

Social and Environmental Screening Template (2021 SESP Template)

Project Information

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1. Project Title	“Scaling up climate resilient flood risk management in Bosnia and Herzegovina”
2. Project Number (i.e., Atlas project ID, PIMS+)	PIMS 6360
3. Location (Global/Region/Country)	Bosnia and Herzegovina
4. Project stage (Design or Implementation)	Proposal
5. Date	June 2023

Part A. Integrating Programming Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Programming Principles in Order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the project mainstreams the human rights-based approach

This project is upscaling the existing project UNDP is implementing in Bosnia and Herzegovina, the “Technology Transfer for Climate Resilient Flood Management in Vrbas River Basin”. The project addresses the increasing vulnerability of communities and livelihoods to intensified climate-induced hydro-meteorological flood-related disasters and fully enables improvement of environment as “critical pre-requisite for development and enjoyment of the human rights”¹⁾. As climate change issues are globally recognized as a main threat to human rights, the project that addresses climate change provides a range of direct and indirect implications for effective enjoyment of human rights.

In general, the project will provide the technical assistance to ensure that flood risk management is undertaken in an integrated manner that secures the lives, livelihoods and assets of the most vulnerable people in BiH and reduces their susceptibility to climate change-induced flood risk that they have limited coping mechanisms to withstand. That includes an increased generation and use of climate data to reduce vulnerability to flood related disasters, considering flood hazard, risk and vulnerability information for strategic management and sound decision making for climate induced flood management, protocols for Flood Forecasting and Early Warning System (FFEWS) and definition of clear communication with information access ensured to vulnerable communities. Through the establishment of a fully functioning national FFEWS, the project will reach the entire population of BiH to reduce the vulnerability to climate induced natural disasters, thereby ensuring that remote, socially and economically vulnerable communities receive equal access to warnings and safety information, and through community-based flood response training, will enable all communities to take proactive steps before and during a flood event, to ensure the protection of their assets thus increasing their capacity to cope with extreme impacts from climate induced events.

Certain human rights that will be exercised throughout the project implementation, especially access to information and participation in decision-making, are recognized as essential to good environmental decision-making ²⁾. Considering all the above, it can be concluded that the project will enable a human rights-supportive environment.

By enhancement of the existing legislative and regulatory FRM framework in order to mainstream the climate-induced flood risk management into sectoral planning for agriculture, hydropower, critical infrastructure and spatial planning, the project will directly protect and save lives, increase food production safety, and flood risk informed local development and land use.

The approach applied within the project will underpin the floodplain planning and development control to achieve basin-wide climate resilience to increasing flood risks and will result in a paradigm shift from uncontrolled floodplain development to climate-risk informed and controlled floodplain usage.

Also, the project aims to mainstream eco-system-based approaches (EbA) solutions into policies and regulations and to promote concepts of "making room for water" and/or "living with floods", which includes direct information and benefits from nature-based flood risk measures for people and livelihoods within the main river basins, and enhances natural capital through environmental protection.

Through development of climate risk financing frameworks that anticipates involvement of private sector and development of risk transfer mechanisms the project will ensure the long-term sustainability of flood risk management in BiH. By development and implementation of a national flood insurance scheme and other risk transfer mechanisms, the project will be securing the financial resilience of the population and increase the capacity to recover more quickly from flood disasters.

By the climate-proof flood protection measures including structural measures, the project will increase resilience of the most vulnerable groups which means significant proportion of BiH population considering fact that flood, under climate change conditions, affects the of 924,453 people within the main river basins in Bosnia and Herzegovina, thus reducing the risks of floods, mudflows and landslides including loss of life and assets; securing local livelihoods; and promoting growth and diversification of the local economy.

^{1), 2)} UNEP

Briefly describe in the space below how the project is likely to improve gender equality and women's empowerment

Over the past years in BiH significant efforts have been made to the implementation of the principle of gender equality. Institutional gender mainstreaming mechanisms have been established within the system of legislative and executive power, at all levels, as a part of an overall effort to improve the status of gender equality (men/boys and women/girls) in Bosnia and Herzegovina. This legislative and policy framework has enabled important legal steps in promoting gender equality, but mainly in the area of reduction of domestic and any other gender-based violence, including prevention and elimination of sexual exploitation, abuse and harassment (SEAH).

Despite these advances in legislative framework, programmes have not been adopted to include measures aimed at achieving gender equality in all areas and at all levels of government and there is inadequate implementation of Article 18 of the Law on Gender Equality in BiH. There persists a lack of gender-disaggregated data on which to make important sectoral decisions, a lack of funding for and hence limited gender mainstreaming in all aspects of sectoral planning.

Gender affects all aspects of vulnerability in societies and there is a need to measure the difference in gender vulnerability to understand who will be at greatest risk in the event of a disaster and evaluate the differential impacts among different groups.

The project is embedding national gender-sensitive socio-economic survey and data collection methods (based on methods developed for the Vrbas project) on which to base flood hazard, risk and vulnerability modelling and mapping. The project will therefore enhance flood hazard, risk and vulnerability modelling and mapping for strategic management and sound decision making for climate induced flood management by ensuring that the vulnerability maps for the river basins are gender sensitive.

Also, development of an integrated centralized and community-based flood forecasting and early warning system (FFEWS) would include the design and implementation of the "Last-Mile" warning dissemination and communication system and the implementation of training and capacity building programme on FFEWS. The project will actively support woman participation in all phases of its development in order to ensure equal access to information and understanding of system generated flood warnings.

