Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 04/20/2023 | Report No: ESRSA02753

BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
Croatia	EUROPE AND CENTRAL ASIA	P180755	
Project Name	Digital, Innovation, and Green Technology Project		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Finance, Competitiveness and Innovation	Investment Project Financing	4/18/2023	6/22/2023
Borrower(s)	Implementing Agency(ies)		
Ministry of Finance	Ministry of Science and Education		

Proposed Development Objective

The project development objective is to advance research and innovation with a digital and green focus through enhancing institutional infrastructure and research performance of research organizations and firms.

Financing (in USD Million)	Amount
Total Project Cost	115.00

B. Is the project being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project [including overview of Country, Sectoral & Institutional Contexts and Relationship to CPF]

The project will advance research and innovation in Croatia with focus on the digital and green agenda, by enhancing institutional capacities and strengthening the program mix. The project aims to fill gaps in the institutional and other enabling conditions and financing for research and innovation. The interventions will build the capacities of institutions to deliver on the digital and green research and innovation agenda, complement and enhance the effectiveness of EU-funded investments, and finance digital and green research and innovation. The project supports reforms envisaged in the National Recovery and Resilience Plan (NRRP), Smart Specialization Strategy (S3), and activities important for OECD accession.

The project is structured into two components for a duration of 5 years. Component 1 'Enabling institutional conditions for digital and green research and innovation' provides technical assistance and financing to strengthen institutional capacities and support the efficient use of EU funds. Component 1 includes two subcomponents. Subcomponent 1.1 aims to improve the institutional capabilities and infrastructure for research, development and innovation, and Subcomponent 1.2 provides complementary resources to enhance the effectiveness of research and innovation financing. Component 2 'Programs for digital and green research and innovation' provides sub-financing to cover the gaps in EU funding and improve the targeting of research and innovation support to digital and green technology.

Subcomponent 1.1 includes potential civil works for infrastructure improvement in selected research institutions, which could include construction or refurbishment of scientific center for electrical engineering and computing, a center for digitalization and greening in the maritime industry, and a STEM center. These centers may be equipped with upgraded research facilities, start-up incubators, co-working laboratories, research and development in the fields of information and communication technologies, artificial intelligence, and cyber security. The potential civil works in Component 2 include pilot projects, through grants to the public and private sector, which may include individual microgrids (a small-scale, localized energy network connecting distributed energy sources that can operate independently of the main grid), integrated transport, remote healthcare, etc.

D. Environmental and Social Overview

D.1. Detailed project location(s) and salient physical characteristics relevant to the E&S assessment [geographic, environmental, social]

The project activities will be implemented throughout the country and are expected to take place predominantly within the existing research organizations and centers. However, participating scientific institutions and infrastructure/equipment sub-projects have not yet been selected, thus, features of locations as well as exact scope of works and research activities are unknown at Appraisal stage. Works will include new construction, reconstruction, rehabilitation, and refurbishment of existing buildings. All works will be required to be carried out in lands that are already owned and occupied by the proponent.

The selection process for funding infrastructure projects will consider a set of non-exclusive criteria, including contribution to digital transformation and green transition, potential for public-private collaboration, performance-based funding reform, lagging region development, and technologies to promote the inclusion of vulnerable populations, and similar. Infrastructure project selection will also involve consultations with academia, civil society, and private sector. All works financed under this component will meet Leadership in Energy and Environmental Design (LEED) sustainability standards, and as such support both climate adaptation and mitigation, including high standards of energy efficiency measures. Selected projects will also meet social sustainability standards. Examples of possible infrastructure include a scientific center for electrical engineering and computing, a center for digitalization and greening in the maritime industry, and a STEM center. Eligible infrastructure will not include facilities (e.g. laboratories) with biosafety risks.

As 36.8% of the land in Croatia is part of Natura 2000 network, it is possible that some of the infrastructure will be located within this area. Having noted that, construction areas will most likely be located in highly urbanized setting (usually a part of University campus or a similar complex). Natura 2000 is managed under well developed and

implemented national institutional and regulatory framework for environmental and nature protection (Ministry of Economy and Sustainable Development, Nature Protection Directorate and designated public institutions defined under Regulation on the Ecological Network and the competences of public institutions for managing the areas of the ecological network OG 80/19).

