



Concept Plan (v.2.0 as of March 15, 2022)

on the functioning of the education system, research and innovation sector of Ukraine during martial law and further reconstruction period related to Russian aggression

IMPORTANT: This document is **the first stage** of the development of a comprehensive plan for a flexible response of education and scientific policy to the current situation of wartime, which takes into account the urgent needs and the course of events.

The purpose of the document is to address existing and potential problems in the field of education and science, to identify target groups of beneficiaries of public policy in research and education, as well as possible priority policy activities. This document is also a communication tool.

In the next stage it is expected to develop a more detailed Action plan, where actions, tasks and needs by regions and levels of education will be specified. At this stage the plan will be expanded by adding activities, indicators, expected results, regional context, needs for assistance, sources of assistance (internal, external) etc.

CONTEXT

During wartime education policy must be adapted to current issues and situation in the education sector. Similarly, the scientific and innovation policy in wartime must be adapted to the current issues and events, ensure functioning of higher education institutions, scientific institutions and innovation-active enterprises.

Obviously as of today (March 15, 2022) the Government's priority task is to save lives, to ensure safe conditions for the citizens of Ukraine and meet their basic needs (food, water, shelter and clothing), including for students, educators and scientists.

However, the Ministry of Education and Science of Ukraine (MoES), as the central executive body responsible for the development and implementation of public policy in the fields of education and science, must think and act strategically.

The acute phase of war will once definitely pass, so the MoES is already developing plans for resumption of teaching and learning, ensuring access to education, and rebuilding educational infrastructure. The Ministry also develops plans for renovation of research and innovation activities in HEIs and scientific institutions, creating favorable conditions for scientific research and innovative project implementation, rebuilding research and innovation infrastructure, combining scientific and industrial potential for rapid economic recovery.

Additionally, the security situation in Ukraine currently differs significantly in the regional context, so educational and scientific policy has to be flexible enough, considering groups of policy beneficiaries and levels of education.

TENTATIVE PLANNING STAGES

Currently, the situation remains unpredictable. Clear planning of specific timeframes is impossible. However, for the purpose of planning of the needs and policy activities, the following stages are conditionally defined:

Stage I. Acute phase of war - threatening and unpredictable security situation in some regions of the country or their certain communities (as of March 10 this includes Kyiv, Kharkiv, Kherson, Mykolaiv, Sumy, Donetsk, Luhansk, Zhytomyr, Zaporizhzhia, Chernihiv oblasts and the city of Kyiv). There are active hostilities, civilian infrastructure is under airstrikes and shelling by the aggressor's troops, sabotage groups are active.

Stage II. Improvement of security situation throughout the country (or the most part of its territory), for example, resulting from ceasefire agreements (and their implementation), withdrawal of aggressor's troops etc.

Stage III. Restoration and rebuilding phase

EDUCATION

KEY ISSUES

Current situation analysis allows to identify a number of key issues that have to be addressed immediately or in the nearest future (*it is possible that the list of issues will be amended/ adjusted*):

- threat to life, health, safety of all the educational process participants (students, educators, parents) because of hostilities;
- forced displacement to regions of Ukraine or countries with better security situation;
- threat to mental health of children and adults due to the war;
- catastrophic drop of student enrollment in education, reduced access to education;
- limited access of students and educators to educational materials and learning tools;
- lack of safe conditions for teaching and learning;
- civilian casualties among students, educators, parents;
- destruction of infrastructure, including educational facilities;
- drop in education quality as a whole;
- lack of information about the needs of the education system in wartime, difficulties and or impossibility to collect reliable data;
- education system overload in more safe regions.

SCALE AND IMPACT

At the moment, it is extremely difficult to assess the medium and long-term impact of the war on the education sector, in particular due to the unpredictability of further events and difficulties with collecting educational data (obviously collecting such data is currently not a priority).

Operational information on quantitative data is missing or significantly limited.

For example, it is known that as of March 15, 2022, 400 educational institutions are damaged, 59 of them are completely destroyed¹.

According to the Office of the UN High Commissioner for Refugees (UNHCR) as of March 15, 2022 the number of refugees fled from Ukraine for other countries is more than 3 million².

