

## **Environmental and Social Action Plan Vranduk HPP**

The European Bank for Reconstruction and Development (EBRD, or the Bank) is providing debt financing to JP Elektroprivreda Bosne i Hercegovine (EPBiH, or the Company) for construction and operation of a new 20MW diversion run-of-river hydropower plant (HPP) near the village of Vranduk on the Bosna River in central Bosnia and Herzegovina. The purpose of the investment programme is to increase the supply of electricity in the country with a renewable source. Construction will take four years beginning in September 2014, and operation is to begin in 2018.

The Project includes the following key components:

- Construction and operation of a new dam 19 metres high including the foundations and 119 meters length from left to the right bank of Bosna river, including a small generating unit, a fish ladder, and a gate storage chamber.
- Construction of the intake structure, tunnel and power house. The tunnel of 6 metres diameter and length of approximately 1,5 km from the intake structure located on the left bank brings water to the power house on the left bank which is approximately 7 km downstream from the dam.
- Construction of a control building, assembly plateau, and switchgear building near the powerhouse.
- Construction of short drain ditch to carry water from the powerhouse to the downstream riverbed.
- Making the riverbed deeper up to 2.9 metres deeper from the tailrace for about 2.5 kilometres downstream to Nemila village.
- Construction and reconstruction of several new and existing roads.
- Construction of new overhead transmission lines to carry electricity from the small generating unit in the dam and the two main generating units in the powerhouse to nearby lines..

Over the course of the Project, EPBiH will need to implement a series of actions to avoid, reduce, or otherwise control potential impacts on people and the environment. Some of these actions are summarized in this Environmental and Social Action Plan (ESAP). The ESAP will be part of the financing agreements between the EBRD and EPBiH. The performance of the required actions will be reported to the EBRD by EPBiH and will be audited or otherwise evaluated by the Bank throughout construction and operation of the Project.

The table below constitutes the ESAP. It identifies the required actions, the basis of the requirement, the timing of the action, the criteria to be used for determining whether the required action has been successfully achieved, and the information to be reported to EBRD. Implementation of all the actions is the responsibility of EPBiH. When other companies perform work under contract to EPBiH, EPBiH will be responsible for those contractors' compliance with the requirements of the ESAP. This is expected to be accomplished by inclusion of requirements in contracts and subcontracts, and by direct oversight and supervision by EPBiH or its designee, as needed.

As agreed by the EBRD and EPBiH, this ESAP may be revised from time to time during Project implementation, sometimes in response to evaluations conducted under the ESAP itself. No changes will be made if they could result in violations of national law or of EBRD requirements for environmental and social performance.

There may be duplication between requirements in this ESAP and requirements in the ESAP for the Una HPP rehabilitation project, in which case the parties will agree how the status of duplicate requirements will be made.

**Environmental and Social Action Plan  
Vranduk HPP**

<i>No.</i>	<i>Action required</i>	<i>Source of requirement<sup>1</sup></i>	<i>Date required</i>	<i>Measure of success and information to be reported<sup>2</sup></i>
0	Prepare and submit environmental and social report to the Bank that includes the status of each ESAP item and the status of compliance with EBRD Performance Requirements.	EBRD PR 1	- Semi-annual (each six months) during construction - Annually during operation	Reports submitted on schedule and in agreed format
<b>PR 1: Environmental and social appraisal and management</b>				
1.1	Receive and comply with all required permits/ authorizations for construction and operation from relevant authorities. These include (but are not limited to): - Water Consent - Water Permit - Construction Permit(s) for HPP, road reconstruction/construction, railway line works	National law EBRD PR1	- Receive: prior to activities that require permits/ authorizations - Comply: throughout Project activities	- Timely receipt of all permits and authorizations - Report to EBRD on status of permit issuance and permit compliance - Report to EBRD immediately in case of significant non-compliance.
1.2	Appoint qualified person(s) to be responsible for and to oversee environmental, social, and occupational health and safety performance at the project site.	EBRD PR 1 Best practice	Appoint and maintain in place prior to construction and prior to operation	Identify the responsible person(s) in reports to Bank
1.3	Develop and implement an integrated Environmental and Social Management System (ESMS) for Vranduk HPP operation and maintenance, ensure that main construction contractor(s) have acceptable systems to manage environmental and social matters. <i>Note: certification not required</i>	EBRD PR1, PR3, PR6, PR10 Best practice	- Maintained and implemented: throughout Project	- Management system developed and operational - Report to EBRD on status of system development and operation

<sup>1</sup> "National law" includes permits and authorizations issued by national, municipal, and/or other legally constituted authorities in BiH

<sup>2</sup> Unless otherwise noted for specific items, information required to be reported to the EBRD will be included in the reports submitted under ESAP requirement 0.

