



Ministry of Science, Technological  
Development and Innovation

Ministry of Science, Technological Development and Innovation  
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SERBIA ACCELERATING INNOVATION AND GROWTH ENTREPRENEURSHIP (SAIGE) PROJECT

ADDITIONAL FINANCING (SAIGE AF II - P181485)  
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK



DRAFT DOCUMENT  
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**Abbreviations**

AF	Additional Financing
AI	Artificial Intelligence
BIO4	Biotechnology, bioinformatics, biomedicine and biodiversity
CCBs	Climate Co-Benefits
CFU	Central Fiduciary Unit
EIA	Environmental Impact Assessment
ES	Environmental and Social
ESCP	Environmental and Social Commitment Plan
ESMP	Environmental and Social Management Plan
ESMP CL	Environmental and Social Management Plan Check List
ESF	Environmental and Social Framework (WB)
ESMF	Environmental and Social Management Framework
	Screening List ES
ESS	Environmental and Social Standard
EU	European Union
GoS	Government of Serbia
GM	Grant Manuel
GRM	Grievance Mechanism
HR	Human Resources
ICT	Information and Communication Technology
IF	Innovation Fund
INP	Institute for Nature Protection
IPA	Instrument for Pre-Accession Assistance
IPCM	Institute for protection of Cultural Monuments
IT	Information Technology
LEP	Law on Environmental Protection
LL	Labor Law
LMP	Labor Management Procedures
ESE	Environmental and Social Expert
EE	Ethics expert
M&E	Monitoring and Evaluation
MAFWM	Ministry of Agriculture, Forestry and Water Management
MoESTD	Ministry of Education, Science and Technological Development
NITRA	Ministry of Science, Technological Development and Innovation
MoEP	Ministry of Environmental Protection
MoH	Ministry of Health
OHS	Occupational Health and Safety
PIU	Project Implementation Unit
POM	Project Operations Manual
R&D	Research and Development
RDIs	Research and Development Institutes

SERBIA ACCELERATING INNOVATION AND GROWTH ENTREPRENEURSHIP – SAIGE

Environmental and Social Management Framework - ESMF

RoS	Republic of Serbia
SAIGE	Serbia Accelerating Innovation and Growth Entrepreneurship
SDF	Serbian Diaspora Facility
SEP	Stakeholder Engagement Plan
SF	Science Fund of the Republic of Serbia
SIP	Serbia Innovation Project
SMEs	Small and Medium Enterprises
SROs	Science and Research Organizations
TA	Technical Assistance
US\$	US Dollar currency
EUR	EU currency
WB	World Bank

**EXECUTIVE SUMMARY**

Serbia positions itself for EU membership with increasing competitiveness in the European market remaining a priority. A structural shift in Serbia's growth model, driven by increased productivity and higher value-added production, is needed to boost competitiveness and spur economic growth. This can be achieved, in part, through enterprise innovation facilitated by increased and more efficient investments in applied research and development (R&D), and support for research commercialization, enterprise formation, and growth of innovative small and medium enterprises (SMEs). Innovation indicators related to these objectives show that Serbia has low level of R&D expenditures, a science financing model that results in inefficiencies, due to its largely non-competitive structure, and low levels of public-private research collaboration, which results in low levels of commercialization of research results that could support economic growth.

With a track record of decade-long and successful cooperation between Serbia, the World Bank (WB) and the European Union (EU) on innovation and entrepreneurship, the World Bank embarked again with the Government of Serbia (GoS) on this subject through the Serbia Accelerating Innovation and Growth Entrepreneurship (SAIGE) Project building up on the success of the World Bank administered first EU Instrument for Pre-Accession (IPA) financed Serbia Innovation Project (SIP). The SAIGE Project currently includes an IBRD loan in the amount of €43 million (US\$48 million), signed on December 13, 2019, approved by the Parliament of the Republic of Serbia in January 2020, and declared effective on May 18, 2020. It also includes an EU IPA 19 funding, recipient-executed grant of €26.88 million (US\$28.52 million) processed as Additional Financing in July 2023. This first AF was not processed at the same time with the original IBRD Loan due to the slightly later approval of EU IPA funds in December 2019, and, at the time prolonged negotiations on the EU-WB Financial Framework Partnership Agreement, finalized on July 8, 2021. The first AF enables the scale-up of activities in the parent Project in line with approved development objectives through the same implementing entities and programs. Gending

The second Additional Financing (AF) in the amount of €25 million (US\$27 million equivalent) is proposed to the SAIGE (P170185) parent project, in order to support AI development in Serbia and BIO4 campus.

The changes proposed for the AF entail expanding the scope of the activities financed by the Parent Project, adjusting its overall design, and extending the closing date of the Parent Project by 24 months.

The development objective of the SAIGE project, the EU IPA and second AF is enhancing Serbia's growth and competitiveness by improving (i) relevance and quality of scientific research, and (ii) entrepreneurship innovation and access to finance for enterprise growth, as a way of contributing to Serbia's growth and competitiveness. Relevance of research refers to the potential of research results to be commercialized on the market, thus contributing to the economy, while excellence refers to international recognition of the quality of the research. The PDO will not change in the context of the proposed second AF.

The original (parent) project consists of three components.

- I. Component 1 (Research Sector Reforms) focused on the financing of the selected programs of and the technical assistance to the Science Fund (SF), the institutional transformation for the selected Research and Development Institutes (RDIs), and a Serbian Diaspora Facility, to finance the TA and provision of grants to scientists, researchers, entrepreneurs and Serbian diaspora to transfer knowledge and skills back to the country.
- II. Component 2 (Enterprise Acceleration) was designed to build on existing programs of the Innovation Fund (IF), combining the TA and the matching grants via co-investment fund to support early (idea) stage and the growth (scale up) stage companies.
- III. Component 3 finances project implementation and monitoring, including the Project Implementation Unit (PIU) operational costs and a part of the Central Fiduciary Unit (CFU) operational costs.

The budget of three components and subcomponents:

- I. Component 1: (EUR 34 million from SAIGE, with additional EUR 31.5 million in EU IPA financing):  
Research sector reforms: Subcomponent 1.1: Serbia Science Fund; Subcomponent 1.2: RDI Reforms; Subcomponent 1.3: Serbian Diaspora Facility
- II. Component 2: (EUR 7 million from SAIGE, with additional EUR 10 million from EU IPA financing):  
Enterprise Acceleration
- III. Component 3: Project Implementation, Monitoring, Capacity Building (EUR 2 million from SAIGE)

The Ministry of Education, Science and Technological Development (MoESTD) until October 2022 was responsible for the overall Project coordination and implementation and execution of Component 1.2 RDI Reforms. After April 2022 elections, a new line ministry – Ministry of Science, Technological Development and Innovation (NITRA) has been tasked (in October 2022) as the successor, with the overall Project coordination and implementation through its PIU and through the Science Fund and the Innovation Fund as associated

Environmental and Social Management Framework - ESMF

Project Implementation Entities. The Science Fund is responsible for the implementation of Component 1.1 Science Fund and Component 1.3 Diaspora Facility and will hire/assign appropriate staff/consultant as required. NITRA continuing from the previous ministry (MoESTD) is responsible for the implementation of Component 1.2 RDI Reforms while the Innovation Fund is responsible for the implementation of Component 2 – Enterprise Acceleration.

In August 2023, a GoS delegation led by the Minister of Science, Innovation and Technological Development (NITRA) requested additional support (IBRD lending) for the innovation agenda, for the SAIGE project. Following this visit, in September 2023, the Bank received a written request for a second Additional Financing for:

- (a) further developing the field of Artificial Intelligence (AI) in Serbia,
- (b) strengthening of R&D management capabilities related to BIO4 agenda, and
- (c) supporting the management and overall project implementation.

Specifically, the Government has requested:

(a) €18.5 million (US\$20 million equivalent) for the Artificial Intelligence (AI) programs. This funding is to support grant programs that will incentivize research and application of AI, administered by the IF and SF. In addition, the AI Institute will receive technical support and grants against their existing Transformation Plan, part of the ongoing R&D Institutes transformation program, implemented currently under the oversight of the PIU and the line Ministry. The NITRA, SF and IF, the current Project Implementing Entities (PIE) will remain as the PIE for the proposed AF.

(b) €3.8 million (US\$4 million equivalent) for continued support and capacity building within the BIO4 campus, both for tenants (R&D Institutes and Faculties) and BIO4 company (designated managing entity). This funding will cover the following activities: (i) capacity building for BIO4 company staff and researchers (managing and operational running of Core Facilities within the BIO4 Campus) and (ii) transformation grants for BIO4 participating RDIs with a focus on promoting science-business collaboration.

(c) €2.7 million (US\$3 million equivalent) for project implementation and monitoring. This will cover capacity building for the implementation of new grant programs of the IF and SF, along with support for the participating institutions as part of RDI Reforms.

The Project is designed as an Investment Project Financing (IPF) and as such needs to comply with the World Bank's Environmental and Social Standards (ESS). In response to the commitment of the GoS to comply with the ESMF, the previous Ministry in charge (MoESTD) has developed this ESMF along with accompanying ES documents such as the ESCP and SEP. These documentations will apply to all activities under the EU IPA project and second additional financing.

Given the nature of the intervention, the experience of implementing institutions in similar project implementation, and the presence of potentially sensitive research areas, the project's risk is assessed as moderate. In some cases, the mitigation activities will need to be designed to deal with the disposal of communal, industrial or hazardous waste and wastewater treatment. No land acquisition or resettlement is anticipated and has been excluded from the list of eligible grant funding activities. Any activities that may have substantial or high environmental and social impacts, including involuntary impacts on land or assets, and unpredictable risks for the environment, community health and safety will be deemed ineligible through the Project's Environmental and Social Screening Procedure developed to defining grant eligibility.

The tentative list of specialized focus areas are being considered: Information and Communication Technology – ICT (including software and hardware Food production technology, Agriculture technology (e.g. innovative seeds or planting methods), Clean and efficient technologies in energy and transport, Bio-based industries (renewable natural resources), Transportation technology (e.g. trains and railway infrastructure that reduce costs and improve capacity, reliability and punctuality, Medical equipment, Innovative medicine (including, e.g. vaccines, medicines and treatments) The project may finance research involving human beings/tissue/embryos and animals if done following EU directives and procedures (Horizon 2020) and relevant national laws and regulations on ethical research. To mitigate the risk of public resistance and misconception about different types of research, the Project will continue conducting public awareness raising about research ethics and procedures applied in Serbia.

Finally, the Labor and Working Conditions risks have been assessed and Labor Management Procedure developed as part of this ESMF to be followed by the Borrower and any third party employing or engaging workers in relation to implementation of the Project.

## 1. INTRODUCTION

### 1.1. Context

Innovation and entrepreneurship are important drivers of growth, due to their role in shifting growth patterns to be more productivity based and trade-oriented and increasing economic dynamism. Innovation in Serbian firms is currently limited by constraints to achieving research excellence (high quality of outputs) and research relevance (economic and societal applicability), both of which are needed for innovation to contribute to growth. Innovation-related indicators show that Serbia, compare to the EU countries, has (i) low levels of Research and Development (R&D) expenditures, (ii) a science financing model that results in inefficiencies, due to its largely non-competitive structure, and (iii) low levels of public-private research collaboration, which results in low levels of commercialization of research results that could support economic growth. The Republic of Serbia is making efforts to improve the existing system in order to better integrate it into the European research and Innovation area.

To address above mentioned challenges, the Government, supported by the World Bank and the European Union Delegation to the Republic of Serbia, has committed and initiated significant reforms of the country's research and innovation, and entrepreneurship system. Government efforts include a comprehensive set of reforms that includes both supply (R&D) and demand side (private sector innovation) interventions, as well as creating links between the two.

A key element of the supply side reforms is changing the model of public financing of R&D activities in the country, including a transition to competitive financing through the introduction of a funding instrument, the Science Fund (SF) of the Republic of Serbia. To this end, a Law on the Science Fund (Official Gazette of RoS No. 95/18) was adopted by Parliament in December 2018, and a Law on Science and Research was adopted in July 2019 (Official Gazette of RoS No. 49/19). To create a more effective R&D financing model, an institutional framework is being developed. Based on good international practice and in accordance with the provisions of the Science Fund Law, Serbia has established an autonomous and professional government institution – the Science Fund of the Republic of Serbia to implement competitive research funding. Currently, the NITRA is working on amendments to the Law of the Science and Research together with relevant stakeholders.

The additional financing (AF) will also enable further addressing of the longer-term funding gap that exists in Serbia's research and innovation sector. Serbia spends in 2021 approximately 0.45 percent of GDP annually for research and innovation as a government spending (total spending on R&D in the country is about 1 percent of GDP), but it is estimated that the funding needs could be at least twice as much. The SAIGE Project and its associated AF are part of the Government's effort to increase the quality and quantity of this spending. Further, the COVID-crisis reinforced the existing need for investment in R&D as policymakers' attention and priorities shifted to more urgent activities, making the SAIGE AF important for the sustainability of innovation and competitiveness-related reforms.

Artificial Intelligence. Since 2018, Serbia has been introducing reforms to establish itself as a leader in AI within Southeast Europe. With EU-financed, World Bank managed technical assistance, Serbia developed a National Strategy for the Development of Artificial Intelligence in 2019, outlining a roadmap for AI development and implementation across various sectors. Serbia is currently working on an updated AI strategy. Serbia joined the AI Governance Alliance in 2023, stating commitment to responsible AI development and gaining access to expert support. Serbia is set to Chair the Global Partnership on Artificial Intelligence (GPAI) in 2025. Serbia has also founded an AI Institute, which is a beneficiary under the SAIGE Parent Project and set to benefit from intensive capacity building through this AF.

Bioeconomy. Serbia has embarked on an ambitious project aiming to establish Serbia as a major hub for bioeconomy in Europe. Specifically, it is in the process of establishing a network of public and private institutions collaborating on topics in biotechnology, biomedicine, bioinformatics and biodiversity, which will also include a physical campus in the capital of Belgrade, BIO4. Construction of the campus is set to begin by September 2024 and is expected to be completed by the end of 2026. The completed campus is expected to accommodate 1400 professors, researchers, 4000 students, over 1000 PhDs, and house 300 cutting-edge laboratories. The Serbian government views BIO4 as a transformative project and has invested heavily in it. The council of Europe Development Bank has also provided €200 million for the initial construction phase, while the EBRD has also provided €80 million for Science and Technology Park extension, of which € 10 million is allocated to BIO4 campus infrastructure. A number of R&D Institutes that are current beneficiaries of the SAIGE Parent Project are expected to join the BIO4 initiative, along with several University of Belgrade faculties.



## 1.2. Objectives of the Environmental and Social Management Framework

This Environmental and Social Management Framework Document (ESMF) provides general policies, guidelines, codes of practice and procedures that will be in place during the implementation of the SAIGE Project (Hereinafter: The Project) to meet requirements of the World Bank (WB) Environmental and Social Standards (ESS). ESMF is an instrument used to assess risks and impacts of projects consisting of programs and/or number of sub-projects, and such risks and impact cannot be identified before the details of such program or sub-projects are defined.

It defines the steps, processes, and procedures for sub-project screening, assessment, management and monitoring of environmental social risks and ethics impacts of the sub-projects. The document provides general framework for the Project and includes screening processes in order to exclude any sub-project which could potentially have substantial and high adverse environmental social and ethics impacts (“High risk” and “Substantial risk” projects).

ESMF includes measures and plans for reduction, mitigation and/or compensation of unavoidable adverse risks and impacts, rules for estimating and budgeting costs of such measures, as well as information on the agency or agencies responsible to address project risks and impacts. It further includes adequate information on the area where the sub-projects are expected to be implemented, including any potential environmental or social vulnerability of such area, as well as information on potential impacts and mitigation measures commensurate to the scale of the impacts.

All sub-projects to be financed under the Project are subject to the project specific environmental and social, and ethical issues screening which shall be conducted by the Project Implementation Unit and The Funds, following the procedures laid out in this ESMF. The screening aims at identifying potential impacts at the sub-projects levels so adequate avoidance, minimization or offset measures as the case may be applied.

This ESMF is intended to be used as a practical tool during program formulation, design, implementation, and monitoring in Project. The purpose of this framework is to specify the procedures that the Project will have in place during implementation, with the objective that all activities supported under the Project will be environmentally and socially sound and sustainable, consistent with WB ESS and Serbian national legislation.

ESMF guide the Project stakeholders to address, avoid, minimize or mitigate adverse environmental and social risks and impacts and enhance the environmental and social outcomes of the Project. ESMF document provides the responsibilities of different parties involved in the project implementation and presents sufficient guidance for the selection, preparation and implementation of sub-projects.

The ESMF also provides guidance for the process and the content for development of site-specific documents, namely Environmental and Social Management Plans (ESMPs) and ESMP Checklist. Ethics Checklist, AI Checklist are mentioned here, but will be elaborated via POM for all subprojects implemented under the Project.

In addition, any “high risk” AI activities undertaken pursuant to this Project will require an AI risk impact assessment to be specified in the Project Operations Manual (POM). Likewise, AI Systems that pose a likely and significant risk of harm to fundamental rights, including that may lead to likely bias and discrimination, will not be funded.

Any AI activity under this Project that involves processing of personal data will require a data protection impact assessment and compliance with the applicable data protection laws.

The above safeguards are in addition to and do not replace the standard environmental and social safeguards protocols.

Further, Project Implementing Entities will commit to flagging activities that engage in “real world testing” for Bank-approved ethics and environmental and social risk assessment and mitigation plan development. In addition, Project Implementing Entities will commit to ensuring that downstream AI developers follow Trustworthy AI development principles. The relevant frameworks will be specified in the POM and the Grant Manual.

The above will be complemented by capacity-building activities for the IF, SF and AI Institute, focusing on capacity building for staff of these organizations, hiring experts on responsible AI, instituting AI Impact assessments both at the design phase and recurring Impact Assessments during the life cycle of the AI. Capacity building will focus on Trustworthy AI principles, including (a) technical AI safety principles (transparency, explainability, accountability and audit, etc.) and (b) broader AI risk issues (fairness, non-discrimination and equality, emergent harms, etc.). Technical assistance will also include the elaboration

(including a public stakeholder consultation process) of legally binding Trustworthy AI instruments applicable to the AI industry in Serbia, consistent with good practice.

This ESMF is prepared with the aim to ensure the following:

- Project compliance with all relevant local policies and legislation, as well as the World Bank requirements.
- Adequate mitigation of all potentially adverse environmental and social impacts and ethics issues of the Project and AF.
- Adequate mitigation of AI-related risk: all AI-related activities under the Additional Financing will respect Trustworthy AI principles to identify, minimize and mitigate risks posed by the effects of AI developed and used under this Project.

## 2. PROJECT DESCRIPTION

### 2.1. Project Components

The Project will consist of the following components and subcomponents:

**Component 1: Research sector reforms** (EUR 34 million, with additional EUR 31.5 million from EU IPA)

Subcomponent 1.1: Serbia Science Fund (EUR 22.5 million, with additional EUR 22 million from EU IPA) – This subcomponent will finance certain competitive programs of the Science Fund that is likely to include basic science grants, applied research grants with incentives for promoting linkages between the private sector and R&D community, incentives for enhancing collaboration with EU (e.g., Horizon 2020, Horizon Europe) and other international programs, This component will also include provision of technical assistance (TA) for the operationalization of the Science Fund, including corporate governance, organizational structure, monitoring and evaluation (M&E) and other key institutional elements.

Subcomponent 1.2: RDI Reforms (EUR 8 million, with additional EUR 9.5 million from EU IPA) – This subcomponent will support reforms of the public Research and Development Institutes (RDIs) system by providing appropriate incentives for undertaking institutional reforms by RDIs on a voluntary (opt-in) basis. This will include providing financing to a select group of RDIs (up to 20) who are willing and able to transform. This subcomponent includes direct support for the AI Institute development and BIO4.

Subcomponent 1.3: Serbian Diaspora Facility (EUR 3.5 million) – The project will support a Serbian Diaspora Facility (SDF) within Science Fund to leverage the strengths and desire of Serbian diaspora community and benefit from this immense potential in the development of research, innovation and entrepreneurship ecosystem in Serbia. This technical assistance and matching grants program will aim to attract promising scientists, researchers and entrepreneurs from the Serbian diaspora community to transfer knowledge and skills back to Serbia.

**Component 2: Enterprise Acceleration** (EUR 7 million, with additional EUR 10 million from EU IPA)

This component is designed to build on existing programs of the IF.

The enterprise acceleration program will consist of two streams: one for early (idea) stage, and the other for growth (scale-up) stage companies. Each stream will serve some 20 companies (teams of two founders) per year, selected competitively by participating investors. The goal of the program will be to double the valuation of the company, i.e. to rapidly advance its development, within a year of program completion. If, throughout the program, market feedback on a company's product, service, or strategy, does not indicate high growth potential, mentors will work with company founders to "pivot," or adjust strategy to market demand, if that is possible.

The focus will be on businesses based on digital technologies, and specialized sub-groups could be considered (e.g. ICT, food and agriculture, health, biotech, education and gaming, etc.). Companies will receive non-dilutive investment (through a co-financing facility) and extensive technical assistance in negotiating with individual investors or early-stage funds, which may be equity-based.

**Component 3: Project Implementation, Monitoring, Capacity Building** (EUR 2 million)

This component will finance activities related to project implementation and monitoring including operations of a Project Implementation Unit (PIU). This will include operational and fiduciary (procurement, environmental and social safeguards and ethics), M&E, project audits, studies, policy/program design and capacity-building support to the NITRA and related agencies.

Additional financing – proposed activities within components

## Environmental and Social Management Framework - ESMF

Proposed activities include grants and technical assistance to be implemented through existing components and Project Implementing Entities (PIEs). The following table summarizes the proposed activities, which are elaborated below.

Activity	Component	PIE	Amount (€ million)
<b>Artificial Intelligence</b>			
<i>AI Research Grants</i>	1.1 Science Fund	Science Fund	8.9
<i>AI Institute TA</i>	1.2 R&D Institute Reforms	PIU/NITRA	1.2
<i>AI Matching Grants for Firms</i>	2. Enterprise Acceleration	Innovation Fund	8.4
<b>AI Total</b>			18.5
<b>BIO4</b>			
<i>TA for BIO4 Team and Researchers</i>	1.2 R&D Institute Reforms	PIU/NITRA	2
<i>TA for BIO4 RDIs</i>	1.2 R&D Institute Reforms	PIU/NITRA	1.8
<b>BIO4 Total</b>			3.8
<b>Project Management</b>			
<b>Project Management</b>	3. Project Management	PIU/NITRA	2.7
<b>AF Total</b>			25

I. Artificial Intelligence (€18.5 million, US\$20 million equivalent)

Support for AI activities will be divided across components as follows.

-Innovation Fund Activities – €8.4 million to be Added to Component 2: Enterprise Acceleration

The Serbia Innovation Fund is the primary vehicle for enabling innovative Serbian products, technologies and services to enter the market. It connects startup companies to knowledge, funding and partnership opportunities for the development and commercialization of innovations. It works in cooperation with international financial institutions, organizations, donors and the private sector. The IF has not implemented any AI-specific programs to date, however, many of their client companies focus on software development and may integrate AI into their technology.

To further support these clients, the SAIGE AF Project will support the IF to implement an AI-focused Matching Grant Scheme, building on successful experience with the IF's existing acceleration programs being implemented under the existing Project. The scheme will be designed to incentivize startup and scaleup companies to pursue R&D and commercial opportunities based on Trustworthy AI, with the goal of creating new products and services, as well as innovative technologies with significant impact and market potential.

The three priority areas including, but not limited to green energy transition, e-mobility and clinical healthcare will be reflected in the scoring guidelines that will also include how well the applicants will ensure Trustworthy AI. Grants will be awarded competitively, through a two-stage process consisting of expert peer reviewers and an independent, professional, selection committee. A draft Grant Manual (GM) has been prepared reflecting this focus and will be updated by the negotiations. The GOM will incorporate Trustworthy AI components into the award criteria and Grant implementation plans.

-Science Fund Activities - €8.9 million to be Added to Sub-Component 1.1: Science Fund

The Science Fund provides research funding and creates an enabling environment for scientific excellence. Programs support basic and applied research, technological development, advanced and innovative ideas, the development of human resources, laboratories and scientific infrastructure, integration into international science trends, and cooperation between science and industry.

The Program for Development of Projects in the Field of Artificial Intelligence has already funded 12 projects in the period 24 months for AI (€2.5 million). Priorities are participation in international research projects (i.e., Horizon Europe) and cooperation with the private sector. Therefore, building on this experience, and aligned with the Grant Manual provisions, the SAIGE AF Project will support the following activities of the Science Fund:

- a) A funding program for AI research projects, with independent competitive selection based on priority areas including, but not limited to e-mobility, green energy transition and clinical healthcare. Research projects will also be assessed based on their compliance with key Trustworthy AI principles, (as specified in the POM and the Grant Manual respectively).
- b) A special funding program for AI research capacity building in the broader scientific community, supporting topics directly and indirectly related to AI technologies, researchers working on applied AI research projects, or interested researchers in joining such projects. The program will include:
  - a. International and local AI experts giving lectures, providing mentorship, and assisting in AI capacity building in the Serbian research ecosystem.
  - b. Study visits by Serbian researchers to leading AI research labs or other institutions with AI research, developing AI products or services.

In addition, the Bank will further the discussions with the SF management on forming a special committee under the SF Scientific Council that would specialize in developing a risk impact assessment framework for safe, secure, responsible trustworthy and reliable AI (Trustworthy AI), ethics, environmental and social issues/impacts is being considered, ensuring continuity and sustainability as well as alignment with compliance requirements under applicable EU law governing the Horizon Europe program and other research programs of strategic interest to Serbia.

#### AI Institute Activities - €1.2 million to be added to Sub-Component 1.2: R&D Institute Reforms

The Institute for Artificial Intelligence Research and Development of Serbia (AI Institute) was established in 2021, as the first such institute in Southeast Europe. The AI Institute already has 52 staff, including hired 44 researchers and AI experts and 8 employees in charge of administration. Current projects range across a wide field of applications, including smart cities, robotics, autonomous systems, Natural Language Processing, computer vision, remote sensing, microbiology, pharma and healthcare, and environmental projects. As the Institute enters its third year of operation, several activities are proposed to further build its capacities as the center of excellence in AI and machine learning (ML) in Serbia.

Therefore, the SAIGE AF Project will support the following activities related to the AI Institute focusing on building institutional capacity to develop the following, inter alia:

- (a) Capacity building for staff and researchers on AI topics, via:
  - i. A mentorship program, enabling researchers to work with mentors recognized globally for their research excellence on joint research projects and publications. This would build on an existing, small pilot project and the AI Institute is now seeking to formalize the program, including introducing incentives for participation, structuring the program with explicit objectives and milestones, and further internationalizing the work of the institute, including by seeking mentors from among Diaspora researchers and their colleagues.
  - ii. An internship program— AI Institute has so far engaged interns locally only and on a voluntary basis. AI Institute will design and implement a paid internship program targeting regional and global talents.
  - iii. Training for AI institute staff and researchers on i) planning international research projects (e.g., those supported by Horizon Europe) and ii) technology transfer and commercialization.
- (ii) Creating strategic partnerships with AI Institutes around the world to collaborate on projects and share best practices, including a researcher exchange program to increase career mobility.
- (iii) Capacity building for institutional management and growth (governance, staffing, HR strategy, and related matters), and for managing AI risks in research and project /product development.

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II. BIO4 Research Management Capacity Building and Funding for Transformation Plan (€3.8 million, US\$4 million equivalent) – to be added to Sub-Component 1.2: R&D Institute Reforms

The BIO4 Campus is a flagship initiative of the Government of the Republic of Serbia, launched in May 2023, focusing on biomedicine, biotechnology, bioinformatics, and biodiversity that will bring together cutting-edge research and development, academia, startups, and the private sector, to create a leading bioeconomy hub in the region and Europe. Through the BIO4 Campus project, future tenants (seven University of Belgrade Faculties and nine Research Institutes) participated in designing labs, workspace and equipment based on their needs. Once the concept design team was chosen through several iterations in 2022, tenants were invited for the preliminary consultations. Technical design teams were engaged in March 2023 and each tenant had numerous meetings and consultations with them and the management team to provide all necessary technical and substantial information. This phase of the design was finished in late December 2023 by signing the design plans by each tenant, confirming that the conceptual and technical design of the buildings matches their current and future needs.

The SAIGE AF Project will support the following activities:

1. Capacity Building for BIO4 LLC Staff and Researchers (€2 million)
  - a. Technical Assistance for BIO4 Campus core facility (€1 million)

The SAIGE AF will not finance any facility development of the BIO4 Campus or the individual facilities. Capacity building on a range of subjects related to facilities management will be provided through the Project. Specifically, managing the core facilities will require hiring national and international subject matter experts who have experience in designing and/or managing similar facilities. These expert consultants will advise and train the BIO4 management team on equipment and technology procurement, international accreditation of labs and facilities, safety and security systems, and assist the BIO4 team in establishing or revising BIO4 facilities rules, procedures, and safeguards standards, based on international good practice. In order to strategically manage and efficiently operate these Facilities, additional specialized training and expertise will be required.

- b. Technical Assistance for BIO4 company capacity building (€1 million)

The designated role of the company is to strategically and operationally lead the development of the BIO4 Campus by working simultaneously on setting up infrastructure and providing equipment, building human capacities in the ecosystem and establishing collaborations worldwide.

BIO4 management and staff will require extensive training and knowledge exchange in a range of topics such as strategy, business development, biotech innovation ecosystem building, managing partnerships and outreach, BIO4 branding and communication strategy development, etc. Once trained, BIO4 management and staff will mentor any new staff joining the campus in the future. Furthermore, BIO4 company will also require complementary services related to the development and international visibility of the BIO4 Campus.

Furthermore, BIO4 will require in-house or external legal services to support commercial and other activities. Thus, it is proposed that the project also covers technical assistance on these topics.

Institutional Transformation of BIO4 RDIs, with a Specific Focus on Promoting Science-Business Collaboration (€1.8 million)

Following the successful example of transformations of R&D Institutes through the SAIGE project, the Government has requested that a similar program be extended to BIO4 participating faculties as well, in order to raise their capacity to achieve BIO4 objectives. These include creation of a new ecosystem for the people, knowledge and biomedicine, biotechnology, bioinformatics and biodiversity facilities, bringing together the academia, science, research and private sector in one place. The transformation program includes self-assessment, external assessment by international sector-specific experts based on self-assessment inputs, preparation of a transformation plan based on assessment outcomes, and subsequently approval of funds for implementation of a transformation plan focused on capacity building and technology transfer (the process of transferring research results into products or services that can be introduced to the market). The assessments include organization's mission and vision, governance, management (leadership, R&D, HR, financial etc.), research and academic capabilities, R&D quality and impact, collaborations, technology transfer, resources,

research Infrastructure, researchers including quality and relevance of young researchers and Ph.D. programs, etc.

As a part of their transformation, this sub-component will include R&D grants of €100,000 to €300,000 per project, designed to incentivize collaboration and technology transfer between BIO4 campus R&D organizations and the private sector, including development of new products, services, and technologies with future market potential. The financed transformation plans will cover the fields of biomedicine, biotechnology, bioinformatics, and biodiversity fields. These will be managed by the PIU, as part of the ongoing R&D Institute Reforms.

### III. Project Management (€2.7 million, US\$3.2 million equivalent – to be Added to Component 3: Project Management)

This funding will include project management, focused on providing financing for the PIU operation including costs related to operational, procurement assistance, environmental, ethical and social safeguards, surveys tracking project implementation, and project audits. Funding under this component will enable capacity building for the implementation of new grant programs of the IF and SF, along with support for the participating institutions as part of RDI Reforms.

## 2.2. Project Beneficiaries

The direct project beneficiary is the NITRA and its associated project implementation entities: the Innovation Fund and the Science Fund.

End beneficiaries include Public Science and Research Development Organizations (RDIs), AI institute, plus through the BIO4 Campus, future tenants ( IMGGI, IMI, IMSI, PANDA IBISS, INEP, IKB Dedinje, BIOSENS, Institute of Chemistry, Technology and Metallurgy, Institute for Biocides and Medical Ecology, The Institute for Artificial Intelligence Research and Development of Serbia and Science Technology Park Belgrade), faculties (Faculty of Pharmacy University of Belgrade, Faculty of Biology University of Belgrade, Faculty of sport and physical education University of Belgrade, Faculty of Technology and Metallurgy of the University of Belgrade, Faculty of Agriculture of the University of Belgrade, Faculty of Chemistry of the University of Belgrade, Faculty of Medicine of the University of Belgrade) Researchers, Private sector enterprises and investors..

## 2.3. Results Chain

The Project aims to strengthen the excellence and relevance of scientific research by introducing a new funding mechanism that supports excellence and relevance of scientific research (Component 1.1), reforming public RDIs to be able to enhance their R&D excellence and relevance including better commercialize the results of scientific research (Component 1.2), building the capacity and culture around the importance and demand for scientific research and introducing mechanisms to accelerate innovative ideas for startup/growth stage businesses (Component 2). This should lead to a more relevant and excellence scientific research outcome, qualified and adequate human resources conducting research and accessible growth financing which supports entrepreneurship innovation. At the end, the Project outcomes contribute to enhanced growth and competitiveness.

The Project will provide support to the SF in developing key elements in several steps:

### Step 1: Preparation and Design

- Action 1: Preparation of Science Fund's operating policy and procedures manual (rule book)
- Action 2: Training, study tours and mentoring of management, staff and selection boards
- Action 3: Design of support programs including preparation of grant manuals
- Action 4: Establishment of selection boards(s) and peer-reviewer system
- Action 5: Design of communication and promotional activities

### Step 2: Ongoing Technical Assistance

- Action 1: Operation of selection boards(s) and peer-reviewer system

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- Action 2: Execution of communication and promotional activities
- Action 3: Design of monitoring and evaluation and impact assessment framework
- Action 4: Conducting relevant feasibility and foresight studies and assessments
- Action 5: Support to ministry, R&D organizations, researchers and SMEs for enhancing regional and EU collaboration (e.g., Horizon 2020, Horizon Europe++) and other international programs
- Action 6: Identification of opportunities, roster of skilled persons for educating and assistance in writing and following up of proposals.
- Action 7: Promotion of regional cooperation activities (e.g. joint evaluation of projects, joint regional proof of concept, etc.).
- Action 8: Enhancing skills of researchers to access international financing for scientific research, through a dedicated program of the Science Fund (related to Actions 6 and 7).

**Step 3:** Direct research grants – the Project will provide financing for direct grants for public research financing under certain programs (to be agreed between the World Bank and SF, during implementation based on POM criteria) designed and developed in phases 1 and 2 as described above. This component will be an addition to the Government budget (and from EU IPA) resources allocated for this purpose.

## 2.4. Exclusions

The Project will not finance:

- Any activities which would have an irreversible and substantial environmental and social impact and correspond to a World Bank Categories – “Substantial or Highrisk Projects<sup>1</sup>. Consequently, only Moderate Risk and low Risk projects are eligible for financing under the Project. This means that the Project will not finance activities for which a Full Environmental Impact Assessment is required as per the Law on Environmental Impact Assessment (Official Gazette of RoS No. 135/2004 and amended in 2009 - 36/2009) or as per WB ESS 1.
  - The Project will not finance activities that would e.g. affect natural habitats, forests, finance experiments or production of pesticides, or cause economic and social displacement.
  - Any activities which involve land acquisition or any form of resettlement.
  - Any of the activities listed in the World Bank Group -IFC Exclusion List given in Annex 01A
  - Any activities listed in the prohibition of AI practices by EU Artificial Intelligence Act, 2023 - given in Annex 01A.
  - Any construction and reconstruction activities.
  - Research on human beings/tissue/embryos and animals that are not in line with EC regulations<sup>2</sup> for this type of research. Ethical issues stated within the Horizon 2020<sup>3</sup> “Ethic Issue Questionnaire” (enclosed as Annex 01C to this ESMF) will not be eligible for financing under this Project unless they comply with EC regulations.
  - Research on human beings/tissue/embryos that is not in line with Serbian regulations<sup>4</sup>
- To give effect to the good practice elements<sup>5</sup> of Trustworthy AI that lay at the core of this Project:
- (a) no AI activity undertaken pursuant to this Project shall be eligible for financing, that includes (the following list is indicative and not exhaustive):
    - i. Any activity directly or indirectly related to weapons systems: All weapons-related financing is excluded, but it is especially important to note that autonomous weapons raise significant ethical concerns about the removal of human oversight in life-or-death decision.
    - ii. Facial recognition technologies (FRT) for mass surveillance, including AI systems that create or expand facial recognition databases through the untargeted scraping of facial images from the internet or CCTV footage, and real-time remote biometric identification systems used in public spaces for law enforcement.
    - iii. Social scoring systems: These systems assign individuals a score based on various factors, potentially impacting their access to opportunities and services. Concerns include potential for discrimination, lack of transparency, and potential misuse by governments or corporations.

<sup>1</sup> Environmental and social risk classification in line with WB Environmental and Social Framework (<http://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf>)

<sup>2</sup> [https://ec.europa.eu/environment/chemicals/lab\\_animals/legislation\\_en.htm](https://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm)

<sup>3</sup> Horizon Europe - Ethic Self-assessment, EUROPEAN COMMISSION - Directorate-General for Research & Innovation ([https://ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/hi/ethics/h2020\\_hi\\_ethics-self-assess\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf))

<sup>4</sup> Law on Health Care ("Official Gazette of RS", No. 25/2019)

<sup>5</sup> The EU Parliament has called for a global ban on autonomous weapons, and several other countries and organizations are working towards similar goals.

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- iv. AI systems that are deliberately designed to deceive or manipulate people: This includes "deepfakes" and other technologies that can be used to create highly realistic but fabricated content or any other AI systems that manipulate human behavior to circumvent their free will.
- (b) nor shall any AI activity be undertaken pursuant to this Project that results in any diminution of due process under law, that results in bias or discrimination, that deprives an individual of their civil liberties or rights to civic participation, that infringes any freedom of expression or that misuses personal data or that causes any similar harm to any individual or group of individuals.

Specific exclusion to cover biomedicine, biotechnology, bioinformatics, and biodiversity will be developed and integrated into ESMF after negotiations.

### 3. ENVIRONMENTAL AND SOCIAL BASELINE ON NATIONAL/STATE LEVEL

#### 3.1. Baseline country and environmental information

Serbia has a land area of 88,499 square kilometers, constituting only 0.05% of the world's land area, or about 1.5 % of Europe. Despite its small size, however, the environment of Serbia is highly diverse compared to other countries in Europe. The reasons for this comparative richness include: the variety of climate, topography, and geology and the long- term ecological and evolutionary history of the region as a biological crossroads.

The Republic of Serbia (RoS) has a population of about 7,5 million, of which some 50% live in rural areas, and 17% derive their living from agriculture and associated industries. The RoS has three major landforms – the plain areas in Vojvodina and the flood plains of the Danube, Sava and Drina rivers; the Morava valley in its mainstream and two southern arms; and the mountainous areas which cover most of the country south of the Sava and Danube. The water resources of RoS in addition to rainfall are dominated by the river inflows from upstream riparian sources estimated at 85% of available water. The balance is derived from the river Morava from within the country. Due to seasonal variations, there are some 160 storage dams, some of which have hydro-electric generation facilities.

The state of environment (air, water, soil, biota, other) is subject of mandatory reporting by Serbian Agency for Environmental Protection (SEPA) and posted<sup>6</sup> (in the moment the last one is for the year 2022<sup>7</sup>).

#### 3.2. Water

Republic of Serbia abounds in waters that are its great natural wealth and has a dense river network, numerous lakes and numerous sources of hot and mineral water. Water quality in Serbia differs significantly from one region to next. Some data, obtained through monitoring, has shown the presence of: ammonia, nitrates, sulfides, iron and mineral oils in the Tisa River Basin; evaporable phenols and manganese in wells in the area of Backa; and, in some cases, suspended solids – for example, in the South Morava Basin. Throughout Serbia, the most problematic physicochemical water quality parameters are turbidity, iron, manganese, nitrates. In Central Serbia the main problem is bacteriological contamination.

Untreated municipal and industrial waste waters are still the greatest source of pollution. The response of pollutants is still unsatisfactory for fulfilment of their legal obligations and reporting about emissions in waters.

There is a need for the modernization of livestock farms, transformation of machinery stock and fuel storage facilities, adequate management of liquid manure and agricultural wastes, outer and inner integrated establishment and maintenance of drainage. The interventions providing the achievement of good ecological state of waters by adequately selected agro technological operations should be preferentially supported.

#### 3.3. Waste

The general state of waste management in Serbia is still inadequate, posing public health and environmental hazards. The most acute problem is hazardous waste, which is not separately collected and disposed of – currently it is processed in regular waste disposal sites. In general, over 50% of disposal sites do not meet the technical requirements of sanitary landfills and are actually just fenced and mapped dump areas. There are also hundreds of illegal dump sites of various sizes in rural areas. Moreover, leakage from these dump sites poses a threat to groundwater, surface water and soil, due to the high content of organic matter and

<sup>6</sup> <http://www.sepa.gov.rs/index.php?menu=5000&id=1304&akcija=showDocuments#>

<sup>7</sup> [http://www.sepa.gov.rs/download/Izvestaj\\_2022\\_usvojen.pdf](http://www.sepa.gov.rs/download/Izvestaj_2022_usvojen.pdf)



heavy metals. It is, however, important to mention adoption of the new Law on Waste Management, which is not yet fully harmonized with the EU *Acquis Communautaire*, and the numerous sub-laws that are currently being developed.

### 3.4. Climate change

According to the World Meteorological Organization, the estimated effects of climate change on Serbia will be the medium range. Serbia, as well as south-east Europe, is likely to have hotter summers, decreased precipitation and, therefore, an increased risk of summer drought. According to data trend over the last 35 years an increase of yearly air temperature by 1°C is noted on Serbian territory in the last 100 years. Shorter periods have greater positive values which means that the increase of temperature at yearly level has intensified over the last couple of decades. Although there are periods with positive and negative trends, since 1982 negative trends ceased and only an increase in temperatures was noted and it still lasts today.

### 3.5. Biodiversity, flora, fauna

In general, Serbia has rich and diverse biodiversity, flora and fauna, a number of different types of ecosystems of particular environmental importance, but it is important to mention that specific diversity in Serbia is under-researched or documented. According to available data, experts estimate that around 60000 taxa (species and subspecies). These includes: forest ecosystems representing different types of forests ; high mountain regions with characteristic mountain ecosystems well-represented or preserved, some of which are found on borders and would require trans-boundary management efforts; mountain regions in which traditional human activities have maintained and even increased biodiversity through centuries of maintaining the open pastures of mountain meadows; gorges and canyons that have been identified as important centers for relict and endemic species; steppe and sands of Vojvodina, as well as lakes, wetlands swamps, marshes, ponds which provide key habitat for migratory birds from elsewhere in Europe and have been identified as wetlands of the Ramsar Convention; karst regions in parts of Serbia, with their numerous caves and pits, supporting a rich fauna; and mountain bogs around mountain and glacial lakes.

It is estimated that in Serbian territory over 1000 species of flora are endangered, according to the red list of Serbian flora (2002). Most of the endangered plants in Serbia is in the IUCN category of “rare plants”. The most endangered part in Serbia’s biodiversity considers the forest ecosystems and especially sensitive ecosystems (e.g. wetland habitats, prairie habitats, continental salt marshes, sandy terrains, mountain habitats) some of which are refugee habitats for relict and endemic species.

### 3.6. Reaching environmental standards in Serbia

Republic of Serbia is taking a huge effort to reach good environmental standards. A set of environmental laws adopted during the last two decades contributed to Serbia coming closer to desired environmental standards. The standards of good environmental practice are applied throughout the country, and progress is particularly visible within the energy and transport sector, also due to the fact that several large projects were financed by different International Financing Institutions (IFI), which implemented a strict environmental system. However, there is still a lot of work to be done regarding environmental protection in Serbia and this chapter is focused on issues most commonly present in these fields, which lead to environmental degradation.

### 3.7. Population

The estimated number of populations in the Republic of Serbia in 2018 was 6 982 604<sup>8</sup>. Observed by sex, 51.3% were women (3 580 898) and 48.7% were men (3 401 706). The depopulation trend continued, meaning that population growth rate, compared with the previous year, was negative and amounted to -5.5‰. At the same time, the process of demographic ageing of the population is manifested by the low and steadily declining participation of young people and the high and continuously increasing share of the elderly in the total population. According to the data for the Republic of Serbia in 2018 the share of persons aged 65 and over was 20.2% and 14.3% for those under the age of 15. Observed at the level of areas, Zaječarska oblast saw the largest share of persons aged 65 and over (28%) and at the same time the smallest share of population aged under 15 (11.3%). On the other hand, the lowest share of persons aged 65 and over was noted in Pčinjska oblast (15.3%); however, the largest share of population aged below 15 was found for Raska oblast (18.2%), and then for Pčinjska oblast (15.,7%).

Serbia has achieved high level of gender equality in science and research participation. As of 2016, women represent at 48.4 percent of researchers 2016 (UNESCO, Women in Science, 2018). However, the percentage of women applicants from companies (owners and employees) is expected to be low due to the underrepresentation of women in early-stage innovative entrepreneurship. The portion of innovation

<sup>8</sup> Source: <http://www.stat.gov.rs/en-us/vesti/20190628-procenjen-broj-stanovnika-2018/?s=1801>

companies with at least one-woman founder is estimated to be 17 percent (Digital Serbia Initiative, 2018). The share of women working in technology startups in the area of software development is approaching 15 percent, which, while above international standards, is still significantly below 50 percent.

### 3.8. State of Innovation and entrepreneurship

Innovation in Serbian firms is currently limited by constraints to achieving research excellence (high quality of outputs) and research relevance (economic and societal applicability), both of which are needed for innovation to contribute to growth. According to USAID's Serbia Business Survey 2017, 84 percent of small and medium enterprises (SMEs) are financed solely from their own sources. Micro-financing and venture capital investment are impeded by an unclear legal framework, high costs of deal discovery for investors, and persisting information asymmetries between entrepreneurs and investors about opportunities for investment. Meanwhile, commercial bank loans are accompanied by high requirements for collateral or long history of operations, neither of which young, innovative firms typically possess. Lack of affordable financing, coupled with limited training and mentoring, is preventing Serbian companies to modernize their production and invest in innovation and commercialization, with young firms and SMEs particularly affected by this challenge. Innovation-related indicators show that Serbia, compare to the EU countries, has (i) low levels of R&D expenditures, (ii) a science financing model that results in inefficiencies, due to its largely non-competitive structure, and (iii) low levels public-private research collaboration, which results in low levels of commercialization of research results that could support economic growth. Around 0.9 percent of GDP is invested in R&D, well below the EU average of 2.03 percent, with most of the funding coming from the Government. To address these challenges, the Government has committed and initiated significant reforms of the country's research and innovation, and entrepreneurship system. The reforms aim to reduce challenges recognized in the Research for Innovation Strategy, 2016-2020.

