

To: The Chair, Inspection Panel
The World Bank Accountability Mechanism, MSN: MC 10-1007, 1818 H St., NW, Washington, DC 20433, USA. Fax: +1(202)-522-0916. Email: ipanel@worldbank.org

Dear Chairman:

Esteemed Members of the Inspection Panel of the World Bank:

Re: Complaint concerning World Bank investments in and financing to Rogun HHP Project.(“[Sustainable Financing for Rogun Hydropower Project](#)” (P181029) and “Technical Assistance for Financing Framework for Rogun Hydropower Project” – (P178819))

Representatives of the Complainants are submitting this complaint to the Inspection Panel on behalf of the project-affected Complainants and their communities regarding the World Bank’s USD 350 million investment in Project#P181029 “[Sustainable Financing for Rogun Hydropower Project](#)”, which was approved by the Board on December 17, 2024. To co-finance the subsequent Rogun Hydropower Project (P181029), the World Bank invited a coalition of international finance institutions, nine of which, allegedly, pledged additional USD 1185 million.

Preparation of above mentioned Project ([P181029](#)) is supported by a corresponding Technical Assistance (TA) Project# 178819 approved and [signed](#) in January 2023. The borrower has received a US\$15 million grant/loan package from the World Bank and AIIB for the project, which has the objective to strengthen Rogun HPP Project’s financial and commercial frameworks and enhance its environmental and social sustainability by “updating” “Environmental and Social Instruments” (E&S) developed in 2014.

The World Bank and several co-financiers have approved financing for construction of the Rogun HPP (Project#P181029) despite the current ESIA documentation being incomplete and based on outdated data and concepts and not addressing key concerns related to the environmental and social consequences of the project. Although, the World Bank claims that the whole project will be implemented according to the standards of its ESF, other co-financiers have already issued calls for tender for specific engineering works, which do not reference the ESF requirements and do not contain the provision that adjustments could be made based on outcomes of the ESIA finalization (e.g. see tender(s) announced by the Islamic Development Bank¹).

¹ General Procurement Notice Construction of Rogun Hydro Power Plant Project (Lot-4 Left Bank Structures) Financing No.TJK1042. <https://www.isdb.org/project-procurement/tenders/2024/gpn/construction-rogun-hydro-power-plant-project-gpn>

As outlined below, given current scientifically sound evidence related to the impacts of climate change and the hydrology of the region as well as the well documented context of closed civic space in Central Asian countries, we expect the project will contribute to a wide range socio-economic and ecological harms, including but not limited to water deficit, degradation of globally important riverine ecosystems, extinction of critically endangered species, economic and physical displacement of local communities and increased cost of living.

Much of the impacts capable of causing harms have not been assessed rigorously, or those assessments have not been disclosed, while the complainants (and their communities) had no chance to participate in any meaningful public consultations, as one riparian consultations were held in secrecy in early November 2023 before the World Bank disclosed the draft ESIA, while another one hastily held in Tashkent on 28 October 2024 was not based on any specific E&S documentation made available for comment prior or even after the meeting and violated many other requirements of the WB standards².

Do the complainants live in the project impact area? YES

The Complainants are citizens of Uzbekistan (Republic of Karakalpakstan) and Turkmenistan, living in the environmental disaster zone of the Aral Sea region stretching along Amu-Darya River and its Delta, have united to file a complaint about violations of the “[Sustainable Financing for Rogun Hydropower Project](#)” (P181029) in Tajikistan, which poses numerous threats to the health and economic survival of their communities and the health of the region's environment.

Harm to be caused by the Project

Complainants and their communities are likely to be harmed by the World Bank's errors and omissions in the design and implementation of the “Sustainable Financing for Rogun Hydropower” Project (P181029)³ and “Technical Assistance for Financing Framework for Rogun Hydropower Project” (P178819) and the lack of disclosure and meaningful public consultation, especially for the communities downstream of the Vakhsh Hydropower Cascade.

During the planning and preparation of the ESIA for the Rogun HPP Construction Financing Project, the interests of people living downstream, particularly those living in the Aral disaster zone in the Amu Darya River basin, were completely ignored⁴. Damage may result from the World Bank's and the borrower's failure to comply with the Bank's Environmental and Social Framework (ESF) and the failure to develop a

² CSO [Letter to the World Bank on improper consultations. 8 November 2024](#) on the Rogun Alert website <https://rogun.exposed/letters>

³ Project [P181029](https://projects.worldbank.org/en/projects-operations/project-detail/P181029) <https://projects.worldbank.org/en/projects-operations/project-detail/P181029>

⁴ Karakalpakstan, the Khorezm region of Uzbekistan and the Dashoguz (Tashauz) velayat of Turkmenistan are usually considered the “environmental disaster zone of the Aral Sea”, but negative socio-ecological consequences are also recorded beyond its borders in the territories of Uzbekistan, Turkmenistan and the Kyzyl-Orda region of Kazakhstan.

robust Environmental and Social Management Plan (ESMP) and Environmental and Social Commitment Plan (ESCP), which detail how the World Bank and the borrower, in consultation with the community, will address significant social and environmental issues arising from the project and prevent harm to the population and ecosystems of the Amu Darya river basin.

We expect that the inevitable reduction and seasonal redistribution of the Vakhsh River flow during the construction, filling of the reservoir and operation of the Rogun hydropower station will create a water shortage in the Lower Vakhsh and Amu Darya rivers, which will lead to irreversible consequences and disrupt the already fragile state of natural and anthropogenic ecosystems, which, mainly, was not taken into account or was directly ignored in the ESIA of the Rogun HPP.