Grants for R&D will be supported under the Project Component 2 through three mechanisms:
(i) Grants for pre-commercial R&D for digital and green solutions (30-35 grants of up to EUR 300,000)- the digital grants will contribute and develop innovative digital technologies, products, and processes while the green grants will address a sustainability challenge (e.g., energy efficiency, circular economy, etc.) as part of the selection process.
(ii) The Challenge Program will provide grants/matching grants to consortia for development of solutions to large-scale and complex digitalization and greening challenges in seven priority areas (personalized health, smart and clean energy, smart and green transport, sustainable and circular food, customized and integrated wood products, security and dual use, and digital products and processes);
(iii) The Synergies Program will provide funding (up to EUR 3 million) to support high-quality digital and green projects that receive Horizon Europe Seals of Excellence projects (awarded under Horizon Europe framework) to projects that exceeded all of the evaluation thresholds, but could not be funded due to budgetary constraints.

New R&D grant schemes may be financed under sub-component 1.2, but only soft activities are expected to be financed (e.g. services, working materials, salaries, conference fees, and similar). None of the grant schemes will support activities that include testing on animals, collecting samples from animals or humans, procuring/working on samples of animal or human tissue/cells/other body materials.

The Geography of Croatia is defined by its location—it is described as a part of Central Europe and Southeast Europe. Croatia's territory covers 56,594 km2. Bordered by Bosnia and Herzegovina and Serbia in the east, Slovenia in the west, Hungary in the north and Montenegro and the Adriatic Sea in the south. Croatia's territorial waters encompass 18,981 square kilometers in a 22km wide zone from the sea coast, and its internal waters (inland waters) cover an additional 12,498 square kilometers. The Pannonian Basin and the Dinaric Alps, along with the Adriatic Basin, represent major geomorphological parts of Croatia. Lowlands make up the bulk of Croatia, with elevations less than 200 meters above sea level. Most of the lowlands are found in the northern regions, especially in Slavonia, which is a part of the Pannonian Basin plain. The land is mainly mountainous (or plateau) in the Lika and Gorski Kotar areas in the Dinaric Alps though some hilly areas can be found in all regions of Croatia to some extent. Most of Croatia has a moderately warm and rainy continental climate. Croatia has a number of ecoregions because of its climate and geomorphology, and the country is consequently among the most biodiverse in Europe. There are four types of biogeographical regions in Croatia: Mediterranean along the coast and in its immediate hinterland; Alpine in the elevated Lika and Gorski Kotar; Pannonian along the Drava and Danube; and Continental in the remaining areas.

The Strategy for Combating Poverty and Social Exclusion in the Republic of Croatia 2014-2020 recognizes population groups that remain vulnerable to poverty, social exclusion, different forms of material deprivation, and, consequently, discrimination. These include: older people; single households; one-parent families; families with more than two children; children without adequate parental care; individuals with lower education; persons with disabilities; Croatian war veterans and victims of war and members of their families; returnees and displaced persons; and ethnic minorities (mainly Roma and Serbs).

Poverty in Croatia also has a territorial dimension. The highest geographical concentration of factors influencing the share of people at risk of poverty can be found in small towns and settlements in the east and the southeast regions of the country - mainly along the border with Bosnia and Herzegovina (BiH) and Serbia (areas most affected by the Homeland War in 1990s), as well as in rural areas. According to a poverty map supported by the World Bank in 2016, county poverty ranges from 5.9 percent (City of Zagreb) to 34.3 percent in Karlovacka and the counties with the highest concentration of the poor are Osjecko-baranjska and Splitsko-dalmatinska counties. https://www.worldbank.org/en/news/infographic/2016/10/19/croatia-mapping-poverty

Whereas the Project's focus is to advance digital and green technologies, as part of the institutional capacity building to be supported under subcomponent 1.1, the Ministry of Science and Education will work to strengthen its internal review, selection, and monitoring systems to promote technologies and green solutions that support lagging region development or inclusion of vulnerable segments of the population. The Bank's Team will support with these efforts through providing guidance on application templates, screening criteria, and indicators for monitoring and evaluation.

Depending on type of supported projects under Component 2 (drawing from STP experience), collection of analysis of water samples plant species for research may take place (however unlikely, given the theme of the project) and that could include collection of small samples from nature protected areas, as well as water bodies (sea, river, lakes) of Croatia. The samples are expected to be very small, and will not produce insignificant impact to nature, when implemented within national regulatory framework. There may also be installation of limited amount of equipment into urbanized and non-urbanized space. Natura 2000 network covers 25,956 km2 of the Republic of Croatia territory, including 36.8 % of the terrestrial territory and 9.3 % of Adriatic Sea under Croatia’s jurisdiction (territorial sea and Croatia’s exclusive economic belt). There are over 1000 plant and animal endemic species and subspecies in Croatia. Sample collection and trials could take place within communities or natural areas where communities extract or depend on natural resources.