The project aims to apply EbA approaches to flood risk reduction as well as structural interventions. Gender-equality criteria will be applied for projects selection, each of the projects submitted for funding would have to describe their impact on both women and men. The project will ensure that women are empowered to benefit from the structural interventions that will mitigate flood events and will be included in consultations during design to ensure that the structures will not impact negatively on gender equality. With regard to EBA approaches the project will implement agro-forestry which will enable and empower women to diversify agricultural activities, thus building women's resilience to cope with climate change impacts.

Along with a multi-year climate resilient municipal investment plan, the project will formulate and implement the gender sensitive community preparedness plan in selected municipalities (10-12) in Vrbas, Una-Sana and Bosna basins. The preparedness plan will be based on needs assessment of both genders and will comprise of gender sensitive actions including access to knowledge (trainings), information and resources that will increase capability of both genders for timely and effective actions to avoid the loss of lives and to reduce the damages of flooding during the event.

Development of risk financing and transfer mechanisms will be based on detailed socio-economic risk, damages and losses assessment, including "willingness to pay" surveys as part of proposal development, for a number of sectors and different types of beneficiaries that includes gender aspect.

The Gender Analysis, through stakeholders' engagement and consultation implies that project design and implementation will mainstream gender issues through the stakeholders' direct engagement, monitoring and evaluation processes, defined gender sensitive actions and budget and quantitative and qualitative gender outcomes. Through the Gender Action plan the project will ensure women participation in the capacity buildings and awareness raising through dedicated focus on gender specific activities. During the project duration, project stakeholders and beneficiaries will be continuously informed about zero SEAH tolerance and encouraged to report possible SEAH acts to the appropriate national authorities for criminal prosecution.

Briefly describe in the space below how the project mainstreams sustainability and resilience

As the project aims to address the increasing vulnerability of BiH communities and livelihoods to intensified climate-induced hydro-meteorological flood-related disasters it is significantly linked to the environmental sustainability. Comparing to the existing flood risk management practice (implementation of hard structural measures, with very low level of flood risk informed development and spatial planning, unreliable forecasting and warning, low preparedness level and flood risk management without considering climate change etc.), the alternative pathway reduces the risk through introduction of an integrated approach, which will embed new skills, methods and technologies to assess the flood hazard, risk and vulnerability strengthening the knowledge systems and institutional capacity to monitor flood risk evolution processes, better understand the risk, and develop a range of risk reduction and management strategies. By implementing this integrated approach environmental risks and threats in general will be reduced. That specifically relates to introduction of EbA approach and promoting of concepts "room for the river" and "life with floods". Based on well-established practice, suitable solutions will be adapted and applied to the BiH context.

The new ecosystem-based flood risk reduction and climate change adaptation methods will be implemented and scaled-up. These approaches and/or interventions encourage natural floodplain functions which can gain additional benefits. Non-structural, ecosystem-based measures include: floodplain reconnection, selective bed raising/riffle creation, wash lands, wetland creation, two-stage channels, re-meandering straightened rivers, land and soil management activities to retain / delay surface flows, woody debris dams on streams and tributaries, flood plain woodland, re-forestation, agro-forestry, creation or re-instatement of a ditch network to promote infiltration (swales, interception ditches, etc), in-channel vegetation management growth to maximize channel roughness. Environmental co-benefits mainly relate to EbA strategies such as agro-forestry will provide water retention functions; regulation of hydrological flows (buffer runoff, soil infiltration, groundwater recharge, maintenance of base flows); natural hazard mitigation (e.g. flood prevention, peak flow reduction, soil erosion and landslide control); increased streambed stabilization resulting in decreased erosion, habitat preservation, and reforestation.

By implementing of the integrated flood risk management approach and methods it is expected significant reduction of losses in agriculture (approx. 30%). Also, soil pollution following floods will be reduced as well as sediment load and debris carried by flash floods to agricultural land that result in significant losses and abandonment of productive land.

Considering that almost one million of people live in flood prone areas that, by the project implementation will increase resilience to climate-induced floods, life quality in general will be improved. Overall, it is expected that project will have a very positive environmental impact.

Briefly describe in the space below how the project strengthens accountability to stakeholders

Due to the lack of a State-level framework and the constitutional character of B&H and its entities, the current state of affairs is complex and heterogenic, and the responsibilities for water management rest with the Entities (Ministry for Agriculture, Forestry and Water Management of RS and Ministry for Agriculture, Water Management and Forestry of FB&H). The legal framework is not unified across the country and there are certain discrepancies in legislation between Entities (FB&H and RS) and even among Cantons within FB&H. The two Entities and the Brčko District have relevant political, administrative and legal jurisdiction in their own territories, but the level of coordination and cooperation among them is not as strong as it should be. In general, there is a lack of cross-sectoral policies, strategies and plans and this is a key barrier to effective flood risk management. Furthermore only a few of these sector plans currently takes account of climate change in their formulations. Thus, the legislative framework does not enable effective flood risk management.

The project will identify key private sector players at risk from flooding with an interest in flood risk reduction, these will include critical Infrastructure providers/managers, such as utility companies communications, telecommunications, transportation sector (airlines/air traffic, road and rail operators), energy (hydropower and other than hydropower) and private enterprises such as hotel groups, chamber of commerce or business community, insurance and micro-finance companies. The project will undertake awareness raising on flood risk, flood risk management approaches to fully engage private and public sector.