Moreover, even the change in the flow regime, which is mentioned only in passing in the ESIA of the Rogun hydroelectric station, will lead to the aggravation of key environmental problems, as well as the need for a high-cost transformation of agriculture and municipal water supply in the middle and lower reaches of the Amu Darya. In the worst-case scenario, the redistribution of runoff will lead to the complete degradation of the local socio-economic structure with enormous social consequences.

The Complainants, who live on the lands washed by the waters of the Amu Darya River, have felt throughout all their lives the consequences of the Aral Sea disaster, triggered by the thoughtless construction of dams, canals and other hydraulic infrastructure, which caused the redistribution of the Amu Darya flow and the destruction of the Aral Sea. Current baseline conditions in the region shared by this crisis have been completely omitted when planning Rogun HPP Project and drafting the ESIA report.

The population of most regions of the lower reaches of the Amu Darya and its delta have been on the brink of extreme physical survival for many years due to salinization and desertification of soil, resulting harm to agricultural productivity and deteriorating human health due to toxic dust storms and low-quality water supplies, with often health threatening concentrations of salts. Most migrants from the Aral Sea region indicated environmental degradation as the leading reason for migration. Two family members of one of the two complainants also migrated out of the region due to deteriorating environment. (See Annex I for details and references).

Deterioration of health, loss of livelihood due to lack of water or its poor quality, uncertainty of survival prospects in an area where the habitat is degraded - this is what has been a heavy moral, psychological and physical oppression for many years that influenced the complainants, their families, and communities.

The additional reservoir of the Rogun hydroelectric power station with a live volume of 10 cubic kilometers, at the operational stage, in dry years can have a decisive influence on the reshaping of the flow of the Amu Darya River and the state of the ecosystems and population dependent on it up to the river delta. These scenarios are not considered in ESIA. During the construction and filling of the reservoir of the Rogun hydropower station, even according to preliminary estimates of the World Bank, within 13–16 years the Amu Darya flow into the Aral Sea will be reduced by 0.8 - 1.2 cubic kilometers annually (this will amount to at least 25% of the current flow into the Amu Darya Delta⁵), which will inevitably lead to a

⁵ Nazariy A.M. Changes in Amu Darya river annual and seasonal flows. September 2023. Presentation (in Russian) https://rivers.help/pdf/2023_Nazariy.pdf

progressive catastrophe in the already existing zone of environmental disaster and its spreading to new areas.

To date, we note the failure to take into account full consideration the cumulative impacts of the Rogun hydropower station during different project lifecycle stages (construction, filling of the reservoir, operation), in conjunction with other functioning and planned water infrastructure projects downstream along the Amu Darya. As we understand it, based on the World Bank's own data, during 15-year long reservoir filling phase, there will be over 20% reduction in water flowing into Aral Sea and no identified coordination with other new large projects along the Amu Darya, for example the Qosh-Tepa canal in Afghanistan. Combined with an evidence-based data about the impacts of climate change in the region (including desertification, salinization, and overall lowered water flow), the operations of the Rogun Dam would be expected to severely exacerbate a range of ecological, social and economic problems – including among others:

- a) devastating impacts on critically endangered species of fish and other riparian species as well as currently intact tracts of floodplain tugai forests which are dependent on the flow regime of the rivers of the Amu Darya basin – one of which was designated as a UNESCO World Natural Heritage Site in 2023,
- b) declines in living standards and health condition of those of local residents who live downstream and around the site (most particularly for those from local communities that rely on the watershed for irrigating farmland), given the loss of land and water availability as well as higher release of salts into the air, and
- c) social dislocation caused by loss of connection to the land and to surrounding communities, and corresponding out-migration, raising the specter of increased cross-border economic and socio-political tensions.

(See Appendix I for detail on cumulative effects)

As a result of these changes, downstream regions are threatened with salinization of land\waters and loss of fertility of large irrigated areas, degradation and desertification of lands due to lack of fresh water, which will necessitate a change in the way of farming due to changes in the flow regime of the Amu Darya⁶.

Reduced flows will also cause environmental degradation in our areas. In particular, due to an increase in mineralization (salt content) in water and the release of salts into the air from dried-out areas, the number of associated diseases will sharply increase.

As a result of the implementation of the Rogun HPP project, the risk of degradation of the aquatic and coastal ecosystems of the Amu Darya basin will increase, with the loss of their recreational properties, biological resources important for local communities and the destruction of unique biological diversity. In particular, the most important tracts of floodplain tugai ecosystems, which have already been significantly reduced due to changes in the flow induced by previously built reservoirs, will be under the threat of degradation, including the World Heritage Site Tugay Forests of the Tigrovaya Balka Nature Reserve and the Amudarya Nature Reserve, a transboundary reserve between Uzbekistan and Turkmenistan. Among the endemic fish species, the two species of Amudarya shovelnose sturgeons, both recognized by the IUCN as critically endangered status - CR) may go extinct due to increasing changes in the flow regime of the water

⁶ [Uzbekistan - Country Climate and Development Report](#). World Bank .2023

and sediments in the river. In our nature conservation programs the complainants used those sturgeons as flagship species representing the biodiversity of the Amu Darya River basin, while historically they were also used by rural healers as traditional medicine (before their numbers were reduced by impacts from upstream water infrastructure). Unless their habitat is protected from further negative dam impacts, our children and grandchildren will only ever know these species in books or local museums, and cultural ties with riverine life will be severed.

The decades-long threat of the implementation of plans for the construction of the Rogun hydropower plant against the backdrop of a progressive decrease in the volume of water entering the region has already become a source of major stress for complainants, their CSOs and local communities. This threat created a feeling and state of alarming uncertainty about their fate among members of local communities and all residents of the Amu Darya valley. This is especially painful for the complainants as environmental professionals who have dedicated their lives to protecting their region from environmental degradation. In addition, for the residents of the Amu Darya Valley, the risks of collapse of the overlying dams pose a great threat, but the population is not even informed about the likely consequences and emergency action plans in the event of different scenarios of such accidents.

