the work on lobbying and the legal consent of the international community to build a large-scale and complex scientific infrastructure on the territory of a single state, which will allow it to demonstrate the scientific potential and attractiveness of the host country, thereby creating an inflow of foreign specialists and investments in the sphere of scientific developments.

The work on organising a large-scale exhibition, "Expo 2030," the application for which Russia was forced to disclaim in the face of unprecedented pressure from a number of Western states, which, in its turn, can be considered a sad case of the influence of politics on science and sabotage of potential achievements, could serve as an example of such an important project.

Analysing the notion of "diplomacy of science," S.V. Garmonin notes that this trend can be called the most practice-oriented due to its close connection with the daily activities of a foreign institution. The main tasks facing the employees responsible for the "scientific" abstract [37] are making it possible to conduct uninterrupted scientific exchange, expanding two- and multilateral contacts, eliminating obstacles of a bureaucratic, institutional nature. This explains why in most embassies, senior diplomats, who serve as guides between Russian scientists and their foreign colleagues, deal with scientific and technical dossiers.

Referring to the practice of the Embassy in Bern, the ambassador gives the example of repeated contacts with leading Swiss universities seeking to establish relations with Russian partners. Nevertheless, according to S.V. Garmonin, science more and more often appears to be a hostage of politics; a vivid example is the problem of interrupted cooperation with Russian scientists, in particular, on the scientific development of the Arctic [27]. Some leading Swiss specialists, as the diplomat reports, have already announced the need to bring the issue of "unblocking" cooperation to the political level.

Against the background of the COVID-19 pandemic, the Russian ambassador draws attention to the newly-emerging term "vaccine diplomacy," which reflects the complexity of the content of science diplomacy.

A vivid example of "science for diplomacy" was Russia's most rapid creation of a highly functional vaccine, which became a significant factor in enhancing the country's international reputation and an important element of its "soft power".

On the other hand, the creation and distribution of Russian vaccines illustrates the principle of "diplomacy for science" as well. The Ministry of Foreign Affairs actively provided comprehensive assistance and support in organising contacts with foreign institutions and supervisory authorities, obtaining permits for the use of Russian drugs abroad, solving complex issues of transportation, disseminating objective information about the vaccine, and signing

contracts for supplying and selling it abroad. In this respect, the desire of Western partners, which is contrary to their own statements, to turn the vaccine into a political tool by artificially delaying and, in some cases, openly sabotaging the process of registering Sputnik abroad is disappointing.

With regard to Switzerland's experience in the field of science diplomacy, it should be noted that the real challenge for Swiss diplomacy was the downgrading of the status of the Confederation to an unassociated "third country" within the framework of the scientific programme "Horizon 2020" against the background of the failed negotiations on the issues of the Framework Agreement with the European Union [28]. So, due to a purely political issue, Swiss scientists, young researchers and students lost the opportunity to apply for support for their projects at the EU level and to exchange information and experience with colleagues. The search for ways to restore the participation of the Swiss side in the pan-European scientific exchange is a vivid example of the action of "diplomacy for science".

The organizational role of diplomacy in promoting and formalizing international scientific initiatives should be called an important component, as noted by S.V. Garmonin [13, p. 122]. A good example of the participation of European diplomacy in ensuring inter-country scientific cooperation is the long history of the creation of the European Organization for Nuclear Research. The opening and successful functioning of the centre required long negotiations on the development of the system of functioning, rules of financing and other organisational aspects of the activities of the international centre.

Speaking of "science in diplomacy," we must not forget that diplomacy is most often defined as art, a dynamically developing industry with flexible approaches and rules. The use of scientific tools in diplomacy serves two main goals: it helps to streamline, describe and classify the approaches of modern diplomatic practice, as well as define the main global and cross-border scientific trends that are crucial for the entire world community [26, p. 216].