Croatia is historically rich area where material cultural heritage includes practically all periods of human activity. There are eight immovable UNESCO protected cultural heritage sites in the country, while numerous archeological sites span form paleolithic to medieval. Protected architecture also includes modern architecture. It is not rare that educational/research facilities are placed in buildings under some type of cultural heritage protection, especially in urbanized areas where there is a long tradition of schooling. Significant archeological zones are present predominantly in the country's southern, northwest and northeast regions.

Croatia is at risk of meteorological hazards and natural disasters, which primarily affect the agricultural, water, and energy sectors through seasonal flooding, decreased precipitation, and periods of drought. Temperatures are already observed to be increasing. Precipitation, despite high variability, appears to be decreasing and more extreme weather events are occurring, especially droughts and heat waves. Croatia is also at risk of earthquakes, forest fires, flooding, water scarcity and extreme heat. This is expected to result in impacts primarily to agriculture and water sectors as well as to wider population health.

D. 2. Borrower’s Institutional Capacity

The project will build on the Bank’s previous and current engagement in the science and educational sector in Croatia; namely successful implementation of Science and Technology Project (STP) and Second Science and Technology Project (STP II), which were respectively rated satisfactorily and moderately satisfactorily for E&S management at closing. No significant gaps in the implementation of the mitigation measures defined in the respective ESMP Checklists/Control List of Materials (as a specific sub-project instrument in STPII) and good construction practices

implemented on the field have been observed. However, apart form Occupational Health and Safety (OHS) and community health and safety considerations, these projects did not include the other social risk or mitigation measures required under the ESF; thus, management of the broader set of social risk issues covered by the ESF, and especially structured stakeholder engagement (ESS10) requirements will be new.

The institution responsible for implementation of the new Project is the Ministry of Science and Education (MoSE) will implement the project and lead and coordinate all project activities. The Croatian Science Foundation (CSF) will support the technical implementation of Component 2. Despite this division, MoSE will host the PIU and assume responsibility for an overall compliance with Banks Operational Policies (including ESF) for all activities supported by the Project. E&S management will be organized within PIU, which, in addition to Project Director, fiduciary and procurement experts, the PIU will engage an environmental expert and a social expert to carry out E&S tasks under ESF for both Components. In addition, an E&S Focal Point will be appointed in CSF to support the E&S experts in the PIU (with obtaining data, specific expertise and information, etc.) and facilitate communication on E&S issues between CPF and PIU. Though MoSE staff has an appropriate educational background for successful management of E&S issues, they lack experience in management of World Bank Projects (as STP I and STP II were implemented by UKF and HAMAG BICRO agencies). In addition, both previous Projects were implemented under Safeguard policies, so there is lack of ESF experience, especially in regards to social risk issues related to social analysis of R&D projects, and stakeholder engagement requirements. Having noted that, it is also relevant to register that MoSE is currently gaining ESF experience in another WB funded Project that commenced in 2022 which is expected to further increase E&S capacity of MoSE by the effectiveness.

Engagement of the full-time Environmental and Social experts in the PIU should be hired not latter than 3 months after the Effective Date. PIU E&S experts, other members of PIU, CSF E&S Focal Point and other Project workers will receive a comprehensive ESF training from the World Bank within 1 month of their engagement. Capacity building will continue on an ongoing basis throughout the project implementation (by provision of comprehensive initial, and specific periodical focused E&S/ESF trainings). The MoSE will ensure that the Bank's environmental and social criteria for all activities, including Technical Assistance, are adequately applied throughout Project implementation.

