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Support of Fundamental Science: Changing Targets

The program of fundamental research which is to become a part of the State Program of the Russian Federation on Development of Science and Technologies in the 2013–2020 Period is under active development. After a change of the top management of the Ministry of Education and Science of the Russian Federation, a few versions of the state program's sub-section dedicated to development of fundamental science emerged. Those versions differ much from the one which was early approved by the Russian Academy of Sciences (RAS). Analysis of the versions developed by the Ministry of Education and Science points to the fact that one of the objectives consists in restructuring of the RAS. However, permanent and inconsistent changes may, on the contrary, postpone solution of that problem.

A new intrigue as regards the issue of formation and financing of fundamental research is unfolding around the science policy. In the past few months, a few versions of the sub-section -- dedicated to support of fundamental research -- of the State Program of the Russian Federation on Development of Science and Technologies in the 2013–2020 Period were prepared. However, the RAS and the Ministry of Education and Science have failed to reach a consensus so far.

A close attention paid to fundamental science is not incidental. Firstly, support of fundamental research is a responsibility of the government. Secondly, in Russia the bulk of fundamental research is carried out within the system of state academies of sciences (*Table 1*) and there has been much talk that due to inefficiency and low productivity of that work fundamental research should be gradually transferred to institutions of higher education (IHE).

Table 1

Federal budget allocations on fundamental research by the main administrators of budget funds, %

Country	2011*	2012**
Russian Academy of Sciences and its regional branches	63.5	68.6
Russian Academy of Agricultural Sciences	9.1	8.5
Moscow State University	1.6	n.a.
St. Petersburg State University	0.6	n.a.

* – Report on administration of the consolidated balance of the Russian Federation and budgets of state extra-budgetary funds in 2011 (on the basis of the Federal Treasury); ** – Federal Law No. 371-FZ of November 30, 2011 on The Federal Budget in 2012 and the 2013-2014 Planned Period (as Amended).

Though federal and research universities have been already established and IHE were granted substantial funds, including those on fundamental research, changes are proceeding rather slowly. Publication activity is still low and the extent of quoting of Russian researchers' work points to an ever more negative trend: as regards the number of references made to Russian authors' work the country gradually yields its positions. In addition to the above, it seems paradoxical that universities in general and research at IHE, in particular, are downgraded in international ratings despite the fact that the government has attached them growing attention. It

is particularly evident in those ratings¹, where the main component of evaluations is scientific achievements made by IHE (Shanghai, Times HE).

However, a low publication activity is related to inefficient work of research entities which are a part of state academies of sciences. For that reason, the decision of the Ministry of Education and Science of the Russian Federation to change the existing system of organization and financing of fundamental research seems quite logical.

The initial idea of the new program of fundamental research consisted in the fact that the above program should be a “single” one and integrate the main fundamental research performers in the country so that overlapping was avoided. In addition to the above, the role of research financing on the tender basis was to be enhanced. So, procedures for establishment of a coordination structure, management, networking with different agencies and assessment of efficiency were developed. In the initial version, the program of fundamental research of state academies of sciences was an independent section of the Sub-Program on Fundamental Research and Development of the Academic Sector of Science of the draft State Program of the Russian Federation on Development of Science and Technologies in the 2013-2020 Period. The RAS secured approval of the above version by the Ministry of Education and Science when the former top management was at the helm (in March 2012), however, the new management of the above ministry placed on June 19, 2012 an updated version of the program on its Web-site and after getting acquainted with the above version the management of RAS withdrew its visa² from it. Comparison of the both versions of the program shows what stood behind that decision. In the new version, there is no mention of the leading role of the RAS in implementation of the single program, however, the role of the Ministry of Education and Science of the Russian Federation was attached greater importance to. The earlier approved version presented the aggregate of independent sub-programs which were to be implemented by the leading participants, that is, the RAS, leading IHE, the Russian Fundamental Research Fund, the Russian Humanitarian Research Fund and other. However, it was suggested that formation and fulfillment of fundamental research would be carried out on the basis of the single system of priorities which are both determined on the basis of proposals of participants in the program with the RAS Plan of Fundamental Research till 2025 taken into account and approved by the Program’s Coordination Council. It was an important condition that the President of the RAS was to be in charge of the Coordination Council. In the new version, the Coordination Council was called the Single Program Council, its functions, as well as subordination of participants were outlined rather vaguely and the RAS became an equal partner, rather than the leading one.

