



Monitoring Report on the Implementation of the Policy Support Facility (PSF) Peer Review Panel Recommendations

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List of abbreviations

PSF - Horizon 2020 Policy Support Facility

MESU – Ministry of Education and Science of Ukraine

NCUST - National Council of Ukraine on Science and Technology

NASU – National Academy of Sciences of Ukraine

NRFU - National Research Foundation of Ukraine

CMU – Cabinet of Ministers of Ukraine

ERA - European Research Area

COST – European Cooperation in Science and Technology

EUREKA - European network developing cooperation between SMEs, research centres and universities for industrial innovation

INFRAIA calls under Horizon 2020 - Integrating Activities for Advanced Communities

ERAC - European Research Area and Innovation Committee

R&I – research and innovation

EU – European Union

DG RTD - Directorate General for Research and Innovation

STI - Science Technology and Innovation

R&D – Research and Development

GDP – Gross domestic product

RTDI – Research, Technology Development, Innovation

SSC - Special Search Commission

1 Introduction

The Peer Review of the Ukrainian system of research and innovation is the starting point for this analysis. This Review was set by an international panel of experts under the Policy Support Facility (PSF). The Policy Support Facility is a tool set up by the European Commission (DG Research & Innovation) under Horizon 2020, the EU's funding programme for research and innovation (R&I), to support EU Member States and countries associated to Horizon 2020 in improving the design, implementation and evaluation of national R&I policies.

The Peer Reviews of national R&I systems are one of the main services offered by the PSF. Peer Reviews constitute an in-depth assessment of a country's R&I system, carried out by a panel of international experts at the country's demand. The Panel formulates concrete and operational recommendations for the national authorities on the reforms which are necessary to improve and strengthen the quality of the national R&I system.

In mid-2015, the Ministry of Education and Science of Ukraine (MESU) approached the European Commission to support an independent Peer Review of the Ukrainian R&I system under the Horizon 2020 Policy Support Facility. This request was presented by the Ministry of Education and Science of Ukraine (MESU) as a very important activity for Ukraine in order to succeed in the improvement of the national research landscape and to reveal the potential of Ukrainian researchers in the future. The Directorate General for Research and Innovation (DG RTD) replied positively to this request on 9 September 2015. After a series of internal meetings and discussions, the Deputy-Minister of the Ministry of Education and Science, Director-General of DG RTD, on 16 December 2015, proposing to focus the Peer Review on the three areas listed below. DG RTD replied to this request on 22 January 2016 and agreed to launch intensive preparations in order to start the Ukrainian Peer Review in March 2016.

In the following weeks, a Peer Review panel was composed, which began its work by following the standard methodology for conducting Peer Reviews of national R&I systems in the context of the Horizon 2020 Policy Support Facility. The panel included five independent experts from Austria, Belgium, Germany, Lithuania, and the Netherlands, acting in their personal capacity, and four peer reviewers acting as policy-makers from Germany, Hungary, Latvia, and the United Kingdom. The Panel was chaired by Prof. Hans Chang, Former Director, Royal Academy of Sciences of the Netherlands. The full report and the detailed steps can be found on the Horizon 2020 research and innovation observatory website.¹

1.1 Aims and focus areas of the Peer Review

The aim of the PSF Peer Review was to give external advice and operational recommendations on possible reforms by reflecting the new Law on Scientific and Technical Activity of Ukraine. At the request of the national authorities, the review focused on the following three areas:

¹ <https://rio.jrc.ec.europa.eu/en/policy-support-facility/peer-review-ukrainian-research-and-innovation-system> (03.05.2018)

(1) Optimization of available policy instruments to support the national research system, including the assessment and advice on the tools introduced by the new Law on Scientific and Technical Activity, mobility of researchers, potential priority research areas.

(2) Internationalisation of research and integration of Ukraine into the European Research Area, including advice on how to better enhance the presence of the Ukrainian scientists and SMEs in the European cooperation schemes.

(3) Role of science in the development of innovation in Ukraine, including advice on how to improve the links between science and business and the innovation system in Ukraine.

1.2 Main Messages

Finally, the PSF Peer Review Panel recommended² to the Ukrainian government to base the design and implementation of reforms of the national Science Technology and Innovation (STI) system according to the seven policy messages below:

- 1.** Ukraine's STI system needs ambitious reforms to boost its efficiency and impact. These should be coupled with strong governmental commitment to invest more money in the sector. The target of 1.7% of public R&D expenditures/GDP in the new Law on Scientific and Technical Activity, although unlikely to be reached soon, should remain valid and support the STI reform agenda. Competitive research funding should aim to reach 40% by 2022.
- 2.** The country needs to "innovate its path to growth" with a cross-governmental STI Strategy that is backed by adequate tools. This will require a cross-government effort that involves the intellectual, material and financial assets of the country. Ukraine must place research and innovation high on its political and policy agenda. The Strategy should be developed and implemented to exploit the potential of STI for growth and societal wellbeing.
- 3.** Science in Ukraine should benefit society and the economy. This will require a fundamental change in the way Ukraine orients and carries out its STI. Notably, the science community must realise that in these difficult times, "science for the benefit of society and the economy" is a must. This has to be firmly anchored in the mission and rules of all research-performing organisations (including universities and the Academies of Sciences).
- 4.** Urgent decisions are needed to prioritise Ukraine's STI actions based on the principles of scientific excellence and on opportunities for innovation-driven economic growth in Ukraine.
- 5.** STI institutions, funding and procedures need a strong institutional revamp. Global standards and good practice should be the leading forces of change. Legal reforms, such as the new Law on Scientific and Technical Activity and the forthcoming Law on Innovation, must be optimally deployed to roll out a fully coordinated cross-government approach on STI.

² Peer Review of Ukrainian Research and Innovation System full report:
<https://rio.jrc.ec.europa.eu/en/file/10369/download?token=38ITxhUE> (03.05.2018)

6. Ukraine should push for the internationalisation and opening-up of its STI system. It should use the manifold opportunities gained by its accession to Horizon 2020, and establish adequate mechanisms to support the success of Ukrainian participants in Horizon 2020. At the same time, Ukraine should take the European Research Area agenda as a backdrop for its national reforms. Openness and internationalisation create vibrant and advanced STI systems.

7. Finally, the government and the STI community must take ownership and communicate on the STI reforms undertaken, as well as on their positive results for the country. This should be a joint effort made by policy-makers from all political parties and the country's leading intellectuals. STI delivers returns for Ukraine's economy and society, and these should be promoted, shared, and used with and between society and economic actors.

In total 30 recommendations were identified which can be allocated to three main categories:

1.

→ **Recommendations to raise quality and relevance of the science base**

2.

→ **Recommendations to open up the research and innovation system to the world and to enhance international collaborations**

3.

→ **Recommendations to build a conducive framework for an innovation-driven economy in Ukraine**

For the follow-up to the Peer Review it was emphasised that, in line with the PSF principles, it is the country's responsibility to ensure the follow-up to the Peer Review, as well as the potential implementation of its recommendations through concrete reforms. In rolling out these reforms, the Ukrainian authorities can continue to call upon the PSF for support and envisage the assessment of the implementation of the Panel recommendations within a three-year time span through a PSF post-Peer Review.

