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Addressing inertia and isolation in teaching and studying global environmental change in Belarus, Russia and Ukraine

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Abstract

It is typical for the region of the former USSR that universities and research centres have decent expertise in mono-disciplinary research while multi- and transdisciplinary studies are not yet well developed, even if adopting research agendas across a broader range of disciplines appears to be a clear way for higher policy relevance or a gainful publication strategy. This observation is the main rationale behind this overview taking stock of the problem. It is based on an extensive evidence collected by authors, who through the recent decades gained extensive experience of stock-taking studies, coordination of international capacity-building projects for higher education, directed over a dozen of summer schools and coordinated a research training network addressing multidisciplinary aspects of environmental sciences in Belarus, Russia and Ukraine. The objective of this paper is to identify drivers and root-causes of the problem, and to outline directions for possible solutions.

Our findings demonstrate that poor performance of research communities in Belarus, Russia and

Ukraine often has to do with structural issues, such as resilient institutional legacies of the past either from the USSR epoch or the shocking socio-economic transition of the 1990s. These legacies are enhanced by low financial allocation to research and higher education, as well as top-down and paperwork-intensive management of the academia by the state. There are no simple solutions to this situation, as something needs to be done beyond the scope of a national higher education or research reform. The Bologna process potentially provides solutions to some problems, e.g. it provides for university autonomy, calls for internationally recognizable qualification frameworks (or at least for one compatible with established practices in the European Higher Education Area) and supports academic mobility. However, its implementation in the region, especially in Belarus and Russia, is problematic. EU capacity building and academic mobility support plays an important role, and at the moment represent the most serious attempt to alleviate the situation.

Keywords list (en): curriculum development, higher education reform, European Higher Education Area, multidisciplinary, transdisciplinarity, research policy

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1 **Introduction.** Global environmental change is a reality affecting all the levels and scales of human society and becoming a key challenge for policy-makers and academia [5; 6; 7]. To address this challenge and to move the global and local social-ecological systems to transformative mode, the policy makers need, among many other things, to learn how to translate their policy questions to research questions, while the research community needs to translate their research findings to policy solutions [7; 9]. To support this, we need truly multidisciplinary environmental science, broadly employing tools and methods of social and policy sciences [2; 5].

2 At the same time, the global dimension of environmental change is strongly featured by local particularities. To study environmental change, a research approach encompassing researchers from all world's regions is desirable. Two main drivers behind this trend can be identified: the first is a formal one referring to political legitimacy, and second is a substantial one in that the inclusion of the local and regional can contribute to improved quality of research on the global level.

3 While most international research networks, programmes, and assessment processes in the area of natural resources, sustainable development, and global change (e.g. Future Earth, SDSN, IPBES) invest heavily in increasing participation of currently under-represented countries and regions in Africa, South East Asia, and Latin America, the target countries of the proposed action, Russia, Belarus, and Ukraine are not just under-represented, they are often not present at all in these global networks. At the same time, their research capacity is potentially very high, although the way their research efforts are framed and presented affects badly its international visibility. The EU was

addressing this issue since early 1990s, and although many thousands funded actions have been implemented since then, the progress was very slow, if not unnoticeable.

4 As we could observe, it is typical for the region of the former USSR that universities and research centres have decent expertise in mono-disciplinary research while multi- and transdisciplinary studies are not yet well developed, even if adopting research agendas across a broader range of disciplines appears to be a clear way for higher policy relevance or a gainful publication strategy. This is the case even for environmental sciences – a field that by definition needs an interdisciplinary approach [6]. It is still dominantly perceived as a pure engineering/natural science discipline, and its social science is still grossly unexplored. Hence it is apparent, that strong action should be taken to demonstrate the advantages of multidisciplinary methodology in environmental sciences and the advantages of identifying, understanding and accounting for the social and political dimensions of environmental problems and the subsequent development of policy options.