One of the most famous examples of the successful functioning of "science in diplomacy" is the existence of the European Organization for Nuclear Research (CERN), located in Switzerland. It can even be said that the opening of CERN in 1954 helped to launch the process of restoring horizontal ties in post-war Europe and to begin to raise the level of mutual trust, uniting for the sake of solving problems beyond national borders.

The International Panel on Climate Change (GEC) serves similar goals. In general, scientific cooperation between European countries has reached an unprecedented level, developing not only in parallel with the activities of international political institutions and with their support but actually creating new institutions that become influential actors in the political field [30, p. 179]. The degree of influence of these actors is such that they are able not only to function in addition to national institutions but also, in some cases, to compete with them, promoting solutions that find themselves in conflict with the interests of individual European countries in the scientific and technical field [1, p. 102].

It is worth mentioning the impact of scientific problems on the state and dynamics of international relations. A vivid example is the activities of the Transnational Red See Center, which was created at the initiative of the Swiss Federal Department (Ministry) of Foreign Affairs and unites representatives of countries with not the best bilateral relations for cooperation on biological diversity in waters.

Unfortunately, as we have seen in recent days, such initiatives can be used in the opposite way: as a political confrontation. So, under the tremendous political pressure from NATO states, Russia had to leave the Council of the Baltic Sea States, wchich turned de facto into a tool of anti-Russian policy. The sad consequences of this decision will have to be felt by both scientists and residents of all coastal countries.

Switzerland occupies a special place in the development of scientific diplomacy as a country with extensive experience and significant potential expressed in such indicators as the number of scientific publications per inhabitant of the country, as well as the share of universities, research institutes and researchers being members of international associations [16, p. 21].

Swiss science diplomacy officially started in 1958 with the sending of the first attachй on scientific cooperation to the United States. In 1969, specialists of this profile were sent to Japan and the USSR; later, they appeared on many foreign missions, where their main tasks were

maintenance of contact and assistance to Swiss scientists working abroad [40].

The main tool of Swiss science diplomacy for more than 20 years has been the Swissnex network of research cooperation centres, the successor of the Swiss House for Advanced Research and Education, which existed in 2000–2008 and operated at the diplomatic missions of the Confederation in 20 countries [28].

Switzerland's reputation as one of the centres of scientific innovation and know-how stimulates the foreign service to pay special attention to the issues of international scientific and technical cooperation. Science diplomacy as a tool of the foreign policy course is mentioned in such important documents as the Strategy of the Confederation Foreign Policy and the plan of actions on reforming the OSCE in 2022-2025 prepared by the FDFA [21].

In 2021, for the first time in the history of the Swiss Confederation, the Institute of the Official Special Representative for Science Diplomacy was established, headed by Alexander Fazel. In May 2022, the Week of Science Diplomacy was first held in Geneva, within the framework of which an "open forum" was organised with 30 participants from 20 countries, the majority of which were represented by Western European states, whereas the number of participants from the countries that are at the forefront of scientific progress (China, India, South Korea, etc.) in total did not exceed 10 people.

A vivid example of science diplomacy activities is the initiative of the Swiss side to create the Geneva Science and Diplomacy Anticipator (GESDA) in 2019, the Federal Adviser and Head of the FDFA I. Kassis's creation [28]. This structure, which is funded by both the federal government and the cantonal authorities, is designed not only to facilitate the interaction of leading scientists in the world community but also to search for solutions to common problems.

Its activities are carried out on three "tracks": "prevention," which describes the most significant trends in science and technology; "acceleration," which promotes dialogue between scientists, diplomats and representatives of business circles; and "application in practice," which renders support to science diplomacy programmes designed to assist in the implementation of the UN Sustainable Development Goals. The first summit, held on October 7–8, 2021, in Geneva, gathered 900 participants from various states. Again, it was a political moment. The Russian Federation was not invited to take part in the summit, and there was only one representative accredited from China and from Japan, the countries that occupy the first places in the world in terms of the number of patents registered annually.