The institutional capacity gaps and training needs will be assessed, and a revised institutional capacity building plan will be developed under the GCF project to address gaps in human, technical and financial FRM capacities. SOPs, Communication Protocols and Codes of Conduct will be developed for each of the institutions responsible for impact-based FFEWS. In addition, roles of regional and local authorities will be clarified and detailed. "Last-mile" communication protocols will be developed and implemented as part of the FFEWS. Operational maintenance procedures for hydrometric network will be established.

The GCF project will implement ICT-based innovations in the communication of forecasts and advisories; improve the use of historical data and derivations; improve medium and shortrange weather forecasts and longer-term predictions for agriculture (seasonal, decadal etc.) and develop partnerships with the private sector including internet providers or mobile companies that are willing to design tailored information delivery services in collaboration with agribusinesses, farmers' groups and other clients to deliver timely forecasts and advisories to farmers

To enable access and sharing of climate risk information, a centralised information system and knowledge sharing platform will be developed. The flood hazard information system to be developed under the GCF project will consist of an integrated e-Library, databases, information systems and knowledge portal (web knowledge portal to increase awareness, provide interactive hazard maps, with integration with social media and possible mobile application to increase community engagement and allow two-way flow of information.

The flood risk management platform will be a country-wide mechanism for cross-entity, multi-sectoral and inter-disciplinary coordination and policy guidance on flood risk management and risk reduction with public, private and civil society participation involving all concerned entities within B&H. The data sharing platform will coordinate all stakeholder engagement at the entity and local level and will pursue an all-of-society engagement in FRM. It would also have mechanisms for effective dialogue with Local Platforms in place in order to influence, encourage and coordinate local action. In parallel, the country-wide Platform will seek to understand local priorities and issues.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Complete SESP Attachment 1 before responding to Question 2.</i>	QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 5</i>			QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High
Risk Description <i>(broken down by event, cause, impact)</i>	Impact and Likelihood <i>(1-5)</i>	Significance <i>(Low, Moderate Substantial, High)</i>	Comments (optional)	Description of assessment and management measures for risks rated as Moderate, Substantial or High
<p>Risk 1.</p> <p>Lack of capacity of duty bearers to meet their obligations under the project, which could lead to environmental or social risks such as OHS issues, infrastructure failure, poor uptake or understanding by users, and grievances due to poor infrastructure design, delivery, operation or maintenance, and/or poor engagement with communities.</p>	<p>L = 3 I = 3</p>	<p>Moderate</p>	<p>There is currently a lack of technical and financial capacity in BiH to design, operate and maintain climate resilient flood protection infrastructure, there is currently a lack of engagement with private and productive sectors in climate-responsive flood risk management, staff turnover can be high and communities do not have adequate understanding of the risks.</p> <p>Poor community engagement can increase the risk of theft or vandalism of equipment, reduced understanding or trust in FFEWs etc</p>	<p>Using previous capacity assessments and consultation with agencies, the project identified gaps and weaknesses. Capacity building has been incorporated into a number of the proposed activities.</p> <p>During the project, further gender sensitive capacity needs assessments to identify any specific needs of government, institutions and communities will be undertaken to assist in the development and implementation of training programs and training materials.</p> <p>A Stakeholder Engagement Plan has been prepared. The SEP will be implemented, reviewed regularly, and updated as required.</p> <p>A Gender Analysis and Action Plan has been prepared.</p> <p>An ESMP has also been prepared.</p>
<p>Risk 2.</p> <p>BiH has are significant gender inequalities, fuelled by traditional gender roles, therefore the Project could potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation</p>	<p>L = 3 I = 3</p>	<p>Moderate</p>		<p>A Gender Assessment and Gender Action Plan was prepared during FP development.</p> <p>Gender issues have been included in the ESAR/ESMP</p> <p>During implementation, deeper stakeholder consultation will need to be undertaken to assess the components in relation to gender, age and other important matters. The Gender Analysis and Action Plan should be updated as required based on stakeholder consultation during implementation</p> <p>A Grievance Redress Mechanism will be operationalised.</p>