5 This observation is the main rationale behind this overview taking stock of the problem. It is based on an extensive evidence collected by authors, who through the last decade gained extensive experience of stock-taking studies, coordination of capacity-building projects for higher education, directed over a dozen of summer schools and coordinated a research training network addressing multidisciplinary aspects of environmental sciences had in Belarus, Russia and Ukraine. The objective of this paper is to identify drivers and root-causes of the problem, and to outline directions for possible solutions.

6 **Empirical evidence used.** As mentioned, the analysis is based on the empirical evidence collected by authors. At the core of this is the Open Societies Institutes (OSI) ReSET project “Governance of Global Environmental Change: Towards a multidisciplinary discussion in tertiary environmental education in former USSR and Mongolia” implemented from 2011 to 2014 (with follow-up activities spanning to 2017). This project represented an ideal experimentation set-up, in which a group of 32 bright young environmental scholars from across Belarus, Russia and Ukraine was exposed to series of summer schools and workshops featuring a group of trainers from various environmental fields, representing 10 EU countries, including a core of the groups of trainers (6 persons) staying with the class through the whole project. The early-career scientists were tasked with group work of the development of problem-oriented multidisciplinary courses (including teaching and learning materials) to be piloted at their home institutions during the project lifetime (total 8 courses developed and piloted in two rounds). Observations from the curriculum development process and progression achieved were extremely insightful.

7 The project involved numerous on-site visits to home departments of its participants, which were taken as an opportunity to take formal and informal interviews about the various aspects of curriculum development and science production at those institutions. The calendar of training events and course piloting rounds is set in the Table 1.

8 *Table 1* Overall timeline, networking and training events of the ReSET project

Date	Location	Event
August 02–16, 2011	Pskov, Russia	Summer School “Principles and application of environmental governance and governance of global change”
November 09–13, 2011	Minsk, Belarus	Autumn workshop “Governance of Global Environmental Change”
April 21–27, 2012	Kiev, Ukraine	Spring School “Nuclear Governance in a Changing World”
July 22 —	Lviv /	

August 04, 2012	Vorokhta, Ukraine	Summer School “Global Change and Local Challenges of Environmental Governance”
September 15–28, 2012	Odessa, Ukraine	Autumn School "Rural areas: management and governance"
May 06-10, 2013	Mahilioŭ, Belarus	Spring School "Governance of Global Environmental Change: From planning and discussing to researching and teaching"
Academic year 2012/13	Pskov, Russia; Simferopol, Ukraine; Minsk, Belarus	The first course piloting round: Environmental Disasters Governance (2ECTS, Pskov State University), Protected Areas Governance (2ECTS, Taurida National V.I. Vernadsky University in Simferopol, Ukraine), Land-Use Governance (3ECTS, Belarusian State Technology University and the International A. Sakharov Environmental University, Minsk, Belarus)
July 15–29, 2013	Krasnoyarsk, Russia	Summer School “Scale in Earth System Governance: Local Case Studies and Global Sustainability”
December 2–6, 2013	St. Petersburg, Russia	Winter School “Sustainability Issues Summarised, Categorized and Connected — transferring research results to learning outcomes”
May 5–9, 2014	Minsk, Belarus	Spring School “Governance of global environmental change: summarising, wrapping up and evaluating“
Academic year 2013/14	Kharkiv, Odessa, Ukraine; Pskov, Russia	The first course piloting round (continued): Protected Areas Governance (2ECTS, re-piloted at Kharkiv National University of Municipal Economy, Ukraine), Land-Use Governance (3ECTS, re-piloted at Odessa State Environmental University), Renewable Energy Governance (2ECTS, V.N. Karazin Kharkiv National University, Ukraine), Waste management based on life cycle assessment (2ECTS, Pskov State University)
Academic year 2013/14	Kharkiv, Ukraine; Pskov, Krasnoyarsk Russia; Mahilioŭ, Belarus	The second course piloting round: Governance of Ecosystem Services (3ECTS, Pskov State University), Communication and Information Tools for Nature Resource Management (3ECTS, Siberian Federal University, Krasnoyarsk, Russia), Governance of Environmental Innovations (2ECTS, Kharkiv National University of Municipal Economy and V.N. Karazin Kharkiv National University, Ukraine), Governance of Energy Efficiency (2ECTS, Joint University of Belarus and Russia, Mahilioŭ, Belarus)
August 4–9, 2014	Budapest, Hungary	Meeting of lead authors and editors of the textbook on case study research and analysis