The Science Breakthrough Radar, launched in 2021 by GESDA experts, can also be called an interesting tool of science diplomacy. It is a regularly updated classification of scientific trends and forecasts (with a perspective horizon of 5, 10 and 15 years) that have the potential to affect international relations [22].

At the national level, the "science in diplomacy" direction is implemented through an extensive network of research institutes, university centres, the Swiss National Science Foundation and the Conference of University Rectors. The leading roles are also played by the interdisciplinary "Laboratory of Research Diplomacy," conducted by the universities of Geneva and Zurich together.

Analysing the similarities and differences between the Swiss and domestic approaches to the implementation of the goals of science diplomacy, the Russian diplomat draws attention to the specificity of actors (government agencies, institutions, individuals) responsible for their implementation (see Table).

Together with the overall similarity of the methods used and the institutions responsible for solving the problems of science diplomacy, a distinctive feature of the "Swiss model" is the concept of "international Geneva" (Fr. Genиve internationale) promoted by the Confederation. According to it, the city playing the role of an international site for a significant number of headquarters of international funds and organisations helps to attract additional attention to the Confederation as the "host country".

Close attention to the development of scientific and technological cooperation as a tool to increase the potential of Switzerland's "soft power" has affected the statistics as well. Thus, the Confederation is a traditional leader in the leading international ratings of investments, the number of patents issued for scientific research, as well as the number of joint publications by

A comparative list of actors in science diplomacy in Russian and Swiss diplomatic practice

	Russia	Switzerland
Embassy (responsible executive or group)	Attaché for Scientific and Technical Cooperation	Scientific Attaché
Associate Centre	Network of Russian Centres of Science and Culture (RCSC)	Network of Swissnex Centres
Non-governmental organisations, foundations, research centres	Research institutes of leading universities in the country	Laboratories of scientific diplomacy at the Universities of Geneva and Zurich
Initiatives receiving government support	Russian Direct Investment Fund (RDIF)	"Innosuisse" Innovation Development Fund
Main funding channel	Public funds	Financing of scientific developments at the expense of manufacturers

Swiss scientists in cooperation with foreign colleagues.

Analysing the state of Russian-Swiss cooperation along the track of science diplomacy, we should keep in mind the significant potential of agreements on scientific and technical cooperation. Thus, in 2012, our countries signed a bilateral agreement at the level of the relevant ministers on scientific and technical cooperation, the development of which lasted for six years. In order to develop the agreement from 2013 to 2019, there existed on a regular basis a mixed commission on scientific and technical cooperation, the meetings of which were interrupted by the COVID-19 pandemic.

It is noteworthy that on the Swiss side, the role of coordinator of the implementation of the programme of scientific and technical cooperation with Russia was given not to a governmental structure but to the University of Geneva with the support of the Federal Polytechnic University of Lausanne (Fr. Ecole Polytechnique Federale de Lausanne, EPFL). It was assumed that the main practical tools for the development of cooperation should be student mobility programmes and joint research projects (in particular, the organisation of research competitions).

As A.B. Dorovskikh notes, in today's rapidly changing geopolitical situation, along with the increasingly complex nature of the emerging problems, the scientific community needs to take an active – and sometimes proactive – part in international relations, presenting opinions based on the results of the research, which could be grounds for important political decisions.

Scientific and technical cooperation can be used as a tool for building and improving relations between states while also being an element of "soft power," a state policy aimed at creating a positive image of the country, that is, both at "brain gain" to the country and at developing ties abroad by non-military methods.

The history of the diplomatic service knows many cases when scientists not only presented their expert opinions and recommendations but directly participated in peacebuilding [30].

A vivid example of such events is the unofficial contacts of the scientific circles within the Pugwash Conferences, which played their role not only in the resolution of the Vietnamese conflict in 1975 but also formed the basis of the Treaty on the Limitation of Anti-Ballistic Missile Systems between the USSR and the USA. Likewise, within the Dartmouth Conferences held between Soviet (later Russian) and American specialists, the methodology of "sustainable dialogue" was developed. It is still used in local conflict resolutions and negotiations with the warring parties [16, p. 21].

