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A Failed Reform of Science

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Abstract. The necessity to reform the national system of science has been clearly recognized in Russia since the mid-1980s. The start of reform has repeatedly been announced. But during the perestroika period, the reform of science was never even started. The most consistent reform effort was made in the early 1990s. This reform produced a number of some positive results, but did not lead to an integration of science into the market system, did not transform the scientific and technological complex into a scientific and technological network, did not free science from the bureaucratic form of organization and governance, did not approve the principles of self-organization and self-government. In 2004–2007, another, generally unsuccessful, attempt has been made to reform science by integrating it into the innovation system, which they tried to create (unfortunately, without success) in those years. As a result of failures to reform the national scientific system and a successful restoration of the bureaucratic administrative-command system, a weakened Russian science is faced with the same problems as a third of a century ago.
Keywords: Reform of science; the national science system; the science and technological complex; the science and technological network; scientific reform; economic reform; perestroika

Despite repeated attempts to reform the national scientific and technological system, over the past three decades, science in Russia has survived rather than developed. And in 2021 the country faces the same problems in this sphere as it did three decades ago. “Russia is facing a colossal task not only and not so much to integrate into the modern market economy as to form the basis of scientific and technological sustainability of its socio-economic development” (Kryukov, 2020. P. 40). This task is complicated by the fact that for three post-Soviet decades domestic science has been radically weakened. According to researchers, “the fact that Russia has a powerful science” is “an ingrained delusion” (Klistorin, Teslya, 2020. P. 174).

The essence of the reform of science in the transition from a state-run planned economy to a market economy was to be the transformation of the former national scientific system into a new one,

the transition from one model of science to another. Twice – in 1992–1994 and 2004–2007 in Russia there were attempts to reform

science, aimed at its adaptation to the market economy and incorporation into the innovation system. Neither in the first nor in the second case the goals were achieved. Obviously, this is largely due to a specific understanding of the essence of the reform of the substitution of notions.

Reform in its essence is a creative rather than destructive act, changing the system in the direction of its development rather than degradation, and making holistic and systemic changes rather than fragmentary and chaotic ones. Conducted in Russia large-scale campaigns on re-subordination and consolidation of organizations, on change of accounting indicators, on rewriting of program-conceptual and normative-legal documents are not reform in itself.

The Eve. Awareness of the Necessity and the Idea of Reform

In the 1970s and early 1980s, many science organizers and researchers expressed concern about the problems of science that needed to be solved. It was clearly realized that integration of science and education, science and production, de-bureaucratization of science, and development of its self-organization and self-management were necessary. But at that time the problem was still isolated. It seemed that development of socialist society in general and its separate spheres and institutions was possible by means of perfection, without fundamental changes of principles of organization of their life activity.

Since the mid-1980s, the character of the discussion of problems of the development of society and science radically changed. People began to talk about the need for a comprehensive reform as a deep systemic transformation. However, there were not many constructive ideas, instead of constructiveness the radicality was offered. The sense of purposeful systematic reform was already receding under the pressure of the madness of the revolution. Beginning from 1987, even the government of the ruling party in the person of Mikhail Gorbachev started talking about perestroika as a "revolutionary" transformation of socialist society.

Gorbachev's pretentious book Perestroika for Our Country and for the World stated: "It is very important not to 'sit still' at the start, to

overcome the lag, to break free from the quagmire of conservatism and to break the inertia of stagnation. This cannot be done evolutionarily, with a timid, creeping reform" (Gorbachev, 1987. P. 48). The author himself probably thought that the set of cliches he used was a system of real measures allowing the transformation of society. A significant part of society at the time was already thinking deeper and seeing beyond it.

In the second half of the 1980s, the idea of the deep transformation of society and its formation based on the principles of market and democracy was being actively discussed in scientific, engineering, teaching, and in the whole intellectual environment of the country. The ideology of the market and democracy was the essence of the reformist ideology developed by the Soviet intelligentsia in cooperation with part of the party nomenclature. Market and democracy were symbols and metaphors rather than constructive goals, and "the demand for transition to the market was moral rather than economic in its origins" (Yaremenko, 1998. P. 36). Society was dominated by the notion that the market and democracy either in the conditions of renewed socialism (communists) or instead of socialism (oppositional intellectuals) would allow the country to overcome the critically felt critical lagging behind the developed countries of the West.