9 Other opportunities to collect empiric evidence included:

- Research-intensive summer schools of the Summer University program of Central European Universities co-directed by some of authors, and featuring strong presence of PhD students and academic faculty from the region (10 schools in 2009–2019);
- Five EU-funded capacity-building projects for higher education in the region (Tempus and Erasmus+ CBHE actions);
- Five Erasmus+ Jean-Monnet modules co-directed by some of the authors in the three countries over 2014–2019.

10 For the purposes of this article, the contents of all the formal and informal interviews held over the research period have been extracted using a matrix containing the following questions:

- What you consider as environmental multi- and transdisciplinary studies?
- Are you (or your colleagues) using multi- and transdisciplinary methodology in your research, and what is your motivation in favour of (or against) it?
- What are the expectations from your boss regarding your publication activity?
- What are your publication ambitions *vis-a-vis* the expectations?
- Are you (or your colleagues) involved to international networks or science-policy interfacing (e.g. international expert panels or assessments), and what is the reason for the situation?

- Are you using in your research or teaching data and other information from the latest international publications and international policy documents?
- What is the primary source for the state-of-art in your teaching or research area (e.g. original sources, reviews in Russian etc.)?
- Are you attending international conferences of your subject area, and what is your primary motivation for attending them?
- How do you use the flexibility (however limited) of curriculum planning when designing courses?
- What is a usual *raison d'etre* for international cooperation initiatives at your department, and what is their perceived value?
- Are national research funding programs, PhD thesis requirements and qualification frameworks (and the actual implementation practices) encouraging in terms of the development of multi- and transdisciplinary research?

11 In addition, teaching experience of the team of authors in higher educational establishments in Belarus, Russia and Ukraine over the last decade was summarised in terms of the following:

- English proficiencies and interest in acquiring them;
- interest in international practices and experience, and willingness to invest time in acquiring them;
- an overall motivation of students to learn;
- understanding of environmental policy purpose, formulation, development and implementation (e.g. of what happens beyond regulatory requirements).

12 Building on this, we have attempted to identify enabling conditions for the development of quality multi- and transdisciplinary environmental expertise, as well as to understand their dynamics. Further exploring this, we tried to come up with broad recommendations.

13 **Enabling conditions for the development of multi- and transdisciplinary expertise.** If plainly asked about the reasons for low levels of interaction with international research communities, and for the limited interest in multidisciplinary research and teaching work, the academic staff in Belarus, Russia and Ukraine invariably started with the language barrier and poor financing; on the second thought, such factors as academic legacies of the past started to be mentioned as equally important ones.

14 ***1. The language barrier and internationalisation deficits*** Indeed, language barrier is an overwhelmingly important disabling factor [1]. Being closely scrutinised it appeared to go much deeper than just being a product of poor teaching in the school system or isolation of the post-USSR cultural space from the western world. Indeed, school teaching is poor, however it also was gradually getting better over last decades in all the three countries [4]. The cultural isolation is not an isolation in its pure terms. All the aspects and sectors of Western culture, including communication platforms, are strongly present in Belarus, Russia and Ukraine. However, in most cases this does not bring any significant incentives to learn English or even acquire any extra-interest in the language, as everything involving information or communication components is translated to Russian, and with Russia's economy and purchasing power of its citizens are growing, international content providers also get more incentives to provide Russian-speaking audience with products they can comfortably enjoy. Needless to mention, domestic cultural production directly targeting Russian-speaking audience is also strong and growing. Further it needs to be mentioned that young people in Russia demonstrate less interest in trying their luck on the international high skill labour market than they did a decade ago. In Ukraine the interest is substantially higher (while in Belarus it is "in between"), however they rather target neighbouring countries or Germany, where command of the English language is of limited importance.