The PSF Peer Review Panel also advised MESU to publish an action plan [including time schedule] for the implementation of the Law on Scientific and Technical Activity **in the first quarter of 2017**. In this action plan, the core messages and recommendations of the PSF Peer Review Panel should be taken into account.

The roadmap for reforming the national Science and Technological Development was adopted by the cabinet of ministers (CMU, No. 776; <http://zakon.rada.gov.ua/laws/show/776-2018-%D1%80/conv?lang=ru#n8>) on October 17, 2018. However to this point, the law is still not adopted.

Methodology

In the following part the recommendations are structured along the three main categories as presented. Each recommendation is listed in its original wording together with the current status of its implementation.

The following categories are used to assess the status of each recommendation:

1. “under implementation”
2. “not implemented”
3. “implemented”
4. The present document was drafted under the RI-LINKS2UA project (funded under Horizon 2020). One of the tasks of the project is to monitor the implementation of the PSF Peer Review panel recommendations to Ukraine. This report is based on own research and received inputs from the following RI-LINKS2UA project partners: MESU, NASU, DLR, ZSI and other stakeholders (e.g. other ministries, agencies responsible for RTDI).

2 Analysis and implementation of the PSF Peer Review Panel recommendations

2.1 Recommendations to raise quality and relevance of the science base

2.1.1 Promoting change and reform through a strong mandate of the National Board on the Development of S&T

Recommendation 1: The National Board on the Development of S&T should work strategically in reforming and re-orienting the system of S&T in Ukraine on the basis of jointly defined priorities with all involved stakeholders, such as the Ministry of Education and Science, the future National Research Foundation and the National Academy of Sciences.

Implementation status: implemented

The most essential recommendation with highly structural relevance was to create a National Board on the Development of S&T with a strong mandate to promote change and reform in the STI system of Ukraine. Recommendation 1 states: “The National Board on the Development of S&T should work strategically in reforming and re-orienting the system of S&T in Ukraine on the basis of jointly defined priorities with all involved stakeholders, such as the Ministry of Education and Science, the future National Research Foundation and the National Academy of Sciences.”

This recommendation was in line with the new Law of Ukraine “On Scientific and Technical Activity” which was enacted on **January 16, 2016**. One of the most important issues contained within this law is the establishment of a permanent advisory body, the **National Council of Ukraine on Science and Technology (NCUST)** under the Cabinet of Ministers of Ukraine. Its main purpose is to ensure the effective interaction between representatives of the scientific

community, governmental agencies and industry representatives, as well as to help develop and implement state policy in the field of science and technology. The National Council of Ukraine on Science and Technology consists of two parts: the Scientific and the Administrative Committee.

The framework for the composition of the NCUST:

- The Scientific Committee includes 24 leading scholars who represent the entire scientific community of Ukraine, the Administrative Committee consists of 24 representatives of the central executive bodies (minimal level of representation: deputy Ministers), the National Academy of Science of Ukraine and the National specialized academies (minimal level of representation: vice-presidents), oblast (city) state administrations of the regions with considerable scientific potential (their level of representation should not be lower than deputy heads of the state administrations), the state executive bodies responsible for science policy, large high-tech enterprises, scientific institutions, universities, academies, institutes and innovative structures.
- In accordance with the Law, the members of the Scientific Committee are appointed by the **Identification Committee on Science**, which is chosen through an open and competitive procedure among the domestic and foreign scholars who have significant scientific achievements, impeccable reputation and credibility in the scientific community.

Due to the new structure of science management, which contains the chance to redefine the Ukrainian scientific landscape substantially, it was of utmost importance to select the best independent scientists with undisputed integrity for the future National Council of Ukraine on Science and Technology. This selection was done by nine members of the **Identification Committee (IC)**. Thus, it became an equally important task to ensure that those nine jurors were able to perform their task solely on the grounds of merit, not yielding to any political pressure. According to the law, the nine members of the Identification Committee (IC) have to be chosen by the so-called "Special Search Commission" (SSC) that should be "mechanically" composed of the 25 Ukrainian scientists with the highest h-index. And according to the law the list for the IC members, had to be announced by the Ministry of Education and Science by **March 16, 2016**.

The SSC ended with a ranked list for 9 IC members (three Ukrainian scientists and six from foreign countries) which MESU provided to the minister cabinet for adoption on **June 14, 2016**.

With a delay of six months, the minister cabinet adopted the composition of the IC via resolution (No. 670) on **September 14, 2016**. The following researchers were selected:

BEENAKKER Carlo Willem Prof. for theoretical Physics at the University of Leiden
Joannes

GAMOTA George Prof. for Physics at the University of Michigan

HUSYNIN Valerii Head of the department for Astrophysics and Elementary

	Particles at the Boholiubov-Institute for theoretical Physics; National Academy of Sciences of Ukraine
LAVRETOVYCH Oleh	Prof. at Liquid Crystal Institute, Kent State University
LARSON Mats Lennart	Professor of Department of Physics, Stockholm University; Director of Alba Nova University Center; Member of the Royal Swedish Academy of Sciences
RIABCHENKO Serhii	Head of the Department of magnetic phenomena physics, National Academy of Science of Ukraine
HALPERIN Bertrand	Prof. for Mathematics and Natural Philosophy at the physics department of Harvard University
SHKURATOV Yurii	Head of Astronomy and Space Informatics of the National Karasin-University in Charkiw
STOCK Günter	President All European Academies (ALLEA)

The first meeting of the IC took place at the Boholiubov-Institute for theoretical Physics of the National Academy of Sciences (NASU) on **October 13, 2016**. According to the agenda the head (Prof. Serhii Riabchenko, UA) and deputy (Prof. George Gamota, USA) of the IC were elected and the rules of internal procedures, and the job specification for the scientific committee were adopted. Furthermore, the first draft for the application procedure and the action plan for the IC were discussed.

The Cabinet of Ministers of Ukraine approved the resolution on the schedule of responsibilities of the NCUST on **April 5, 2017 (No. 226) “On establishment of the National Board of Ukraine for Science and Technology Development”**. Hereafter, the NCUST will be the main national strategic entity for the implementation of reforms in the STI system of Ukraine under the direction of the prime minister. The main tasks of the NCUST are the creation of proposals for:

- the main lines of action in the area of research and technological development;
- priorities for the development and concrete implementation of these actions;
- the integration of the Ukrainian scientists into the international and European research area, considering national interests;
- the system of independent evaluation of governmental scientific and technological programmes, research projects, governmental research institutes and state degree’s;
- the evaluation of annual reports of leading research institutes (e.g. NASU), and;
- the configuration of the state budget for research and technological development.