The number of newly internally displaced persons is currently unavailable, but could potentially reach up to 6.7 million³. The UNHCR estimates that around one million people are newly displaced in Ukraine⁴ as of March 9, 2022, however, this figure probably does not reflect the real situation.

As of March 14, 2022, the Office of the UN High Commissioner for Human Rights (OHCHR) recorded 1,834 civilian casualties in the country: 691 killed and 1,143 injured.⁵ Unfortunately, these figures are significantly underestimated (as acknowledged by the organization itself), as according to the Ukrainian Parliament Commissioner for Human Rights, as of 10 a.m. on March 15, 2022, since the beginning of the Russian invasion of Ukraine, 97 children have died and more than 100 children have been injured.

¹ <https://saveschools.in.ua/>

² <https://data2.unhcr.org/en/situations/ukraine>

³ <https://www.unrefugees.org/emergencies/ukraine/>

⁴ https://reliefweb.int/sites/reliefweb.int/files/resources/2022-03-09_Ukraine%20Humanitarian%20Impact%20SitRep.pdf

⁵ <https://www.statista.com/statistics/1293492/ukraine-war-casualties/>

However, there is no doubt that war and martial law affect the whole education system, all levels of education, all education process participants. The structure of Ukraine's education system and main numbers (as of 2022) are below.

Level of education / institutions	Scale	Comments
Preschool education		
kindergartens and other preschool institutions	1,13 million of children 141,500 pedagogical staff 15,500 preschool institutions	regular entrance age - 3 years 1 year before primary education is mandatory, although children can receive it both at institutions or in families
School education		
Primary education	4,23 million students almost 14,000 schools	entrance age - 6-7 years duration - 4 years (Grades 1-4)
Basic secondary education (lower secondary)	up to 500,000 pedagogical staff	duration - 5 years (Grades 5-9)
Profile secondary education (lower secondary)		duration - 3 years (Grades 10-12) possible tracks: academic - in schools professional - VET institutions and pre-higher education institutions
Out-of School education		
out-of school education institutions	1351 institutions up to 19,200 educators 1,138 million students	
Inclusive learning		
schools preschool institutions network of Inclusive Resource Centers (IRC)	inclusive learning in 7136 schools and 2242 preschool institutions 23216 inclusive classes, with 32686 students with special education needs (SEN) 3 796 inclusive preschool groups for 6 849 children with SEN 22758 teacher assistants in schools 667 IRC	
Vocational education		
VET institutions	695 VET institutions 244,300 students 31,3 pedagogical staff	entrance - either after Grade 9 or Grade 11(12)
Professional pre-higher education		
Colleges and technical schools	252 institutions 1 335 690 students (jointly with higher education)	entrance - either after Grade 9 or Grade 11(12)
Higher education		
Universities, academies, institutes, other higher educational institutions (HEIs)	336 HEIs 1 335 690 students (jointly with professional pre-higher education)	entrance after Grade 11(12) or professional pre-higher education

Non-Government controlled areas (NGCA) of Donetsk and Luhanska oblasts ⁶		
Schools, kindergartens, vocational schools	357,400 students 36,800 teachers	Education Cluster estimate as of start of 2018/2019 school year

Source: Institute of Educational Analytics⁷

TARGET BENEFICIARIES

Evidently, all educational process participants are beneficiaries of education policy during both martial time and the period of further restoration, however, in order to respond effectively and flexibly to the needs of the education sector, it is appropriate to identify the following main groups of beneficiaries:

- educational process participants whose lives and health are in danger
- educational process participants in need of psychological support and assistance
- educational process participants, who have moved to regions of Ukraine with better security situation
- educational process participants, who have moved abroad
- educational process participants, whose educational institutions have been damaged or destroyed
- local educational authorities

PRIORITY ACTIVITIES

The main priority measures that the MoES plans to take aiming to address the above issues are listed in the table.