**Environmental and Social Action Plan  
Vranduk HPP**

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1.4	Develop and implement procedures for managing contractors, including requirements to include appropriate standards and ESAP requirements in contracts and subcontracts, and for overseeing implementation of ESHS standards and ESAP requirements. Procurement of contractors should require consideration of ESHS performance/ capability.	EBRD PR 1 Best practice	<ul style="list-style-type: none"> <li>- Contractor management program: in place prior to construction</li> <li>- Inclusion of relevant ESAP and ESHS in selection process and in contracts: all contracts</li> <li>- Contractor oversight: throughout performance</li> </ul>	<ul style="list-style-type: none"> <li>- Consideration of ESHS performance/capability in contractor selection and inclusion of requirements in contracts</li> <li>- Contractor management/ oversight procedures in place</li> <li>- Report to Bank on contractor ESHS performance (separate for each contractor and also in total), and on highlights of EPBiH oversight</li> </ul>
1.5	Develop and implement a Construction Environmental Management Plan (CEMP) to include actions needed to meet requirements of with permits, consents, and licences, and requirements in EIA and ESAP, and also including requirements of all subplans required by EIA and ESAP (traffic, erosion control, emergency response, waste, etc.)	National law EBRD PRs 1, 3, 4, 6	<ul style="list-style-type: none"> <li>- Develop CEMP: prior to construction</li> <li>- Implement CEMP (and all plans): throughout construction</li> </ul>	<ul style="list-style-type: none"> <li>- CEMP developed and implemented</li> <li>- Report to EBRD on status of CEMP and associated subplans</li> </ul>
1.6	<p>Developed Traffic Management Plan for construction phase, including at least:</p> <ul style="list-style-type: none"> <li>- Forecast of vehicle/equipment journeys and timing, including routes, based on indicative construction schedule</li> <li>- Driver training requirements</li> <li>- Maintenance requirements, with particular attention to proper operation of noise controls and emissions controls</li> <li>- Preferred routes for specific activities, including restrictions/limitations to minimize disturbance to schools, hospitals, other sensitive areas</li> <li>- Timing of activities to minimize road closures and disruption to local residents</li> <li>- Consultations with local authorities and traffic authorities</li> <li>- Incident reporting and response actions</li> </ul>	National law EBRD PRs1,3,4 Best practice	<ul style="list-style-type: none"> <li>- Develop plan: prior to construction</li> <li>- Approval/acceptance by authorities in charge: prior to construction</li> <li>- Implementation of Plan: throughout construction</li> </ul>	<ul style="list-style-type: none"> <li>- Plan developed and implemented, disclosed to local authorities</li> <li>- Drivers trained, including contractors</li> <li>- Report to Bank status of planning, highlights of implementation</li> </ul>