15 Summing up, average secondary school graduates entering higher education still have poor language commands, they have limited opportunities to improve them in the course of university studies, and we could not see any improvements in English proficiencies of the student body in all the three countries over the last decade. Partly this also can be attributed to the fact that environmental studies programs receive, in general, less motivated students, with an exception of a few higher ranked universities (e.g. St.-Petersburg State University was one where the overall language situation was and still is substantially better). This greatly constrains the value of international academic exchange. Even if sent abroad under schemes like Erasmus Mundus (however limited in scale, and also often involving EU university partners with limited success of internationalisation), many students spend most of their study periods overcoming the language barrier and therefore receive limited exposure to teaching and learning contents. Likewise, international guest lecturers benefit only very few in a class room, if simultaneous translation is not provided, or if a lecturer cannot provide explanations in Russian or another national language.

16 Those are background conditions, however in terms of science production and its regeneration (and rejuvenation), a more powerful factor is what kind of students get promoted to doctoral studies. Here we immediately could recognise the following issues:

- A carrier track in the academia is not attractive in Belarus, Russia and Ukraine even comparing to most of other countries in the world; the reward is extremely poor, while pressure is growing, so the pool of candidates to choose from is not that big, and basically anyone interested and formally qualified to apply for doctoral studies usually gets there; a little advantage environmental scientists have e.g. in comparison with economists or engineers, is that environmental protection, as a carrier track is not particularly financially rewarding either; and

- On one hand, English proficiencies are not very high on the list of competences that need to be demonstrated by a future PhD student, but on the other, they often explicitly conflict with higher ranked competencies, such as an ability to work focused and hard, or disciplinary knowledge (such student often do not have enough time or incentives for English classes); this set-up is changing, but this change is still very slow, and happening rather at the level of mental models than the actual action, because, as mentioned, the competition is low if not absent.

17 Naturally, the language barrier and its persistent nature compromise the quality of scientific production, especially where multidisciplinary studies are concerned. The following points need to be mentioned in particular:

- The spread of new ideas is very slow, as the community of junior and senior scientists checking on new international publications in their field is very limited; it was in the experience of authors that they had major difficulties in finding established Russian translation for “ecosystem services” or, more recently “nature-based solutions”;

- Using international multidisciplinary literature in research can be therefore challenging, because new pieces of terminology or whole concepts can be difficult to reconcile with those established in the national literature base;

- The language of international publications is too challenging for students, even for those with language commands well above average, and therefore academic papers cannot functionally serve as reading;

- Using or promoting fresh concepts from the international literature often means asking for troubles, as senior colleagues do not tend to like to hear something new, and as such, review of international literature is of tertiary importance;

- Publication activity in the field of environment is low quality, as due to poor English commands many authors cannot make use of good publications practices (i.e. even to see what means to be “well written”), make a decent literature review and, most important, to write the actual body of text that could survive even friendly international peer-review; this is a major constraint to the capacity of global change researchers to share their knowledge with international peers, even

when this knowledge is really worth sharing — for example, the whole bulk of knowledge produced by Belarusian researchers about the day-to-day management of a nuclear disaster had been never shared in international journals [9].

18 However, if we reflect on the ReSET Project, our experiences show that if incentives are provided, in this case the opportunity to travel, participate in international workshops and summer-schools, have collaborations with and tutoring by internationally well renowned scholars, some of the junior researchers, those with the more ambitious mindsets, can make significant progress in language skills in a very short time and immediately are rewarded for that as it opens up even more opportunities.