The system of evaluation of the program’s efficiency underwent serious changes, as well. The earlier approved version included a variety of indices ranging from financial, infrastructure (the number of large research units) and personnel indices to those of frequency of quotation. For instance, there were indices of evaluation of the extent of integration of different entities

¹ For more detailed information on positions of Russian IHE in different ratings and the specifics of compilation thereof, refer to: I. Baranov. At the Bottom of International Ratings http://russiancouncil.ru/inner/?id_4=321; Not Happy with the Hit-Parade? // Poisk, No. 38, 21.09.2012, p. 2.

² N. Volchkova. May It Go Without Surprises? // Poisk, No. 38, 21.09.2012, p. 3.

carrying out fundamental research -- the number of new base departments, training and research centers and laboratories dealing with academic issues established at IHE -- which factors were quite important to the single program. On the contrary, the new version includes only indices of publication activity and quotation frequency. It is not quite correct to use the bibliometric analysis data alone for current evaluation of efficiency of the research as such data is adequate for longer periods of time and should be supplemented with other indices.

It is evident that all the changes were aimed at diminishing of the role of the RAS, while other aspects were not paid much attention to. As a result, the draft of that sub-section of the State Program appears rather eclectic.

After strong criticism from the RAS, redevelopment of the draft began and at least two more versions which do not contribute to amicable resolution of the situation followed. The next version presented the apotheosis of a bureaucratic approach. So, the goal of the program consisted in establishment of unified rules and procedures for organization and fulfillment of fundamental and applied research (FAR) for all the entities of FAR which qualitatively upgrade the institutional environment of fundamental science and create effective motivation and conditions for ensuring Russia's leading positions by a broad range of the research, as well as follow-up coordination of activities of FAR entities on the basis of the established rules and procedures. Thus, the actual goal was determined as development of instruments, rather than fundamental research.

In the above version, the description of the program was structured by the objectives and due to that one could not get any idea about the fact how implementation of the program is organized, what system of subordination of fundamental research entities proposed and how fundamental science financed and coordinated in a complex structure made up of many participants.

The principal idea consisted in division of functions of financing and carrying out of fundamental research in order to, probably, eliminate the system of RAS where those functions overlapped. However, the idea of that approach was presented as a requirement to distribute on a tender basis at least 15% of funds allocated for fundamental research. So, despite intentions of developers such a situation actually consolidated the existing system of financing within the RAS where depending on the sector 15% to 25% of the funds is distributed on a tender basis on fundamental research.

Finally, division of evaluation indices did not withstand criticism. So, it was suggested, in particular, that evaluation of the established institutional structure of fundamental science should be carried out on the basis of existence of respective schools of scientific research, that is, a group of prominent researchers of international caliber (10 to 15 persons) in a specific area of research specialization.

The Soviet science had plenty of such research schools with many of them being world-renowned. If that is the indicator of quality of an institutional environment, then, they should return as soon as possible to the Soviet system of organization of fundamental science.

It was expected that the quality of consortiums' work should be evaluated, in particular, on the basis of the ratio of the expenditures on the equipment to the efficiency of such an

equipment calculated as a ratio between the number of publications and patents and the period of utilization of that equipment. However, the period of utilization of the equipment is indirectly related to the number of publications and patents.

Another version emerged early in October and actually presented a number of conceptual provisions of the future system of support of fundamental science. The objective of that version consists in securing of “a global leadership in strategic lines of fundamental science” which task in as situation of low and declining indices, including bibliometric ones looks like an utopia, at least, in the period till 2020. A number of conceptual aspects, including engagement of foreign experts in evaluation of projects, ensuring of higher transparency of tenders, promotion of integration between science and education and holding of joint tenders for representatives of research entities and IHE, as well as Russian and foreign researchers are quite reasonable. However, the above is formulated as a list of intentions. The version in question does not provide explanations as to which party is the manager and which one, a participant in the program. Evaluation indices are reduced to a small set of bibliometric indices.

At the latest meeting of the Expert Council of the Open Government³, the interested parties (representatives of the RAS, state research centers and IHE) pointed out that their comments on the draft state program were not taken into account. In its turn, the Ministry of Education and Science of the Russian Federation insists that that document is a framework one and all the details will be revised more than once before being finalized. However, the analysis of different versions of that document shows that neither details, nor some principal aspects have been specified.

Different versions of the sub-section on development of fundamental research aggravate the standoff between the Ministry of Education and Science and the RAS which took place in the past few years. The current developments should be interpreted as an effort to draw up a program which will become an instrument of gradual reforming of the RAS. However, the disarray demonstrated in development of that document may result in such a drop in the quality standard as would create unexpected and serious problems when the actual implementation of the State Program begins.

³ N. Volchkova. Consensus in Time Trouble. What Do Disputes Over the New State Program End Up With and When? // Poisk, No42, 19.10.2012. <http://www.poisknews.ru/theme/science-politic/4325/>