A 2016 World Bank analysis identified promising potential of the Serbian entrepreneurship ecosystem, but identified the following limitations, which continue to persist:

- Supply of IT, managerial, and creative skills,
- Lack of "smart money," i.e., training and mentoring coupled with financing for innovative early-stage and growth-stage enterprises, with a gap especially prominent in the US\$500,000-US\$1,500,000 range- the total venture capital investment in 2017 was only 1,5 million EUR
- Low rates of commercialization of inventions and innovations, and
- Challenging business environment for entrepreneurs.

Despite the economic crisis, the overall public R&D expenditure in Serbia has been increasing over the past years. The biggest jump was seen in 2011 when the budgetary allocations increased by 22% in comparison with 2010, following the government obligations which are result of the additional financing for research infrastructure through financial agreements with the EIB and the Council of Europe Development Bank with a total value of €305m which was implemented in 2010-2015. After that NITRA continued to support innovation activities through IPA funds and other sources. In that respect 18.6 million EUR was allocated in total through Innovation Fund supporting programs so far. Addition to this, beside other initiatives, through different programs ministry supports science technology parks in order to improve innovation ecosystem.

Of the existing international indicators of the artificial intelligence status, the Artificial Intelligence Readiness Index 9(hereinafter: Index) is the only one providing comparable indicators for a large number of countries in the world (194). This Index is still in development and so far, only two reports have been published, and it has been used as an indicator of Serbia's position in the comparative perspective.

Based on the 2019 Report, Serbia is ranked 58th out of 194 countries.<sup>10</sup> The Index measures eleven indicators grouped into four areas: governance, infrastructure and data, skills and education, and public administration and services.<sup>11</sup>

This Index is composite, which means that the data for forming the overall score is obtained from other existing indices from previous years (some of the data dates back to 2016) and is based on the research of publicly available data. Although the focus of the Index is on the provision of public services, the indicators also show the degree of readiness of the private sector and the society as a whole for technological solutions based on artificial intelligence.

<sup>9</sup>This index was prepared by Oxford Insights in collaboration with the International Development Research Centre (IDRC).

<sup>10</sup>The results for all indicators are presented in the Appendix. The results need to be interpreted indicatively.

<sup>11</sup>Government Artificial Intelligence Readiness Index 2019, Oxford Insights and the International Development Research Centre.

According to the Index, Slovenia is ranked highest (38<sup>th</sup> place) in comparison to other countries in the region, while Bulgaria, Hungary and Romania are ahead of Serbia. North Macedonia and Croatia rank slightly lower than Serbia, while Montenegro, Albania and Bosnia and Herzegovina are significantly less prepared for the development of artificial intelligence than Serbia.

Concerning the part of the IT sector or the startup ecosystem dealing with artificial intelligence, there are no studies delivering precise data on the number of companies and their economic indicators.

Although many startup companies use artificial intelligence in the development of their products and services, there is still no clear focus on the aspects of artificial intelligence in the activities aiming at the development of the startup ecosystem.

Considering the fact that there is an increasing number of products and services using artificial intelligence on the market, it becomes more difficult to recognize the difference between those products and services significantly contributing to progress in the development and implementation of artificial intelligence and others just being somewhat related to artificial intelligence and therefore especially promoted. If the policies and measures aiming at economic development on a wider scale and at the information technology industry on a narrower scale are supposed to have an according focus on the field of development and implementation of artificial intelligence, clearly defined areas of special interest for the development and implementation of artificial intelligence are missing.

### 3.9. Research and Development (R&D) sector in Serbia

Currently, research activities in Serbia are funded directly by the NITRA mostly through project-based funding. With success rates of up to 95 percent, practically all applicants receive funding, and the limited resources are split evenly across the research community. Such a system does not systematically promote research excellence, nor does it consider its relevance for economic partners. This is evident in the low and declining output of the Serbian research community, witnessed by the decreasing number of publications since 2012. The current system incentivizes individual researchers to publish. This has given limited success in generating high quality scientific output; however, reforms are necessary to establish institutional incentives for increasing the quantity of expertise and increasing the relevance and quality of research. All these improvements are necessary to increase the absorption capacity of the country's R&D sector, including accessing European research funding sources.

The innovation process is fragmented, the public R&D and business sector is separate from each other, and there is no significant industry-academia cooperation or networking. It would be crucial to integrate the business sector into the R&D system, however, there are no measures to change this situation at present. There are no demand-side R&D and innovation policy tools – there are no national studies and guidelines in this field. Regarding human resources in R&I, brain drain is still a serious problem in Serbia and the research population is aging. Salaries are not attractive enough to encourage young talents to choose a scientific career. Although there are some efforts (e.g. funding programme) to encourage Serbian researchers to return home, the present system does not seem to be open enough for this initiative. The evaluation culture and monitoring system are still relatively weak in Serbia: there is no transparent and permanent evaluation and monitoring system in practice. 39 See Correa et al., 2013b 40 See Kutlaca, 2011 41 See Smart Specialization Platform, European Commission, 2014a 42 See Smart Specialization Platform, European Commission, 2014b 43 See European Commission, 2014a 44 See EBRD, 2014. Baseline study and concept for policy mix peer review (D4.19).

Serbia has made important progress in international cooperation as it is more and more active in the EU Framework Programmes, signed new bilateral S&T agreements, member of EUREKA and COST. However, there is no strategy for international cooperation and still many of the international cooperation/networking opportunities cannot be realized due to lack of institutional support or funds.

M NITRA continued to support RDIs activities in the country during the years, made the decision to reform the R&D framework and continued to support innovation activities through IPA funds and other sources. In that respect, MoESTD and now NITRA has taken significant steps to improve the legislative and institutional framework in order to create an effective national research and innovation system and provide support to infrastructure projects of governmental interest. Addition to this, Serbian Government fully supports the creation of the Smart Specialization Strategy Serbia (4S) and the NITRA coordinates this process with the active engagement of all relevant institutions from the country which jointly implement this process. The process of creation was launched in early 2017 and for these purposes have been developed several documents and conducted Entrepreneurial discovery process in order to identify priority fields of smart specialization.

The Republic of Serbia selected Artificial Intelligence strategy 2019, with the goals of creating:

1. an education system that develops the competencies for future needs of the job market, referring to professions directly and indirectly influenced by artificial intelligence technologies;
2. a business sector that supports the development and integration of business entities based on the use of artificial intelligence;

3. scientific research that spurs the emergence of highly competent experts in the field of artificial intelligence and its implementations, with their research contributing to the development of the business sector;
4. legal regulation in all fields that is adapted to the new circumstances brought about by artificial intelligence, the requirements of new business models and product developments and services based on artificial intelligence, while taking into account the protection against potential negative effects; and
5. comprehensive understanding of ethical aspects while planning, designing and implementing solutions in the field of artificial intelligence from a perspective of technical characteristics as well as from a perspective of effects of implementation, while taking into account the principles of preserving the freedom of individuals, fairness and equality, avoidance of damage, openness, transparency and sustainability.

RoS follows all relevant international guidelines covering AI:

- European Parliament. EU AI Act: first regulation on artificial intelligence. June 8, 2023<sup>12</sup>
- Department for Science, Innovation, & Technology. A pro-innovation approach to AI regulation. March 29, 2023 (<https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/whitepaper>).
- Latham & Watkins Privacy and Cyber Practice. China's new AI regulations. August 16, 2023 (<https://www.lw.com/en/admin/upload/SiteAttachments/Chinas-New-AI-Regulations.pdf>).

In addition, GoS issues the first Guidance on ethic principles concerning all research activities involving the development or/and use of AI-based systems or techniques: (Ethical Guidelines for the Development, Implementation And Use Of Reliable And Responsible Artificial Intelligence, "Sl. glasnik RS", br. 23/2023). The document is based on UNESCO, (2021), Recommendation on the Ethics of AI<sup>13</sup>, and Ethics By Design and Ethics of Use Approaches for Artificial Intelligence, European Commission, Research Ethics and Integrity Sector, 2021.

The National Platform for AI is developed (<https://www.ai.gov.rs/>) in RoS, as well as some tools addressing ethics concerns<sup>14</sup>; Research and Development Institute for Artificial Intelligence of Serbia is established (<https://ivi.ac.rs/>); Strategy for the development of artificial intelligence in the Republic of Serbia for the period 2020-2025, Official Gazette of the RS 96/2019, is approved. In the next three years, Serbia will be the chairing of the Global Partnership for Artificial Intelligence (GPAI), which aims to establish standards and rules for the development of artificial intelligence.

For ES point of view, important document is above mentioned the Conclusion on The Adoption of Ethical Guidelines For The Development, Implementation And Use Of Reliable And Responsible Artificial Intelligence (Official Gazette of RS, No. 23/2023), and in particular chapter 4.6. of this document. This Guidelines aim to enable science, especially in the field of artificial intelligence, to develop and progress, but not to allow man, as the central figure of all processes that affect him and of which he is an indirect or direct agent, to be endangered and neglected. Also, artificial intelligence systems that are being developed must be in line with the well-being of humans, animals and the environment.

"In accordance with the principles of fairness and damage prevention, during the life cycle of an artificial intelligence system, it is necessary to consider its impact on society and the environment. Exposure to artificial intelligence systems in all segments of life (education, work or entertainment) can change the way an individual act or negatively affect social relationships. The effects of applying artificial intelligence systems must be continuously monitored and reviewed. It is necessary to support research that includes the development of artificial intelligence systems that have a positive impact on environmental protection" (chapter 4.6).

## 4. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

### 4.1. Foreword

The legal, legislative and institutional framework for environment and society i.e. social considerations in Serbia is founded on the Constitution of Serbia, which stipulates the right to a healthy environment and the duty of all,

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<sup>12</sup> <https://www.europarl.europa.eu/news/en/headlines/society/20230601STO93804/eu-ai-act-first-regulation-onartificial-intelligence>

<sup>13</sup> <file:///C:/Users/ivana.jovanovic3/Downloads/UNESCO%20Recommendation%20on%20the%20ethics%20of%20artificial%20intelligence.pdf>

<sup>14</sup> See for example: <https://www.ai.gov.rs/tekst/sr/238/etika-u-vestackoj-inteligenciji.php>  
<https://www.ai.gov.rs/tekst/sr/586/eticke-smernice.php>

in line with the law, to protect and enhance the environment. Health and the environment are also supported by many governmental strategies, international agreements and the Sustainable Development Goals.

Environmental legislation in Serbia has over 100 laws and regulations. Currently, most of these are harmonized with EU directives and other legislation (related Multilateral Environmental Agreements).

## 4.2. Relevant Institutions

The key relevant institutions for environmental and social management for the SAIGE Project are:

- The Ministry of Environmental Protection (MoEP)
- Provincial Secretariat for Environmental Protection – PSEP
- The local self-government authority responsible for environmental protection matters
- Serbian Environmental Protection Agency
- Ministry of Labor, Employment and Social Policy
- Labor inspectorate
- Occupational Safety and Health Administration
- Ethical Commission for the Protection of the Welfare of Experimental Animals
- Ethical Council for the Welfare of Experimental Animals
- Ethical Boards of Health Care Institutions
- Ethical Board of Serbia
- RDIs in transformation process under component 1.1 (subcomponent 1.2.)
- AIK Institute
- BIO4 campus: RDIs, faculties and companies

Additionally, a PIU at NITRA will be responsible for conducting early environmental and social screening of SAIGE sub-projects to be used for defining grant eligibility criteria.

## 4.3. Relevant Government Policies, Acts, Rules, Strategies and Guidelines

Environmental protection in Republic of Serbia is regulated by several national and municipal laws and by-laws. Main environmental legislation in force in Serbia is summarized in Annex 04. Full List of regulations in the field of environmental protection in the Republic of Serbia is placed on following website: <http://www.pravno-informacioni-sistem.rs>, while national legislation relevant for SAIGE project, is presented below.

### 4.3.1. The Constitution of the Republic of Serbia

Serbia's Constitution, adopted in September 2006, states that "Everyone shall have the right to a healthy environment and the right to timely and complete information about the state of the environment. Everyone, especially the Republic of Serbia and autonomous provinces, shall be accountable for the protection of the environment. Everyone shall be obliged to preserve and improve the environment."

### 4.3.2. The agenda 2030

At the summit held in September 2015, the United Nations General Assembly adopted Resolution A/RES/70/1 - *Transforming our world: the 2030 Agenda for Sustainable Development*<sup>15</sup>. The 2030 Agenda is a universal strategy and countries will mobilize all resources in order to achieve targets by 2030. The 2030 Agenda, and its 17 goals, include all three dimensions of sustainable development: economic growth, social inclusion and environmental protection. In 2015 the 17 Goals were adopted by all UN Member States<sup>16</sup>, including Serbia. The Government of the Republic of Serbia has directly participated in development and writing of the Sustainable Development Agenda by involving citizens in the process through after 2015 Development Agenda consultations, and by direct participation of the state representatives in the global forums where Sustainable Development Goals were defined.

Indicators of sustainable development goals can be found on the official UN website<sup>17</sup>. How Serbia is progressing in achieving SDGs is available at Statistical Office of the Republic of Serbia website<sup>18</sup>.

### 3.3. Agenda for the EU integration

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<sup>15</sup> <https://sdgs.un.org/2030agenda>

<sup>16</sup> <https://www.un.org/sustainabledevelopment/development-agenda/>

<sup>17</sup> <https://unstats.un.org/sdgs/>

<sup>18</sup> <https://sdg.indikatori.rs/en-us/>

European integration and membership in the European Union represent the national interest and strategic commitment of the Republic of Serbia, and the European Union values are the same ones which the Republic of Serbia supports and strives to refine. The Republic of Serbia views the European Union accession process as an incentive for reformations and the strengthening of European standards.<sup>19</sup>

Serbia applied to join the European Union in 2009 and has been a candidate for membership since 2012. Process started in 2003 when Serbia was identified as a potential candidate for EU membership during the Thessaloniki European Council summit. In 2013 a Stabilization and Association Agreement between the EU and Serbia entered into force and the negotiating framework was adopted, followed by the 1st Intergovernmental Conference with Serbia in January 2014, signaling the formal start of Serbia's accession negotiations. The EU Council endorsed the revised enlargement methodology for the Western Balkans in March 2020. The main novelty in this enlargement methodology is the establishment of six negotiation clusters that cover several negotiation chapters. Two separate chapters: 34 – Institutions and 35 – Other issues have remained outside of the clusters. So far, 2 of 6 negotiation clusters are open for negotiation, including Cluster 4 – Green agenda and sustainable connectivity (and 22 out of 35 chapters have been opened, two of which are provisionally closed)<sup>20</sup>. Cluster 3 (competitiveness and inclusive growth) is technically ready for opening. Opened cluster 4 covers chapters: 14 (Transport policy), 15 (Energy), 21 (Trans-European networks) and 27 (Environment and climate change). This cluster is at the heart of the Green Agenda for the Western Balkans and closely linked to Serbia's Economic Reform Programme and the Commission's Economic and Investment Plan.

European Commission is providing annual progress reports towards EU membership<sup>21</sup>. Serbia should continue to integrate into the new European Research Area in accordance with its plan to increase investment into research and innovation by 50% over the next five years. Serbia has a smart specialization strategy in place for the period of 2020-2027. However, it needs to adopt and implement the related action plan for 2023-2025<sup>22</sup>. In the coming period, Serbia is invited to focus on the following areas, among others:

- step up efforts on implementing and enforcing environment and climate legislation, in particular on environmental impact assessment, waste management, air and water quality, transboundary cooperation and law enforcement by inspectorates, and
- adopt an ambitious national energy and climate plan (NECP) consistent with the European Green Deal's zero emission target for 2050<sup>23</sup>.

It is important to acknowledge that Serbia's green transition aspirations are not only driven by its EU accession ambition. The government has reaffirmed its commitment to global climate action under the Paris Agreement, updating its emissions reduction target for 2030 to 33.3% compared to 1990 levels. Serbia has also made regional commitments under the Green Agenda for the Western Balkans, like the Sofia Declaration, which goes beyond decarbonization and highlights the importance of depollution, the circular economy, biodiversity, and sustainable food systems. World Bank report, Supporting Serbia's Transition to Greener and More Resilient Growth (2022)<sup>24</sup>, suggests areas of activities that the country needs in the process of green transition and implementation of the green reform agenda.

## 5. RELEVANT WB ENVIRONMENTAL AND SOCIAL STANDARDS

### 5.1. Environmental and Social Management Framework

This Section describes key requirements of the World Bank relevant for the Project. The applicability of these requirements to specific sub-projects should be assessed after detailed information on such sub-projects is made available.

The World Bank (Bank) adopted Environmental and Social Framework (2016) which became effective in October 2018. The Framework specifies the Bank's commitment to sustainable development through Bank's policies and number of Environmental and Social Standards designed to support the Borrower's projects,

<sup>19</sup> <https://www.mfa.gov.rs/en/foreign-policy/eu-integration/political-relations-between-serbia-and-eu>

<sup>20</sup> <https://www.mei.gov.rs/eng/documents/negotiations-with-the-eu/negotiation-clusters/>

<sup>21</sup> <https://www.mei.gov.rs/eng/documents/eu-documents/annual-progress-reports-of-the-european-commission-for-serbia>

<sup>22</sup> EC SWD (2023) 695 final

<sup>23</sup> EC SWD (2023) 695 final

<sup>24</sup> <https://documents1.worldbank.org/curated/en/099530111022255705/pdf/P17641306e85c00100a145093af447ee1fa.pdf>

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aimed to alleviate extreme poverty and promote shared prosperity. The Bank's Environmental and Social Framework consists of three parts:

- A Vision for Sustainable Development
- The Environmental and Social Standards (ESS 1-10)
- The WB Environmental and Social Policy for Investment Project Financing

**5.2. Project Consisting of Multiple Smaller Sub-projects**

For projects comprising several smaller sub-projects under the auspices of a World Bank supported Project, the World Bank requirements involve mandatory review of adequacy of local environmental, social and ethic requirements relevant for the sub-projects, as well as assessment of the Borrower's capacity to manage the environmental and social risks and impacts of such sub-projects, particularly, Borrower's capacity to (a) perform sub-projects screening; (b) ensure necessary expertise for conducting environmental, social and ethic assessment; (c) review findings of environmental, social assessment and ethic for individual sub-projects; (d) implement mitigation measures; and (e) monitor environmental, social and ethic impact during project implementation. If necessary, the project may envisage measures to strengthen Borrower's capacities.

**5.3. Overview and relevance of Environmental and Social Standards for SAIGE Project**

The World Bank is committed to support Borrowers to design and implement environmentally and socially sustainable projects, as well as to strengthen Borrower's capacity to assess and manage projects' environmental and social risks and impacts. The below applicable Environmental and Social Standards establish the standards that the Borrower and the project will meet through the project life cycle, as follows:

	E & S Standards	Relevance
ESS1	Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS2	Labor and Working Conditions	Relevant
ESS3	Resource Efficiency and Pollution Prevention and Management	Relevant
ESS4	Community Health and Safety	Relevant
ESS5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Relevant
ESS6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Relevant
ESS8	Cultural Heritage	Relevant
ESS9	Financial Intermediaries	Not Relevant
ESS10	Stakeholder Engagement and Information Disclosure	Relevant

These ESSs are accompanied by unbinding Guidelines, Best Practice Notes, Templates and Checklists". An overview of the standards is given in more detail below.

5.3.1. ESS1 Assessment and Management of Environmental and Social Risks and Impacts

Assessment and impacts are applied to all projects supported by the World Bank through Investment Project Financing. The objective is to identify, evaluate and manage environmental and social risks and impacts associated with each stage of the project, in order to achieve environmental and social outcomes consistent

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with Bank requirements. ESS 1 is also applied to all Associated Facilities/ Activities which must meet ESSs requirements to the extent that the Borrower has control or influence over such Associated Facilities/ Activities. Within ESS 1, the Borrower is obliged to:

- Conduct environmental and social assessment of the proposed project, including stakeholder engagement,
- Undertake stakeholder engagement and disclose appropriate information in accordance with ESS10,
- Undertake Environmental and Social Audits for activities implemented in earlier phases (for completion of which WB financing is sought) and for works that commenced. Develop an Environmental and Social Commitment Plan (ESCP) and implement all measures and actions set out in the legal agreement including the ESCP,
- Conduct monitoring and reporting on the environmental and social performance of the project against the ESSs and ESCP as agreed with the WB.

The environmental and social assessment will be proportionate to the risks (as defined by the WB E&S Policies and Directives) and impacts of the Project and will assess in an integrated way all relevant direct, indirect and cumulative environmental and social risks and impacts throughout project life cycle, including those specifically identified in the ESS2-10. Environmental and social assessment process shall apply mitigation hierarchy according to which: (a) risks and adverse impacts needs to be anticipated and to the extent possible avoided, while positive impacts and benefits for the community and physical environment need to be maximized, (b) where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (c) residual adverse impacts and risks need to be removed or mitigated to the acceptable level; (d) where moderate/significant residual impacts remain, compensate where technically and financially feasible.

5.3.2. ESS2 Labor and Working Conditions

ESS2 requires Borrowers to promote fair worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. ESS2 applies to project workers including fulltime, part-time, temporary, seasonal and migrant workers.

The term "project worker" is related to:

- a) people employed or engaged directly by the Borrower (including the project proponent and the project implementing entities) to work specifically in relation to the project (direct workers);
- b) people employed or engaged through third parties to perform work related to core functions of the project, regardless of location (contracted workers); (c) people employed or engaged by the Borrower's primary suppliers (primary supply workers); and (d) people employed or engaged in providing community labor (community workers).

Labor Management Procedures (LMP) were prepared to guide management labor and working conditions risks for project workers as defined under ESS2. The LMP is incorporated into this ESMF (chapter 6).

5.3.3. ESS3 Resource Efficiency and Pollution Prevention and Management

Sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with Good International Industrial Practice. The main objectives of ESS3 are:

Objectives • To promote the sustainable use of resources, including energy, water and raw materials. • To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities. • To avoid or minimize project-related emissions of short and long-lived climate pollutants. 3 • To avoid or minimize generation of hazardous and non-hazardous waste. • To minimize and manage the risks and impacts associated with pesticide use. The applicability of this ESS to each subproject will be assessed during environmental and social screening of sub-projects.

The Borrower shall be obliged to apply technically and financially feasible measures to improve efficient consumption of energy, water and raw materials, as well as other resources. Such measures shall integrate cleaner production principles into the product design and production processes in order to conserve raw material, energy, water and other resources.

Besides, the Borrower will avoid the release of pollutants or, when avoidance is not feasible, minimize and control the concentration and mass flow of their release using the performance levels and measures specified in national law or the World Bank Group Environmental, Health and Safety Guidelines whichever is most stringent. This applies to the release of pollutants to air, water and land due to routine, non-routine, and accidental circumstances, and with the potential for local, regional, and transboundary impacts. Assessment of

risks and impacts and proposed mitigation measures related to relevant requirements of ESS3, including raw



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materials, water use, air pollution, hazardous materials, and hazardous waste will be included within scope of the ESIs, namely ESMPs and ESMP checklists as relevant.

Pollution prevention and management includes management of:

- Air pollution
- Hazardous and non-hazardous waste
- Chemicals and hazardous material
- Pesticides

5.3.4. ESS4 Community Health and Safety

This standard is likely to be applicable to this Project in rather limited interventions. ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable.

Objectives of ESS4 are the following:

- To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and non-routine circumstances.
- To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams.
- To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials.
- To have in place effective measures to address emergency events.
- To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.

At the early stage of implementation, the Project will ensure that the NITRA reviews/adopts a set of Environmental, Health and Safety Guidelines materially consistent with ESS4 requirements.

The Project targets small and medium companies that typically do not use security personnel. As innovation firms for matching grant support are selected, the use of security personnel will be reassessed. The Horizon Europe questionnaire will be an integral part of the overall screening questionnaire and will be applied in the case of ethically sensitive research on humans and animals. To mitigate potential risks, adequate measures will be used in accordance with the best international practice and national legislation. Furthermore, the safety protocols for working in or visiting various research sites will be an integral part of the ESMP/checklist.

5.3.5. ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

In general, ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. Habitat is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the nonliving environment. All habitats support complexities of living organisms and vary in terms of species diversity, abundance and importance. This ESS also addresses sustainable management of primary production and harvesting of living natural resources. Objectives of the ESS6: to protect and conserve biodiversity and habitats; to apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity and to promote the sustainable management of living natural resources. This standard is currently not relevant to the project. But given the variety of areas financed by the project (e.g., food and agriculture, health, biotech, education, etc), there is a chance that some subprojects within a protected or sensitive/valuable natural area (or one that may affect habitats or protected species) could be proposed at a later stage. If so, the PIU will ensure, during sub-projects screening, (i) to screen out all activities with potentially significant impact to sensitive and valuable natural areas/habitats or protected species, considering the nationally and internationally recognized GIIPs; (ii) the potential impacts will be identified and mitigation measures to be addressed in subsequent ESMPs/ESMP checklists. Furthermore, any activities undertaken in critical habitats or in a protected area would require a site-specific Biodiversity Management Plan (BMP) to be developed.

5.3.6. ESS8 Cultural Heritage

ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. The general objectives are as follows: to protect cultural heritage from the adverse impacts of subproject activities and support its preservation, to address cultural heritage as an integral aspect of

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sustainable development, to promote meaningful consultation with stakeholders regarding cultural heritage, to promote the equitable sharing of benefits from the use of cultural heritage throughout the project life cycle.

As archaeological and research works on the site are planned for some subprojects, there is a possible impact on the cultural heritage. To address the risks

(i). cultural heritage (CH) will be integrated to the screening inquiry, (ii). Cultural Heritage Management Plans will be developed (as part of the ESMPs/ESMP checklists) for all works with identified CH risks (iii). the ESMF and the site specific ESMPs/ESMP Checklists will include precautionary provisions on chance finds.

The ESMF also includes general requirements for carrying out archaeological and other research works on the site in regard to the protection of any cultural heritage objects during the implementation of respective contracts. Furthermore, ESMP Checklists specific for location will consider the potential impacts in a more detailed manner. If any cultural heritage object is to be identified during the preparation of ESMP Checklists specific for location, the Cultural Heritage Plans will be required as part of ESMPs or ESMP Checklists.

If previously unknown cultural heritage is encountered during subproject activities, a chance finds procedure should be followed. It has to be included in all contracts relating on field research, including excavations, demolition, movement of earth, etc. The chance finds procedure sets out how chance finds associated with the subproject has to be managed.

The chance finds procedure should be established and implemented prior to the commencement of archaeological and other research work on the field in accordance with the requirements of the ESS8.

In the event of the unexpected discovery of archaeological objects, the Researcher (Project Leader/ Principal Investigator) shall immediately inform NITRANITRA/SF/PIU and the Institute for the Protection of Cultural Monument. The work will be temporarily stopped while the authorities decide if any research is needed or if any protection measures should be applied. The researcher is obliged to comply with the instructions of the authorities responsible for the protection of cultural heritage. The requirements of this ESS8 will apply to all sub-projects that are likely to have risks or impacts on cultural heritage. This will include a sub-project which:

- a) Involves excavations, demolition, movement of earth, flooding or other changes in the physical environment;
- b) Is located within a legally protected area or a legally defined buffer zone;
- c) Is located in, or in the vicinity of, a recognized cultural heritage site;
- d) Is specifically designed to support the conservation, management and use of cultural heritage.

### 5.3.7. ESS10 Stakeholder Engagement and Information Disclosure

Recognizes the importance of open and transparent information sharing and engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

ESS10 objectives are:

- To establish a systematic approach for stakeholder engagement that will help identify stakeholders and build and maintain a constructive relationship with them, in particular with project-affected parties
- To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and in environmental and social performance.
- To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.
- To ensure that appropriate project information on environmental and social risks and impacts are disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.
- To provide project-affected parties with accessible and inclusive means to raise issues and grievances and allow Borrowers to respond to and manage such grievances.

To ensure compliance with EES10 the SEP has been prepared. Stakeholder activities under the project will be implemented by full time the social specialist who will be supported by the existing staff of the Innovation Fund and Science Fund. Social specialist will oversee assessing social risks, preparing adequate social measures and monitoring and reporting on compliance with WB social standards. He/she will also be responsible for collecting and systematically reporting on GM Stakeholder engagement and feedback survey work. The SF and IF will seek feedback from applicants about their programs annually to improve their future grant activities. Survey results and implications for future programs will be made available to the stakeholders. Each fund has own Grievance Mechanism (GM) enabling continued feedback on the grant schemes and

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resolution of individual grievances during implementation. Existing GM will be upgraded to respond to AI and Bio4 related activities envisaged under AF2.

5.3.8. General Environmental, Health and Safety (EHS) Guidelines

The World Bank Group requires borrowers/clients to apply the relevant levels or measures of the EHS Guidelines. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects will be required to achieve whichever is more stringent.

The General EHS SAIGE Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all scientific research projects and should be used together with the relevant Guideline(s).

5.3.9. Key ESF objectives compared to national requirements.

ESF Objectives	National Laws and Requirements	Gaps	Recommended Actions
<b>ESS1: Assessment and Management of Environmental and Social Risks and Impacts</b>			
<ul style="list-style-type: none"> <li>• To identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.</li> <li>• To adopt a mitigation hierarchy approach to:                             <ul style="list-style-type: none"> <li>○ Anticipate and avoid risks and impacts</li> <li>○ Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels</li> </ul>                             Once risks and impacts have been minimized or reduced, mitigate and where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.                         </li> <li>• To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.</li> <li>• To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.</li> </ul>	<p>Law on EIA</p> <p>Decrees and lists</p>	<p>Public consultations on project design are not requested.</p> <p>Social impact assessment is not required</p> <p>Small scale activities that may not require specific measures as per Serbian law, but require an ESMP, ESMP Checklist or E&amp;S audit as per Bank ESF</p> <p>Associated facilities are not covered</p>	<p>Stakeholder engagement and public consultations in accordance with the Stakeholder Engagement Plan (SEP).</p> <p>Conduct Social Impact Assessment</p> <p>Prepare E&amp;S management instruments in line with the WB ESF and this ESMF such as ESMP, ESMP Checklist or E&amp;S screening</p>

<ul style="list-style-type: none"> <li>To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.</li> </ul>			
<p><b>ESS2: Labor and Working Conditions</b></p>			
<ul style="list-style-type: none"> <li>To promote safety and health at work.</li> <li>To promote fair treatment, non-discrimination, and equal opportunities for project workers.</li> </ul>	<p>Various laws, policies and code of practices are applicable to the implementation of this LMP.</p> <p>These laws and policies are aligned with the international</p>	<p>Specific Labor Grievance Mechanism is not requested.</p> <p>Code of Conduct and training on OHS related issues for workers is not mandatory.</p>	<p>Grievance mechanism for project workers shall be established</p> <p>Project activities will require engagement of direct and contracted workers.</p>
<ul style="list-style-type: none"> <li>To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.</li> <li>To prevent the use of all forms of forced labor and child labor.</li> <li>To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.</li> <li>To provide project workers with accessible means to raise workplace concerns.</li> </ul>	<p>standards, namely ILO Conventions and EU Directives, as the terms, conditions and instruments proposed in the international conventions and directives are incorporated into the Labor Law of Serbia</p>		<p>Both groups will be subject to the Project LMP and the World Bank Group Environment, Health and Safety Guidelines.</p> <p>Contractors will be required to develop Code of Conducts and SEA/SH Code of Conduct which must be read, understood and signed by all workers.</p> <p>As per the ESS2 the Borrower needs to develop and implement written Labor Management Procedures which set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS.</p>
<p><b>ESS3: Resource Efficiency and Pollution Prevention and Management</b></p>			
<ul style="list-style-type: none"> <li>To promote the sustainable use of resources, including energy, water and raw materials, as well as other resources</li> <li>To avoid or minimize adverse impacts on human health and the environment by avoiding</li> </ul>	<p>Law on Environmental Protection</p> <p>Law on integrated environmental pollution prevention and control</p>	<p>Regular monitoring is not required.</p> <p>No request for GIIP adherence.</p>	<p>In addition to national legislation adherence, adopt and implement the WB EHSG and measures as prescribed in this ESMF to achieve the highest of the standards.</p> <p>Cary out regular monitoring of ESMP/ESMP CL implementation.</p>

<p>or minimizing pollution from project activities.</p> <ul style="list-style-type: none"> <li>• To avoid or minimize project-related emissions of short and long-lived climate pollutants.</li> <li>• To avoid or minimize generation of hazardous and non-hazardous waste (where possible waste will be reused and recycled in safe manner; if not possible, waste will be disposed in accordance with relevant procedures)</li> <li>• To minimize and manage the risks and impacts associated with pesticide use.</li> </ul>	<p>Law on waters</p> <p>Law on protection and sustainable use of fisheries</p> <p>Law on Plant Protection Products Law on Energy Efficiency</p> <p>Law on Waste Management</p> <p>Basel Convention on Transboundary Movement of Hazardous Wastes and their Disposal Official Journal of FRY, International Treaties, No. 2/99,</p> <p>The Aarhus Convention</p>		
<p><b>ESS4: Community Health and Safety</b></p>			
<ul style="list-style-type: none"> <li>• To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances.</li> <li>• To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure.</li> <li>• To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials.</li> <li>• To have in place effective measures to address emergency events.</li> <li>• To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the</li> </ul>	<p>Law on planning and construction Decree on health and /safety and OHS at construction sites</p> <p>Law on Roads</p> <p>Law on Road Safety</p> <p>Rulebook on technical standards for universal access</p>	<p>In substance the gaps between the national requirements and the ESS are not substantial. However, mitigation and prevention measures shall be required in the form of site-specific Contractor management plans. In case double standards are detected within the ESF and national requirements the more stringent will prevail.</p>	<p>To be ensured that Project activities do not pose any unintended negative consequences on communities, following defined ESMP and ESMP checklist.</p> <p>Measures and actions developed to assess and manage specific risks and impacts outlined in the ESMF and subsequent ESMPs.</p> <p>Trainings on SH/SEA</p>

<p>project-affected communities.</p> <ul style="list-style-type: none"> <li>To apply noise prevention and mitigation measures if/when predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline</li> </ul>	<p>Fire protection act</p>		
<p><b>ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources</b></p>			
<p>ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems.</p> <p>ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support.</p> <p>This ESS also addresses sustainable management of primary production and harvesting of living natural resources. ESS6 recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a project.</p>	<p>Conservation of biodiversity, was identified as one of Serbia's priorities for environmental protection in the GoS.</p> <p>The Law on Nature protection ("Official Gazette of RS" 36/2009, 88/2010, 91/2010corr 14/2016), 95/2018 and 71/2021) governs protection and conservation of nature and biological, geological and landscape diversity as part of the environment.</p>	<p>There are gaps between ESS 6 and national laws with respect to No Net Loss/Net Gain requirements pertinent to Natural and Critical Habitats respectively.</p>	<p>The environmental and social screening criteria, will screen for the relevant risks and apply mitigation hierarchy. The environmental screening criteria will ensure that no activities with potential significant negative impact are eligible for funding in natural sensitive or critical habitats. Where the activities in modified habitats are considered, the project will incorporate consultations with protected area sponsors, national and local guardian institutions and relevant stakeholders, including local communities, and NGOs. Various actions will be taken during subprojects preparation and implementation in order to avoid any negative impacts. Preconditions of relevant institutions will be obtained during preparation of site specific ESMP documents and mitigation measures will be prescribed. Project supervision will control implementation of subject requirements.</p>
<p><b>ESS8: Cultural Heritage</b></p>			
<ul style="list-style-type: none"> <li>To protect cultural heritage from the adverse impacts of project activities and support its preservation.</li> <li>To address cultural heritage as an integral aspect of sustainable development.</li> </ul>	<p>Cultural property law ("Official Gazette of RoS 71/94, 52/11, 92/11). This Law regulate the system of the protection and</p>	<p>There are no significant gaps between ESS 8 and national laws</p>	<p>No activities that can impact protected cultural heritage will take place. Chance findings clause will enter all ESAs for sub-projects.</p>

<ul style="list-style-type: none"> <li>• To promote meaningful consultation with stakeholders regarding cultural heritage.</li> <li>• To promote the equitable sharing of benefits from the use of cultural heritage.</li> </ul>	<p>use of cultural property and define conditions for the implementation of activities relating to the protection of cultural property.</p>		<p>Scientific research projects are carried out by the protection of cultural heritage</p>
<p><b>ESS10: Stakeholder Engagement and Information Disclosure</b></p>			
<ul style="list-style-type: none"> <li>• To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project- affected parties.</li> <li>• To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.</li> <li>• To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.</li> <li>• To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.</li> <li>• To provide project-affected parties with accessible and inclusive means to raise issues and grievances and allow Borrowers to respond to and manage such grievances.</li> </ul>	<p>The Republic of Serbia citizen engagement commitments do not reside under a single self-standing law or regulation. However, the recognition of importance of citizen engagement is embedded in the legal system and clearly recognized by the mandatory procedures provided by individual laws</p>	<p>While all acts spell out right to information held by public bodies, the ESS recognizes the importance of open and transparent engagement vis-à-vis project stakeholders and community by the borrower</p> <p>RS Law does not recognize project level GRM</p>	<p>SEP Prepared and implemented</p> <p>Citizen Engagement activities are to be implemented as per SEP.</p> <p>GRM effective and operational at early Project stage and adapted to respond to project needs SEA/SH grievances. These types of grievances will be managed separately by a trained expert. The necessary training for the appointed staff member who is to deal with such grievances will be provided.</p>

#### 5.4. Other Criteria and Guidelines

The World Bank developed Environmental, Health, and Safety Guidelines<sup>25</sup> which present technical reference documents with general and industry-specific examples of Good International Industrial Practice.

The Borrower is obliged to apply an appropriate level of performance or measures referred to in the Environmental, Health and Safety Guidelines. In the case of double compliance standards (when country legislation is different from the requirements and measures specified in the Guidelines), the more stringent one shall be applied. Therefore, subproject's Applicants shall follow provisions of the WB EHS during preparation of subproject specific ESMP document and during subproject implementation as well. NITRA will monitor implementation of EHS requirements through its PIU through a two tier monitoring system and relevance of the requirements shall be acknowledged by the Applicants using the Confirmation Statement as presented in Annex 16. The EHS Guidelines are referenced to in this ESMF and become mandatory to each successful Applicant by signing the Confirmation of compliance.

### 6. LABOR MANAGEMENT PROCEDURES

These Labor Management Procedures (LMP) lay out the Project's approach to meeting the objectives of World Bank Environment and Social Standard 2: Working and Labor Conditions (ESS2). They set out the terms and conditions for employment or engagement of workers on the project, specifying the requirements and standards to be met and the policies and procedures to be followed, assesses risks and proposes the implementation of compliance measures. The LMP is developed to help avoid, mitigate and manage risks and impacts in relation to project workers and ensure protection of their fundamental rights, fair treatment and provision of safe and healthy working conditions. The LMP applies to all project workers, as categorized by the ESS2, whatever basis of their employment or engagement on the project may be.

The Serbian national framework guiding Labor and Working Conditions including Occupational Health and Safety (OHS) meet, with a few minor exceptions, the requirements of ESS 2. Therefore, the application of the said framework to contracted and direct workers (including civil servants) as the two categories of workers expected under the Project are subject to the mandatory National legal requirements as supplemented by this LMP. Relevant provisions of this LMP will be incorporated into relevant tender documents as will the Monitoring & Evaluation measures as provided in these procedures.

#### 6.1. Overview of labor use on the Project

These LMP apply to **project workers and to limited extent to** civil servants as defined by ESS2<sup>26</sup>.

**Direct workers** are - persons employed or engaged (or to be employed/engaged) directly by the NITRA, MoF, Innovation Fund (IF) and Science Fund (SF) (the associated project implementation agencies (PIAs) in relation to the project and Government civil servants currently employed by the MoESTD.

Where Government civil servants are working in connection with the project, whether full time or part time they will remain subject to the terms and conditions of their existing public sector employment agreement or arrangement, unless there has been an effective legal transfer of their employment or engagement to the project ESS2 will not apply to these workers except in OHS and child labor and forced labor.

Additional direct workers are experts engaged within the Project Implementation Unit (PIU), CFU employees hosted by the MF and the staff of the Science and Innovation Funds respectively. Under this category only persons currently employed with MOESTD/NITRA qualify as civil servants. The Innovation Fund and Science Fund staff are not employed as civil servants. i.e. the Law on Civil Servants is not applicable to them. The Innovation and Science Fund staff is employed in accordance with the Labor Law which is also applicable to private companies.

Direct workers according to different implementation entities:

- **The Project Implementation Unit (PIU) has been formed.** PIU together with the associated project implementation agencies (PIAs) the Innovation Fund and the Science Fund is responsible to manage

<sup>25</sup> [https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/sustainability-at-ifc/policies-standards/ehs-guidelines](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines)

<sup>26</sup> Full text of ESS 2 accessible is accessible at <http://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=45&zoom=80>, last accessed on October 9, 2019



and implementing the project. The PIU and is staffed with qualified experts i.e. a Project Manager, an Assistant, three Project Officers, M&E Officer, 2 Environmental and Social Experts (ESEs), Ethics Expert, and International Institutional advisor for the Science Fund

- **The Central Fiduciary Unit (CFU) of the MoF** will perform fiduciary responsibilities i.e. procurement and financial management. The CFU is adequately staffed with knowledgeable and experienced consultants.
- **The Science Fund and Innovation Fund** employees<sup>27</sup> by the PIAs are working under the applicable national Labor Law which regulates status, rights and duties. External consultants under the Project will be engaged directly by PIAs and the selection process of external consultants will be supported by CFU. It is planned that 3 staff from the IF will be allocated directly to SAIGE implementation.

**Contracted worker** –people employed or engaged through third parties to provide services essential for specific Project activities without which the project cannot be implemented. Contracted workers are expected to be engaged by providers of Technical Assistance, project audits, capacity building supports etc services needed for the project implementation. These service providers (third parties) include firms providing Technical Assistance (TA) for the operationalization of the Science Fund, and educational institutions. The providers will be awarded contracts for specific project activities under each of the Components. The personnel involved in these activities are expected to be accomplished professionals and highly educated and well-established experts, and do not fall into the category of vulnerable persons.

**Migrant Workers:** Foreign citizens employed in accordance with the law regulating employment of foreign citizens in Serbia enjoy the same rights in terms of work, employment and self-employment as Serbian citizens provided that the conditions set in the law are fulfilled. In other words, if any foreign citizen obeys the law and obtains a temporary or permanent residence and a work permit or personal work permit, he/she is entitled to receive the same treatment as any other employee in Serbia. As potential contracted workers are to be selected on the basis of their competences and professional achievement, whether they are migrant or non-migrant workers is deemed irrelevant. For that reason, the LMP will not specifically address migrant workers.

## 6.2. Assessment of potential labor risks

**Project activities.** Project workers will mainly be involved in project management, administrative support, capacity building work and IT systems development.

It is expected that a significant number of contracts will be consulting services that will involve both individuals and firms. The majority of the individual consultants will be international experts and Serbian diaspora experts and these consultancies will be advertised internationally (UNDB) and locally in newspaper of wide circulation. In order to attract more candidates, consultants previously engaged on similar projects (ISP, SRITTP, C&J, etc) may also be contacted. The selection of consulting firms will be advertised internationally or locally, depending on the scope of assignment and the prescribed thresholds for substantial risk projects.

In addition, labor related risk will be assessed also in research grants by social specialists and adequate mitigation measures will be outlined in ESMP/CL.

Key Labor Risks

## 6.3. Project workers (external consultants and civil servants, and employees of service providers)

Project workers (external consultants and civil servants, and employees of service providers) are anticipated to be office staff with most of their work done indoors. These workers will have desktop jobs, although minor off-site travel may be needed to supervise beneficiaries (direct workers) and to install equipment and to conduct training/TA (contracted workers). Field travel (i.e. visit to beneficiaries, training events) might expose them to travel and site related, all these risks are minimal. Due preparations have to be made for each visit or event focusing on traffic safety and provision of adequate gear or equipment. Given the nature of the Project work and the expected profile of project workers, the risk of child or forced labor tends to be negligible. Identified project workers don't belong to vulnerable groups. Brief overview of Labor framework, terms and conditions

Various laws, policies and code of practices are applicable to the implementation of this LMP. These laws and policies are aligned with the international standards, namely ILO Conventions<sup>28</sup> and EU Directives, as the terms, conditions and instruments proposed in the international conventions and directives are incorporated into the national labor legislation.

<sup>27</sup> The Science Fund currently engages -39 full time employees and. The Innovation Fund currently engages 28 persons.

<sup>28</sup> Serbia has ratified all ILO Conventions stated in ESS2 (ILO Conventions 29, 87,98, 100, 105,111, 138 and 182).

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The Constitution of the Republic of Serbia (2006) guarantees the right to work, free choice of occupation, availability of work positions under equal conditions, respect of person's dignity at work, safe and healthy working conditions, necessary protection at work, limited working hours, daily and weekly interval for rest, paid annual holiday, fair remuneration for work done and legal protection in case of termination of working relations.

The Labor Law (LL) ("Official Gazette of RS", Nos. 24/2005, 61/2005, 54/2009, 32/2013, 75/2014, 13/2017, 113/2017 and 95/2018), is the main legislation that guides labor practices in Serbia. The terms and conditions provided by this Law includes ban to direct or indirect discrimination regarding employment conditions and choice of candidates for performing a specific job, conditions of labor and all the rights deriving from the employment relationship, education, vocational training and specialization, job promotion and cancelling an employment contract for reasons of sex, birth, language, race, color of the skin, age, pregnancy, health condition, and/or disablement, ethnic origin, religion, marital status, family obligations, sexual orientation, political or other belief, social background, financial status, membership in political organizations, trade unions, or any other personal characteristic. The Law guarantees the employee's right to corresponding earnings, compensations and refund of expanses, entitlement to training and professional development, provision of safety and health at work, health-care protection, personal integrity protection, personal dignity, and other rights in the event of illness, reduction or loss of work ability and old age, including financial benefits in course of temporary unemployment, as well as the right to other forms of protection. Women in course of pregnancy and childbirth, parents with a child under three years of age or in need of special care and minors (younger than 18) are given special protection. Harassment and sexual harassment are prohibited. The Law sets out the conditions for employment (including the minimum age for employment), specifies what information an employment contract must contain, and defines fixed term (definite period of time) employment, part time employment, remote work (outside the Employer's premises) and work without established employment relationship (service supply contract, temporary and seasonal work, supplementary work). It stipulates maximum hours of work, overtime, break during working day, daily and weekly rest and leave entitlements (annual leave, sick leave, and maternity leave). The Law lays out the framework for retrenchment and termination of the employment relationship, provides for freedom of association and collective bargaining and guarantees the right to judicial protection.