The country's enormous lag in technological development was recognized even by the official ideology. Thus, in 1989 Gorbachev wrote in one of his articles that in the years of "stagnation" and "missed opportunities" in the USSR they "underestimated the significance of the revolution in science and technology and did not take practical steps in this direction, although there was much talk about the need to combine the achievements of the NTR, and its newest stage, with the advantages of socialism. As a result, in terms of civilization in a number of important spheres and directions, we remained as if in the last technological era, while the Western countries have moved into another era of high technology, fundamentally new relationship between science and production, new forms of life support of people, up to the household" (Gorbachev, 1989. P. 10).

The roots of backwardness were seen (depending on the observer's ideological platform) either in the technological basis of society,

the low scientific and technological level of production, the missed scientific and technological revolution, or in the economic and political system, in socialism and communist ideology.

Supporters of the ideas of market and democracy were extremely heterogeneous in composition, and their temporary ideological unity was extremely unstable, situational and even illusory. A sort of manifesto of this unstable eclectic ideology of market-democratic reform of the Soviet society, including science, was a collection of articles titled No Other Way Other is not given [No Other, 1988]. Such researchers as V. L. Ginzburg and M. D. Frank-Kamenetsky, N. N. Moiseev and G. H. Popov, T. I. Zaslavskaya and A. V. Yablokov and others, different in their positions and subsequent fate, discussed the reform of domestic science and the whole society in it.

Already in the beginning of 1989 the first Congress of People's Deputies of the USSR destroyed this unity, and two strategies of market-democratic reforms were clearly defined – one considered the market and democracy as a way of system transformation of socialism, the other considered them as the alternative to socialism, the way to get rid of it.

In the years of perestroika, the state decided in the sphere of science only on cartoon self-financing, announced in 1987 by the well-known Resolution of the CPSU Central Committee and the USSR Council of Ministers "On the transfer of scientific organizations to full cost accounting and self-financing"[1]. In the same year of 1987 the leadership of the State Committee on Science and Technology of the USSR was replaced. From that moment the personnel and organizational turmoil in the system of state science management began, which lasted more than thirty years (see about it: [Semyonov, 2000]). The radical changes proclaimed in the Decree, including activation of the potential of academic and branch science, intensification of the interrelation of science and production, increase in the production of science-intensive goods, improvement of the

[1] Resolution of the Central Committee of the Communist Party of the Soviet Union and the Council of Ministers of the USSR "On the Transfer of Scientific organizations to full economic account and self-financing" from September 30, 1987 № 110. URL: www.consultant.ru (accessed 28.08.2020).

material and information support of science, exclusion of scientific monopolism, and, as a result, acceleration of scientific and technical progress, did not take place.

If they could be implemented it would really mean the reform of scientific and technological system, its progress (at least partial) from mobilization model to innovative one, from administrative-command management to some form of self-organization, from hierarchical principle of organization based on subordination to network based mainly on coordination principles. It did not happen, because perestroika was not a reform of the existing system, but the mechanism of its self-destruction. It is true both for science and for society as a whole.

During perestroika, no real constructive reform of science was begun. Not those actions and steps which could constructively transform the ineffective, but still capable national scientific and technological complex and provide its controlled transition to a new condition dominated, but the actions in the spirit of "dismantling" and "breaking", only damaging and destroying the former, even outdated, but an integral construction. Of course, the question arises: why did it happen this way?

Perestroika as a mechanism of self-destruction

Perestroika launched the process of society's disorganization and self-destruction. "According to Yaremenko, "perestroika itself did not herald anything unexpected at first, it was just another ideological campaign. But this campaign entailed some political shifts that made the situation unmanageable. They showed how rotten everything was" (Yaremenko, 1998. P. 116).

Agreeing with the assessment of the loss of governability as a key factor of the process of destruction of society, I cannot agree with the initially purely ideological nature of perestroika. It was initially a process of dismantling the political system. In 1990–1991 the author had the opportunity to communicate with a number of people from the entourage of the country's leadership. According to one of the evidences, Gorbachev, Yakovlev and Shevardnadze said that "the main goal is to destroy the autocracy of the Communist

Party of the Soviet Union. It was the successful resolution of this task that led to the loss of controllability and, ultimately, the collapse of the entire system.