The application procedure for the future members of the scientific committee started on **April 11, 2017** and was open for 30 days until May 10, 2017. The qualification needed was specified as follows:

- Participation at the development of the scientific system of Ukraine;
- Substantial personal achievements in science and/or scientific management;
- Comprehensive ideas for the future of sciences and complex knowledge and scientific interest in various scientific and technological areas, and;
- Experience in evaluation procedures, participation in international project, and management of high technological projects.

The Cabinet of Ministers of Ukraine approved (order № 520-p) the composition of the National Council for Science and Technology Development on **August 09, 2017**. In total 48 members were selected by a public call; 24 members of the Scientific Committee and 24 members of the Administrative Committee³.

Members of the Scientific Committee of NCUST of Ukraine with a term of 4 years

ANISIMOV Ihor Oleksiiiovych	- Dean of the Faculty of Radiophysics, Electronics and Computer Systems of the Kyiv National University
BILOUS Anatolii Hryhorovych	- Head of the Department of Solid-State Chemistry of the Institute of Nanosciences and Nanotechnologies
VOITENKO Nana Volodymyrivna	- Head of the Sensor Lab, Bohomoltsia Institute of the National Academy of Sciences
HUNDOROVA Tamara Ivanivna	- Head of the Department of Theory of Literature and Comparative Literature of the Institute of Literature, National Academy of Sciences
YEHOROV Ihor Yuriiiovych	- Head of the Department of Innovation Policy, Economics and High Technologies at the State Enterprise, Institute of Economics and Forecasting, National Academy of Sciences of Ukraine (NAS)
YEMETS Alla Ivanivna	- Head of the Department of Cell Biology and Biotechnology, Institute of Cell Biology, NAS of Ukraine
IZOTOV Yurii Ivanovych	- Head of the Physics of Sight and Galaxies Division of the NAS of Ukraine
KLYMCHUK Oleksandr Borysovych	- Leading Researcher, Department of Hydrogeological Problems of NAS of Ukraine
KLYMCHUK Oleksandr Borysovych	- Professor of the Institute of High Technologies of Kyiv National University
LYSETSKYI Lonhin Mykolaiovych	- Leading Researcher of the Department of Molecular and Materials, the NAS of Ukraine
MCHEDLOV-PETROSIAN Mykola	- Head of the Department of Physical Chemistry, Kharkiv

³ <http://zakon.rada.gov.ua/laws/show/520-2017-%D1%80> (13.11.2018)

Otarovych
 STATSYK Oleh Volodymyrovych - National University
 - acting Head of the Department of Signaling
 Mechanisms of the Cell, Deputy Director for Scientific
 Work of the Institute of Biology, NAS of Ukraine, Lviv

Members of the Scientific Committee of the NCUST of Ukraine with a term of 2 years

ARBUZOVA Svitlana Borysivna - Director of the private research institute in medical
 sciences, Mariupol

VOROBIOVA Olha PETRIVNA - Head of the Department of English Philology and the
 Philosophy of the Language, University of Foreign
 Languages, Kyiv

HOLOVACH Yurii Vasylovych - Head of the Laboratory of Statistical Physics of Complex
 Systems, NAS of Ukraine

DIDUKH Yakiv Petrovych - Head of the Department of Geobotany and Ecology of the
 Institute of Botany of the National Academy of Sciences

OKOVYTYI Serhii Ivanovych - Head of the Department of Organic Chemistry, Deputy
 Dean for Scientific Work and International Cooperation of
 Dnipro National University

PARASIUk Oleh Vasylovych - Dean of the Chemical Faculty of Lesya Ukrainka Sumy
 National University

PROKOPOVYCH Pavlo - Head of the Department of Economics and Management
 Volodymyrovych of the Kyiv School of Economics

SLIUSARENKO Yurii - Head of the Department of Statistical Physics and
 Viktorovych Quantum Theory of the National Academy of Sciences,
 Kharkiv

STOVPCHENKO Hanna - Leading researcher of the Department of Physical and
 Petrivna Metallurgical Problems of Electroslag Technologies, NASU

UTIEVSKYI Serhii Yuriiiovych - Professor of the Department of Zoology and Animal
 Ecology, Kharkiv National University

FOKIN Andrii Arturovych - Head of the Department of Organic Chemistry and
 Technology of Organic Substances, Kyiv Politechnical
 Institute

CHERNIHA Roman - Leading Researcher, Department of Mathematical Physics,
 Mykhailovych Institute of Mathematics, NASU

In accordance with the provisions of the Law of Ukraine "On Scientific and Scientific and Technological Activity", the National Council of Ukraine for Science and Technology Development is a permanent consultative and advisory body formed under the Cabinet of Ministers of Ukraine and established to ensure an effective interaction between representatives of the scientific community, executive authorities and economy in the formation and implementation of general state policy in the field of scientific and technological activity. Further regulations which are urgently needed for the development of the scientific sphere in Ukraine will be prepared by this Council.

While according to the law NCUST meetings have to be held once in every 3 months, in 2018 only two full sessions of the National Board took place. The first meeting of the National Council of Ukraine for Science and Technology Development was held on January 16 2018, and headed by the Prime Minister of Ukraine. The draft regulations on the new **National Research Foundation of Ukraine (NRFU)** were accepted on the procedure for state certifications of the universities. The NRFU has to be established, and the next main steps to be taken should be to:

- work out the optimal model of National Science Development;
- form the priority directions for R&D meeting the priorities of economic development of Ukraine (for MESU and other authorities, NASU and the branch academies);
- establish institutional funding by the scientific directions for the universities grounded on the state certification with competitive financing of projects as additional funding source (for MESU and Ministry of Finance);
- work out the draft regulations on the state certification of scientists (for MESU and the Scientific Committee) and to;
- work out the issue of state support for R&D (for MESU and other authorities).

The second meeting took place on November 30, 2018 and was devoted almost completely to the establishment of the National Research Foundation (NRFU). The NCUST approved the elected members of the Scientific Council of the NRFU and discussed organizational issues, such as candidates for the Acting Director of the NRFU, level of salaries of its officials, and the particularities of its registration. It was decided to create working groups for solving practical questions related to the creation of the NRFU.

Assessment

With regard to the structural dimension of the first recommendation, the actions taken for the establishment of the NCUST met the intent of the recommendation, and sufficient evidence was provided to demonstrate that measures were implemented. Nevertheless, the process to establish the NCUST needed too much time to be able to solve the most urgent problems in the Ukrainian STI system.

On the one hand, Ukraine needs fast and effective structural changes, and on the other hand the realisation of basic preconditions will take more time.

The criticism that is to be expected after making important decisions according to “unilateral or self-interested preferences”, e.g. about the composition of an important council (which has to decide about priorities and budget distribution, the support or closing of institutes etc.) or even about selecting an appropriate professional (like the national programme coordinator in Brussels), leads to very complex and administratively overburdened mechanisms and processes.

With regard to the dimension of contents of the first PSF Peer Review panel recommendation, which postulates a strategic role of the NCUST for the reform and re-orientation of the system of S&T in Ukraine on the basis of jointly defined priorities with all involved stakeholders, the action taken formally met the intent of the recommendation, and sufficient evidence was provided to demonstrate that measures were implemented.)