19 **2. Poor financing and segregation of research communities** This issue is, indeed, strongly present and manifested, however it is not that straightforward either, and, as often is the case with scarce resources, it has to do not only with the amount, but also with transparency, allocation and entitlements. Usually the national government (e.g. responsible ministries or agencies) are blamed, and often that is for a reason: paperwork demands for teaching and research activities are only growing, while full time lecturing workloads are killing (900–950 h/year in Belarus (inclusive tutoring and thesis supervision), 830–900 in Russia and 600 in Ukraine for an associate professor as of 2019). State funding is distributed among universities is not perceived as just either: while certain category of universities enjoy relatively high level of support, regional ones receive substantially less, with discussions going on all the time about eliminating the number of such universities, taking away from them certain degree programs, restrict their functions as regards curriculum development and teaching (e.g. limiting it to tutoring and support to distant learning provided by central universities) etc. Likewise, in their informal talks academic staff from regional universities insist that in national calls for research funds they have a smaller chance for success just because they do not belong to the “high league”. Once received, a research grant can be challenging to use for the purposes of internationalisation: e.g. in Belarus, due to budget constraints, the convention is that the only allowed use is for salaries, while budgeting international conference visits, journal page fees or editing services are out of question. In Russia there is broader flexibility, although the tightening economic situation pushes many organisations to adapt similar policies.

20 High teaching workload is also a reason for limited research mobility. An absent teacher can be very difficult to substitute, as it means that a very high number of teaching hours needs to be re-distributed. There are several known examples when university authorities rejected requests of teachers to provide them a long leave for a research or teaching stay abroad, even if such a stay would be important for professional development, and when the teachers managed to secure for that a prestigious grant. In a standard situation, a teacher is offered to choose between a resignation and staying home; this can be a hard choice to make, especially in smaller cities with limited job opportunities in academia.

21 Accreditation, licensing and curriculum review procedures leave very little space for creativity when it comes to curriculum design. There exist some flexibility, a bit more in Russia and a bit less in Belarus, however creating brand new curriculum contents also means completing massive paperwork and passing many accreditation and review steps. This restrains creativity, especially it is not paid extra, and teaching load (and associated paperwork load) is already overwhelming.

22 Importantly, formal and informal policies and management practices introduced by the government appear to be only a part of a problem, especially where global environmental change studies are concerned. A significant portion of it lies with the academia itself. Similarly to the language barrier situation, legacies of the past are important, of which administrative and disciplinary segregation (and their combinations) and siloing appear to be the most significant ones [3]. The disciplinary segregation is manifested e.g. through research proposal review mechanisms

with reviewers representing mostly mono-disciplinary views, and holding suspicious attitudes towards multidisciplinary research inquiries. The administrative one needs to be taken into account when attempting topics informally “belonging” to research units under certain state bodies, e.g. in Belarus that would be anything related to the management of Chernobyl disaster “belonging” to research groups authorised by the Ministry of Emergencies [9]. It also can be a combination of factors, e.g. as shared in a story about research proposals on the development of a transborder adaptation strategy for transboundary lakes and their watersheds in an EU country and a country in the study area. It was a call for bilateral projects with research teams funded by respective national research foundations, so the same application was ranked as the best one by reviewers in an EU country and the worst one in a country in the region; later it was disclosed by a mistake that a reviewer did not even assess the application, but just turned it down with the lowest score, because in her perception it was not a right kind of a research institute to do a project involving lakes.

23 Researchers in the region are very well aware of various instances of segregation, and take all sorts of preventive measures in order to avoid consequences. For instances, any doctoral thesis needs to fit neatly into what is called (with little variations across the region) “a passport of specialisation”: this document contains a list of disciplinary fields with highly detailed descriptions of what they cover. In case if a thesis contains descriptors from more than one field, then it would take two thesis defense procedures instead of one, and at two different dissertation committees. Naturally, such a situation is better to be avoided, as the procedural and paperwork requirements are monumentally taxing even for a regular single defense. Needless to say, this discourages doctoral students and their supervisors in their potential multidisciplinary ambitions.

