ШЕКАРАСЫЗ ӨЗЕНДЕР

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Rivers without Boundaries Public Fund

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RIVERS WITHOUT BOUNDARIES

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CC:
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Re: Rogun Hydropower Project and Tigrovaya Balka UNESCO World Heritage property in Tajikistan

We are concerned with potential direct, indirect, and cumulative impacts on the **Tugay forests of the Tigrovaya Balka Nature Reserve UNESCO World Heritage**[1] property along the Vakhsh River and similar valuable riverine ecosystems, located downstream along Amu Darya River, which may result from the Rogun HPP Project in Tajikistan and reoperation of the whole Vaksh Hydropower Cascade due to addition of the largest dam. The project[2] is presently considered for financing by The World Bank, Asian Infrastructure Investment Bank, European Investment Bank, Asian Development Bank, Islamic Development Bank and other international finance institutions and the World Bank Environmental and Social Standards (ESS) and procedures are used in the ESIA process. Some institutions indicate intention to expedite project approval and make decisions this spring, while, in our understanding, the Rogun HPP Project's ESIA[3] is incomplete and invalid, because it fully ignores potential impacts on critical habitats such as the Lower Vakhsh River and Tugay forests of the Tigrovaya Balka Nature Reserve.

We have reasonable hope to be heard as the highest degree of precautionary approach is prescribed for World Heritage and critical habitats by the World Bank (WB) ESS1 and ESS6, and the Asian Infrastructure Investment Bank (AIIB), European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB) have by-laws precluding them from financing projects that potentially may cause harm to the UNESCO World Heritage properties[4].

[1] https://whc.unesco.org/en/list/1685/
[2] https://projects.worldbank.org/en/projects-operations/project-detail/P181029
[3] https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099122223091529585/p1810291b43c970a71993e1a8e76ceb151c
[4] https://whc.unesco.org/en/no-go-commitment/

Critical Habitats and Endangered Species downstream of Vakhsh Hydropower Cascade

The Tigrovaya Balka Nature Reserve World Heritage property is located between the Vakhsh and Panj rivers in southwestern Tajikistan. The Reserve includes extensive riparian tugay ecosystems, which represent the largest and most intact tugay forest of this type in Central Asia, and this is the only place in the world where the Asiatic poplar tugay ecosystem has been preserved in its original state over an area of this size.

The ecosystems of the Tigrovaya Balka floodplain mainly depend on a meandering Vakhsh river and its fluvial dynamics. These dynamics are conditioned by the variation in river flow, by regular seasonal variations (low flows in winter, high flows in summer) as well as by rare and extraordinary flood events (extreme floods) and corresponding sediment flow. Water and sedimentation regime further determines habitat formation, groundwater levels, chemistry of surface waters and aquifers, composition and genesis of soils, changes in vegetation cover and well-being of endangered fauna from many aquatic organisms to Bactrian Deer.

Lower Vakhsh River within the UNESCO World Heritage property and beyond is one of the key critical habitats for several endangered species of fish[5]: Large Amu-Darya shovelnose sturgeon - *Pseudoscaphirhynchus kaufmanni* (listed as Critically Endangered[6]) , Small Amu-Darya shovelnose sturgeon - *Pseudoscaphirhynchus hermanni* (listed as Critically Endangered[7]), Pike asp -*Aspiolucius esocinus* (listed as Endangered[8]), Aral barbel - *Luciobarbus brachycephalus* (listed as Vulnerable[9]) , Chu Sharpray -*Capoetobrama kuschakewitschi* (listed as Endangered[10]), which are also listed as rare and endangered in the Red Book of the Republic of Tajikistan (2015). Status of populations and possible impacts on those species have not been assessed in the ESIA.

Historic impacts threatening Tigrovaya Balka and attempts to mitigate those.

For the last several decades the World Heritage property has faced the following many challenges:

- River flow changed by dams of the Vakhsh Cascade (Nurek Hydro built in the 1960s being the most impactful factor) reducing floods that sustain floodplain ecosystems. Floods shaped morphology, water regime, vegetation density and chemistry of floodplain habitats.
- Agricultural encroachment and pollution (now the floodplain lakes are partly fed by waters from irrigation systems rich in salts, pesticides, etc.). Competition for water with irrigated agriculture located upstream of the reserve[11].
- Poaching and illegal logging and grazing (as floodplains become dryer, they are also become more accessible for humans and cattle).
- Decrease in groundwater levels due to change of river morphology because of the reservoirs upstream blocking sediment flow (deepening of channels in absence of sediment load), absence of replenishment from flood water inflows and decrease in silt deposition shaping relief and delivering nutrients in tugay forests.
- Vakhsh hydropower cascade decreased turbidity/sediment transport by 7-11 times, which radically altered riverbed and conditions for spawning and migration of shovelnose sturgeons.[12]