2.1.2 Raising quality and relevance of S&T through competitive research funding

Recommendation 2: The National Research Foundation should become a strong change-maker and champion reforms in the STI system of Ukraine, notably through a stepwise strong increase in the competitive funding of research projects

Implementation status: under implementation

The Ukrainian research system lacks a comprehensive approach towards competitive R&D funding. The Horizon 2020 PSF Peer Review panel stated that the NRFU should exclusively and competitively fund research projects, fundamental or applied. The NRFU should abstain from providing institutional funding. The NRFU should focus its funding activities on excellence in research, and on its relevance both vis-a-vis the national priority areas and the broad science base. The PSF Peer Review Panel strongly suggested to the Government of Ukraine to mobilise substantial extra funds from the state budget to support the activities of the NRFU. Furthermore, the panel suggested that the Minister of MESU should act as political budget authority for the NRFU.

The National Research Foundation of Ukraine has been established by the Resolution of Cabinet of Ukraine from 04.07.2018 No. 528. This legal act approved the Regulation on the Foundation and determined the number of its workers. Also, to provide for the work of the Fund in the next year, the draft Law of Ukraine “On State Budget for 2019” foresees the allocation of means for the provision of NRFU activities.

The National Research Fund of Ukraine will work in the following areas⁴:

- support of research and development activities;
- promotion of scientific cooperation, scientific mobility, in particular, scientific training of researchers, including abroad;
- development of the material and technical base for scientific research and development;
- development of research infrastructure;
- support for projects of young scientists;
- popularization of science

⁴ <https://www.kmu.gov.ua/ua/news/uryad-stvoriv-nacionalnij-fond-doslidzen-yakij-davatime-granti-na-nauku-z-2019-roku>
(10.09.2018)

The certain amount of public costs are planned for the activity of the NRF in the draft Budget of Ukraine for 2019⁵

According to MESU the NRF will start with its activities in 2019.

Recommendation 3: The National Research Foundation should be internationally supervised and assisted to guarantee higher accountability and transparency.

Implementation status: under implementation

The PSF Peer Review Panel suggested that a temporarily implemented advisory board responsible for supervision and assistance, consisting of administrators from international sister organisations, such as the DFG (Germany), NWO (The Netherlands), SNSF (Switzerland), ERC (Europe) etc., should regularly supervise the grant review procedures of the NRFU. As part of the review, feedback from scientists who have submitted proposals should be collected and considered. The supervision reports on the review procedures of the research projects should be communicated to the National Board and the scientific community in Ukraine, together with the pertinent conclusions of the NRFU Board. The NRFU should be put in a position to work in English and to translate the most important documents into English.

For the purpose of preserving impartiality and separating the National Research Foundation of Ukraine from the other entities, the National Research Foundation is subordinated to the Cabinet of Ukraine.

The Structure of Scientific Board of the Foundation, formed through the meticulous selection procedure of the Scientific Committee, was approved by the National Board on the Development of S&T in the end of November. This supervising body of the Foundation will begin its work at the start of this year 2019. According to the current legislation, NRF can attract international experts and means of international donors during its activity.

Recommendation 4: An international peer-review system for projects should be introduced to support the excellence and internalisation of Ukrainian science

Implementation status: under implementation

The enhanced use of English and continual improvement of the standard of Ukrainian research proposals and projects would not only open up the Ukrainian system of research towards international cooperation but also strengthen its competitiveness and increase the likelihood to successfully competition for European funding.

The PSF Peer Review Panel suggested implementing research proposal writing, proposal submission and review procedures in English (starting with projects above a certain financial

⁵ <http://www.nas.gov.ua/EN/Messages/News/Pages/View.aspx?MessageID=4254> ((11.11.2018)

threshold) in order to prepare the Ukrainian scientific community for international competitive research procedures.

International mobility and an increased publication of articles in English should also be promoted.

This recommendation will be implemented by NRFU, which will start its work in 2019. Partially, MESU and NASU use the international expertise already.

2.1.3 Enhancing R&F at universities and increasing autonomy

Recommendation 5: Research universities should be identified in a post-factum approach over five years on the basis of transparent international standards.

Implementation status: under implementation

In principle, any university should have the possibility and resources for research activities. However, the PSF Peer Review Panel, was of the opinion that it is too early to attach financial consequences to the status of a research university in Ukraine, since the level of research across the universities in Ukraine is too uneven and in general too volatile. The PSF Peer Review Panel advised that the status of a research university must be earned, not granted upfront, and that it should not automatically last indefinitely. Instead, the PSF Peer Review Panel advocated a post-factum identification of research universities. The PSF Peer Review Panel suggested a period of 5 years when research universities could be identified, based on transparent criteria, and taking good international practice into account.

To finance this institutional transition, MESU should transfer 50% of the research funding (which so far was competitively allocated to R&D projects of universities) into an institutional lump sum on an annual basis. The volume of this institutional R&D budget dedicated to the universities should be calculated on the average competitive R&D project funding, which each university has competitively received through MESU over the preceding 5 years.

Assessment

According to the Law of Ukraine “On scientific and scientific and technical activity”, MESU has already put into force a certification procedure for higher education institutions. A mechanism of base financing provision on the results of such a certification has been introduced as well.

The Cabinet of Ministers of Ukraine adopted the resolution of August 22nd, 2018 No. 652 “Certain issues of conduction of state certification of higher education institutions as regards conduction by them of scientific (scientific and technical) activities”.

Recommendation 6: A process of profiling and merging of universities should be induced to avoid "mushrooming" and improve impact and critical mass.

Status: implemented

The PSF Panel draw the attention of the Ukrainian authorities on the issue of the quantity and quality of higher education institutions in Ukraine and to carefully start to induce and elaborate a process of merging universities and/or on shaping the profiles of existing universities.

Recommendation 7: All research organisations of the Academies of Science and universities should be entitled to their own discretionary use of acquired third party funding.

Status: Implemented

Commitment for scientific fundraising should be seen as a driver for excellence and competitiveness.

Therefore, the PSF Peer Review Panel recommended that surplus budget generated by research institutes and universities (e.g. through third party financing, consultancy work, contracts with industry etc.) should not be given back to the treasury, but rather the use of surpluses generated through third party funding and financing should fall under the autonomy of the research institutes and universities. The universities should be enabled and empowered to operate hard currency accounts, which is a necessity for successful engagement in EU projects, in particular as coordinators of such projects.

The Ministry of Education and Science implemented this recommendation through the existing laws.

2.1.4 Raising the efficiency and the contribution of the Academy of Science of Ukraine

Recommendation 8: The National Academy of Sciences of Ukraine should streamline its current profile and concentrate its priority focus.

Status: under implementation

The PSF Peer Review Panel advised NASU to make explicit how the research activities of its institutes will contribute to innovative progress in the national priority areas and report annually about the results. By the end of 2017, the Presidency of NASU was asked to communicate a strategic plan for each of the various priority areas selected by NASU, defining the corresponding research lines, the amount of manpower, the institutes involved, impacts already achieved and the collaborating national and international partners or networks.