II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC) — Moderate

Environmental Risk Rating — Moderate

Environmental risk rating is set at moderate at the Appraisal stage as potential environmental impacts from infrastructure investments and grant schemes supported R&D activities are expected to be low to moderate; these will be implemented in EU regulatory and functioning institutional setting and none of the activities are foreseen to be complex and large. Comprehensive Project E&S instruments and procedures will successfully screen out all substantial and high risk activities. Proposed construction/rehabilitation works, under Component 1, are anticipated to be small to medium scale implemented in already urbanized areas. As a result, key environmental risks include those typical for civil works such as emission of dust and noise due to excavation and construction/reconstruction;

management of construction and small amounts of hazardous wastes, traffic disturbance, noise, OHS related risks, other community risks, etc. Further, as activities under Component 2 will be digital and green in type (e.g. may include applied research in energy storage, carbon capture systems, smart grid technologies, AI, and similar) and of R&D type and size; Consequently, though financial ceilings are for some activities may be high, the resulting potential impacts are expected to be small-scale which can be readily addressed by standard mitigation measures and are mostly limited to existing R&D laboratories. Waste generation under Component 2 may include small quantities of hazardous and municipal waste and management of small amounts of chemicals and hazardous materials (e.g. some metals). Laboratories are expected to be mostly digital laboratories while construction and/or work of laboratories with biosafety risks will not be financed. Sub-projects actvities that entail collection or use of animal and human tissue, and animal testing will not be financed as the laboratories under this project are not licensed for biosafety works. The laboratories will not be involved in purchase of large amounts of chemicals. Limited risk to biodiversity is possible under grants funding (small scale, and is well managed by the legislation) and construction. As such, the potential risks and impacts under this Project can be characterized as predictable, temporary and predominantly reversible; low in magnitude; site-specific and have low probability of serious adverse effects to human health and/or the environment, easily mitigated and managed. Long term positive results for the environment are expected under all components of the Project. Under the sub-components 1.1, and 1.2 TA is to provide support to build capacities for design, implementation of R&D programs, as well as policies that may have environmental implications downstream hence a subject to E&S due diligence. New R&D grant schemes may be financed under sub-component 1.2, but only soft activities are expected to be financed (e.g. services, working materials, salaries, conference fees, and similar). Expected Project activities are not complex nor large, do not involve activities that have high-risk potential for harming people or the environment while substantial risk activities are to be few, if any. All of the project sites will likely be located within the existing research centers, universities and/or other institutions. The Project will be implemented in the EU legislative setting and functional environmental and nature protection institutional framework, including clear and functional procedures (incl. monitoring) and paths for management of all types of waste (including hazardous), OHS, emissions management, protection of water, soil, etc. In addition, the Borrower is an institution with scientific background and with experience in implementation of WB and other IFO and EU Projects, as well as ongoing project implemented under ESF. In addition to WB E&S due diligence, all Component 2 (and sub-component 1.2) financing schemes are also a subject to DNSH scrutiny as co-financed from various EU funds.

Social Risk Rating Moderate

The Social Risk rating is moderate as the Project will support civil works and R&D sub-grants that could produce temporary impacts to surrounding communities or raise concerns among certain stakeholders. Civil works under subcomponent 1.1 will be supported for select research institutions within land already under their ownership and use. Given this, no land acquisition or displacement should be caused by these works. The ESMF will include screening criteria to ensure that involuntary land taking, restrictions in access, and/or physical or economic displacement have not occurred to achieve the objective of the works supported by the Project. At the same time, R&D grants, ranging from $300,000 to $3M each, could entail data/sample collection, trials, and/or related works and activities that could introduce temporary impacts on communities or raise concerns for communities where these take place. Other stakeholder risks around R&D grants could arise from disputes over intellectual property; or impacts on existing (and possibly less sustainable) commercial activities that could be adversely impacted or phased out with the introduction of the new technology. As the R&D subprojects will not be known by appraisal, the ESMF and SEP will incorporate social screening criteria to identify, assess, and mitigate risks, based on the feedback of stakeholder engagement processes with relevant industry/user groups and communities where project activities take place. As Croatia follows EU labor standards and maintains practice aligned with ESS2 standards, labor and SEA/SH risk is low.

B. Environment and Social Standards (ESSs) that Apply to the Activities Being Considered

B.1. General Assessment

ESS1 Assessment and Management of Environmental and Social Risks and Impacts

Overview of the relevance of the Standard for the Project:

ESS1 applies to the project due to the environmental and social risks associated with project activities, more specifically envisaged construction works for small to medium infrastructure development in selected research institutions under Component 1 and grant scheme/challenge fund/synergy fund for R&D sub-projects planned under Component 2 (as well as possibly under sub-component 1.2).