**Environmental and Social Action Plan  
Vranduk HPP**

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<b>PR 2: Labour and Working Conditions</b>				
2.1	Consolidate human resources policies into one document and make accessible to workers. Verify contractor HR policies are consistent with EPBiH and best practice.	EBRD PR 2 Best practice	Q2 2014	<ul style="list-style-type: none"> <li>- Consolidated HR Policy</li> <li>- Acceptable contractor HR policies</li> <li>- Report to EBRD on progress of consolidation, and on future revisions</li> </ul>
2.2	Develop and implement an occupational health and safety (OHS) plan to guide all activities during construction and then operation. Requirements to include (but not be limited to): <ul style="list-style-type: none"> <li>- Job- and task-specific hazard analysis and controls</li> <li>- PPE requirements and enforcement mechanisms</li> <li>- Designation and enforcement of smoking/no-smoking areas</li> <li>- Safety training for all personnel in their own language(s)</li> <li>- Review of contractors OHS plans, to meet same standards as EPBiH/EPC plan</li> <li>- Oversight of contractor OHS implementation, including mandatory reporting to EPBiH/EPC</li> <li>- Recordkeeping, including total work-hours, lost work-hours due to accidents/incidents, description of lost-time incidents, hospitalizations, fatalities</li> <li>- Toolbox talks to share information on risks, accident prevention, etc.</li> </ul>	National law EBRD PR 2 Best practice	<ul style="list-style-type: none"> <li>- Adoption of plan(s): prior to construction and then operation</li> <li>- Implementation of plan: throughout construction and operation</li> <li>- Oversight of contractors: throughout construction</li> </ul>	<ul style="list-style-type: none"> <li>- Development and implementation of OHS plan.</li> <li>- Zero injuries or lost-time accidents during construction and operation.</li> <li>- Report to EBRD on status of plan development and on OHS performance, including work-hours, lost-time incidents, major accidents, fatalities (including actions taken in response to accidents).</li> </ul>
2.3	Develop and implement a grievance mechanism for employees and contractors, including dissemination of information to the workforce in workers native language(s). <i>Note: this grievance mechanism is not the same as the mechanism for external stakeholders under PR 10.</i>	EBRD PR 2	<ul style="list-style-type: none"> <li>- Mechanism developed prior to construction</li> <li>- Mechanism implemented throughout construction and operation</li> </ul>	<ul style="list-style-type: none"> <li>- Grievance mechanism submitted to EBRD for review</li> <li>- Summary of EPBiH and contractor worker grievances reported to EBRD, with details of major issues</li> </ul>

**Environmental and Social Action Plan  
Vranduk HPP**

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2.4	Workers' accommodation to be provided in compliance with international best practice and EBRD/World Bank guidance. EPBiH to oversee accommodation.	EBRD PR 2 Best practice	Throughout construction	<ul style="list-style-type: none"> <li>- Accommodations meet international standards and EBRD/WB guidance</li> <li>- Report to Bank on EPBiH oversight and results</li> <li>- Report immediately any major incidents or issues</li> </ul>

**Environmental and Social Action Plan  
Vranduk HPP**

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<b>PR 3: Pollution Prevention and Abatement</b>				
3.1	Conduct noise assessment to define baseline noise conditions and applicable noise limits at project boundaries, at the Vranduk Fortress, and at the other nearest sensitive receptors. This is to include defining and locating sensitive receptors and major construction noise sources. Use results to develop noise monitoring and management plan to ensure noise does not exceed applicable standards. Plan should also include provisions for on-demand noise measurements upon request by anyone affected by noise, and implementation of mitigation as needed to reduce noise to meet standards.	National law EBRD PR 3 Best practice	<ul style="list-style-type: none"> <li>- Noise assessment completed: prior to construction</li> <li>- Noise control/mitigation plan in place: throughout construction</li> <li>- On-demand monitoring and mitigation: as required throughout construction</li> </ul>	<ul style="list-style-type: none"> <li>- Noise assessment complete, NSRs and limits defined, mitigation/controls in place and included in CEMP</li> <li>- Report to EBRD on assessment results and on incidence and results of on-demand monitoring</li> <li>- During construction, report on noise levels and compliance with limits</li> </ul>
3.2	Develop construction Waste Management Plan that describes types and quantities of wastes to be generated during construction and defines methods and locations for management. Plan should prioritize waste avoidance, reuse, and recycling over disposal. Wastes to include (among others) spoil from tunnel and dam foundation excavation, dredged materials, construction debris, fuel and solvents, household/domestic waste and wastewater, etc. <i>Note: plan for management of dredged material prepared under 3.5 below to be included in WMP.</i>	National law EBRD PR 3 Best practice: EU Waste Framework Directive (2006/12/EC)	<ul style="list-style-type: none"> <li>- Construction WMP developed and reviewed/approved by authorities: prior to construction</li> <li>- WMP implemented: throughout construction</li> </ul>	<ul style="list-style-type: none"> <li>- WMP developed, reviewed/approved by authorities, included in CEMP, and implemented</li> <li>- Waste avoidance, reuse, recycling maximized</li> <li>- Report to Bank status of WMP development, approval, and implementation</li> <li>- Report to bank immediately any incidents involving waste release or off-site damage</li> </ul>