24 **3. Other persistent legacies and their malresilience** There are additional aspects in which institutional legacies work as disabling factors to internationally relevant science production in Belarus, Russia and Ukraine. As such, environmental studies have deep roots in the Soviet geographical and ecological research tradition. Alongside with obvious bright sides this brings dark ones as well. For instance, a large community of geographers, who are traditionally responsible for multi- and transdisciplinarity in environmental sciences (although less and less so) tends to adhere to the legacy of numerous schools, which produced their own terminology, taxonomy units and distinctive methodological approaches. As a result, terminological discussions often take the pride of place at the expense of substantive contents. Soviet landscape science is a prime example: taxonomy discussions are in the very core of it, while the actual process and pattern often become secondary. Naturally, such discussions represent very little interest to the audience outside the post-USSR countries, and low interest of international journals in such contributions also discourages potential contributors from re-framing their research in terms, which would be of higher relevance to international readership.

25 An important process that started about a decade before the collapse of USSR and still evolving, is the degradation of the very institution of peer-review. Blind peer-review as a luxury most of domestic research journal cannot afford, while solicited (informally) reviews of theses, textbooks, curricula etc. is the standard way of doing this. Partly as a cultural thing, starting from the secondary school students learn that feedback is not a useful thing, but a ritual nuisance and, most likely, a punishment. They do not learn to act on it, and the feedback itself is not provided in a form conducive to taking it constructively. As students often share, they do not like to speak on conferences or seminars because they may receive questions after their talk, and they would take questions as hostile critique and prefer not to have any. This attitude contribute to a cultural shock student or even researchers have in the course of their international mobility. Although at long-term such a shock can be a positive thing, it also compromises educational value of a mobility action.

26 Coming back to the contents, an important research direction that is almost entirely

missing in academic literature, but also in educational curricula, is environmental policy analysis. Problems of policy formulation, development and implementation is something that is useless to discuss with students in an environmental management class without substantial preparations. Likewise, in case of environmental policy, learning objectives were understood by many of academic staff members as understanding of the body of environmental legislation as well as relevant implementation agencies and their competences — without any insights or understanding of power, agency, norms, etc. This also comes from Soviet institutional legacies: e.g. the USSR did have planning policies as such, as spatial planning was understood as a purely technical process of land allocation according to suitable functions [8]. The attitude is still very similar, and it is not much different in other sectors. Fundamental research on environmental governance, including critical theoretical work and environmental humanities studies, is de-facto non-existent. This makes any efforts on interdisciplinarity imbalanced from the start even if they ever happen, which is not of common occurrence due to absolute domination in the field by natural science theory and epistemology. No wonder that NGOs appeared to be absolute frontrunners in developing and analysing environmental and natural resource policies in most of former USSR, and the most useful, informative and insightful publications (although of non-academic nature, as a rule) are produced by NGOs. New generation university (such as Higher School of Economics in Russia or Kyiv-Mohyla Academy in Ukraine) are trying to fill the void, while major old generation universities are only starting to explore this research arena, and still to a mixed success.

27 **Conclusions.** Our findings demonstrate that poor performance of research communities in Belarus, Russia and Ukraine often has to do with structural issues, such as resilient institutional legacies of the past either from the USSR epoch or the shocking socio-economic transition of the 1990s; these legacies are enhanced by low financial allocation to research and higher education, as well as top-down and paperwork-intensive management of the academia by the state. There are no simple solutions to this situation, as something needs to be done beyond the scope of a national higher education or research reform.

28 The Bologna process potentially provides solutions to some problems, e.g. it provides for university autonomy, calls for internationally recognizable qualification frameworks (or at least for one compatible with established practices in the European Higher Education Area) and supports academic mobility. However, its implementation in the region, especially in Belarus and Russia, is problematic. National educational authority seemed to see in it new ideas for reporting and other paperwork requirements, rather than a functional instrument for improving internationalisation, quality assurance and practical orientation of national higher education systems. This led to massive discredit of the Bologna process in the region, and any of its guidelines or recommendations are taken with suspicion and hostility. Nevertheless, EU capacity building and academic mobility support plays an important role. For many individuals involved to such actions it was a mind blowing experience (in a good sense), and based in their experience they are trying to bring real change, although EU actions, such as Erasmus+, are not accessible to many due to overly excessive (and quickly proliferating) application and reporting requirements. It can be only regretted that privately funded programs, such as extremely successful OSI ReSET, are not operating in the region anymore, or chose to make their formats less accessible (e.g. New Visby Program by the Swedish Institute).