Potential environmental impacts and risks associated with the civil works generally include: a) dust and noise due to excavation, demolition and construction; b) management of demolition / construction wastes and accidental spillage of machine oil, lubricants, etc., c) possible management of small amount of hazardous materials like asbestos or paints and varnishes; d) traffic disturbance; e) small scale surface or ground water pollution; f) soil pollution or erosion; g) workers safety; and h) impacts on cultural heritage sites and in some cases, although quite unlikely, cultural heritage chance finds. Social risks with the civil works could most likely relate to community disturbances from temporary disruptions in traffic, vibrations, noise, and dust. No land acquisition or displacement should be caused by these works.

Under sub-component 1.2, adjustments in existing and new grant schemes may be supported where mostly 'soft' and small-scale activities will be supported, including covering wages, purchase of working materials, small equipment, conference costs, and similar.

Component 2 financing will include grant programs for various schemes (e.g. matching schemes, co-funding, new grants, etc.) all supporting digitalization and green transition challenges. Though the sub-project activities under this component are not fully defined, the Project design limits the financial (up to EUR 3 mil.), thematic scope (green and digital, innovative digital technologies, products, and processes, energy efficiency, circular economy, etc.) and in some cases priority areas (personalized health, smart and clean energy, smart and green transport, sustainable and circular food, customized and integrated wood products, security and dual use, and digital products and processes). Therefore, financing of large-scale infrastructure is not expected under Component 2, but rather R&D green and digital sub-project financing, will typically would include use of small amounts of chemicals, heavy metals and other metals, laboratory work, outsourcing of services, purchase and installation of equipment, operating costs, etc. It also may entail the collection of samples or carrying out of trials within communities or among certain target populations or with natural resources (i.e., forests) upon which they depend. However, sampling is to be small-scale, legally obtained and not exercise any economic or environmental impact.

None of grant schemes will not support activities that include testing on animals, collecting samples from animals or humans, procuring/working on samples of animal or human tissue/cells/other body materials. Purchase of large amounts of chemicals and other hazardous materials will not be eligible for funding.

Project environmental and social due diligence is based on a robust and comprehensive Environmental and Social Management Framework (ESMF) which was prepared to guide E&S management of Project activities as sub-project locations and designs/activities under both components as the subprojects and sub-grants are not defined by Appraisal. The ESMF is set out to guide environmental and social due diligence of the sub-projects and other Project activities, including TA. E&S risks and potential impacts will be managed through screening procedures and mitigation measures (aligned with requirements defined in WB EHSG and GIIP), as well as E&S review, monitoring, reporting and consultation procedures with clearly defined responsibilities, which are outlined in the Project's ESMF and SEP. The ESMF sets out clear environmental and social assessment requirements for the project activities, based on their specific levels of E&S risk, and provides guidance (and templates, where applicable) on the preparation of activity-specific risk-proportional E&S instruments, such as Environmental and Social Management Plans (ESMPs) and ESMP Checklists that will be prepared for infrastructure interventions and more complex sub-project activities. Other E&S instruments will be prepared, as deemed necessary (e.g. Control list of Materials for small-scale R&S sub-projects).

Site/activity specific instruments will be prepared during Project implementation for each subproject/sub-grant, and require WB approval, consultation (in line with the ESMF and SEP requirements) and finalized before bidding and contracting of works/activities. The ESMF also refers to activities and related risks (including climate change related risks) that can be addressed with good design, engineering and construction practices; as well as by preparing and implementing adequate mitigation measures and applying best housekeeping practices. Screening questions, criteria, and monitoring indicators will be developed by MoSE during project implementation as part of the institutional strengthening activities to promote and measure how the R&D activities supported contribute to lagging regions or inclusion of vulnerable groups.

The ESMF has an exclusion list that will prohibit extension of the support to IFC non-eligible activities as well as other activities excluded form funding. Comprehensive screening will also exclude from support substantial and high risk activities, animal testing, purchase of large amounts of chemicals, collection and use of human and animal tissue, activities with significant risk to biodiversity and CH, involuntary land taking, displacement or restrictions in access, and other exclusion criteria. The national institutional and regulatory environmental framework is also in place to address these risks, which will be reflected in ESMF and sub- project specific ESMPs or ESMP Checklists.

All Horizon framework approved projects, underwent Do No Significant Harm (DNSH) E&S scrutiny, mandatory also to all National Resilience and Recovery Plan (NRRP) and other EU co-funded activities. No retroactive financing and E&S management of Associated Facilities are envisaged at the Appraisal stage.