Complainants' communities have not received any information about the expected socio-environmental impacts of the project, the ESIA materials are not available in Uzbek, Karakalpak and Turkmen languages, complainants are not aware of any consultations or surveys conducted in their potentially affected regions in the process of preparing the ESIA. A failure to provide such information is a violation of national legislation and requirements of international law, e.g. the Aarhus Convention. The lack of reliable information in the ESIA about the consequences for the lower reaches of the river in different scenarios for the use of the Rogun HPP deprives members of the complainants' communities (and local authorities alike) of an opportunity to plan for the future, to make informed choices between attempts to adapt to environmental deterioration or migration from their homes.

For the Complainants and other residents of our countries, the project documents do not provide for compensation measures and damage compensation mechanisms for cases where negative impacts below the cascade cannot be avoided. The project documentation neither provides a venue for filing compensation claims for losses in case of a dam burst or malfunctioning.

We expect that the project could create a migration/displacement crisis in the already disadvantaged Amu Darya basin from the upper reaches of the Vakhsh to the very lower reaches of the Amu Darya. More than 50 thousand people will be forcibly resettled from the Rogun reservoir bottom in Tajikistan and more will migrate from downstream areas (e.g. in Turkmenistan and Uzbekistan) experiencing the loss of livelihoods due to redistribution of water flows caused by the creation of the Rogun HPP reservoir upstream, with many of those searching for places to live, new jobs, in surrounding countries (e.g. Uzbekistan, Kazakhstan and Turkmenistan) and potentially creating socio-economic pressures and igniting civil unrest. In the lower reaches of the Amu Darya, the number of potential migrants and economically deprived people will depend on the modes of operation of the Rogun hydropower reservoir as the regulator of the whole Vakhsh Cascade in different periods of water availability.

The impending changes in the Vakhsh River flow and its impact on the lower reaches of the Amu Darya, as well as the contribution of these changes to the cumulative impacts and their effects associated with other projects in the Amu Darya basin are of major concern. Lack of information on potential impacts does not allow both the authorities of the riparian countries and local communities to develop adequate countermeasures and adaptation to the potential negative consequences of the construction of the Rogun hydropower station. However, it is projected by the World Bank's "[Uzbekistan - Country Climate and Development Report](#)," that just in the agricultural sector of Uzbekistan adaptation of the irrigation system to water scarcity through 2030 will cost additional US\$8.7 billion (mostly in Amu-Darya basin. Stating that the World Bank clearly points to a direct causal link with development of upstream reservoirs: "*transboundary allocation issues and poor regional cooperation have made it challenging to coordinate the planning and operations of such (water) infrastructure, while the unplanned and regionally uncoordinated development of infrastructure in upstream regions amplifies the risks of water shortages for downstream regions*". Other dependent sectors like municipal water supply, health system, etc. will also confront water scarcity and resulting decrease in its quality, which in turn will decrease the overall living standards and increase climate adaptation costs in our communities.

The Complainants state that the upcoming threats of water shortages, a decrease in water quality, changes in the mode of water supply will irreversibly change their environment, cause irreparable damage to the biological diversity of the region, the culture of local communities and can lead to the collapse of the region's economy, which is based on irrigated agriculture, giving rise to unemployment, poverty, as a consequence of environmental and economic migration from the region. Impacts of Rogun HPP coupled with other water infrastructure planned in the basin may eventually make anthropogenic agricultural ecosystems reach a threshold in resilience capacity, after which the current socio-economic system will collapse and migration flows will become massive and irreversible. (For a more detailed explanation of the expected changes, see the Appendix I)

At the same time, the Rogun hydroelectric power station is presented by proponents as a reliable cost-effective optimal way to put an end to power shortages in winter and reduce greenhouse emissions in the region, while, when analyzed objectively, it looks like one of the most expensive and time-consuming "false solutions" which contradicts basic principles of climate justice. In September 2024 the ADB project paper clearly confirms that costs of Rogun electricity far exceed present values⁸. Expensive energy produced at Rogun HPP and exported to the region will increase electricity bills for the vulnerable population of the countries, such as Uzbekistan and Kazakhstan. Officials of those countries are being lured into signing long-term power purchase agreements for energy, most of which will be available only in a decade or two after the Rogun HPP completion. The Complainants see that inflation has increased in

⁷ **Uzbekistan - Country Climate and Development Report**. November 2023

<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099111423124532881/p1790680f452f10ba0a34c06922a1df0003>

⁸ "The sustainability risk for Barqi Tojik is considered substantial due to the higher cost of energy purchases from independent power producers and the **Rogun HPP**. These costs exceed the tariffs Barqi Tojik receives for domestic sales and, in some cases, even surpass the revenue obtained from export sales". [Reconnection to the Central Asian Power System Project - Additional Financing: Report and Recommendation of the President](#) <https://www.adb.org/projects/documents/taj-52122-002-rrp>

Tajikistan, where electricity tariffs are soaring in order to achieve “production cost recovery”⁹ and citizens there are encouraged by authorities to switch back to coal and other dirty energy sources for heating purposes. The Complainants believe that the bet on completing the Rogun hydroelectric power station with the “world’s tallest dam” (335 meters) will push the development of Central Asian power systems onto a high-emissions path by promoting the most expensive and time-consuming decarbonization methods, thus closing opportunities to pursue much cheaper alternatives which could be built much faster (e.g. wind and sun). The exports of expensive energy produced at Rogun HPP could significantly increase electricity bills for the population of the countries purchasing power from Rogun HPP compared to other possible decarbonization scenarios. Besides electricity systems of Central Asia are prone to catastrophic blackouts, often caused by malfunctioning of large generation units¹⁰. Adding giant Rogun Hydro as a large single source of maneuvering capacity may increase a risk for all countries involved in case of its malfunctioning. This will negatively affect the livelihoods of communities in Uzbekistan, where one of the complainants resides.