Issue	Stage, when the issue is relevant	Priority activities
threat to life, health, safety of all the educational process participants because of hostilities	stage I stage II	to adapt educational policy to martial law conditions, <i>inter alia</i> , to introduce unscheduled vacations, to postpone or to cancel mandatory examinations, etc.; to ensure regular payment of salaries to educators; to provide information support regarding shelter maps, algorithms of actions in emergencies, to disseminate information through available channels; to organize evacuation of students and educators from life- and health-threatening regions (<i>if necessary - not within the MoES competence</i>); to assist in the arrangement of shelters in educational institutions (<i>if necessary - not within the MoES competence</i>)
forced displacement to regions of Ukraine or countries with better security situation	stage I stage II	to establish and maintain transit and reception centers for displaced people in educational institutions (<i>if necessary - not within the MoES competence</i>); to provide logistical support for maintaining centers for displaced people in educational institutions, to provide information and resource support
threat to mental health of children and adults due to	stage I stage II	to introduce psychological support programs for children and adults;

⁶

https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/children_teachers_and_education_facilities_in_donetska_and_luhanska_oblasts_-_summary_2018_10_19.pdf

⁷ <https://cutt.ly/eAUVZYT>, <https://cutt.ly/6ASJ8r3>

the war	stage III	<ul style="list-style-type: none"> to develop recommendations and materials for parents and educators on providing psychological support to children; to train teachers on providing psychological support to children
catastrophic drop of student enrollment in education, reduced access to education	stage I (для окремих регіонів) stage II stage III	<ul style="list-style-type: none"> to resume/ continue the educational process where the security situation allows; to create new and to develop existing modalities for distance learning; to develop learning tools for distance learning; to create opportunities for students to study in educational institutions at the place of temporary residence (online or offline); to involve educators in teaching in educational institutions at the place of temporary residence; to create opportunities to study and to teach in other educational institutions while damaged educational facilities are being restored
limited access of students and educators to educational materials and learning tools	stage I (for some regions) stage II stage III	<ul style="list-style-type: none"> to create and develop digital educational content and e-learning platforms, including for self-education; to disseminate educational materials/kits for internally displaced students and educators; to disseminate educational materials and/ or learning tools for educational institutions hosting internally displaced students and educators; to develop digital educational infrastructure, including access to high-speed Internet for all educational institutions and households; to provide students and educators with digital devices
lack of safe conditions for teaching and learning	stage I stage II	<ul style="list-style-type: none"> to develop recommendations on flexible models to organize educational process; to encourage educational institutions to use widely their academic autonomy, for example regarding the calendar planning of academic year and educational process organization
civilian casualties among students, educators, parents	stage II stage III	<ul style="list-style-type: none"> to provide comprehensive support to family members of the victims - financial, psychological, rehabilitation (<i>if necessary - not within the MoES competence</i>); to develop and introduce a flexible system of involving educators from other educational institutions; to involve teachers and educators of retirement age in teaching; to actively involve people without pedagogical education in teaching; to provide comprehensive support for children and students who have lost their parents
destruction of infrastructure, including educational facilities	stage II stage III	<ul style="list-style-type: none"> to refocus existing and to introduce new budget programs under MoES (including targeted subventions) to finance refurbishment and rebuilding of educational facilities, restoration of learning environment in educational institutions; to refocus ongoing international projects in education sector to restoration of educational infrastructure (<i>if</i>

		<i>possible</i> ; to attract additional resources from the partners to restoration of educational infrastructure and learning environment (grant, loans, TA projects)
drop in education quality as a whole	stage II stage III	to introduce tools and programs of catch-up learning; to adjust curricula and educational programs; to widely use education quality surveys and learning assessments in order to identify learning gaps
lack of information about the needs of the education system in wartime, difficulties and or impossibility to collect reliable data	stage I stage II stage III	to use a broad range of information sources (e.g. data from international organizations and partners) and to analyze data rapidly; to adapt existing and create new tools of monitoring and reporting attacks on education ⁸ ; to attract international assistance aiming to collect information; to digitize processes of data collection about education needs (<i>if possible</i>)