**Environmental and Social Action Plan  
Vranduk HPP**

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3.3	<p>Develop and implement erosion control and land restoration program, to include:</p> <ul style="list-style-type: none"> <li>- Erosion control plan that describes activities that must use defined best international practices to minimize run-off from construction sites and minimize impact of construction activities on water quality. Activities to include, at a minimum, dredging, instream and riparian/riverbank works, land-clearing, work on bare ground, etc.</li> <li>- Land restoration plan to describes actions to be taken to stabilize land after disturbance ends or is interrupted for long periods. Plan must result in permanent stability of banks and land surfaces, with maximum use of native species for revegetation. Monitor revegetation until self-sustaining cover is established.</li> </ul> <p>Contractor implementation of plans is to be monitored by EPBiH</p>	<p>National law EBRD PR 3 Best practice</p>	<ul style="list-style-type: none"> <li>- Plans developed: before construction begins</li> <li>- Plans implemented and monitored: throughout construction</li> <li>- Land restored: immediately after disturbance ends</li> <li>- Monitoring: until vegetative cover is self-sustaining</li> </ul>	<ul style="list-style-type: none"> <li>- Plans developed and included in contracts and in CEMP</li> <li>- Plans implemented by all contractors</li> <li>- Erosion minimized, land stabilized as soon as possible</li> <li>- Report to Bank when plans developed, highlights of monitoring and performance, and percentage of disturbed land restored each year and in total</li> </ul>
3.4	<p>Develop and implement dust control program to minimize generation of dust by construction activities, including provisions for dust suppression with water or other means, sheeting/covering trucks carrying spoil and other loose materials, etc.</p>	<p>National law EBRD PR 3 Best practice</p>	<ul style="list-style-type: none"> <li>- Develop program: prior to construction</li> <li>- Implement program throughout construction</li> </ul>	<ul style="list-style-type: none"> <li>- Plan developed and implemented</li> <li>- Minimal visible dust</li> <li>- Report to Bank on status of plan development and implementation</li> </ul>
3.5	<p>Develop plan for construction and operational dredging, to include:</p> <ul style="list-style-type: none"> <li>- Practices and procedures to minimize dredging impacts on downstream water quality</li> <li>- Scheduling to minimize impacts on aquatic ecosystem, including avoidance of spawning seasons as much as possible</li> <li>- Notice to and consultations with downstream communities prior to dredging</li> <li>- Tailored plan for management of dredged material, to be part of Waste Management Plan under 3.2 above.</li> </ul>	<p>EBRD PRs 3, 6</p>	<ul style="list-style-type: none"> <li>- Dredging plan developed and adopted: prior to construction dredging</li> <li>- Notice to downstream communities: prior to dredging</li> </ul>	<ul style="list-style-type: none"> <li>- Plan in place and operational</li> <li>- Minimal downstream impacts from dredging</li> <li>- Report to Bank status of plan development and highlights of dredging program implementation</li> </ul>

**Environmental and Social Action Plan  
Vranduk HPP**

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3.6	Develop and implement plan to collect and manage floating waste during operational phase. Maximize reuse and recycling over disposal, provide for management in authorized facilities. Incorporate plan into the ESMS.	National law EBRD PR 3  Best practice: EU Waste Framework Directive (2006/12/EC) (as amended)	- Plan developed and approved: before reservoir filling - Plan implemented: throughout operation	- Plan(s) developed for construction and operational phases - Plans disclosed to authorities and approved if required - Plan implemented successfully, with floating waste on reservoir minimized - Report to EBRD on plan(s) development, approval, and implementation
3.7	Based on water volume during periods of ecological minimum flows, conduct assessment of capacity for septic and other waste flows from Vranduk village to be diluted sufficiently to avoid water quality degradation or aesthetic problem. If results show violation of standards or otherwise suggest a problem, work with authorities to devise solution that protects public health and water quality and meets applicable standards.	National law EBRD PRs 3, 4	- Assess: Prior to commissioning - Implement solution (if necessary): as needed to prevent problems	- Assessment completed - Solutions agreed with authorities (if needed) - No water quality or public health issues - Report to Bank on assessment and solutions