The LL also envisages engagement via Service Contracts (*Ugovor o Delu*). Direct workers engaged on the Project as individual consultants will be contracted under consultancy contracts, which are treated as Service Contracts under the LL.

Although the LL applies to all employees who work in the territory of Serbia, civil servants are also subject to terms and conditions of a set of laws<sup>29</sup> and bylaws specifying different categories of civil servants, their duties, restraints imposed, selection process, performance management, promotion, professional development, apprenticeship, disciplinary measures, grievances and complaints, HR planning and administration.

Employment relationship is also regulated by the Law on Employment and Unemployment Insurance ("Official Gazette of RS", Nos. 36/2009, 30/2010, 88/2010, 38/2015, 113/2017, 113/2017, and 49/2021) and the Law on Employment of Foreign Citizens ("Official Gazette of RS", Nos. 128/2014, 113/2017, 50/2018 and 31/2019)

The rights stemming from the employment relationship are further elaborated by the Law on Mandatory Social Security Insurance Contribution (Official Gazette of the RS", Nos. 84/2004, 61/2005, 62/2006, 5/2009, 52/2011, 101/2011, 47/2013, 108/2013, 57/2014, 68/2014, 112/2015, 113/2017, 95/2018, 86/2019, 153/2020, 44/2021 and 118/2021) (the Law on Retirement and Disability Insurance ("Official Gazette of RS", Nos. 34/2003, 64/2004, 84/2004, 85/2005, 101/2005, 63/2006, 5/2009, 107/2009, 101/2010, 93/2012, 62/2013, 108/2013, 75/2014, 142/2014, 73/2018, 46/2019, 86/2019 and 62/2021), and the Law on Health Insurance ("Official Gazette of RS", No. 25/2019). These laws specify contributions, benefits and entitlements covering all employees and extend the entitlement to social security, retirement, disability, injury and health insurance to those who work without the established working relationship.

The following laws specifically address the issues of discrimination, harassment and equal opportunities at work: Law on the Prohibition of Discrimination ("Official Gazette of RS", Nos. 22/2009 and 52/2021), Law on the Prevention of Harassment at the Workplace ("Official Gazette of RS", No. 36/2010), Rulebook on Conduct of Employers and Employees in Relation to Prevention and Protection from Harassment at Work ("Official Gazette of RS", No. 62/2010) Law on Protection of Whistle Blowers ("Official Gazette of RS", No. 128/2014), Law on Gender Equality ("Official Gazette of RS", No. 104/2009). They lay out the grievance mechanisms and legal procedures in relation to perceived maltreatment and infringement of the employee's right.

The Law on Peaceful Settlement of Labor Disputes ("Official Gazette of RS", Nos. 125/2004, 104/2009 and 50/2018) regulates the method and procedures of settlement of collective and individual labor disputes. A dispute can be initiated on a voluntary basis in relation to the collective agreement, strike, termination of

<sup>29</sup> Law on civil servants, 2005, with amendments in 2007, 2008, 2009, 2014, 2017 and 2018.

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employment contract, working hours, annual leave, disbursement of salary, compensation of costs, discrimination and abuse at work, etc.

The above legislation applies to all who work or provide services in Serbia and is in line with ESS2 requirements.

#### 6.4. Gap analysis

Various laws, policies and code of practices are applicable to the implementation of this LMP. These laws and policies are aligned with the international standards, namely ILO Conventions<sup>30</sup> and EU Directives, as the terms, conditions and instruments proposed in the international conventions and directives are incorporated into the national labor legislation.

The existing gap relates to non-presence of the worker grievance mechanisms able to receive SEA/SH related complaints as mandatory practice. This is not envisaged in the LL; However this Law as well as Law on the prevention of harassment at workplace<sup>31</sup> endorse the right to seek and gain protection at the workplace from a conduct that represents harassment and provide for judicial protection of employees in case of unfair or unlawful employment relationship practices.

For employees qualified as civil servants the law guiding their employment addresses the grievance mechanism in such a way to provide for employment relations and workplace dispute resolution through the Appeals Commission housed within the institution providing employment.

#### 6.5. Policies and procedures

The NITRA/ HR policies are defined by the LL, Law on Civil Servants, Law on OHS and the Collective Agreement for civil servants (negotiated at 3 years terms, current agreement validity is until 2021 when terms will be re-negotiated). There is HR Management Service at the Government level, for civil servants, performing specialist tasks related to HR management in ministries, special organizations, services of the Government and support services of administrative districts (planning, recruitment and selection, administration of central HR registry, planning and provision of training and development. The labor, working conditions and OHS requirements as defined in the NITRA HR policies are in line with standards as set forth in ESS2 and this LMP.

The policies adopted for the Project will contribute to the achievement of ESS2 objectives and are in line with the NITRA HR Policies.

All Employers of direct or contracted workers, in the project must ensure safety and health at work. Strict adherence to the legal provisions, notably the LHSW, is required. It is the responsibility of the NITRA, MF and third parties as Employers (both civil servants and consultants regardless of their employment status) to fulfil all the obligations stipulated by the law. This includes assessment of the OHS risks and hazards, informing and training of project workers on the occupational health and safety issues, and taking preventive measures prior and during the work process in order to mitigate or diminish risks for project workers' health and safety. The third party should adapt work processes, workstations and work environment in such a manner to make them safe and hazard free. If any protective equipment is needed, NITRA, MF and the third party will provide project workers with it at the third party's expense. The third party must keep records prescribed by the national legislation regarding health and safety at work, and duly report work-related injuries, near misses, fatalities and diseases, in compliance with the law. As for the risks relating to transportation and traffic and residual risks of the workplace, the third party will take reasonable precautionary measures as part of normal work routine.

The Project promotes fair treatment, non-discrimination and equal opportunity of project workers. Any and every Employer to direct or contracted workers, will ensure that the selection process for project workers is bias-free, and that the requirements set are not directly or indirectly discriminatory. The project workers will be recruited and assessed on the basis of their competence and professional achievements. Gender, birth, language, race, color of the skin, age, pregnancy, health condition, and/or disablement, ethnic origin, religion, marital status, family obligations, sexual orientation, political or other belief, social background, financial status, membership in political organisations, trade unions, or any other personal characteristic unrelated to inherent job requirements cannot be ground for making any decision regarding employment and the employment relationship. However, third parties are encouraged to take a gender sensitive approach and make reasonable accommodation to make it possible for persons with disabilities to take part in the project. Provided that project workers are expected to be established experts, no person under the age of 18 years will be employed or engaged for work on the project.

<sup>30</sup> Serbia has ratified all ILO Conventions stated in ESS2 (ILO Conventions 29, 87,98, 100, 105,111, 138 and 182).

<sup>31</sup> Law on the prevention of harassment at workplace ("Official Gazette of the Republic of Serbia", No. 36/2010)

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All project workers will perform work or provide services under conditions set in their engagement/employment contract or agreement.

All project workers are entitled to fair treatment and protection from harassment and sexual harassment and abuse at work. The contracted party must install mechanisms that will protect the project worker from any incidence of mistreatment. If it happens anyway, the grievance mechanism should be in place to enable the project worker to file grievances to a competent person within the company/institution and be informed on the actions taken subsequently in relation to his grievances, without prejudice to his/her right to seek judicial protection. If a third party does not have an affective grievance mechanism in place, they must follow the guidelines in section 9 to design and install such mechanism. Whether adequate GM is in place shall be confirmed by signing the Statement of compliance with provisions of labor legislation (Annexed to this EMSF in Annex 05 to be appended to the Contract).

In no way any project worker will be prevented from joining a trade union or any other worker organization. The principle of free association and collective bargaining will be strictly respected. The third party must not condition the participation of a project worker in the project, his/her status, remuneration or entitlements on the project worker's membership or activity in any organization. Adherence to law and good practice and a high level of integrity is expected from all participants in the project.

Provision confirming that non-compliance with the national legislation, particularly the legislation regarding terms and conditions of employment, labor rights and occupational health and safety, may constitute the ground for termination of the contract with a contracted party and exclusion of that party from the Project will be included in tender documentation.

Age of employment

Serbia has adopted the ILO Conventions on child labor and incorporated them in the legal system. The minimum age of employment is 15, but employment relationships with people under the age of 18 can be established with the consent in writing of a parent provided that work to be performed does not put at risk their health, integrity or education. A person under 18 years of age must present a medical certificate attesting that he/she is capable of performing the activities related to the specific job, and that such activities do not harm his/her health.

As service providers are expected to employ or engage highly qualified, experienced and competent project workers, it is understood that no one under the age of 18 will be employed or engaged. If any contracted party employs or engages a person under the age of 18 years, that party will not only be terminated and excluded from the project but will also be reported to the authorities (Labor Inspectorate).

No other restrictions regarding the age of employment will be imposed. The age of workers will not be used as a criterion in deciding on hiring and promoting project workers or terminating their contracts.

## **6.6. Responsibilities for management of labor**

For direct workers hired or to be hired by the MoESTD/NITRA, MF, IF and SFLabor management responsibilities lies within these entities. The provisions of the LMP will be communicated to the institutions by the MoESTD/NITRA and copies both on English and Serbian made available. The Head of the PIU will continue to be responsible for selection, engagement and management of the PIU staff while the employee relations/HR issues of civil servants employed by the NITRA being temporarily seconded to the PIU will be dealt with in line with the Ministry's HR policies and by their Personnel / HR Department, while these relation for staff engaged in the CFU is subject to the LL (as they are not civil servants but consultants engaged through consultancy contracts) with labor management responsibilities distributed among the Head of CFU and HR Department of the MF. Additionally, the Code of Conduct with provision on Sexual harassment and abuse is in the Annex 18 of this ESMF.

The management of OHS is within the remit of the OHS Officer within NITRA, CFU and the Innovation and Science Fund (person appointed in compliance with the LHSW).

Any third party hiring contracted workers shall be responsible for the employee relation/HR issues. This will be embedded into the bidding documents, ESMP/CL contractually enforcing this LMP, through adaptive wording in the bidding documents and a monitoring template to be used for monitoring of labor management performance by the PIU. As for the implementation of these Labor Management Procedures, unless a Labor and Employee Relations/HR Manager or OHS Specialist is assigned to the Project by the third party, the team leader will be responsible for compliance with the LMP provisions.

### **6.7. Terms and conditions - Key aspect governing the Project labor and working conditions**

The terms and conditions of employment will be governed by the provisions of the LL, while occupational health and safety is guided by the LHSW. In the case of the direct workers who are civil servants the Law on Civil Servants is additionally applicable. The national laws governing labor and workplace concerns are in line with ESS2 with the exception of workers GM.

A project worker may be employed or engaged for work on the Project only after negotiating, signing, and receiving a copy of an employment contract or engagement agreement which contains information required by the provisions of the LL.

The project worker can be employed on a permanent (open-ended contract) or temporary (fixed-term contract) basis or can be engaged without establishing the employment relationship on the basis of an agreement.<sup>32</sup> In either case, the project worker will be registered in the Central Registry of Compulsory Social Insurance, in accordance with the national legislation of the Republic of Serbia. If the project worker is employed / engaged in his/her domicile country other than Serbia, he/she will be registered in accordance with the national legislation of that country. In the case of self-employed project workers, evidence of registration in the Central Registry of Compulsory Social Insurance or a corresponding foreign body has to be presented.

The terms and conditions of employment or engagement of the project worker must meet at minimum the standards of the LL.

### **6.8. Workers Grievance Mechanism**

The LL does not foresee grievance mechanisms as mandatory practice but provides for judicial protection of employees in case of unfair or unlawful employment relationship practices instead. Any employee may refer to the trade union or other representative labor organization for help in handling any disciplinary or grievance action. The Employer should not prevent any project worker from seeking assistance or advice in such situations. The Law on Peaceful Settlement of Labor Disputes allows for settlement of both individual and collective grievances and claims arising from the employment relationship and work situations without referring to judiciary through mediation of mediators and arbiters and agreement of the parties involved. On the contrary, the Serbian legislation relating to prevention of discrimination, sexual harassment and abuse at work and combating corruption is much more specific and is aligned with the above stated requests laying out clear procedures to be followed in any case of discriminatory actions, unjust treatment or concerns over non-compliance with the law.

The law on civil servants addresses the grievance mechanism in such a way to provide for employment relations and workplace dispute resolution through the Appeals Commission housed within the institution providing employment.

The above stated mechanisms provided by the Serbian legislation are considered as minimum standard to be achieved in addressing labor dissatisfaction and perceived maltreatment. Any third party employing and engaging contracted workers are expected to design and implement grievance mechanisms that will be aligned or surpass this standard ensuring an easy access to protective measures and effective remedial actions in work situations that may give rise to grievances and disputes.

For direct workers employed or engaged by NITRA (PIU), MF (CFU), SF and IF not subjected to the Law on Civil Servants, a special workers GM<sup>33</sup> is established by the PIU within MoESTD/NITRA in June 15, 2022 and will continue to serve for AF2. This GM both serves as workplace and dispute resolution instrument for direct workers and contracted workers in case no GM exists with the third parties employing or engaging them. Any project worker to be employed or engaged will receive a written information on the GM its function, role, authority and mechanism and such receipt shall be confirmed in writing on an execution copy of the information which shall be kept with the employment/engagement file with the respective HR department or Head of Institution as the case may be.

Grievance mechanisms address workplace concerns specifying procedures as to whom a project worker should lodge the grievance, the time frame for receiving a response or feedback and steps to refer to a more senior level, while allowing for transparency, confidentiality and non-retribution practices.

The mechanism foresees the procedure that at least:

- Specifies to whom the employee should lodge the grievance;

<sup>32</sup> The Serbian Labor Law recognizes two categories of workers: Employees with established employment relations (fixed term and open-ended employment contract) and persons engaged outside employment relations (seasonal works, service contracts, additional work engagement).

<sup>33</sup> <https://nitra.gov.rs/cir/inovacije/projekat-saige>

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- Refers to the time frame allowed for the grievance to be dealt with;
- Allows the employee to refer to a more senior level within the organization if the grievance is not resolved at the lower level;
- Includes right to representation;
- Guarantees non-retribution practice;
- Does not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration/dispute resolution procedures, if the grievance is not resolved within the organization;
- Provides for anonymous complaints to be raised and addressed.

The project worker is entitled to give suggestions, remarks and information regarding health and safety at work. He/She may refuse to work if his/her life or safety is endangered or if appropriate measures for provision of health and safety at work are not in place. The project worker may express his/her concern or raise grievances to the appointed OHS officer or through the workers' representative in the Health and Safety Council if such exists in the company.

The project workers should be informed on available grievance mechanisms upon their employment or engagement. The information should be made available together with the notification on prohibition of harassment and protection of whistle blowers<sup>34</sup>.

Contracted parties should demonstrate their willingness to implement these mechanisms, even if such a requirement is not prescribed by any law of the domicile country. Direct workers, as civil servants, are subject to the terms and conditions of the national legislation regulating their status. The grievance mechanism provided for by this legislation will be applicable to them.

## 6.9. Third parties management

The implementation of the LMP begins with the tender procedure.

The Borrower will incorporate standardized environmental and social clauses in the tender documentation and contract documents, in order for potential bidders to be aware of the requirements to be met. The Borrower will also state that adherence to the national legislation regarding labor and employment relations and occupational health and safety is a prerequisite for participation in the project.

Tender documents shall be clear that forced labor, child work or disguised employment are unacceptable and may be the ground for exclusion from the project. The requirements should also include a ban to discrimination, harassment and gender-based violence.

The bidders will be required to submit a statement confirming their awareness of WB ESF standards, their firm compliance with the national labor and employment and occupational health and safety laws and labor management procedures in accordance with WB ESS2, their willingness WB ESS2, their willingness to establish a GM if not established or to use the project GM, from any practice that can be interpreted or perceived as discriminatory or unfair to their employees and in breach of ESS2 requirements. The statement template is presented in Annex 05. The statement should be signed by the bidder's legal representative. The failure to submit such a statement will exclude a bidder from taking part in bidding.

The Borrower will make reasonable efforts to ensure that the third parties awarded with the contract are reliable law-abiding entities who do not have a history of disrespect for labor law, unresolved labor disputes or frequent work-related accidents. During the evaluation of the reliability of the third parties Due diligence shall be exercised.

The contract to be made with the selected third party will incorporate the terms and conditions of this LMP as the minimum standard provided for the project workers employed or engaged by the third party.

During the implementation of the contract, the third parties engaging/employing project workers will have to submit semiannual reports presenting their compliance with the LMP during the contract period. The report should include the number and status of project workers, the number of hired and terminated employees in the given period, the number of hours worked, overtime, regularity of payment, OHS issues (injuries and fatalities, if any), safety measures, grievances raised and resolved, training provided/attended, incidents of non-compliance with the law or the LMP.

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<sup>34</sup> Such notification is the employer's obligation stipulated by Law on the Prevention of Harassment at the Workplace (2010), Rulebook on Conduct of Employers and Employees in Relation to Prevention and Protection from Harassment at Work (2010) and Law on Protection of Whistle Blowers (2014)

In case of any inconsistencies or departure from the required standards and practice, the contracted parties will be asked to present a detailed report. Depending on the gravity of a situation or malpractice, the Borrower may decide to inform the Labor Inspectorate on suspected transgressions.

The PIU will monitor the performance of third parties to ensure their compliance with the LMP.

## 7. POTENTIAL ENVIRONMENTAL, SOCIAL and ETHICS IMPACTS AND RISKS

Given the nature of the intervention and the second AF included AI and BIO4, the experience of implementing institutions in similar project's implementation, and the presence of potentially sensitive research areas, the SAIGE project risk is assessed as substantial. No construction or reconstruction works will be financed under this Project and no adverse impacts such as involuntary resettlement and land acquisition, impacts on biodiversity, on cultural heritage, are expected. No activities with major environmental and social impact ("High risk" or "Substantial risk" projects) would be implemented under the Projects.

The Project will not finance any of the activities listed in the World Bank Group -IFC Exclusion List given in Annex 01A. The environmental risks will be small in magnitude, of temporary nature and directly associated with the listed investments and TA activities under the Project.

Also, the Project will not finance any research on human embryos/beings/tissue and animals that is not in line with EC regulations on this type of research. Research with ethical issues stated within the Horizon Europe<sup>35</sup> "Ethic Issue Questionnaire" (enclosed as Annex 01C to this ESMF) will not be eligible for financing under this Project unless they comply with EC regulations. Ethics issues table will be provided to applicant during application process, and it is checked during screening process by Ethics expert.

To maximize the potential benefits of AI and minimize its risks, it is important to develop ethical and responsible AI systems that prioritize environmental protection and sustainability. The following general principles applicable to all AI systems will be monitored: 1. Human agency and oversight, 2. Technical robustness and safety, 3. Privacy and data governance, 4. Transparency, 5. Diversity, non-discrimination and fairness, and 6. Social and environmental well-being. Please see further on AI exclusion list in the Annex 01 IFC Exclusion list.

In the case of Artificial intelligence related research, there are potential risks associated with data privacy. These will be assessed through adequate measures in accordance with Horizon Europe.

Having in mind that 2024 is just the beginning for AI regulatory landscape across the institutions (and world), in the upcoming period more information is expected related risk management framework (and possible indicators). In addition to AI related ethics issues, mentioned above, SAIGE project and subprojects will also be viewed from the aspect of environmental risk. Not diminishing the potential positive significance of AI for the environmental protection system (the use of artificial intelligence can provide key competitive advantages to companies and support socially and environmentally beneficial outcomes, for example in healthcare, farming, education and training, infrastructure management, energy, transport and logistics, public services, security, justice, resource and energy efficiency, and climate change mitigation and adaptation), AI has a number of potentially negative impacts on the environment and natural resources, the assessment of which will be handled by an environmental specialist.

There is an inherent reputational risk to supporting research activities in areas perceived as sensitive by the public.

To mention, related potential and social impacts and risks, in a few cases, the mitigation activities will need to be designed to deal with wastewater treatment, communal, industrial or hazardous waste disposal/management.

Any activities that may have high environmental and social impacts, including involuntary impacts on land or assets, and unpredictable risks for the environment, community health and safety, health and safety of research subjects will be deemed ineligible through the Project's Environmental and Social Screening Questionnaire (Annex 02) to be used for defining (matching) grant eligibility. Any minor and substantial and moderate impacts will be identified by the ESMF and addressed in activity specific ESMPs or ESMP Checklists

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<sup>35</sup> EU grants, How to complete your ethics self-assessment

[https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/how-to-complete-your-ethics-self-assessment\\_en.pdf](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/how-to-complete-your-ethics-self-assessment_en.pdf)

Environmental and Social Management Framework - ESMF

the ESMF and Project Operations Manual (POM) will ensure that the grant selection procedures are fair, transparent and merit based.

Overall sub-projects implementation is expected to have positive or mitigated environmental and social impacts. Innovation and entrepreneurship are important drivers of growth, due to their role in shifting growth patterns to be more productivity based and trade-oriented and increasing economic dynamism. The importance of young, innovative firms for employment and growth has been noted in countries around the world. New firms are more likely to create new employment opportunities than older ones. Young companies also introduce competition into markets and create new markets by developing and commercializing new services and products. Competitive grants offered by the SF will support the researchers by providing them with grants that match their project needs. Grants will be designed to encourage participation of women researchers. Preparing project proposals for the SF will improve their capacity to bid for EU and other international research grants.

Nevertheless, certain adverse impacts may occur to a smaller extent. Specific sub-projects to be financed have not yet been defined, namely scope and specific sectors of potential activities are not known. Thus, the ESMF provides environmental and social protection general guidelines, which would help identify high and substantial risk activities based on environmental and social risks associated to such activities. The following tentative list of specialized focus areas are being considered:

Focus area
<ul style="list-style-type: none"> <li>○ Information and Communication Technology - ICT (including software and hardware)</li> <li>○ Food production technology</li> <li>○ Agriculture technology (e.g. innovative seeds or planting methods, sunflower adaptation to stress caused by climate change, causative agent of sugar beet root disease)</li> <li>○ Clean and efficient technologies in energy and transport</li> <li>○ Bio-based industries (renewable natural resources)</li> <li>○ Transportation technology (e.g. trains and railway infrastructure that reduce costs and improve capacity, reliability and punctuality)</li> <li>○ Medical equipment</li> <li>○ Innovative medicine (including, e.g. vaccines, medicines and treatments)</li> <li>○ Animal and human embryos/beings/tissue research</li> <li>○ Archaeological research (e.g. provenance, context and space-time modeling of archaeological material (copper, obsidian, ceramics and bronze, exploring new sites),</li> <li>○ Medical research (e.g. research, development, preparation, characterization, "in vitro" and "in vivo" tests of clay suitable to act as mycotoxin absorbents, production of biological drugs, Cancer-associated thrombosis (CAT), organic synthesis),</li> <li>○ Geodynamic research and software modeling (e.g. sensor devices for the detection of the 3 most common food-borne bacteria (<i>Listeria monocytogenes</i>, <i>Salmonella enteritidis</i> and <i>Campilobacter jejuni</i>), GHG in farms for raising cattle),</li> <li>○ Biological research (e.g. genetic analysis of iridoids from the genus <i>Nepeta</i>, insect pest control, monitoring of wild pollinators (EUPMS), of used medicinal plants in the pharmaceutical, cosmetic and food sectors),</li> <li>○ Construction research related to new materials (e.g sustainable sediment management, Cross-Laminated Timber Floors),</li> <li>○ Research related to food additives (e.g. development of new high-value milk proteins (FMPP) using goat milk, wine waste or edible mushrooms in an innovative way, production of bioactive peptides, additives to bakery products, cultivation of new next-generation probiotics),</li> <li>○ Technological research of new materials for use in medicine and industry (e.g., preparation of deep eutectic solvents (DES) based on choline chloride (ChCl), anti-cancer drugs).</li> <li>○ Artificial intelligence related research</li> <li>○ Technical Assistance for BIO4 Campus core facility</li> <li>○ Technical Assistance for BIO4 company capacity building</li> </ul>

Due to the nature and magnitude of potential environmental and social risks, during project implementation no negative project impacts on the natural environment are expected. Impacts are likely to be easily mitigated with mitigation measures. The impacts are not adverse, limited, site-specific, likely reversible, implemented on non-sensitive sites. Therefore, the Project is recognized as substantial Risk project in terms of environmental and social sensitivity. It triggers ESS1, ESS2, ESS3, ESS4, ESS6, ESS8 and ESS10 standards and provides effective and rigorous screening criteria to exclude any sub project potentially adversely affecting the social and natural environment.



## Focus research sectors and possible risks

### 7.1.1. Information and Communication Technology - ICT

Information and communications technology (ICT) has environmental impacts through the manufacturing, operation and disposal of devices and network equipment, but it also provides ways to mitigate energy use, for example through smart buildings and teleworking. At a broader system level, ICTs influence economic growth and bring about technological and societal change. Managing the direct impacts of ICTs is more complex than just producing efficient devices, owing to the energetically expensive manufacturing process, and the increasing proliferation of devices needs to be taken into account.

### 7.1.2. Food production technology

Agriculture, no matter how sustainable or unsustainable, impacts the environment through air and water quality, energy consumption, natural resources, solid and toxic waste, and land use. Current food production, processing practices, and distribution systems are putting ongoing pressure on the environment and natural resources. Industrial agriculture practices, such as monoculture crops (large-scale, single crops grown intensively) or concentrated animal feeding operations (CAFOs) (large number of animals in a confined space also known as factory farms) are known for using large concentrations of water, pesticides, fertilizers, and for CAFOs specifically, water and air pollution from massive amounts of manure.

### 7.1.3. Agriculture technology (e.g. innovative seeds or planting methods)

Twenty-first century innovations develop varieties in response to the environmental, agricultural and social challenges of our time. Innovations in plant breeding cannot and will not replace traditional practices, they simply increase the range of tools available to plant breeders. Through innovation people can produce improved varieties that sustain and potentially increase yields and are better adapted to withstand disease and the effects of climate change, such as drought or floods, supporting sustainable agriculture and food security.

Seed that is resistant to pests and disease and can withstand the effects of climate change results in more abundant and reliable harvests for farmers. Thanks to innovations in plant breeding farmers can grow high protein crop varieties – insufficient protein in the diet is a significant contributing factor to under-nutrition. Innovations in plant breeding have given us food that stays fresher longer. Many types of fruit and vegetables can be transported and stored more easily, thus extending their shelf life and reducing food waste.

### 7.1.4. Clean and efficient technologies in energy and transport

The environmental impacts associated with clean and efficient technologies in energy and transport can include land use and habitat loss, water use, and the use of hazardous materials in manufacturing, though the types of impacts vary greatly depending on the scale of the system and the technology used (photovoltaic solar cells or concentrating solar thermal plants).

Electric vehicles have the potential for significant contributions towards achieving climate protection goals in the transport sector. However, the environmental impacts of a large-scale introduction of electric vehicles are still unknown.

### 7.1.5. Bio-based industries (renewable natural resources)

Since agriculture is expected to remain the largest water-consuming sector, natural resources such as water and fertile soil tend to be exposed to over-exploitation. Combined with an already decreasing availability due to the effects of climate change and intensive management practices, groundwater and soil pollution resulting from, for example, badly managed bio-waste and pharmaceuticals, entering the water supply through, for example, faeces, urine, washing, etc., as well as an existing and rising demand for food, could undermine world food security.

### 7.1.6. Medical equipment

Healthcare practices have a significant impact on the environment. Hospitals operate 7/24 every day and have large environmental footprints. They impact the environment by: generating large quantities of waste (including infectious, hazardous, and solid wastes); using material that may have toxic effects: including but not limited to: polyvinyl chloride (PVC), diethylhexyl-phthalate (DEHP), cleaning materials, heavy metals in electronics, pesticides, batteries, mercury in medical devices, equipment and light bulbs; consuming large amounts of energy, thereby generating significant greenhouse gas emissions and consuming copious amounts of water.

### 7.1.7. Innovative medicine (including, e.g. vaccines, medicines and treatments)

Pollution of water and soils with pharmaceutical residues is an emerging environmental issue.

For humans, the possible impacts are less clear than for the environment, but there are concerns notably regarding certain types of molecules, even if to date there is no clear evidence of short-term health effects on humans. Antibiotics, anti-parasiticides, anti-mycotic and anti-cancer medicinal products are pharmaceutical groups that are especially intended to kill their target organism or target cells and might prove to be the most important pharmaceutical compounds affecting human health.

#### 7.1.8. Animal and human embryos/beings/tissue research

- Research on human embryos/beings/tissue: Research on humans covers a wide scope, from medical testing or drug trials to the collection of data and biological samples (blood, urine, tissue, cells). Key risks are threats to human life or well-being. The second most important element to respect in research that involves human subjects is their consent.
- Research on children: There are great ethical and societal risks in working with children: as a trusting population, they may be easily manipulated, exploited or abused. Means to safeguard children from these risks include developing an informed consent process for their guardians, ensuring that the research methodology is not invasive and establishing means to protect their identities with the utmost confidentiality.
- Inhumane treatment of animals: Projects requiring research on animals which attract ethical attention include in particular research on primates, transgenic or cloned animals and any research that inhibits animal mobility or implies prolonged periods of suffering or constriction.

#### 7.1.9. Archaeological research

Environmental pollution has created health problems, acidification of ground and lakes, and serious damage to cultural heritage. Outdoor monuments suffer from this pollution, but so do buried archaeological remains. The deterioration rate of archaeological artefacts, especially of inorganic materials, has accelerated in recent years, and this increased deterioration to a large part can be attributed to anthropogenic pollution. The earlier assumption that archaeological artefacts are best preserved when allowed to remain underground has turned out to be doubtful, at least in regions with serious soil acidification. Many artefacts may have already disappeared because of heavy pollution and that is why this supported research is important. The conservation work aims at reducing further degradation as much as possible.

#### 7.1.9. Biological research

Climate has far-reaching and large impacts on biological systems. Climate change may benefit some species and cause extinction for others. Cumulatively, it will alter biological communities and the functioning of ecosystems. The Earth is already experiencing sufficient climate change to affect biological systems; well-documented changes in plant and animal populations are related to recent climate change. Predicting future biological impacts of climate change remains a formidable challenge for science.

One of the great challenges for biology today is to try to understand how future changes in climate will impact biological systems. Progress towards this goal depends on understanding how species respond to changes in climate, examining biological responses to recent climate changes and integrating this information in experiments and models to try to understand how complex biological systems will interact under future changing climate conditions.

#### 7.1.10. Construction research related to new materials

Increasing utilization of crude materials by the building units results in the diminution of natural resources as well as raising the ecological shocks including CO<sub>2</sub> secretions all over the surroundings. Being prominently used, steel and concrete industries are dominating the construction industries leading to damage to the environment. Due to building and construction activities, three billion tons of raw materials have been consumed. Steel and concrete are the prime materials which are used in construction and require high embodied energy resulting in huge CO<sub>2</sub> emissions. Steel is used in the sectors such as mechanical engineering, construction, and ships building to everyday utilization things, and also in construction projects such as roads, bridges or rail.

The construction industry leads to some severe impacts on the environment such as: ecosystem disruption, damage to the landscape, damage to flora either during the manufacturing or transport of raw material for construction industry, health care damage by contamination of environment during production, processing, maintenance and demolition of building materials, different emissions from the building materials cause contamination in soil, water and air. New materials which have less environmental impact and are more environmentally friendly will help to minimize these environmental hazards caused by these materials which are more harmful globally.

#### 7.1.11. Technological research of new materials for use in medicine and industry

## Environmental and Social Management Framework - ESMF

For decades, researchers have dreamed about harnessing the power of genetic technology to prevent or treat a range of diseases. A synthetic version of a molecule in the human body known as messenger RNA (ribonucleic acid), or mRNA, held that promise. The Moderna and Pfizer mRNA COVID-19 vaccines have helped significantly reduce the number of cases of COVID-19 since they were first approved for emergency use. mRNA vaccines work by delivering instructions to cells that empower them to produce antigens and become the body's own antibody-producing factory.

In the healthcare industry, a large amount of data is already being collected to generate insights on emerging conditions and to improve patient care. Yet, like other industries, the healthcare sector continues to grapple with issues such as data silos and security challenges that stand in the way of harnessing insights.

## 7.1.12. Artificial intelligence related research

Artificial Intelligence research (AI) is itself a significant emitter of carbon and has environmental impact. Managing the AI environmental and climate impact is still not developed. Reducing AI's climate impact is to try to quantify its energy consumption and carbon emission, and possibly reduce them. "Environmental standards should be developed to ensure the mitigation of environmental impact and green AI certifications could be introduced to facilitate the industry process for promoting green AI development. For the organizations and companies that are using and deploying AI technologies, practical industry framework and guidelines that support green procurement of AI technologies would support them in looking for environmentally friendly AI practices." <sup>36</sup> Getting researchers to divulge how much carbon dioxide was produced by their research, encourage researchers to prioritize computationally efficient hardware and algorithms, to report training time and sensitivity to hyperparameters, will be the step forward in dealing with AI.

As noted above (chapter 7 introductory part), AI applications can cause negative environmental impacts. Let's mention only some of the negative effects of AI on the environment - significant carbon emissions, use of energy, most of which is created by burning fossil fuels (the massive amounts of energy and computational resources required to train large language models can contribute to significant carbon emissions), the production and disposal of the hardware used for AI can also contribute to e-waste disposal/management and further environmental degradation, potential for increased natural resource extraction, exacerbation of environmental injustices, and job displacement. The development of the EU concept will be also followed, where the environment in relation to AI is viewed through basic human rights (the use of AI with its specific characteristics e.g. opacity, complexity, dependency on data, autonomous behavior, can adversely affect a number of fundamental rights, including right to health and safety of people).

For example, AI applications can exacerbate the negative environmental impacts of the mining, extractive and manufacturing sectors, where advanced AI applications can be used upstream for finding and extracting minerals or fossil fuels, midstream for transport and material storage, and downstream for product refining. While AI can increase efficiencies that support sustainability efforts, these applications can also work to increase net GHG emissions instead. Another example, AI could be used to develop autonomous weapons that could be used to harm the environment and wildlife. In addition, there is a risk that AI could be used to automate industries that are harmful to the environment, such as the fossil fuel industry. While AI can help reduce the environmental impact of these industries, it could also enable them to operate more efficiently, leading to increased greenhouse gas emissions and other environmental damage.

Artificial Intelligence (AI) can help accelerate progress for the necessary transformations. The impact of artificial intelligence on the environment is big; most often, when it comes to the impact of artificial intelligence (AI - Artificial Intelligence), we stop at the ethical norms, principles and implications of the impact - which are not questioned. However, the impact on the environment seems to be much larger than initially anticipated. Environmental sustainability should be considered as one of the principles towards responsible development and application of AI<sup>37</sup>. Evaluating the environmental impact of AI is no easy task, and in now days in early stage (to update these continuously is strongly recommended). AI's unequal access and environmental costs, including its carbon footprint, raise societal concerns. The potential for AI to monopolize innovation and unfairly

<sup>36</sup> <https://www.nature.com/articles/s42256-020-0219-9>

<sup>37</sup> See for example Dhar P., *The carbon impact of artificial intelligence*, Nature Machine Intelligence · August 2020, <https://www.researchgate.net/publication/343618995>

Tomlinson, B., Black, R.W., Patterson, D.J. et al. The carbon emissions of writing and illustrating are lower for AI than for humans. *Sci Rep* 14, 3732 (2024). <https://doi.org/10.1038/s41598-024-54271-x>, with references cited.

appropriate scientific knowledge, especially through commercial large language models, is a growing issue. But its environmental impact goes well beyond its carbon footprint.

As far as it is anticipated in now days, there are ES concerns related AI:

- 1) Carbon footprint already mentioned above. An AI carbon footprint is the amount of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases (whose emissions affect climate change, among other things) emitted during the production, training and use of AI systems. These systems are becoming increasingly complex and require more data to train, which means that their carbon footprint is growing. AI systems are typically trained on large datasets that are stored in data centers. The greater the amount of energy that these data centers consume, the greater the model's carbon footprint.
- 2) Water consumption and management. For cooling the computers used (with already mentioned power needed for computing) is the most energy-intensive process within data centers.
- 3) Waste management. Environmentally sound waste management is required for AI related issues.
- 4) Green procurement practicing - for the organizations and companies that are using and deploying AI technologies, practical industry/legal framework and guidelines that support green procurement of AI technologies would support them in looking for environmentally friendly AI practices.
- 5) Social concerns -Responsible use of generative AI should take into account the limitations of the technology, also its societal effects.

Ethical challenges of using AI in Health care are recognized recently. World Health Organization asked for the prompt regulation:

World Health Organization. Regulatory considerations on artificial intelligence for health. 2023  
<https://iris.who.int/handle/10665/373421>).

Both European Commission and US looking for optimal guiding of AI use in health care. They ask for “Trustworthy” and “Responsible” AI in Health:

Ethical challenges in the use of artificial intelligence (AI) in medicine: human and non-human caring, E-Book, European Commission, 2019.

Goldberg C.B. et al., To Do No Harm — and the Most Good — with AI in Health Care, NEJM AI 2024; 1 (3), DOI: 10.1056/AIp2400036

Ethical Principles and Requirements of AI use for health (AIH):

There are six general ethical principles that any AI system must preserve and protect based on fundamental rights as enshrined in the Charter of Fundamental Rights of the European Union (EU Charter), and in relevant international human rights law:

1. Respect for Human Agency: human beings must be respected to make their own decisions and carry out their own actions. Respect for human agency encapsulates three more specific principles, which define fundamental human rights: autonomy, dignity and freedom.
2. Privacy and Data governance: people have the right to privacy and data protection, and these should be respected at all times;
3. Fairness: people should be given equal rights and opportunities and should not be advantaged or disadvantaged undeservedly;
4. Individual, Social and Environmental Well-being: AI systems should contribute to, and not harm, individual, social and environmental wellbeing;
5. Transparency: the purpose, inputs and operations of AI programs should be knowable and understandable to its stakeholders;
6. Accountability and Oversight: humans should be able to understand, supervise and control the design and operation of AI based systems, and the actors involved in their development or operation should take responsibility for the way that these applications function and for the resulting consequences.

Central criterion for use of AIH should be:

- Better health for all patients;
- Better health care experience, including faster access;
- Lower costs and
- Improved productivity; and support for the health care workforce, amid health care labour shortages and burnout.

To conclude:

- (if) AI's potential for improving health turns out to be as great as it now seems
- All health care leaders bear the responsibility to support ways to help patients
- It is also an ethical imperative for all involved with AIH to focus on the public good
- Commitment to develop applications and provide them for free or low cost to underserved populations
- The technology is advancing at a blistering speed and/ but
- Conclusions reached today may no longer be relevant!

Table 7.22: Summary of key environmental, social, ethical impacts and risks of AI systems

Impact	Risk	Comment
Impacts on land use/settlements,	Not relevant	There will be no land acquisition as defined by ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
Ground and surface water,	Low	Potential impacts of some subprojects on ground and surface water can be offset or mitigated by following site specific ESMP/ESMP checklist mitigation measures
Air quality,	Low	Potential impacts of some subprojects on air can be offset or mitigated by following site specific ESMP/ESMP checklist mitigation measures
Flora and fauna (protected areas and species),	Not relevant	No adverse impacts on biodiversity are expected, but any identified risks will be mitigated through cite specific ESMP/ESMP checklist
Noise and vibration,	Low	No civil works will be financed under the Project.
Soil quality,	Low	Soil contamination can occur from: Drainage of dredged materials, spillage of hazardous and toxic chemicals. Impact can be mitigated by following site specific ESMP/ESMP checklist mitigation measures
Waste,	Moderate	Health hazards and environmental impacts can happen due to improper waste management practices, especially medical waste and waste from laboratories, as well e-waste Impact can be mitigated by strictly following procedures prescribed in Serbian Law on Waste Management and by respecting site specific ESMP/ ESMP checklist mitigation measures.
Cultural heritage and religious issues,	Low	Protection of cultural heritage from the adverse impacts of project activities and support its preservation. Consulting with stakeholders regarding cultural heritage. The chance findings clause will enter all ESAs for sub-projects. If necessary, Cultural Heritage Management plan will be developed.

Impact	Risk	Comment
Labor management	Moderate	<p>Labor risks to project workers, i.e researchers and employees of the PIU, as well as for hired external consultants are negligible given that most will be office workers. Labor management is defined by the ESMF which provides adequate procedures and measures to allow management of labor in line with national law and ESS2 (protective equipment, notification, information on workers for the importance of environmental and hygienic protection and COVID-related measures, etc.)</p> <p>Also, promote fair treatment, non-discrimination, and equal opportunity for all project workers, including researchers and to provide project workers with accessible means to raise workplace concerns.</p>
Health and Safety for affected communities including research subproject,	Low	<p>Potential health, fire and safety risks for workers/research subjects and community shall be mitigated by adhering to the relevant laws guiding research including but not limited to radiological and nuclear safety, use of chemicals, the animal protection law and The Law on Occupational Safety and Health, Law on Fire Safety.</p> <p>Also, with respect to community health and safety, the Project manager will include health and safety measures to prevent the public from entering the research area, such as appropriate fencing and signage. Before the starting of work on the field, effective measures will be taken to resolve potential emergency situations.</p>
Data Privacy	Low	<p>The protection of natural persons in relation to the processing of personal data is a fundamental right. Data protection will follow REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT as well as national law of data protection (Official Gazeta RS, 87/2018).</p>
Respect for Human Agency	Moderate	<p>Human beings must be respected to make their own decisions and carry out their own actions. Respect for human agency encapsulates three more specific principles, which define fundamental human rights: <b>autonomy, dignity and freedom.</b></p> <ul style="list-style-type: none"> <li>- End-users and others affected by the AI system MUST NOT be deprived of abilities to make basic decisions about their own lives or have basic freedoms taken away from them.</li> <li>- It MUST be ensured that AI applications do not autonomously and without human oversight and possibilities for redress make decisions: about fundamental personal issues ( e.g. affecting directly private or professional life, health, well-being or individual rights), that are normally decided by humans by means of free personal choices; or about fundamental economic, social and political issues, that are normally decided by collective deliberations, or similarly significantly affects individuals.</li> </ul>

Impact	Risk	Comment
		<ul style="list-style-type: none"> <li>- End-users and others affected by the AI system <b>MUST NOT</b> be in any way subordinated, coerced, deceived, manipulated, objectified or dehumanized.</li> <li>- Attachment or addiction to the system and its operations <b>MUST not</b> be purposely stimulated. This should not happen through direct operations and actions of the system. It also should be prevented, as much as possible, that systems can be used for these purposes.</li> <li>- AI applications should be designed to give system operators and, as much as possible, end-users the ability to control, direct and intervene in basic operations of the system.</li> <li>- End-users and others affected by the AI system <b>MUST</b> receive comprehensible information about the logic involved by the AI, as well as the significance and the envisaged consequences for them.</li> </ul>
Privacy and Data governance	Moderate	<ul style="list-style-type: none"> <li>- The AI systems <b>MUST</b> process personal data in a lawful, fair and transparent manner.</li> <li>- The principles of data minimization and data protection by design and by default <b>MUST</b> be integrated in the AI data governance models.</li> <li>- Appropriate technical and organizational measures <b>MUST</b> be set in place to safeguard the rights and freedoms of data subjects (e.g. appointment of data protection officer, anonymization, pseudonymization, encryption, aggregation). Strong security measures <b>MUST</b> be set in place to prevent data breaches and leakages. Compliance with the Cybersecurity Act<sup>4</sup> and international security standards may offer a safe pathway for adherence to the ethical principles.</li> <li>- Data should be acquired, stored and used in a manner which can be audited by humans. All EU funded research must comply with relevant legislation and the highest ethics standards.</li> </ul>
Individual, Social and Environmental Well-being	Low	<ul style="list-style-type: none"> <li>- AI systems <b>MUST</b> take into account all end-users and stakeholders and must not unduly or unfairly reduce their psychological and emotional well-being</li> <li>- AI systems should empower and to advance the interests and well-being of as many individuals as possible</li> <li>- AI development <b>MUST</b> be mindful of principles of environmental sustainability, both regarding the system itself and the supply chain to which it connects. Whenever relevant, there should be documented efforts to consider the overall environmental impact of the system and the Sustainable Development Objectives, where needed, steps to mitigate it. In the case of embedded AI this must include the materials used and decommissioning procedures.</li> <li>- AI systems that can be applied in the area of media, communications, politics, social analytics, behavioral analytics online communities and services <b>MUST</b> be assessed for their potential to negatively impact the quality of communication, social interaction, information, democratic processes, and social relations (for example by supporting uncivil discourse, sustaining or amplifying fake news and deepfakes, segregating people into filter bubbles and echo chambers, creating asymmetric relations of power and dependence, and enabling political manipulation of the electorate). Mitigating actions must be taken to reduce the risk of such harms.</li> </ul>

Impact	Risk	Comment
		<ul style="list-style-type: none"> <li>- AI and robotics systems MUST not reduce safety in the workplace. Whenever relevant, the application should demonstrate consideration of possible impact on workplace safety, employee integrity and compliance standards, such as with IEEE P1228 (Standard for Software Safety).</li> </ul>
<p>Transparency, explainability and objection</p>	<p>Low</p>	<ul style="list-style-type: none"> <li>- It MUST be made clear to end-users that they are interacting with an AI system (especially for systems that simulate human communication, such as chatbots).</li> <li>- The purpose, capabilities, limitations, benefits, and risks of the AI system and of the decisions conveyed by it MUST be openly communicated to end-users and other stakeholders, including instructions on how to use the system properly.</li> <li>- When building an AI solution, one MUST consider what measures will enable the traceability of the AI system during its entire lifecycle, from initial design to post-deployment evaluation and audit or in case its use is contested.</li> <li>- Whenever relevant, the research proposal should offer details about how decisions made by the system will be explainable to users. Where possible this should include the reasons why the system made a particular decision. Explainability is a particularly relevant requirement for systems that make decisions or recommendations or perform actions that can cause significant harm, affect individual rights, or significantly affect individual or collective interests.</li> <li>- The design and development processes MUST address all the relevant ethical issues, such as the removal of bias from a dataset. The development processes (methods and tools) MUST keep records of all relevant decisions in this context to allow tracing how ethical requirements have been met.</li> </ul>
<p>Accountability by design, control and Oversight</p>	<p>Low</p>	<ul style="list-style-type: none"> <li>- It MUST be documented how possible ethically and socially undesirable effects (e.g. discriminatory outcomes, lack of transparency) of the system will be detected, stopped, and prevented from reoccurring.</li> <li>- AI systems MUST allow for human oversight and control over the decision cycles and operation, unless compelling reasons can be provided which demonstrate such oversight is not required. Such a justification should explain how humans will be able to understand the decisions made by the system and what mechanisms will exist for humans to override them.</li> <li>- To a degree matching the type of research being proposed (e.g. basic or precompetitive) and as appropriate, the research proposal should include an evaluation of the possible ethics risks related to the proposed AI system. This should include also the risk assessment procedures and the mitigation measures after deployment.</li> <li>- Whenever relevant, it should be considered how end-users, data subjects and other third parties will be able to report complaints, ethical concerns, or adverse events and how these will be evaluated, addressed and communicated back to the concerned parties.</li> <li>- As a general principle, all AI systems should be auditable by independent third parties (e.g. the procedures and tools available under the XAI approach<sup>5</sup> support best practice in this regard). This is not limited to auditing the decisions of the system itself but covers also the procedures and tools</li> </ul>



Impact	Risk	Comment
		used during the development process. Where relevant, the system should generate human accessible logs of the AI system’s internal processes.