The draft Environmental and Social Management Framework (ESMF), draft Stakeholder Engagement Plan (SEP), including a grievance redress mechanism (GRM), and the draft Labor Management Procedures (LMP) have been reviewed by the Bank and disclosed by appraisal. Appropriate stakeholder consultations, revisions and re-disclosure shall follow after appraisal, but no later than September 15th 2023.

ESS10 Stakeholder Engagement and Information Disclosure

The Project's Stakeholder engagement plan (SEP) outlines processes for structured and meaningful stakeholder engagement in order to build interest, uptake, capacity and enhance outcomes, while ensuring that stakeholders are able to: (i) adequately inform planning, priority setting, and delivery mechanisms; and (ii) raise risks and concerns in timely ways to influence design and interventions that affect them. It will engage stakeholders at both the broader institutional and policy level while also including strategies for community level engagement for specific infrastructure and R&D grants if community impacts could arise.

Project stakeholders are those people, communities and entities who have interests, could be affected by, benefit from, and/or could influence the project's overall objectives and activities. Key stakeholders include: relevant government agencies; universities/research/academic institutions; communities where R&D and infrastructure will be carried out; key private entities that are represented in clusters, platforms or associations with particular interest in green and digital economies/solutions; and civil society organizations involved in environmental, green economy and digital technology policies and R&D or representing vulnerable groups who could benefit from or be affected by these technologies.

The SEP maps these stakeholders for each project activity and outlines objectives, procedures, and strategies for meaningful engagement to improve project outcomes and mitigate social risk across all project activities. The Ministry of Science and Education (MoSE) already employs various consultative platforms and mechanisms for stakeholder engagement with research organizations, professionals and the private sector and other agencies within the R&D community that will continue under the Project, and as needed, be enhanced and tailored for project activities. The SEP includes procedures to ensure that vulnerable groups, populations or industries that could potentially be adversely impacted by the R&D projects supported, are identified and measures are taken, to the extent feasible and relevant, to ensure their inclusion within engagement strategies.

The Project's SEP also describes the Grievance Redress Mechanism (GRM), which provides a framework for complaints tracking, response, resolution within the stipulated response times, thus closing the feedback loop and leverage the help desk established under subcomponent 1.1.

The SEP will be implemented in coordination with other citizen engagement activities included within the project such as beneficiary feedback surveys and post-project assessments involving stakeholders in targeted locations.

B.2. Specific Risks and Impacts

A brief description of the potential environmental and social risks and impacts relevant to the Project.

ESS2 Labor and Working Conditions

The standard is relevant. Considering that the OHS procedures in Croatia are in line with ILO conventions, with clearly defined procedures and responsibilities as well as implementation control, the ESMF includes sections on Environment Health and Safety (EHS) which set out the way OHS issues will be managed in accordance with the requirements of national law, ESS2, WB EHSG and GIIP. Potential OHS risks include those typical for civil works such as dust, noise, risk from falling, operating heavy machinery, managing waste, etc., but also laboratory work such as exposure to (small amounts of) chemicals, heavy metals, managing hazardous materials and wastes, electricity, explosive gases, etc. Given OHS legislation is well developed and EU compliant, as well as strong institutional

framework for OHS risk related to Occupational Health and Safety can be assessed as low to moderate. OHS supervision related to Occupational Health and Safety carried out on the national level is generally well implemented and agile. The OHS risks will be addressed in detail, in activity specific E&S instruments (ESMPs, ESMP Checklists, Control List of Materials, etc.) in line with the guidelines provided in the ESMF which will include but not limited to good site organization and housekeeping, use of PPE, fire protection procedures and equipment, emergency protection, good communication and information dissemination procedures, application of MSDSs, and trainings and certification (where applies).
This Project will most likely include all categories of project workers defined by ESS2, except community workers.

The Project will engage direct workers, contractors, and primary suppliers. Direct workers are those directly employed or engaged (or to be employed/engaged) by MoSE (E&S experts employed within the PIU). Contracted workers, both low and high quality skilled, are expected to be engaged for both projects components (research firms, firms in high-technology and knowledge-intensive services, construction companies). The number and the type of required skills of contracted workers will depend on the activities being implemented and the phase and progress of the project. As in Croatia the number of migrant workers is increasing, especially within the construction sector, there is a possibility of engagement of migrant workers, especially among contractors. Finally, the project envisages procurement of equipment, primary supply workers will also be engaged during the project implementation.

