National Initiatives for Open Science in Europe

Open Science in Montenegro – State-of-the-art and Strategic Plans

Enis Kočan
University of Montenegro
Faculty of Electrical Engineering
enisk@ucg.ac.me

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Outline

☐ **Open Science in Montenegro**

☐ Strategic document on OS adopted by Governement of Montenegro

☐ Provisions of the Programme of Implementation of OS in Montenegro by 2022

☐ Action Plan

Open Science in Montenegro

❑ Montenegro is taking its first steps in implementing Open Science (OS) policies

❑ **Ministry of Science (MoS)** and **University of Montenegro (UoM)** are leading this process of adopting and deploying OS policies

❑ Up to recent time, implementation of the principles of Open Science was matter of choice of individual researchers

❑ There are no agreements between Montenegro and major internal publishers, nor planned negotiations regarding transformative agreements for open access.

Open Science in Montenegro

❑ Open Access policy has been for the first time mentioned in **Strategy of Scientific Research Activity** (2017-2021), where 4 main directions to be promoted in this area are recognized:

1. The availability of scientific research literature
2. The availability of data from publicly funded research
3. The availability of scientific research infrastructure
4. Development of MREN (Montenegrin Research and Academic Network)

❑**Government of Montenegro** has adopted the first strategic document of Open Science on **June 26, 2020**

❑ The document is entitled "**Programme of implementation of Open Science prinicples in Montenegro with the Action Plan (2020-2022)**"

Open Science in Montenegro

❑ For a several years in a row, **MoS** supports publishing papers in Open Access journals, categorized as Q1-Q3 (WoS categorization) in given areas.

❑ **MoS** also supports publication of Open Access scientific journals, provided that the journal is indexed in the Directory of Open Access Journals – DOAJ

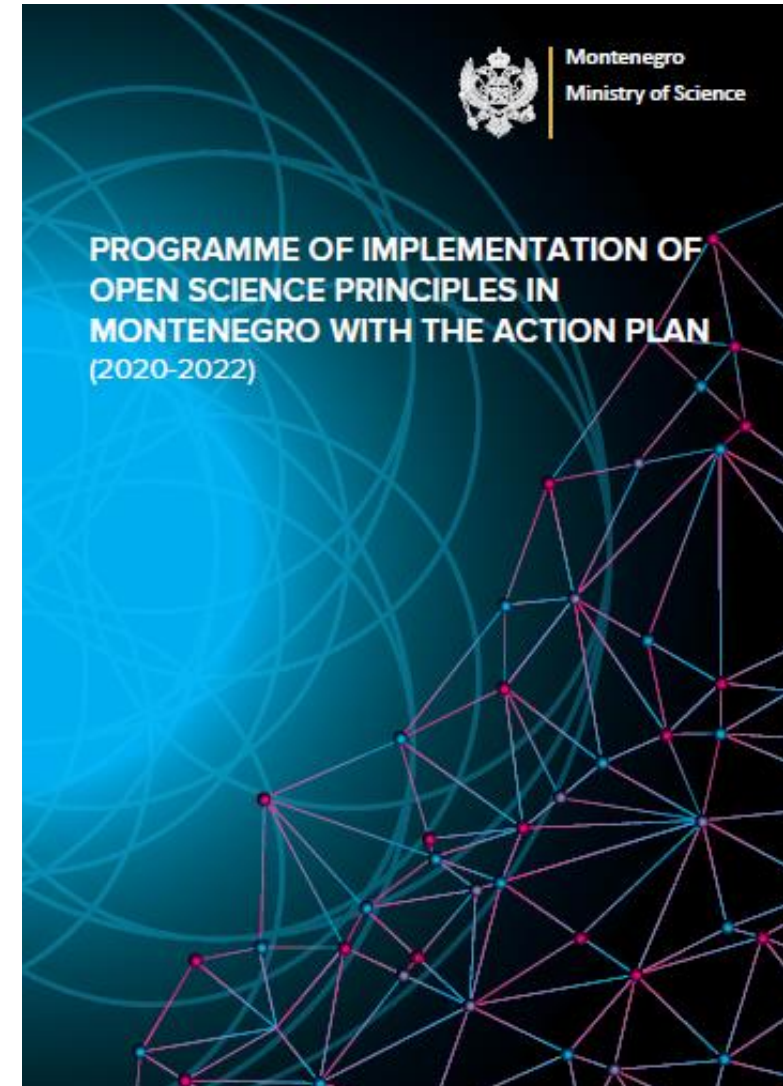   ❑ There are currently 9 journals from Montenegro in DOAJ

Open Science in Montenegro

❑ MoS participates in regional OS initiative, realized through **RCC** (***Regional Cooperation Council***)

   ❑ Through RCC initiative, Montenegro has participated in 2 EU Meetings of the *Commission Expert Group on National Points of Reference on Access to and Preservation of Scientific Information*

   ❑ RCC is currently working on document entitled **Protocol on Open Access to Research Infrastructure in the Western Balkans**, which is coming to its final form, and is expected to be adopted at the Sofia Summit on November 10, 2020.