**The main ethical requirements for AI and robotics systems above can be summarized as:**

- AI systems must not negatively affect human autonomy, freedom or dignity.
- AI systems must not violate the right to privacy and to personal data protection. They MUST use data which is necessary, non-biased, representative and accurate.
- AI systems must be developed with an inclusive fair, and non-discriminatory agenda.
- Steps must be taken to ensure that AI systems do not cause individual, social or environmental harm, rely on harmful technologies, influence others to act in ways which cause harm or lend themselves to function creeps.
- AI systems should be as transparent as possible to their stakeholders and to their end-users.
- Human oversight and accountability are required to ensure conformance to these principles and address non-compliance.

7.1.13. Potential environmental impacts of limited upgrading of laboratory infrastructure and facilities

It is expected that some of SAIGE subproject can be related to limited upgrading of existing laboratory infrastructure and facilities, within the existing footprint. Since the existing infrastructure, facilities and equipment will be rehabilitated, repaired or replaced during the realization of the project, impacts on environment will be a consequence of human presence and machines, and the nature of construction works at a location, which are limited to the location of works or its surrounding vicinity. However, all work should be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment.

7.1.13.1. Workers /Researchers (health, fire and safety measures)

Impacts – Researchers in the laboratory may be affected adversely due to hazardous working environments where hazardous substances and chemicals, biological waste, gases under pressure, etc. may be present.

Mitigation Measures – The person responsible for safety and health at work in accordance with national law (Law on Occupational Health and Safety, “Official Gazette of RS”, 101/05, 91/15, 113/2017) will inform the researchers of legal requirements regarding health and safety issues and ensure the researchers use personal protective equipment (PPE) and follow prescribed procedures. Also, Researchers’ PPE should comply with international good practice laboratory work (as needed masks and safety glasses, gloves etc).

The laboratory in which the subproject is conducted will have to provide first aid, rapid availability of trained paramedical personnel, and emergency transport to the nearest hospital with accident and emergency facilities.

Furthermore, laboratories, and any other facility used for activities funded by the Project, will ensure that all fire and safety practices are in line with national requirements (i.e., up to date evacuation plan, fire protection plan, trainings undertaken, fire extinguishers in place and serviced timely, etc.). This also further requires appropriate equipment usage, adequate training, personal protective equipment, proper All accidents and incidents must be investigated. Any accidents/incidents resulting in injury to personnel to the extent that they need medical attention, and accidents/incidents involving unplanned fires and explosions, must be reported to the laboratory’s responsible party and to EH&S. It is recommended that incidents that do not result in significant injury or damage, but do result in near misses, be reported to the laboratory’s responsible person and to the EH&S Officer.

7.1.13.2. Air pollution and dust

Impact – Possible sources of air pollution will be dust due to project activities, machinery movement and other sources. Works can involve breaking up, digging, crushing, transporting, and dumping small quantities of dry materials. Locally, the air quality may experience some moderate and temporary deterioration due to dust from construction equipment exhaust. The dust may settle on vegetation, crops, structures and buildings.

Mitigation Measures – Spraying water is the main way of controlling dust.

7.1.13.3. Noise

Impact – Noise caused by the upgrading works will have only a temporary impact. Although temporary and mostly moderate, noise impacts in the vicinity of residential areas may cause negative health impact, if not mitigated.

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Mitigation Measures – In sensitive areas special care regarding noise emission will be taken by the Contractor, strictly respecting the ESMP requirements. In case of noise disturbance with noise emissions which are above permitted level, temporary movable noise barriers should be considered as appropriate mitigation measure.

7.1.13.4. Waste disposal and potential contamination of soils and watercourses

Impact – Potential contamination of soils and watercourses as a result of improper disposal of liquid and solid wastes from rehabilitation activities.

Mitigation Measures – The mitigation measure to avoid contamination of soils and watercourses is waste collection of separate types (mineral waste, wood, metals, plastic, hazardous waste, e.g. asbestos, paint residues, spent engine oil), waste quantities, proper organization of disposal pathways and facilities, or reuse and recycling wherever possible.

## 8. ENVIRONMENTAL SOCIAL AND ETHICS RISK MANAGEMENT

### 8.1. Risk classification according to the WB ESMF

The World Bank policies classifies all projects (including the projects which involve financial mediators) in one of four groups, namely projects with:

- High risk
- Substantial risk
- Moderate risk
- Low risk.

To determine appropriate risk classification, the Bank prescribes to take into account relevant issues such as:

- Type, location, sensitivity and scope of the project,
- Nature and magnitude of potential environmental and social risks and impacts, as well as
- Borrower's (including any other agency responsible of project implementation) capacity and commitment to manage environmental and social risks and impacts in the manner consistent with ESSs.

Other areas of risk can also be relevant for implementation of measures, as well as for results of environmental and social impacts mitigation measures, depending on specific project and context. These can include legal and institutional framework, nature of mitigation and the proposed technology, managerial structures and legislation, as well as considerations related to stability, conflict or security.

Risk classification is presented in detail in Annex 14. In cases, the projects involving several smaller sub-projects identified, prepared and implemented during the projects, the World Bank requirements involve mandatory review of adequacy of local environmental and social requirements relevant for the sub-projects (procedure explained in this ESMF), as well as assessment of the Borrower's capacity to manage the environmental, social and ethics risks and impacts of such "joint" sub-projects, particularly, Borrower's capacity to

- (a) perform sub-projects screening;
- (b) ensure necessary expertise for conducting environmental and social assessment;
- (c) review findings of environmental and social assessment for individual sub-projects;
- (d) implement mitigation measures; and
- (e) monitor environmental and social impact during project implementation. If necessary, the project may envisage measures to strengthen Borrower's capacities.

The NITRA/PIU/PIEs are obliged to carry out appropriate environmental and social assessment of sub-projects as presented in ES screening procedure scheme below.

ES and Ethics Screening<sup>38</sup> lead to determination of project category, based on estimated ES risk:

Category	Risk Level	Decision	REQUIREMENTS
1	<b>Low risk</b> project (with negligible environmental, social and ethic impacts for which an environmental impact assessment is not necessary)	<b>Eligible</b> for financing.	<b>NO FURTHER STEPS REQUIRED</b>  No additional environmental and social assessment necessary
2	<b>Moderate risk</b> project (with impacts that can be easily identified and for which standard preventive and/or corrective measures can be prescribed without an environmental, social and ethic impact assessment)	<b>Eligible</b> for financing.	<b>ESMP CL REQUIRED</b>  It is necessary for Applicant to develop ESMP checklist.
3	<b>Substantial risk</b> project (with potential and very significant or irrevocable environmental and social impacts, whose size is difficult to determine in the project identification phase)	<b>Eligible</b> for financing, subject to the following:  Applicant is required to obtain Opinion from the competent authority responsible for environmental protection (in accordance with the Law on EIA and Decree on establishing the List of Projects for which the Impact Assessment is mandatory (“Official Gazette of RS” No. 114/08),  <b>In case the EIA is not required, the project is eligible for financing.</b>  <b>In case the EIA is required, the project is not eligible for financing.</b>	<b>ESMP REQUIRED</b>  It is necessary for Applicant to develop ESMP with required public consultations.  <b>THE PROJECT IS EXCULED</b>
4	<b>High risk</b> project (or enterprises involved in manufacturing or use of hazardous or illegal substances). Applicable Law on EIA and Decree on establishing the List of Projects for which the Environmental Impact Assessment (EIA) is mandatory.	<b>Not eligible</b> for financing	<b>THE PROJECT IS EXCULED</b>

<sup>38</sup> Ethic related screening is the separate track, acknowledged with the ESMF

*Important note: It is possible that project have multiple risks category, i.e. moderate/low and AI related issues. In that case two documents have to be prepared ESMP CL and AI-ESMP CL*

Applicants selected for the acceleration program will take part in the intensive training and mentoring that will last about 12 weeks. During this period, they will receive funding in the form of At-Entry grant, which they can use to cover the necessary costs of their business. Due to the nature of the activities which are focused on training and mentoring, there won't be a need for E&S instruments. Instead, the subprojects will only be screened against exclusion lists available in this ESMF. ES expert will review all pre-selected Applications and highlight those whose operations fall under any of the activities from the exclusion list. These Applications will not be further evaluated and will be rejected.

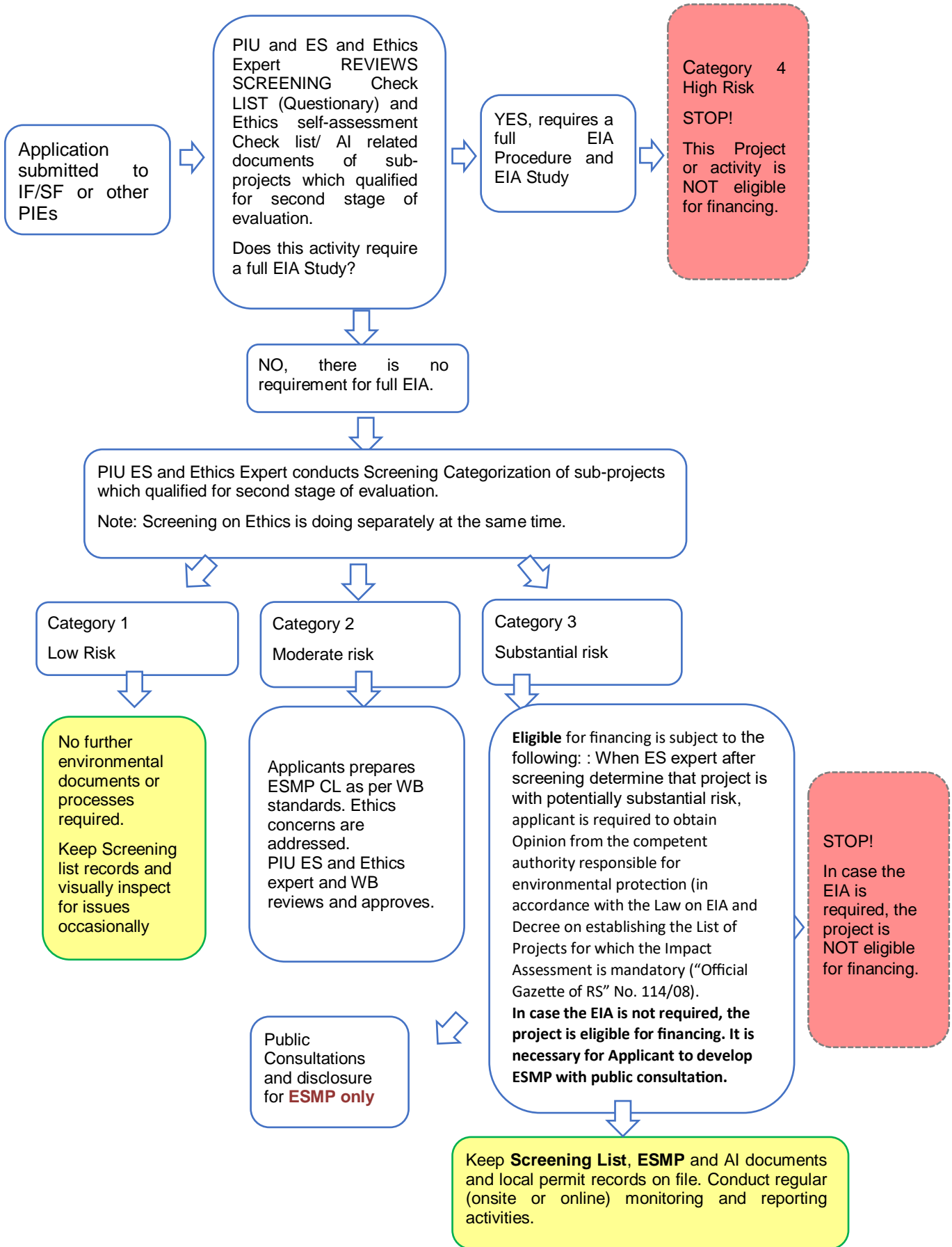
All sub-projects (companies) enrolled in the accelerator program will be considered eligible to apply for Co-Investment Grant funding. These companies may apply for and receive CI Grants after the acceleration program and nine (9) months following completion of the program, provided a qualified investment is raised provided and no breach of Acceleration Agreement have occurred during the program. In these cases, the E&S instruments will be prepared as follows:

Environmental and Social Review - The first step in the process of assessing environmental and social impact is review of the Environmental and Social Screening Questionnaires (ESSQS). The IF's expert for environmental and social matters will examine submitted ESSQs and categorize Applications according to the risk level, as explained in the Section 8.2.1. below.

Applicants will be informed about the outcome of this review and the necessity to prepare Environmental and Social Management Plan (ESMP) or ESMP Checklist as a prerequisite for approving the Application. Details on preparation of the ESMP or ESMP Checklist are provided in the Section 8.3 and 8.4. below.

In parallel, ethics review is conducted by the ethics expert, who conducts review based on filled self-assessment questionnaires, and potential online or onsite site visits (as needed). An ethics expert will be called upon to provide assessment of any Applications that raise possible ethical risks and to suggest follow up measures or prepare specific monitoring provisions for such Applications.

**Environmental, Social and Ethics Screening Procedure under the Project**



Other projects proposed by SAIGE applicants, classified as Substantial Risk Projects are not subject of EIA, but will be subject of rigid environmental and social and ethics screening which will be conducted by PIU unit. It is important to note that **any activities that may have significant environmental and social impacts (classified as “High Risk” Projects), including involuntary impacts on land or assets, and unpredictable risks for the environment, community health and safety will be deemed ineligible** through the Project’s Environmental and Social Screening Procedure to be used for defining grant eligibility (see Annex 02).

## 8.2. Environmental & Social and Ethics Screening and Sub-Project Approval

All sub-projects to be financed under the Project must undergo environmental & social and ethics screening in the manner described in this ESMF. The PIU would perform this process when reviewing sub-projects applications and inform applicants on environmental & social and ethics requirements for sub-projects, in order to be able to implement them in environmentally & socially and ethics acceptable manner.

Screening is the first step in the process of sub-projects analysis, and its purpose is to identify potential impacts of the proposed sub-projects and define measures aimed to prevent or minimizing negative impacts. Specifically, the screening would identify environmental, social and ethics risks related to the proposed sub-project and determine the type of impact assessment documentation needed for sub-project implementation. Sub-projects unacceptable due to the nature of the proposed activities would be rejected.

### Ethical issues

In order to ensure ethical conduct in relation to eligible research activities under the National law, applicants are required to consult and engage with this section of the document at application stage. As part of the application process, applicants will be required to conduct the ethics self-assessment and provide response to the question on ethical issues within the HORIZON EUROPE “Ethics issues Questionnaire” (Annex 01C) as well as conduct a broader Environmental and Social Screening Questionnaire (Annex 02). The objective of the above Ethics assessment is to ensure that EU Directive on the protection of animals is applied for scientific purposes (2010/63/EU) designed to limiting the use of animal testing for scientific purposes as partially transposed by the Animal welfare law (Official Gazette No 41/09) is complied with and is it being complemented through the fact that the NITRA is following European Research Centre guidelines and procedure. 7.1.18. Ethical issues assessment procedures.

For assessment of ethical issues, SF currently applies the procedures and regulation of the EC (for European Research Centre and Horizon Europe projects), in anticipation of having to comply with these in the future. SF procedures are also in line with relevant national laws/regulations (Animal welfare Law, Regulation on welfare of animal intended for experimental purposes ('Official Journal of. RS", No 39/10) and Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine).

The ethical appraisal starts with an ethics Ethics self-assessment, V2.0-13.07.2021 (filled out by applicant).

Applicants are provided with the document: How to complete your ethics self-assessment, with new item AI enclosed. Relevant provision of the Serbian Law on Health Care is enclosed as Annex 13 of this ESMF document. The most important requirement is if research involves animal/human tissue, applicant must submit methodology and research procedure and Informed Consent approved by Ethics Board (Serbian: “Eticki Odbor”) appointed within the Institution where such research will be conducted.

The tasks of the Ethics Board are to:

To approve the implementation of scientific research in the field of health, medical research, research in the field of public health, as well as to monitor their implementation;

To approve the taking of human organs, cells and tissues from a living donor or deceased person in accordance with the law and give an opinion on ethical and other issues in the process of transplantation, ie the application of cells and tissues;

o considers ethical issues and make decisions regarding the taking of parts of the human body for scientific-teaching purposes, in accordance with the law;

Animal investigations can be performed by legal entity and individual research registered in the Register for Animal Experiments, kept by the Ministry of Agriculture, forestry and water management. Animal testing may be conducted on the basis of a Decision on the approval of animal testing issued by the Ministry, based on the expert opinion of the Ethical Commission for the Protection of the Welfare of Experimental Animals. Scientific research organizations and other legal entities conducting animal experiments are obliged, within their organization or together with other scientific research organizations, or legal entities conducting animal

experiments, to establish an Ethical Commission (Serbian: “Eticka komisija”) for the protection of the welfare of experimental animals.

Ethical Commission (i) determine the manner of conducting the experiment on animals, in accordance with this Law; (ii) exercise professional control over the conduct of the experiment on animals; (iii) organize training of persons conducting animal experiments; (iv) give expert opinions to the Minister on the ethical and scientific justification of conducting the experiment and (v) submit regular annual reports to the Minister.

Interventions on animals for scientific and biomedical purposes will be carried out by certified scientists.

For specific and invasive animal experiments, a decision approving an animal experiment is issued based on the opinion of the Ethical Council (Serbian: “Eticki Savet”) for the Welfare of Experimental Animals.

Other Key articles of the Animal welfare law are enclosed as Annex 12 to this document. Additionally, full application proposals should include HORIZON EUROPE “Ethics issues Questionnaire” that must be filled in with yes/no. Applicants should describe any relevant ethical aspects in their research plans. When a research permit or a statement by an ethics Commission is required for the implementation of the project, applicants shall provide information on the permits or permit proposals. Research on human tissue and animals that is not in line with EU regulations on this type of research will not be financed by this project (see Annex 01C for exclusions).

AI technologies can be of great service to humanity and all countries can benefit from them, but also raise fundamental ethical concerns, for instance regarding the biases they can embed and exacerbate, potentially resulting in discrimination, inequality, digital divides, exclusion and a threat to cultural, social and biological diversity and social or economic divides; the need for transparency and understandability of the workings of algorithms and the data with which they have been trained; and their potential impact on, including but not limited to, human dignity, human rights and fundamental freedoms, gender equality, democracy, social, economic, political and cultural processes, scientific and engineering practices, animal welfare, and the environment and ecosystems. The applicants need to address ethic issues concerning AI in the “Ethics issues table” as well.

#### 8.2.1. Environmental & Social and Ethics Screening Process (Step-by-Step)

##### **Step 1.** Applicant prepares necessary documentation.

Applicant shall be responsible to prepare the required documentation and confirmation that all permits necessary for the proposed sub-projects have been obtained from responsible authorities as prescribed by appropriate local legislation and in line with the World Bank procedures, as described in this document. Within the application process, each applicant needs to provide the following data and documents:

- Completed and filled Environmental and Social Screening Questionnaire (Annex 02) and Horizon Europe Ethic Issues Questionnaire (Annex 01C)
- License to conduct medical research, as relevant for entities doing this kind of work, in line with adequate provisions of Animal Welfare Law issued by the MAFWM, Veterinarian Directorate<sup>39</sup>
- Written statement made under material and criminal responsibility that the Applicant will comply with all the provisions of Law on labor and protection at work (Annex 05 to this document)

PIU E&S and Ethics experts will assist and guide applicants to develop ESMP/ESMP checklists, based on the already prepared MASTER EMSP checklist and inputs (sub-projects details) received through the application form. In case some necessary information is lacking to guide the preparation of the relevant E&S instruments, the PIU specialists may consult the applicant before finalizing documents.

#### STEP 2. SCREENING AND RISK CLASSIFICATION BY THE PIU

NITRA/PIU will carry out screening of each of the sub-projects qualified for second stage of evaluation, based on the Environmental and Social screening Questionnaire (Annex 02) and Ethics issues Questionnaire provided by the Applicant (Annex 01C), as well as the related AI CL and based on the follow up information of subproject details received from applicants where necessary. In the case of “YES” claims, the PIU may ask for inspection of documentation or other material evidence from the applicant.

After reviewing the screening ENVIRONMENTAL AND SOCIAL SCREENING Checklist and Ethic Self-assessment questionnaire, sub-project risk will be classified in one of the following categories:

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<sup>39</sup> Article 34 Of Animal Welfare Law, accesible at [https://www.paragraf.rs/propisi/zakon\\_o\\_dobrobity\\_zivotinja.html](https://www.paragraf.rs/propisi/zakon_o_dobrobity_zivotinja.html)

Category	Risk Level	Decision
1	<b>Low risk</b> project (with negligible environmental, social and ethic impacts for which an environmental impact assessment is not necessary)	<b>Eligible</b> for financing. No additional environmental and social assessment necessary
2	<b>Moderate risk</b> project (with impacts that can be easily identified and for which standard preventive and/or corrective measures can be prescribed without an environmental, social and ethic impact assessment)	<b>Eligible</b> for financing. It is necessary for Applicant to develop ESMP CL.
3	<b>Substantial risk</b> project (with potential and very significant or irrevocable environmental and social impacts, whose size is difficult to determine in the project identification phase)	<p><b>Eligible</b> for financing. Applicant is required to obtain Opinion from the competent authority responsible for environmental protection (in accordance with the Law on EIA and Decree on establishing the List of Projects for which the Impact Assessment is mandatory (“Official Gazette of RS” No. 114/08),</p> <p>In case the EIA is not required, the project is eligible for financing. It is necessary for Applicant to develop ESMP that would require public consultations.</p> <p>In case the EIA is required, the project is not eligible for financing.</p>
4	<b>High risk</b> project (or enterprises involved in manufacturing or use of hazardous or illegal substances).	<b>Not eligible</b> for financing

E&S screening and ethics screening are conducted separately but at the same time. However, the report on the screening will include both E&S and ethic results of the screening.

Environmental, social and ethics screening is conducted by the PIU for sub-projects qualified for second stage of evaluation (pre-selected projects/shortlisted projects). The screening process must be finished before any agreements are signed for the awarded sub-projects. The PIU reserves the right to assign a different (higher) category based on the information received beyond the yes/no evaluation, and also reserves the right to increase the project risk category following further assessment and consultations with the World Bank team.

The PIU determines sub-project category depending on its type, location, sensitivity and scope, nature and intensity of environmental and social risks and impacts.

As the output of screening phase, PIU /ESS and ethics experts will make and sign Screening Categorization List of screened subprojects. The results of the screening may constitute the following:

1. Approved without additional requirements.
2. Approved with obligatory application of ESMP Checklist and/or Ethic Checklist/ AI ES Check List/AI Ethic Cl.
3. Approved with obligatory application of ESMP.
4. Not approved.

Screening Categorization List should be shared with the WB team for final approval. All subprojects categorized by the PIU ES and Ethics experts as low risk will not require further detailed background info. However, these subprojects may be randomly selected for post review to ensure the risk categorization has been adequately assigned.



**Step 3** The PIU approval of ESMP/ESMP Checklist

The PIU ES expert will provide support and guidance to the applicants while preparing ESMP/ESMP Checklist, based on the results from Step 2 above mentioned. The ESMP/ESMP checklists shall be subject to approval by PIU/ES experts and final approval of the WB. In the case there is no ESMP or ESMP checklist prepared for the moderate or substantial risk sub-project, it would not be eligible for financing.

For the subprojects where the ESMP is required public disclosure of the document and consultations are mandatory.

For the subprojects where the ESMP checklist is required there is no need for public consultation on the subject matter.

ESMP template is provided in Annex 06. Additionally, a sample of filled out ESMP is provided in Annex 07.

ESMP Checklist template is provided in Annex 08.

PIU would include in each sub-project financing agreement, the Applicant's obligation to comply with the requirements specified in the ESMP or ESMP Checklist. The Applicant would be required to invest all efforts to ensure sub-project implementation in environmentally and socially acceptable manner. PIU/ES/Ethic experts will conduct monitoring visits to ensure ESMP/ESMP Checklist implementation. Environmental and social/ethics monitoring online, or onsite visit will be organized by SF/IF in the appropriate phase of project implementation. In addition, ad hoc monitoring visits will be performed for low risks subprojects as well. ESS monitoring template is provided in Annex 18. NOTE: If Applicant's research includes ethical concerns or involves significant or complex ethical issues, if needed, PIU will engage an ethics adviser/advisory entity such as the Ethical Commission for the Protection of the Welfare of Experimental Animals and the Ethical Council for the Welfare of Experimental Animals<sup>40</sup>. An ethics expert can support applicants to deal with ethical issues and put in place the procedures to handle them appropriately.

### **8.3. Environmental and Social Management Plans**

The ESMP is detailed plan that outlines specific measures and actions to manage environmental and social impacts and it is required for substantial risk projects and needs to be disclosed and publicly discussed, while the ESMP-Checklist is a tool that provides guidance on implementing the requirements of the ESS and does not require public consultations. The ESMP-Checklist is used for moderate risk projects as a supplementary aid to ensure that the project is in compliance with the ESSs.

Template of an ESMP document - part I, II & III (Table Mitigation Plan, Table Monitoring Plan and Public consultations information) is enclosed as Annex 07 to this ESMF document.

Sample of a filled-out ESMP document according to the scientific project- part I & II is enclosed as Annex 07 to this ESMF document.

Depending on screening results and assigned environmental category, recommended contents of ESMP document is as follows:

- Executive Summary
- Project description
- Policy, legal and administrative framework
- Baseline conditions
- Summary of predicted adverse environmental and social impacts related to subproject;
- Description of mitigation measures and implementation plan
- Description of monitoring activities and plan
- Institutional arrangements and reporting procedures
- Stakeholder engagement – information disclosure, public consultations and participation

**8.3.1. Disclosure and Public Consultations on ESMP document**

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<sup>40</sup> See Animal Welfare Law, (“Official Gazette of RS” No. 41/09)

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For all projects that would require an ESMP should be organized local public consultations. For that purpose, it is necessary to disclose in advance the ESMP document (at least for a week) in on the Applicant's website. Placing notification in the local media is not necessary unless required by PIU. During the consultations, the subproject applicants will register all comments and suggestions on improving the ESMP documents and will prepare relevant reports to be included in the final version of the ESMP document. Public consultations can be organized virtually with receiving relevant questions/proposals on-line and taking them into consideration while finalizing the ESMPs.

#### **8.4. ESMP Checklist /Ethic Checklist / AI ESMP CL/AI ETHIC CL**

ESMP Checklist needs to be prepared for moderate risk sub-projects.

ESMP Checklist document includes following parts:

- General Project and Site Information
- Environmental and Social Impacts Screening
- Mitigation Measures
- Monitoring Plan

Template of ESMP Checklist is provided in Annex 08. The ESMP Checklist provides is designed to be user-friendly and compatible with WB ES requirements and national laws. The checklist format attempts to identify potential risks and suggests relevant mitigation measures covering various areas (e.g., OHS, cultural heritage, waste management, life and fire safety etc.) ES experts provide support and guidance to applicants while preparing ESMP/ESMP Checklist and final approval of these documents.

Ethic Checklist needs to be prepared for moderate risk projects required by ethic expert. Template of Ethic Checklist is provided in Anex 08-A.

AI ESMP CL needs to be prepared for AI ES moderate risk projects required by ES expert. Template of AI ES and Ethics Checklist is provided in Anex 08B and Annex 8C.

Abovementioned AI annexes are developed by ES and Ethics expert based on the currently knowledge and international practice and national regulations (mostly EU AI document).

#### **8.5. Monitoring and Reporting**

PIU together with the IF and SF shall monitor implementation of this ESMF, both at overall Project level and individual sub-projects level. Within its usual monitoring activities, PIU shall perform monitoring (including on-site or online monitoring, as needed) to ensure that Applicants comply with their grant agreement obligations.

Applicant's labor management compliance with national legislation on labor and safety at work shall be monitored based on brief Report on Compliance with Legal Obligations Related to Labor, which shall be submitted on semi-annual basis by the Applicant to PIU.

PIU through its Environmental, Social and Ethics Experts will also monitor the project beneficiaries' adherence to the ESMP/ESMP Checklist/ Ethics Checklist during the implementation of the sub-project, and will also perform environmental visits, where applicable. As part of regular monitoring activities of the IF and SF, the PIU/SF/IF team will check that the sub-project beneficiary is conducting all environment/social/ethics related actions and reporting in accordance with the ESMP/ESMP Checklist. Fulfillment of these requirements will be confirmed by Environmental, Social and Ethics Experts. Template of ES Monitoring report is provided in Annex 17.

In order to ensure ethical eligible research activities under the national legal framework and monitoring of ethical issues during project implementation, the SF developed and made public the separate Ethics Act (in the form of a guidelines) which will outline the procedures applicable to all RDIs in the country. The SF's administration will monitor the formal compliance of the ethical procedures (existence of approvals, etc.), together with a PIU ethic expert). In order to clarify what is needed in terms of ethics paperwork requirements and to keep it for future monitoring processes, interested applicants are guided with this document throughout the application process on ethics aspects. Compliance of procedures for research activities, advisory and policy support provided to SF and RDIs with WB ESS standards will be evaluated with the Bank's ESH guidelines by mainstreaming into the Environmental and Social Screening tool. The Ethics Check is conducted on the basis of the information provided by the concerned beneficiaries, who may be invited to further elaborate ethical issues and prove alignment of research procedures with national ethical legislation and Ethics EUROPE Online Manual provided by SF. On site or online visits will also be organized by SF staff for projects with ethical issues.

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In case of substantial breach of ethical principles, research integrity or relevant legislation, the SF can carry out an Ethics Audit following the provisions and procedures laid down in the grant agreement.

The Checks and Audits can result in an amendment of the grant agreement. In severe cases, it can lead, upon the decision of the SF, to a reduction of the grant, its termination or any other appropriate measures, in accordance with the provisions of the grant agreement.

The potential impacts and recommended mitigation measures PIEs have many years of experience in realization of public calls through supporting and monitoring of research projects, inter alia, in the field of environmental protection, where the application of research results can improve the environmental impact. The potential impacts and recommended mitigation measures are described below as well as a subproject characteristic impacts and mitigation measures.

Particularly, PIU shall monitor:

- Number of received and approved applications under Project component 1 and 2;
- Number of collaborative applied research projects (Number)
- Number of scientific publications in top 10 percent of internationally recognized journals (Number)
- External investment generated by participating companies (US\$) (Number)
- Number of new or improved innovative products or services introduced to the market (Number)
- Number of Science Fund programs in operation (Number)
- Number of grant awards by SF (Number)
- Percent of which have women principal investigators (Number)
- Number of SF grants awards for climate change issues (Number)
- Amount of grant awards by SF (US\$ million) (Number)
- Amount of international funds attracted by SF supported projects (in millions of USD) (Number)
- Number of publications supported by SF programs (Number)
- Number of collaborative projects supported by SF (Number)
- Number of SF staff trained (Number)
- Subcomponent 1.2. RDI Reforms
- Establishment of Institutional Funding of SROs (Text)
- Number of internal assessment of RDIs (Number)
- Number of external assessments of RDIs (Number)
- Number of RDIs executing transformation plans (Number)
- Number of collaborations between participating RDIs and private sector/HEI/international entities (Number)
- Subcomponent 1.3. Serbian Diaspora Facility
- Number of Diaspora participating in the program (Number)
- Number of Serbia researchers participating in the program (Number)
- Percent of which are women (Number)
- Number of joint publications by local and Diaspora researchers (Number)
- Component 2. Enterprise Acceleration
- Number of enterprises completing acceleration program (Number)
- Percentage of which have at least one woman founder (Number)
- Number of accelerated enterprises achieving at least 10% annual growth one year after the program (Number)
- Number of received complaints (see Chapter 6.8 of the Project Grievance Mechanism);
- Regular submission of Annual Reports on Implementation of Activities and Spending.

PIU shall establish and maintain records on information and engagement of all stakeholders, which records would as a minimum contain the following information:

- List of disclosed relevant documentation,
- Summary of received comments and public opinion,
- Summary of how general public comments and opinion are addressed;
- Date and place of each public consultation with specified purpose of the consultation, minutes, number and list of participants,
- Issues to be addressed in the next period,
- Form of engagement and communication (e.g. written communication, public consultations, extraordinary communication as a result of occurred changes) specifying its purpose (e.g. to inform stakeholders on certain change in the Project),
- Number of stakeholders' complaints related to the communication (with gender breakdown) and number of complaints which resulted with positive outcome,

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- Number of received and approved applications (broken down by SME and intermediary owner/manager gender),
- Number received and addressed complaints and grievance redressing timeframe,

Number of projects requiring a pre-approval from ethical board and % of projects that required approval that are compliant with ethics requirements.

PIU would report on a regular basis to the World Bank on sub-projects screening, approval and monitoring results.

**ES monitoring of AI related issues within project**

It should be noted that ES monitoring of AI within the science and innovation projects, in now days, is pioneering (in initial phase) work globally and in Serbia. Detailed screening procedure and risk management for AI will be outlined in the POM. Qualified AI risk specialist will lead these activities.

Possible indicators to monitor ES concerns related to AI issues in project, include:

a. for carbon footprint:

- identification of source of electric energy (from fossil fuels and/or renewable energy; by bringing the computation to where renewable/green energy is more abundant, or scheduling computation for times of day when renewable energy is more available<sup>41</sup>);
- identification of use of electric energy (to monitor global electricity demand of data center in TWh<sup>42</sup>, for example; advice is to include data for the year before project start)
- keeping an eye on the emissions level (as example, there are some available carbon footprint / sustainability calculators<sup>43</sup>). If possible and appropriate, in order to “picture” model emissions (in g of CO<sub>2</sub>), within the project, keep record on tasks<sup>44</sup> (in appropriate measure unit): text classification, token classification, extractive QA, masked language modelling, image classification, multitask text classification, object detection, multitask extractive QA, text generation, summarization, image captioning, multitask summarization and image generation.

b. for water consumption and management:

- evidence on water management, in particular info on use of the new cooling methods if applicable<sup>45</sup> ;
- quantity of water used for cooling of computers/electricity used for air conditioning (in order to cool computers)

c) for waste management:

- evidence on waste management standards and environmentally sound waste management, in particular for electronic waste (quantities of electronic waste produced, how managed)

d) For green procurement practicing - for the organizations and companies that are using and deploying AI technologies, practical industry/legal framework and guidelines that support green procurement of AI technologies would support them in looking for environmentally friendly AI practices.

**e) Social concerns –** address issues not covered by ethic screening and monitoring (like bias- respect for colleagues, research participants, research subjects, diversity, non-discrimination, fairness and prevention of harm; this could include the proper management of information, respect for privacy, confidentiality and intellectual property rights, and proper citation). Alternatively, note that all social issues related the project are covered by parallel ethic screening performed (mandatory if applicable).

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<sup>41</sup> emissions can be reduced by a factor of 30 to 40, compared to using a grid dominated by fossil fuels

<sup>42</sup> according to International Energy Agency (IEA) data centers have the potential to double their energy usage by 2026 and forecasts show AI, cryptocurrency, and data centers consuming nearly 2% of global energy by 2022, set to double by 2026

<sup>43</sup> like the Microsoft Sustainability Calculator designed to help organizations measure and track the carbon footprint of their IT infrastructure and the ML CO<sub>2</sub> Impact calculator, useful tool for measuring the equivalent carbon dioxide generated during the training of machine learning-ML models.

To mention ISO 14067 international standard developed to determine the greenhouse gas emissions produced during each stage in the life cycle of a product

<sup>44</sup> Tasks, as example, are taken from <https://techxplore.com/news/2023-12-ai-image-generation-carbon-footprint.html>

<sup>45</sup> (traditional cooling methods, such as air conditioning, cannot always keep data centers cool enough and, for example, Microsoft researchers are using a special fluid engineered to boil 90 degrees lower than water’s boiling point to cool computer processors reducing a server’s power consumption by 5 to 15 percent)

## 8.6. Record keeping

PIU/ES and Ethics keep electronic record on:

- List of sub-projects after screening with categorization, signed by ES experts, and filled ES Screening Checklist signed by Applicant, and co-signed by ES experts with note on sub-project categorization
- List of the projects with prepared and approved ESMP/ ESMP Checklist, signed by ESSE and ESMP or ESMP Checklist for each subproject in that category, signed by Applicant, and co-signed by ESE with note that ESMP/ESMP Checklist is approved,
- ESS Monitoring Report after each site visit (on-site/remotely), signed by ESSE,
- Other related documents permit, certifications, other documents, keep separately if not attached to above documents.

PIU/Expert for Ethics keep records on ethics related documents.

## 8.7. Labor risk not subject to ESS2

Labor engaged by grant beneficiaries, SMEs, growth scale-up stage companies and alike are not considered project workers and consequently are not subject to ESS2. Labor and working conditions risks related to beneficiary employees are risks related to ESS1. The informal and unpaid work does not dominate the innovation, acceleration etc sector dominates the sector, is a social risk to be addressed through mitigation measures compliant with ESS1. This risk will be mitigated through labor and working conditions commitments signed by grantees/ applicants to be included in the calls for proposal in the form as appended in Annex 09.

# 9. IMPLEMENTATION ARRANGEMENTS

## 9.1. Responsibility for Project implementation

The Ministry of Education, Science and Technological Development (MoESTD) was until October 2022 responsible for overall Project coordination and implementation when NITRA took over as its successor, with specific agencies (Innovation and Science Fund) responsible for the implementation of their respective components. A Project Implementation Unit (PIU) is established NITRA and is responsible for coordination of the project with all project implementing entities. The PIU will be responsible for all project implementation related activities including technical, operational, environmental and social risk management, reporting, monitoring and evaluation, audits, studies, and capacity building, etc. The fiduciary activities related to the procurement and financial management aspects are handled by the Central Fiduciary Unit (CFU) at the Ministry of Finance which is responsible to handle such activities for several Bank financed projects. The CFU will engage additional staff as necessary to handle this responsibility. Establishment of PIU including its policies/resources, responsibilities, as well as the Project Operations Manual (POM) outlining detailed project implementation arrangements including operating, fiduciary and M&E procedures, staffing, responsibilities, resources, etc. will need to be satisfactory to the Bank.

The Science Fund is responsible for the implementation of Component 1.1. Science Fund and Component 1.3. Diaspora Facility and will hire/assign appropriate staff/consultant as required. The SF is a new entity and has no experience with World Bank projects thus will require significant capacity building assistance under the project. The SF has set up a Governing Board and a Scientific Council. It will establish Program Commissions, as and when needed, made up of professional experts which will be responsible for the design and evaluation of R&D projects. The following will be subject to World Bank review and approval:

- o Selection of the SF Governing Board and Programs Commission members.
- o Procedures for the selection and operations of the peer reviewers and selection Commissions for all SF programs.
- o Grant Manuals for all SF programs outlining detailed policies and procedures including evaluation, procurement, environmental, reporting and M&E procedures for grants.

The NITRA is responsible for the implementation of Component 1.2 RDI Reforms. This will include selection of RDIs to participate in the project based on assessments of RDIs. The NITRA is to be also responsible for the approval of RDI transformation plans and monitoring of their implementation; these will be subject to prior review by the World Bank. The SAIGE Project will finance technical assistance to NITRA to undertake these activities as well as for policy and capacity building for the design and implementation of R&D sector reforms, preparation of future R&D and Innovation Strategy, laws, rules and regulations, etc.

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The Innovation Fund is responsible for the implementation of Component 2. Enterprise Acceleration and AI focused program. The Innovation Fund has years of successful experience in managing Bank and EU financed projects. Given that Enterprise Acceleration is a new activity for the Innovation Fund as well as AI focused program, the project will include relevant technical assistance for enhancing IF's capacity to manage this program. Grants Manuals outlining detailed procedures including application, evaluation, monitoring, procurement, environmental, reporting and M&E procedures will be subject to prior review and approval by the World Bank.

## **9.2. Implementation Support**

### **9.2.1. Environmental and Social Expert**

Environmental and Social experts and are responsible for screening sub-projects/grants selected for financing to ensure:

- (1) compliance with the World Bank Group (IFC) exclusion list, and additional project specific biomedicine, biotechnology, bioinformatics, and biodiversity exclusion list (yet to be developed)
- (2) that no sub-projects with major impacts of a Category "High risk" type are supported,
- (3) that sub-projects/grants will not necessitate involuntary land acquisition or any form of resettlement,
- (4) no World Bank Safeguard standards other than ESS1, ESS2, ESS3, ESS4, ESS6, ESS8 and ESS10 are relevant for proposed sub-project. Any activities corresponding to the World Bank Category 3 ("Substantial Risk") Projects will be required to have an Environmental and Social Management Plan (ESMP), and any activities corresponding to the World Bank Category 2 ("Moderate Risk") Projects will be required to have ESMP Checklist in place prior to approval that would identify potential environmental, social and ethics impacts and provide adequate mitigation measures.

In addition, the Environmental and Social Experts are responsible to ensure that any Technical Assistance (TA) outputs supported under the Project are consistent with World Bank Safeguard policies.

Besides ES experts, Ethics expert is engaged throughout Project in order to create conditions that ethics issues are integrated in the financing programs, ensuring that actions taken fully complied with national regulation and international standards of ethics in research.

## **9.3. Training**

PIU prepared an annual training plan which will be agreed with the Bank. It will include information on the title of training, institution that shall provide it, timeline, cost, number, position and names of relevant people to be trained. The training plan shall be updated in agreement with the Bank through the duration of the Project at least annually or as required to reflect the actual project implementation needs.

### **9.3.1. Modes of Training**

A key concept in training programs is to provide training through a combination of formal classroom training and practical on-the job sessions. Technical assistance should be made available to provide training, guidance and advisory support in all aspects of works implementation in order that the key players (environmental as well as technical team) become fully conversant with, and capable of carrying out their respective duties. Training for the various categories of staff needs to be carried out with varying durations and through different approaches, such as on-site and classroom training, workshops, seminars and practical on-the-job training.

### **9.3.2. Workshops**

Intensive refresher courses for periods of one to three days are useful for addressing specific problem areas. Such workshops are organized to supplement on-the-job training for some of the technical and administrative staff. Short workshops can either be arranged through the provision of technical assistance, an in-house training facility, or by contracting other training institutions within the country.

### **9.3.3. Seminars**

Seminars are useful as a means for disseminating data and information, in particular for senior government officials at central and local level, as well as representatives of other government agencies. Seminars can be an effective platform for policy makers, planners and administrators to review the importance of an Environmental and Social Management System. Equally important, this type of seminar is important in

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terms of creating awareness of the potential of utilizing new organizational arrangements, work methods, and involvement of the private sector, beyond the boundaries of a particular program.

Component 3 will cover the incremental costs (staff, equipment, operating costs etc.) of a PIU staff included at least PIU project manager, assistant, project officers, M&E officer, procurement and financial management officers, an ES and other experts required by the Project.

Capacity building measures to PIU as, may be necessary in environmental and social safeguards and annual program planning and can be achieved by:

- Training program for the existing staff.
- Technical Assistance: knowledge sharing and on-the-job training and mentorship.
- Capacity-building activities related to AI, for the staff of IF, SF and AI Institute.
- BIO4 Research Management Capacity Building for the Staff and Researchers.

## 10. STAKEHOLDER ENGAGEMENT AND GRIEVANCE MANAGEMENT

### 10.1. Stakeholder Engagement<sup>46</sup>

The World Bank’s Environmental and Social Standard (ESS) 10 is on “Stakeholder Engagement and Information Disclosure”. The provisions of the Standards are to be read in conjunction with other applicable ESSs. The main principles are related to early stakeholder engagement enabling meaningful consultations with identified stakeholders and maintain a stakeholder engagement log as a documented record.

The Republic of Serbia stakeholder and citizen engagement commitments do not reside under a single self-standing law or regulation. However, the recognition of importance of stakeholder and citizen engagement is embedded in the legal system and clearly recognized by the mandatory procedures provided by individual laws.

Stakeholder engagement activities relevant to the project as well as those conducted during project preparation and planned throughout the life of the Project have been summarized in a standalone Stakeholder Engagement Plan (SEP).

The SAIGE SEP which will also apply in its entirety to SAIGE Additional Financing has been updated in June 2020 to reflect changes which have occurred caused by the global COVID-19 pandemic and in July 2020 and in February 2023 to reflect the approved additional EU IPA financing for SAIGE activities.

#### 10.1.1. Preliminary consultations on the ESMF for SAIGE as a Parent project

The MoESTD Environmental Consultant conducted interviews with the key stakeholders. MoESTD representatives were notified of the meetings and invited to attend.

The first key stakeholder’s consultations on the preparation of the ESMF were held in Belgrade, on September 23rd, 2019, within the WB premises.

Second consultations were held on October 04<sup>th</sup>, 2019, in Belgrade in the MoESTD premises in Njegoseva 12, Belgrade.

Stakeholder meetings participants:

- Administrative authorities,
- World Bank,
- Organizations supporting entrepreneurship,
- R&D Institutions (the Innovation Fund, The Science Fund, Hygiene Institute, Institute for medical plants, Institute for nuclear research). Brief record on public consultations is enclosed as annex 16 to this ESMP document,
- Private companies beneficiaries of on-going innovation programs (3 companies).

The purpose of these meetings was to agree on the project design and monitoring indicators with administrative authorities, as well as to investigate interest of the organizations which provide support to entrepreneurs and of private companies for financing mechanisms envisaged by the project and to analyze their capacities and needs. The purpose of the meetings was to gauge the view of private companies already using different types of R&D and innovation funding and to incorporate lessons learned into the design.

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<sup>46</sup> For more detail information, please see in the SAIGE SEP document.

A list of participants is enclosed within the Annex 15 of this ESMF document.

10.1.2. Roles and Responsibilities

Stakeholder engagement will be coordinated and led by the Social specialist in NITRA/ PIU. The PIU will closely coordinate with other key stakeholders – The Innovation Fund and the Science Fund. The roles and responsibilities of these actors/stakeholders are summarized in the Table below.