V. Yaremenko offered, however, the most correct explanation of what triggered perestroika and what predetermined its logical outcome. He did it not in publications, but in speeches and private conversations, including those with the author of these lines. Fortunately, his colleague S.A. Belanovsky made wonderful records of his conversations with Yaremenko [Yaremenko, 1998]. According to Yaremenko, the causes of society's self-destruction are rooted in the special pyramidal structure of Soviet society and in the role played by the bureaucracy in it.

He attributes the formation of "social strata with different levels of privileges" to the Stalinist period, as a result of which there was a society that "was class-oriented, and each higher class had certain privileges". It was "a hierarchy of social environments", "a hierarchically constructed system of social guarantees". [Ibid. P. 111]. Such a system provided "a high motivation for advancement on the social ladder" [Ibid. [Ibid. P. 30].

Similarly built the "technological structure of the economy. It had a "pyramidal structure", a hierarchy of "technological levels, in accordance with which resources are distributed" [Ibid. [Ibid. P. 102]. Technological and social pyramids were united by the underlying principle of resource distribution. According to Yaremenko, "the entire social structure of our society was, to some extent, adjusted to the structure of resource distribution, correlated with it" [Ibid. [Ibid. P. 110].

Summarizing a lot of Yaremenko's statements, we can say that Soviet society was considered by him as a piramida consisting of four stages. The first of them was filled by the masses of the most abused citizens – prisoners (convicts), the second – the unpassported peasantry, the third – workers and other ordinary townspeople, the fourth – the nomenklatura. Considering urbanization, reduction of the share of the rural population and the share of the lower stratum, Y.V. Yaremenko said that the pyramid was increasingly acquiring the form of a barrel.

Such a social system encouraged everyone (except the nomenklatura) to strive to reach a higher level.

Only the nomenklatura had nowhere to grow within the system, and it was focused on abroad – it sent its children to appropriate universities and subsequent work in embassies, trade missions, correspondents' offices, etc. (there were no villas and yachts then). It was the nomenklatura that turned out to be the source of perestroika and the main beneficiary of the collapse of the social system. The top echelon of the nomenklatura, especially its corrupted part, destroyed the entire pyramid during perestroika.

Society as a whole was ill-prepared for another variant of development (the reform proper), and science – even less, which was "experimentally established" during the reform of the early 1990s. "In 1992 the forced transition to market relations in research and development, hard (at least in respect of science) budgetary policy strengthened many negative trends that developed in the 80s, and contributed to the formation of new ones… On the whole, science was even less prepared than production for the changes in the mechanism of its financing". [Yaremenko, 1997. P. 417]. Before the collapse of the USSR and the Soviet system, the reform of science had not even really begun. Perestroika, as shown above, was not a reform, but a mechanism of self-destruction of the Soviet system and the USSR as a state.

First attempt at science reform (1992–1994)

The first real attempt to reform the scientific and technological system in post-Soviet Russia is firmly connected with the name of Minister B. G. Saltykov. Analyzing its character and consequences it is important to keep in mind that in 1992 Russia was undergoing a serious crisis in all the spheres of life and activity. Science was part of the collapsing world. It is also important to remember that science had no place in the "Gaidar reforms". It itself and its future were the least important part of the new government's interests connected with the accelerated denationalization and the fastest possible formation of the "class of owners.

The speed of change was then placed above quality and efficiency. Those who had to interact with ministries and the government at that time are well aware that in those circles it was openly said that it did not matter in which hands property would go, the initial composition of the class of owners could not be qualitative and effective, but then "the foam would escape", and the market would put everything in its place.

It is typical that a quarter of a century later the main result of Ye. T. Gaidar's beneficiaries consider the emergence of private property in the country to be the main result of the reforms, leaving aside the questions of the ways it was formed, the quality of the emerging class of owners, and the price paid by the country for the "initial accumulation. Thus, in 2016 O. V. Vyugin said that "if you call in one word the essence of the reforms of the 1990s, it is private property … Everything else is what should have followed private property [Russian Economy., 2016. P. 6]. In his opinion, the main thing is that "all the same there was a legal registration of property rights for the Soviet heritage. The heritage was very rich, and there was a legal registration of private ownership of the means of production". [Ibid. P. 7].

In contrast to this point of view, Academician V. M. Polterovich noted that, according to calculations of A. Markevich and M. Harrison [Markevich, Harrison, 2013], "relative losses of GDP in the 1990s in Russia were higher than the total losses during the years of terror and the years of World War II. When evaluating reforms, should we abstract from these losses or should we also take them into account?" [Russian Economy., 2016. P. 18].