Open Science in Montenegro

- **University of Montenegro (UoM)** has signed the **Berlin Declaration** on Open Access to Knowledge in the Sciences and Humanities on **October 2018**.
    - UoM has also created a digital repository, which includes an open electronic database of doctoral dissertations defended at the University of Montenegro
    - **NI4OS-Europe** project is the first international project in the area of OS, in which participates an institution from Montenegro
    - On June 2020, UoM has become a member of **OpenAire A.M.K.E.** legal entity
    - On October 01, 2020, UoM has adopted "**Policy for Open Access to Research Infrastructures at University of Montenegro**"
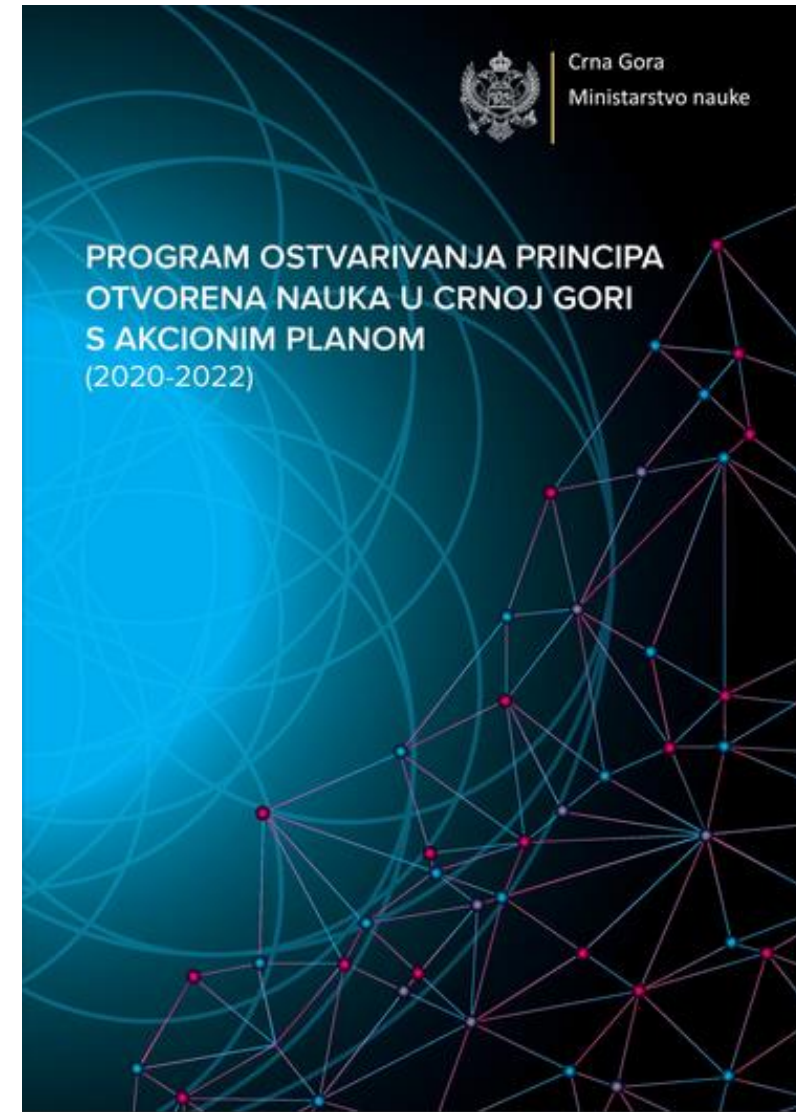
Open Science in Montenegro

❑ Among other, **Policy for Open Access to Research Infrastructures at University of Montenegro** defines:

❑ Research infrastructure management

❑ Users of resarch infrastructure

❑ Access to research infrastructure

❑ Forming of pricing for research infrastructure services

❑ Collection and use of the funds received for provision of the research infrastructure services