The control body of NASU determining the strategic lines of the activity of the Academy was the Addressee of this methodological recommendation.

Assessment

There are currently discussions on different levels regarding the new priorities of NASU as an autonomous institution.

Moreover, since 2018 the new model of NASU funding has started as a pilot one via a new programme of the State Budget named "Support for the development of priority areas of scientific research". It consists of 5 pillars:

- 1) Support of the state-priority research and developments implemented by those research institutes/centres recognized as the highest category (A) by the evaluation results carried out during 2016-2018 (see the measures in recommendation 9) ;
- 2) Performing the most important for Ukraine research and developments of the high degree of readiness (high TRL) on a competitive basis;
- 3) Support of the newly established research groups on a competitive base headed by distinguished young researchers;
- 4) Providing funding of the joint international projects selected on the competitive base;
- 5) Purchasing and modernisation of the equipment necessary for the high-level research.

In 2018 funds for such projects were obtained in October only, which made it difficult to spend them efficiently.

Recommendation 9: The Academy of Science of Ukraine should make its institutes' organisation more effective through regular independent evaluation exercises.

Status: under implementation

The PSF Peer Review Panel urged NASU to evaluate ALL research institutes and research groups within the next four to five years maximum.

Those institutes and research groups which perform far below the Academy's benchmark should be closed and the freed budgets should be invested in the best performing research groups and the most pressing upcoming challenges.

Assessment

As early as 2017 the assessment of NASU institutes was introduced with engagement of peer experts (namely international ones) based upon the experience of assessment system of Leibnitz Scientific Community (Germany).

The National Academy of Sciences of Ukraine has established the system of independent evaluation. In 2016 within a pilot exercise 13 research entities have been evaluated; in 2017 the next 29 ones; In 2018 the evaluation has been completed additionally for the 94 research institutes, centres, other entities. More than 30% of experts involved in the evaluation appeared

to be external ones together with 11% scientists from abroad (i.e. international experts). Representatives of foreign organisations are also included to the higher-level commissions related to their fields of research as well as to the highest level Permanent Commission of the NASU for evaluation. The NASU invited the representatives of the Ukrainian Scientific Diaspora to register themselves as experts for the participation in evaluation processes. As a result of the evaluation those institutes that gained the A category received additional funding in 2018 to support the most prospective research

Recommendation 10: The Academy of Sciences of Ukraine is advised to initiate several science communication activities.

Status: under implementation

The PSF Peer Review Panel advised NASU to enhance its autonomous capacity as a through several science communication activities (like symposia, TV specials, etc.) to strengthen its “science for society” nexus.

Assessment

It is worth emphasizing that in recent years, NASU has conducted a significant number of events to help popularise science (in particular, within the remit of Day of Science festival), and has also published the popular scientific journal “Outlook” etc. MESU is always ready to support these initiatives, which are extremely important for the future of our science.

The popular papers on scientific issues are published in the weekly newspaper "Mirror of the Week" at the special heading "Technologies", as well as in the daily newspaper "Day"⁶ on a permanent basis. The new TV programme "Science XXI" has been launched in 2017 at the initiative of the NASU with support of the Committee on Science and Education of the Supreme Council of Ukraine at the Parliamentary TV channel "RADA".

Starting in 2015 the new form of science communication "The Scientific picnics" implemented usually by young researchers widened their presence in all regions of Ukraine. They are carried out twice a year: in spring back-to-back to the annual Scientific Fest and in autumn close to the International Day of Science.

In 2018 the Day of Science held on 10-11 November embraced 6 Ukrainian cities and gathered hundreds of interested people, supported by the Kyiv-city public budget. Besides the annual All-Ukrainian Scientific Fest initiated by the NASU is carried out in May and presents a lot of exhibitions, discussion panels, excursions, round table and conferences.

The popular journal "Svitoglyad" (World-View) founded by the NASU and Main Astronomic Observatory (MAO) edited 6 times a year provides the information on the prominent scientists, history of Ukrainian science, the world- level advanced scientific and engineering achievements.

⁶ <https://day.kyiv.ua/en/archivenewspaper> (13.11.2018)

Besides the certain NASU research institutes initiated the events for popularisation special scientific fields: they are "The Astronomy Day" in MAO, "The nervous Science Day" by Institute of Physiology in the frame of International Braine Awareness Week, course of lectures "What the archaeology tells about" by the Institute of Archaeology.

The researchers from the State Museum of Natural History located in L'viv organised the lessons in biology for disable schoolchildren in the frame of the inclusive education strategy, while the contest for the students of Artist Academy has been held in Kharkiv to commemorate the prominent scientists by painting their portraits, after that at the exhibition the best works has been presented and marked with awards. The new "PfysMathDay" started just in 2018 at the initiative of the Institute of Mathematics.

Recommendation 11: The Academy of Sciences of Ukraine should broaden the diversity of its Human Capital, with particular focus on age and gender balance

Status: under implementation/not implemented

NASU should set the target that the members of the Presidium, which carry out management positions, are younger than 70/67 years of age (male/female) and that the percentage of female members is more than 25%.

Assessment

According to the annual 2017 report the average age of researchers employed at NASU research institutes / centres is 52,8 years. Among them the gender distribution can be described as follows: overall ratio of female employed is 49,8 %, male researchers - 50,2%. Among researchers we find 41,5% females and 58,5% males. The heads of institutes/research centres are represented by 6,4% females and 93,6% males while deputy heads are 18,7% females and 81,3% males. The research managers (in Ukrainian - "scientific secretaries") of research institutes/centres show to be 47,3% females and 52,7% males. Every year the percentage of women in the positions of scientific secretaries and deputy heads increases.

Recommendation 12: The Academy of Sciences of Ukraine and universities should promote publications in international journals and downsize in-house publishing

Status: under implementation

The PSF Peer Review Panel advised universities and NASU to promote the use of English in publications and to introduce this element in the criteria for individual and institutional assessments. NASU and the universities should downsize their in-house publishing activities by safeguarding only those scientific journals that have a competitive impact factor. Preference should be given to those which are edited in English.

Assessment

The Procedure of the state certification of the scientific institutions approved by the Resolution of the Cabinet of Ministers of Ukraine (№ 540 from July 19, 2017) states publishing in international journals as the main criteria. However, it is not easy to implement, as very few Ukrainian journals are included into international databases.

2.1.5 Raising the efficiency of other research performing organisations through institutional reforms

Recommendation 13: The Sectoral Academies of Science should be modernised drawing on the transformation model of the National Academy of Science of Ukraine.

Status: Not implemented

The PSF Peer Review Panel acknowledged the reforms to modernise the Sectoral Academies of Sciences such as the one conducted by the State Academy of Agriculture and Ecology of Ukraine.

The PSF Peer Review Panel suggested transforming the existing Sectoral Academies of Sciences along the recommendations directed to the national Academy of Sciences of Ukraine.

Recommendation 14: The institutes in the sphere of MESU and other ministries should be evaluated and – depending on the obtained results of these assessments – restructured or dissolved.