The fact that science had no place in Gaidar's reform is evidenced by the government's "Program of deepening economic reforms"[2] (for more on this, see [Semyonov, 1996. pp. 448–450]. The Gaidar reform did not take science into account even as an element of the system being transformed, not to mention the use of science's potential in the process of these transformations.

[2] Program of deepening economic reforms. M., 1992.

And yet, science in the early 1990s was an integral part of the ongoing process of denationalization and the related reformatting of all spheres of society. No resources were allocated to reform science. Something could be done only by redistributing the scarce current funding, as well as by changing the methods of financing and organizing research.

Although B. G. Saltykov headed the Ministry of Science (which has been reformatted and changed its name several times) from November 1991 to June 1996, only the period from 1992 to 1994 is considered reformative [Semyonov, 2009. p. 33–38].

The main conceptual document of the reform, which contains the most complete description of its intent, is the Basic Provisions of the Concept of Science and Technology Development in the Russian Federation in 1992–1993[3]. The interview of B. G. Saltykov to the Naukovedenie magazine is also of interest. [Saltykov, 2002]. The "main provisions" are based on the ideas, according to B. G. Saltykov, developed by him and his scientific team during his work in CEMI of the USSR Academy of Sciences, INP of the USSR Academy of Sciences and the Analytical Center on the problems of socio-economic and scientific and technical development of the USSR Academy of Sciences. In the 1990s and partly in the 2000s the reform activities were based on the circle of ideas from the "Fundamentals".

The document noted some shortcomings of the Soviet scientific system, to overcome which the reform should be aimed. It highlights "conservatism", "low adaptive capacity" and "deep structural crisis" of science. Seven priorities of the state scientific policy are specified in the "Reform conception" section, including: selective and selective support of scientific researches and scientific organizations; preservation of the best Russian scientific schools at the expense of stable budget financing; demilitarization and conversion of the research sphere; denationalization and adaptation of the research sphere to

[3] Main Provisions of the Concept of Development of Science and Technology of the Russian Federation in 1992–1993 // The Courier of Russian Science and Higher School. 92. № 4.

market principles; transition from financing of scientific organizations to financing of target projects and programs; maintenance of variety of financing sources; creation of regional funds to support scientific and technological development.

As we can see a cardinal change of financing of scientific research was planned: transition from state financing of integral scientific system from the federal budget to selective financing of its separate parts from multiple sources, from financing of all scientific organizations (and only organizations) to selective support of organizations, projects, programs and scientific schools. It was also supposed to radically change the interaction of science with practice by reducing its ties with the defense-industrial complex ("demilitarization" and "conversion") and its adaptation to market principles.

In the "Main Provisions" the reformatory policy was structured according to its "elements" understood as "priority directions" of innovative development and as "tasks" of using the available innovative potential. Four priority directions and three groups of tasks were singled out in the section "Main elements of scientific and technical policy of immediate and perspective period".

As the first it is provided: the works of interbranch character on creation, development and distribution of techniques and technologies which are leading to cardinal changes in technological basis of the country; the works on large-scale branch scientific and technical projects requiring scale concentration of resources which are not under force of separate enterprises; scientific and technical maintenance of realisation of social purposes, including development of public health services, education, culture, environment, infrastructure, the directions of scientific and technical progress connected with development of technological base.

It is striking the purely technocratic character of allocation of priority directions of innovative development and obviously state way of their support. No adaptation to market principles, no denationalization and no multiple sources of financing are actually envisaged by the Basic Provisions, despite the priorities of the scientific and technical policy declared in them.

The document singles out three groups of problems: using the considerable innovational potential available in the country, first of all in defense industrial sectors; concentration of R&D; flexible combination in financing of budgetary resources and funds of interested enterprises and organizations and also creation of innovation funds and insurance companies combining the funds of the state and commercial structures.

It is possible to state that the "Basic provisions" is a document aimed at denationalization and market orientation of science, its integration into the innovation system and development of self-organization and self-management in science. In other words, the transformation of the state scientific and technological complex into a scientific-innovation system integrated into the market was envisaged.

President Boris Yeltsin also spoke about this in his Address to the Federal Assembly: the "meaning" of the development of science "is now very clear: we need the natural integration of science into the new market conditions"[4].