In the view of the history of environmental degradation in the Aral Sea region and risks/harms described above, the complainant expect serious negative environmental consequences from the Rogun HPP Project to affect them personally, their communities and wider downstream environment in Uzbekistan and Turkmenistan where 8 to 10 million people living in the zone of influence of the Amu Darya River, including dependent canal systems (Karakum, Karshi, Amu -Bukhara).

Failures to Comply with World Bank Policy Requirements and Procedures

The project is subject to the World Bank’s 2018 ESF, including its Environmental and Social Standards (ESSs). Neither the World Bank nor the borrower has met the requirements of ESS1, ESS3, ESS4, ESS5, ESS6, and ESS 10. The World Bank also violated requirements of the ESP and failed to adhere to the ESF “Vision”. The borrower’s environmental and social management plan (ESMP) does not contain practical mitigation measures, even for the items marked in the ESIA TOR as requiring mitigation¹¹. It also does not follow the logic and present full contents prescribed by the ESS1. Major deviations from the requirements of the ESS1 are also found in the draft Environmental and Social Commitment Plan (ESCP), which does not contain key obligations necessary to mitigate potential impacts and is largely devoid of clear substantive requirements beyond promises to compile in future action plans prescribed by policies. From our perspective, we cannot understand how the World Bank could ever use it to keep the Borrower accountable, which is the prime purpose of ESCP. Since the completion of the previous ESIA in 2014 the Borrower has not effectively implemented mitigation and monitoring measures to meet the requirements set forth in the

⁹ On the role of rising electricity tariffs in inflation see: **World Bank. July 2024. Tajikistan Economic Update:** <https://thedocs.worldbank.org/en/doc/32cdc98fe3e6e0120eb15b05aa2b9faa-0080062024/original/Tajikistan-Economic-Update-Summer-2024-en.pdf>

¹⁰ <https://canecca.org/en/the-winterstans/>

¹¹ For example the ToR for ESIA states that 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*". The ESIA does not include results of the feasibility study. The ESMP states that the biodiversity management plan, Fisheries plan, Cultural heritage plan, etc. should be disclosed prior to the WB Board review. None of those documents has been disclosed/consulted as of October 20 2024.

World Bank approved E&S documents and no solid plans are presented now for the finalization of the current ESIA and ESMP.

Stakeholder Engagement Plan (SEP) has no specific timetable and clear procedures for consultations on the key E&S documents, which are listed as disclosable in the ESIA documentation. As a result no meaningful consultation took place up to date. Some key documents such as Volume 2 of the ESIA (actual full environmental assessment report) and Biodiversity Action Plan and Resettlement Action Plan (RAP#2) have not been disclosed as of 1 February 2024. Stakeholder engagement Plan SEP and associated procedures do not comply with ESS10. Riparian consultations organized in 2023 in secrecy and in absence of valid draft ESIA, have not met basic standards of being accessible and meaningful. Thus, the communities where the complainants live were deprived of the only opportunity to hear about the project and raise questions. The SEP also has no integration of a contextual reprisal risk assessment, meaning there is a complete lack of recognition of the repercussions facing those who may raise questions. In effect the SEP does not acknowledge, let alone mitigate, the potential risk for anyone to raise their voice about the project, and the associated potential for harm in this context that is well documented to be one of the most repressive on the planet today.

Given factors above we believe that the current project documentation does not comply with the World Bank's policy requirements, while the World Bank management does not undertake sufficient efforts to make it happen. Annex I on Correspondence with the World Bank Management contains the detailed analysis of non-compliance undertaken by the CSOs and sent to the leadership of the World Bank in October 2024. The same analysis also available at a special website dedicated to the Rogun HPP Project: <https://rogun.exposed/non-compliance>

Contacts with the World Bank Management

We have opened conversations with World Bank management on multiple occasions, including:

- In January-October 2024 complainants and supporting CSOs wrote many letters to the World Bank Management and got unsatisfactory formal answers to some questions, with partly inaccurate information. In particular those were:
 1. [Request for wider riparian consultations after full ESIA disclosure](#). **January 18, 2024**
 2. [World Heritage and Biodiversity issues](#) **27 February 2024**
 3. [ESIA critique](#), request to bring up to standard multiple parts of it **March 3, 2024**
 4. [New request for improved public participation and full disclosure](#) **March 28**
 5. [Rogun HPP ESIA violates Environmental and Social Standard 1](#) **April 2, 2024**
 6. [Resettlement Framework Consultations Critique](#) **4 July 2024**
 7. [On lack of civic space and human rights risks](#). **17 July 2024**

8. [Request for Meetings Prior to Consideration of the Project by the Board. 26 July 2024](#)
9. [Rogun HPP Project fails to Comply with the Environmental and Social Policy Requirements. 10 October 2024.](#)
10. [Rogun HPP Project: Analysis of non-compliance with the World Bank Standards \(sent to President and the Board, October 2024. Also available in PDF format in English and in Russian\) – World Bank response October 28, 2024](#)
11. [Letter on the World Bank’s involvement in large hydropower projects \(23 October 2024\) – World Bank Response, November 19,2024](#)
12. [Letter to the World Bank on improper consultations. 8 November 2024 –](#)
13. [Letter to the WB on November 14 “consultations”. November 26 –](#)
14. [Report on Analysis of Alternatives: What is more efficient than “the tallest dam in the world”? sent to all WB Executive Directors on 6 December 2024 –](#)

Most responses we got did not contain answers to most of our questions and included some highly misleading arguments. None of substantive requests that we put forward has been followed in substance and most promises made by the Management remain unfulfilled.