Status: under implementation

MESU should only be directly responsible for the mission, strategy, management and financing of those institutes which directly serve the political tasks of the ministry by providing relevant intelligence, evidence and/or operational support. To assess whether such functions are truly performed in an efficient and effective manner by the institutes in the sphere of MESU, these institutes should be comprehensively evaluated. The Resolution of the Cabinet of Ministers of Ukraine (№ 540 from July 19, 2017) approved the Procedure of the state certification of the scientific institutions. In accordance with Law of Ukraine "On scientific and scientific and technological activity", this procedure is carried out to determine the effectiveness of activities of the scientific institutions.

The aim of the certification is to expand opportunities and stimulate effectiveness of the Ukrainian scientific institutions.

Therefore, those institutes whose performance is weak should be either reformed or terminated.

The PSF Peer Review Panel considers two options:

1. The integration of suitable research institutes into appropriate universities.

2. The integration of suitable research institutes into (institutes of) the National Academy of Sciences of Ukraine or the Sectoral Academies of Science, if appropriate.

In order to find out which combinations might be most promising, institutes should be incentivised to start projects, possibly with universities, NASU institutes, or other partner organisations through participating in competitive funding endeavours, organised, for instance, by the National Research Foundation.

Assessment

The draft action plan of the Government for 2019 foresees the beginning of the certification procedure for the scientific institutions (The resolution of the Cabinet of Ministers of Ukraine (No. 652, August 22 2018). The scientific institutions which will be referred to the 4th (lowest) category after the results of certification will be recommended for reorganization or closing.

2.1.6 Developing talent and capacity

Recommendation 15: Research careers should be stimulated through a mix of policy instruments, such as increase in salaries, exchange programmes or awards

Status: under implementation

A mix of policy instruments should be implemented to safeguard the scientific human capital base and to make Ukraine an attractive location for young researchers within the global research market.

A relevant policy mix has to include also salary-related elements. A new salary scheme for faculty staff that takes their research activities and outputs into account should be introduced.

Assessment

It is envisaged to expand presidential and governmental programmes for the exchange of young scientists with other countries, and to review the award system for “outstanding research in Ukraine” with the objective to promote excellence.

In this regard the MESU, with the involvement of different stakeholders, developed a roadmap for Ukraine's integration into the European Research Area (ERA-UA). The roadmap was agreed with the Scientific Committee of the National Council for Science and Technology Development.

The roadmap includes the following priorities:

1. Effective national research systems.
2. Optimal transnational co-operation and competition.
3. Open labour market for researchers.

4. Gender equality in research.
5. Optimal circulation and transfer of scientific knowledge.
6. International cooperation.

The ERA Roadmap was adopted on March 22, 2018.

Recommendation 16: Research administration should become leaner, ensure less red tape and get rid of inefficiencies and corruption.

Status: under implementation

The PSF Peer Review Panel recommended to thoroughly scrutinising administration processes by including the perspectives of the end-users and simplifying those processes which are unnecessary, cumbersome and inflated.

The administrative staff of universities and research institutes should receive training, job shadowing and mentoring in order to learn and get to know more efficient management and administration systems of other European STI landscapes. Collaboration should be established or further developed with pertinent university associations, leagues (such as LERU), confederations or organisations that are promoting excellence in research management for research institutions.

Assessment

MESU will provide incentives for the different institutions addressed by this recommendation to set up adequate simplification plans with corresponding Human Resource Development plans and to be able to implement them in a five-year period.

MESU intends to introduce a number of procedures aiming to further simplify the research management processes at national research and innovation institutions. One of these innovations is an electronic system for registration of scientific projects.

2.2. Recommendations to open up the research and innovation system to the world and to enhance international collaboration

2.2.1 Increasing participation in European Research

Recommendation 17: The opportunities offered by Horizon 2020 should be reaped through adequate accompanying support measures and initiatives

Status: under implementation

The following recommendations were made by the PSF Peer Review Panel:

1. Set up a dedicated and well-staffed unit in MESU dealing with Horizon 2020 and ERA integration

2. MESU should establish a liaison office in Brussels to facilitate communication and exchange with relevant stakeholders located there.
3. Unify the existing NCP networks into one professional, powerful and united National Contact Point (NCP) system for Horizon 2020 and other European RTI programmes and initiatives in Ukraine.
4. Establish a knowledgeable system of delegates to the Programme Committee of Horizon 2020 with the so-called 14 configurations, preferably in connection and/or strong alignment with the NCP network.
5. Regularly monitor participation in Horizon 2020.
6. Establish and incentivise learning cycles on the use of Horizon 2020.
7. Launch national programmes to support Horizon 2020 participation, e.g. similar to the Momentum Programme of the Hungarian Academy of Sciences or the Polish “Pact for Horizon”, including research proposal preparation grants, normative recognition vis-à-vis research career advancements or the award of the status of a research university.
8. Participate in multilateral European initiatives including selected Joint Programming Initiatives or ERA-NETs.

Assessment

For the purpose of informing about the possibilities of the Horizon 2020 programme, and consultation of potential participants from Ukraine, the network of 40 national contact points (NCP) and regional contact points (RCP) on all thematic areas of the Horizon 2020 programme have been appointed. The NCP network is coordinated by MESU. A number of actions are conducted by the NCP network in different regions/cities of Ukraine to provide information and support for those interested in participating in Horizon 2020 - EU Framework Programme for Research and Innovation.-

Regular monitoring of participation of the Ukrainian organizations in the programme Horizon 2020 is carried out by MESU.

For selection of the Horizon Programme Committee Members a public call was published. Based upon public competition results the Programme Committee Members were appointed under the Order of the Cabinet of Ukraine from September, 5th 2018 (No. 636-r).

The participation of Ukraine in bilateral scientific and technical programmes is very important for the further international cooperation in participation in Horizon 2020 programme. Within the bilateral scientific and technical cooperation in 2018 between Ukraine and 10 partner-countries (Poland, Lithuania, Germany, Austria, France, Moldova, China, Belarus, Latvia, USA), 97 research projects were carried out.

On July 16, 2018, the first meeting of the Coordination Centre for the implementation of the Horizon 2020 was held in Kyiv.

Recommendation 18: Ukraine should become a member of COST and provide incentives for increased participation of its STI community in EUREKA

Status: under implementation

Ukraine should explore the possibility to become a member of COST (European Cooperation in Science and Technology, funded under Horizon 2020), the longest-running European framework supporting trans-national cooperation among researchers, engineers and scholars across Europe. Up to now, about 132 Ukrainian organisations took part in COST actions.

To incentivise the participation of innovative Ukrainian companies in EUREKA (European network developing cooperation between SMEs, research centres and universities for industrial innovation) the PSF Peer Review Panel suggested considering to hand over the managing authority to the Ministry of Economic Development and Trade.

Assessment

Ukraine financed EUREKA projects for the first time in 2017. Ukraine plans to continue this funding in 2019.