Figure 1. Responsibilities of key actors/stakeholders in Stakeholder engagement

Actor/Stakeholder	Responsibilities
NITRA/PIU	<ul style="list-style-type: none"> <li>• Plan, implement and monitor stakeholder engagement activities in line with SEP;</li> <li>• Lead and coordinate stakeholder engagement activities;</li> <li>• Collect stakeholder feedback through regional workshops, satisfaction surveys and bilateral meetings,</li> <li>• Manage the grievance mechanism at Project level, communicate grievances regularly through monitoring reports,</li> <li>• Manage national GM database and submit quarterly reports on the substance and quantity of grievances; and</li> <li>• Supervise/monitor programs and engage with final beneficiaries</li> <li>• Launch of RDI Reform component (to launch the Call for Expression of interest for RDIs to participate in this component)</li> <li>• Training and information workshops (while the Call for Eol is open)</li> <li>• Other promotional events</li> <li>• Questionnaires for beneficiaries</li> </ul>
Innovation Fund	<ul style="list-style-type: none"> <li>• Facilitate information requests and grievances by transfer to the PIU</li> <li>• Discloses all documents, distributes outreach material as needed</li> <li>• Launch event</li> <li>• Information sessions</li> <li>• Residency week and demo day</li> <li>• Networking sessions</li> <li>• Matchmaking sessions</li> <li>• Awardee ceremonies</li> <li>• Other promotional events</li> <li>• Annual applicant surveys</li> <li>• Annual stakeholder workshop on the progress of acceleration program</li> </ul>
Science Fund	<ul style="list-style-type: none"> <li>• Facilitate information requests and grievances by transfer to the PIU</li> <li>• Discloses all documents, distributes outreach material as needed</li> <li>• Launch of call and promotional events</li> <li>• Training workshops (weekly “open doors” for potential applicants, webinars on targeted topics and for targeted audiences outside of Belgrade)</li> <li>• Responses to frequently asked questions published on SF website</li> <li>• Award ceremony</li> <li>• Other promotional events</li> <li>• Annual questionnaires on research programs</li> </ul>

Documents and Information to Be Disclosed

All relevant Project information will be disclosed in local and English language at the website of the NITRA the Innovation Fund and Science Fund respectively. The information posted at these web sites would ensure equal access for all stakeholder groups. Each disclosed information shall contain information on the person responsible of information disclosure, as well as the tentative date of the next information disclosure.

Particularly, the information on the following documents shall be publicly disclosed:

- ESMF, SEP, LMP, ESCP and ESMP/ESMP CL, in compliance with Personal Data Protection law and without possible intellectual properties related innovation/research information



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- Public Calls for funding, with explanation of funds allocation criteria, application terms and conditions and application selection and approval process, including envisaged timeline.
- Public Calls for any action from the Projects Procurement Plan, namely for selection of consultants and providers of services, good and equipment including IT.
- Details on grievance mechanisms, with clear information on how complaints or comments can be submitted and how the mechanism functions (process and deadlines),
- Contact details for responsible persons in PIU,
- Notification on planned disclosure of new information (planned disclosure time),
- Minutes from public consultations and meetings

PIU shall update the information disclosed on NITRA website on a regular basis. All information disclosed should be concise, clear and easily accessible by different types of vulnerable groups.

10.1.3. Documentation and Records

- PIU shall establish and maintain records on engagement with all stakeholders, which would contain as a minimum the following information:
- List of disclosed relevant documentation,
- Summary of received comments and public opinion,
- Summary of how general public comments and opinion are addressed;
- Date and place of each public consultation with specified purpose of the consultation, minutes, number and list of participants,
- Issues to be addressed in the next period,
- Number of stakeholders' complaints related to the communication (with gender breakdown) and number of complaints which resulted with positive outcome,
- Number of received and approved applications (broken down by SME and intermediary owner/manager gender).

**10.2. IF existing Grievance Mechanism (GM):**

The IF has an operating GM in place. All complaints are recorded and processed by the IF staff using the established procedures during the piloting phase of IPA 2011. Formal complaints about the outcome of the evaluation process (or other grievances) is recorded and summarized in the IF's "Complaint Monitoring Tool". The Tool contains info regarding the complaint(s) such as: Project ID, Nature of Complaint, Receipt Date, Complain Date, Detailed Description of the Complaint, Action Taken, Outcome, Status: Pending / Closed. Complaints are submitted by way of a formal letter (via email), written in English, up to 500 words. All complaints are responded to within 8 days of receipt. All complaints are processed regularly, and where applicable, an independent Investment Commission is contacted for assistance. The Applicants' right to file a fact-based objection to the outcome of the Application status are described in Program manuals (under Project Evaluation and Financing Decision): [http://www.inovacionifond.rs/cms/files//program-katapult/Program\\_manual\\_v2.3\\_ENG.pdf](http://www.inovacionifond.rs/cms/files//program-katapult/Program_manual_v2.3_ENG.pdf)

The IF GM is applied to Project Component 22 and can be used by any person who believes that any of his/her rights are or might be violated by the sub-projects financed through the matching grant scheme (acceleration program), including Applicant's workers.

IF Program Managers are responsible for ensuring that each Application receives an objective and fair initial peer review, that the process is transparent, that all applications are treated with equal opportunity and that all applicable laws, regulations, and policies are followed.

SF Grievance Mechanism has been set up for the Science Fund supported by ES expert under PIU SAIGE project.

**10.3. World Bank Grievance Redress System**

Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit [www.inspectionpanel.org](http://www.inspectionpanel.org).

### **Previous SAIGE stakeholder consultations on WB ESF documents (ESMF, SEP, LMP and ESCP)**

Starting from 22 October 2019, MoESTD disclosed Draft ESMF, document (in line with associated WB documentation, SEP and ESCP) on its web site and announced invitation for Public Consultations for the public, bodies and organizations interested in ESMF document for the Project. Same announcement is published in daily newspaper “Blic” on 25 October 2019. Public and other interested parties and organizations were invited to participate in process of public consultation on draft ESMF document.

Draft ESMF document and Call for Public Consultations were also placed on:

- on the web site of the Science Fund: <http://fondznanauku.gov.rs/wp-content/uploads/2020/06/Environmental-and-Social-Management-Framework.pdf>
- on the web site of the Innovation Fund:
- <http://www.inovacionifond.rs/cms/files//program-katapult/esmf-new-saige-2022.pdf>

On 01 November 2019, at 11:00 AM (local time), public consultations and presentation of the Draft ESMF document were organized at the premises of the Ministry of Education, Science and Technological Development - Institute of Chemistry, Technology and Metallurgy, Njegoseva 12, 11000 Belgrade, conference hall at the second floor. During the public consultations, there were comments and remarks related to issues presented in the ESMF, but no new environmentally or socially related issues were raised.

A full report on public consultations is enclosed as Annex 15 to this ESMF document.

## **ANNEX 01: EXCLUSION LIST OF PROJECT / ACTIVITIES**

Each project which falls under list 01A or list 01B will not be eligible for financing under the Project.

### **ANNEX 01A IFC EXCLUSION LIST**

The IFC Exclusion List defines the types of projects that IFC **does not** finance.

IFC does not finance the following projects:

- Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCB's, wildlife or products regulated under CITES.
- Production or trade in weapons and munitions.<sup>47</sup>
- Production or trade in alcoholic beverages (excluding beer and wine).<sup>1</sup>
- Production or trade in tobacco.<sup>1</sup>
- Gambling, casinos and equivalent enterprises.<sup>1</sup>
- Production or trade in radioactive materials. This does not apply to the purchase of medical equipment, quality control (measurement) equipment and any equipment where IFC considers the radioactive source to be trivial and/or adequately shielded.
- Production or trade in unbonded asbestos fibers. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.
- Drift net fishing in the marine environment using nets in excess of 2.5 km. in length.

A reasonableness test will be applied when the activities of the project company would have a significant development impact, but circumstances of the country require adjustment to the Exclusion List.

**All financial intermediaries (FIs)**, except those engaged in activities specified below\*, must apply the following exclusions, in addition to IFC's Exclusion List:

- Production or activities involving harmful or exploitative forms of forced labor<sup>48</sup>/harmful child labor.<sup>493</sup>
- Commercial logging operations for use in primary tropical moist forest.
- Production or trade in wood or other forestry products other than from sustainably managed forests.

\* When investing in **microfinance** activities, FIs will apply the following items in addition to the IFC Exclusion List:

- Production or activities involving harmful or exploitative forms of forced labor<sup>2</sup>/harmful child labor.<sup>3</sup>
- Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals. Hazardous chemicals include gasoline, kerosene, and other petroleum products.
- Production or activities that impinge on the lands owned, or claimed under adjudication, by Indigenous Peoples, without full documented consent of such peoples.

### **ANNEX 01B IFC EXCLUSION LIST Prohibition of AI practices (by EU Artificial Intelligence Act, 2023)**

AI systems posing an unacceptable level of risk to personal safety will be prohibited. The following list include bans on intrusive and discriminatory uses of AI, such as:

- systems that use subliminal techniques or deliberately manipulative or deceptive techniques, with the aim of substantially distorting a person's or a group of persons' behaviours by appreciably impairing the person's ability to make an informed decision, thereby causing the person to take a decision that that person would not have otherwise taken in a manner that causes or is likely to cause that person, another person or group of persons significant harm;

- systems which exploit the possible vulnerabilities of a given person or group of persons, in particular known or predictable personality traits or the social or economic situation, age, physical or mental capacity of that person or group of persons, with the aim or effect of substantially altering that person's behaviour;

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<sup>47</sup> This does not apply to project sponsors who are not substantially involved in these activities. "Not substantially involved" means that the activity concerned is ancillary to a project sponsor's primary operations.

<sup>48</sup> Forced labor means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

<sup>49</sup> Harmful child labor means the employment of children that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development.

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- placing on the market, putting into service or use of biometric categorisation systems that categorise natural persons according to sensitive or protected attributes (e.g., gender, race, ethnic origin, citizenship status, religion, political orientation), or characteristics or based on the inference of those attributes or characteristics;
- systems used for social rating (classifying people according to their social behaviour or personality characteristics);
- the use of 'real-time' remote biometric identification systems in publicly accessible areas;
- predictive policing systems (based on profiling, location or past criminal behaviour);
- emotion recognition systems in law enforcement, border management, the workplace, and educational institutions; and
- untargeted scraping of facial images from the internet or CCTV footage to create facial recognition databases (violating human rights and right to privacy).
- emotion recognition systems used in law enforcement, border management, the workplace and educational establishments;
- 'post' remote biometric identification systems, with the only exception of law enforcement for the prosecution of serious crimes and only after judicial authorisation.

The following have been added to the list of high-risk systems:

- systems intended to be used as security components in the management and operation of the supply of water, gas, heating, electricity and critical digital infrastructures;
- systems intended to be used to assess the appropriate level of education of an individual and which substantially influence the level of education and vocational training from which that individual will benefit or to which he or she will have access;
- systems intended to be used to monitor and detect prohibited behaviour in students during tests in the context of, or within, education and training institutions;
- systems intended to be used to make or substantially influence decisions on the eligibility of natural persons for health and life insurance;
- systems intended to evaluate and classify emergency calls from individuals;
- AI systems intended to be used by public authorities in the management of migration, asylum and border controls to process, control and verify data for the purpose of detecting, recognising and identifying natural persons;
- systems intended to be used to influence the outcome of an election or referendum or the voting behaviour of individuals in the exercise of their vote in elections or referendums;
- AI systems used in recommender systems operated by major social media platforms.

**Annex 01C: HORIZON EUROPE Ethics Issue Questionnaire**

Ethics issues checklist” that must be filled in with yes/no.

Applicants should always describe any relevant ethical aspects in their research plans. If a research permit or a statement by an ethics Commission is required for the implementation of the project, applicants shall provide information on the permits or permit proposals.

Ethics issues checklist

1 HUMAN EMBRYONIC STEM CELLS AND HUMAN EMBRYOS		YES/NO		Information to be provided in the proposal	Documents to be provided/kept on file
Does your activity involve Human Embryonic Stem Cells (hESCs)?		<input type="checkbox"/>	<input type="checkbox"/>		
If YES:	Will they be directly derived from embryos within this project?	<input type="checkbox"/>	<input type="checkbox"/>	Activity not eligible for funding	Activity not eligible for funding
	Are they previously established cell lines? Are the cell lines registered in the European registry for human embryonic stem cell lines?	<input type="checkbox"/>	<input type="checkbox"/>	1) Origin and line of cells. 2) Details on licensing and control measures by the competent authorities of the Member States involved 3) Declaration confirming that the 6 specific conditions ( <i>see below</i> ) for activities involving human embryonic stem cells are met.	1) Copies of ethics approval. 2) Declaration that the human embryonic stem cell lines used in the project are registered in the European hESC registry ( <a href="http://www.hpscereg.eu">www.hpscereg.eu</a> ).
Does your activity involve the use of human embryos?		<input type="checkbox"/>	<input type="checkbox"/>	1) Origin of embryos. 2) Details of the recruitment, inclusion and exclusion criteria and informed consent procedures. 3) Confirmation that informed consent has been obtained.	Copies of ethics approval. Informed consent forms and information sheets.
If YES:	Will the activity lead to their destruction?	<input type="checkbox"/>	<input type="checkbox"/>	Activity not eligible for funding	Activity not eligible for funding
Does your activity involve the use of other human embryonic or foetal tissues / cells?		<input type="checkbox"/>	<input type="checkbox"/>	<i>See section 3 below</i>	
2 HUMANS		YES/ NO		Information to be provided in the proposal	Documents to be kept on file and provided on request
Does your activity involve human participants?		<input type="checkbox"/>	<input type="checkbox"/>	Please provide information in one of the subcategories below	
If YES:	Are they volunteers?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on recruitment, inclusion and exclusion criteria and informed consent procedures. 2) Details on unexpected findings policy.	1) Copies of ethics approvals (if required by law or practice). 2) Informed consent forms and information sheets.

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	Are they healthy volunteers for medical studies?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details of the recruitment, inclusion and exclusion criteria and informed consent procedures. 2) Details on incidental findings policy.	1) Copies of ethics approvals. 2) Informed consent forms and information sheets.
	Are they patients for medical studies?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the disease/condition /disability 2) Details on the recruitment, inclusion and exclusion criteria and informed consent procedures. 3) Details on incidental findings policy	1) Copies of ethics approvals. 2) Informed consent forms and information sheets.
	Are they potentially vulnerable individuals or groups?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the type of vulnerability. 2) Details of the recruitment, inclusion and exclusion criteria and informed consent procedures. 3) Procedures to ensure participants are not subject to any form of coercion and undue inducement.	1) Copies of ethics approvals (if required by law or practice). 2) Informed consent forms and information sheets.
	Are they children/minors?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the age range. 2) Details on assent procedures and parental consent for children and other minors. 3) Procedures to ensure the welfare of the child or other minors 4) Justification for involving children/minors.	1) Copies of ethics approvals (if required by law or practice). 2) Informed consent forms and information sheets.
	Are there other persons unable to give informed consent?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the procedures for obtaining consent from the guardian/legal representative. 2) Procedures to ensure participants are not subject to any form of coercion and undue inducement.	1) Copies of ethics approvals. 2) Informed consent forms and information sheets.
	Does your activity involve interventions (physical also including imaging technology, behavioral treatments, tracking and tracing, etc.) on the study participants?	<input type="checkbox"/>	<input type="checkbox"/>		
If YES:	Does it involve invasive techniques (e.g. collection of human cells or tissues, surgical or medical interventions, invasive studies on the brain, TMS etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	1) Risk assessment for each technique and overall.	1) Copies of ethics approvals.
	Does it involve collection of biological samples?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the type of samples to be collected. 2) Procedure for the collection of biological	1) Copies of ethics approvals.

				samples.	
Does your activity involve conducting a clinical study as defined by the Clinical Trial Regulation 536/2014 (using pharmaceuticals, biologicals, radiopharmaceuticals, or advanced therapy medicinal products)? (n/for DEP)		<input type="checkbox"/>	<input type="checkbox"/>		
If YES	Is it a clinical trial?	<input type="checkbox"/>	<input type="checkbox"/>	<ol style="list-style-type: none"> <li>1) Details on the medical products that are being used and risk assessment.</li> <li>2) Details on the disease/condition /disability of the participants</li> <li>3) Details of the recruitment, inclusion and exclusion criteria and informed consent procedures.</li> <li>4) Details on the incidental findings policy</li> </ol>	<ol style="list-style-type: none"> <li>1) Registration in the EU database (when applicable).</li> <li>2) Copy of authorisation/ethics approval to conduct clinical trial.</li> <li>3) Copy of the insurance and liability details.</li> </ol>
	Is it a low-intervention clinical trial?	<input type="checkbox"/>	<input type="checkbox"/>	<ol style="list-style-type: none"> <li>1) Details on the medical products that are being used and risk assessment.</li> <li>2) Details on the disease/condition /disability of the participants</li> <li>3) Details of the recruitment, inclusion and exclusion criteria and informed consent procedures.</li> <li>4) Details on the incidental findings policy</li> </ol>	<ol style="list-style-type: none"> <li>1) Registration in the EU database (when applicable).</li> <li>2) Copy of authorisation/ethics approval to conduct clinical trial.</li> <li>3) Copy of the insurance and liability details.</li> </ol>
<b>3 HUMAN CELLS / TISSUES</b>		<b>YES/ NO</b>		<b>Information to be provided in the proposal</b>	<b>Documents to be provided on request</b>
Does your activity involve the use of human cells or tissues (other than those covered by <u>section 1</u> )?		<input type="checkbox"/>	<input type="checkbox"/>	Please provide information in one of the subcategories below.	
If YES:	Are they human embryonic or foetal cells or tissues?	<input type="checkbox"/>	<input type="checkbox"/>	<ol style="list-style-type: none"> <li>1) Origin of human foetal tissues/cells.</li> <li>2) Details on informed consent procedures.</li> <li>3) Confirmation that the informed consent has been obtained.</li> <li>4) If applicable, details on the induced human pluripotent cell lines.</li> </ol>	<ol style="list-style-type: none"> <li>1) Copies of ethics approvals.</li> <li>2) Informed consent forms and information Sheets.</li> <li>3) If applicable, registration certificates of the cell lines and project from the hPSCreg.</li> </ol>
	Are they available commercially?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on cell types and provider (company or other).	1) Copies of import licences (if relevant).

	<p>Are they obtained within this project?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Details on cell types including the source of the material, the amount to be collected and the procedure for collection.                  2) Details on the duration of storage and what will be done with the material at the end of the activity.                  3) Confirmation that informed consent has been obtained.</p>	<p>1) Copies of ethics approvals (if relevant).                  2) Informed consent forms and information sheets.</p>
	<p>Are they obtained from another project, laboratory or institution?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Details on cell types.                  2) Country where the material is stored.                  3) Details of the legislation under which material is stored.                  4) Details on the duration of storage and what will you do with it at the end of the project?                  5) Name of the laboratory /institution.                  6) Country where the laboratory/institution is located.                  7) Confirm that material is fully anonymized or that consent for secondary use has been obtained.</p>	<p>1) Authorisation by primary owner of cells/tissues (including references to ethics approvals)                  2) Copies of import licences (if relevant).                  3) Statement from the primary laboratory/institution that informed consent has been obtained.</p>
	<p>Are they obtained from a biobank?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Details on cell types                  2) Details on the biobank (name and country where it is located)                  3) Details of the legislation under which material is stored.                  4) Confirmation that material is fully anonymised or that consent for secondary use has been obtained.</p>	<p>1) Copies of import licenses (if relevant).                  2) Statement of biobank that informed consent has been obtained.</p>
<p>4 PROTECTION OF PERSONAL DATA</p>		<p>YES/NO</p>		<p>Information to be provided in the proposal</p>	<p>Documents to be provided on request</p>



Does your activity involve processing personal data?		<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Details of the technical and organisational measures to safeguard the rights and freedoms of the participants/data subjects. These may include.</p> <ul style="list-style-type: none"> <li>- Project specific data protection policy and/or the contact details of the data protection officer (these must be provided to the participants)</li> </ul> <p>The security measures to prevent unauthorised access to personal data</p> <p>2) Anonymisation /pseudonymisation techniques. Details of the informed consent procedures with regard to the data processing (if relevant).</p> <p>3) Explanation as to how all of the processed data is relevant and limited to the purposes of the project ('data minimisation' principle)</p> <p>4) Justification of why personal data will not be anonymised/ pseudonymised (if relevant).</p> <p>5) Details of the data transfers (type of data transferred and country to which data are transferred).</p>	<p>1) Informed consent forms and information sheets (if relevant).</p> <p>2) Data management plan (if relevant).</p> <p>3) Data protection impact assessment (if relevant).</p>
If YES:	Does it involve the processing of special categories of personal data (e.g. sexual lifestyle, ethnicity, genetic, biometric and health data, political opinion, religious or philosophical beliefs)?	<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Justification for the processing of special categories of personal data (if relevant).</p> <p>2) Justification to why the project objectives cannot be reached by processing anonymised/ pseudonymised data (if applicable).</p>	
	If YES Does it involve processing of genetic, biometric or health data?	<input type="checkbox"/>	<input type="checkbox"/>		<p>1) Declaration confirming compliance with the laws of the country where the data were collected.</p>

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	<p>Does it involve profiling, systematic monitoring of individuals, or processing of large scale of special categories of data or intrusive methods of data processing (<i>such as, surveillance, geolocation tracking etc.</i>)?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<ol style="list-style-type: none"> <li>1) Details of the methods used for tracking, surveillance or observation of participants.</li> <li>2) Details of the methods used for profiling.</li> <li>3) Assessment of the ethics risks related to the data processing operations.</li> <li>4) Explanation as to how the rights and freedoms of the participants/data subjects will be safeguarded and harm will be prevented.</li> <li>5) Explanation as to how the data subjects will be informed of the existence of the profiling, its possible consequences and how their fundamental rights will be safeguarded.</li> </ol>	<p>1) Opinion of the data controller on the need for conducting data protection impact assessment under art 35 GDPR. (if relevant).</p>
	<p>Does your activity involve further processing of previously collected personal data (<i>including use of pre-existing data sets or sources, merging existing data sets</i>)?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<ol style="list-style-type: none"> <li>1) Details of the database used or of the source of the data.</li> <li>2) Details of the data processing operations.</li> <li>3) Explanation as to how the rights of the participants/data subjects will be safeguarded.</li> <li>4) Explanation as to how all of the processed data is relevant and limited to the purposes of the project ('data minimisation' principle)</li> <li>5) Justification of why the data will not be anonymised/ pseudonymised (if relevant).</li> </ol>	<ol style="list-style-type: none"> <li>1) Confirmation that the data controller has a lawful basis for the data processing and that the appropriate technical and organisational measures are in place to safeguard the rights of the data subjects</li> <li>2) Permission by the owner/manager of the data sets (<i>e.g. social media databases</i>) (if applicable).</li> <li>3) Informed Consent Forms + Information Sheets + other consent documents (if applicable).</li> </ol>
	<p>Is it planned to export personal data (data transfer) from the EU to non-EU countries? Specify the type of personal data and countries involved</p>	<input type="checkbox"/>	<input type="checkbox"/>	<ol style="list-style-type: none"> <li>1) Details of the types of personal data and countries involved.</li> <li>2) Explanation as to how the rights and freedoms of the participants/data subjects will be safeguarded</li> </ol>	<p>1) Confirmation that data transfers will be made in accordance with Chapter V of the General Data Protection Regulation 2016/679</p>
	<p>Is it planned to import personal data (data transfer) from non-EU countries into the EU or from a non-EU country to another non-EU country? Specify the type of personal data and countries involved</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Details of the types of personal data and countries involved.</p>	<p>1) Confirmation of compliance with the laws of the country in which the data was collected.</p>

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Does your activity involve the processing of personal data related to criminal convictions or offences?		<input type="checkbox"/>	<input type="checkbox"/>	Details on the personal data to be processed and the legal basis for the processing; Risk assessment for data processing operations. Explanation as to how harm will be prevented and the rights of the participants/data subjects will be safeguarded.	1) Opinion of the data controller on the need for conducting data protection impact assessment under art 35 GDPR (if relevant).
<b>5 ANIMALS</b>		<b>YES/NO</b>		<b>Information to be provided in the proposal</b>	<b>Documents to be provided on request</b>
Does your activity involve animals?		<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the numbers of animals to be used, nature of the experiments, procedures and techniques to be used. 2) Details on species and rationale for their use. 3) Details on procedures to ensure animal welfare. 4) Details on implementation of the 3Rs Principle.	1) Copies of all appropriate authorisations for the supply of animals and the project experiments. 2) Copies of training certificates/ personal licences of the staff involved in animal experiments.
If YES:	Are they vertebrates? (n/a for DEP)	<input type="checkbox"/>	<input type="checkbox"/>	Same information as above.	Same documents as above.
	Are they non-human primates (NHP) (e.g. monkeys, chimpanzees, gorillas, etc.)? (n/a for DEP)	<input type="checkbox"/>	<input type="checkbox"/>	Same information as above plus: 1) Justification on why NHPs are the only subjects suitable for achieving your scientific objectives. 2) Details on the purpose of the animal testing. 3) Details on the origin of the animals.	Same documents as above plus: 1) Personal history file of NHP (See art 31 of Directive 2010/63).
	Are they genetically modified? (n/a for DEP)	<input type="checkbox"/>	<input type="checkbox"/>	1) Number of animals to be used, nature of the experiments, procedures, anticipated impact and how this will be minimised. 2) Details on species and rationale for their use. 3) Details on procedures to ensure animal welfare. 4) Details on implementation of the 3Rs Principle.	1) Copies of all appropriate authorisations for the supply of animals and the project experiments. 2) Copies of training certificates/ personal licences of the staff involved in animal experiments.
	Are they cloned farm animals? (n/a for DEP)	<input type="checkbox"/>	<input type="checkbox"/>	Same information as above.	1) Copies of all appropriate authorisations for the supply of animals and the project experiments. 2) Copies of training certificates/ personal licences of the staff involved in animal experiments. 3) Copies of authorisations

					for cloning (if required).
	Are they an endangered species? ( <i>n/a for DEP</i> )	<input type="checkbox"/>	<input type="checkbox"/>	1) Justification on why there is no alternative to using this species. 2) Details on the purpose of the activity.	1) Copies of authorisations for supply of endangered animal species (including CITES) and the project experiments. 2) Copies of training certificates/ personal licences of the staff involved in animal experiments.
<b>6 THIRD COUNTRIES</b>		<b>YES/ NO</b>		<b>Information to be provided in the proposal</b>	<b>Documents to be provided on request</b>
	Will some of the activities be carried out in non-EU countries?	<input type="checkbox"/>	<input type="checkbox"/>	1) Countries involved. 2) Risk-benefit analysis.	
	Specify the countries			3) Details on activities are carried out in non-EU countries.	
	In case non-EU countries are involved, do the activities undertaken in these countries raise potential ethics issues? Specify the countries	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the materials and the countries involved.	1) Copies of ethics approvals and other authorisations or notifications (if required). 2) Confirmation that the activity could have been legally carried out in an EU country (for instance, an opinion from an appropriate ethics structure in an EU country).
	<b>Is it planned to use local resources</b> (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the type of local resources to be used and modalities for their use.	1) For human resources: copies of ethics approvals. 2) For animals, plants, micro-organisms and associated traditional knowledge: documentation showing compliance with the <u>UN Convention on Biological Diversity</u> (e.g. access permit and benefit sharing agreement).
	Is it planned to import any material (other than data) from non-EU countries into the EU or from a non-EU country to another non-EU country? ( <i>n/a for EDF</i> ) <i>For data imports, see section 4.</i> <i>For imports of human cells or tissues, see section 3.</i> Specify the material and countries involved	<input type="checkbox"/>	<input type="checkbox"/>	1) Countries involved. 2) Details on the type of materials to be imported.	1) Copies of import licences/ Material Transfer Agreement (MTA).

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Is it planned to export any material (other than data) from the EU to non-EU countries? (n/a for EDF) <i>For data exports, see section 4.</i> Specify the material and countries involved	<input type="checkbox"/>	<input type="checkbox"/>	1) Countries involved. 2) Details of the type of materials to be exported.	1) Copies of export licences/ Material Transfer Agreement (MTA).
<b>Does your activity involve low and/or lower-middle income countries?</b> (n/a for DEP) If yes, detail the benefit-sharing actions planned	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on the benefit sharing measures. 2) Details on the responsiveness to local needs. 3) Details on the procedures to facilitate effective capacity building.	
Could the situation in the country put the individuals taking part in the activity at risk? (n/a for DEP)	<input type="checkbox"/>	<input type="checkbox"/>	1) Details of the safety measures you intend to take, including training for staff and insurance cover.	1) Insurance coverage (if relevant)
<b>7 ENVIRONMENT, HEALTH AND SAFETY</b>	<b>YES/NO</b>		<b>Information to be provided in the proposal</b>	<b>Documents to be provided on request</b>
Does this activity involve the use of substances or processes (or technologies) that may cause harm to the environment, to animals or plants (during the implementation of the activity or further to the use of the results, as a possible impact)? <i>For activities involving animal experiments, see section 5.</i>	<input type="checkbox"/>	<input type="checkbox"/>	1) Risk-benefit analysis. 2) Show how you apply the precautionary principle (if relevant). 3) Details on safety measures to be implemented.	1) Safety classification of laboratory. 2) Copy of GMO and other authorisations (if required).
Does this activity deal with endangered fauna and/or flora / protected areas? (n/a for DEP)	<input type="checkbox"/>	<input type="checkbox"/>	1) Details on endangered fauna and/or flora / protected areas.	1) Specific authorisations (if required).
Does this activity involve the use of substances or processes (or technologies) that may cause harm to humans, including those performing the activity (during the implementation of the activity or further to the use of the results, or the deployment of the technology as a possible impact)? <i>For activities involving human participants, see section 2.</i>	<input type="checkbox"/>	<input type="checkbox"/>	1) Details of the health and safety procedures.	1) Safety classification of laboratory. 2) Host Institution safety procedures.
<b>8 ARTIFICIAL INTELLIGENCE</b>	<b>YES/NO</b>		<b>Information to be provided</b>	<b>Documents to be provided/kept on file</b>

<p>Does this activity involve the development, deployment and/or use of Artificial Intelligence-based systems?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>) Explanation as to how the participants and/or end-users will be informed about:</p> <ul style="list-style-type: none"> <li>- their interaction with an AI system/technology (if relevant);</li> <li>- the abilities, limitations, risks and benefits of the proposed AI system/technique;</li> <li>- the manner in which decisions are taken and the logic behind them (if relevant).</li> </ul>	<p>1) Detailed risk assessment accompanied by a risk mitigation plan (if relevant). These must cover the development, deployment and post-deployment phases. 2) Copies of ethics approvals (if relevant).</p>
			<p>) Details on the measures taken to avoid bias in input data and algorithm design;</p> <p>) Explanation as to how the respect to fundamental human rights and freedoms (e.g. human autonomy, privacy and data protection) will be ensured;</p> <p>) Detailed explanation on the potential ethics risks and the risk mitigation measures.</p>	
<p><b>Could the AI based system/technique potentially stigmatise or discriminate against people</b> (e.g. based on sex, race, ethnic or social origin, age, genetic features, disability, sexual orientation, language, religion or belief, membership to a political group, or membership to a national minority)? (only HE, EDF)</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Detailed explanation of the measures set in place to avoid potential bias, discrimination and stigmatisation.</p>	
<p><b>Does the AI system/technique interact, replace or influence human decision-making processes</b> (e.g. issues affecting human life, health, well-being or human rights, or economic, social or political decisions)? (only HE, EDF)</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>) Detailed explanation on how humans will maintain meaningful control over the most important aspects of the decision-making process;</p> <p>) Explanation on how the presence/role of the AI will be made clear and explicit to the affected individuals.</p>	<p>1) Information sheets/Template Informed consent forms (if relevant)</p>
<p><b>Does the AI system/technique have the potential to lead to negative social</b> (e.g. on democracy, media, labour market, freedoms, educational choices, mass surveillance) and/or environmental impacts either through intended applications or plausible alternative uses? (only HE)</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Justification of the need for developing/using this particular technology</p> <p>2) Assessment of the ethics risks and detailed description of the measures set in place to mitigate the potential negative impacts during the research,</p>	<p>For serious and/or complex cases: Algorithmic impact assessment/human right assessment. These must cover the development, deployment and post-deployment phases.</p>

			development, deployment and post-deployment phase.	
Does this activity involve the use of AI in a weapon system? ( <i>only EDF</i> )		<input type="checkbox"/>	<input type="checkbox"/>	
If YES:	Is it possible to establish which specific function/functions are automated/autonomous in the weapon system? ( <i>only EDF</i> )	<input type="checkbox"/>	<input type="checkbox"/>	Justification for the need Detailed explanation on how humans will maintain meaningful control
	If the weapon system has AI-enabled functions, could these functions render the weapon system indiscriminate? ( <i>only EDF</i> )	<input type="checkbox"/>	<input type="checkbox"/>	Justification for the need Detailed explanation on how humans will maintain meaningful control
	Does the design include the possibility of an autonomous mode for self-protection? If yes, can the system reliably distinguish between targets (threats) and non-targets? ( <i>only EDF</i> )	<input type="checkbox"/>	<input type="checkbox"/>	Justification for the need Detailed explanation on how humans will maintain meaningful control
<b>Does the AI to be developed/used in the project raise any other ethical issues not covered by the questions above</b> (e.g., subliminal, covert or deceptive AI, AI that is used to stimulate addictive behaviours, life-like humanoid robots, etc.)? ( <i>only HE and EDF</i> )		<input type="checkbox"/>	<input type="checkbox"/>	1) Detailed explanation on how the potential ethics issues will be addressed and the measures set in place to mitigate ethics risks.
<b>9 OTHER ETHICS ISSUES</b>		<b>YES/ NO</b>		<b>Information to be provided in the proposal</b>
Are there any other ethics issues that should be taken into consideration? Please specify		<input type="checkbox"/>	<input type="checkbox"/>	1) Any relevant information.
				1) Detailed risk assessment accompanied by a risk mitigation plan. These must cover the development, deployment and post-deployment phases.
				1) Detailed explanation on how the potential ethics algorithmic assessment will work
				1) Detailed overview of the automated functions
				1) Description of the automated navigation and its ability to discriminate targets
				1) Documents to be provided on request

If the Applicant has entered any ethics issues in the ethical issue table in the administrative proposal forms, the Applicant if deemed necessary by the selection body will be required to provide the following:

- submit an ethics self-assessment, which describes how the proposal meets the national legal and ethical requirements;
- explains in detail how applicant intends to address the issues in the ethical issues table, in particular as regards research methodology (e.g. clinical trials, etc.)
- the potential impact of the research (e.g. environmental damage, benefit-sharing, etc.).

Form filled out by Applicant	
Date	
Name	
Title	
Signature and stamp	

Form checked and reviewed by Ethics Expert:
1. LOW (No ethics issues, clearance)
2. Moderate (conditional Ethics clearance, auditing planned and prepared Ethics Checklist)

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- 3. Substantial(auditing planned)
- 4. High (no ethic clearance)

Justification:

Date	
Name	
Title	

Signature



**ANNEX 02: Environmental AND SOCIAL Screening Questionnaire**

**02A) ENVIRONMENTAL SCREENING Questionnaire**

NOTE: This checklist will be used to exclude project with high risks on environment and social community

ENVIRONMENTAL SCREENING Questionnaire (to be filled in for every subproject separately)		
PART I Administrative and institutional data		
1.	Sub-project name	(Name of rehabilitation sub-project)
2.	Sub-Project location	(Municipality / City, RS/RoS)
3.	Proximity to nearest settlement (houses)	
4.	Proximity to nearest river/lake	
5.	Project description (Describe main project features and location of work execution)	
Note: Comments/explanations bellow is mandatory to fill and to give narrative explanation as much as possible in order to give as much as possible information for screening		

PART II Project exclusion criteria			
	Issue	Yes/No	Comment
6.	Is the project found of the IFI exclusion list (see the Annex 01A)	Yes [ ] No [ ]	[ ] If yes, the project is not eligible for financing. Identify another project.
7.	Does the proposed project require a FULL Environmental Impact Assessment as per the Serbian Law on Environmental Impact Assessment (list of Projects for which full EIA is mandatory)? (see the Annex 01B)	Yes [ ] No [ ]	[ ] If yes, the project is not eligible for financing. Identify another project.
8.	Will the project implementation result in the involuntary land acquisition, resettlement of population or permanent land occupation, encroachment on private property, impacts on livelihood incomes?	Yes [ ] No [ ]	[ ] If yes, the project is not eligible for financing. Identify another project.
9.	Will the project involve actions which will cause new physical changes in the locality (topography, land use, waterbodies, etc.) compared to the state before reconstruction?	Yes [ ] No [ ]	[ ] Go back to original design and avoid any physical changes in the locality [ ] Develop a site specific ESMP [ ] Exclude the project and identify another site
10.	Will the project result in increased use of natural resources such as land, water, materials or energy compared to the state before reconstruction?	Yes [ ] No [ ]	[ ] Go back to original design and avoid increase in natural resources use [ ] Develop a site specific ESMP

PART II Project exclusion criteria			
	Issue	Yes/No	Comment
			[ ] Exclude the project and identify another site

PART III Basic information on the proposed project and the Applicant			
	Issue	Yes / No	Comment
11.	Does the existing enterprise have valid operating permit, licenses, approvals etc.?  Permits to screen for include: construction permit, operational/use permit, urban permit, water management permit		If not, please explain.  If not, will the financing be used to correct this condition?
12.	The current number of employees with the Applicant is:		
	Fewer than 10		
	Between 10 and 20		
	Between 20 and 50		
	More than 50		
13.	Has the Applicant submitted a signed statement that the conditions of work are in compliance with the current Serbian legislation on labor and protection at work, including life and fire safety (fire protection)?		
14.	Are all the existing employees of the Applicant regularly registered for pension and disability insurance (i.e. has a certificate been submitted on paid contributions, which was issued by the competent tax authority)?		
15.	Does the Applicant usually employ persons of age 15 to 18?		
16.	Would new workers be recruited for the requirements of the sub project (enter the number in the comment field)?		
17.	Can the proposed subproject be deemed relevant for adaptation to climate change or increasing resilience to climate change?		

PART IV Adverse Project Impacts and Risks – Information on importance for project categorization			
	Issue	Yes/No	Comment
18.	Are there any indications that the Applicant could use informal labor for the needs of the subproject?		
19.	Are there any indications that the Applicant could employ persons of age 15 to 18 without complying with legislated		

PART IV Adverse Project Impacts and Risks – Information on importance for project categorization			
	Issue	Yes/No	Comment
	provisions concerning employment and protection of such workers?		
20.	Does the subproject include any significant potential physical hazards for workers?		
21.	Would subproject implementation cause emissions of polluting substances in the air and/or would measures be required for environment protection in order to ensure compliance with Serbian standards?		
22.	Would project implementation include discharge of wastewater and/or require environment protection measures in order to ensure compliance with Serbian standards?		
23.	Would subproject implementation cause any emission of noise at a level that would require measures of control in order to ensure compliance with Serbian standards? Would the levels of noise affect especially sensitive receptors (natural habitats, hospitals, schools, local population, ...)		
24.	Would project implementation cause the onset of waste that would require special provisions for management, and which would need to be disposed of by companies authorized for waste management?		
25.	Will the activity generate solid waste that may be considered hazardous, difficult to manage, or may be beyond the scope of regular household waste?  (This may include, but not be limited too, animal carcasses, toxic materials, pesticides, medical waste, cleaning materials, flammables etc.)		
26.	(In case of procurement of new equipment, would the old equipment be disposed of by an authorized company for waste management?)		
27.	Does the existing enterprise have a valid water management permit that calls for special investments or measures for the enterprise's wastewater releases (or is in the procedure of obtaining this permit as per the Serbian laws)?		
28.	Are there any significant outstanding environmental fees, fines or penalties or any other environmental liabilities (e.g. pending legal proceedings involving environmental issues etc.)		If so, will the financing be used to correct this condition and please explain?
29.	Will the activity generate water effluents (wastewater) that may require special treatment, control or the water management permit?		

PART IV Adverse Project Impacts and Risks – Information on importance for project categorization			
	Issue	Yes/No	Comment
30.	<p>Will the activity consume, use or store, produce hazardous materials that:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> require special permits or licenses</li> <li><input type="checkbox"/> require licensed or trained personnel</li> <li><input type="checkbox"/> are outlawed or banned in EU or Western countries</li> <li><input type="checkbox"/> are difficult, expensive, or hard to manage</li> <li><input type="checkbox"/> are inconsistent with PPAH recommendations</li> <li><input type="checkbox"/> may cause soil and water pollution or health hazards if adequate control measures are not in place</li> </ul>		
31.	<p>Have there been any complaints raised by local affected people or groups or NGOs regarding conditions at the facility?</p> <p>If so, will the grant financing be used to remedy these complaints?</p>		
32.	<p>Will the activity be located within or close to natural habitats or areas under consideration by the Government for official protection status? Will the activity potentially impact areas of known significance to local, regional or national cultural heritage?</p>		
33.	<p>Will the activity involve import of living organisms, e.g. saplings, insects, animals, etc. or works that can impact sensitive environmental receptors?</p>		
34.	<p>Has the local population or any NGOs expressed concern about the proposed activity’s environmental aspects or expressed opposition?</p>		
35.	<p>Is there any other aspect of the activity that would – through normal operations or under special conditions – cause a risk or have an impact on the environment, the population or could be considered as a nuisance (e.g. use of pesticides)?</p>		
36.	<p>Is there any aspect or risk leading to increase of energy consumption and carbon/GHG emissions, e-waste disposal/management, increased natural resources extraction, harm the environment and wildlife (e.g. artificial intelligence development and use)</p>		

**02B) Social Screening Questionnaire**

SOCIAL SCREENING FORM AND TRIGGERS FOR SUB PROJECTS		
Screening indicators related to Land acquisition, assets and access to resources		
Type of activity – Will the sub project:	Explanation:	
Require land acquisition (temporarily or permanently)		

Environmental and Social Management Framework - ESMF

Use land that is currently occupied or regularly used for productive purposes (e.g. gardening, farming, pasture, fishing locations, forests)		
Physically displace individuals, families or businesses		
Result in the temporary or permanent loss of crops, fruit trees or household infrastructure		
Result in the involuntary restriction of access by people to legally designated parks and protected areas		
Result in loss of livelihood		
Have negative impact to any vulnerable individuals or groups		
Have negative impact to informal side road shops, traders or any nomadic type of commercial activity		
<p>Social Concerns:</p> <p>Are appropriate measures in place to ensure informed consent is obtained from participants in research activities?</p> <p>How is privacy protected to prevent violations during data collection and analysis?</p> <p>Is there a clear protocol for the ethical use of human or animal subjects in experiments?</p>		
<p>Bias and Discrimination:</p> <p>Are steps taken to identify and mitigate bias in research methodologies?</p> <p>How is data collection monitored to prevent discriminatory outcomes?</p> <p>What measures are implemented to address existing biases in the interpretation of research findings?</p>		
<p>Inequitable Distribution of Benefits:</p> <p>How are the benefits of scientific research distributed among different social groups?</p> <p>What strategies are in place to ensure equitable access to advancements and technologies?</p> <p>Are there specific initiatives to address disparities in access to research outcomes?</p>		
Community Displacement:		

Environmental and Social Management Framework - ESMF

<p>Are potential impacts on communities, including displacement and cultural heritage loss, assessed before initiating research projects?</p> <p>How are community concerns addressed and integrated into research planning and decision-making processes?</p> <p>What measures are taken to minimize social disruption and mitigate the negative effects of community displacement?</p>		
<p>Health and Safety Risks:</p> <p>What protocols are in place to ensure the health and safety of researchers, participants, and surrounding communities?</p> <p>How are risks related to exposure to hazardous materials or accidents in laboratories identified and managed?</p> <p>Are emergency response plans in place to address potential health and safety incidents?</p>		
<p>Employment and Economic Impacts:</p> <p>Will this invention lead to potential job displacements or changes in employment patterns assessed and mitigated?</p> <p>What measures are taken to prevent job displacement caused by the potential commercialisation of the research product ?</p> <p>Are strategies in place to promote job creation and economic opportunities resulting from scientific advancements?</p>		
<p>Public Perception and Trust</p> <p>How is public perception of research outcomes monitored and addressed?</p> <p>What efforts are made to build and maintain trust in the specific research?</p> <p>Are there mechanisms in place to address public concerns and misconceptions about research activities?</p>		

If any of the boxes above are ticked YES, the Sub project will not be eligible for financing

CERTIFICATION

Applicant:

The Applicant, in signing this form proves that the project activity will not involve land acquisition, any form of construction, or will promote any activities on the World Bank Group IFC exclusion list. In addition, the Applicant is aware of the EIA requirements as per the Serbian Law and certifies that there are no Full Environmental Impact Assessment reports required.