29 Potentially, the development of multidisciplinary global environmental change research in Belarus, Russia and Ukraine is in common interest of all, including the academia and policy communities in these countries (as this would improve, respectively, the quality of the publication outputs, and provide better support to policies and their improvement), as well as internationally, because everyone would be benefited both researchers and policy-makers, if such a large knowledge base would become available. However, we can observe that to date, the response and action from these parties in addressing the issue was very modest. National academic communities appear, with

a few notable exceptions, to be happy about their silos, and so are policy makers, who do not need any extra interferers. Interestingly, international communities appear to show some more interest to addressing the problem: at least there are targeted actions by the EU (e.g. development of multidisciplinary teaching and learning contents and tools is in the list of program priorities in Erasmus+ Capacity Building for Higher Education), individual EU member states and private foundations. Likewise, international assessments and expert platforms are concerned about under-representation of certain regions, especially where multidisciplinary expertise is required, and design dedicated capacity building actions. The commitment of international research journals for sharing strategic knowledge through taking an extra effort for supporting researchers from the regions takes less visible forms though.

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Инерция и изоляция в преподавании и изучении проблем глобального изменения окружающей среды в высшем образовании Беларуси, России и Украины

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Аннотация

Характерной особенностью университетов и исследовательских центров в странах бывшего СССР является значительный опыт монодисциплинарных исследований, в то время как многопрофильные и трансдисциплинарные исследования получили менее широкое развитие. Это наблюдается даже в тех случаях, когда реализация исследовательских программ, позволяющих объединить расширенный спектр дисциплин, представляется перспективной с точки зрения повышения общественной значимости исследований и/или их успешного опубликования. Данное наблюдение побудило авторов составить настоящий обзор.

Представленный обзор основан на данных, собранных нами в ходе реализации ряда международных проектов, охватывающих междисциплинарные аспекты наук об окружающей среде. Завершенные мероприятия включали инвентаризационные и аналитические исследования, координацию проектов по наращиванию и укреплению потенциала высшего образования, руководство более чем 10-ю летними школами и координирование научно-образовательной сети, которая объединяла молодых учёных из Беларуси, России и Украины. Цель настоящего исследования — выявление движущих сил и основных причин низкой представленности междисциплинарных исследований в области наук об окружающей среде на пространстве бывшего СССР, а также определение направлений для выхода из сложившейся ситуации.

Результаты проведённого исследования показывают, что низкие показатели, демонстрируемые исследовательскими сообществами в Беларуси, России и Украине наиболее часто связаны со структурными проблемами, а именно устойчивым институциональным наследием прошлого (эпохи СССР либо шокового социально-экономического перехода 1990-х гг.). Это наследие усугубляется низким уровнем финансирования науки и высшего образования, а также жёсткой и иерархичной системой государственного управления высшим образованием, требующей избыточно-интенсивного документооборота. Простых решений для выхода из сложившейся

ситуации не существует, поскольку масштаб проблемы выходит за рамки национальной реформы высшего образования и исследовательского процесса. Болонский процесс потенциально обеспечивает решение некоторых проблем. Так, например, он предусматривает университетскую автономию, призывает к соответствию международно-признанным квалификационным рамкам (или хотя бы совместимости с устоявшейся практикой Европейского пространства высшего образования), и поддерживает академическую мобильность. Однако его реализация в регионе, особенно в Беларуси и России, проблематична. Программы ЕС по развитию компетенций и наращиванию потенциала, а также поддержка академической мобильности играют важную роль и в настоящее время представляют собой наиболее успешную попытку улучшения ситуации.

Ключевые слова: разработка учебных программ, реформа высшего образования, европейское пространство высшего образования, междисциплинарность, трансдисциплинарность, исследовательская политика

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