Most activities will require professionals and highly educated and well-established experts however risks related to working conditions and treatment of the project workers are present, especially in relation to Component 2 - Programs for digital and green research and innovation, in relation to activities of funding private sector research and innovation (Grants for pre-commercial digital and green R&D). The risk is related to possible absence (or not sufficiently developed) labor management procedures of applicants. The ESMF includes a Labor Management Procedure (LMP) that outlines the requirements of ESS2 and the national legal framework. The LMP will include a Grievance Redness Mechanism (GRM) specific for all project workers in order to receive, evaluate, and address work related complaints, feedback, questions and suggestions.

ESS3 Resource Efficiency and Pollution Prevention and Management

Standard is relevant, as the works to be financed may include management of construction waste, packaging waste, commercial waste, but also small amounts of hazardous waste. Portions of this waste that may have hazardous characteristics (including waste form laboratories) will be managed in a manner that is prescribed for such wastes in WB EHSG, GIIP and national legislation, so as to minimize pollution and risks to human health. This includes but is not limited to separate and safe collection within the institution, safe handling and temporary storage, collection and transport of hazardous waste (as well as other types) by licensed companies, processing and/or disposal at licensed facilities only, etc. as defined in the ESMF. As locations of civil works (new research centers) are unknown, there is also a risk of generating limited quantities of asbestos waste during possible retrofitting. The subproject-specific ESMPs will include a Waste Management Plan that would determine the quantities of waste, their categorization as per the national waste catalogue, and the proposed handling, storage, transport and disposal measures.
The project is not expected to be a significant consumer of large quantities of raw materials, water or energy. E&S compliance for purchase of mineral materials (e.g. sand, gravel, cement) for construction purposes will be verified through suppliers compliance with OHS and environmental permits and standards, and valid concessions. Smaller quantities of hazardous waste generated to result from implementation of grant schemes, electronic and electric

waste, batteries and other types of special types of waste can be efficiently managed through the national collection and disposal/processing system also incorporated in the ESMF measures and procedures. Adequate infrastructure exists within the national waste management system for safe disposal of asbestos waste that would possibly be generated in the case of rehabilitation. Hazardous (as well as other types) waste collection and disposal/processing/export is carried out by licensed companies. Processes are organized and supervised by competent authorities (Ministry of Economy, Sustainable Development and State Inspectorate and Environmental Protection and Energy Efficiency Fund). While most of generated hazardous wastes are exported (including liquid waste), capacity for disposal and processing of E&E waste and asbestos waste exists.

ESS4 Community Health and Safety

This Standard is relevant to the project, as possible adverse impacts on the health and safety of the surrounding communities and contractors' employees may occur during the civil works envisaged under Component 1 and from R&D activities within communities or affecting their natural resources under Component 2.

Risks related to civil works are typical, identified as generation of waste, noise, dust, unauthorized entrance to sites, traffic management and traffic safety. Risks to the community stemming from unauthorized access to working sites will be prevented through a set of measures specified in ESMPs such as allowing access only to authorized persons with informational and warning signs and fences. Traffic/Road Safety Management Plans with measures to ensure the safety during construction and for the operation phase will be prepared together with the Emergency Response Plans with procedures to respond to accidental spills, emissions, fires and other crisis events. General guidelines for traffic management plans will be included in the ESMF and further detailed in site-specific ESMPs. Additional guidelines will be given for such sites like those located in sensitive areas - near schools, hospitals, etc. Potential risks concerning disruption of residential activities during heath switching and building retrofitting (such as noise, dust, etc.) will be assessed and mitigated through sub-project specific measures in the ESMPs. In compliance with the Standard, feasible universal access will be secured, where applicable. The SEP will include procedures for community engagement for each infrastructure project during early stages of design and construction in order to inform communities of risks, receive their feedback and concerns, and ensure that mitigation measures address their issues and priorities.

For R&D sub-grants there could be potential needs for data or materials collection and/or trials to be carried out in community spaces or within forests or water bodies upon which they depend. Whereas restrictions in access to communities to these natural resources would not be permitted under this Project, other impacts will be screened, assessed and mitigated in participatory manners through the SEP's procedures for community engagement for sub-grants.

The Project is not expected to produce a significant adverse impact to climate change in any of the life cycle phases, nevertheless, as Croatia is prone to suffering climate change effects, therefore increasing resilience to floods, winds, landslides and soil erosion risks climate change abatement and adaption measures will be integrated to sub-project designs. Life and fire safety will be addressed though application of national legislation and internationally recognized international standards (as per WB EHSGs).