SCIENCE and INNOVATION

KEY ISSUES

- threat to life, health, and safety of all participants of scientific, scientific-technical, and innovative activities as a result of war;
- forced relocation of people to regions of Ukraine and countries where the security situation is better;
- limited access to research and innovation infrastructure;
- lack of safe conditions for scientific, scientific-technical and innovative activities;
- human casualties among employees of higher education institutions, research institutions and innovation-active enterprises;
- destruction of infrastructure, in particular for research and innovation;
- impossibility to conduct scientific and scientific-technical expertise;
- inability to implement scientific, technical, and innovative projects due to a lack of access to the necessary infrastructure and staff losses;
- lack of information about the needs of science, science-technology, and innovation initiatives in wartime;
- impossibility of rapid retraining of personnel to meet the needs of the military-industrial complex;
- loss of relevance of initiated or planned research and innovation projects;
- impossibility of commercialization of scientific results and technology transfer;
- inability to participate in international programs to support science and innovation.

SCALE AND IMPACT

It is extremely difficult to assess the medium- and long-term impacts of the war on the sphere of scientific, scientific-technical, and innovative activities, in particular, due to the unpredictability of further development of the situation and problems with collecting information regarding the possibility of continuing previously started and planned scientific and scientific-technical works and projects, as

⁸ including adaptation of the Standard Operating Procedures for Monitoring Attacks on Education in Ukraine, <https://cutt.ly/cAAC1De>

well as innovation projects, the state of research and innovation infrastructure (obviously, the collection of such data is not a priority at the moment).

Operational information on quantitative indicators is missing or significantly limited.

Damaged: Azov State Technical University, Sumy State University, Kharkiv National University. VN Karazin, nuclear subcritical installation "Neutron source based on a subcritical assembly controlled by a linear electron accelerator", which is located on the site of the National Research Center "Kharkiv Institute of Physics and Technology".

However, there is no doubt that war and martial law will affect the entire sphere of scientific, scientific-technical, and innovative activities.

Indicator	Scale
institutions of higher education engaged in scientific activities	257
scientific institutions	400
researchers	51,500 persons
employees involved in research and development	78,900 persons
innovation-active enterprises	782
scientific objects that constitute national heritage, are used to conduct research as part of the research infrastructure	145

TARGET BENEFICIARIES

Obviously, the beneficiaries of public research innovation policy in wartime and the following period of reconstruction are all the participants of scientific, scientific-technical, and innovative activities, scientists, and researchers, but for an effective and flexible response to the needs of science, it is appropriate to identify such main groups of beneficiaries as:

- educational process participants for whom there is a threat to life and health;
- participants of scientific, scientific-technical, and innovative activities in respect of whom there is a threat to life and health;
- participants of scientific, scientific-technical, and innovative activities who has left for safe regions of Ukraine;
- participants of scientific, scientific-technical, and innovative activities who left Ukraine for other countries;
- participants of scientific, scientific-technical, and innovative activities whose institutions (HEIs, scientific institutions) are damaged or destroyed;
- participants of scientific, scientific-technical, and innovative activities who have lost access to research and / or innovation infrastructure;
- participants of scientific, scientific-technical, and innovative activities who have lost access to unpublished results of their research;
- innovation-active enterprises damaged, destroyed or lost their staff capacity.

PRIORITY ACTIVITIES

The table below outlines the main priority activities that the MoES plans to take to address the issues in science and innovation sector.

Issue	Stage, when the issue is relevant	Priority activities
-------	-----------------------------------	---------------------