Since the Nurek Reservoir altered the flow and sediment regime, various measures have been proposed to save the tugay ecosystem and some of those were implemented. In 1976 the Government of Tajik Soviet Republic prescribed measures to safeguard the Tigrovaya Balka, which included implementation

[5] https://www.uzdaily.com/en/post/86942
[6] https://www.iucnredlist.org/species/18601/120872031

[7] https://www.iucnredlist.org/species/18600/156719289
[8] https://www.iucnredlist.org/species/39462/156728608
[9] https://www.iucnredlist.org/species/135684/4180293
[10] https://www.iucnredlist.org/species/169620/156732450
[11] https://www.mdpi.com/2225-1154/10/2/13
[12] https://www.cms.int/en/document/shovelfish-or-large-amu-dar-shovelnose-pseudoscaphirhynchus-kaufmanni

of "artificial floods". In 2009 Dr. Petr Gunin reviewing necessary measures insisted on releasing "one large flood in 10-15 years, when hydrological situation is favorable. In 2020 the GIZ Project formulated the key conditions of ecosystem preservation: "*By 2035, within the reserve at least 76% of the area within 500 m of the river is forested, with at least one sapling of Populus pruinosa per one m², and the **forest experiences 25 or more days of flooding per year***"[13]

In 2005-2009, as part of the UNEP and WWF's project, a large-scale work was carried out to restore degraded tugay forest and wetland ecosystems in the Tigrovaya Balka, including clearing (dredging) natural stream connecting lakes, building channels for supplying fresh water bypassing the dams, constructing pumping stations to fill key floodplain lakes[14].Program resulted in certain improvements of tugay's health. WWF also extended work to surrounding lands by implementing water-saving technologies in agriculture.

Meanwhile in 2023 Tajik and international experts again emphasize that sustaining favorable flooding regime in Vakhsh River is the most critical condition for preserving the Tigrovaya Balka[15].

World Heritage Committee Position

In 2023 World Heritage Committee issued the Decision 45 COM 8B.30[16] which inscribed the Tigrovaya Balka on the UNESCO World Heritage List and provided important guidance for its management and preservation:

"*The integrity of the property depends on the riparian dynamics of the Vakhsh and Panj rivers, with the Vakhsh being the most important but also the most modified by dams. These dams change inter-seasonal and inter-annual flow dynamics reducing the flooding on which riparian tugay ecosystems depend. The water balance is now **partly supported** by secondary water sources from irrigation systems. The water regime within the property has been restored to the extent that the property's integrity is ensured, but the matter requires constant attention and action…. Maintenance of the Outstanding Universal Value is contingent on regular supply of water from upstream sources….*

The World Heritage Committee Requests the State Party to:

1. *Secure and maintain a natural hydrological regime for the property with sufficient provision of water to the property to maintain its Outstanding Universal Value,*
2. *Assess regularly the management effectiveness of the property, including research on the hydrological regime of the Vakhsh River in relation to the property,…"*

There is clear understanding that semi-natural dynamics or upstream flows coming from the Vakhsh River is most critical for sustaining the ecosystem health, and that the current water regime is heavily altered, and further efforts are needed to improve and sustain it.

The Rogun HPP Project promise and failure to fulfill it.

The Rogun HPP, which construction started 48 years ago upstream from Nurek dam, if built, will have a reservoir with an active capacity of 10 cubic kilometers or much more than 50% of Vakhsh River annual discharge. The rest of Vakhsh cascade already has a total live volume of 4-6 cub.km. During the filling of the enormous reservoir, which will take at least 15 years, it will compete for water with growing Tajik irrigated agriculture, taking annually one cubic kilometer of water from the Vakhsh River. The whole cascade will be reoperated to incorporate the new dam, so that the Rogun Reservoir will from the day of completion redistribute summer flows to winter months cutting peaks of large floods, while the Nurek reservoir will be managed as run-of-river dam.

[13] https://conservationstandards.org/wp-content/uploads/sites/3/2021/01/210119_CSCP_Publication_Web.pdf
[14] https://www.ramsar.org/sites/default/files/documents/library/cop13nr_tajikistan_e.pdf
[15] https://cabar.asia/en/tigrovaya-balka-nature-reserve-in-tajikistan-how-can-we-save-the-last-stronghold-of-tugay-forests-2
[16] https://whc.unesco.org/en/decisions/8411

The way the Rogun HPP operates will either further degrade downstream floodplain forests and wetlands or by setting special environmental flow regime and other measures this damage may be partially mitigated.