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

This standard is currently not relevant. The Project will support civil works for infrastructure improvements in selected research institutions (Subcomponent 1.1) and pilot projects through grants to the private sector or research institutions (Component 2). The ESMF will incorporate a screening tool to ensure that any subprojects and works requiring land acquisition leading to restrictions in access, displacement or involuntary land taking are ineligible. In the unforeseen case that involuntary land acquisition becomes necessary the relevance of this Standard would be reconsidered and a Resettlement Action Plan (RAP) would be prepared.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

The standard is relevant. As scope and locations of Project activities are unknown at the Appraisal stage and drawing from the experience of the previous projects (where for example, there was collection of small amounts of plant/mineral materials from nature protected areas), some of the project activities can potentially impact biodiversity and protected natural assets. The likelihood and severity of this impact is deemed to be insignificant to low, hence it is expected that all potential adverse impacts will be successfully addressed through applications of procedures and instruments defined in the Project ESMF, prescription of adequate measures in the ESMP/ESMP Checklist developed for the activity, as well as application of in the national regulation in the field of nature protection. Competent authorities will be informed of all activities that include protected areas, natural areas and collection of plant species and approval sought. ESMP/ESMP Checklist will also reflect requirements of the national nature protection system.
No animals or animal tissue will be collected or used in sub-projects. Sub-projects that include use of invasive alien species will not be eligible for funding. Activities with significant impact to natural areas will not be eligible for financing and will be screened out though the comprehensive screening procedures.
Limited risk to biodiversity is also possible from construction activities planned under Component 1 as large territory of Croatia (over 36%) is under Natura 2000 network. National regulatory and institutional framework for management of areas under Natura 2000 includes Nature Protection Directorate of the Ministry of Economy and Sustainable Development and designated public institutions defined under Regulation on the Ecological Network and the competences of public institutions for managing the areas of the ecological network OG 80/19, and further under Nature Protection Act (OG 80/13, 15/18, 14/19) and Rulebook on conservation goals and basic measures for the conservation of birds in the area of the ecological network (Official Gazette 15/14).

ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

This ESS is not relevant, as there are no Indigenous Peoples in Croatia.

ESS8 Cultural Heritage

The ESS is considered relevant on a precautionary basis. Though Project activities are not envisaged that are likely to have risks or impacts on cultural heritage, locations as well as the type of infrastructural sub-projects are not fully determined at Appraisal, thus impact to CH cannot be excluded. Rehabilitation works in existing CH protected buildings cannot be excluded. The national legislation in Croatia related to cultural protection is well developed and aligned with EU and other international standards. The implementation of legislation is also satisfactory. In the case

of likely impacts to protected CH, CHMP will be prepared for the activity (as stand alone document or part of E&S assessment document) to address these issues compliant to ESF and satisfactory to WB.

Chance finds clause is integrated to ESMF and will be reflected in all other stemming E&S instruments (ESMPs, ESMP Checklists, etc.) prepared under the Project.

ESS9 Financial Intermediaries

The ESS9 is currently not relevant since no financial intermediaries will be party in the project implementation.

C. Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways	No
OP 7.60 Projects in Disputed Areas	No

B.3. Reliance on Borrower's policy, legal and institutional framework, relevant to the Project risks and impacts

Is this project being prepared for use of Borrower Framework?	No

Areas where "Use of Borrower Framework" is being considered:

Croatia's Environmental and Social legislation is not being proposed to be applied in whole or in part for this project.

IV. CONTACT POINTS

World Bank

Contact:	Todor Milchevski	Title:	Senior Private Sector Specialist
Telephone No:	5240+7265 / 385-1-2357265	Email:	tmilchevski@worldbank.org
Contact:	Francisco Moraes Leitao Campos	Title:	Senior Economist
Telephone No:	5786+699 / 32-2-5520699	Email:	fcampos@worldbank.org

Borrower/Client/Recipient

Borrower: Ministry of Finance

Implementing Agency(ies)

Implementing Agency: Ministry of Science and Education

V. FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: http://www.worldbank.org/projects

VI. APPROVAL

Task Team Leader(s):	Todor Milchevski, Francisco Moraes Leitao Campos
Practice Manager (ENR/Social)	Varalakshmi Vemuru Cleared on 20-Apr-2023 at 08:03:4 EDT