**Environmental and Social Action Plan  
Vranduk HPP**

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3.8	<p>Conduct hydrologic and sediment modelling to:</p> <ul style="list-style-type: none"> <li>- Define sediment buildup in the reservoir</li> <li>- Estimate the need for and frequency of sediment sluicing through the dam gates to keep intakes clear</li> <li>- Estimate sediment buildup in river reach between dam and tailrace using predicted sluicing rates, durations, and frequencies. Manage sluicing and water releases so as to prevent buildup that could increase flood levels.</li> <li>- Estimate sediment load and buildup downstream of the tailrace, in particular in the dredged section.</li> </ul> <p>Monitor sediment accumulation (i.e., riverbed and riparian zone elevation) at five or more equally spaced locations between dam and tailrace to detect any sediment accumulation. Modify dam operations plan so that water releases:</p> <ul style="list-style-type: none"> <li>- Result in minimal sediment buildup and raising of the riverbed and riparian zone between dam and tailrace</li> <li>- Minimize dredging that will be needed below the tailrace</li> <li>- Minimize impact on downstream biodiversity.</li> </ul>	National law EBRD PRs 3, 4, 6	<ul style="list-style-type: none"> <li>- Initial modelling and estimates: as part of final design but prior to dam operations</li> <li>- Repeat modelling: every 3 years throughout operation</li> <li>- Modifications to dam operations plan: after each modelling results are analyzed</li> </ul>	<ul style="list-style-type: none"> <li>- Modelling completed</li> <li>- Sediment sluicing through dam kept as “natural” as possible (timing and flow rates)</li> <li>- No elevation changes in riverbed/riparian zone</li> <li>- Minimized dredging downstream from tailrace</li> <li>- Report to Bank summary of model results and any sediment issues</li> </ul>
<b>PR 4: Community Health and Safety</b>				
4.1	As much as possible, schedule construction works to daytime hours and weekdays to minimize noise and other disturbance. When possible, curtail dam construction during events at Vranduk Fortress.	EBRD PR 4 Best practice	Throughout construction	<ul style="list-style-type: none"> <li>- Works primarily conducted during weekday daylight hours</li> <li>- Minimal disturbance at Fortress</li> </ul>

**Environmental and Social Action Plan  
Vranduk HPP**

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4.2	Develop and enforce code of conduct that is part of imported workers' contracts This should include rules on interactions with local communities to prevent conflicts with local residents or other disruptions.	EBRD PR 4 Best practice	Prior to use of non-local workers at project sites	<ul style="list-style-type: none"> <li>- Code of conduct developed and enforced</li> <li>- No serious incidents between workers and local communities</li> <li>- Report to Bank any incidents</li> </ul>
4.3	Install warning signs on riverbanks between the dam and the tailrace to warn that water levels may increase quickly and endanger life. Also install and use warning signals (sirens, lights, etc.) whenever water is to be released from the gates and thus raise water levels downstream. Signals must be audible and/or visible to anyone in the riparian zone between the dam and tailrace, and must give advance notice of releases to allow time for people to move from danger zone.	EBRD PR 4 Best practice	<ul style="list-style-type: none"> <li>- Install signs and alarms: Prior to closing dam gates</li> <li>- Test alarms: as specified by authorities</li> <li>- Use alarm signals: at decreasing intervals before water release through dam gates</li> </ul>	<ul style="list-style-type: none"> <li>- Signs and alarms installed</li> <li>- Alarms maintained in working condition</li> <li>- Alarms used before releases that would raise water levels</li> <li>- Report to Bank when installed and operational status</li> <li>- Report to Bank immediately in case of injury or death due to water releases</li> </ul>
4.4	Revise the Vranduk HPP Accident Prevention Plan to make it a consolidated Emergency Preparedness and Response Plan (EPRP) that meets ICOLD guidelines. Plan to include actions under 3.8 and 4.3 above and measures to be taken in the event of a dam failure. Disclose EPRP to local communities and emergency services.	National law EBRD PR1, PR2, PR3, PR4 Best practice (ICOLD)	<ul style="list-style-type: none"> <li>- Plan developed and disclosed: prior to operation</li> <li>- Plan in place and implemented as needed: throughout operation, implemented as needed</li> </ul>	<ul style="list-style-type: none"> <li>- EPRP developed, disclosed, adopted, and in place</li> <li>- Report to EBRD on status of plan development and disclosure</li> </ul>