<p>Risk 3. Given the level of gender-based violence that already exists in BiH, there is a risk that any shifts in power balances that the project could cause might exacerbate GBV , including sexual exploitation, abuse, and harassment (SEAH).</p>	<p>L = 2 I = 4</p>	<p>Moderate</p>	<p>In Bosnia and Herzegovina (BiH), gender-based violence is widespread and underreported – a 2013 survey reported that every second woman had experienced some form of gender-based violence during her adult life.</p> <p>The LGBTI community in BiH is for the most part absent from the public sphere due to pervading hostile attitudes among the majority of the population, fear for physical safety, and discrimination by family, friends, and coworkers.</p>	<p>Gender issues have been included in the ESAR/ESMP A Gender Assessment and Gender Action Plan was prepared during FP development. Implementation of the GAP required.</p> <p>The project will adhere to UNDP’s policies for protection against Harassment, Sexual Harassment, Discrimination and abuse of Authority, as well as special measures for protection from sexual exploitation and sexual abuse.</p> <p>UNDP will request that contractors, suppliers, and partners adhere to zero tolerance for SEAH conduct and commit to taking adequate action if faced with SEAH allegations, in the absence of which, contractual arrangements can be terminated. Gender issues should be considered in SESA (see next risk).</p>
<p>Risk 4. The project will be supporting planning and policy reform to encourage a “living with floods” approach. Such reforms may alter land use or development conditions, which could have economic impacts. .</p>	<p>L = 4 I = 3</p>	<p>Moderate</p>		<p>Undertake a targetted SESA to determine potential impacts of planning and policy reforms. Implement SEP to engage community and ensure understanding of need for improved use and benefits to broader community. GRM to be operationalised to address any grievances</p>
<p>Risk 5. The project will be supporting planning and policy reform to encourage a “living with floods” approach. There is a risk that affected stakeholders may raise grievances</p>	<p>L = 3 I = 3</p>	<p>Moderate</p>		<p>Implement SEP to engage community. GRM to be operationalised to address any grievances</p>
<p>Risk 6. The Project activities, including EbA, may potentially cause adverse impacts to habitats (modified, natural) and/or ecosystems and ecosystem services The project includes works within riverbeds, this poses various risks to natural habitats eg physical disturbance (which could affect habitats or things such as fish spawning grounds), hydrological changes, sediment movement, spill risks (associated with</p>	<p>L = 4 I = 3</p>	<p>Moderate</p>	<p>The project will implement a number of transformative interventions that would set BiH on the path the climate risks informed, integrated flood risk management. Proposed solutions include use of techniques, technologies, systems and processes not causing the increase in greenhouse gas emissions. Particular consideration has been given to specific priority flood management measures</p>	<p>As part of the development of the project, a number of studies have been undertaken to better identify risks and eliminate or develop mitigation measures. These studies include, but were not be limited to: hydrology and hydraulic assessments, broad environmental baseline and identification of sensitive, critical habitats, socio-economic, and legal requirements.</p> <p>An Environmental and Social Assessment Report (ESAR) has been prepared based on desktop information and field observations of representative sites. The ESAR includes a safeguards management instrument, Environmental and Social Management Plan (ESMP). The ESMP was developed based on the findings of the (ESAR).</p>

<p>the use of machinery in an aquatic environment).</p> <p>Flood management measures could affect the biodiversity and eco-systems eg via habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, and pollution.</p>			<p>foreseen by the project (e.g. floodplain reconnection, washlands, wetland creation, land and soil management activities, re-forestation and other).</p> <p>Sites selected give consideration to the outcomes of the studies noted above and the needs so that adverse impacts are avoided or at least minimised, while benefits are maximised.</p> <p>The project aims to result in improvements in watershed ecosystems and restoration of ecological function using EbA strategies that will reverse the deleterious effects of catchment degradation and enhance livelihoods of rural communities</p>	<p>In addition, the detailed design of the specific projects will be based on the Guidelines for nature-friendly stabilization of the riverbed and riparian areas that will be elaborated within the project. As per the EIA laws of BiH, site specific Preliminary Environmental Assessments will be prepared for all river-works and to assess and manage all of their potentially significant impacts</p>
<p>Risk 7.</p> <p>Construction works (levee rehabilitation) at the Krupa River site, which is near the Hutovo Blato Ramsar wetland, could harm that protected area.</p>	<p>L = 3 I = 3</p>	<p>Moderate</p>	<p>The sites and interventions are known, and advanced designs have been completed for each site, so there is a reasonable level of confidence in the risk and likely impact.</p> <p>The Krupa River works involve the rehabilitation of the outer/dry part of the existing levee that is located in agricultural land (i.e. there will no impacts on the river flow, river morphology and river ecology). Works will be land-based and outside of the Ramsar wetland.</p> <p>No other project sites are in or near a protected area, or critical/sensitive habitat.</p>	<p>As per the EIA laws of BiH, site specific Preliminary Environmental Assessment will be prepared for this project to assess and manage its potentially significant impacts.</p> <p>This site specific assessment prior to commencement of construction to identify the required management measures will ensure that no unacceptable impacts to Ramsar wetland will occur and will integrate all applicable UNDP requirements of</p> <p>Biodiversity Action Plan for activities near critical/sensitive habitat.</p>
<p>Risk 8.</p>	<p>L = 4 I = 1</p>	<p>Low</p>	<p>Reforestation will be primarily for flood management purposes rather than timber and the</p>	<p>Revegetation/Reforestation Management plans will be developed for the EbA areas. These will be based on catchment/flood management, not forestry for timber eg</p>