Environmental and Social Expert engaged by the Project:

Environmental and Social Management Framework - ESMF

I hereby certify that I have thoroughly examined all the potential adverse effects of this sub project. To the best of our knowledge, the sub project does not avoid /avoids all adverse social impacts (in case the Sub project Does Not Avoid ad verse social impacts list at least two excluding the Sub projects eligibility

Form filled out by Applicant	
Date	
Name	
Title	
Signature and stamp	

Form checked and reviewed by Environmental and Social Expert:	
Sub-project category:	
High: _____ (exclusion)	
Substantial _____	
Moderate _____	
Low _____	
Date	
Name	
Title	
Signature	

**ANNEX 03: MOST RELEVANT NATIONAL LEGISLATION** as on March 2024

**1. General**

- LAW ON INNOVATION ACTIVITY, Official Gazette of the RS, No. 129/21 of 28 December 2021
- LAW ON SCIENCE AND RESEARCH, Official Gazette of the RS, No. 49/19 of 8 July 2019
- CONSTITUTION OF THE REPUBLIC OF SERBIA , Official Gazette of the RS, Nos. 98/06 of 10 November 2006, 115/21 of 30 November 2021 - Amendments I-XXIX and 16/22 of 9 February 2022
- LAW ON THE PLANNING SYSTEM OF THE REPUBLIC OF SERBIA, Official Gazette of the RS, No. 30/18 of 20
- LAW ON INSPECTION SUPERVISION, Official Gazette of the RS, Nos. 36/15 of 21 April 2015, 44/18 of 8 June 2018 (other law) and 95/18 of 8 December 2018
- LAW ON FREE ACCESS TO INFORMATION OF PUBLIC IMPORTANCE, Official Gazette of the RS, Nos. 120/04 of 5 November 2004, 54/07 of 13 June 2007, 104/09 of 16 December 2009, 36/10 of 28 May 2010 and 105/21 of 8 November 2021 April 2018
- Law on Ratification of the Convention on Availability of Information, Public Participation in Decision-Making and the Right to Legal Protection in Environmental Matters (Aarhus Convention) ("Official Gazette of RS" No. 38/2009),
- LAW ON THE PROTECTOR OF CITIZENS , Official Gazette of the RS, No. 115/21 of 30 November 2021
- LAW ON STANDARDIZATION , Official Gazette of the RS, Nos. 36/09 of 15 May 2009 and 46/15 of 28 May 2015
- LAW ON ACCREDITATION, Official Gazette of the RS, Nos. 73/10 of 12 October 2010 and 47/21 of 10 May 2021
- LAW ON CULTURAL HERITAGE , Official Gazette of the RS, No. 129/21 of 28 December 2021
- Law on Patents (Official Gazette of RS, no 99/2011, 113/2017 other laws 95/3018, 66/2019 and 123/2021 this law regulates the legal protection of inventions.
- The Law on Copyrights and related Rights (Official gazette of RS 104/2009, 99/2011 from 27.12.2011 and 119/2012) This Law regulate the rights of the authors of literary, scientific and artistic works
- LAW ON FIRE PROTECTION, Official Gazette of the RS, Nos. 111/09 of 29 December 2009, 20/15 of 24 February 2015 and 87/18 of 13 November 2018
- Law on Defense ("Official Gazette of RS", Nos. 116/07, 88/09, 104/09, 10/15 and 366/18)
- Law on air traffic ("Official Gazette of RS", no. 73/2010, 57/2011, 93/2012, 45/2015, 66/2015, 83/2018 and 9/2020),
- Decision on the ratification of the Convention on International Civil Aviation (Official Gazette of the FNRJ - International Agreements No. 3/54),
- LAW ON DISASTER RISK REDUCTION AND EMERGENCY MANAGEMENT, Official Gazette of the RS, No. 87/18 of 13 November 2018
- LAW ON TRANSPORT OF DANGEROUS GOODS, Official Gazette of the RS, Nos. 104/16 of 23 December 2016, 83/18 of 29 October 2018 and 95/18 of 8 December 2018 (other law)

**2. Environment and Climate change**

LAW ON CLIMATE CHANGE, Official Gazette of the RS, No. 26/21 of 23 March 2021

LAW ON ENVIRONMENTAL PROTECTION, Official Gazette of the RS, Nos. 135/04 of 21 December 2004, 36/09 of 15 May 2009, 36/09 of 15 May 2009 (other law), 72/09 of 3 September 2009 (other law), 43/11 of 14 June 2011 (CC), 14/16 of 22 February 2016, 76/18 of 12 October 2018 and 95/18 of 8 December 2018 (other law)

LAW ON THE ENVIRONMENTAL IMPACT ASSESSMENT, Official Gazette of the RS, Nos. 135/04 of 21 December 2004 and 36/09 of 15 May 2009

Decree on establishing the List of Projects for which the Impact Assessment is mandatory and the List of projects for which the EIA can be requested ("Official Gazette of RS" No. 114/08)

LAW ON NATURE PROTECTION , Official Gazette of the RS, Nos. 36/09 of 15 May 2009, 88/10 of 23 November 2010, 91/10 of 3 December 2010 (Corrigendum), 14/16 of 22 February 2016, 95/18 of 8 December 2018 (other law) and 71/21 of 15 July 2021



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LAW ON AIR PROTECTION, Official Gazette of the RS, Nos. 36/09 of 15 May 2009, 10/13 of 30 January 2013 and 26/21 of 23 March 2021 (other law)

LAW ON ENVIRONMENTAL NOISE PROTECTION, Official Gazette of the RS, No. 96/21 of 8 October 2021

LAW ON WASTE MANAGEMENT, Official Gazette of the RS, Nos. 36/09 of 15 May 2009, 88/10 of 23 November 2010, 14/16 of 22 February 2016, 95/18 of 8 December 2018 (other law) and 35/68 of 29 April 2023

LAW ON CHEMICALS, Official Gazette of the RS, Nos. 36/09 of 15 May 2009, 88/10 of 23 November 2010, 92/11 of 7 December 2011, 93/12 of 28 September 2012 and 25/15 of 13 March 2015

Law on Water ("Official Gazette of RS" No. 30/10, 93/12, 101/2016 and 95/2018)

Law on Strategic EIA ("Official Gazette of RS" No. 135/2004)

Law on National Parks ("Official Gazette of RS", no. 84/15 and 95/18)

LAW ON MINING AND GEOLOGICAL SURVEYS, Official Gazette of the RS, Nos. 101/15 of 8 December 2015, 95/18 of 8 December 2018 (other law) and 40/21 of 22 April 2021

LAW ON BIOCIDAL PRODUCTS, Official Gazette of the RS, No. 109/21 as of 19 November 2021

LAW ON FOOD SAFETY, Official Gazette of the RS, Nos. 41/09 of 2 June 2009 and 17/19

Law on forest ("Official Gazette of RS", 30/10, 93/12, 89/15 and 95/2018)

Law on Agricultural Land ("Official Gazette of RS", Nos. 62/2006, 65/2008, 41/2009, 112/2015, 80/2017 and 95/2018),

Law on Soil Protection ("Official Gazette of RS", No. 112/2015),

Law on seeds ("Official Gazette of RS", no. 45/2005 and 30/2010),

Law on planting material of fruit trees, vines and hops ("Official Gazette of RS", No. 18/2005 and 30/2010),

Law on Amendments to the Law on Plant Protection Products ("Official Gazette of RS", No. 17/2019)

Law on radiological and nuclear safety, ("Official Gazette of RS" No. 95/18, 10/19)

LAW ON ENERGY EFFICIENCY AND RATIONAL ENERGY USE, Official Gazette of the RS, No. 40/21 of 22 April 2021

LAW ON THE USE OF RENEWABLE ENERGY SOURCES, Official Gazette of the RS, Nos. 40/21 of 22 April 2021 and 35/23 of 29 April 2023

LAW ON ENERGY EFFICIENCY, Official Gazette of the RS, Nos. 25/13 of 15 March 2013 and 40/21 of 22 April 2021 - other law

Selected sublaws, some of them under updated procedure:

- Regulation on ecological network ("Official Gazette of RS", No. 102/2010),
- Regulation on protection regimes ("Official Gazette of RS", No. 31/2012),
- Rulebook on the content and manner of keeping the register of protected natural assets ("Official Gazette of RS", No. 81/2010),
- Rulebook on evaluation criteria and the procedure for categorizing protected areas ("Official Gazette of RS", No. 97/2015),
- Decree on placing under control the use and circulation of wild flora and fauna ("Official Gazette of RS", Nos. 31/2005, 45/2005, 22/2007, 38/2008, 9/2009, 69/2011 and 95/2018),
- Rulebook on the declaration and protection of strictly protected and protected wild species of plants, animals and mushrooms ("Official Gazette of RS", Nos. 5/2010, 47/2011, 32/2016 and 98/2016),
- Rulebook on the manner of storage, packaging and marking of hazardous waste ("Official Gazette of RS", Nos. 92/2010 and 77/2021),
- Rulebook on categories, testing and classification of waste ("Official Gazette of RS", No. 56/10 and 93/2019),
- Rulebook on categories, testing and classification of waste ("Official Gazette of RS", No. 56/10),

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- Rulebook on the form of daily records and annual report on waste with instructions for its completion ("Official Gazette of RS", Nos. 95/10 and 88/2015),
- Rulebook on the form of the document on the movement of hazardous waste, the form of prior notification of the method of its delivery and instructions for filling it in ("Official Gazette of RS", Nos. 114/2013 and 17/2017),
- Rulebook on the document form on the movement of waste and instructions for its completion ("Official Gazette of RS", No. 72/2009),
- Rulebook on the method and procedure of pharmaceutical waste management ("Official Gazette of RS", No. 49/2019),
- Rulebook on medical waste management ("Official Gazette of RS", No. 48/2019),
- Rulebook on how to keep records on chemicals ("Official Gazette of RS", No. 31/2011),
- Rulebook on the Register of Chemicals ("Official Gazette of RS", Nos. 16/2016, 6/2017 and 117/2017),
- Rulebook on chemical advisers and conditions that must be met by a legal entity or entrepreneur who conducts training and knowledge testing of chemical advisers ("Official Gazette of RS", Nos. 13/11, 28/11 and 47/12),
- Rulebook on the content of the safety data sheet ("Official Gazette of RS", No. 81/10),
- Instructions on determining preventive measures for safe storage, storage, or use of particularly dangerous chemicals ("Official Gazette of RS", Nos. 94/10 and 6/2017),
- Rulebook on permits for the performance of transport activities, i.e. permits for the use of particularly dangerous chemicals ("Official Gazette of RS", Nos. 94/10 and 6/2017),
- Rulebook on amendments to the Rulebook on classification, packaging, labeling and advertising of chemicals and specific products in accordance with the Globally Harmonized System for Classification and Labeling ("Official Gazette of RS", No. 21/2019),
- Rulebook on organizing fire protection according to the category of fire hazard ("Official Gazette of the RS", No. 6/2021),
- Rulebook on preventive measures for safe and healthy work at the workplace ("Official Gazette of RS", Nos. 21/20109 and 1/2019),
- Rulebook on the manner and procedure of risk assessment at the workplace and in the working environment, ("Official Gazette of RS", Nos. 72/2006, 84/2006, 30/2010 and 102/2015).
- Rulebook on preventive measures for safe and healthy work when using work equipment ("Official Gazette of RS", Nos. 23/2009, 123/2012, 102/2015 and 101/2018),
- Rulebook on the procedure for inspecting and checking work equipment and testing working environment conditions ("Official Gazette of RS", Nos. 94/2006, 108/2006, 114/2014 and 102/2015),
- Rulebook on unmanned aircraft ("Official Gazette of RS", No. 1/20),
- Decision on determining data that may not be entered in cartographic and other publications ("Official Gazette of the RS", no. 50/16),
- Decision on the determination of military and other facilities and areas that are prohibited for observation, filming and access and measures for their protection ("Official Gazette of the SRJ", No. 11/96 and "Official Gazette of SCG", No. 42/2005),
- Rulebook on conditions for the development of a project to improve the quality of arable agricultural land: ("Official Gazette of RS", No. 128/2020),
- Rulebook on the conditions for carrying out control of the fertility of arable agricultural land, ("Official Gazette of RS", No. 115/2020),
- Regulation on the limit values of pollutants in surface and groundwater and sediment and deadlines for achieving them ("Official Gazette of RS", No. 50/2012)

### 3.Social

- LABOUR LAW, Official Gazette of the RS, Nos. 24/05 of 15 March 2005, 61/05 of 18 July 2005, 54/09 of 17 July 2009, 32/13 of 8 April 2013, 75/14 of 21 July 2014, 13/17 of 24 February 2017 (CC), 113/17 of 17 Decembar 2017 and 95/18 of 8 December 2018 (Authentic Interpretation)
- LAW ON PREVENTION OF HARASSMENT AT WORK, Official Gazette of the RS, No. 36/10 of 28 May 2010
- LAW ON PEACEFUL SETTLEMENT OF LABOUR DISPUTES, Official Gazette of the RS, Nos. 125/04 of 22 November 2004, 104/09 of 16 December 2009 and 50/18 of 29 June 2018
- LAW ON PROHIBITION OF DISCRIMINATION, Official Gazette of the RS, Nos. 22/09 of 30 March 2009 and 52/21 of 24 May 2021
- LAW ON OCCUPATIONAL SAFETY AND HEALTH, Official Gazette of the RS, No. 35/23 of 29 April 2023

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- Rulebook on the manner and procedure of risk assessment at the workplace and in the working environment, ("Official Gazette of RS", Nos. 72/2006, 84/2006, 30/2010 and 102/2015).
- Rulebook on the provision of signs for safety or health at work ("Official Gazette of RS", Nos. 95/2010 and 108/2017),
- Rulebook on the provision of first aid, the type of means and equipment that must be provided at the workplace, the method and deadlines for training employees to provide first aid ("Official Gazette of RS", No.109/2016),
- Rulebook on preventive measures for safe and healthy work to prevent the occurrence and spread of infectious disease epidemics ("Official Gazette of RS", No. 94/2020),
- Rulebook on preventive measures for safe and healthy work when exposed to biological hazards ("Official Gazette of RS", Nos. 96/2010 and 115/2020),
- Rulebook on preventive measures for safe and healthy work at the workplace ("Official Gazette of RS", Nos. 21/20109 and 1/2019),
- Rulebook on preventive measures for safe and healthy work when exposed to chemical substances ("Official Gazette of RS", Nos. 106/2009, 117/2017, 107/2021),
- Rulebook on preventive measures for safe and healthy work when exposed to carcinogens or mutagens, ("Official Gazette of RS", Nos. 96/2011 and 117/2017),
- Rulebook on the provision of signs for safety and health at work ("Official Gazette of RS", Nos. 95/2010 and 108/2017),
- Rulebook on preventive measures for safe and healthy work when using work equipment ("Official Gazette of RS", Nos. 23/2009, 123/2012, 102/2015 and 101/2018)

### 3. Ethics

- LAW ON HEALTH CARE, Official Gazette of the RS, Nos. 25/19 of 3 April 2019 and 92/23 of 27 October 2023
- Law on Personal Data Protection (Official Gazette of the RS, 87/2018)
- LAW ON PATIENTS' RIGHTS, Official Gazette of the RS, Nos. 45/13 of 22 May 2013 and 25/19 of 3 April 2019 (other law)
- Animal Welfare Law, "Official Gazette of RS" No. 41/09
- Regulation on welfare of animal intended for experimental purposes ('Official Journal of. RS", No 39/10)

### 4. Artificial inteligency

CONCLUSION ON THE ADOPTION OF ETHICAL GUIDELINES FOR THE DEVELOPMENT, IMPLEMENTATION AND USE OF RELIABLE AND RESPONSIBLE ARTIFICIAL INTELLIGENCE (Official Gazette of RS, No. 23/2023)

**ANNEX 04      FORMAT FOR REPORT ON COMPLIANCE WITH CONDITIONS OF WORK WITH ESS2  
for third parties engaging contracted workers**

Assignment name:

Contract ref. No:

Contract period: Start date (M/D/Y) End date (M/D/Y)

Contractor/Service Supplier:

Reported period:

Date of report:

Signature of authorized person:

**LABOR AND WORKING CONDITIONS COMPLIANCE REPORT**

Company employees\* statistics:

Total number of employee's gender disaggregated<sup>1</sup>: M\_\_\_\_\_F\_\_\_\_\_

Number of employees with an employment contract out of total number of employees

Number of employees without an employment contract out of total number of employees    Number \_\_\_\_\_ of employees with access to social security, pension and health insurance out of total number of employees  
Number of employees who receives wages/salaries at least once a month out of total number of employees

Number of employees who left the company in the reported period out of total number of employees

Number of employees hired in the reported period

Number of hours worked per employee (monthly average)

Total overtime (monthly average per employee)

- Number of injuries at work (in reporting period and cumulative since contract start) out of total nr. of employees
- Number of fatalities at work (in reporting period and cumulative) out of total nr. of employees
- Number of reported violence out of total nr. of employees
- Number of reported harassment/ abuses out of total nr. of employees

Availability of an accessible and functioning employee grievance mechanism (Y/N)

Number of grievances raised with the GM (in reporting period and cumulative since contract start)

Number of grievances resolved by GM (in reporting period and cumulative since contract start)

Number of suits filed with regard to labor, employment and OHS issues

Number of disputes brought to peaceful settlement/ voluntary arbitration procedure

Number of visits by labor/ OHS inspection

\*The employee is any natural person employed or engaged to work or perform service for the employer

1 The number of employees refers to the actual number/headcount on the date of the report.

2 The numbers imply the total number of incidents in the reported period.

Project workers statistics:

- Total number of project workers\*\*:
- Number of project workers with an employment contract:
- Number of project workers without an employment contract:
- Number of project workers with access to social security, pension and health insurance verified by confirmation from registry:

Working and Labor Conditions Screening Check List

	Terms and conditions	Yes / No	Notes
1	All project workers have an employment contract or engagement agreement in writing.	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “No” please specify and explain
2	All project workers are paid at least once a month	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “No” please specify and explain
3	All project workers worked 8 hours a day, 40 hours a week	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “No” please explain and specify the hours worked
4	All project workers had a regular daily and weekly rest	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “No” please specify and explain
5	Number of project workers were terminated from employment with termination in line with national labor law and ESS2	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “Yes” please specify number and explain conditions of termination
6	Number of project workers attended OHS related training programme	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “Yes” please specify number and explain
7	Project workers were granted leaves they are entitled to	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “Yes” Please specify the type and number of leaves
8	Project workers were involved in accidents at work resulting in injuries or fatalities	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “Yes” please specify and explain
9	Project workers reported on cases of discrimination, harassment, sexual harassment or non-compliance with law	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “Yes” please specify and explain
10	1Project workers raised grievances or started voluntary arbitration / legal proceedings to settle a dispute	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “Yes” please specify and explain
11	In the reported period there were some incidents on noncompliance with the LMP	Yes <input type="checkbox"/> No <input type="checkbox"/>	If “Yes” please specify and explain

**ANNEX 05 STATEMENT OF THE SERVICE PROVIDERS ON COMPLIANCE WITH PROVISIONS OF LABOR LEGISLATION**

Date and place of issuance: \_\_\_\_\_

Name and address of the issuer: \_\_\_\_\_

**STATEMENT OF LEGAL AND REGULATORY COMPLIANCE**

Hereby we declare that<sup>50</sup>

- We are aware of, and comply with, the standards laid down in the Labor Management Procedures;
- We conform to all national laws\* and applicable regulations concerning employment, labor and employee relations, and labor and working conditions;
- We are committed to providing a safe and healthy environment for our employees and to implementing all occupational health and safety requirements as stipulated by national legislation;
- We do not tolerate any form of child, forced or slavery work.
- We prohibit any form of harassment, abuse and violence at work and forbid direct or indirect discrimination against any employee or groups of employees on any ground and for whatever reason.
- We confirm that a worker GM is available
- We confirm that no worker GM is available but will be established by the time the contract is signed.

We hereby state that should we be awarded with the contract; we shall adopt the Labor Management Procedures applicable to the project and incorporate them in our practice.

We understand that the failure to respect any of the above stated commitments could lead to termination of the contract and exclusion from the project.

Signature:

Name:

Position:

\*National Laws refers both to the Laws of Republic of Serbia and the domicile Law of the country in case the Bidder is foreign

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<sup>50</sup> The Applicant should mark adequate commitment.

**ANNEX 06 ESMP TEMPLATE**

An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. The Borrower will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.

Contents of the ESMP:

INTRODUCTION

PROJECT DESCRIPTION

BASELINE DATA

- Population
- Health and Safety
- Geology and soil
- Climatic characteristics
- Seismology
- Air quality
- Waste
- Water resources
- Soil
- Flora and Fauna
- Noise
- Cultural heritage

SENSITIVE RECEPTORS

POTENTIAL IMPACT AND IMPACT ASSESSMENT

- Potential Impacts on the environment and nature
- Potential Impacts on increased natural resource extraction
- 
- Potential Impacts on the Air quality
- Potential Impacts on energy consumption and carbon emission
- 
- Potential Impacts on water (water protection and drainage) and soil
- Impact of generated waste streams
- Potential impacts on workers and community health and safety
- Potential socio-economic impacts
- Potential Impacts on the Flora and Fauna
- Potential Impacts on Cultural Heritage
- Potential impacts on workers and community health and safety
- 
- PUBLIC CONSULTATION
- ENVIRONMENTAL AND SOCIAL MITIGATION PLAN
- ENVIRONMENTAL AND SOCIAL MONITORING PLAN

**I MITIGATION PLAN**

Phase	Activity	Expected negative impact (env, soc, ethical, Ai ethical)	Mitigating Measure	Indicator of mitigation	Cost of Mitigation	Responsibility for mitigation*	Monitoring observation and comments (to be filled out during supervision)
Project Preparation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
Project Execution / operate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						

\* Items indicated to be the responsibility of the contractor shall be specified in the bid documents

**II MONITORING PLAN**

Phase	What parameter is to be monitored ?	Where is the parameter to be monitored ?	How is the parameter to be monitored/ type of monitoring equipment ?	When is the parameter to be monitored- frequency of measurement or continuous?	Monitoring Cost What is the cost of equipment or contractor charges to perform monitoring ?	Responsibility	Status of application of mitigation measures observation and comments (
Project preparation							
Project Execution / Operate							



### III. PUBLIC CONSULTATION DETAILS AND MINUTES OF MEETING FOR THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

In a separate document provide details on:

1. Manner in which notification of the consultation was announced: media(s) used, date(s), description or copy of the announcement
2. Date(s) consultation(s) was (were) held
3. Location(s) consultation(s) was (were) held
4. Who was specifically invited (Name, Organization or Occupation, Telephone/Fax/e-mail number/address (home and/or office)?
5. List of Attendees (Name, organization or occupation, contact details)
6. Meeting Agenda
7. Summary Meeting Minutes (Comments, Questions and Response by Presenters)
8. List of decisions reached, and any actions agreed upon with schedules and deadlines and responsibilities.

ESMP reviewed and approved by Environmental and Social Expert:

Date

Name

Title

Signature

**ANNEX 07: SAMPLE FILLED OUT ESMP**

**I. MITIGATION PLAN EXAMPLE ONLY FOR SCIENTIFIC PROJECT**

<b>Phase</b>	<b>Issue</b>	<b>Mitigating Measure</b>	<b>Cost of Mitigation (If Substantial)</b>	<b>Institutional Responsibility*</b>	<b>Supervision</b>
<b>Project preparation</b>	<b>I.</b> Agreements on business and technical cooperation necessary for access to all of the planned sampling locations will be prepared before sampling. Due to unforeseen circumstances some sampling location might become unavailable during project realization.	<b>I.</b> Alternative sampling locations were chosen, in case of inaccessibility due to any external event which could not be calculated, and agreements on business and technical cooperation necessary for their access will be prepared before start of the project thus allowing reaching of the proposed project deliverables.	<b>I.</b> Cost will be covered by personal budget	<b>I.</b> PIU/SF/.....	
<b>Project preparation</b>	<b>II.</b> Climatic chamber with fitotron system will be procured as the equipment necessary for the realization of the project. Usage of this new equipment will require specific training in the laboratory.	<b>II.</b> Specific training for all team members on the use of climatic chamber with fitotron system will be provided by the equipment supplier.	<b>II.</b> None	<b>II.</b> .....	PIU/SF/.....

<p align="center"><b>Project preparation</b></p>	<p><b>III.</b> Life and fire safety (LFS) procedures in laboratory</p>	<p><b>III.</b> All researchers are familiar with the current Evacuation Plan and Protection and Rescue Plan. All researchers are familiar with the dangers of fire and fire protection measures and are trained in handling fire extinguishers, hydrants and other devices used for extinguishing fires by the Law. All researchers in the Project are familiar with the "Instructions for action in case of fire".</p>	<p><b>III.</b> None</p>	<p><b>III.</b> .....</p>	<p>PIU/SF/ .....</p>
<p align="center"><b>Open field phase - execution</b></p>	<p><b>I.</b> Soil sampling disrupts structure of the soil and disturbs local population.</p> <p><b>II.</b> Selection of microbial strains - Certain microbial strains in soil might impose health safety and ecological disturbances.</p> <p><b>III.</b> Accidental events that could occur during field work of the project team members (allergic reaction to</p>	<p><b>I.</b> 25 g of soil (5 x 5 g) will be collected in each field from a depth of 15 cm, using a hand soil auger, thus minimizing any disturbance to the soil structure.</p> <p><b>I.</b> All of the necessary agreements will be procured before the sampling, and a responsible person will be present at all times, so there is no adverse impact of sampling on the local population.</p> <p><b>II.</b> The project limits the usage of autochthonous microbial strains to the local ones, already present in the soil, and BSL-1 and GRAS microbes.</p> <p><b>III.</b> First aid kit is part of the field equipment. Transport of the injured person to the nearest ambulance will be conducted when necessary.</p>	<p><b>I.</b> Not substantial</p> <p><b>II.</b> Not substantial</p> <p><b>III.</b> Not substantial</p>	<p><b>I.</b> .....</p> <p><b>II.</b> .....</p> <p><b>III.</b> .....</p>	<p>PIU/SF/ .....</p>

	<p>an insect bite, injury from a fall, a cut, etc.).</p> <p><b>IV.</b> Weather-related extreme events prevent field work.</p> <p><b>V.</b> Fear and panic of the local population</p>	<p><b>IV.</b> Carefully planning of field work in advance, taking into account the weather forecast will be performed to insure field work is done in adequate weather conditions.</p> <p><b>V.</b> During the realization of the project field activities, there will be no adverse effects on health and safety of the local population. All population currently present will be informed previously by researchers and cooperants.</p>	<p><b>IV.</b> Not substantial</p> <p><b>V.</b> Not substantial</p>	<p><b>IV.</b> .....</p> <p><b>V.</b> .....</p>	
<p><b>Laboratory phase - execution</b></p>	<p><b>I.</b> Handling of isolated fungal cultures could lead to an increase of indoor airborne fungal spore load in the laboratory, with an adverse effect on human health.</p> <p><b>II.</b> Pollution of the environment due to improper management and disposal of infectious and chemical waste generated during laboratory work.</p>	<p><b>I.</b> All laboratory work with fungal cultures is realized within a laminar flow cabinet, with regular disinfection cleaning and sterilization via UV treatment, taking into account all precautionary measures of sterile laboratory work.</p> <p><b>II.</b> Generated infectious and chemical waste will be disposed of in bags and/or boxes for infectious/chemical waste and placed in a special room intended for that purpose and removed regularly by specialized companies for handling chemical and biological waste with whom FBUB has signed contract. Waste</p>	<p><b>I.</b> Not substantial</p> <p><b>II.</b> Not substantial</p>	<p><b>I.</b> .....</p> <p><b>II.</b> .....</p>	<p>PIU/SF/ .....</p>

	<p><b>III.</b> Unwanted microbial strains present in the bioformulations.</p> <p><b>IV.</b> Created compost mixture contains pathogens and other substances with deteriorating effect on the soil and the environment.</p>	<p>disposal follows strict protocol (Hazardous waste management plan at the University of Belgrade - Faculty of Biology).</p> <p><b>III.</b> Quality control of each bioformulation produced: concentration, colony morphology and molecular identification.</p> <p><b>IV.</b> The compost is produced by the process not allowing concentration and existence of pathogens, pesticides and other substances.</p> <p><b>IV.</b> Final compost and individual components are regularly tested using regular lab and microbiological testing.</p>	<p><b>III.</b> Not substantial</p> <p><b>IV.</b> All the costs associated with the development and testing are budgeted.</p>	<p><b>III.</b> .....</p> <p><b>IV.</b> .....</p>	
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\*Items indicated to be the responsibility of the contractor shall be specified in the bid documents

## II. MONITORING PLAN EXAMPLE ONLY FOR SCIENTIFIC PROJECT

Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored/ type of monitoring equipment?	When is the parameter to be monitored- frequency of measurement or continuous?	Monitoring Cost	Responsibility	Supervision
	Agreements on business and technical cooperation necessary for access to all of the sampling locations.	Institution implementing the project.	By checking before going to the field.	Each time, before going to the field location.	None.	WP Coordinator – PI.	PIU/SF
	Personal protective equipment for personal protection during field work (sterile gloves, surgical face masks, safety goggles, safety boots, etc.).	On-field visual assessment.	Use of equipment for personal protection.	Regularly, during the project duration.	Not substantial.	WP Coordinator – PI.	
	Equipment for health safety during field work – first aid kit.	On-field visual assessment.	Use of equipment for health safety.	Regularly, during the project duration.	Not substantial.	WP Coordinator – PI.	

<b>Open field phase – preparation and execution</b>	Soil health status.	Laboratory of the institution implementing the project and outsourcing companies.	Metabarcoding analysis (SRO) and determination of mineral content, pesticides, trash elements, and physical-chemical characterization of soil (outsourcing companies).	During the first year of project implementation and after bioformulation application.	As defined by the project budget.	WP* Coordinator – PI.	
	Efficiency of the designed soil improvers in open field.	Laboratory of the institution implementing the project and outsourcing companies.	Metabarcoding analysis and crop parameters (SRO); physicochemical properties of the soil and chemical characterization of compounds in maize grain (outsourcing companies).	After bioformulation application in the third year of the project.	As defined by the project budget.	WP Coordinator – PI.	
<b>Laboratory phase - execution</b>	Beneficial properties of soil microbes.	Laboratory of the institution implementing the project.	<i>In vitro</i> assays for characterization of PGP, biocontrol and biofortification properties of microbes.	Regularly, during the implementation of WP2*.	As defined by the project budget.	WP Coordinators – PI and TM2*.	PIU/SF

	Bacterial strains used in bioformulation.	Laboratory of the institution implementing the project.	Metabarcoding analysis.	With every batch bioformulation produced.	As defined by the project budget.	WP Coordinators – PI and TM1*.	
	Quality of the produced compost.	Laboratory of the institution implementing the project and outsourcing companies.	Microbiological analysis (SRO) and physicochemical properties of the compost (outsourcing companies).	With every batch compost produced.	As defined by the project budget.	WP Coordinators – PI and TM5*.	
	Efficiency of the designed soil improvers in greenhouse environment.	Laboratory of the institution implementing the project.	Plant analysis including shoot and root length, and their wet and dry biomasses.	After bioformulation application at the end of the second year and the beginning of the third year of the project.	As defined by the project budget.	WP Coordinator – PI.	
	Life and fire safety (LFS) procedures in laboratory	Laboratory of the institution implementing the project.	Visual inspections and checks of the documentation	Periodically during the implementation of the project	Not substantial.	Responsible person for LFS in SRO	

PI – .....; TM1\* – .....; TM2\* – .....; TM5\* – .....; WP – Work Package; WP



**ANNEX 08: ESMP CHECKLIST filled out sample**

**Part 1. General project and site information**

INSTITUTIONAL & ADMINISTRATIVE		
Country	Republic of Serbia	
Project title	<b>SERBIA ACCELERATING INNOVATION AND GROWTH ENTREPRENEURSHIP (SAIGE) PROJECT</b>	
Component	1.1.Science Fund of the Republic of Serbia 1.2. Innovation Fund of the Republic of Serbia	
Subcomponent title	Title of the Program	
Scope of project activities	Objective of the Program	
Institutional arrangements	Project management	
	Ministry of Science, Technological Development and Innovation (NITRA) / Project Implementation Unit SAIGE	Local partners and/or beneficiary: Science Fund of the RS Innovation Fund of the RS
PROJECT DESCRIPTION		
The name of the Program		
<b>Project Proposal Title:</b>		
<b>Acronym:</b>		
Sub-program:		
Participating Scientific and Research Organization (SRO) and address		
Principal Investigator (PI) (Name and contacts details):		
Partner organizations on the project:		
	<p><b>Note:</b> The leading partner will be responsible for the overall implementation of the project and for implementing the measures prescribed by the ESMP CL. Each partner organization will strictly adhere to the prescribed measures, according to the type and scope of participation in the project. Each partner organization must meet the legal requirements for working on the project (i.e. have the necessary accreditation, etc.),</p>	

	which the leading partner will guarantee with its signature. The responsibilities and duties of partner organizations for implementing the measures prescribed by the ESMP CL and reporting to the leading partner are defined by the partnership agreement between the leading and other partner organizations.
Introduction/Project Description	<p>Note: Please focus on description relevant to <i>environmental and social risk and management</i>. Describe the nature of the project, the scale of activities, where and how the results will be obtained and used, who is involved, what measures are already in the place</p>
<b>LEGISLATION</b>	
Identify national local legislation	<p><b>Note:</b> The complete updated legislation can be found <a href="#">HERE</a>.</p>
Are permits required from the competent authorities of the RS? If so, what specific permits are needed, and have they already been obtained?"	<input type="checkbox"/> No, permits are not required <input type="checkbox"/> Yes, permits are required <p>If permits are required, write down which permits are required and from which RS Authority..</p>
<b>INSTITUTIONAL CAPACITY BUILDING</b>	
Will there be any capacity building during the project implementation, and/or need for capacity building is identified?	<input type="checkbox"/> No or <input type="checkbox"/> Yes <p>If Yes, please provide the information about capacity building activity.</p>
<b>ATTACHMENTS</b>	
<p><i>Example of attachments:</i></p> <p>Attachment 1: Agreement for hazardous waste disposal</p> <p>Attachment 2: Agreement with subcontractors</p> <p>Other permits/agreements/certification/letters of support/other documents – as required</p>	

**PART 2: Environmental and Social Management Plan Check List** filled out sample (ESMP Check list)

<b>PART 2: ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES</b>			
<b>Will the research activity include any of the following potential impacts/risks</b>	<b>Activity/Issues</b>	<b>Status</b>	<b>Additional references</b>
	<b>A.</b> Health and Safety	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section <b>A</b>
	<b>B.</b> Working in the laboratory	<input type="checkbox"/> Yes <input type="checkbox"/> No	If 'Yes', see Sections <b>A, B, D, E and F</b> below
	<b>C.</b> Collection of plant, animal and genetic material	<input type="checkbox"/> Yes <input type="checkbox"/> No	If 'Yes', see Sections <b>A, C, H and I</b> below
	<b>D.</b> Use of hazardous materials and chemicals	<input type="checkbox"/> Yes <input type="checkbox"/> No	If 'Yes', see Sections <b>A, B, D, E and F</b> below
	<b>E.</b> Handling of gases under pressure	<input type="checkbox"/> Yes <input type="checkbox"/> No	If 'Yes', see Sections <b>A, B, D, E and F</b> below
	<b>F.</b> Hazardous and/or non-hazardous waste and/or e-waste generation	<input type="checkbox"/> Yes <input type="checkbox"/> No	If 'Yes', see Sections <b>A, D and F</b> below
	<b>G.</b> Protection of cultural heritage	<input type="checkbox"/> Yes <input type="checkbox"/> No	If 'Yes', see Sections <b>A, G, H and I</b> below
	<b>H.</b> Health and safety of the local population (field experiments/activities)	<input type="checkbox"/> Yes <input type="checkbox"/> No	If 'Yes', see Sections <b>A, H and I</b> below
	<b>I.</b> Other issues, not mentioned above (e.g. AI related and not covered by ethics)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>PART 2: ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES</b>			

ACTIVITY/Section	PARAMETER	MITIGATION MEASURES CHECK LIST
<p>A. Health and Safety</p>	<p>Occupational Health and Safety</p>	<ol style="list-style-type: none"> <li>1. Drafted and adopted Act on risk assessment in written form for all workplaces in accordance with the Law on occupational safety and health ("Off. Gazette of RS", no. 35/2023.)</li> <li>2. The workplaces of all researchers/participants in the project are systematized</li> <li>3. The complete work related to the Project will be carried out in a safe and disciplined manner, organized in such a way as to prevent accidents and reduce the possible negative impact on employees and the environment, all in accordance with written instructions for safe work;</li> <li>4. All researchers/participants in the Project are trained for safe and healthy work and records are kept of this on the prescribed forms, in accordance with the Rulebook on Records in the Field of Safety and Health at Work ("Official Gazette of RS", No. 62/2007 and 102/2015);</li> <li>5. All researchers/participants in the Project are provided with the use of means and equipment for personal protection at work (gloves, masks and respirators, protective glasses, etc., depending on the type of activity), all in accordance with the Rulebook on personal protective equipment ("Office Gazette of RS", 23/2020). The equipment is regularly and adequately used;</li> <li>6. Instructions for safe work for the use of work equipment, means and equipment for personal protection at work are prepared and available to all researchers in accordance with the legal regulations of the RS, and all researchers/participants are familiar with it.</li> <li>7. Occupational safety and health equipment for employees must be available at the location (first aid, firefighting equipment, etc.) in accordance with the Rulebook on the method of providing first aid, the type of means and equipment that must be provided at the workplace, the method and deadlines for training employees to provide first aid ("Official Gazette of RS", No. 109/2016);</li> <li>8. Signs for safety and/or health, for the purpose of notifying and informing researchers/employees about risks in the technological process, directions of movement and permitted places of detention, as well as measures to prevent or eliminate risks are visibly marked and highlighted. Check whether all researchers/participants in the Project are familiar with the same and whether there is a record/documented information about it.</li> <li>9. All work equipment, primarily in laboratories, is regularly inspected and checked, and records are kept on prescribed forms in accordance with the Rulebook on the procedure for inspecting work equipment and testing working environment conditions ("Official Gazette of RS" No. 15/22023).</li> <li>10. All measures related to fire protection, in accordance with the law, must be implemented in all facilities where activities financed by the Project are carried out in accordance with the Fire Protection Law ("Official Gazette of RS", 111/2009, 20/2015, 87/2018 and 87/2018) and there is documented information about it (rules, trainings, etc.);</li> <li>11. All researchers and participants in the Project must be familiar with the current Evacuation Plan and the Protection and Rescue Plan and must comply with the prescribed measures. All employees must be familiar with the dangers of fire and fire protection measures and must be trained in handling fire extinguishers, hydrants and other devices used for extinguishing fires in accordance with the Fire Protection Law ("Official Gazette of RS", No. 111/2009, 20/2015,</li> </ol>

		<p>87/2018 and 87/2018) and by-laws, about which there is documented information (training records);</p> <ol style="list-style-type: none"> <li>12. All researchers/participants in the Project are familiar with the "Instructions for action in case of fire", which is documented;</li> <li>13. If an incident or accident occurs with serious negative impact or consequences for the environment and/or human health, the Science Fund will be notified without delay. The Science Fund will notify the SAIGE Project Management Unit and the World Bank within 48 hours of the incident. The notification will contain all available information about the event. A more detailed analysis (cause analysis) will be carried out within the agreed time frame.</li> <li>14. For the researcher's work and stay in the field, documented information was created, which contains all recognized potential risks (accident situations) and responses to them. All researchers/participants in the Project are familiar with this documented information.</li> </ol>
<p><b>B. Working in the laboratory</b></p>	<p>Good laboratory practice</p>	<ol style="list-style-type: none"> <li>1. In the laboratory where scientific research tests related to the Project are carried out, the principles of Good Laboratory Practice are respected in accordance with GUIDELINES Good laboratory practices ("Off. Gazette of the RS", No. 28/2008) (<a href="http://www.pravno-informacioni-sistem.rs">www.pravno-informacioni-sistem.rs</a>)</li> <li>2. All researchers/participants in the Project are familiar with the documented information that governs the work in the laboratory (Manual, Rulebook, Quality Policy, etc.);</li> <li>3. A satisfactory number of employees with appropriate qualifications, appropriate premises, devices, and material for timely and correct performance of laboratory tests are provided;</li> <li>4. The laboratory where scientific research tests are performed has a clearly defined legal entity with documented information that is legally responsible for all laboratory activities;</li> <li>5. The laboratory has a defined laboratory management that has overall responsibility for the work of the laboratory (job descriptions and responsibilities of researchers, responsible person for work in the laboratory, etc.);</li> <li>6. In the laboratory where tests are carried out, the results of measuring environmental conditions (microclimate, chemical hazards, physical hazards, lighting, biological hazards) are controlled and recorded in accordance with the Rulebook on the procedure for inspecting work equipment and testing working environment conditions (" Official Gazette of RS", No. 15/2023).</li> <li>7. In the laboratory, access control to the area where tests are performed is defined and there is a record of this;</li> <li>8. Appropriate personal protective equipment is defined for all researchers/participants in the project for work in the laboratory and records are kept in accordance with the law; Proper functioning of equipment, including proper handling, scheduled maintenance and safe operation is ensured in the laboratory and records are kept;</li> <li>9. The equipment has identification with a unique ID number and an identification showing the calibration status and the date of the next calibration;</li> </ol>

		<p>10. Researchers/participants in the Project who handle the equipment have appropriate authorizations (for equipment involving gases under pressure and other equipment that requires special training and certification);</p> <p>11. For handling the equipment, there are instructions for use that are available to researchers (the instructions are in printed form and available/highlighted on the wall next to the equipment);</p> <p>12. There is a documented procedure for what to do in the event of equipment failure, overloading or mishandling, and records are kept about it;</p> <p>13. Control of purchased products, including chemicals and reagents and their verification before use, is carried out in the laboratory, and there is a record of this;</p> <p>14. Records are kept on the receipt and adequate storage of chemicals, reagents and consumables;</p> <p>15. The laboratory has a list of documented information related to work in the laboratory, with which all researchers/participants in the Project are familiar (instructions for safe work, management of waste, chemicals, hazardous waste, etc.);</p> <p>16. Risks associated with laboratory activities are recognized and documented;</p> <p>17. Standard operating procedures have been established and applied:</p> <ul style="list-style-type: none"> <li>- Substances to be tested and reference substances, devices, material and reagents</li> <li>- Keeping records,</li> <li>- Reporting, storage and availability,</li> <li>- Testing system,</li> <li>- Quality assurance procedures.</li> </ul> <p>18. Devices used during testing are regularly inspected, cleaned, maintained and calibrated in accordance with standard operating procedures and records are kept;</p> <p>19. In the laboratory there is a Catalog of waste generated (hazardous and non-hazardous) with defined waste streams;</p> <p>20. Management of waste packaging from chemicals has been resolved in the laboratory and records are kept about it;</p> <p>21. The management of biological waste generated during testing has been resolved in the laboratory and there are records about it;</p> <p>22. In the laboratory, the management of pharmaceutical waste is resolved in accordance with the Rulebook on the manner and procedure of pharmaceutical waste management ("Official Gazette of RS", No. 49/2019);</p> <p>23. In the laboratory, the management of medical waste is resolved in accordance with the Rulebook on the management of medical waste ("Official Gazette of RS", No. 48/2019);</p> <p>24. The person responsible for waste management was appointed in accordance with the law. Specify the number of the Decision/Decision;</p> <p>25. Handling of waste and its removal is done in a way that will not jeopardize the integrity of the examination. Appropriate conditions for collection, storage and disposal of waste, as well as appropriate procedures for decontamination and transport, have been established;</p>
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<p><b>C.</b> Collection of plant, animal and genetic material</p>	<p>Type of plant and animal material</p>	<p>1. For Projects that involve the collection of plant, animal and genetic material, in accordance with the Law on Nature Protection, the Project requested and received an opinion from the Institute for Nature Protection of the Republic of Serbia/Province of Vojvodina Institute for Nature Protection, for:</p> <ul style="list-style-type: none"> <li>- the purpose and goal of collection, i.e. the type of planned activities with the name of the project on the basis of which the research is carried out,</li> <li>- names and surnames of collaborators who will collect wild species of plants, animals and mushrooms,</li> <li>- scientific names of wild species and the number of individuals intended for collection,</li> <li>- the place/locations where the planned activities will be carried out,</li> <li>- the period (time) of the implementation of the mentioned actions i</li> <li>- research methods (capture, collection, marking, sampling, etc.) that will be applied;</li> </ul> <p>2. For the collection of wild species for scientific research and educational purposes, it is necessary to obtain a permit from the Ministry of Environmental Protection before starting work in the field. The Ministry of Environmental Protection, according to the previously obtained expert opinion of the Institute for Nature Protection of Serbia, issued the necessary permits to the SRO;</p> <p>3. When performing works and activities in nature and using the natural habitats of wild species, measures, methods and technical means are applied that contribute to the preservation of the favorable condition of species, i.e. that do not endanger wild species and/or disrupt the habitats of their populations, or these works and activities can be limited in a period that coincides with significant phases of their life cycle;</p> <p>4. Harassment of animals and collection of plants outside the defined area is prohibited;</p> <p>5. It is prohibited to use, destroy and undertake other activities that could endanger strictly protected wild species of plants, animals and fungi, including birds and their habitats</p>

		<ol style="list-style-type: none"> <li>6. It is forbidden to introduce indigenous wild species and their hybrids into the wild;</li> <li>7. Taking genetic material from nature for use must not threaten the survival of the ecosystem or the population of wild species of plants, animals and fungi in their habitats.</li> <li>8. The import of animals for scientific research purposes was carried out in accordance with the Law on animal welfare ("Off. Gazette of RS", No. 41/2009) and the Law on Veterinary Medicine ("Off. Gazette of RS", No.91/2005, 30/2010, 93/2012 and 17/2019.)</li> <li>9. The competent authorities have been informed that the researchers will carry out fieldwork in protected areas, and have authorized that;</li> <li>10. All researchers who perform fieldwork, as well as subcontractors who participate in field research within the project, are familiar with the potential risks that may arise during fieldwork activities.</li> </ol>
<p><b>D. Uses of Hazardous Materials</b></p>	<p>Safe management of chemicals, biohazards and hazardous materials</p>	<ol style="list-style-type: none"> <li>1. During the scientific research work on the Project, some of these chemicals are used and records are kept about it: <ul style="list-style-type: none"> <li>- chemicals registered in the Register of Chemicals;</li> <li>- substances of concern;</li> <li>- certain dangerous chemicals are imported/exported;</li> <li>- use biocidal products from the list of active substances.</li> </ul> </li> <li>2. There is a list of chemicals used on the Project;</li> <li>3. The method of storage and preservation of hazardous chemicals used in the Project is in accordance with the Law and all researchers/participants in the Project are familiar with the same, about which there is documented information;</li> <li>4. On an annual basis, data on the amount and type of chemicals used on the Project are submitted;</li> <li>5. The laboratory have a chemical adviser? Specify the number of the Certificate;</li> <li>6. On the annual level, the reported chemicals were carried out in accordance with the law of the RS;</li> <li>7. All researchers/participants in the Project are informed about the dangerous chemicals used in the workplace, the type and name of those substances, the risk of injury at work or damage to the health of employees, binding limit values of exposure at the workplace and other legal provisions, keeping records;</li> <li>8. Measures of sustainable and safe management of materials and precautionary measures specified in safety data sheets (Eng. Safety Data Sheet) that are used must be strictly applied and all researchers/participants in the Project are familiar with the same in accordance with the Law of RS;</li> <li>9. An extract from the safety data sheet related to safe work and personal protective equipment is available at the place of use of the chemical;</li> <li>10. All researchers/participants in the Project who work with chemicals have received adequate training related to their safe handling;</li> </ol>



		<ol style="list-style-type: none"> <li>11. All containers and pipelines for dangerous chemical substances, which are used in the work process, must be marked, in accordance with the regulations on the marking of chemical substances and prescribed signs for safety and health at the workplace;</li> <li>12. Reagents that could react with each other and cause a chemical reaction must not be stored in the same space;</li> <li>13. Containers and vessels in which chemicals and hazardous waste are stored are resistant to leakage, while those containing significant quantities have double protection against leakage and spillage (e.g. tank containers);</li> <li>14. All workers are not be exposed to radiation, dangerous chemicals or potential sources of infection;</li> <li>15. Before disposing of potentially infectious materials (including biological material, protective equipment, containers, etc.), they must be autoclaved.</li> </ol>
<p><b>E. Handling of gases under pressure</b></p>	<p>Health&amp;Safety at work and prevention of accidents</p>	<ol style="list-style-type: none"> <li>1. Regular works procedures/instruction defined who receives the gases under pressure and checks whether the data on the label corresponds to the order and records are kept;</li> <li>2. Gases under pressure are handled only by trained employees with appropriate certificates in accordance with instructions;</li> <li>3. Persons handling gases under pressure use appropriate protective equipment and are adequately trained/certified for work with the use of gases under pressure;</li> <li>4. Cylinders with pressurized gases should be protected from falling and heating;</li> <li>5. Full and empty pressurized gas cylinders must be labeled to exclude any possibility of error. If there is no label or it is not legible, such bottles are not used;</li> <li>6. The space in which there are cylinders with pressurized gases must be adequately ventilated;</li> <li>7. A risk assessment was performed and work instructions were prepared for researchers/participants in the Project who use gases under pressure;</li> <li>8. The safety data sheet is available at the point of use;</li> <li>9. Working instructions for safe work with gases under pressure have been developed;</li> <li>10. Personal protective equipment has been defined for researchers/participants in the Project who work with gases under pressure;</li> <li>11. The transport of cylinders with pressurized gases is carried out only with a closed valve and a protective cap, and so that the cylinder is secured against sliding and rolling;</li> <li>12. Gas cannot be transferred to another pressurized gas container. The return flow of the fluid is disabled;</li> <li>13. Original/existing labels must not be damaged and must not be removed;</li> <li>14. The bottle valve and pressure regulator are regularly maintained in good condition, so that they are not contaminated with fats and oils. The installation for gas consumption is manually controlled; when not in use - the bottle valve is closed;</li> <li>15. Gas consumption is enabled only with a suitable pressure regulator, the seal is checked before connection;</li> <li>16. Damaged pressurized gas bottles are not used, as well as bottles with damaged labels, but are marked with the appropriate label and the supplier is notified for further collection;</li> </ol>