❑ Obligations related to confidentiality and protection of intellectual property

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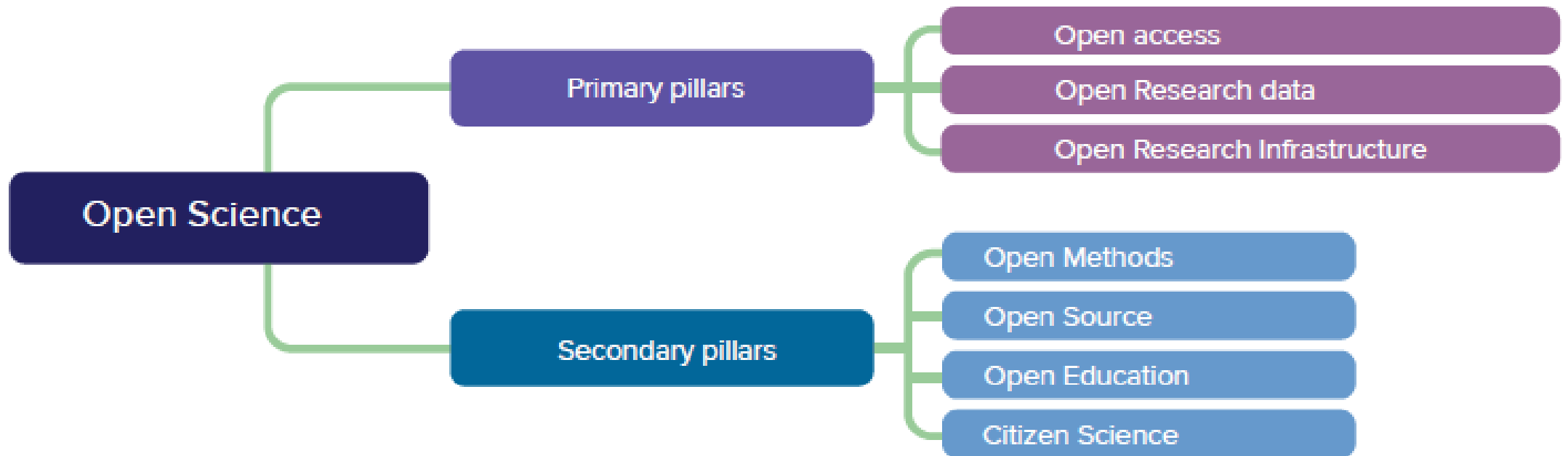
Creation of strategic document on OS in Montenegro

❑ Top down approach in creation of the document, initiated by the Ministry of Science

❑ Working Group nominated by Ministry of Science:

1. **Darko Petrušić**, PhD, *The Director General of the Directorate for Scientific Research Activity*

2. **Lidija Vukčević** – *MoS*

3. **Prof. Enis Kočan**, Phd, *University of Montenegro*

4. **Kotar Mojca**, Phd, *University of Ljubljana, external expert*

❑ https://www.mna.gov.me/ministarstvo

   ❑https://online.fliphtml5.com/ugzer/fqll/#p=1

❑

Creation of strategic document on OS in Montenegro

❑ Besides this, all the relevant research intitutions and potential OS stakeholders were informed about the work on document

    ❑ Representatives from 15 research performing/supporting institutions responded to call to participate in creation of this strategic document.

❑ Harmonized document form was sent to all these intitutions, with several of them providing valuable comments and contributions incorporated in the final form of the document.