See **Appendix II** on the CSO Correspondence with World Bank Management.

HOW THE HARM COULD BE AVOIDED:

1. To be useful for identifying and preventing harms, it is critical that the ESIA and all E&S tools should be extended to assess thoroughly downstream impacts all the way to the Amu Darya Delta - including its confluence with the Aral Sea and its rural periphery with oases vulnerable to droughts – in terms of forecasting the flow regime at each downstream river stretch as well as its dependent components: freshwater biodiversity, ecosystem processes (services) of the river, local communities and their river-related socio-economic activities (e.g. irrigation). All probable scenarios of water regulation by Rogun HPP and the cascade on downstream areas in Amu Darya Basin should be considered in the impact assessment. Cumulative Impact Assessment should not substitute for the specific assessment of Rogun HPP impacts on riparian countries and downstream ecosystems, but seriously consider and model how Rogun impacts may amplify those of new large water infrastructure projects in downstream areas, where we are already witnessing severe water stress. All this should be done in the context of a full spectrum of plausible climate change scenarios. The E&S instruments should include the study of the very feasibility\ probability of future fulfillment of the old, largely outdated, water-management agreements signed in the 1990s between post-Soviet riparian countries (excluding Afghanistan) and identify adjustments and improvements in those agreements necessary to de-risk basin-wide water management under alternative development scenarios in the completely new climatic, economic and geopolitical situation of mid-21 century.

2. As the affected community members, the complainants would have expected that international financial institutions would have supported robust analysis of alternatives based on the most up to date, scientifically, environmentally, socially and economically sound data, including a no project option in accordance with ESS1. This not a formality, but a necessity, since expected socio-ecological impacts downstream and those from resettlement are directly associated with the size of the reservoir, while potential decarbonization efforts may be uneconomical and counterproductive due to high cost of the electricity produced by the Rogun HPP project. First of all, it should consider

options for the Rogun Project completion which downsize the dam height and allow to use saved resources to diversify Tajik energy system over-reliant on hydropower (for example see the CSOs' study¹²). Analysis of alternatives should also include comparison of different operation regimes possible at Rogun HPP to be able to assess the full range of negative impacts and benefits it can bring to downstream communities and the ecosystems of the Aral Sea basin. Another aspect that requires attention is additional financial and energy allocations that will be needed for mitigation measures in irrigation, municipal supply, healthcare, other sectors. Decisions on the plan for Rogun HPP Project completion should be based on the outcomes of the analysis of alternatives.

3. Public participation should be fully implemented in all riparian countries in a manner that protects members of civil society from retaliation. After analysis of alternatives and additional assessments of downstream impacts omitted in current ESIA, the project proponents must conduct broad consultations with downstream communities in all riparian countries, especially in potentially affected areas, including appropriate presentation of findings in national languages, languages of minorities (e.g. Karakalpak) and Russian, as common language for transboundary communication in the region.

4. In the Complainants' opinion, from many possible alternative scenarios of the Rogun HPP Project completion, the priority should be given to those which:

a. Guarantee that the Rogun HPP reservoir filling and operation does not exacerbate social, environmental and economic consequences of the Aral Sea Crisis - the largest human-induced ecological disaster in Asia.

b. ESIA and Resettlement Framework should address impacts on and needs of both upstream and downstream communities and minimize numbers of resettled and economically displaced by the project. Most negative impacts (displacement, flow disruption, economic hardships) could be minimized by decreasing the dam height and reservoir volume.

c. Develop, prior to financing decision, enforceable equitable agreements between all riparian countries to guarantee that Rogun HPP and other new water infrastructure will not worsen downstream flow conditions for natural ecosystems and local population dependent on irrigation. Fully implement precautions required by the World Bank's operational policy 7-50 "Projects on International Waterways" to allow all riparian countries to make informed decisions in the inclusive and equitable decision-making process. .

d. Safeguard floodplain tugay ecosystems (including the Tigrovaya Balka World Heritage) and other critically important biodiversity in the areas downstream from the Vakhsh Hydropower cascade by providing artificial floods: special environmental flow regime with binding agreement to ensure its implementation.¹³ Reassess impact of reduced inflow into Amu-Darya Delta during reservoir filling period and its consequences for flora and fauna and make sure the damage is prevented..

e. Diversify and make climate-proof the development of the renewable energy system of Central Asia to guarantee stable production of affordable electricity based on climate-justice principles.

¹² [Report on Analysis of Alternatives: What is more efficient than "the tallest dam in the world"?](https://rivers.help/pdf/2024_En_The_tallest_dam_in_the_world.pdf) sent to all WB Executive Directors in December 2024 https://rivers.help/pdf/2024_En_The_tallest_dam_in_the_world.pdf

¹³ For specific requirements see <https://www.researchgate.net/publication/378267865>).

APPENDIX I (provided by the local complainants-environmental experts)

MECHANISMS OF THE SOCIO-ECOLOGICAL IMPACTS OF THE ROGUN HPP PROJECT ON THE POPULATION AND ECOSYSTEMS OF THE LOWER AMU DARYA.

Problem Statement

The Rogun hydroelectric power station with a reservoir volume of 13 cubic kilometers is a key factor determining the flow regime in the Amu Darya basin in the future. At one time, the expectation that further redistribution of flow from summer to winter would create a threat of environmental and socio-economic degradation in downstream countries led to significant international tensions between upstream and downstream countries.