		<p>17. Procedures in case of fire were defined and general emergency protocols. All researchers/participants in the Project have been informed about this.</p>
<p><b>F.</b> Hazardous and/or non-hazardous waste and/or e-waste generation</p>	<p>Management of non-hazardous waste</p>	<ol style="list-style-type: none"> <li>1. All generated waste is separately collected, sorted, and classified in the prescribed manner separately, and temporarily stored in designated containers marked with the name of the waste and the label from the Waste Catalog in accordance with the Law on Waste Management of the RS;</li> <li>2. All types of waste are ultimately disposed of in sanitary/environmentally sound official landfills in accordance with national regulation.</li> <li>3. Waste is stored in a way that does not affect human health and the environment, and such conditions are ensured that there is no mixing of different types of waste, as well as no mixing of waste with water;</li> <li>4. Daily records are kept of the generated waste in accordance with the Law;</li> <li>5. The waste is handed over to the authorized operator for a specific type of non-hazardous/hazardous waste with a completed Document on the movement of non-hazardous waste, i.e. the Document on the movement of hazardous waste in accordance with the Law;</li> <li>6. In accordance with the Law, the Person Responsible for waste management was appointed;</li> <li>7. It is strictly forbidden to dispose of waste in nature or watercourses;</li> </ol>
	<p>Management of hazardous materials, including hazardous waste and e-waste</p>	<ol style="list-style-type: none"> <li>1. Hazardous waste is stored in tanks, containers and other vessels accessible only to authorized personnel in accordance with the Rulebook on the manner of storage, packaging and labeling of hazardous waste ("Official Gazette of RS", Nos. 92/2010 and 77/2021);</li> <li>2. The container for storing hazardous waste should be closed and made of material that ensures impermeability with adequate protection against atmospheric influences;</li> <li>3. Containers for the storage of hazardous waste, with all their components, should be resistant to the hazardous waste contained in them;</li> <li>4. Containers for storing hazardous waste are regularly maintained and cleaned;</li> <li>5. Larger amounts of waste in liquid state are stored in containers with an impermeable tank that can accommodate the entire amount of waste in the event of an accident (leakage);</li> <li>6. Different types of hazardous waste, stored in the same area, must be disposed of separately;</li> <li>7. Hazardous waste is packed according to the characteristics of hazardous waste (flammable, explosive, infectious, etc.) and marked in accordance with the law governing the transportation of hazardous waste;</li> <li>8. The hazardous waste warehouse is fenced to prevent access by unauthorized persons, physically secured, locked and under constant surveillance;</li> <li>9. Records are kept of all activities related to the storage of hazardous waste in accordance with the law governing waste management and special regulations;</li> <li>10. Copies of documents on the movement of hazardous waste must be kept until the fifth copy of the completed Document on the movement of hazardous waste is received from the recipient, which confirms that the waste has been adequately disposed of in accordance with the law;</li> </ol>

		<p>11. Hazardous waste is classified according to the origin, characteristics and composition that make it dangerous, in accordance with the regulation governing the category, testing and classification of waste;</p> <p>12. If hazardous waste consists of several types of hazardous ingredients, its classification is based on the most abundant component;</p> <p>13. The label marking packaged hazardous waste contains:</p> <ul style="list-style-type: none"> <li>- warning: HAZARDOUS WASTE in Serbian and English;</li> <li>- index number and name of waste from the Waste Catalog,</li> <li>- Y designation according to the List of categories or related types of hazardous waste;</li> <li>- C mark according to the List of waste components that make it dangerous (C list),</li> <li>- H mark according to the List of waste characteristics that make it dangerous (H list),</li> <li>- data on the waste owner who packed the waste: name, address, phone/fax, date of packaging, first and last name of the qualified person responsible for professional work;</li> <li>- physical property of waste: powder, solid matter, viscous matter, paste, sludge, liquid matter, gaseous matter,</li> <li>- the amount contained in the package.</li> </ul> <p>14. E-waste is managing in accordance with the national legislation; if e-waste genared, explain management in place</p>
	<p>Medical waste management</p>	<p>1. At the level of the Organization, a Medical Waste Management Plan was drawn up in accordance with the Rulebook on Medical Waste Management ("Official Gazette of RS", No. 48/2019) and all researchers/participants in the Project are familiar with the operational procedures for medical waste management according to place of origin;</p> <p>2. The flows of medical waste generated in the laboratories within the Project have been defined and all researchers/participants are familiar with them. All procedures/instructions are in writing;</p> <p>3. In accordance with national regulations, researchers/participants in the Project will ensure adequate and sufficient infrastructure for handling and disposal of medical waste;</p> <p>4. Researchers/participants in the Project are familiar with protective measures (personal protective equipment) and how to react in the event of an accident during medical waste management;</p> <p>5. Project researchers/participants are familiar with the packaging of medical waste generated during the project and records are kept about it;</p> <p>6. Medical waste generated in the laboratory should have an adequate label containing:</p> <p>7. date of waste generation,</p> <p>8. index number and type of waste according to the Catalog of Waste,</p> <p>9. place of waste generation,</p> <p>10. amount of waste i</p>

		<ol style="list-style-type: none"> <li>11. the name of the person who filled out the sticker.</li> <li>12. Medical waste is stored in a place intended only for that purpose, visibly marked with an inscription about the purpose of the space, a ban on entry to unauthorized persons, as well as a warning about the possibility of endangering people's health;</li> <li>13. Infectious waste, as well as cytotoxic and cytostatic waste, is collected in a way that prevents direct contact with the personnel handling the waste, and its repackaging is not allowed in the warehouse and during delivery;</li> <li>14. Sharp objects are collected separately from other medical waste;</li> <li>15. The producer of medical waste should have a contract with a licensed organization that has permission to collect and transport and dispose medical waste.</li> </ol>
<p><b>G.</b> Protection of cultural heritage</p>		<ol style="list-style-type: none"> <li>1. For archaeological research, permits must be obtained from the competent authorities of the Republic of Serbia, namely the Ministry of Environmental Protection, i.e. the Institute for Nature Protection of Serbia, and the Ministry of Culture and Information of the RS.</li> <li>2. If during the execution of construction and other works archaeological sites or archaeological objects are encountered, the contractor is obliged to immediately, without delay, stop the work and notify the competent institute for the protection of cultural monuments and to take measures to ensure that the find is not destroyed or damaged, and to shall be preserved in the place and position in which it was discovered. Their instructions will be respected in further work;</li> <li>3. Adequate care and awareness raising will be undertaken so that all researchers/participants in the Project are maximally enlightened about the protection and importance of the excavation of archaeological materials;</li> <li>4. For the retrieval of artifacts from one or more museums or archeological collections, for the purpose of examination, documented information must be created to contain the basis for retrieval, the method of retrieval, the reverse sheet, the method of storage, the responsible person and the method of return;</li> <li>5. When part of the examination is carried out in foreign laboratories, there is documented information on the method of transport and the necessary accompanying documentation;</li> <li>6. Before the beginning of archaeological research in the field, documented information was created that recognized all potential risks and protection measures.</li> </ol>
<p><b>H.</b> Health&amp;Safety of the local populations (Field activities)</p>		<ol style="list-style-type: none"> <li>1. Before the start of research works in the field, especially if they last for a long period of time and in locations that are accessible to the public, documented information is prepared, which contains all the necessary measures that should be taken by the researcher/participant in the Project, so that the impact on the local the population was minimized (protective fences, warning tapes, various notices, etc.);</li> <li>2. If the planned activities include the occurrence of noise, a notice will be posted for the population about periods of more intense noise, and the company will take all measures to reduce the noise;</li> </ol>

		<ol style="list-style-type: none"> <li>3. Before the start of field surveys, which are in the immediate vicinity of populated areas, warning boards will be placed regarding speed limits, road safety or pedestrian safety. Special focus will be placed on the safety of children if a school is nearby;</li> <li>4. Before starting research work, a protective fence was provided, and adequate warning tapes and signs were placed;</li> <li>5. Unemployed/unauthorized persons are strictly prohibited from entering the research zone - the prohibition signs have been posed;</li> <li>6. Local communities and general public are informed about potentially dangerous research works through appropriate notices in the media and/or at publicly accessible locations (including the research site).</li> <li>7. Emergency preparedness plans and communication protocols for informing the public in the case of emergency are prepared.</li> <li>8. Data privacy and data security protocols established and staff trained.</li> <li>9. Information on how to submit grievances including contact phone or emails visible to local population</li> <li>10. Informed consent has been obtained from the research volunteers.</li> </ol>
I. Other issues, not mentioned above	(e.g. AI related and not covered by ethics)	

PART 3: MONITORING PLAN - filled out sample					
What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored (what should be measured and how)?	When is the parameter to be monitored (timing and frequency)?	Who is responsible for reporting?	Monitoring
<b>RESEARCH PROJECT REPARATORY PHASE</b>					
All permits required by the competent authorities of the RS	At the office SRO	By checking prior to commencement of works/activities	Once, before start of works/activities.	The responsible person for each subproject Have to notify the SF/IF of the results	PIU/SF/IF The Institution implementing the subproject

Accident's prevention	At the SRO office and on the site during field research	By checking if there are procedures/instructions for responding to emergency situations during works and if the equipment is in working condition at the sub-project location	Once, before start of works/activities	The responsible person for each subproject Have to notify the SF/IF of the results	PIU/SF/IF The Institution implementing the subproject
Tents and associated equipment during field research	At the-office of the specialized company	By checking if materials are in adequate condition (eg, it is not destroyed, torn, etc.)	Periodically, according to the technical specifications	The responsible person for each subproject Have to notify the SF/IF of the results	The Institution implementing the subproject
Preparedness of the research staff and appointed external staff (local guide) for the quick and appropriate response in the case of accidental situations	On each site	Providing training for the research staff	Before start of works/activities, and periodically;	The responsible person (Health&Safety officer) for each subproject: have to notify the SF/IF of the results	PIU/SF/IF The Institution implementing the subproject
<b>RESEARCH PROJECT IMPLEMENTATION PHASE</b>					
Establishment and implementation of appropriate procedures related to OHS.	At the sub-project location/ SRO offices and other premises where financed activities will be carried out;	Checking plans and operating procedures	Before starting the implementation of the sub-project	Responsible person in the institution implementing the subproject	PIU/SF/IF The Institution implementing the subproject
Control and Waste Management Plan (WMP)	At the sub-project location /laboratory visual assessment and checks of the documentation	By preparing CWMP which will cover an overview of control and waste management, mitigation measures, and monitoring and reporting	During the project duration	The responsible person for each subproject. Have to notify the SF/IF of the results	PIU/SF/IF The Institution implementing the subproject

		plan in accordance with local law.			
Toxic/hazardous materials management and Hazardous waste management	On-site/laboratory visual assessment and checks of the documentation	Preparing procedures/instructions for the management of toxic/hazardous materials/chemicals and hazardous waste management	During the project duration	The responsible person for each subproject . Have to notify the SF/IF of the results	PIU/SF/IF The Institution implementing the subproject
Management and storage of chemicals	On-site/laboratory visual assessment	Visual inspections and checks of the documentation	Periodically during the implementation of the subproject	Responsible person in the institution that implements the sub-project	PIU/SF/IF The Institution implementing the subproject
		Emergency preparedness and response plan including communication strategy at place			
Life and fire safety (LFS) procedures in place	SRO offices and other premises where financed activities will be carried out;	Visual inspections and checks of the documentation	Before starting the implementation of the sub-project	Responsible person for LFS in SRO. Have to notify the SF/IF of the results	PIU/SF/IF The Institution implementing the subproject

Date:	Prepared by:	Submitted by:	Signature PI:
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ESMP Checklist reviewed and approved by Environmental and Social Expert:

Date:

Name:

Title:

Signature:



**Part 1. General project and site information**

INSTITUTIONAL & ADMINISTRATIVE		
Country	Republic of Serbia	
Project title	<b>SERBIA ACCELERATING INNOVATION AND GROWTH ENTREPRENEURSHIP (SAIGE) PROJECT</b>	
Component	1.1. Science Fund of the Republic of Serbia 1.2. Innovation Fund of the Republic of Serbia	
Subcomponent title	Title of the Program	
Scope of project activities	Objective of the Program	
Institutional arrangements	Project management	
	Ministry of Science, Technological Development and Innovation (NITRA)	Local partners and/or beneficiary: Science Fund of the RS Innovation Fund of the RS Project Implementation Unit SAIGE

PROJECT DESCRIPTION	
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The name of the Program	
<b>Project Proposal Title:</b>	
<b>Acronym:</b>	
Sub-program:	
Participating Scientific and Research Organization (SRO) and address	
Principal Investigator (PI) (Name and contacts details):	
Partner organizations on the project:	
	<b>Note:</b> The leading partner will be responsible for the overall implementation of the project and for implementing the measures prescribed by the ESMP CL. Each partner organization will strictly adhere to the prescribed measures, according to the type and scope of participation in the project. Each partner organization must meet the legal requirements for working on the project (i.e. have the necessary accreditation, etc.).

	<p>which the leading partner will guarantee with its signature. The responsibilities and duties of partner organizations for implementing the measures prescribed by the ESMP CL and reporting to the leading partner are defined by the partnership agreement between the leading and other partner organizations.</p>
<p>Introduction/Project Description</p>	<p>Note: Please focus on description relevant to <i>ethic and social risk and management</i>. Describe the nature of the project, the scale of activities, where and how the results will be obtained and used, who is involved, what measures are already in the place</p>
<p><b>LEGISLATION</b></p>	
<p>Identify national local legislation</p>	

PART 3: MONITORING PLAN - filled out sample					
What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored (what should be measured and how)?	When is the parameter to be monitored (timing and frequency)?	Who is responsible for reporting?	Supervision
<b>RESEARCH PROJECT IMPLEMENTATION PHASE</b>					
Informed consent: Effectiveness of informed consent procedures, and compliance with ethical standards	SRO where Informed consent is obtained				
Ethics committee Processing of personal data: Effectiveness of data security measures, compliance with data protection laws, and protection of participant confidentiality	Location of Ethics committee				PIU/SF/IF The Institution implementing the subproject
Using Human Cells and Tissues: Implementation of informed consent processes, protection of donor privacy, and compliance with ethical and legal standards	SRO where human cells or tissue are collected	Audits of consent forms, regular reviews by an Ethics Committee, and assessments of privacy protocols	During the project	Responsible person for LFS in SRO. Have to notify the SF/IF of the results	PIU/SF/IF The Institution implementing the subproject
The use of experimental animals: Adherence to animal welfare guidelines, relevant Law proper handling procedures,	SRO using animals			PI (if it is a clinical trials, quarterly report to ALIMS)	PIU/SF/IF

PART 3: MONITORING PLAN - filled out sample					
What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored (what should be measured and how)?	When is the parameter to be monitored (timing and frequency)?	Who is responsible for reporting?	Supervision
and compliance with relevant laws					
Import/export of any material  Artificial intelligence: Adherence to AI ethics principles, transparency in AI communication, and mitigation of biases.	Leading SRO				
Using Human Cells and Tissues: Implementation of informed consent processes, protection of donor privacy, and compliance with ethical and legal standards	SRO where human cells or tissue are collected	Regular assessments by an AI Ethics Committee, AI specialist algorithmic and reviews of fairness and bias mitigation strategies	During the project	Responsible person for LFS in SRO. Have to notify the SF/IF of the results	PIU/SF/IF The Institution implementing the subproject

Date:	Prepared by:	Submitted by:	Signature PI:
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ESMP Checklist reviewed and approved by Ethics Expert:

Date:

Name:

Title:

Signature:

**Annex 8B – Environmental and Social AI CL** regarding the elements of development/application/implementation of artificial intelligence in the project

PROJECT INFORMATION			
<b>Project Proposal Title:</b>			
<b>Acronym:</b>			
Participating Scientific and Research Organization (SRO) and address / Lead organization-applicant			
Principal Investigator (PI)/ Person responsible for the Project (Name and contacts details):			
Partner organizations on the project:			
<p><b>Note:</b> The leading partner will be responsible for the overall implementation of the project and for implementing the measures identified by the AI ESMP CL. Each partner organization will strictly adhere to the prescribed measures, according to the type and scope of participation in the project. Each partner organization must meet the legal requirements for working on the project (i.e. have the necessary accreditation, etc.), which the leading partner will guarantee with its signature. The responsibilities and duties of partner organizations for implementing the measures prescribed by the AI ESMP CL and reporting to the leading partner are defined by the partnership agreement between the leading and other partner organizations.</p>			
<p><b>PART 1. Project related ES risk information<sup>51</sup></b> - this part is obligatory to be prepared (when requested by ES expert after screening/categorization) and <b>acknowledged/reviewed/approved by ES expert, before the contract for project financing is signed</b></p>			
<b>1.1. Environmental protection</b>			
- Are there potential negative impacts of artificial intelligence systems on the environment?	YES	NO	Explain answer
- Have mechanisms been established to assess the impact of the development, application and/or use of artificial intelligence systems on life environment (for example, the amount of energy used and carbon emissions)?	YES	NO	Explain answer, and provide details
- Are measures defined to reduce the impact of artificial intelligence systems on the environment during its life cycle?	YES	NO	Explain answer, and provide details

<sup>51</sup> In line with the CONCLUSION OF THE GOVERNMENT OF SERBIA ON ADOPTION OF ETHICAL GUIDELINES FOR THE DEVELOPMENT, IMPLEMENTATION AND USE OF RELIABLE AND RESPONSIBLE ARTIFICIAL INTELLIGENCE, Official Gazette of RS, 23/2023, ad 4.6.1. (Under heading 4.6. - Social and environmental well-being)

<b>1.1. Impact on work and skills</b>			
- Does the artificial intelligence system affect work engagement and way of working?	YES	NO	Explain answer
- Before the introduction of the artificial intelligence system, were the employees/ employees whose work will be affected by the introduction of the system informed and consulted? , as well as their representatives (unions, etc.)?	YES	NO	Explain answer
- Have appropriate measures been taken to ensure an understanding of the impact of artificial intelligence systems on the way employees/engaged work?	YES	NO	Explain answer
- Does the use of artificial intelligence systems create a risk of dequalification of employees?	YES	NO	Explain answer
- Are appropriate measures taken to prevent the risk of loss skill?	YES	NO	Explain answer
- Does the use of artificial intelligence systems promote or require new (digital) skills?	YES	NO	Explain answer
- Have the user manual and other materials necessary for the training of employees/ engaged been prepared?	YES	NO	Explain answer, provide details
- Are the trainings of employees/engaged?	YES	NO	Explain answer
<b>1.3. Impact on society</b>			
- Can an artificial intelligence system have a negative impact on society as a whole or on democracy?	YES	NO	Explain answer
- Has the indirect impact of using artificial intelligence systems on all stakeholders or society as a whole been assessed?	YES, an impact assessment was carried out	NO	Explain answer
- Is have appropriate measures been taken that reduce the potential harmful impact on society?	YES	NO	Explain answer
-Are measures taken to ensure that the artificial intelligence system does not negatively affect democracy?	YES	NO	Explain answer
<b>Part 2. Project related ES monitoring<sup>52</sup>, Monitoring table information - this part is obligatory to be prepared each time in regular (or on request) reports on project progress/implementation, shared and acknowledged/commented and reviewed/approved by ES expert</b>			
Address issues listed in Part 1 of this form.			
Also, address applicable indicators for:			
For carbon footprint:			
- identification of source of electric energy (from fossil fuels and/or renewable energy; by bringing the computation to where renewable/green energy is more abundant, or scheduling			

<sup>52</sup> The CONCLUSION OF THE GOVERNMENT OF SERBIA ON ADOPTION OF ETHICAL GUIDELINES FOR THE DEVELOPMENT, IMPLEMENTATION AND USE OF RELIABLE AND RESPONSIBLE ARTIFICIAL INTELLIGENCE, Official Gazette of RS, 23/2023, ad 4.6., in particular: “The effects of applying artificial intelligence systems must be continuously monitored and reviewed.”

<p>computation for times of day when renewable energy is more available);</p> <ul style="list-style-type: none"> <li>- identification of use of electric energy (to monitor global electricity demand of data center in TWh , for example; advice is to include data for the year before project start)</li> <li>- keeping an eye on the emissions level (as example, there are some available carbon footprint / sustainability calculators). If possible and appropriate, in order to “picture” model emissions (in g of CO2), within the project, keep record on tasks (in appropriate measure unit): text classification, token classification, extractive QA, masked language modelling, image classification, multitask text classification, object detection, multitask extractive QA, text generation, summarization, image captioning, multitask summarization and image generation.</li> </ul>	
<p>For water consumption and management:</p> <ul style="list-style-type: none"> <li>- evidence on water management, in particular info on use of the new cooling methods if applicable;</li> <li>- quantity of water used for cooling of computers/electricity used for air conditioning (in order to cool computers)</li> </ul>	
<p>For waste management:</p> <ul style="list-style-type: none"> <li>- evidence on waste management standards and environmentally sound waste management, in particular for electronic waste (quantities of electronic waste produced, how managed)</li> </ul>	
<p>For green procurement practicing - for the organizations and companies that are using and deploying AI technologies, practical industry/legal framework and guidelines that support green procurement of AI technologies would support them in looking for environmentally friendly AI practices.</p>	
<p>Social concerns – address issues not covered by ethic screening and monitoring (like bias- respect for colleagues, research participants, research subjects, diversity, non-discrimination, fairness and prevention of harm; this could include the proper management of information, respect for privacy, confidentiality and intellectual property rights, and proper citation). Alternatively, note that all social issues related the project are covered by parallel ethic screening performed (mandatory if applicable).</p>	
<p>Other comments, suggestions, proposals for indicators/monitoring/difficulties in data gathering, etc., if any</p>	

This is applicant explanatory checklist of environmental and social issues related to artificial intelligence, fill out with full responsibility of applicant and commitment to respect the National Ethical guidelines for the development, application and use of reliable and responsible artificial intelligence (chapter 6.4)<sup>53</sup> and EU Guidance (related Environment, Health and Safety)<sup>54</sup>, in all phases of the project, to monitor and report the implementation through. Information and documents which should be provided will be the subject of project review and monitoring by SF/IF/ES experts.

<sup>53</sup> ZAKLJUČAK VLADE SRBIJE O USVAJANJU ETIČKIH SMERNICA ZA RAZVOJ, PRIMENU I UPOTREBU POUZDANE I ODGOVORNE VEŠTAČKE INTELIGENCIJE, "Sl. glasnik RS", br. 23/2023

<sup>54</sup> [https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/how-to-complete-your-ethics-self-assessment\\_en.pdf](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/how-to-complete-your-ethics-self-assessment_en.pdf)

Date:

Prepared, chose: PART 1 or PART 2

Submitted by:

PI/ Person responsible for the Project, Signature:

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Environmental and Social AI ESMP CL – Part 1

or

Environmental and Social AI ESMP CL – Part 2

Review and ES opinion:

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Acknowledged and approved by Environmental and Social Expert:

Date:

Name:

Title:

Signature:

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**Annex 8C – ETHIC AI CL<sup>55</sup>** regarding the elements of development/application/implementation of artificial intelligence in the project

PROJECT INFORMATION	
Project Proposal Title:	
Acronym:	
Participating Scientific and Research Organization (SRO) and address / Lead organization-applicant	
Principal Investigator (PI)/ Person responsible for the Project (Name and contacts details):	
Partner organizations on the project:	
	<p><b>Note:</b> The leading partner will be responsible for the overall implementation of the project and for implementing the measures identified by the AI ESMP CL. Each partner organization will strictly adhere to the prescribed measures, according to the type and scope of participation in the project. Each partner organization must meet the legal requirements for working on the project (i.e. have the necessary accreditation, etc.), which the leading partner will guarantee with its signature. The responsibilities and duties of partner organizations for implementing the measures prescribed by the AI ESMP CL and reporting to the leading partner are defined by the partnership agreement between the leading and other partner organizations.</p>

This checklist is a supporting tool and does not constitute an exhaustive list of all ethics requirement that may be applicable to the development of each specific AI system. It has to be used in conjunction with Part 1-3 of the current guidelines and applied to a degree matching the type of AI system and the research being proposed (from basic to precompetitive).

Specification of Objectives against Ethical Requirements	Yes	No (how potential risks will be mitigated?)
<b>Respect for Human Agency</b>		
End-users and others affected by the AI system are not deprived of abilities to make all decisions about their own lives, have basic freedoms taken away from them,		
End-users and others affected by the AI system are not subordinated, coerced, deceived, manipulated, objectified or dehumanized, nor is attachment or addiction to the system and its operations being stimulated.		

<sup>55</sup> Based on EU document Ethic-by-design-and-ethic-use-approach-for-artificial-intelligence.  
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The system does not autonomously make decisions about vital issues that are normally decided by humans by means of free personal choices or collective deliberations or similarly significantly affects individuals,		
The system is designed in a way that give system operators and, as much as possible, end-users the ability to control, direct and intervene in basic operations of the system (when relevant)		
<b>Privacy &amp; Data Governance</b>		
The system processes data in line with the requirements for lawfulness, fairness and transparency set in the national and EU data protection legal framework and the reasonable expectations of the data subjects.		
Technical and organisational measures are in place to safeguard the rights of data subjects (through measures such as anonymization, pseudonymisation, encryption, and aggregation).		
There are security measures in place to prevent data breaches and leakages (such as mechanisms for logging data access and data modification).		
<b>Fairness</b>		
The system is designed to avoid algorithmic bias, in input data, modelling and algorithm design. The system is designed to avoid historical and selection bias in data collection, representation and measurement bias in algorithmic training,		
aggregation and evaluation bias in modelling and automation bias in deployment		
The system is designed so that it can be used different types of end-users with different abilities (whenever possible/relevant)		
The system does not have negative social impacts on relevant groups, including impacts other than those resulting from algorithmic bias or lack of universal accessibility,		
<b>Individual, and Social and Environmental Well-being</b>		
The AI system takes the welfare of all stakeholders into account and do not unduly or unfairly reduce/undermine their well-being		
The AI system is mindful of principles of environmental sustainability, both regarding the system itself and the supply chain to which it connects (when relevant)		
The AI system does not have the potential to negatively impact the quality of communication, social interaction, information, democratic processes, and social relations (when relevant)		

The system does not reduce safety and integrity in the workplace and complies with the relevant health and safety and employment regulations		
<b>Transparency</b>		
The end-users are aware that they are interacting with an AI system		
The purpose, capabilities, limitations, benefits and risks of the AI system and of the decisions conveyed are openly communicated to and understood by end-users and other stakeholders along with its possible consequences		
People can audit, query, dispute, seek to change or object to AI or robotics activities (when applicable)		
The AI system enables traceability during its entire lifecycle, from initial design to post-deployment evaluation and audit		
The system offers details about how decisions are taken and on which reasons these were based (when relevant and possible)		
The system keeps records of the decisions made (when relevant)		
<b>Accountability &amp; Oversight</b>		
The system provides details of how potential ethically and socially undesirable effects will be detected, stopped, and prevented from reoccurring.		
The AI system allows for human oversight during the entire life cycle of the project /regarding their decision cycles and operation (when relevant)		

This is applicant explanatory checklist of ethics and social issues related to artificial intelligence, fill out with full responsibility of applicant and commitment to respect the National Ethical guidelines for the development, application and use of reliable and responsible artificial intelligence and EU Guidance, in all phases of the project, to monitor and report the implementation through. Information and documents which should be provided will be the subject of project review and monitoring by SF/IF/ES experts.<sup>56</sup>

Date:

Prepared,

Submitted by:

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<sup>56</sup> •Etičke smernice za razvoj, primenu i upotrebu pouzdane i odgovorne veštačke inteligencije, "Sl. glasnik RS", br. 23/2023  
•UNESCO, (2021), Recommendation on the Ethics of AI, <https://unesdoc.unesco.org/ark:/48223/pf0000381137/PDF/381137eng.pdf.multi>  
• World Health Organization. Regulatory considerations on artificial intelligence for health. 2023 <https://iris.who.int/handle/10665/373421>.  
• Coalition for Health AI. Blueprint for trustworthy AI implementation guidance and assurance for healthcare. December 7, 2022 (<https://www.coalitionforhealthai.org/papers/Blueprint%20for%20Trustworthy>)  
• Ethical challenges in the use of artificial intelligence (AI) in medicine: human and non-human caring, E-Book, European Commission, 2019  
• Goldberg C.B. et al., To Do No Harm — and the Most Good — with AI in Health Care, NEJM AI 2024; 1 (3), DOI: 10.1056/AIp2400036  
• Ethics By Design and Ethics of Use Approaches for Artificial Intelligence, Version 1.0, 25 November 2021

PI/ Person responsible for the Project, Signature:

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Acknowledged and approved by Ethic Expert:

Date:

Name:

Title:

Signature:

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**ANNEX 09: COMPLIANCE STATEMENT TEMPLATE FOR SMEs/GRANTEES under Component 2**

Date and place of issuance: \_\_\_\_\_

Name and address of the issuer: \_\_\_\_\_

**STATEMENT OF LEGAL AND REGULATORY COMPLIANCE**

Hereby we declare that

- We conform to all national laws and applicable regulations concerning employment, labor and employee relations, and labor and working conditions;
- We are committed to providing a safe and healthy environment for our employees and to implementing all occupational health and safety requirements as stipulated by national legislation;
- We do not tolerate any form of child, forced or slavery work.
- We prohibit any form of harassment, abuse and violence at work and forbid direct or indirect discrimination against any employee or groups of employees on any ground and for whatever reason.

We understand that the failure to respect any of the above stated commitments could lead to termination of the contract and exclusion from the project.

Signature:

Name:

Position:

**ANNEX 10: Grievance redress log Template**

#	Priority	Date Feedback Received	Feedback Channel	Category of feedback	Summary Description	Anonymous (Yes/No)	Person assigned to address feedback	Status (resolved, pending, escalated)	Date resolution feedback of	Communication about resolution
1										
2										
3										
4										
5										
6										

**ANNEX 11: ES Questionnaire template to be used for regular reporting to PIU and WB**

**Within the regular reporting of project progress, established by IF/SF, it is mandatory to include answers by grantees to questions above. IF/SF will share these with PIU ES and E experts, and it is the subject of regular reporting to WB.**

Template:

Describe relevant Environmental, Social and Ethic related activities for the reference period. Please provide details in terms of related ES/E mitigation and monitoring, Environmental and Social Management Checklist/IT CL/Plan implementation for the reference period (monitoring activities, risk management, mitigation plan).

Please list official protocols or permissions obtained by the public authorities you follow, if any, included but not limited to permissions not available when project started, but planned to be obtained during the project implementation.

If applicable, please describe activities related to the *ethics* issues of your project (research involving the use of animals/human participants or material, personal data protection, artificial intelligence etc). In case that any activity related to these issues was undertaken and/or any ethical risk emerged in the reference period, please elaborate. Please list official protocols or ethical permissions obtained in the reference period, if any.

Issue /ES risk	<b>Mitigation Plan</b>	<b>Monitoring Plan</b>	Evidence and documentation (narrative explanation, evidence documents list and attach)
To address each issue (from ESMP CL/ESMP/other applicable)			
....			

Clan 7

Article 7

Zabranjeno je:

It is forbidden:

5) prisiljavati zivotinju na uzimanje hrane, osim u zdravstvene ili naučnoistrazivacke svrhe;

to compel the animal to take food, except for health or scientific research purposes;

29) upotrebljavati otrove i druga hemijska sredstva koja izazivaju bol, patnju i smrt zivotinja, osim u cilju kontrole populacije glodara, odnosno deratizacije i izvodjenja ogleada na zivotinjama u naučnoistrazivacke svrhe;

use poisons and other chemical agents that cause pain, suffering and death of animals, except for the purpose of the rodent population control, (pest control) and experimenting on animals for scientific research purposes;

35) drzati, reprodukovati i koristiti divlje zivotinje u cilju izlaganja u cirkusima, na takmicenjima i priredbama i, osim u naucne svrhe, na izlozbama;

holds, reproduce and use wild animals for the purpose of exhibiting at circuses, at competitions and events and except for scientific purposes, at exhibitions;

Clan / Article 14

Zabranjeno je obavljati intervencije na zivotinjama radi promene njihovog identiteta, prikrivanja telesnih mana i starosti, kao i delimicnu ili potpunu amputaciju pojedinih delova zivotinjskog tela.

It is forbidden to perform interventions on animals to change their identity, cover their body defects and age, as well as partially or completely amputate certain parts of the animal body.

**Intervencije iz stava 1. ovog clana izuzetno se mogu obavljati:**

The interventions referred to in paragraph 1 of this Article may exceptionally be performed:

2) u naučnoistrazivacke i biomedicinske svrhe, u skladu sa ovim zakonom;

2) for scientific research and biomedical purposes, in accordance with this Law;

Clan 15

**Zivotinja se moze lisiti zivota na human nacin, ako:**

The animal life could be deprived in a humane way if:

4) se koristi u naučnoistrazivacke i biomedicinske svrhe, u skladu sa ovim zakonom;

utilize for the scientific research and biomedical purposes, in accordance with this Law;

Clan / Article 34

Sprovođenje ogleada na zivotinjama moze se obavljati na osnovu resenja o odobrenju sprovođenja ogleada na zivotinjama koje donosi ministar, na osnovu strucnog misljenja Eticke komisije za zastitu dobrobiti ogleadnih zivotinja.

Animal testing could be performed upon receiving approval for implementing animal examination, from the Minister which is based on the expert opinion of the Ethical Commission for the Protection of the Welfare of Experimental Animals.

Izuzetno od stava 1. ovog clana, za izvodjenje specficnih i invazivnih ogleada na zivotinjama, resenje iz stava 1. ovog clana izdaje se na osnovu misljenja Etickog saveta za dobrobit ogleadnih zivotinja.

Exception from paragraph 1 of this Article, for carrying out specific and invasive animal experiments could be approved upon receiving opinion of the - Ethical Council for the Welfare of Experimental Animals

Clan / Article 38

Ogled na zivotinjama moze se sprovođiti samo radi:

Animal experiments could only be performed for:

6) naucnih istrazivanja;

6) scientific research;



7. Eticki savet za dobrobit oglednih zivotinja

Ethical Council for the Welfare of Experimental Animals

Clan / Article 48

Radi razmatranja strucnih pitanja, davanja strucnih misljenja i ucesca u realizaciji projektnih zadataka u oblasti dobrobiti zivotinja, ministar, u skladu sa propisima kojima se uređuje državna uprava, resenjem osniva posebnu radnu grupu - Eticki savet za dobrobit oglednih zivotinja (u daljem tekstu: Eticki savet).

For the purpose of considering expert opinions, professional advisory and estimations and in the line with project tasks and implementation in the field of animal welfare, the Minister, in accordance with the governing regulations and the state administration, by his decision can establishes a special working group - Ethical Council for the welfare of experimental animals (hereinafter: Ethical Council).

8. Eticka komisija za zastitu dobrobiti oglednih zivotinja

Ethical Commission for the Protection of the Welfare of Experimental Animals

Clan / Article 51

Naucnoistrazivacke organizacije i druga pravna lica koja sprovode oglede na zivotinjama duzne su da, u okviru svoje organizacije ili zajedno sa drugim naucnoistrazivackim organizacijama, odnosno pravnim licima koja sprovode oglede na zivotinjama, obrazuju eticku komisiju za zastitu dobrobiti oglednih zivotinja (u daljem tekstu: Eticka komisija).

Scientific research organizations and other legal entities conducting animal experiments are obliged, within their organization or together with other scientific research organizations, or legal entities conducting animal experiments, to establish an ethical Commission for the protection of the welfare of experimental animals (hereinafter: Ethics Commission).

Clan / Article 76

Inspekcijski nadzor nad sprovođenjem ovog zakona i propisa donetih na osnovu njega vrši Ministarstvo preko veterinarskih inspektora.

The Ministry through veterinary inspectors shall supervise the implementation of this law and the regulations adopted thereunder.

**ANNEX 13: KEY ARTICLES OF THE LAW ON HEALTH CARE ("O.G. of RS", No. 25/2019)**

Etički odbor

Član 130

Etički odbor je stručni organ koji prati pružanje i sprovođenje zdravstvene zaštite na načelima profesionalne etike, načelima poštovanja ljudskih prava i vrednosti i prava deteta, kao i kodeksa ponašanja zaposlenih u zdravstvenoj ustanovi. Direktor zdravstvene ustanove imenuje etički odbor, na predlog stručnog saveta.

Član 131

Zadaci etičkog odbora zdravstvene ustanove su da:

- 1) prati i analizira primenu načela profesionalne etike u obavljanju zdravstvene delatnosti i predlaže mere za njihovo unapređenje;
- 2) prati i analizira sprovođenje kodeksa ponašanja zaposlenih u zdravstvenoj ustanovi i predlaže mere za njihovo unapređenje;
- 3) daje saglasnost za sprovođenje naučnih istraživanja u oblasti zdravstva, medicinskih istraživanja, istraživanja u oblasti javnog zdravlja, kao i da prati njihovo sprovođenje;
- 4) daje saglasnost za uzimanje ljudskih organa, ćelija i tkiva od živog davaoca, odnosno umrlog lica, u skladu sa zakonom i daje mišljenje o etičkim i drugim pitanjima u postupku presađivanja, odnosno primene ćelija i tkiva;
- 5) razmatra etička pitanja i donosi odluke u vezi sa uzimanjem delova ljudskog tela u naučno-nastavne svrhe, u skladu sa zakonom;
- 6) razmatra etička pitanja u vezi sa primenom mera za lečenje neplodnosti

Član 131

Zadaci etičkog odbora zdravstvene ustanove su da:

- 1) prati i analizira primenu načela profesionalne etike u obavljanju zdravstvene delatnosti i predlaže mere za njihovo unapređenje;
- 2) prati i analizira sprovođenje kodeksa ponašanja zaposlenih u zdravstvenoj ustanovi i predlaže mere za njihovo unapređenje;
- 3) daje saglasnost za sprovođenje naučnih istraživanja u oblasti zdravstva, medicinskih istraživanja, istraživanja u oblasti javnog zdravlja, kao i da prati njihovo sprovođenje;
- 4) daje saglasnost za uzimanje ljudskih organa, ćelija i tkiva od živog davaoca, odnosno umrlog lica, u skladu sa zakonom i daje mišljenje o etičkim i drugim pitanjima u postupku presađivanja, odnosno primene ćelija i tkiva;
- 5) razmatra etička pitanja i donosi odluke u vezi sa uzimanjem delova ljudskog tela u naučno-nastavne svrhe, u skladu sa zakonom;

Ethics Board

Article 130

The Ethics Board is an expert body that monitors the implementation and provision of health care based on the principles of professional ethics, the principles of respect for human rights and values and rights of the child, as well as the code of conduct for employees in the health institution.

Upon the proposal of the expert council the director of the health care institution is appointed by the Ethics Board,

Article 131

Tasks of the ethics board of the health institutions are to

- 1) monitor and analyze application of the principles of professional ethics in the performance of health services and propose measures for their improvement;
- 2) monitor and analyze the implementation of the code of conduct for employees in the health institution and propose measures for their improvement;
- 3) gives the approval to conduct scientific research in the field of health care, medical research, research in the field of public health, and to monitor their implementation;
- 4) to give consent for the taking of human organs, tissues and cells from a living donor or deceased person, in accordance with the law, and gives an opinion on ethical and other issues in the transplantation, or the application of the cells and tissues;
- 5) consider ethical issues and make decisions regarding taking parts of the human body for scientific and educational purposes, in accordance with the law;
- 6) Consider the ethical issues related to the implementation of measures for the treatment of infertility;

Article 131

Tasks of the Ethics Board of the health institutions are to

- 1) monitor and analyze application of the principles of professional ethics in the performance of health services and propose measures for their improvement;
- 2) monitor and analyze the implementation of the code of conduct for employees in the health institution and propose measures for their improvement;
- 3) gives the approval to conduct scientific research in the field of health care, medical research, research in the field of public health, and to monitor their implementation;
- 4) to give consent for the taking of human organs, tissues and cells from a living donor or deceased person, in accordance with the law, and gives an opinion on ethical and other issues in the transplantation, or the application of the cells and tissues;

6) razmatra etička pitanja u vezi sa primenom mera za lečenje neplodnosti

5) consider ethical issues and make decisions regarding taking parts of the human body for scientific and educational purposes, in accordance with the law;

6) Consider the ethical issues related to the implementation of measures for the treatment of infertility;

Etički odbor Srbije

Član 141

Etički odbor Srbije je stručno telo koje se stara o pružanju i sprovođenju zdravstvene zaštite u skladu sa načelima profesionalne etike, načelima poštovanja ljudskih prava i vrednosti i prava deteta, na nivou Republike Srbije.

Vlada imenuje i razrešava predsednika i članove Etičkog odbora Srbije, na predlog ministra.

Ethics Board of Serbia

Article 141

The Ethics Board of Serbia is a professional body that takes care of the delivery and implementation of health care in accordance with the principles of professional ethics, the principles of respect for human rights and values and rights of the child, in the Republic of Serbia. The Government shall appoint and dismiss the President and members of the Ethics Board of Serbia, at the proposal of the Minister.

Član 142

Nadležnost Etičkog odbora Srbije je da:

1) predlaže osnovna načela profesionalne etike zdravstvenih radnika i zdravstvenih saradnika i prati njihovu primenu u obavljanju zdravstvene delatnosti na teritoriji Republike Srbije;

2) predlaže kodeks ponašanja zaposlenih u sistemu zdravstvene zaštite i prati njegovu primenu na teritoriji Republike Srbije;

3) koordinira rad etičkih odbora u zdravstvenim ustanovama;

4) prati sprovođenje naučnih, medicinskih i istraživanja u oblasti javnog zdravlja u zdravstvenim ustanovama na teritoriji Republike Srbije;

5) daje mišljenja o spornim etičkim pitanjima koja su od značaja za sprovođenje naučnih, medicinskih i istraživanja u oblasti javnog zdravlja u zdravstvenim ustanovama u Republici Srbiji;

Article 142

Jurisdiction of the Ethics Board of Serbia is to:

1) proposes the basic principles of professional ethics health workers and experts and monitor their use in the performance of health care services in the territory of Serbia;

2) proposes a code of conduct employed in the health care and monitoring its use in the Republic of Serbia;

3) coordinate the work of Ethics Boards in health institutions;

4) monitor the implementation of the scientific, medical and research in the field of public health in health institutions in the Republic of Serbia;

5) give opinions on controversial ethical issues that are of importance for scientific, medical and research in the field of public health in health institutions in the Republic of Serbia;

**ANNEX 14: RISK CLASSIFICATION**

Project type, location, sensitivity, scale	Nature & magnitude of ES risks & impacts, available mitigation	Applicants capacity and commitment	Context risk relevant to ES measures
<b>HIGH RISK</b>			
<ul style="list-style-type: none"> <li>▪ Complex</li> <li>▪ large to very large scale</li> <li>▪ in sensitive location(s)</li> </ul>	<ul style="list-style-type: none"> <li>▪ wide range of significant adverse risks and impacts</li> <li>▪ long term, permanent and/or irreversible, impossible to avoid entirely</li> <li>▪ some cannot be mitigated or require complex, unproven mitigation, sophisticated social analysis</li> <li>▪ high in magnitude and/or in spatial extent (large to very large area or population);</li> <li>▪ significant adverse cumulative or transboundary impacts;</li> <li>▪ high probability of serious adverse effects to human health and/or the environment</li> <li>▪ high value and sensitivity (eg. protected and internationally recognized areas)</li> <li>▪ high value, sensitive lands or rights of Indigenous Peoples and other vulnerable minorities</li> <li>▪ Intensive or complex involuntary resettlement or land acquisition</li> <li>▪ Impacts on cultural heritage or densely populated urban areas</li> <li>▪ may give rise to significant social conflict, harm or human security risks</li> <li>▪ a history of unrest in area or sector, concerns about use of security forces</li> </ul>	<ul style="list-style-type: none"> <li>▪ uncertain, conflicting agency jurisdiction</li> <li>▪ legislation, regulations not addressing risks and impacts</li> <li>▪ changes to applicable legislation are being made</li> <li>▪ enforcement is weak</li> <li>▪ limited past experience of implementing agencies</li> <li>▪ challenges and concerns about track record regarding ES issues</li> <li>▪ significant stakeholder engagement capacity, commitment, track record concerns</li> </ul>	<ul style="list-style-type: none"> <li>▪ factors outside project control impacting ES performance and outcomes</li> </ul>
<b>SUBSTANTIAL RISK</b>			
<ul style="list-style-type: none"> <li>▪ not as complex</li> <li>▪ Large to medium scale</li> <li>▪ not such sensitive location</li> </ul>	<ul style="list-style-type: none"> <li>▪ some significant risks and impacts</li> <li>▪ mostly temporary, predictable and/or reversible</li> <li>▪ possibility of avoiding or reversing but with substantial investment and time</li> <li>▪ may give rise to limited degree of social conflict, harm, human security risk;</li> <li>▪ medium in magnitude and/or in spatial extent (medium to large area and population)</li> <li>▪ less severe, more readily avoided/mitigated cumulative and/or transboundary impacts</li> </ul>	<ul style="list-style-type: none"> <li>○ uncertain, conflicting agency jurisdiction</li> <li>○ legislation, regulations not addressing risks and impacts</li> <li>○ changes to applicable</li> </ul>	

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Project type, location, sensitivity, scale	Nature & magnitude of ES risks & impacts, available mitigation	Applicants commitment capacity and	Context risk relevant to ES measures
	<ul style="list-style-type: none"> <li>▪ medium to low probability of serious adverse effects to human health and/or the environment (with known and reliable mechanisms to prevent or minimize)</li> <li>▪ lower effects on areas of high value or sensitivity</li> <li>▪ more readily available and reliable mitigatory and/or compensatory measures</li> </ul>	<ul style="list-style-type: none"> <li>○ legislation are being made</li> <li>○ enforcement is weak</li> <li>○ in some respects, limited experience of implementing agencies</li> <li>○ some concerns about track record regarding ES issues readily addressed</li> <li>▪ some stakeholder engagement concerns readily addressed</li> </ul>	
<b>MODERATE RISK</b>			
<ul style="list-style-type: none"> <li>▪ no activities with high potential for harming people or environment</li> <li>▪ located away from sensitive areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ risks and impacts not likely to be significant</li> <li>▪ not complex and/or large</li> <li>▪ predictable and expected to be temporary and/or reversible;</li> <li>▪ low in magnitude;</li> <li>▪ site-specific, without likelihood of impacts beyond the project footprint;</li> <li>▪ low probability of serious adverse effects to human health and/or the environment</li> <li>▪ Routine safety precautions are expected to be sufficient to prevent accidents</li> <li>▪ easily mitigated in a predictable manner</li> </ul>		
<b>LOW RISK</b>			

Project type, location, sensitivity, scale	Nature & magnitude of ES risks & impacts, available mitigation	Applicants capacity and commitment	Context risk relevant to ES measures
	<ul style="list-style-type: none"> <li>▪ Minimal or negligible risks to and impacts on human populations and/or the environment</li> <li>▪ few or no adverse risks and impacts and issues</li> <li>▪ No further assessment after screening</li> </ul>		

## **ANNEX 15: REPORT ON PUBLIC DISCLOSURE AND PUBLIC CONSULTATION ON ESMF**

As required by WB Environmental and Social Standard 10 (ESS10) – Stakeholder Engagement and Information disclosure, during preparation of Draft ESMF, SEP and ESCP document The Borrower carried out several round of consultations with all relevant stakeholders.