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PROGRAM OSTVARIVANJA PRINCIPA
OTVORENA NAUKA U CRNOJ GORI
S AKCIONIM PLANOM
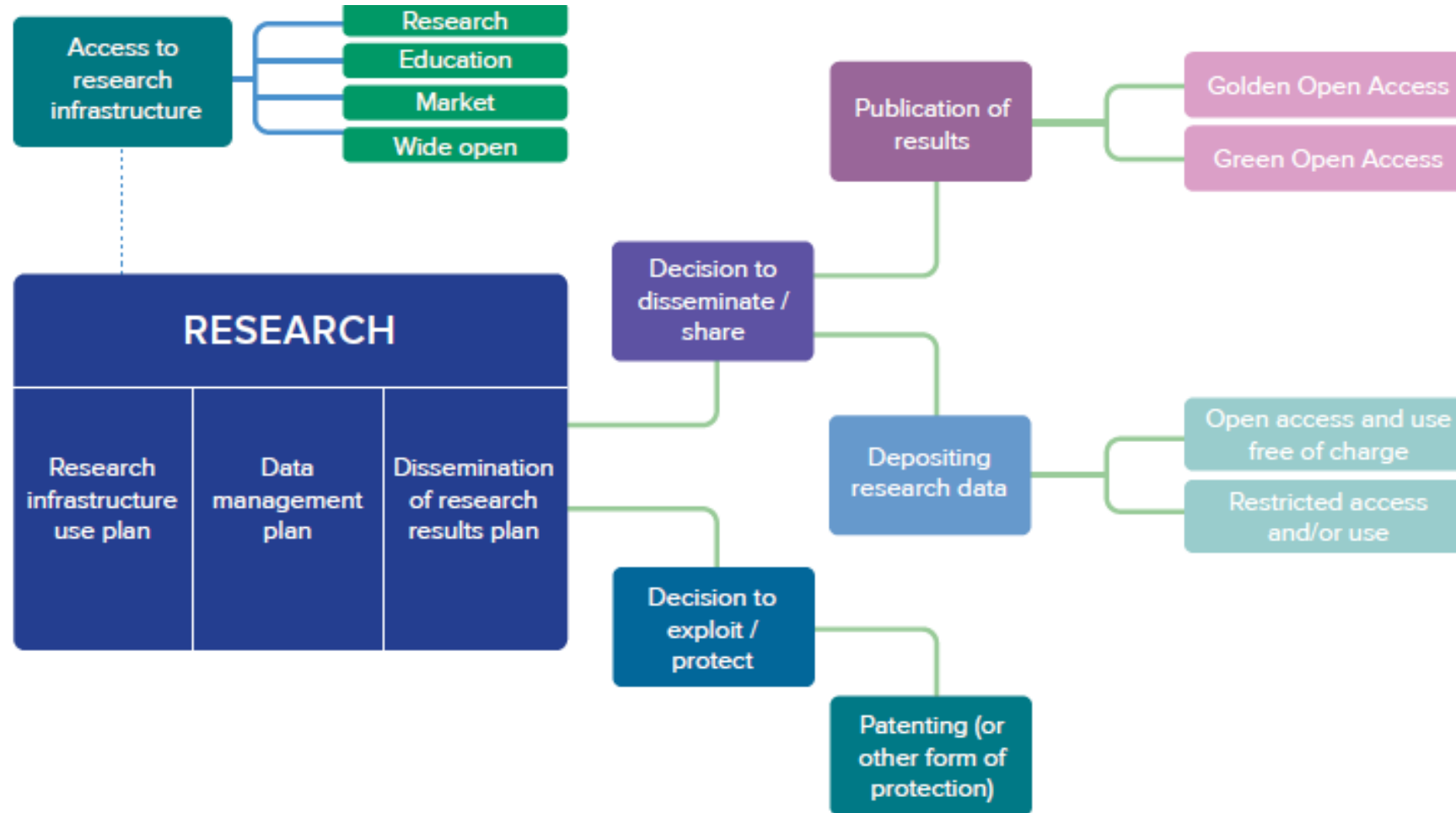(2020-2022)

Strategic document on OS in Montenegro

❑ <u>The vision</u> of Montenegro is that research activities should be based on Open Science principles, which implies that they should benefit society as a whole, and that public research funding directed at research activity funding ought to be spent efficiently and transparently.

❑ This can be achieved through open access to:

   ❑ **publications,**

   ❑ **research data,**

   ❑ **research infrastructures**.

Strategic document on OS in Montenegro

Aspects of Open Science in Montenegro

Strategic document on OS in Montenegro

Research process and dissemination of research results

Strategic document on OS in Montenegro

❑ The provisions of the Programme are <u>aligned with </u>the requirements of open access to publications and research data in **Horizon 2020** Framework Programme for Research and Innovation (2014-2020), <u>while taking into</u> account the development of Open Science that will be included in the **Horizon Europe Framework Programme for Research and Innovation** (2021-2027), i.e., the segment on:

   ❑research infrastructures,

   ❑skills and training, as well as on

   ❑research assessment.

❑ The Programme of Implementation of Open Science Principles in Montenegro (2020-2022) represents <u>the first phase in the longer process of aligning the Montenegrin research system with the European Research Area</u>.

Strategic document on OS in Montenegro

❑ The Programme of Implementation of Open Science Principles in Montenegro (2020-2022) envisages the following:

1. Providing open access to peer reviewed articles;
2. Providing direct open access to national academic publishing;
3. Enabling open access to research data shall be enabled in line with the principle of "as open as possible, as closed as necessary". Preparation and submission of a data management plan within the research process is encouraged
4. Providing for accessibility of research infrastructures (facilities, devices and digital infrastructures) where they have been acquired or established through public funding, as well as providing for interoperability of digital infrastructures with international digital research infrastructures;
5. Awareness-raising and strengthening the skills and training in the field of Open Science for all Montenegrin science stakeholders;
6. Acknowledging the implementation of Open Science in research assessment.

Strategic document on OS in Montenegro

❑ The Programme applies to researchers, research funding organisations and research performing organisations.

❑ The Programme is accompanied by an **Action Plan** that specifies activities with related indicators, responsible organisations, timeframes and the funding needed to provide the conditions for implementation of the Programme.