Unfortunately, there was no such market in Russia at the beginning of the 1990s in which science could be integrated, and there is no such market at the present time. And science itself was very poorly prepared for such integration, it is not ready for this now. Neither then nor now the State conducted or is conducting a consistent policy of such integration. A quarter of a century after the adoption of the Basic Provisions, the country has not developed a capable innovation system, and science has not been integrated into the market (for more details see [Semenov, 2013]). Instead of denationalization, since the early 2000s the process of re-government of science has been observed [Semenov, 2012]. Instead of self-organization, bureaucratic mechanisms and forms of management in their worst form were established [Semyonov, 2020].

If in 1992–1994 the team of reformers was able to implement some part of their plans in the conditions of the most severe crisis, then since

[4] Address of the President of Russia B. N. Yeltsin to the Federal Assembly of the Russian Federation. Yeltsin's Address to the Federal Assembly of the Russian Federation "On Strengthening the Russian State" 1994. URL: http//www.intelros.ru/2007/02/04

1995 the reforms started to stagnate and they had to fight for their survival in the state power system. And after 1998, when the default draw a line under the previous vector of socio-economic development of the country, and especially after 2000, when the priority was the strengthening of the role of the state, with increasing speed there was a new governmentalization of the economy and the field of research and development, which grew after 2012 in the restoration of the bureaucratic administrative command system.

The most important practical results of the 1992–1994 science reform include first of all: preservation of the most valuable part of the branch science by creating a system of state scientific centers and their unification to the Association of SSC; establishment of state funds for support of innovation activity, including the Russian Technology Development Fund (1992) and the Fund for Assistance to Small Innovative Enterprises in Science and Technology (1994); establishment of state funds for support of scientific research, including the Russian Fund of Basic Research (1992) and the Russian Humanitarian Scientific Fund (1994); preparation and adoption in 1996 of the first Federal Law "On Science and State Scientific and Technical Policy" in the country history.

At the same time the ministerial team of reformers has absolutely failed to soften and make manageable the process of collapsing reduction of the sphere of R&D, to make manageable and useful for the domestic science the process of connection to the global system of circulation of scientific personnel, which has turned, in fact, into a "brain drain" – loss for Russia of a large part of active and most demanded by the world science researchers.

As writes M. F. Chernysh, "thoughtless attitude" to brain drain leads to the fact that "the national science slowly but surely slips to peripheral positions, becomes practically dependent on foreign research centers in everything, and further, if its degradation continues, will enter "the flickering phase" when there are some scientists in the country, but real scientific production, or it is completely secondary". [Chernysh, 2020. P. 53].

It took almost half a century to adopt the first law on science in Russian history (see [Fil, 2019]). However, the document, consisting

of three conceptually different projects, turned out to be largely eclectic and did not encourage science to reform and take an active role in the life of society. However, all subsequent attempts to develop a new law on science were even worse, especially the cartoon bill developed in 2019 under the leadership of M. Lukashevich. It was discussed at a roundtable of the journal "Science Management: Theory and Practice" in July 2019.

The second attempt of reform of science (2004–2007)

In the early 2000s the President of the Russian Federation V. V. Putin proclaimed and with a delay of several years actually started an active scientific and technological policy, associated with the name of Minister A. A. Fursenko, which meant the second attempt of reform, based mainly on a set of ideas, proclaimed and partially implemented in the early 1990s. The general principles of this policy were repeatedly formulated and publicly justified by Minister A. A. Fursenko.

The author has analyzed 217 texts of the minister (mostly interviews and public speeches) of the period 2004–2011 in which it was constantly stated that the state has to deal with three issues in the scientific and technological sphere: priorities, scientific environment as well as the innovation system.

Beginning from 2004 the minister insistently repeated that "the most important thing today is to set priorities"[5]. That along with priorities "the main task" is "to keep the environment for knowledge generation"[6]. That "there are two components of the support of science. The first – the need to preserve the environment in which knowledge is created … The second. We should identify somewhere scientific priorities and support them[7]. That "along

[5] Fursenko A. Venture investments will come with strong projects // Rossiyskaya Biznes-Gazeta. 2004. October 12. oct. 480.

[6] Two concepts. Interview with Andrey Fursenko, the Minister of Education and Science of the Russian Federation [El. resource] RIA Nauka. URL: https://ria.ru/20041015/707695.html

[7] Vaganov A. The president of RAN must approve the President of the country // Nezavisimaya gazeta. 2005. June 29.

with support of priorities the state should provide preservation of the scientific environment where new knowledge arises, support of leading scientific schools and universities"[8].