Consultations have been started for acquisition of membership by Ukraine in the European programme of long-term transnational Cooperation of researchers, engineers and scholars COST. After almost ten years' break the participation of Ukrainian HEI in the innovative European program EUREKA was restored (currently MESU co-finances 2 projects of the programme, further on the number of such projects to be increased).

Recommendation 19: Opportunities for international STI exposure, especially for junior and middle-career researchers, should be assured, based on their contribution to research advancement

Status: under implementation

Opportunities for researchers from Ukraine to gain international experience are insufficient, especially for junior and middle-career researchers. Opportunities to attend international conferences abroad and to visit international research partners should not be concentrated on a few individuals within universities or research institutions. It makes sense to allocate more funds to young researchers, as they are the ones who will shape the future of research in Ukraine.

The leadership of universities and research institutes (including NASU) should be made responsible for establishing a travel budget fund and ensure that young people in particular may access it.

Assessment

In 2018, the new Ukrainian State Budget programme stipulated to include the costs for short and mid-term training visits for young researchers in foreign research centres (selected on a

competitive basis) in the budget of NASU. On November 6th, 2018 President Petro Poroshenko announced the creation of special Presidential Fund, worth 1bn Hryvnas, which will be oriented to the support of young students and scientists.

Recommendation 20: Access to national and international scientific infrastructures should be improved

Status: under implementation

The PSF Peer Review Panel highlighted the need to provide better equipment as well as access to (domestic and international) scientific infrastructure, especially for young researchers.

MESU should seek to establish beneficial agreements with European research infrastructures, and should secure necessary budgets, also from the EU, through the so called Horizon 2020 INFRAIA calls (Integrating Activities for Advanced Communities), as well as from international sources that allow Ukrainian researchers to have access to these research infrastructures and to conduct research together with their fellow researchers from other countries.

Assessment

In May 2018 the Ministry of Education and Science of Ukraine adopted an order about creation of centres for joint use of the scientific equipment. It is foreseen that eight centres of such a type will be created in the higher education institutions.

It is aimed to establish a network of state key laboratories as the core element of the national research infrastructure landscape. The network should promote the integration of the university and academic science into the real economy sector in order to achieve breakthrough results in the priority areas of science and technology development. Information about the calls and opportunities on access to the European research infrastructures has been published on a permanent base at the NASU website provided by the Horizon 2020 “RICH2020” project.⁷ The Memorandum of Understanding between the RICH2020 project and NASU had been signed in 2015. Also three Ukrainian representatives took part in the training session organised by the ResInfra@DR project⁸ to build capacity for evaluation, planning, monitoring, operation and management of research infrastructures.

2.2.2. Enhancing research quality by using the expertise of the Ukrainian diaspora

Recommendation 21: Cooperation with the scientific diaspora should be increased in order to exploit its potential for Ukrainian STI

⁷ <http://www.rich2020.eu/> (03.05.2018)

⁸ <http://www.interreg-danube.eu/approved-projects/resinfra-dr> (03.05.2018)

Status: under implementation

An inviting and welcoming spirit should be created to engage the scientific diaspora in interacting and cooperating with local research teams.

MESU and the National Board on the Development of S&T should prepare an action plan on how to properly address and engage the Ukrainian research diaspora in the reform process and in research collaboration at the working level.

As a first step, a database on the Ukrainian diaspora should be established for active communication and outreach measures.

It is furthermore advised to use bilateral S&T agreements between Ukraine and other countries as a basis to prepare joint projects between domestic researchers and colleagues from the diaspora.

Assessment

With support of the EaP PLUS and RI-LINKs2UA projects the workshop «SCIENCE CONNECTS: Strengthening the Interaction between Researchers in Ukraine and Scientific Diaspora» has been carried out in May 2017⁹. The follow-up of it was the international seminar for young researcher in life science organised by German-Ukrainian association of expat researchers; the wide list of Ukrainian researchers working abroad has been invited to fill appropriate forms and express their readiness to be involved on a permanent base to join activities including their participation in different evaluation procedures. Based on their answers some of them are included in the commissions for independent evaluation of NASU institutes. As a follow-up after the mentioned workshop some new projects have been launched with participation of Ukrainian researchers working abroad (expats). Additionally, the forum of the Ukrainian Research Diaspora “ADVANCING SCIENCE THROUGH INTERNATIONAL COOPERATION” has been organised from 20-22 October 2018¹⁰ and involved 38 Ukrainian expat researchers from ten countries with support of NASU, MESU, Ukrainian International Committee of Science and Culture at NASU, GUAS, Humboldt Club Ukraine, and other Ukrainian and German organisations.

2.2.3 Policy learning and strategic decision-making

Recommendation 22: The association to Horizon 2020 should also be used as a source for policy learning

Status: under implementation

The PSF Peer Review Panel encouraged Ukraine to consider Horizon 2020 not just as a powerful source of funding for (public-private) research partnerships, but also as a source for policy learning. This necessitates active participation of Ukrainian high-level experts in several bodies, including, first and foremost, the ERAC (European Research Area and Innovation Committee).

⁹ <https://www.eap-plus.eu/object/event/80> (03.05.2018)

¹⁰ <http://ukrainet.eu/2018/06/30/2018-diaspora-forum/> (03.05.2018)

The PSF Peer Review Panel considered important that Ukraine follows closely the activities of the European Research Area (ERA) related groups and aspires for policy learning with and from them.

Assessment

The Ministry of Education and Science of Ukraine expects that the alignment of national policies with the policy of European Research Area will be enhanced through the newly appointed Ukrainian representatives and experts in Horizon 2020 Programme Committees.

Recommendation 23: International collaboration efforts in STI should be aligned with national priorities and strategies

Status: under implementation

The PSF Peer Review Panel recommended discussing a more strategic alignment of internationalisation policies with national priorities and strategies. A review (or quality check) of various existing bi- or multilateral agreements should be made to draw a picture of who on the national level is involved and the results brought through these agreements.

Assessment

Decisions should be taken on the challenges to be addressed and the priorities to be set based on the deliberations of the National Board on the Development of S&T.

Future programmes should be developed in collaboration with different partners from Ukraine.

It can be noted again, that the already mentioned new roadmap for Ukraine's integration into the ERA is reflecting this recommendation as well.

2.3 Recommendations to build a conducive framework for an innovation-driven economy in Ukraine

2.3.1. Putting innovation high on the political agenda

Recommendation 24: Elaborate a cross-governmental Innovation Strategy and Action plan focusing on priority domains for science- and technology-based innovation

Status: under implementation

The PSF Peer Review Panel recommended that the Cabinet of Ministers of Ukraine develops a National Innovation Strategy, based on the work of the National Board and its working groups. It should aim to identify the overall role of innovation for development in Ukraine, assess the

present situation highlighting assets and constraints for Ukraine as an innovation-driven economy, and present ways forward in terms of priorities for supporting innovation.

Assessment

Up to now the Ministry of Education and Science of Ukraine prepared a draft order for the Cabinet of Ministers of Ukraine "On approval of the operational plan of the priority measures for reforming of the national scientific field". The plan is focusing on the effective inter-sectoral coordination of actions and is connected with the implementation of the Law of Ukraine "On Scientific and Scientific and Technological Activity".