❑ A **two-level governance structure** is planned for implementation of the Open Science principles in Montenegro, with a

   ❑ **strategic working group**, composed of representatives of all interested national Open Science stakeholders, and the

   ❑ **operational working group** of the Ministry of Science.

SWOT ANALYSIS

STRENGTHS

❑ Support to Open Science principles at the regional and state level;

❑ Activities on application of the Open Science principles have commenced;

❑ Presence of internationally well integrated excellence research teams / researchers;

❑ Developed scientific research system.

WEAKNESSES

❑ Absence of national Open Science infrastructure;

❑ Inadequacy of legislative regulations and policies for support to Open Science principles;

❑ Insufficient implementation of the Open Science principles;

❑ Absence of education and insufficient promotion of Open Science principles.
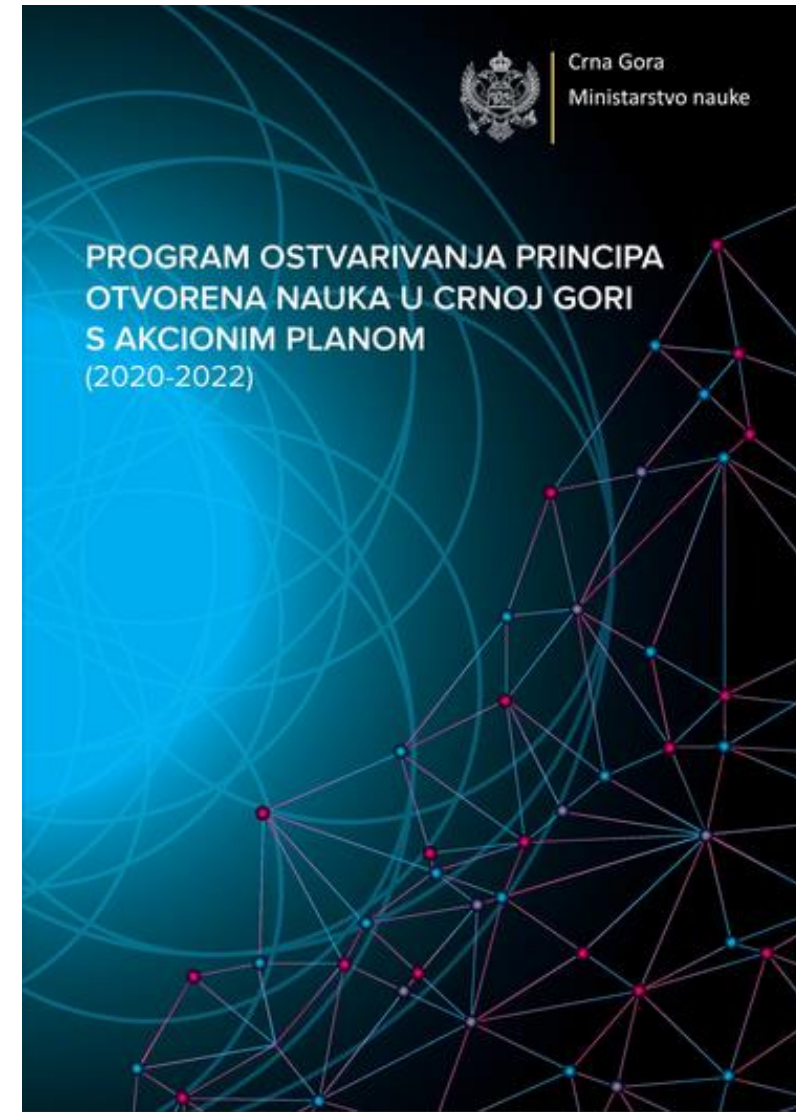
SWOT ANALYSIS

OPPORTUNITIES

- Possibility of better utilisation of leading international funds for research and innovation resting on the Open Science principles;

- Possibility of better utilisation of Open Access to large international research infrastructures (JRC, CERN, etc.);

- Possibility of accessing open digital platforms for Open Science;

- Possibility of planning a "large-scale research infrastructure for sustainable technologies" in South-East Europe – SEEIIST, with a view to more efficient use;

- Greater possibility for establishing public-private partnerships.

