

Recommendations for facilitating the implementation of the Open Science in the Western Balkans countries

Based on the [UNESCO recommendations on open science](#), [the EU's open science policy](#), [Report on the existing open science practice in the Western Balkan countries](#) and shared experiences at the round table held at the [Open science days in Belgrade](#), November 3, 2022, recommendations were developed for facilitating the implementation of Open Science (OS) in the Western Balkans countries (WBCs).

OS emerged several decades ago as a movement to transform scientific practice in order to adapt to the changes and challenges of the digital era and to increase the social impact of science. Greater and open access to research processes and results improves the efficiency of scientific systems and reduces costs during the collection, creation, and reuse of research data. Also, increasing the social impact of science multiplies opportunities for local, national, regional, and global participation in the research process, which enables a wider circulation of scientific discoveries. Therefore, it is extremely important that the WBCs participate equally in global scientific transformations and create the basis for the future development of scientific potential.

Recommendations

Policies and infrastructure

1. The WBC generally have developed OS policies, except for Albania and Bosnia and Herzegovina. *It is strongly suggested that Albania and Bosnia and Herzegovina adopt national open science policies to join other WBC in their efforts to make open science a new research practice.*
2. Existing policies in Serbia, Montenegro, and North Maceonia declaratively regulate OS, respecting its importance, without an action plan for infrastructure maintenance. Therefore, resources for implementation of OS are not available to researchers. *It is strongly suggested that policies specify the ways in which the infrastructure for open science will be provided.*
3. The reproducibility of science has become a fundamental stumbling block of trust in science. Replication studies are necessary in all areas of science to ensure confidence in scientific results. *It is recommended that the policies of scientific journals include replication studies in their aim and scope.*



Funding

1. Publishing in Gold Open Access typically costs \$1,000 to \$3,000. Researchers do not have enough funds to pay for Golden Open Access and usually deposit the results of scientific work in institutional repositories (so-called Green Open Access). *Research institutions are strongly encouraged to develop institutional repositories to help researchers meet Open Access requirements defined by national policies.*

Education

1. Open science implies many new research practices and principles, such as the FAIR (Findable, Accessible, Interoperable, and Reusable) data principle, Data Management Plan, open code, open software, citizen science, etc. Currently, researchers are informed about these skills exclusively by participating in EU projects and their educational activities. Some educational material has been published in Serbia ([Otvorena nauka: praksa i perspektive](#); [Vodič za građansku nauku](#)), but it is necessary that young researchers have unlimited access to education about transformative trends in science. *The introduction of these new research practices into curricula is recommended.*
2. Decision makers in all WBCs can improve these processes by introducing additional criteria for accreditation of study programs in empirical sciences. *It is recommended that the criteria that include OS become part of the accreditation of study programs.*

Next generation metrics

1. Relying on exclusively quantitative criteria during scientific evaluation contributes to a greater number of scientific works. However, the number of scientific papers is not a basis for evaluating scientific impact. *It is recommended to change the criteria for the evaluation of scientific work, which should be relied on [DORA Declaration on Research Assessment](#), [Leiden manifesto for research metrics](#) and [EU Next-generation metrics: Responsible metrics and evaluation for open science](#).*

WBC-RRI.NET team