<p>The Project will include EbA, including planting larger areas approximating reforestation. There is a risk that these areas that could possibly be harvested in the future.</p>			<p>maintenance of the EbA areas will reflect that.</p> <p>No natural forests will be converted</p>	<p>species planted will be appropriate for the area ie local species to be used and selection of tree species for planting along river margins will be guided by an agri-forestry study prepared for the Vrbas River Basin flood risk reduction.</p> <p>Project includes planning and policy changes, such elements will incentivise the protection and conservation of forests. An SESA will be undertaken to assess potential adverse impacts of plan and policy work.</p>
<p>Risk 9.</p> <p>The potential outcomes of the Project could be sensitive or vulnerable to potential impacts of climate change as it is dealing with natural systems eg rivers, floodplains and forests.</p> <p>Some of the flood mitigation interventions could be susceptible to landslides, erosion, flooding or extreme climatic conditions, which could be exacerbated by climate change</p>	<p>L = 3 I = 3</p>	<p>Moderate</p>	<p>Project is focussed on mitigating climate change impacts, therefore CC has been considered in design.</p> <p>Interventions are focussed on flood management and therefore will often be in flood zones.</p> <p>Upland EbA could be susceptible to landslide or erosion, particularly during establishment.</p>	<p>Climate change models and predictions were used to provide a baseline vs future scenario, which were used to establish design criteria ie design takes account of climate risk.</p> <p>Emergency procedures have been outlined in the ESMP and will be developed further if required.</p> <p>Sites have been selected to minimise risk.</p> <p>Climate and hydrological studies have been undertaken to inform designs.</p> <p>ESMP includes mitigation strategies for sediment and erosion</p>
<p>Risk 10.</p> <p>There are risks associated with construction activities eg OHS, cultural heritage and COVID19</p>	<p>L=4 I=3</p>	<p>Moderate</p>	<p>Some of the project activities include construction. All construction carries some inherent risk. This project requires the use human labour and heavy machinery. Works will be undertaken in and around rivers.</p> <p>BiH has a high presence of UXO. This presents a potential hazard during construction activities (earthworks).</p> <p>The world is currently suffering from the COVID19 pandemic, and BiH is no exception. As a highly transmissible infectious virus, COVID 19 represents a risk whenever mass gatherings, close working conditions or physical contact occurs involving people infected with the virus. The project will involve community engagement (potential for</p>	<p>Application of the ESMP along with conforming with labour laws and practices to ensure appropriate OHS practices required to ensure risk remains acceptable.</p> <p>The ESMP includes measures to address UXO and cultural heritage in line with the SES and national laws.</p> <p>COVID safe practices are to be adopted by the project. Compliance with directives of WHO and Ministry of Health must occur and all efforts to reduce the risk of spread will be taken.</p> <p>The ESMP contains actions required for COVID19.</p>

			gatherings) and construction activities that may require workers to be in proximity.	
<p>Risk 11.</p> <p>The proposed Project consume resources, in particular rock, and result in the generation of some waste so there are associated risks associated with the production of this material and wastage.</p>	<p>L = 3</p> <p>I = 2</p>	Low	<p>Riverbank protection will involve the use of large amounts of rock that will be sourced from existing quarries</p> <p>Project involves construction; all construction projects produce some waste (earth spoil, packaging, worker facility waste, machinery maintenance waste etc).</p>	<p>Procurement plan to consider sustainability issues.</p> <p>The ESMP includes measures to manage waste.</p>
<p>Risk 12.</p> <p>There are many existing and planned HPPs in Bosnia, some of which lie within the areas of influence of the project Although the project's physical interventions do not specifically focus on HPPs, some of the modelling and policy/flood management interventions of the project do relate to HPPs. Therefore, the project could directly or indirectly support HPPs that operate in a manner inconsistent with the SES.</p>	<p>L = 4</p> <p>I = 3</p>	Moderate	<p>As an existing part of the national river management system, it is important that HPP are included in any project that involves flood management in FBiH.</p> <p>The interventions that include HPP are the following:</p> <ol style="list-style-type: none"> 1. Integrate the HPPs hydrometric network and identify opportunities to establish or formalize data access and sharing between HPPs, hydro-meteorological institutes and water agencies to maximise the network (1.1.1). 2. Flood hazard models for each basin will be enhanced to include HPP modelling (1.2.2) 3. Incorporate HPP operations into flood hazard and risk modelling for development of enhanced operating rules for HPPs (1.2.4).. 4. Development of flood forecasting models and platforms for Neretva River Basin (which has HPPs) (1.3.1) 	<p>The ESAR discusses the involvement of HPPs in the project It identifies that all activities associated with the project eg cofinanced activities, are required to meet the UNDP SES.</p> <p>Both GCF and co-financed activities are to be managed through the same Project Board/PMU to facilitate application of the same systems/standards, this will include application of UNDP SES.</p> <p>The project includes measures to ensure that HPP in the project's framework / target areas are brought into the Flood Risk Management frameworks and to enhance climate resilience of the operations of HPPs through improved operational rules. Those HPPs directly involved in / supported by the project's activities will be requested to agree to the conditions in the ESAR and sign a Social and Environmental Commitment Plan (SECP) or letter (prior to ProDoc signature).</p>

			<p>5. Review, identify and develop sector-specific FFEWS products, including for HPP Sector (1.3.2)</p> <p>6. Capacity building on all of the modelling methodologies, guidelines and SoPs developed (1.3.4)</p> <p>7. Mainstream climate induced flood risk reduction into sectoral strategies, plans and technical guidelines for agriculture, hydropower and critical infrastructure, forestry and environment</p> <p>None of the above activities actively promote HPP, but rather help improve the current situation in FBiH, which is already feeling the impact of climate change on HPPs, such as reduced power production, altered flow regimes and increased flooding. By integrating HPPs into flood management frameworks rather than operating separately, as is currently the case, these impacts can be reduced, with improved outcomes for communities upstream and downstream. .</p>	
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QUESTION 4: What is the overall project risk categorization?