THREATS
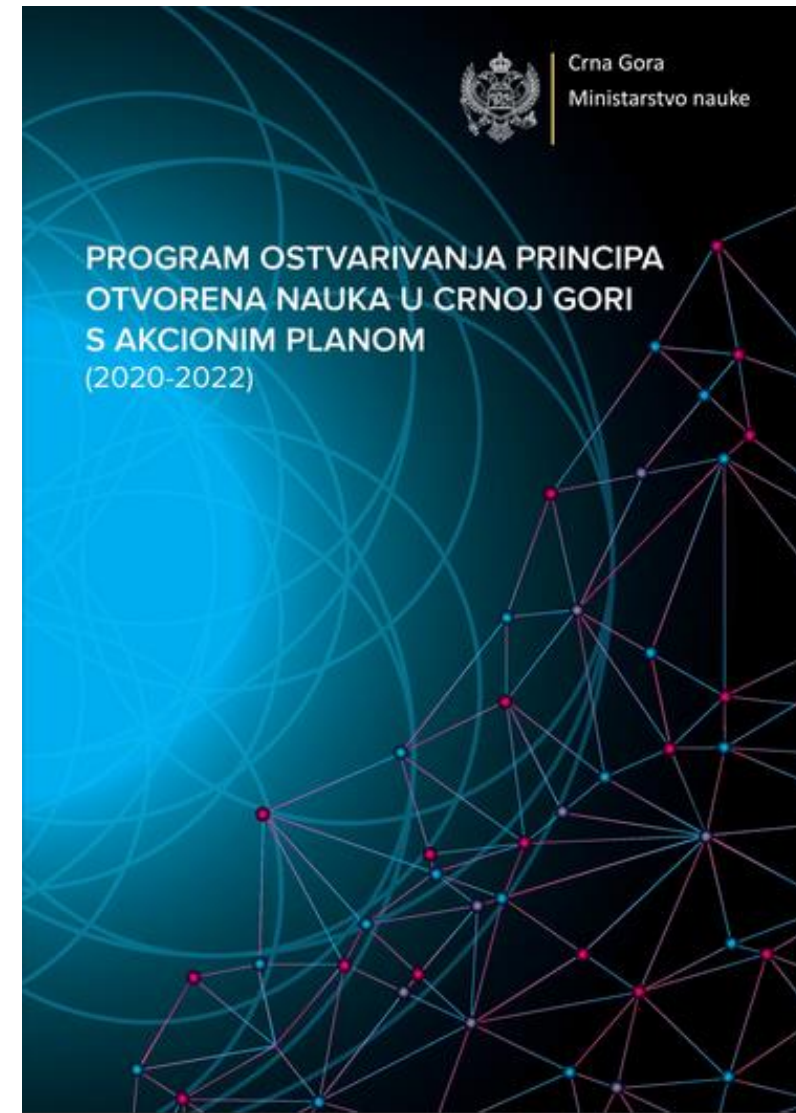
- Publishers of scientific publications attempting to slow down the stronger establishment of Open Science principles;

- Change in the European strategic framework for application of Open Science principles;

- Outflow of highly-qualified research and innovation human resources

Strategic document on OS in Montenegro

❑ https://www.mna.gov.me/ministarstvo

   ❑ https://online.fliphtml5.com/ugzer/fqll/#p=1

❑ Document structure:

1. Introduction

2. Open Science Concept

3. Strategic Framework of the Programme of Implementation of Open Science Principles in Montenegro (2020-2022)

4. Open Science in Montenegro in Early 2020

5. Vision od the Programme of Implementation of Open Science Principles in Montenegro (2020-2022)

Strategic document on OS in Montenegro

❏ <u>Document structure</u>:

6. Provisions of the Programme of Implementation of Open Science Principles in Montenegro (2020-2022)

7. Operational Goals and Performance Indicators of the Programme of Implementation of Open Science Principles in Montenegro (2020-2022)

8. Action Plan of the Programme of Implementation of Open Science Principles in Montenegro (2020-2022)

9. Management, Reporting and Evaluation of the Programme of Implementation of Open Science Principles in Montenegro (2020-2022)

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PROGRAM OSTVARIVANJA PRINCIPA
OTVORENA NAUKA U CRNOJ GORI
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Open Access to scientific publications

❑ <u>In the first phase</u>, the focus would be placed on creating a national repository.

❑ In the meantime, it is recommended that all publications resulting from publicly funded research to be stored in well-known international professional repositories, in accordance with the principles of **Green Open Access**.

    ❑ repositories that require rights to deposited publications and restrict access in any way should be avoided.

    ❑ if the research team opt for **Gold Open Access**, **article processing charges (APC)** would represent eligible costs during the research period.

❑ Once the infrastructure is established, the practice of <u>Green Open Access</u> will become <u>mandatory</u>!!!!

    ❑ After depositing the publication in the repository, users will need to provide Open Access to the <u>bibliographic metadata</u> of the publication, which must be <u>presented in a standard format</u>.

❑ Journals published by Montenegrin-based publishers that contain peer-reviewed papers and receive national public funding for their activities, in part or in full, must be openly available (under the Gold Open Access principle).

