



Lessons (learned and learning) from Ukraine on the impact of war on science and higher education for the international policy and scientific communities

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2nd Conference on the Ukraine crisis:
One year of war in Ukraine, exploring
the impact on the science sector and
supporting initiatives

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Crisis – or Crises?

- External vs. internal crises
 - External - war
 - Internal – pre-existing sources of conflict
- Crises are also opportunities
 - In SWOT, crises are the “T” - threats
 - When analyzing, don’t forget the SWO part
 - Crisis can be productive because it creates urgency



Perspectives on science in Ukraine

- Pre-existing “slow” crises
 - Scientific emigration since 1991
 - Unresolved institutional conflicts from Soviet system
 - Corruption War’s impact (since February 2022)
 - Radically deepened the challenges
 - Brought them to a head
 - All recognize the need for change...
 - But do not agree on what it should be
 - It appears to be a frozen conflict – no will to take serious action



Important milestones

- Thought and discussion
 - Ten-point statement of national academies of US, Poland, Ukraine, and others
 - ISC/ALLEA report from 1st Conference
 - NASEM Workshop on Rebuilding Science, Education, and Innovation in Ukraine
 - Many good articles and reports in science media (e.g., *Science*, *Nature*, *C&E News*, *Physics Today*)
- Actions
 - Early on: Programs focusing on support for refugee scientists
 - Science for Ukraine
 - Institution-based “out-placement” projects, large (NASEM-PAN) and more local
 - More recent: Support of scientists remaining in Ukraine
 - Direct financial support – still difficult...But possible!
 - Encouraging virtual collaborations
 - Joint calls
 - Training in research management



Some general lessons learned

- LISTEN. LEARN.
 - Understand the needs of the country rather than imposing your own ideas.
 - Make sure you have a deep understanding of local context.
- Be strategic
 - Preserving and protecting “human capital” must precede restoring physical infrastructure
 - Develop a shared vision of the future
 - Do not let first/ emergency responses dictate medium- and long-term strategy
 - Do not assume that the next phase will begin after the crisis is over
- Discussion vs. action
 - Do not dwell too long on discussion. Resist the temptation to over-analyze.
 - Identify practical response actions for the short- and medium-term.
 - Use the urgency of the situation to spur actions and to overcome institutional inertia and to imagine change.
- Take modest risks. Do not allow fear of failure or “abundance of caution” to become paralysis.



Lessons about science and crisis

- Plan your actions so that refugee scientists will want to return to their country to do world-class research and development. (There are exceptions...)
- Do not fall into the trap of seeing science as independent of the needs of the affected society.
- Scientific research, education, and technological innovation are vital to a society's health and viability.
- Brain drain is real. It robs and weakens the affected country. Be careful.
- Promote vigorous international scientific cooperation, especially with the scientists who remain in the country.