More modern examples include the construction of nuclear power plants abroad. Thanks to the efforts of scientists and the Rosatom Corporation, today Russia is one of the world leaders in the number of power units installed in foreign countries. Such projects as the Akkuyu Nuclear Power Plant in Turkey, the El Dabaa Nuclear Power Plant in Egypt, the Bushehr Nuclear Power Plant in Iran, the Paks Nuclear Power Plant-2 in Hungary, the Tianwan Nuclear Power Plant in China and others allow us to not only expand the economic partnership between our country and foreign colleagues but also significantly strengthen diplomatic and scientific ties.

According to A.B. Dorovskikh, scientific policy "appears where science intersects with an

administrative resource, in the positive sense of the word." Thus, its appearance should first of all be conditioned by the need for sensitive regulation of scientific and technical activities directed to something useful for the state, but at the same time, it is important to minimise the risks of a negative influence on scientific progress.

In the Russian Federation, scientific policy is regulated by the Federal Law "On Science and State Scientific and Technical Policy," according to which the main goals of state policy in this industry are the development of the country's scientific and technical potential, the gradual development of the contribution of science and technology to the state economy, the solution of social problems, as well as ensuring Russia's international scientific leadership at leading sites [10].

The priority directions for the development of science diplomacy in the Russian Federation are also determined by the Decrees of the President of the Russian Federation "On National Goals and Strategic Objectives of the Development of the Russian Federation for the Period until 2024" [33] and "On the Strategy of Scientific and Technological Development of the Russian Federation" [32] and are reflected in the Concept of Foreign Policy of the Russian Federation [17], as well as in the Concept of Humanitarian Policy of the Russian Federation and the Concept of International Scientific and Technical Cooperation of the Russian Federation [18].

The provisions of the Concept of Foreign Policy of the Russian Federation, in particular, note: "In order to strengthen the role of Russia in the world humanitarian space, to form its positive perception abroad, to strengthen the position of the Russian language in the world, to counter the Russophobia campaign carried out by unfriendly foreign states and their associations, as well as to increase mutual understanding and strengthen confidence between states, the Russian Federation intends to give priority attention: 1) to popularizing and protecting domestic achievements in the fields of culture, science, education and art from discrimination abroad, as well as strengthening the image of Russia as a state that is attractive for life, work, study and tourism..." [14].

In the Concept of Humanitarian Policy of the Russian Federation, approved by Decree of the President of the Russian Federation of September 5, 2022, the development of science diplomacy is one of the key national interests of Russia's humanitarian policy abroad. The text of the document notes: "The national interests of the Russian Federation in the humanitarian sphere abroad are: popularization of domestic achievements in the field of culture, science, education, sports, information and communication technologies; development of international cooperation in the field of culture, science, education, sports and tourism; promotion of international youth cooperation, including in the cultural, scientific and sports fields..." [34].

While developing a scientific policy, the state sets tasks of both an internal and external nature. Among the external tasks, we can distinguish the following:

– the need to increase efficiency in disseminating information about domestic culture and science, their potential and the most outstanding representatives, improving its image and reputation on the global stage;

– participation of Russian specialists in international programmes on scientific cooperation aimed at solving global problems;

– reducing the brain drain and becoming a pole of attraction for representatives of the international scientific community.

One of the tools for achieving these tasks, as well as protecting national interests, is science diplomacy, and an increasing interaction of research and diplomatic practices will further contribute to their implementation, regardless of the geopolitical situation.

In the context of increasing sanctions pressure exerted on Russia by the states of the collective West, the participation of Russian scientific organisations and Russian scientists in the implementation of megascience projects carried out within the framework of such international organisations and international cooperation formats as the CIS, SCO, BRICS and ASEAN is of particular importance.