    ❑ Journals must be included in the **Directory of Open Access Journals** (**DOAJ**).

❑ Publishers of scientific monographs should strive to publish monographs through business models that will enable open access to the full text immediately upon publication, with their licensing pursuant to Open Access licenses (e.g. Creative Commons)

    ❑ Published open access scientific monographs must be included in the **Directory of Open Access Books** (**DOAB**).

Open Access to research data

❑ The first phase assumes the establishment of a national repository for research data storage, as well as accompanying rules for its use.

❑ it is recommended that until the establishment of a national repository, all research data resulting from publicly funded research (partially or fully) be stored in one of the existing repositories.

    ❑ it is recommended to use thematic repositories for appropriate areas (findable on re3data.org or FAIRsharing.org) or Zenodo (zenodo.org) repository.

❑ Open access to research data should be provided immediately after the publication of a scientific paper to which they belong, with possible legal and / or ethical restrictions.

    ❑ If access to research data is restricted due to exceptions, or if an embargo period is established, then at least openly available metadata must be prepared and immediately available for the digital repository catalogue

Open Access to research data

❑ Research datasets must have unique identifiers (e.g., DataCite)

   ❑ DataCite (https://datacite.org/) is an international organisation whose main purpose is to develop and support the discovery, identification and citation of research data and other research outputs.

❑ Submission of a **data management plan** (**DMP**) in the first six months of the project is <u>encouraged</u>

   ❑ DMP costs will be considered as eligible costs in research funding schemes at the national level

❑ Following the establishment of a national infrastructure for storing research data obtained through publicly funded research (in part or in full), it will be <u>mandatory</u> to apply the **Open Data principles**, with a *recommendation* to adopt and practice the *FAIR principles*.

Open Access to research infrastructure

❑ At the national level, scientific research infrastructure acquired or created as a result of publicly funded research (in part or in full) must be available to all researchers according to the Open Access principles

❑ Montenegro adopted the National Roadmap for Research Infrastructure (2015-2020) as the first country in the Western Balkans to do so, only to revise the document in 2019.

❑ It is desirable to open the research infrastructure for international / transnational use.

  ❑ This enables the research infrastructure to attract excellent researchers
  ❑ The first phase would involve the creation of a national digital register for research infrastructure.

❑ Furthermore, it is necessary to clearly define the rules of access and use of research infrastructure, focused on **research, education, achieving market benefit.**

Education and promotion of Open Science

❑ Researchers should be aware of the benefits OS can bring them and should acquire new knowledge and skills through continuous training and support specific to their disciplines.

❑ Higher education institutions should include topics related to Open Science in their curricula.

❑ The activities that are of particular importance are:

   ❑ organisation of promotional events (info-events, trainings, workshops);

   ❑ education and training of doctoral students, through the modification of curricula;

   ❑ training of researchers;

   ❑ training of support staff;

   ❑ providing discipline-specific guidance and training;