**PR 5 Land Acquisition and Resettlement**

**Environmental and Social Action Plan  
Vranduk HPP**

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5.1	<p>Implement the Land Acquisition and Compensation Framework (LACF) for both Phase 1 and Phase 2 of the land acquisition programme.</p> <p>Develop and implement a Resettlement Action Plan which is to be developed following the completion of the census for Phase 2 of land acquisition.</p>	National law EBRD PR5	<ul style="list-style-type: none"> <li>- LACF developed, agreed, and disclosed prior to EBRD Board consideration</li> <li>- Land acquired in accordance with LACF, following development of RAP prior to any construction or other activities on land not owned by EPBiH</li> <li>- Review progress with EBRD following completion of Phase 1 and prior to commencement of Phase 2 land acquisition.</li> </ul>	<ul style="list-style-type: none"> <li>- RAP provided to EBRD for review and approval and adoption by EPBiH</li> <li>- Completion of census and development of RAP in accordance with LACF</li> <li>- Economic and physical displacement in accordance with RPF and PR5</li> <li>- Report to Bank on status of land acquisition, and any displacement required.</li> </ul>
5.2	Appoint a qualified independent monitor of the implementation of the Resettlement Action Plan.	EBRD PR 2	<p>Appoint: prior to construction</p> <p>Monitoring: throughout implementation of RAP until land acquisition is complete</p>	<ul style="list-style-type: none"> <li>- Appointment of qualified monitor</li> <li>- Development of monitoring plan for Bank approval</li> <li>- Implementation of monitoring plan</li> <li>- Report to Bank when appointment is made, then report summary(ies) of monitoring</li> </ul>

**Environmental and Social Action Plan  
Vranduk HPP**

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<b>PR 6: Biodiversity Conservation and Natural Resources Management</b>				
6.1	Conduct assessment to further characterize aquatic ecosystem, with emphasis on determining whether Annex I habitat and/or protected fish/aquatic species are found in either the area of the future reservoir or the downstream river and riparian areas that may be affected by the project. If possible, undertake assessment in consultation with authorities and local fisheries organization.	EBRD PR 6 Best practice: Habitats Directive (92/43/EEC), as amended	Assessment: complete prior to instream construction	<ul style="list-style-type: none"> <li>- Assessment completed</li> <li>- Offset-mitigation implemented as agreed with authorities</li> <li>- Report status of assessment and consultations with authorities</li> </ul>
6.2	If Annex I habitat is found that will be affected by the project is found under the 6.1 assessment, consult with authorities and then modify designs and/or determine offset-compensation measures such as replanting trees near the Project site or enhancing habitat elsewhere on the Bosna River. If protected species is found, design fish ladder to allow movement of those species. Include in ESMS.	EBRD PR 6	Modify designs/mitigate (if needed): following consultations with authorities and notice to EBRD	<ul style="list-style-type: none"> <li>- Designs modified if required</li> <li>- Report to Bank of any design changes</li> </ul>
6.3	If any protected species is found in the 6.1 assessment, retain independent expert to evaluate potential impact of the project on the species. If there will be adverse impacts, modify design in consultation with authorities in order to prevent or reduce impacts, or consult with authorities to identify alternative mitigation/compensation.	EBRD PR 6	<ul style="list-style-type: none"> <li>- Evaluation (if needed): complete prior to instream construction</li> <li>- Design/mitigation changes: to be agreed with EBRD prior to dam commissioning</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluation completed if needed</li> <li>- Design/mitigation changes (if needed) to avoid/reduce impacts</li> <li>- Report to Bank the results of the evaluation (if needed) and discuss/agree further requirements</li> </ul>