Today in the Amu Darya basin there are basic legal agreements establishing general principles of water allocation, but there are no agreements that would determine the solution to the entire range of issues related to the coordinated management of water flow at present and in the future after the completion of the Rogun hydroelectric complex. In addition, the current system of agreements does not include the most important prospective water user – Afghanistan. In the context of increasing climate change, all this creates enormous risks of using a new facility with significant damage downstream.

The World Bank in the document “ **Key Issues for Further Consideration of the Proposed Rogun Hydropower Project** ” back in 2014, it highlighted the shortcomings of the current water flow regulation regime and recommended the development of alternative “cooperative” regimes (paragraphs 63-70)¹⁴.

This document, based on the results of the ESIA and feasibility study of the Rogun HPP 2014 (paragraph 71), emphasizes that “*Under any mode of operation of the Rogun HPP dam, there will be benefits for the riparian countries in terms of the development of additional institutional mechanisms - be it international legal obligations, financial guarantees, or both to ensure that the reservoir will be built, filled, and operated as agreed.*”

This statement shows that proper international mechanisms did not exist in 2014 (and new ones have not been created until 2024). In the submitted materials of the 2023 ESIA there are no specific recommendations on the above issues, there are no draft additional water management agreements, there are no prescribed and binding mechanisms guaranteeing the safe and mutually beneficial use of the Rogun HPP in the context of all hydraulic structures of the transboundary basin, and there is no description of actions and mechanisms for eliminating the consequences of damage in case of natural and man-made accidents or disasters, mechanisms for joint coordination of actions in eliminating damage.

¹⁴ 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

Meanwhile, the creation of the Rogun hydroelectric power station will create significant social and environmental problems long before the facility is put into operation. So in the same World Bank document, in paragraph 47, in the context of the impact on the Aral Sea, it is recognized that at the filling stage “*in the case of creating the largest reservoir (option 1290 m), this will lead to an average annual reduction in downstream flow by 0.83 billion cubic meters annually for 16 years.*” Moreover, in 2013–2022, the annual inflow into the Amu Darya delta and the Aral Sea averaged 4.1 billion cubic meters¹⁵.

Meanwhile, the 2023 EIA declared an almost complete refusal to consider and mitigate the socio-ecological consequences downstream of the Vakhsh cascade of hydroelectric power stations under various possible scenarios for regulating runoff and changes in water availability, including under the influence of climatic factors.

Given already unacceptably high degree of environmental and social harms caused by human-induced water infrastructure impacts, the denial to assess and prevent possible harms of the Rogun HPP in the areas downstream of the Vakhsh Hydropower Cascade is likely to lead to multidimensional harms to local communities and nature, which should be assessed in the context of the Aral Sea crisis.

Aral Sea Catastrophe and Its Legacy (also see Appendix XX)

We, who live on the lands washed by the waters of the Amu Darya River, have felt the consequences of the Aral Sea disaster all our lives, triggered by the thoughtless construction of dams, canals and other hydraulic infrastructure, which caused the redistribution of the Amu Darya flow and the destruction of the Aral Sea. Current baseline conditions in our region shaped by this crisis have been completely omitted when planning Rogun HPP Project and drafting the ESIA report.

Research results show that due to a reduction in the flow of the Amu Darya, by 2017 in the Muynak district the percentage of saline lands reached 96%, in Karakalpakstan as a whole it exceeded 80% of the area of all irrigated land¹⁶, and yields fell by half, which led to severe economic consequences for the population of the region¹⁷.

The population of most regions of the lower reaches of the Amu Darya and its delta have been on the brink of extreme physical survival for many years. Among residents of the Aral Sea region (delta of the Amudarya River), the prevalence of eye and respiratory diseases¹⁸, anemia¹⁹, diabetes mellitus²⁰,

¹⁵ Nazariy A. Changes in annual and seasonal runoff in the Amudarya river basin (report at a seminar in Almaty 04-05.09.2023): https://rivers.help/pdf/2023_Nazariy.pdf

¹⁶ http://www.cawater-info.net/library/rus/aral_and_prearalie_2017.pdf

¹⁷ <https://aral.mptf.uz/site/aralsea.html>

¹⁸ <https://cyberleninka.ru/article/n/geograficheskie-ekologicheskie-strukturnye-osobennosti-regionov-i-svyazannye-s-nimi-bolezni-naseleniya-yuzhnogo-priaralya>

¹⁹ <https://cyberleninka.ru/article/n/vliyanie-klimata-na-sostoyanie-zdorovya-naseleniya-priaralya>

²⁰ <https://cyberleninka.ru/article/n/vliyanie-klimata-na-sostoyanie-zdorovya-naseleniya-priaralya>

respiratory and oncological diseases is increasing^{21 22}. Since the 1960s, the incidence of coronary heart disease has increased 18 times²³, pneumonia - 19 times, chronic bronchitis - 30 times²⁴. The decline in the quality of drinking water has led to an increase in kidney stone diseases: among the rural population of Karakalpakstan, the incidence of cases has increased by 4.2 times²⁵. Extremely high rates of child mortality and morbidity are recorded in the Aral Sea region^{26 27}. According to scientists, at least 46.4% of respiratory diseases in children are caused by air pollution with sulfates due to dust storms caused by desertification of areas of the bottom of the dried-up Aral Sea²⁸. Research by Doctors Without Borders (2001–2002) revealed a high prevalence of multidrug-resistant tuberculosis in the Republic of Karakalpakstan (13% of new and 40% of recurrent cases)²⁹.