Recommendation 25: Ensure representation of the Ministry of Economic Development and Trade and innovation actors in the National Board on the Development of S&T

Status: Implemented

The PSF Peer Review Panel recommended to establish a permanent seat for a high-level representative of the Ministry of Economic Development and Trade in the Administrative Committee of the National Board on the Development of S&T.

Additionally, all relevant constituents of the Innovation Ecosystem should be represented in the Administrative Committee.

Assessment

A High-level representative from the Ministry of Economic Development and Trade, Deputy Minister of Economic Development and Trade became a member to the Administrative Committee of the NCUST by the order from the Cabinet of Ministers (August 9, 2018).

Recommendation 26: Establish a permanent working group on innovation together with consultative processes under the National Board on the Development of S&T

Status: under implementation

The PSF Peer Review Panel suggested a permanent working group to be created to cover the issue of innovation.

Assessment

Until today, the Council on Innovation was already established and its composition and activity regulations were approved by the resolution of the Cabinet of Ministers of Ukraine № 895 on 25 October 2017.

The Council on Innovation is a temporary consultative and advisory body of the Cabinet of Ministers of Ukraine.

The main tasks of the Council on Innovation are to provide:

- the coordination and interaction of executive authorities, civil society, business entities and subjects of innovation activity, preparation of proposals for the creation of socio-economic, organizational and legal conditions for the effective reproduction, development and use of the state's innovative potential;
- the development of innovation infrastructure, science support;
- the implementation of priority projects in the real economy.

The Council is headed by the Prime Minister of Ukraine, and its members are representatives of business, public organizations, subjects of innovation activity and heads of executive bodies, in particular the Ministry of Education and Science of Ukraine and the Ministry of Economic Development and Trade of Ukraine.

2.3.2 Supporting innovation with concrete instruments, programmes and schemes

Recommendation 27: Realistic and effective innovation policy instruments should be identified

Status: under implementation

The PSF Peer Review Panel recommended that Ukraine should establish and allocate public money to a range of innovation support instruments, programmes and schemes, which are necessary for innovation to flourish.

Assessment

The execution of this recommendation will become possible after the approval of new version of the Law of Ukraine on Innovation Activity, which will be prepared based on the provisions of the Strategy of Innovation Development, after its approval.

The elaboration of the State Innovation Development Strategy was planned for 2018 with the purpose to determine the principles of innovative development of Ukraine. It should bring together competences of various central executive authorities in the field of innovation activity and provide concrete measures for the implementation of its objectives.

Among the priorities of this strategy are measures to normalize the principles of innovation and development of innovation infrastructure, and for the implementation of the mechanisms and the tools for innovators support.

Recommendation 28: Innovation vouchers for internationalization and validation of innovation activities for companies should be introduced

Status: under implementation

The PSF Peer Review Panel gave emphasis not only on connecting Ukrainian universities and research institutions with their international counterparts, but also on innovative Ukrainian companies being trained to operate in international innovative markets. In the international context, Ukrainian firms will be required to develop and improve high-quality innovative products.

The PSF Peer Review Panel suggested introducing innovation vouchers for the internationalisation and validation of innovations to support Ukrainian firms in entering attractive foreign markets with strong innovation competition.

Assessment

Regarding the current status, MESU has already developed a draft law called "On Support and Development of Innovation Activity", which is currently under approval.

The provisional law stipulates the following points in relation to the aforementioned recommendation:

- Changes in the system of budget financing of innovation activity (concentration of resources in one manager of budget funds)
- Simplification of the procedure for obtaining state support for the subjects of innovation activity, in particular the provision of innovative vouchers;
- Establishing of mechanisms for attracting private domestic investment in the development of innovations (using joint investment institutions through the creation of venture funds for financing innovative projects).

Recommendation 29: Science-industry mobility schemes should be established

Status: under implementation

The PSF Peer Review Panel recommended the implementation of a pilot science-industry mobility scheme in Ukraine, with the aim of promoting cooperation between public research organisations and innovative businesses. Such a scheme could provide incentives for researchers in the public sector to get involved in activities in and with companies.

Assessment

The above mentioned draft law "On Support and Development of Innovation Activity" suggests the following action regarding this recommendation:

- Definition of the principles and forms of public-private partnership in the field of innovation activity and financial relations that arise in such a partnership, in particular, the simplification of the mechanism for implementing joint activities involving budget institutions (universities, research institutions) and business entities.

The proposed support mechanisms are also foreseen in the Strategy of Innovation Development (current in the draft stage) and Strategy of Industrial Development (the preparation of this document is carried out by Ministry of Economic Development and Trade).

Recommendation 30: Cooperative projects between the public research sector and industry should be supported

Status: under implementation

The PSF Peer Review Panel recommended the establishment of a new funding mechanism to support cooperative research projects shared between public research institutions and companies. This would involve grants to consortia formed between actors from the two sides, with the objective to jointly develop innovations based on the exploitation of research results by the company.

Assessment

The mechanism of support of cooperative projects between public research sector and industry is foreseen in the draft of the new law “On Support and Development of Innovation Activity” which stipulates the following actions regarding this recommendation:

- Establishment of the Fund for the Innovation Development as a legal entity of public law of the type of "fund of funds";
- Establishing a mechanism for the commercialization of intangible assets of universities and research institutions through the Fund for the Innovations Development;
- Definition of the principles and forms of public-private partnership in the field of innovation activity and financial relations that arise in such a partnership, in particular, the simplification of the mechanism for implementing joint activities involving budget institutions (universities, research institutions) and business entities.

Beside the aforementioned the new law on technology transfer (foreseen to be adopted in 2019) will also tackle the cooperation between public research sector and industry.

3 Conclusions

As seen from this analysis, the majority of the 30 recommendations made by the PSF Peer Review Panel have been tackled by the responsible institutions in Ukraine.

From an external point of view, the most crucial open task to be concluded in 2019 is the practical operation of NRFU (National Research Foundation of Ukraine), which is planned to start with its activities in 2019.

Moreover, the current draft of the national innovation development strategy under the responsibility of MESU should be finalised soon in order to effectively start the development of a new innovation system of Ukraine.

It is acknowledged that the Ukrainian authorities have taken all recommendations seriously and started their practical implementation. In general, Ukraine's STI system still needs to work on the pending reform processes thoroughly, in order to enhance its efficiency and competitiveness both in national and international domains.

Considering that the Ukrainian STI system has to evolve from a post-Soviet structure to an open, transparent, highly competitive and Western-oriented system, the developments shown in this report are extremely significant. The relatively long process of establishing the strategically very central NCUST illustrates how serious it is for MESU to regain the trust of the Ukrainian scientific community.

Another important milestone was the successful introduction by NASU of appropriate evaluation procedures for its research institutes.

Now it is time to capitalize on these successes in order to tackle with new energy, confidence and even more speed the necessary next steps needed to further modernize the Ukrainian STI system.

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