   ❑ providing actor-specific guidance and training.
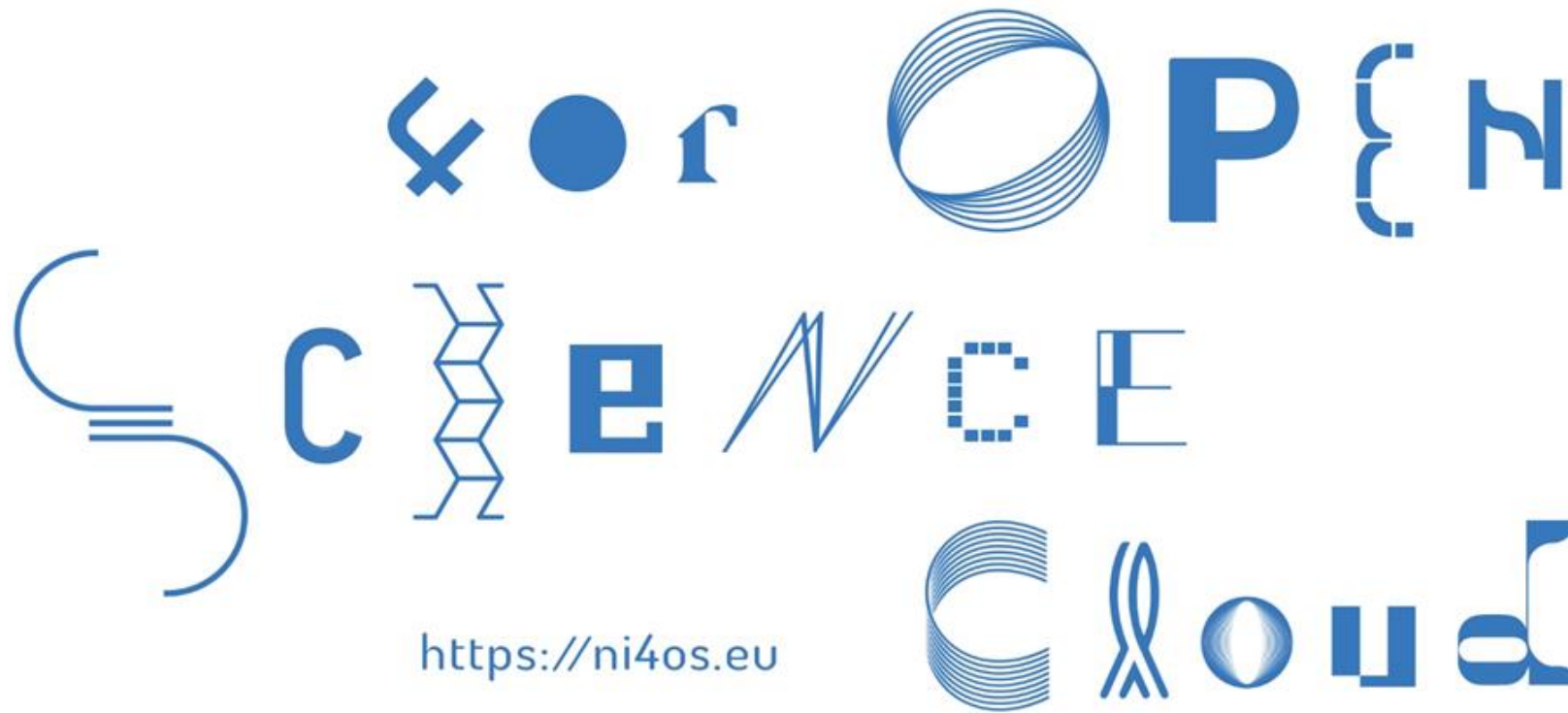
Criteria for assessment of research activity

❑ In order to promote the practice of the Open Science principles, it is necessary to introduce criteria for assessment and rewarding of researchers who follow the Open Science principles in their careers

❑ In this regard, the key activities are:

   ❑ additional acknowledgment of publications published according to the Open Access principle, in the assessment of research work at different levels;

   ❑ integrating research data management, openness and FAIR principles into the process of assessment and evaluation of research at different levels;

   ❑ promotion of researchers who practice the Open Science principles;

   ❑ acknowledging the practice of the Open Science principles during:

      ❑ researcher recruitment procedures;

      ❑ evaluation of project proposals;

      ❑ evaluation of the institutions;

      ❑ awarding research rewards.

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Action Plan

OPEN SCIENCE – ACTION PLAN	IIIQ 2020	IVQ 2020	IQ 2021	IIQ 2021	IIIQ 2021	IVQ 2021	IQ 2022	IIQ 2022	IIIQ 2022	IVQ 2022
Operational Goal 1: Improving legislative framework that enables the application of Open Science principles										
A) Drafting an analysis that will determine the impact of the Open Science principles on existing legislation and policies along with recommendations for their amendments	■	■	■	■	■					
B) Drafting a study that will identify the necessary amendments to the rules for advancement in academic and research careers in terms of support for the Open Science principles	■	■	■	■	■					
Operational Goal 2: Establishing national infrastructure for Open Science to improve research and innovation activities										
A) Drafting a feasibility study and terms of reference for a national Open Science repository (publications and data)	■	■								
B) Establishing a national Open Science repository			■	■	■					
C) Drafting a study that will determine whether to develop a national research infrastructure registry or to join an international registry	■									
D) Development of a national registry or enabled use of international registry			■	■						
E) Drafting a National roadmap for research (and innovation) infrastructure		■	■	■						
Operational Goal 3: Enhancing the implementation of Open Science principles to improve excellence and relevance of scientific research activities										
A) Creating national rules for Open Access to scientific publications				■	■					
B) Creating national rules for supporting national scientific journals				■	■					
C) Creating national rules for publishing open research data				■	■					
D) Creating national rules for the registry of open research infrastructures Operational				■	■					
Goal 4: Developing human capital through education and promotion of Open Science principles to strengthen competitiveness in the field of research										
A) Organisation of educational and promotional events				■	■	■	■	■	■	■
B) Analysis of the study programmes (curricula) at the level of doctoral studies, with a view to include Open Science principles in the learning outcomes	■	■	■	■	■					
C) Incentives for participation in Open Science activities in line with the call for proposals for scientific research activities	■	■	■	■	■	■	■	■	■	■

Thanks!

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