	Low Risk	<input type="checkbox"/>	
	Moderate Risk	<input checked="" type="checkbox"/>	<p>There is a range of potential limited social and environmental risks.</p> <p>Based on the findings of the ESAR, the overall project pre-mitigation risk has been assessed as Moderate as a result of moderate risks in areas such as technical capacity of agencies, gender equity, biophysical impacts, flooding and landslides, and OHS.</p>

			<p>However, with the application of appropriate avoidance and mitigation measures, it is considered that these risks can be managed, and impacts kept to acceptable levels.</p> <p>An ESMP has been prepared to provide a mechanism for the management of these risks.</p>									
	Substantial Risk	<input type="checkbox"/>										
	High Risk	<input type="checkbox"/>										
QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)												
Question only required for Moderate, Substantial and High Risk projects												
	<u>Is assessment required? (check if "yes")</u>	X										
	<i>if yes, indicate overall type and status</i>											
		X	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 20%; text-align: center;">Targeted assessment(s)</td> <td style="width: 60%;">Completed – gender analysis; stakeholder analysis; targeted assessments for preparation of the ESAR</td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> <td> ESIA (Environmental and Social Impact Assessment) Based on the BiH regulatory system, preliminary EIAs will be conducted for all river-works. They will assess the impacts and risks and prescribe proper management and monitoring measures that will be eventually integrated in water permit issued for each site by Water Agency and construction permit issued by Relevant government Ministry. </td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> <td> SESA (Strategic Environmental and Social Assessment) Planned - to assess impact of proposed plan and policy reforms </td> </tr> </table>		Targeted assessment(s)	Completed – gender analysis; stakeholder analysis; targeted assessments for preparation of the ESAR		X	ESIA (Environmental and Social Impact Assessment) Based on the BiH regulatory system, preliminary EIAs will be conducted for all river-works. They will assess the impacts and risks and prescribe proper management and monitoring measures that will be eventually integrated in water permit issued for each site by Water Agency and construction permit issued by Relevant government Ministry.		X	SESA (Strategic Environmental and Social Assessment) Planned - to assess impact of proposed plan and policy reforms
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	<u>Are management plans required? (check if "yes")</u>	X										
	<i>if yes, indicate overall type</i>											
		X	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 20%; text-align: center;">Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste</td> <td style="width: 60%;">Completed –GAAP, SEP; Planned – ESDC plans, other Site specific plans per the ESAR, including BAP (for Kupa River site)</td> </tr> </table>		Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste	Completed –GAAP, SEP; Planned – ESDC plans, other Site specific plans per the ESAR, including BAP (for Kupa River site)						
	Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste	Completed –GAAP, SEP; Planned – ESDC plans, other Site specific plans per the ESAR, including BAP (for Kupa River site)										

			Management Plan, others)	
		X	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	Completed
		<input type="checkbox"/>	ESMF (Environmental and Social Management Framework)	
	Based on identified <u>risks</u>, which Principles/Project-level Standards triggered?		Comments (not required)	
	Overarching Principle: Leave No One Behind	X		
	Human Rights	X	The assistance planned to be implemented through the project will improve natural environment as a pre-requisite for development and enjoyment of the human rights. By ensuring access to information, participation in decision-making certain human rights will be directly exercised. Project will ensure that flood risk management is undertaken in an integrated manner that secures lives, livelihoods and assets of the most vulnerable people in BiH and reduces their susceptibility to climate change-induced flood risk by increased generation and use of climate data to reduce vulnerability to flood related disasters, considering flood hazard, risk and vulnerability information for strategic management and sound decision making for climate induced flood management, protocols for FEWS and definition of clear communication with information access ensured to vulnerable communities.	
	Gender Equality and Women's Empowerment	X	From its very beginning the Project has focused on women's empowerment as one of the most vulnerable groups in case of disasters. The Project will be generating gender disaggregated data and implementing an innovative socio-economic risk modeling based on gender-sensitive vulnerability assessment, which will also play an important role in selection of non-structural measures which will be implemented during project duration.	

		Special attention is being paid to women's capacity building and support to flood endangered single-headed female households. Zero tolerance will be applied to any type of sexual exploitation, abuse, and harassment.
	Accountability	X The project will be supporting planning and policy reform, stakeholders who are affected by such reforms could raise grievances. A targetted SESA and GRM are planned.
	1. Biodiversity Conservation and Sustainable Natural Resource Management	X The project applies an eco-system-based approaches (EbA), which represents a transfer of a well-established flood management practice from countries that have been using this method for decades. The project will look to these areas for best practice approaches that can be adapted to the B&H context. The successful practices will be codified in a form of guidance documents and upscaling in the rest of the country will be promoted as the national guidelines and tools on how to undertake flood risk management for any part of their territories.
	2. Climate Change and Disaster Risks	X Project is a climate change project so will therefore take climate projections into account in its design.
	3. Community Health, Safety and Security	X The project involves construction and field-based activities, which have inherent OHS risks. Due to COVID 19, any activities that involve people working in proximity increases risk of transmission. The project will adopt appropriate 'COVID safe' practices.
	4. Cultural Heritage	X Project involves earthworks and while no known heritage is likely to be disturbed, there is potential for chance finds.
	5. Displacement and Resettlement	X Changes to policies could result in land use changes/allowable activities. An SESA will be undertaken to assess the potential impacts of economic displacement
	6. Indigenous Peoples	<input type="checkbox"/>
	7. Labour and Working Conditions	X UXO is an ongoing risk in BiH, so has to be considered when undertaking any activities that involve earthworks.
	8. Pollution Prevention and Resource Efficiency	X

Final Sign Off

Final Screening at the design-stage is not complete until the following signatures are included

Signature	Date	Description
QA Assessor		UNDP staff member responsible for the project, typically a UNDP Programme Officer. Final signature confirms they have “checked” to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have “cleared” the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
INSTRUCTIONS: The risk screening checklist will assist in answering Questions 2-6 of the Screening Template. Answers to the checklist questions help to (1) identify potential risks, (2) determine the overall risk categorization of the project, and (3) determine required level of assessment and management measures. Refer to the SES toolkit for further guidance on addressing screening questions.		
Overarching Principle: Leave No One Behind		Answer (Yes/No)
Human Rights		
P.1	Have local communities or individuals raised human rights concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
P.2	Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	Yes
P.3	Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?	No
<i>Would the project potentially involve or lead to:</i>		
P.4	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
P.5	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? ¹	No
P.6	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	No
P.7	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Gender Equality and Women's Empowerment		
P.8	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
<i>Would the project potentially involve or lead to:</i>		
P.9	adverse impacts on gender equality and/or the situation of women and girls?	No
P.10	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	Yes
P.11	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
P.12	exacerbation of risks of gender-based violence? <i>For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.</i>	Yes

¹ Prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender and transsexual people.

Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below		
Accountability		
<i>Would the project potentially involve or lead to:</i>		
P.13	exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them?	No
P.14	grievances or objections from potentially affected stakeholders?	Yes
P.15	risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	No
Project-Level Standards		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
<i>Would the project potentially involve or lead to:</i>		
1.1	adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	Yes
1.2	activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	Yes
1.3	changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	risks to endangered species (e.g. reduction, encroachment on habitat)?	No
1.5	exacerbation of illegal wildlife trade?	No
1.6	introduction of invasive alien species?	Yes
1.7	adverse impacts on soils?	Yes
1.8	harvesting of natural forests, plantation development, or reforestation?	Yes
1.9	significant agricultural production?	No
1.10	animal husbandry or harvesting of fish populations or other aquatic species?	No
1.11	significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	Yes
1.12	handling or utilization of genetically modified organisms/living modified organisms? ²	No
1.13	utilization of genetic resources? (e.g. collection and/or harvesting, commercial development) ³	No
1.14	adverse transboundary or global environmental concerns?	No
Standard 2: Climate Change and Disaster Risks		
<i>Would the project potentially involve or lead to:</i>		

² See the [Convention on Biological Diversity](#) and its [Cartagena Protocol on Biosafety](#).

³ See the [Convention on Biological Diversity](#) and its [Nagoya Protocol](#) on access and benefit sharing from use of genetic resources.

2.1	areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunami or volcanic eruptions?	Yes
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change or disasters? <i>For example, through increased precipitation, drought, temperature, salinity, extreme events, earthquakes</i>	Yes
2.3	increases in vulnerability to climate change impacts or disaster risks now or in the future (also known as maladaptive or negative coping practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	Yes
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	No
Standard 3: Community Health, Safety and Security		
<i>Would the project potentially involve or lead to:</i>		
3.1	construction and/or infrastructure development (e.g. roads, buildings, dams)? (Note: the GEF does not finance projects that would involve the construction or rehabilitation of large or complex dams)	Yes
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	Yes
3.3	harm or losses due to failure of structural elements of the project (e.g. collapse of buildings or infrastructure)?	No
3.4	risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	Yes
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g. food, surface water purification, natural buffers from flooding)?	No
3.7	influx of project workers to project areas?	Yes
3.8	engagement of security personnel to protect facilities and property or to support project activities?	No
Standard 4: Cultural Heritage		
<i>Would the project potentially involve or lead to:</i>		
4.1	activities adjacent to or within a Cultural Heritage site?	No
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	Yes
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.4	alterations to landscapes and natural features with cultural significance?	No
4.5	utilization of tangible and/or intangible forms (e.g. practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
<i>Would the project potentially involve or lead to:</i>		
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	No

5.2	economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	Yes
5.3	risk of forced evictions? ⁴	No
5.4	impacts on or changes to land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	Yes
Standard 6: Indigenous Peoples		
<i>Would the project potentially involve or lead to:</i>		
6.1	areas where indigenous peoples are present (including project area of influence)?	No
6.2	activities located on lands and territories claimed by indigenous peoples?	No
6.3	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? <i>If the answer to screening question 6.3 is “yes”, then the potential risk impacts are considered significant and the project would be categorized as either Substantial Risk or High Risk</i>	No
6.4	the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? <i>Consider, and where appropriate ensure, consistency with the answers under Standard 5 above</i>	No
6.7	adverse impacts on the development priorities of indigenous peoples as defined by them?	No
6.8	risks to the physical and cultural survival of indigenous peoples?	No
6.9	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices? <i>Consider, and where appropriate ensure, consistency with the answers under Standard 4 above.</i>	No
Standard 7: Labour and Working Conditions		
<i>Would the project potentially involve or lead to: (note: applies to project and contractor workers)</i>		
7.1	working conditions that do not meet national labour laws and international commitments?	No
7.2	working conditions that may deny freedom of association and collective bargaining?	No
7.3	use of child labour?	No
7.4	use of forced labour?	No
7.5	discriminatory working conditions and/or lack of equal opportunity?	No
7.6	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	Yes

⁴ Forced eviction is defined here as the permanent or temporary removal against their will of individuals, families or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection. Forced evictions constitute gross violations of a range of internationally recognized human rights.