This need was mentioned in the 2014 Rogun HPP ESIA[17], which suggested that the project "*could …provide support to one or more programs of maintenance and improvements of Tigrovaya Balka, a detailed plan developed and included in the project ESMP is recommended*". The 2014 ESMP attached to the ESIA suggested designing "*Release of occasional "**artificial floods**"; this would have to be done in close coordination with all concerned stakeholders, mainly also to prevent damage to inhabited and cultivated areas. First step: initial study in Tigrovaya Balka study would include assessment of feasibility of staged floods to mimic previous natural flows. If not practical, identify alternative measures to improve situation".* We are not aware of any such study being carried out under the World Bank supervision after 2014 ESIA was shelved.

Nevertheless, the 2022 Terms of Reference for the "*Update Environmental and Social Instruments for the Rogun HPP Project*" ***point (i)*** *states that the preparation of the Biodiversity Management Plan " will include working with Rogun and Tigrovaya Balka experts to **assess the feasibility of having Rogun release water in a pattern and amount that at least partially mimics previously naturally occurring floods**, which ended with the construction of Nurek HPP[18]*". So, there was a reasonable hope that such feasibility study envisioned by the World Bank since 2014 and by Tajik authorities since 1976 will be finally carried out and may define the way forward to safeguard the World Heritage in the contexts of Rogun HPP development and Vakhsh Hydropower Cascade reoperation. However, even this promise for a feasibility study, which only partially covers objectives of the ESIA, has not been fulfilled, as the ESIA materials do not contain the results of such an assessment on the feasibility of environmental flow releases. The Biodiversity Management Plan, that could incorporate implementation of "artificial floods" and other specific measures has not been released.

Unfortunately, the draft ESIA, released on December 22, 2023, on the World Bank website, does not include any other assessment of project impacts on the Tigrovaya Balka floodplain ecosystems. At the same time, the ESIA text on page 106 of Volume I recognises the potential (and even desirability) of the Rogun HPP's decisive impact on flood regulation downstream of the Vakhsh HPP Cascade: "4.11.8. *The construction of the Project will improve flood routing capacity for the area downstream of the Vakhsh cascade. This positive effect could be increased by appropriate flood management. The inclusion of Rogun HPP in the cascade would also reduce risks of floods of lower magnitude, but with a higher probability of occurrence*." It was flood control by the Nurek HPP that previously led to the deterioration of the Tigrovaya Balka ecosystems, and now it will be further exacerbated by the creation of the Rogun reservoir. There are multiple other points in the ESIA Volume I testifying that the flow regime downstream of the Vakhsh Hydropower cascade may be changed in near future. For the reservoir filling phase the impacts on Lower Vaksh and Amu Darya are characterized as "negative impacts of regional extent with large magnitude and major significance" large (Table 8-10 – Water-Summary of Impacts. Page 260. Volume 1)[19].

It is very clear that even continuation of the "current operation pattern of flow regulation by hydropower cascade" proposed in the ESIA as the only possible option will have a negative impact on the World Heritage Site. In order to justify this regime, the ESIA must include a study of these impacts on the outstanding universal values of the UNESCO World Natural Heritage property, as well as a study of impacts under other alternative operation pattern regimes. The ESIA openly talks about three different possible regimes but does not assess and compare their impacts. In 2014 the World Bank in 2014

[17] https://www.worldbank.org/content/dam/Worldbank/Event/ECA/central-asia/11_ESIA_Environmental%20and%20Social%20Impacts_Version_ENG.pdf
[18] https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099335005162258056/p17881905baf660009df70fe368c67810c
[19] Important to note, that there is no analysis or meaningful data presented in volume 1 of the ESIA to support its qualitative assessment of "impacts on water", while Volume II, which contains annexes with detailed assessment results has not been disclosed by the World Bank.

clearly characterized the current operation regime as non-optimal and called on riparian countries agree on a different operational regime, but it never considered the potential consequences for biodiversity[20].

An environmental flow regime sufficient for safeguarding and recovery of the Tigrovaya Balka ecosystems should be designed as a part of those assessment studies for incorporation into any operational regime proposed. Potential impacts on other remaining tugay (floodplain forest) ecosystems in the nature reserves of Turkmenistan and Uzbekistan should also be assessed within the revised ESIA.

Cumulative impact assessment (CIA) has been done improperly and does not consider potential impact on biodiversity and ecosystem services. The World Bank has already proposed to "upgrade the CIA"[21]. We would suggest that cumulative impacts resulting from reoperation of the Vakhsh Hydropower Cascade, which modernization and extension is supported by several MDB projects (e.g. Nurek Rehabilitation[22]) should be explored in conjunction with development of irrigation agriculture in the same basin[23], as both may have profound impacts on Lower Vakhsh ecosystems and the World Heritage Site. Unfortunately, the currently proposed "CIA upgrade" does not explicitly include impacts on biodiversity and ecosystem services in lower Vakhsh River valley.