threat to life, health, and safety of all participants of scientific, scientific-technical, and innovative activities as a result of war	stage I stage II	<p>to adapt scientific and innovation policy to wartime conditions (e.g. postponement of scientific, scientific and technical works and projects, scientific and scientific and technical expertise);</p> <p>to provide information support as to the location of shelters, step-by-step instructions for emergencies, dissemination of information through accessible channels;</p> <p>to assist to evacuation of employees of higher education institutions, research institutions and innovation-active enterprises from dangerous to life and health regions (<i>if necessary - not within the competence of the MoES</i>);</p> <p>to assist in arranging bomb-shelters in higher education and scientific institutions (<i>if necessary - not within the competence of the MoES</i>)</p>
forced relocation of people to regions of Ukraine and countries where the security situation is better	stage I stage II stage III	<p>to analyze the number of forcibly displaced entities in scientific, scientific-technical and innovative activities;</p> <p>to establish locations for transit and reception of displaced persons in HEIs education and research institutions premises;</p> <p>to provide logistical support for the construction of centers in higher education institutions, research institutions, to provide information and resource support;</p> <p>to involve IDPs in scientific, scientific-technical, innovative activities under internal academic mobility initiatives</p>
limited access to research and innovation infrastructure	stage I (for some regions) stage II stage III	<p>to provide displaced persons with access to the necessary research and / or innovation infrastructure;</p> <p>to ensure joint use of existing research and innovation infrastructure on the basis of higher education and research institutions;</p> <p>to ensure access to research and innovation infrastructure in other countries;</p> <p>to introduce a mechanism for ordering research from foreign partners, which have the necessary research infrastructure</p>
lack or absence of safe conditions for scientific, scientific-technical, and innovative activities	stage I stage II	<p>to spread information on opportunities for scientists from partner countries as to the performance of scientific and scientific-technical activities;</p> <p>to encourage higher education and research institutions to participate in academic mobility programs</p>
human casualties among employees of higher education institutions, research institutions, and innovation-active enterprises	stage II stage III	<p>to provide comprehensive support to family members of the victims - material, psychological, rehabilitative (<i>if necessary - not within the competence of the MoES</i>);</p> <p>to introduce a flexible system for recruiting researchers from other institutions and organizations;</p> <p>to develop programs promoting internal academic mobility;</p> <p>to involve researchers in cooperation with innovation-active enterprises on retraining, use of scientific equipment, creation of high-tech products</p>

destruction of research and innovation infrastructure	stage II stage III	<p>to analyze the state of research and innovation infrastructure;</p> <p>to refocus existing and new budget programs of the MoES to fund the repair and renovation of higher education & research institutions premises, purchase of scientific equipment and facilities;</p> <p>to refocus existing projects and programs to fund infrastructure projects and projects on development of innovative infrastructure of HEIs and RIs;</p> <p>to attract additional resources from partners for the restoration of research and innovation infrastructure (grants, loans, international technical assistance projects);</p> <p>to cluster research and innovation infrastructure by regional and functional criteria</p>
impossibility to conduct scientific and scientific-technical expertise	stage II stage III	<p>to introduce online tools for scientific, science-technical expertise;</p> <p>to digitize of objects of scientific, science-technical expertise</p>
inability to implement scientific, technical, and innovative projects due to a lack of access to the necessary infrastructure and staff losses	stage I stage II stage III	<p>to support joint science-technical and innovative projects of higher education institutions, research institutions, and businesses engaged in innovation;</p> <p>to provide long-term loans for establishment of high-tech enterprises involving higher education and research institutions</p>
loss of relevance of initiated or planned research and innovation projects	stage I stage II	<p>to set a new system of priorities for the development of science, technology, and innovation (defense, space industry, biotechnology, alternative energy, information technology);</p> <p>to establish a funds redistribution mechanism for executors of previously started scientific, science-technical work or project in case of impossibility of its execution / loss of relevance</p>
impossibility of commercialization of scientific results and technology transfer	stage II stage III	<p>to introduce a transparent procedure for technology transfer abroad and commercialization of scientific results created with budget funds by foreign companies on mutually beneficial terms;</p> <p>to create favorable conditions for attracting foreign investment;</p> <p>to create conditions for SMEs to invest in research activities by developing cooperation between research and real sectors;</p> <p>to introduce effective economic mechanisms stimulating participants of innovation activity to introduce recent technologies, production (provision) of new or improved competitive products (services) at various stages of this activity</p>
inability to participate in international programs to support science and innovation	stage II stage III	<p>to develop a mechanism for flexible cooperation with foreign scientific institutions and organisations;</p> <p>to ensure international cooperation in the field of research and innovation, to promote the participation of scientists, researchers, SMEs in the EU Framework Program for Research and Innovation "Horizon Europe" and Ukraine's integration into the European Research Area</p>