**Environmental and Social Action Plan  
Vranduk HPP**

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6.4	If technically feasible, include in final design a fish pass/ladder to allow free movement of fish upstream and downstream, and features to prevent fish entrainment in either the tunnel intake or the small dam turbine intake. Retain qualified international expert (or local expert with international experience) to review fish pass design for ability to successfully allow movement of protected and other species. During operation, maintain fish pass to ensure successful operation, and maintain fish exclusion devices. If fish pass/ladder is not feasible, consult with authorities and local fisheries organizations to identify further mitigation/compensation.	National law EBRD PR 6 Best practice	<ul style="list-style-type: none"> <li>- Fish pass design: as part of final design</li> <li>- Review by independent expert: prior to adoption of final design</li> <li>- Consultations with authorities and fish/river society: before construction</li> </ul>	<ul style="list-style-type: none"> <li>- Effective design</li> <li>- Successful fish movement</li> <li>- Report to Bank on status of design, review, construction, and operation</li> </ul>
6.5	Retain independent expert(s) to review the ability of the ecological minimum flow (EMF) to preserve biodiversity between dam and powerhouse, with emphasis on effects on any protected species found in 6.1 assessment. If necessary, modify EMF to preserve robust ecosystem, in particular protected species. Modify EMF if expert determines more or less flow is needed at specific times of the year.	PR1, PR6 and PR4 Environmental Permit (No. UPI 05-23-209/09 ZM) Preliminary water consent	<ul style="list-style-type: none"> <li>- Initial evaluation: prior to dam commissioning</li> <li>- Repeat evaluations to identify effects: annually after commissioning until stable and robust ecosystem is maintained for three consecutive years</li> <li>- Modify EMF: as needed to preserve robust ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>- Expert retained</li> <li>- Expert evaluates adequacy of EMF to preserve biodiversity, recommends changes if necessary</li> <li>- EMF modified as needed and as approved by authorities</li> <li>- Report results of EMF evaluations and recommendations</li> <li>- Report to Bank any changes to EMF</li> </ul>
6.6	Develop rating curve to define correlation between water flow and water elevation/depth. Install sensors for continuous measurement of water elevation/depth in the river immediately downstream of the dam. Use resulting data to ensure EMF is maintained continuously, initially at the rate required by EIA/permit, then as recommended under 6.5 and as approved by authorities.	National law EBRD PR 6	Rating curve: within three months of dam gate closure Installation of continuous monitors: by time of dam commissioning	<ul style="list-style-type: none"> <li>- Monitors installed and maintained, data recorded</li> <li>- Rating curve developed, flow rates calculated</li> <li>- Report to EBRD status and success of program</li> </ul>

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<b>PR 8: Cultural Heritage</b>				
8.1	Develop plan to manage unexpected impacts on cultural heritage, including Vranduk Fortress, implement if any impacts are detected. Plan to include: <ul style="list-style-type: none"> <li>- Consultations with cultural heritage authorities and Vranduk Fortress administration to identify ways in which to monitor the Fortress for any damages due to construction activities, including increase in traffic.</li> <li>- Monitoring for damage/impacts as agreed with authorities and administration</li> <li>- Stopping activities found to be damaging the Fortress until less damaging approaches are identified</li> <li>- Taking immediate action to reduce/avoid further damage as needed</li> <li>- If damages occur, consulting with authorities and administration to develop and implement remediation/repair plan</li> </ul>	PR8 Best practice	Ongoing	<ul style="list-style-type: none"> <li>- Consultations with authorities and administration</li> <li>- Plan developed and implemented</li> <li>- No damage to fortress, or appropriate compensation/mitigation if it occurs</li> <li>- Report to Bank status of consultations, plans, and any instances of damage</li> </ul>
8.2	Develop, receive approval for, train workers in the use of, and implement a chance find procedure.	National law EBRD PR 8	Procedure developed and approved: prior to construction Workers trained: prior to employment on site Implementation: throughout construction	<ul style="list-style-type: none"> <li>- Procedure develop and implemented successfully</li> <li>- All chance finds handled in accordance with procedure</li> <li>- Report to Bank on status of procedure development, on training, and on any chance finds</li> </ul>
<b>PR 10: Information disclosure and stakeholder engagement</b>				

**Environmental and Social Action Plan  
Vranduk HPP**

<i>No.</i>	<i>Action required</i>	<i>Source of requirement<sup>1</sup></i>	<i>Date required</i>	<i>Measure of success and information to be reported<sup>2</sup></i>
9.1	Implement Stakeholder Engagement Plan (SEP) including appointment of a member of staff as a community liaison officer and implementation of stakeholder grievance mechanism.	EBRD PR 10 Best practice	Ongoing	<ul style="list-style-type: none"> <li>- Stakeholder engagement and information disclosure carried out in accordance with SEP.</li> <li>- Report to EBRD on stakeholder engagement activities.</li> <li>- Report to EBRD all grievances and resolutions.</li> </ul>
9.2	If requested by stakeholder(s) following disclosure of ESIA package, schedule, announce, and hold a public meeting to receive comments.	EBRD PR 10	<ul style="list-style-type: none"> <li>- Schedule, announce, hold meeting: if requested, before end of 120-day disclosure period</li> <li>- Response to comments: before EBRD Board consideration</li> </ul>	<ul style="list-style-type: none"> <li>- Meeting held if requested</li> <li>- Comments responded to as needed</li> <li>- Report to EBRD if meeting is requested, provide copy of announcements</li> <li>- Provide for EBRD approval draft responses to comments (if any)</li> </ul>