The "environment" was always associated with the essence and specificity of science, with cultural and historical peculiarities and traditions. "Priorities" were understood both as purely scientific and innovative scientific-technological, connected with the market, practical demands of business and the state.

Deep reform of science was necessary for living in market conditions. "There are no options, we do not even need to discuss whether it is necessary or not to reform. We still will be reformed, but in one case we as a chip in the stream will be thrown in different directions, or we all the same will start to manage this movement"[9]. The future of science itself depends on the ability to work in the market – "If business does not start to invest scientific research, science, even with the help of the state, will not be able to overcome the crisis"[10].

A profound reform of science was needed to live under market conditions. "There are no options, we do not even need to discuss whether or not to reform. We will still be reformed, just in one case we as a chip in the stream will be thrown in different directions, or we still begin to manage this movement. The future of science itself depends on the ability to work in the market – "If business does not start to invest scientific research, science, even with the help of the state, will not be able to overcome the crisis.

The task of supporting priorities was closely linked to the creation of an innovation system, including technology transfer centers, technology parks, insurance funds, credit organizations, etc. "All this should be built by the state. Add to this a huge package of normative

[8] Minister of Education and Science Andrei Fursenko: "Our science needs to overcome arrogance" // Izvestiya. 14.08.2006. № 146.

[9] Minister of Education and Science Andrei Fursenko. Op. cit.

[10] Two Concepts. Interview with Andrey Fursenko, Russian Minister of Education and Science [El. resource] RIA Nauka. URL: https://ria.ru/20041015/707695.html

legal acts, which should remove the barriers to the commercialization of scientific developments"[11].

But between the declared SSTP and the real system of action of the state there was no complete coincidence either in volume or in meaning. The most harmful was the effect of the actual displacement of business by the state from the process of financing science. The state, instead of stimulating the very weak interest of business in scientific research and fully supporting the extremely weak interest of science in business, simply wedged itself between business and science with the FTP.

Minister A. A. Fursenko repeatedly spoke about the negative consequences of this, in his words, "dangerous trend", when "the growing budget financing of scientific, innovative sphere does not become a catalyst for attracting extrabudgetary funds, but serves to replace them. Accordingly, the share of attracted funds instead of growing is falling, and if this continues, "the public trough" will be closed" [Sosnova, 2008]. [Sosnova, 2008]. Such policy was not proclaimed, but, it turns out, actually carried out with the support of supply, but not demand, which was carried out through the "public trough" FTP. It is not at all public-private partnership (PPP), declared as a principle of policy, but the simple displacement of business by the state and reorientation of science on usual budgetary financing.

The experts of OECD also noted that "instead of stimulating demand, supply comes to the fore, and state financing of innovations is channeled through a set of tools which oust business investments"[12]. That the Russian policy, "which inherited from the Soviet era the approach to innovations based mostly on the supply factor, should pay more attention to the demand and the role of consumers in supply and innovations development". The failure to create an innovation system predetermined the turn to the radical change of the state scientific and technological policy in 2012–2013.

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[11] Medvedev Yu. Demining the field of miracles // Rossiyskaya Gazeta. 2004. November 24.

[12] OECD Innovation Policy Reviews: Russian Federation. M., 2011. [P. 15].

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Thus, the reform of science in practice turned out to be a romantic projection. There was no integration of science into the market either in the 1990s or in the following years. All of its problems remained in their place and only worsened during the lost time.

These problems are rooted in the outdated disciplinary and administrative structure of Russian science, in its low resource supply, in the degradation caused by the policy of forcing scientists to produce reportable indicators instead of solving real problems, and in the policy of suppressing the national language, which turns Russian-language science into science of junk magazines, which takes away from Russian the status of the language of advanced science, which is a threat both for preserving quality education in the Russian language and for its preservation as a language of intercultural education.

The reasons for the progressive degradation of Russian science are usually seen by researchers as either "underfunding," "lack of demand," or "poor management. In reality, these and many other negative factors take place. Moreover, all these factors interact, creating a synergetic effect.

Underfunding is largely due to non-demand, the absence of effective demand for science. Bad management creates conditions for the absence of such demand. Thus the author as a whole agrees with N. V. Putilo and Y. I. Shupletsova who reasonably mark that "the main problem of the Russian science – in bad management, and practically at all levels". [Putilo, Shupletsova, 2019. p. 98]. To rectify the situation, one should start from this end.

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