Standard 8: Pollution Prevention and Resource Efficiency		
<i>Would the project potentially involve or lead to:</i>		
8.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	Yes
8.2	the generation of waste (both hazardous and non-hazardous)?	Yes
8.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	No
8.4	the use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention</i>	No
8.5	the application of pesticides that may have a negative effect on the environment or human health?	No
8.6	significant consumption of raw materials, energy, and/or water?	No

Attachment 2. Indicative List of Social and Environmental High Risk Activities

The following types of activities may pose potential significant and/or irreversible adverse social and environmental risks and impacts and should generally be categorized as High Risk. High Risk activities may involve significant adverse impacts on physical, biological, socioeconomic, or cultural resources, and also include activities that raise significant concerns among potentially affected communities and individuals. Such adverse impacts may involve a range of human rights, gender, and/or environmental sustainability issues. High Risk activities typically require development of a full Environmental and Social Assessment (ESIA) or a Strategic Social and Environmental Assessment (SESA). An assessment of adverse impacts of High Risk activities – including direct, indirect, cumulative, and induced impacts – must include consideration of potential risks and impacts within the activity's area of influence.

Listed below are *indicative examples* of types of activities which should generally be categorized as High Risk. However, the final categorization of each Project will depend on the nature and extent of any actual or potential adverse social and environmental impacts, as determined by the specifics of its design, operation, and location. The list is not exhaustive; other activities not listed may also require categorization as High Risk. Potential adverse risks and impacts may arise from Projects that are site-specific and involve physical interventions ("downstream" activities) as well as "upstream" activities involving planning, policy and/or sector reform, and capacity building. Case examples of UNDP High Risk projects will be made available in the [SES Toolkit](#).

Projects with significant adverse social and/or environmental impacts

- Projects which may result in significant adverse social impacts to local communities or other project affected parties
- Projects which may involve significant displacement and/or resettlement⁵
- Projects which may adversely impact the rights, lands, resources and territories of indigenous peoples
- Projects which may adversely impact critical habitats
- Projects which may result in significant adverse impacts to cultural heritage
- Projects that emit significant quantities of GHGs⁶

Waste and chemicals projects

- Waste-processing and disposal installations for the incineration, chemical treatment or landfill of hazardous, toxic or dangerous wastes
- Large-scale waste disposal installations for the incineration or chemical treatment of non-hazardous wastes
- Municipal wastewater treatment plants with a capacity exceeding 150,000 population equivalent
- Municipal solid waste processing and disposal facilities
- Integrated chemical installations, i.e. those installations for the manufacture on an industrial scale of substances using chemical conversion processes, in which several units are juxtaposed and are functionally linked to one another and which are for the production of: basic organic chemicals; basic inorganic chemicals; phosphorous, nitrogen or potassium based fertilizers (simple or compound fertilizers); basic plant health products and biocides; basic pharmaceutical products using a chemical or biological process

Extraction and harvesting activities

⁵ Significant displacement and/or resettlement refers here to potential scale. Projects involving physical resettlement and/or economic displacement are generally considered High Risk. However where potential displacement and/or resettlement may be minimal, UNDP may determine that its requirements could be met with application of standard best practice and mitigation measures without the need for a full ESIA.

⁶ The significance threshold to be considered is generally more than 25,000 tonnes of CO₂- equivalent per year for the aggregate emissions of direct and indirect sources. The quantification of emissions should consider all significant sources of GHG emissions, including non-energy related sources such as methane and nitrous oxide, among others.

- Groundwater abstraction activities or artificial groundwater recharge schemes in cases where the annual volume of water to be abstracted or recharged amounts to 10 million cubic meters or more
- Industrial-scale commercial harvesting operations of tree plantations.
- Large-scale logging or deforestation of large areas
- Where tree plantations provide all the raw material, industrial plants for the: (a) production of pulp from timber or similar fibrous materials; or (b) production of paper and board with a production capacity exceeding 200 air-dried metric tonnes per day.
- Large-scale peat extraction
- Large-scale quarries and open-cast mining, and processing of metal ores or coal

Land, agriculture, livestock projects

- Large-scale land reclamation or sea dredging operations
- Large-scale primary agriculture or forestation, reforestation, or afforestation involving intensification, land use change or conversion of natural habitats, priority biodiversity features and/or critical habitats
- Industrial plants for the production of pulp from timber or similar fibrous materials or production of paper and board
- Large-scale installations for the intensive rearing of poultry or livestock
- Plants for the tanning of hides and skins where the treatment capacity exceeds 12 tonnes of finished products per day

Large-scale infrastructure (construction and/or expansion)

- Construction of motorways, express roads and lines for railway traffic; airports; new roads of four or more lanes; realignment and/or widening of existing roads to provide four or more lanes of 10 kilometers or more in a continuous length
- Large-scale sea and river ports and also inland waterways and ports for inland-waterway traffic; trading ports, piers for loading and unloading connected to land, and outside ports (excluding ferry piers)
- Large dams and complex dams⁷ and other impoundments designed for the holding back or permanent storage of water, including, for example, for hydroelectric Projects, water supply for irrigation or municipal water supply and other purposes, and flood control.

Large-scale energy and fuel projects, including transmission/transport (construction and/or expansion)

- Crude oil refineries
- Thermal power stations and other combustion installations (with heat output of at least 300 megawatts)
- Extraction of petroleum and natural gas for commercial purposes
- Installations for storage of petroleum, petrochemical, or chemical products
- Pipelines, terminals and associated facilities for the large-scale transport of gas, oil and chemicals
- Construction of high-voltage overhead, underground or submarine electrical power lines
- Large-scale wind power installations for energy production (wind farms)

Other

- Large-scale tourism and retail development.

⁷ Large dams are defined as those of 15 meters or more in height. Complex dams are those of a height between 10 and 15 meters that present special design complexities, including an unusually large flood-handling requirement, location in a zone of high seismicity, foundations that are complex and difficult to prepare, or retention of toxic materials.