The impact assessment should have been carried in line with the 2022 Guidance and Toolkit on Impact Assessments in a World Heritage Context[24] – "*to ensure that direct, indirect and cumulative impacts on OUV have been properly reviewed and considered in consultation with relevant stakeholders and rights-holders, to inform decision-making. The loss or damage to OUV cannot be compensated for, as OUV is irreplaceable, and thus all damage must be avoided. The concept of 'offset' therefore is not applicable in the context of World Heritage*". Assessment result, according to the rules of the World Heritage Convention, must be submitted by Tajikistan for review by the International Union for Conservation of Nature (IUCN) and the UNESCO World Heritage Centre.

Conclusions

We believe that the following steps must be urgently taken within a framework of the Rogun HPP Project and its ESIA process before any multilateral finance institutions make decision to proceed with the project support:

1. The Rogun HPP project's area of impact (AOI) considered in the ESIA is too narrow and should be extended to Tigrovaya Balka Nature Reserve and further to the Amu Darya Delta in order to assess multiple flow regimes resulting from various possible modes of Rogun reservoir operation in the context of the whole Vakhsh Hydropower Cascade management as well as full spectrum of impacts on the freshwater biodiversity, wildlife populations, ecosystem processes (services) of the river, river-related socio-economic activities (e.g. irrigation) and others.
2. Comprehensive assessment of the baseline situation, as well as direct and indirect potential impacts of Rogun HPP project and its cumulative impacts on the World Heritage property (as required by the World Heritage Convention rules) must be carried out for those areas and issues and presented to IUCN/UNESCO for review.
3. Environmental flow regime with flood releases sufficient for safeguarding and recovery of the Tigrovaya Balka ecosystems should be designed as a part of those assessment studies. Climate change projections should be taken into account. Endangered fish species needs should be studied and considered. Potential impacts on other remaining tugay (floodplain forest)

[20] Para 64-74 https://www.worldbank.org/content/dam/Worldbank/document/eca/central-asia/World%20Bank%20Note%20-%20Key%20Issues%20for%20Consideration%20on%20Proposed%20Rogun%20Hydropower%20Project_eng.pdf
[21] https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099012524153061688/p17881918ee3270e1a837157b9b911b501
[22] https://documents1.worldbank.org/curated/en/270681485857484036/pdf/SFG2940-V1-EA-P150816-Box402882B-PUBLIC-Disclosed-1-29-2017.pdf
[23] https://www.adb.org/sites/default/files/linked-documents/53109-001-ieeab.pdf
[24] https://whc.unesco.org/en/guidance-toolkit-impact-assessments/

ecosystems in the nature reserves of Turkmenistan and Uzbekistan should also be assessed within the revised ESIA.

4. Potential water allocation conflicts between hydropower and irrigated agriculture and their possible impacts on quantity and quality of water supply to Tigrovaya Balka should be studied in the same assessments in the context of climate change with special attention to reservoir filling period. Cumulative impact assessment with other hydropower projects in the Vakhsh and broader Amu Darya basin must be carried out. The upgrades in "cumulative impact assessment" should include these aspects with specific attention to impacts on globally important biodiversity.

5. Binding Biodiversity Management Plan with comprehensive measures must be designed and all key commitments reflected in the Environmental and Social Commitment Plan (ESCP) and other relevant legal agreements before any decision of funding. Those agreements, among other things, must guarantee that enforceable reservoir regulation rules for Rogun Reservoir and Vakhsh Cascade include appropriate environmental flow releases and take into account all other necessary safeguards identified through heritage impact assessments and the rest of the renewed ESIA.

Without these actions completed satisfactorily before project approval, neither the World Bank nor any other responsible international financial institution should consider financing completion of the Rogun reservoir project.

In case if no credible and comprehensive independent assessment of impacts and a feasibility study for "artificial floods" and other mitigation measures is performed and mitigation measures designed and their implementation guaranteed by international agreements, **the creation of Rogun reservoir will inevitably lead to full deterioration of Tigrovaya Balka floodplain and aquatic ecosystems**. The last chance to secure the necessary water regime will be foregone.

This will also create a very dangerous precedent, when multilateral banks support a project without performing heritage impact assessment and ensuring minimization of harm to the World Heritage properties. It is especially dangerous as up to 15 major international banks/funds are involved in the "Rogun Coordination Group" summoned by the World Bank to support the Rogun HPP project.

Please respond to us to the following email address: coalition@riverswithoutboundaries.org, cc: alex.kolotov@gmail.com

Sincerely

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