On September 23, 2019, the first round of consultation with key stakeholders was held at the World Bank premises in Belgrade, Boulevard Kralja Aleksandra 86. Representatives of key institutions that will implement the Project attended the meeting. Particular emphasis is placed on the potential environmental and social impacts of the Project and the experiences of individual institutions that have previously used loan funds in similar projects.

On 04 October 2019, as a continuation of the preparation of the Environmental and Social Management Framework (ESMF), at the premises of the Ministry of Education, Science and Technological Development - Institute of Chemistry, Technology and Metallurgy, Njegoseva 12 Belgrade, a second round of consultation was held with key Project stakeholders. The meeting was attended by representatives of key stakeholders. Special focus was given to monitoring and evaluation of projects, screening forms, development of environmental and social management plans during Project implementation, opportunities for involvement of diaspora experts and ways of public involvement during Project implementation.

On 22 October 2019, WB “No Objection” on draft ESMF document including the SEP and ESCP document was delivered to the MoESTD.

Starting from 22 October 2019, MoESTD disclosed Draft ESMF, ESCP and SEP document on its web site and announced invitation for Public Consultations for the public, bodies and organizations interested in ESMF document for Project. Same announcement is published in daily newspaper “Blic” on 25 October 2019. Public and other interested parties and organizations were invited to participate in process of public consultation on draft ESMF document.

Draft ESMF document and Call for Public Consultations were also placed on:

- o on the web site of the Science Fund: <http://fondzanauku.gov.rs/>
- o on the web site of the Innovation Fund: <http://www.inovacionifond.rs/>

On 01 November 2019, at 11:00 AM (local time), public consultations and presentation of the Draft ESMF document were organized at the premises of the Ministry of Education, Science and Technological Development - Institute of Chemistry, Technology and Metallurgy, Njegoseva 12, 11000 Belgrade, conference hall at the second floor. During the public consultations, there were comments and remarks related to issues presented in the ESMF, but no new environmentally or socially related issues were raised.

### **PRELIMINARY CONSULTATIONS WITH KEY STAKEHOLDERS, 23 SEP 2019**

On September 23, 2019, with the aim of preparing the Environmental and Social Management Framework (ESMF), the first round of consultation with key stakeholders was held at the World Bank premises in Belgrade, Boulevard Kralja Aleksandra 86.

The meeting was attended by representatives of key institutions that will implement the Project. A list of participants is attached.

Engaged Environmental and Social Consultant informed the representatives of key institutions about the necessity of drafting an ESMF document in accordance with World Bank procedures related to Project approval. Particular emphasis is placed on the potential environmental and social impacts of the Project and the experiences of individual institutions that have previously used loan funds in similar projects

The meeting started at 1pm and ended at 2:30 pm, with the announcement of the next round of consultations with a broader list of stakeholders.

SERBIA ACCELERATING INNOVATION AND GROWTH ENTREPRENEURSHIP – SAIGE  
Environmental and Social Management Framework – REPORT ON PUBLIC CONSULTATIONS  
PRELIMINARY CONSULTATIONS WITH KEY STAKEHOLDERS, 04 OCT 2019

On 04 October 2019, as a continuation of the preparation of the Environmental and Social Management Framework (ESMF), at the premises of the Ministry of Education, Science and Technological Development - Institute of Chemistry, Technology and Metallurgy, Njegoseva 12 Belgrade, a second round of consultation was held with key Project stakeholders.

The meeting was attended by representatives of key institutions that will implement the Project in question. A list of participants is attached.

During the consultation, attendees informed the Environmental Consultant of the implementation of previous World Bank-funded projects. Special focus was given to monitoring and evaluation of projects, screening forms, development of environmental and social management plans during Project implementation, opportunities for involvement of diaspora experts and ways of public involvement during Project implementation.

The meeting began at 10 a.m. and ended at 12 p.m., with the announcement of a public presentation on Draft ESMF document, expected in the second half of October 2019.

#### FINAL ROUND OF PUBLIC CONSULTATIONS WITH RELEVANT STAKEHOLDERS, 04 OCT 2019

On 01 November 2019, at the premises of the Ministry of Education, Science and Technological Development - Institute of Chemistry, Technology and Metallurgy, Njegoseva 12 Belgrade, a final round of stakeholder's consultations was held.

There were 14 attendees on public consultation meeting in Belgrade. Most of them were key Project stakeholders – Ministry of Education, Science and Development, Innovation Fund, Science Fund and representatives of Research and Development Institutions.

The meeting was attended by:

1. Mr. Sasa Lazovic Ministry of Education, Science and Development
2. Ms. Tijana Knezevic Ministry of Education, Science and Development
3. Ms. Jasmina Grubor Ministry of Education, Science and Development
4. Ms. Marina Sokovic Ministry of Education, Science and Development
5. Ms. Katarina Urosevic World Bank
6. Ms. Milena Kostadinovic Innovation Fund
7. Mr. Stefan Popovic Innovation Fund
8. Ms. Mara Zivkov Science Fund
9. Ms. Milana Mitrovic Institute of Plant Protection and the Environment
10. Mr. Zeljko Dzeletovic Institute for Application of Nuclear Energy INEP
11. Mr. Branko Brkljac Faculty of Technical Sciences - University of Novi Sad
12. Mr. Boris Antic<sup>57</sup> Faculty of Technical Sciences - University of Novi Sad
13. Mr. Zoran Mitovic<sup>58</sup> Faculty of Technical Sciences - University of Novi Sad
14. Mr. Igor Radovic Environmental Specialist, engaged by Ministry of Science

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<sup>57</sup> Mr. Antic delivered comments to Draft ESMF document via E-mail

<sup>58</sup> Mr. Mitrovic delivered comments to Draft ESMF document via E-mail





Picture 1: Public consultation in Belgrade, 01 November 2019



Picture 1: Public consultation in Belgrade, 01 November 2019



Picture 1: Public consultation in Belgrade, 01 November 2019

The meeting started according to schedule at 11:00 AM. The Environmental Specialist Mr. Igor Radovic presented the ESMF document in detail to the interested attendees.

Participants are informed that the purpose of ESMF, ESCP and SEP document is to specify the procedures that the Project will have in place during implementation. In addition, it was emphasized that all activities supported under the Project shall be environmentally and socially sound, sustainable, and consistent with WB ESS and Serbian national legislation.

Project screening procedure and risk classification are explained, as well as legal and administrative framework for Project.

Special attention during public consultations was given to Ethical Issues. Screening procedure for possible subprojects that include research activities on animals or human tissues are carefully explained to all participants, having in mind sensitivity of such activities, legal framework and huge number of comments received from WB representatives during preparation of Draft ESMF document. It is confirmed that subject research activities can be performed strictly in accordance with Animal Welfare Law (for subprojects that include research activities on human tissues), Healthcare Law and role of Ethical Board (for subprojects that include research activities on human tissues). Finally, participants are informed that ethical issues stated within the Horizon 2020 “Ethic Issue Table” will not be eligible for financing under this Project unless they comply with EC regulations.

The importance of Labor management and the most important provisions of WB Environmental and Social Standard ESS2 (Labor and Working Conditions) are also explained to the public during presentation of ESMF document.

Before starting with questions of participants, institutional responsibilities and monitoring and reporting procedure on Project are presented and explained.

Consultation started at 11:00 AM and ended at 1:00 PM, local time.

#### Questions and Answers:

Q1 Sasa Lazovic, MoESTD: Why the Environmental Risk of the Project is increased from the starting category “Low Risk” to current category “Moderate Risk”?

A1 Katarina Urosevic, WB: Because major part of Project is allocated to Science Fund which is new institution and there is a question of their own capacity to oversee with Project and its Environmental and Social Requirements.

Q2 Sasa Lazovic, MoESTD: Can current category “Moderate Risk” be decreased to “Low Risk” during negotiations with the WB?

A2 Igor Radovic, ES: Bank keeps their right to reassess.

the Project Category during the whole Project cycle.

Q3 Milena Kostadinovic, IF: If no ethical issues are related to proposed subproject, and applicant have only “No” as answers within the Ethic Issue Table, is there any need for Applicant to obtain opinion of Ethical Commission or Ethical Council (for animal testing) or Ethical Board (for human tissue testing)?

A3 Igor Radovic, ES: No. In such cases there is no need for obtaining opinions of subject ethical bodies and no further ethical screening will be conducted.

Q4 Milena Kostadinovic, IF: There will be no need for Externally Engaged Consultants engaged for Screening of Subprojects with Ethic Issues since valid regulative exists and all applicants which plan to conduct subprojects connected with ethic issues must obtain Ministry Permit and Opinion of the relevant Ethic body (Ethical Council, Ethical Commission or Ethical Board).

A4 Igor Radovic, ES: OK. Suggestion accepted. ESMF will be updated accordingly.

Q5 Igor Radovic, ES: WB specialist suggested excluding Table 6 from Screening list - HORIZON 2020 Ethic Issue Table. What is your opinion regarding this issue?

A5 Katarina Urosevic, WB: Instead of deletion, Table 6 can be modified and harmonized to local circumstances.

Q6 Igor Radovic, ES: Which type of regulation and when will be adopted by Science Fund in order to prescribe detailed procedures for human tissue testing?

A6 Mara Zivkov, SF: It will be a Rulebook with detailed instructions for such activities. It will be Internal Act of the Science Fund, harmonized with Serbian legislative. It should be adopted during January 2020.

Q7 Igor Radovic, ES: What type of regulation and when will be adopted by Science Fund in order to prescribe detailed procedures for human tissue testing?

A7 Mara Zivkov, SF: It will be a Rulebook with detailed instructions for such activities. It will be Internal Act of the Science Fund, harmonized with Serbian legislative. It should be adopted during January 2020.

Q8 Igor Radovic: Will Innovation Fund adopt any Internal Act in regards with Project, similar to Science Fund?

A8 Milena Kostadinovic, IF: Yes. Innovative Fund will adopt the same IF type of Internal Act which will be adopted before the first Public call for the Component 2.

Q9 Stefan Popovic, IF: Can we agree that no ESMP document (regardless “regular” or “simplified” type) will be required for subprojects which fall in Category 1 (low Risk)? If so, it should be clearly confirmed within the ESMF text.

A9 Igor Radovic: Comment accepted. No further environmental documents or processes are required for Category 1 (low Risk) subprojects. Screening list records will be kept by PIU and visually inspected for issues occasionally.

Q10 Brank Brkljac, FTN: We prepared two suggestions to PIU. The first is related to collection of feedback informations from applicants in order to conclude how successful Request For proposal was. Suggestion is to divide total number of applications with number of approved subprojects.

Second suggestion was in relation with Project priority determination. Instead of currently present “bottom-up” approach we suggest another – “top-down” approach where Project Carrier collect information from different state institutions and define real needs for the project. Once the priorities are determined – Request for proposal should take into account subject priorities.

A10 Katarina Urosevic, WB: Great. WB has recognized this approach as extremely important and supports every effort that enables science and technology to have a positive impact on the principles of sustainable development.

#### Public Consultation Summary

During the 10 days aimed for insight into the ESMF document WB representatives submitted additional comments, questions and remarks on ESMF document, mostly related to investigations on animal and human tissues. Representatives of MOESTD responded with adequate explanations, answers and comments so all questions are addressed and the ESMF document is updated accordingly.

During the Public Consultation process suggestions regarding the ESMF document and preparation of Project activities are received from group of research employed in Faculty of Technical Sciences - University of Novi Sad.

Finally, Institute for molecular genetics and genetic engineering, University of Belgrade, submitted their Comments on ESMF document. All questions were addressed and suggestions were taken into consideration and incorporated into the final version of the ESMF document. Terms used in ESMF for different bodies (Ethical Council, Ethical Committee and Ethics Board) are uniformed. Procedures related to animal research are now separated from procedures that are related to research on human tissues. List of applicable laws is updated and Law on protection of personal data is included.

**СПИСАК ПРИСУТНИХ НА ЈАВНИМ КОНСУЛТАЦИЈАМА**

<p><i>Предмет ЈАВНИХ КОНСУЛТАЦИЈА:</i>  <b>ОКВИРНИ ПЛАН ЗА УПРАВЉАЊЕ ЗАШТИТОМ ЖИВОТНЕ СРЕДИНЕ И СОЦИЈАЛНИМ УТИЦАЈИМА</b>                  Консултације са кључним заинтересованим странама  <b>Environmental and Social Management Framework – ESMF</b>                  Consultations with key stakeholders</p>		<p><i>Место одржавања ЈАВНИХ КОНСУЛТАЦИЈА:</i>                  Канцеларија Светске Банке у Београду, Булевар краља Александра                  WB premices in Belgrade, Kralja Aleksandra Str.</p>	
<p>Убрзавање иновација и раст предузетништва у Србији - SAIGE                  Serbia Accelerating Innovation and Growth Entrepreneurship – SAIGE</p>		<p><i>Датум јавних консултација:</i>                  23. септембар 2019.                  September 23, 2019</p>	
<i>Р.б.</i>	<i>Име и презиме</i>	<i>Организација / адреса</i>	<i>Телефон.; Факс; Е-маил</i>
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<p><i>Предмет ЈАВНИХ КОНСУЛТАЦИЈА:</i>  <b>ОКВИРНИ ПЛАН ЗА УПРАВЉАЊЕ ЗАШТИТОМ ЖИВОТНЕ СРЕДИНЕ И СОЦИЈАЛНИМ УТИЦАЈИМА</b>                  Консултације са кључним заинтересованим странама  <b>Environmental and Social Management Framework – ESMF</b>                  Consultations with key stakeholders</p>		<p><i>Место одржавања ЈАВНИХ КОНСУЛТАЦИЈА:</i>                  Institut za hemiju, tehnologiju i metalurgiju IHTM, a Njegoševa 12, Beograd                  Institute of Chemistry, Technology and Metallurgy, Njegoseva 12, Belgrade</p>	
<p>Убрзавање иновација и раст предузетништва у Србији - SAIGE                  Serbia Accelerating Innovation and Growth Entrepreneurship – SAIGE</p>		<p><i>Датум јавних консултација:</i>                  04. октобар 2019.</p>	<p><i>Date:</i>                  October 04, 2019</p>
<i>Р.б.</i>	<i>Име и презиме</i>	<i>Организација / адреса</i>	<i>Телефон.; Факс; Е-маил</i>
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## СПИСАК ПРИСУТНИХ НА ЈАВНИМ КОНСУЛТАЦИЈАМА

### *Public Consultations with key stakeholders - List of participants*

<p><i>Предмет ЈАВНИХ КОНСУЛТАЦИЈА:</i>  <b>ОКВИРНИ ПЛАН ЗА УПРАВЉАЊЕ ЗАШТИТОМ ЖИВОТНЕ СРЕДИНЕ И СОЦИЈАЛНИМ УТИЦАЈИМА</b>                  Консултације са кључним заинтересованим странама  <b>Environmental and Social Management Framework – ESMF</b>  <b>Public Consultations with key stakeholders</b></p>		<p><i>Место одржавања ЈАВНИХ КОНСУЛТАЦИЈА:</i>                  Institut za hemiju, tehnologiju i metalurgiju ИТМ, а Njegoševa 12, Be                  Institute of Chemistry, Technology and Metallurgy, Njegoseva 12, Belgrade</p>	
<p>Убрзавање иновација и раст предузетништва у Србији - SAIGE                  Serbia Accelerating Innovation and Growth Entrepreneurship – SAIGE</p>		<p><i>Датум јавних консултација:</i>                  01. новембар 2019.</p>	<p><i>Date:</i>                  November 01, 2019</p>
<i>Р.б.</i>	<i>Име и презиме</i>	<i>Организација / адреса</i>	<i>Телефон.; Факс; Е-маил</i>
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SERBIA ACCELERATING INNOVATION AND GROWTH ENTREPRENEURSHIP – SAIGE  
 Environmental and Social Management Framework – REPORT ON PUBLIC CONSULTATIONS

<p><i>Мет ЈАВНИХ КОНСУЛТАЦИЈА:</i>  <b>ВИРНИ ПЛАН ЗА УПРАВЉАЊЕ ЗАШТИТОМ ВОДНЕ СРЕДИНЕ И СОЦИЈАЛНИМ УТИЦАЈИМА</b>                  консултације са кључним заинтересованим странама  <b>Environmental and Social Management Framework – ESMF</b>                  Public Consultations with key stakeholders</p>		<p><i>Место одржавања ЈАВНИХ КОНСУЛТАЦИЈА:</i>                  Institut za hemiju, tehnologiju i metalurgiju IHTM, a Njegoševa 12, Beograd                  Institute of Chemistry, Technology and Metallurgy, Njegoseva 12, Belgrade</p>	
<p>Убрзавање иновација и раст предузетништва у Србији - SAIGE                  Accelerating Innovation and Growth Entrepreneurship – SAIGE</p>		<p><i>Датум јавних консултација:</i>                  01. новембар 2019.</p>	<p><i>Date:</i>                  November 01, 2019</p>
<i>Име и презиме</i>	<i>Организација / адреса</i>	<i>Телефон; Факс; Е-маил</i>	



In accordance with the provisions of Art. 76 and 77 of the Law on State Administration ("Official Gazette of RS", Nos. 79/05, 101/07, 95/10, 99/14, 47/18 and 30/18 - other law) and Article 14 paragraph 2 of the Law on Ministries (Official Gazette of the RS, Nos. 44/14, 14/25, 54/15, 96/15 - other law and 62/17), in accordance with the World Bank's Environmental and Social Standards: Environmental and Social Standard on the Stakeholder Engagement and Information Disclosure - ESS10,

**Republic of Serbia**

**MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGICAL DEVELOPMENT**

informs the public and calls  
relevant entities, persons and legal entities, including other government bodies, relevant associations, the professional public, and other interested parties,  
to participate

**PUBLIC CONSULTATIONS**

related to

- **ENVIRONMENTAL AND SOCIAL FRAMEWORK (ESF)**
- **ENVIRONMENTAL AND SOCIAL COMMITMENT PLAN (ESCP)**
- **STAKEHOLDER ENGAGEMENT PLAN (SEP)**

for

**Serbia Accelerating Innovation and Growth Entrepreneurship Project  
(SAIGE Project)**

Interested parties can get an insight into the subject documents on following addresses:

- on the web site of the Ministry of Education, Science and Technological Development: <http://www.mpn.gov.rs>
- on the web site of the Science Fund: <http://fondzanauku.gov.rs>
- on the web site of the Innovation Fund: <http://www.inovacionifond.rs>

Comments and suggestions on to the subject documents shall be submitted in written form to the Ministry of Education, Science and Technological Development, Nemanjina 22-26, 11000 Belgrade or via following E-mail: [nauka@mpn.gov.rs](mailto:nauka@mpn.gov.rs) with note / subject: "For public consultation of SAIGE", as of 1 November 2019.

Registration for participation in direct public consultations and presentation of subject documents to be held on Friday, November 1, 2019, beginning at 11:00 at the premises of the Ministry of Education, Science and Technological Development - Institute of Chemistry, Technology and Metallurgy, Njegoseva 12, 11000 Belgrade, conference hall at the second floor, should be sent to following address [tijana.knezevic@mpn.gov.rs](mailto:tijana.knezevic@mpn.gov.rs).

If you need any additional information, please contact: +381 (0)11 36 16 526 or E-mail address [tijana.knezevic@mpn.gov.rs](mailto:tijana.knezevic@mpn.gov.rs).

Picture 4: Announcement of public consultation in daily newspaper, English, ("Blic", 25 Nov 2019)





У складу са одредбама чл. 76. и 77. Закона о државној управи („Сл. гласник РС”, бр. 79/05, 101/07, 95/10, 99/14, 47/18 и 30/18 - др. закон) и члана 14. став 2. Закона о министарствима („Сл. гласник РС”, бр. 44/14, 14/25, 54/15, 96/15 - др. закон и 62/17), а сагласно Еколошком и социјалном стандарду Светске банке: Environmental and Social Standard on The Stakeholder Engagement and Information Disclosure - ESS10,

Република Србија

**МИНИСТАРСТВО ПРОСВЕТЕ, НАУКЕ И ТЕХНОЛОШКОГ РАЗВОЈА**

обавештава јавност и позива релевантне субјекте, физичка лица и правна лица, укључујући друге државне органе, релевантна удружења, стручну јавност, као и друге заинтересоване стране, да се укључе у

**ЈАВНЕ КОНСУЛТАЦИЈЕ**

које се односе на

- ОКВИР ЗА УПРАВЉАЊЕ ЗАШТИТОМ ЖИВОТНЕ СРЕДИНЕ И СОЦИЈАЛНИМ УТИЦАЈИМА ПРОЈЕКТА (ESF)
- ПЛАН ЕКОЛОШКИХ И СОЦИЈАЛНИХ ОБАВЕЗА (ESCP)
- ПЛАН УКЉУЧИВАЊА ЗАИНТЕРЕСОВАНИХ СТРАНА (SEP)

и учешће у припреми активности које се односе на

**Пројекат акцелерације иновација и подстицања раста предузетништва у Србији (SAIGE пројекат)**

Увид у предметна документа може се извршити:

о На веб страници Министарства просвете, науке и технолошког развоја:

<http://www.mpn.gov.rs>

о На веб страници Фонда за науку: <http://fondzanauku.gov.rs>

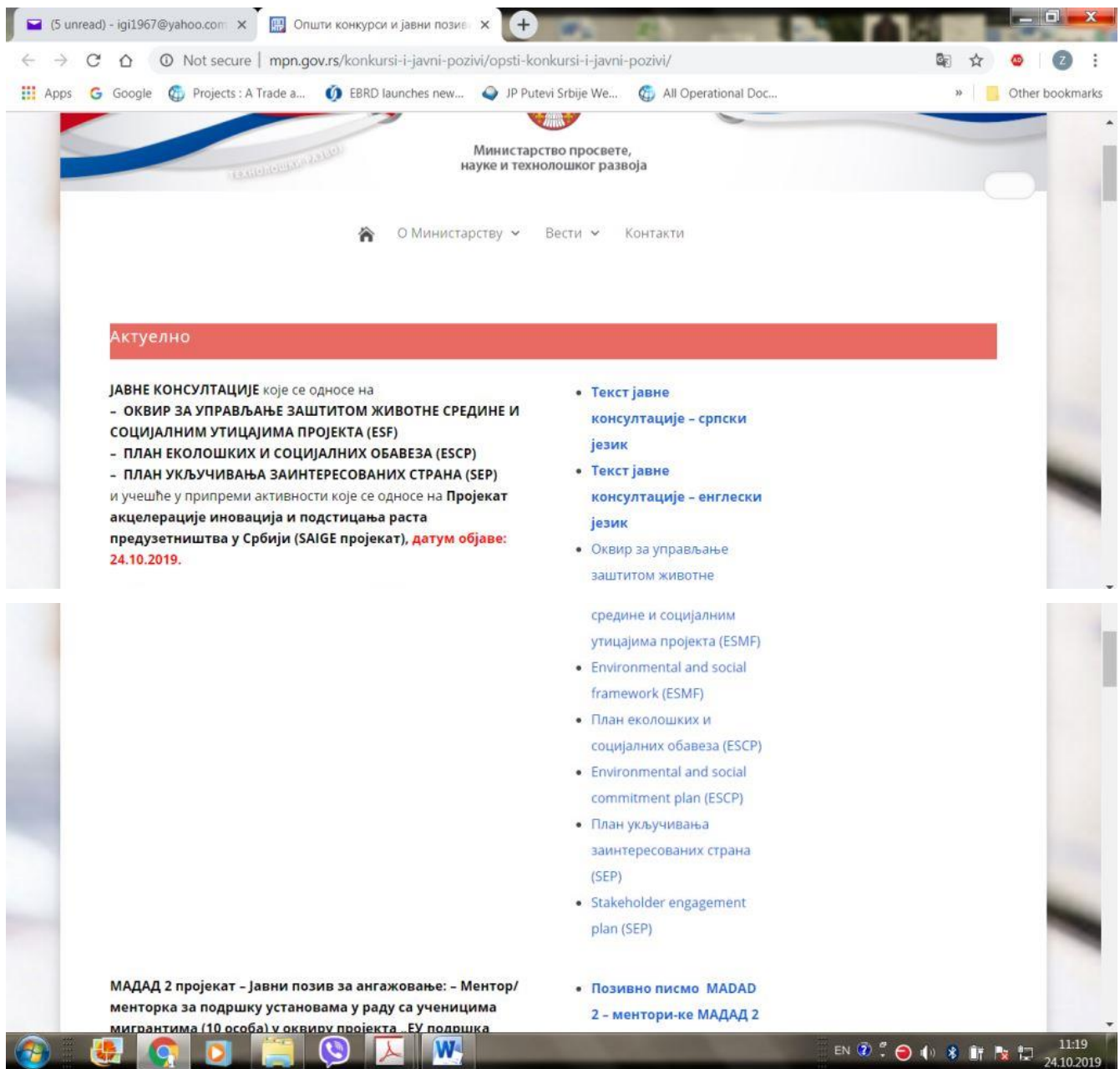
о На веб страници Фонда за иновациону делатност: <http://www.inovacionifond.rs>

Примедбе, мишљења и сугестије у вези са предметном документацијом се подносе Министарству просвете, науке и технолошког развоја у писаном облику на адресу Немањина 22-26, 11000 Београд или електронском поштом на адресу: [nauka@mpn.gov.rs](mailto:nauka@mpn.gov.rs) са напоменом/предметом: „За јавне консултације SAIGE”, закључно са 01. новембром 2019. године.

Пријава учешћа у непосредним јавним консултацијама и презентацији предметних докумената која ће се одржати у петак 1. новембра 2019. године, са почетком у 11:00 часова у просторијама Министарства просвете, науке и технолошког развоја – у Институту за хемију, технологију и металургију, Београд, улица Његошева број 12/ поткровље, врши се на адресу [tijana.knezevic@mpn.gov.rs](mailto:tijana.knezevic@mpn.gov.rs).

Додатне информације о овом обавештењу са позивом јавности могу се добити на тел: +381 (0)11 36 16 526 или електронској адреси [tijana.knezevic@mpn.gov.rs](mailto:tijana.knezevic@mpn.gov.rs).

Picture 4: Announcement of public consultation in daily newspaper, Serbian, (“Blic”, 25 Nov 2019)

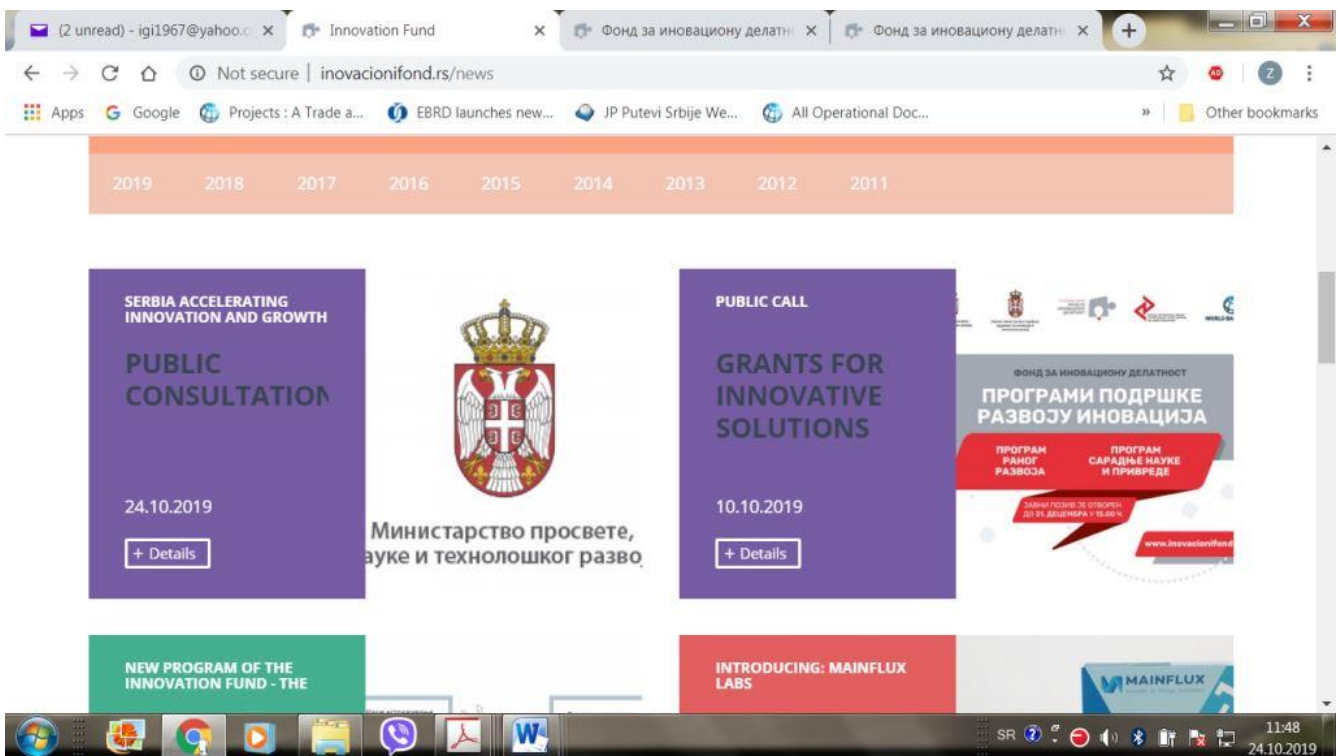


Picture 5: Announcement of public consultation on DRAFT ESMF document on Ministry web site

SERBIA ACCELERATING INNOVATION AND GROWTH ENTREPRENEURSHIP – SAIGE  
Environmental and Social Management Framework – REPORT ON PUBLIC CONSULTATIONS



Picture 6: Public disclosure of DRAFT ESMF document, English language, Ministry web site



Picture 5: Announcement of public consultation on DRAFT ESMF document, English language, SF web site

The screenshot shows a web browser window displaying the website of the Science Fund of the Republic of Serbia (Fond za nauku Republike Srbije). The page is in Serbian and features a navigation menu with links for 'Насловна', 'О нама', 'Програми', 'Позиви', 'Вести', and 'Контакт'. The main content area is titled 'ЈАВНЕ КОНСУЛТАЦИЈЕ' (Public Consultations) and includes the following text:

РЕПУБЛИКА СРБИЈА  
МИНИСТАРСТВО ПРОСВЕТЕ, НАУКЕ И ТЕХНОЛОШКОГ РАЗВОЈА

обавештава јавност и позива

релевантне субјекте, физичка лица и правна лица, укључујући друге државне органе, релевантна удружења, стручну јавност, као и друге заинтересоване стране,

да се укључе у

**ЈАВНЕ КОНСУЛТАЦИЈЕ**

- ОКВИР ЗА УПРАВЉАЊЕ ЗАШТИТОМ ЖИВОТНЕ СРЕДИНЕ И СОЦИЈАЛНИМ УТИЦАЈИМА ПРОЈЕКТА (ESF)
- ПЛАН ЕКОЛОШКИХ И СОЦИЈАЛНИХ ОБАВЕЗА (ESCP)
- ПЛАН УКЉУЧИВАЊА ЗАИНТЕРЕСОВАНИХ СТРАНА (SEP)

и учешће у припреми активности које се односе на

Пројекат акцелерације иновација и подстицања раста предузетништва у Србији (SAIGE пројекат)

Увид у предметна документа може се извршити:

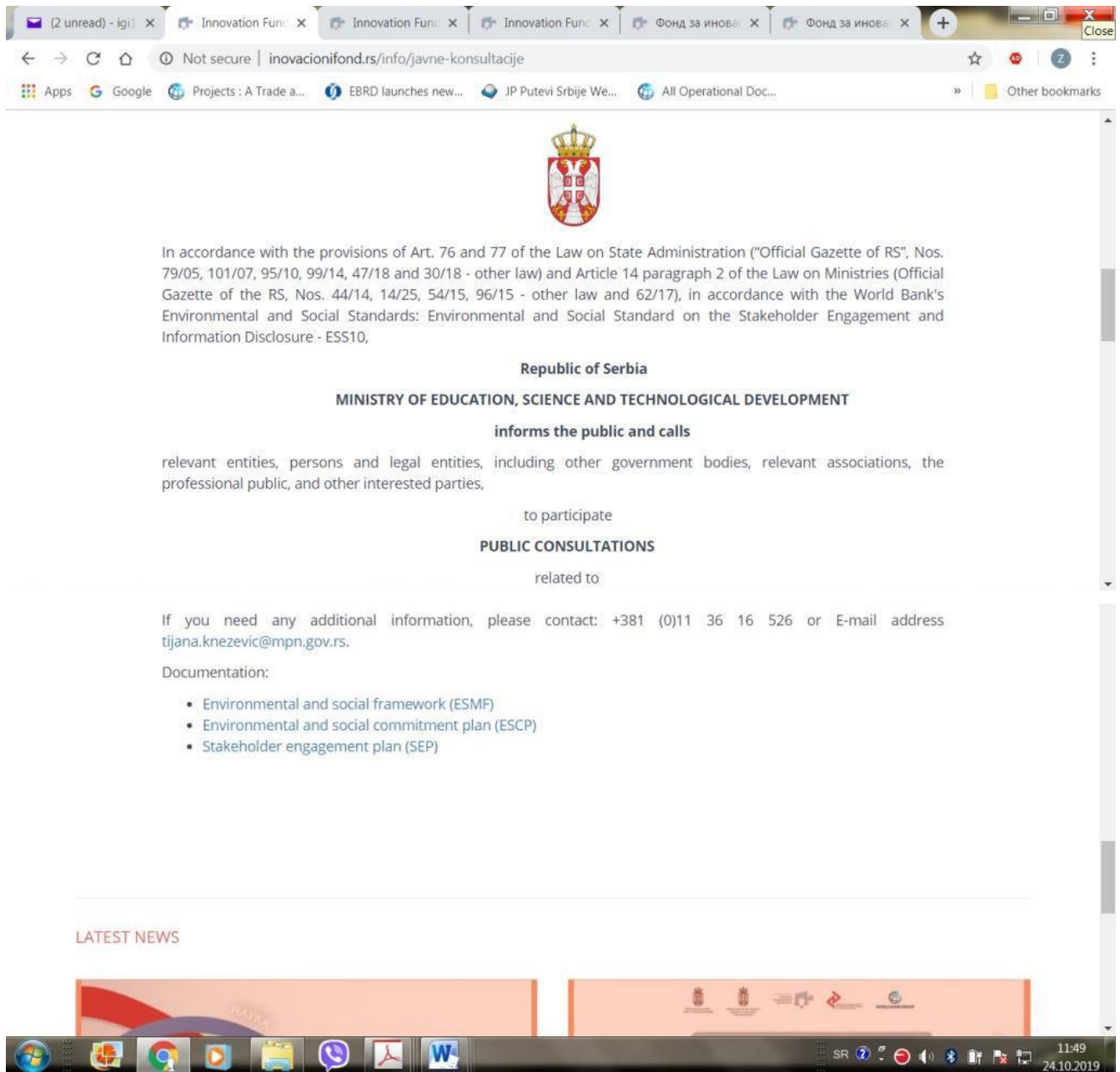
- На веб страници Министарства просвете, науке и технолошког развоја: <http://www.mpn.gov.rs>

Примедбе, мишљења и сугестије у вези са предметном документацијом се подносе Министарству просвете, науке и технолошког развоја у писаном облику на адресу Немањина 22-26, 11000 Београд или електронском поштом на адресу: [nauka@mpn.gov.rs](mailto:nauka@mpn.gov.rs) са напоменом/предметом: „За јавне консултације SAIGE“, закључно са 01. новембром 2019. године.

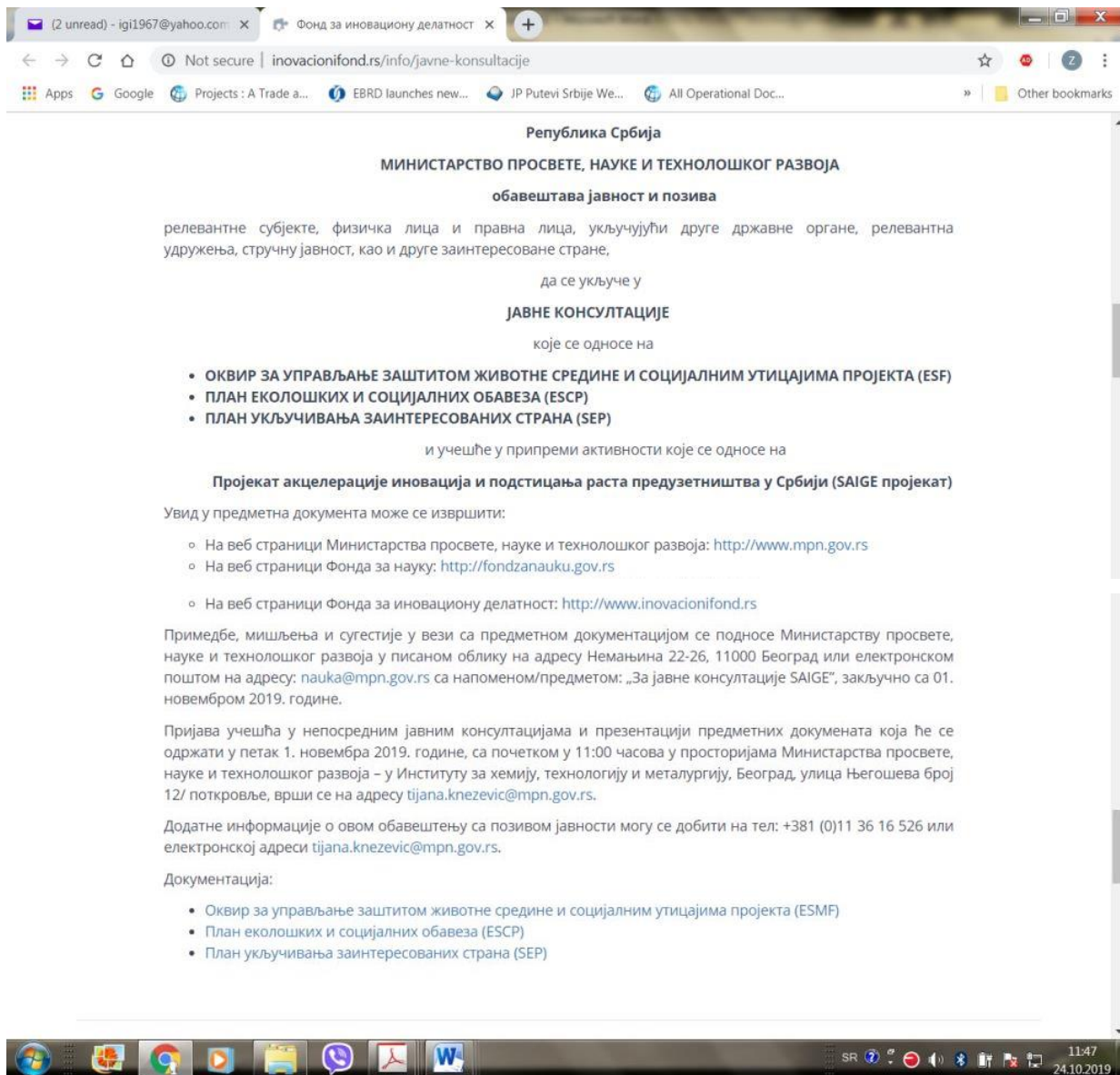
Пријава учешћа у непосредним јавним консултацијама и презентацији предметних докумената која ће се одржати у петак 1. новембра 2019. године, са почетком у 11:00 часова у просторијама Министарства просвете, науке и технолошког развоја – у Институту за хемију, технологију и металургију, Београд, улица Његошева број 12/ поткровље, врши се на адресу [tijana.knezevic@mpn.gov.rs](mailto:tijana.knezevic@mpn.gov.rs).

On the right side of the page, there is a vertical list of months from October 2019 to December 2018, and a 'Категорије' (Categories) section with the following items: Иновације, Истраживање, Наука, and Управљање Пројектима.

Picture 5: Announcement of public consultation on DRAFT ESMF document, Serbian language, SF web site



Picture 5: Announcement of public consultation on DRAFT ESMF document, English language, SF web site



Picture 7: Call for Public Consultations on DRAFT ESMF document, Serbian language, IF web site

**ANNEX 16 STATEMENT OF THE COMPLIANCE of SMEs/Grantees and RDI with WB EHS guidelines** <sup>59</sup>

Date and place of issuance: \_\_\_\_\_

Name and address of the issuer: \_\_\_\_\_

**STATEMENT OF LEGAL AND REGULATORY COMPLIANCE**

Hereby we declare that in case of successful award:

- We are aware of, and comply with, the standards laid down in World Bank EHS Guideline;
- We conform to all national laws\* and applicable regulations concerning Environment, Health and Safety;
- We are committed to providing a safe and healthy environment for our employees and the community and to implementing as stipulated by national legislation and the WB EHS Guidelines, whereas we are aware in case of discrepancies the more stringent standards of the two shall be achieved;
- We confirm to have received a copy of the WB EHS Guidelines, that we fully understand the requirements and confirm this by signing this Statement.
- We confirm our understanding that adherence to these standards might be subject to announced and unannounced audits by the PIU or any other third party authorized by the PIU

We understand that the failure to respect any of the above stated commitments could lead to termination of the contract and exclusion from the project.

Signature:

Name:

Position:

\*National Laws refers both to the Laws of Republic of Serbia and the domicile Law of the country in case the Bidder is foreign

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<sup>59</sup> Copy of the WB ESH Guidelines shall be appended to each Call for Proposal but for purposes of this ESMF are available at <https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=iOWim3p>

**ANNEX 17 – ESMP/ESMP Checklist Monitoring report template**

Environmental and Social Monitoring Report

Program:

Project ID & name:

Company/Grantee name & location:

Monitoring of: ESMP  / ESMP Checklist

Environmental monitoring visit(s) conducted on:

Reporting period:

Reporting date:

Phase No.	Issue	Mitigation measure(s)	Monitoring measure(s)	Status	Period	Evidence	Comments (if applicable)
		According to ESMP/ESMP Checklist/Questionnaire for reporting I. Mitigation Plan	According to ESMP/ESMP Checklist/Questionnaire for reporting II. Monitoring Plan				
						Documents/photos (contracts, location of docs, photos, delivery notes etc.)	
						Performance assessment conducted during the site visit	

Additional comments (if any):

Enclosure:

Appropriate evidence submission will be requested after ES monitoring visit

Reviewed and prepared by the Environmental and Social Expert:

NOTE: In case of unpredictable situations, PIU will organize online monitoring visit.



## ANNEX 18 – GENERIC CODE OF CONDUCT

We are the Service Provider (*enter name of Service Provider*). We have signed a contract with [*enter the name of Employer*] for [*enter a description of the Works/Services etc*]. These Works/Services will be carried out at [*enter the Site and other locations where the Services will be carried out*]. Our contract requires us to implement measures to address environmental and social risks related to the Services including the risks of sexual exploitation and abuse and gender-based violence.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Service. It applies to all our staff, labourers and other employees at the location where the Service Provider is being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Service. All such persons are referred to as “**Contractor’s Personnel**” and are subject to this Code of Conduct.

This Code of Conduct identifies the behaviour that we require from all the Service Provider’s Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

### REQUIRED CONDUCT

Service Provider’s Personnel shall:

1. Carry out his/her duties competently and diligently
2. Comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor’s Personnel and any other person
3. Maintain a safe working environment including by:
  - a. ensuring that workplaces, machinery, equipment and processes under each person’s control are safe and without risk to health
  - b. wearing required personal protective equipment
  - c. using appropriate measures relating to chemical, physical and biological substances and agents
  - d. implement the OHS Management Plan
  - e. following applicable emergency operating procedures.
4. Report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health
5. Adhere to a zero-alcohol policy during work activities, and refrain from the use of illegal substances at all times
6. Treat other people with respect regardless of gender, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status
7. Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate,
8. Not engage in any form of sexual harassment including unwelcome sexual advances, requests for sexual favors, and other unwanted verbal or physical conduct of a sexual nature with other Contractor’s or Employer’s Personnel
9. Not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. In Bank financed projects/operations, sexual exploitation occurs when access to or benefit from Bank financed Goods, Works, Consulting or Non-consulting services is used to extract sexual gain
10. Not engage in Sexual Assault, which means any form of non-consensual sexual contact that does not result in or include penetration. Examples include attempted rape, as well as unwanted kissing, fondling,

or touching of genitalia and buttocks not engaged in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage

11. Complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation and Assault/Sexual Harassment (SEA/SH)
12. Report violations of this Code of Conduct; and
13. Not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the Project Grievance Mechanism.

## RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter the name of the Service Provider's Social Expert with relevant experience in handling gender-based violence, or if such person is not required under the Service Provider another individual designated by the Service Provider's to handle these matters*] in writing at this address [..... ] or by telephone at [..... ] or in person at [..... ]; or
2. Call [.....] to reach the Contractor's hotline (*if any*) and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

## CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by the Service Provider's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

### FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of the Service Provider's contact person with relevant experience in handling gender-based violence*] requesting an explanation.

Name of Service Provider's Personnel:

Name \_\_\_\_\_]

Signature: \_\_\_\_\_

Date: (day month year): \_\_\_\_\_

Counter signature of authorized representative of the Service Provider:

Signature: \_\_\_\_\_

Date: (day month year): \_\_\_\_\_