Environmental threats and the loss of the economic basis of existence simulated population migration from an environmental disaster zone. In 2000, UNHCR reported that, including the Aral Sea regions of Uzbekistan, Turkmenistan, and Kazakhstan, the number of environmental migrants exceeds 50,000 people, but indicated that this is incomplete data. The report provides data from sociological surveys of 1995-1998, according to which 250,000 migrants from the Aral Sea region indicated environmental degradation as the leading reason for migration. The UNHCR rapporteur believes that in dry years, “economic competition for water resources in the Aral Sea zone could lead to the migration of about 300,000 refugees from the Uzbek part of the Aral Sea zone to other regions of Uzbekistan, Turkmenistan, Russia and Kazakhstan.”³⁰

Meanwhile the 2023 UN Country Assessment for Uzbekistan shows grim prospects: “Water availability is expected to decrease by 29.4% by 2030 in the Amudarya basin due to the construction of the Qosh-Tepa canal in Afghanistan, and climate change. As a result, the land area under cultivation in the Amudarya basin may decrease by 18.9%. The estimated impact would be equal to

²¹ <https://cyberleninka.ru/article/n/ekologo-geograficheskiy-aspekt-aralskogo-krizisa-chast-1-razvitie-aralskoy-problemy-ee-izuchenie-otsenka-i-razrabotka-meropriyatiy>

²² <https://cyberleninka.ru/article/n/chislennoe-modelirovanie-rasprostraneniya-pyli-s-vysotshey-akvatorii-aralskogo-morya>

²³ <https://cyberleninka.ru/article/n/geograficheskie-ekologicheskie-strukturnye-osobennosti-regionov-i-svyazannye-s-nimi-bolezni-naseleniya-yuzhnogo-priaralya>

²⁴ <https://cyberleninka.ru/article/n/geograficheskie-ekologicheskie-strukturnye-osobennosti-regionov-i-svyazannye-s-nimi-bolezni-naseleniya-yuzhnogo-priaralya>

²⁵ <https://cyberleninka.ru/article/n/otsenka-sostoyaniya-zdorovya-naseleniya-priaralya>

²⁶ <https://www.dw.com/ru/the-Aral-Sea-problem-will-never-be-solved/a-832279>

²⁷ <https://cyberleninka.ru/article/n/problemy-ekologicheskogo-krizisa-aralskogo-morya-i-ego-vliyanie-na-zdorovie-naseleniya>

²⁸ <https://cyberleninka.ru/article/n/ekologo-gigienicheskaya-otsenka-okruzhayushey-sredy-territoriy-prilegayuschih-k-zonam-anthropogennogo-vozdeystviya-v-regione>

²⁹ <https://ru.msf.org/article/kazhdyy-den-prinyav-lekarstva-ya-chuvstvuyyu-sebya-kak-budto-ya-uzhe-umerla-bolnaya-mlu-tb>

³⁰ Most probably, the number of migrants from the Uzbekistan portion of the Aral Sea area exceeds 50,000 people. Data obtained in the course of the social surveys performed in 1995-1998 showed that for the quarter of a million migrants from the Aral Sea area, the primary reason for migration was their concern about the quality of the environment. In the years of scant precipitation, economic competition for water resources in the Aral Sea area could potentially cause migration of about 300,000 refugees from the Uzbek part of the Aral Sea area to other regions of Uzbekistan, Turkmenistan, Russia, and Kazakhstan. UN High Commissioner for Refugees, 2000, Aman A. Population Migration in Uzbekistan... P. 20. <https://digitallibrary.un.org/record/539486?ln=es&v=pdf>

0.7% of GDP and about 250,000 jobs could be lost in crop production. The Kashkadarya, Bukhara, Khorezm regions and **Karakalpakstan** will face the biggest impacts from the construction of the Qosh-Tepa canal and, to mitigate these impacts, the adoption of water saving technologies, water tariffs that reflect the scarcity³¹, and regional development plans that mitigate disparities in the economic impact have been suggested³².

Mechanisms underlying the Environmental Disaster

Our education, knowledge, work experience (30 years or more), sense of responsibility to our communities and nature, allow us to assess the wide range of real and potential threats posed by the Rogun hydroelectric power station project for the middle and lower reaches of the Amu Darya basin.

In this regard, we attach a brief description of the possible mechanisms of change predicted for the worst-case climatic and socio-political scenarios, which must be considered in any ESIA.

We believe that in the Amu Darya basin, the processes of natural and anthropogenic desertification and ecosystem degradation will significantly accelerate due to the combination (synergy) of several cumulative effects caused primarily by the construction of the Rogun hydroelectric station:

- (I) combinations of planetary processes of climate change, including an anomalously large warming gradient in the Central Asian region [3] and a decrease in the Amu Darya flow due to the second cumulative effect:
- (II) reduction of the Amu Darya flow due to the filling of the reservoir of the Rogun hydroelectric station and the sub-synchronous development of the new irrigation area by the Kosh-tepa canal (see below/separately),
- (III) pollution of the Amu Darya waters with salts washed out (from the Kosh-Tepa massif) and agricultural waste (residues of fertilizers and pesticides) which cannot be diluted to safe concentrations due to lack of water.