At the beginning of the 2020s, about 1.5 thousand Russian researchers annually participated in the implementation of international scientific projects and represented the interests of the Russian Federation in leading foreign scientific centres, including CERN in Switzerland.

Today, the Russian Federation is an active member of a number of international scientific organisations, as well as a number of international

projects belonging to the "megascience" category. These include the International Space Station (ISS), the Kurchatov Centre for Synchrotron Radiation (KCSR) and a number of others. The participation of Russian researchers and scientific organisations in "global" science projects as well as the establishment of scientific education centres (SECs) and world-class research centres (WCRCs) in the Russian Federation is promoted through diplomatic channels. In the early 2020s, there were 10 SECs and 17 WCRCs in our country, in the activities of which foreign researchers participated [15, p. 22].

Results. To sum up the analysis of the practical aspects of using science diplomacy in solving state foreign policy issues, it is possible to formulate a number of recommendations for the further application of this tool in the future:

– to maintain and increase the degree of information openness and to continue working on the image of the Russian scientific community;

– to systematise the legal basis (of the existing bilateral and international agreements);

– to create individual "road maps" of scientific cooperation for every country;

– to revise and improve the training programmes in the field of science diplomacy (for example, to create an educational standard in the field of training "science attaches" following the example of the existing institute of "agriculture attache");

– to maintain Russia's membership in international organisations and on thematic scientific and technical sites against the background of the ongoing sanctions pressure from the West, to counteract the course towards the "politicisation of science";

– to systematise the experience of foreign countries in the field of science diplomacy; to study the practices of public-private partnerships to finance and promote projects in the field of science and technology; to analyse the existing scientific infrastructure and methods of supporting innovations in foreign countries;

– to encourage the creation of mixed working groups of scientists and diplomats to develop ways to solve global problems (global warming, terrorism, etc.) at the practical and legal levels (for example, the preparation of draft international agreements);

– to keep diplomatically supporting the access of Russian scientists to carrying out research at "megascience" facilities;

– to develop a single information portal for foreign researchers with information on the scientific projects implemented by Russia in each country;

– to promote the image of Russia as a modern international centre for scientific research and an integral participant in international scientific and technological progress.

It seems also possible to use and practically apply various forms of analysis within the framework of science diplomacy, focused on the development of Russia's scientific and technological potential. This kind of activity involves identifying the most promising areas of scientific cooperation, determining effective forms and methods of development of international scientific interaction, identifying the role of state and non-state actors in the implementation of strategic objectives of Russian science diplomacy. Its important components are collecting and generalising primary and secondary data based on the use of a set of quantitative and qualitative methods.

The analysis conducted makes it possible to state the overall successful and consistent nature of work on the development of science diplomacy as a special area of Russian foreign policy.

As is shown by the example of the activities of Russian foreign institutions in Switzerland, Russian diplomacy is involved in ensuring the functioning of international cooperation programmes, large "megascience" projects, the activities of expert scientific foundations, and so on.

At the same time, the current unfavourable international situation, which is primarily characterised by the trend towards politicisation of all areas of international cooperation, poses new challenges for Russian diplomacy in defending the country's scientific and technical sovereignty on international platforms, reorienting the directions of international cooperation, and providing truthful reporting on the activities of Russian scientists. Additionally, the main task in this area remains to respect state interests and promote a gradual increase in the efficiency of Russian scientists' activities for the benefit of the country.

The recommendations given in the article on its improvement are intended to contribute to the preservation and development of science diplomacy as a tool to support channels of international communication and cooperation to confront the global challenges of our time.

NOTE

[1] The term "science diplomacy" was first used in the article by American researchers W. Davidson and J. Montville in 1981. The authors characterised science diplomacy as an important component of "Track Two Diplomacy," which acted as "an informal, unstructured interaction" between actors in international processes. As the article noted, the "fundamental feature" of Track Two Diplomacy is its ability to "resolve or mitigate the manifestations of actual or potential conflict by appealing to the natural human capacity to respond to expressions of reason and goodwill".

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