In this regard, the predictable/stable in volume and regime/schedule flow of the Vakhsh River below the dams of the entire Vakhsh cascade acquires a very high importance in terms of its contribution to the preservation of natural ecosystems and any deviation of these two parameters from historically

³¹ https://uzbekistan.un.org/sites/default/files/2024-02/2023%20Uzbekistan%20CCA%20Update_Final.pdf

³² For comparison, the World Bank's recent report predicts: "Already limited water resources are projected to decline in Uzbekistan. By 2050, water resources are projected to decline in Syr Darya (by 5 percent) and Amu Darya (by 15 percent) as the glaciers feeding the two rivers recede, even in the 2°C warming scenario. Forecasts project that a 2°C increase would shrink glacier cover by half and a 4°C increase would shrink it by more than three-quarters. For some catchments, estimates project an even steeper decline of 30–40 percent in water availability by 2050". **Uzbekistan - Country Climate and Development Report**. November 2023

<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099111423124532881/p1790680f452f10ba0a34c06922a1df0003>

established ones threatens with fatal, scientifically predictable consequences for the entire Lower Amudarya basin, including all its ecosystems.

Degradation of anthropogenic agro-ecosystems

Anthropogenic ecosystems—the agricultural lands and unique agglomerations that have developed in the region over many thousands of years—will suffer even more severely and irreversibly. Due to the shift and unpredictability of the distribution of the Amu Darya flow - across construction stages, during the filling of the reservoir and throughout the entire period of operation of the Rogun hydroelectric power station, the flow regimes and volumes will change.

The most important activities carried out in the region's agriculture and which will predictably be disrupted are timed to coincide with the existing flow schedule of the Vakhsh and Amu Darya as a whole, which has been established over the years:

- Massive irrigation, strictly timed to the various phases of development of the most important agricultural crops, primarily cotton, the basis of the economy of the entire region.
- Massive leaching of soils and soils from salts accumulated due to evaporation in the previous season, the most important reclamation measures, is also timed to coincide with this schedule. (or from salts accumulated due to evaporation of irrigation water during the previous seasonal cycle).
- Filling reservoirs in the Amu Darya basin, including the zones of the Karakum, Karshi and Amu -Bukhara canals, the most important event ensuring the sustainability of agriculture and anthropogenic ecosystems in general, is also strictly confined to this schedule/regime.

Due to the above changes in the flow regime of the rivers, as well as due to at least three cumulative effects indicated above, mass phenomena will occur in the middle and lower reaches, such as:

- Land salinization and loss of fertility of large areas, especially on the periphery of oases, which will affect increasingly larger areas due to lack of water for irrigation and reclamation, which will lead to general degradation of agriculture in the region,
- Desertification of abandoned lands due to lack of water will lead to their withdrawal from agricultural use and the beginning of their involvement in desertification processes, with the final loss of fertility and agricultural value.
- Social, as a consequence of the first two - the forced need to change the way of farming due to changes in the flow regime of the Amu Darya and water intake regimes for irrigation and reclamation leaching, as well as their (irrigation regimes) discrepancy with the biological cycles/growth phases of cultivated agricultural plants.

Exacerbation of economic and social problems of the region

The degradation of anthropogenic ecosystems due to the impact of three cumulative effects will lead to the formation of the next, fourth cumulative effect (IV) - the socio-economic situation in the region will sharply worsen, which will cause a drop in the standard of living and a decrease in the quality of life, which will begin to cause an outflow of population from the region, in essence, mass environmental migration:

- Decline in living standards (economic parameter). Due to land salinization and loss of soil fertility, there will be a sharp reduction in the agricultural production base, which will lead to massive competition for the land fund that has retained its quality/fertility and is provided with irrigation water. People who lose in this competition will be doomed to a sharp decline in income, a drop in living standards, and marginalization due to the inability to find alternative work. Will decrease productivity in rural farms, including a fall production food
- Decrease in quality of life (physiological parameter). Due to the increase in mineralization (salt content) in the water, the release of salts into the air from dried-out massifs will sharply increase the number of associated diseases, previously described for Karakalpakstan and other regions of the Aral ecological disaster zone, only these phenomena will become much wider.
- Environmental and economic migration as a consequence of the imposition of cumulative effects. A sharp deterioration in the standard of living and quality of life will force people to environmental and economic migration from the affected area to other, less affected regions of their countries and outside their countries, thereby formalizing the category of “ecological refugees from the region.
- Loss of cultural diversity and cultural identity . Massive impoverishment of the population, loss of connection with the host environment, participation in migration flows, often uncontrollable and unpredictable, will lead to a sharp decline in the cultural diversity of the region and the loss of cultural identity, cultural ties between communities and within the communities themselves due to their physical destruction.

Degradation of natural ecosystems

The implementation of all planned activities for the construction of the Rogun hydroelectric power station, as well as the combination of the cumulative effects indicated above, will predictably lead to shock and stress conditions in the animal and plant world. In turn, this will certainly lead to a depletion of biological diversity and general degradation of the ecosystems of the Amu Darya basin.

In particular, the ecosystems of the tugai forests of the Amu Darya floodplain, as particularly valuable ecosystems that are already experiencing colossal anthropogenic pressure, will be threatened with severe degradation and extinction.

The unique components of biological diversity in the Lower Vakhsh and Amu Darya basins are not identified as valuable components, described or considered in the presented ESIA materials. First of all, these are tracts of floodplain tugai forests, entirely dependent on the flow regime of the rivers of the Amu Darya basin. In 2023, one of them, the Tigrovaya Balka Nature Reserve, was deservedly recognized as a UNESCO World Natural Heritage Site, however, other massifs preserved in specially

protected natural areas of the coastal countries downstream are of no less value. In addition, the Vakhsh-Panj-Amu Darya floodplain complex has enormous transboundary value and is an important migration corridor, for example for Bukhara deer, which became the subject of a special protocol under the Bonn Convention on Migratory Animals. In the lower reaches of the Amu Darya there are several tugai massifs, the impact on which also requires an environmental assessment, including the Amu Darya Nature Reserve, which is cross-border with Uzbekistan.

Endangered species - the Amudarya shovelnose sturgeon (endemic to this basin), Aral salmon, pike asp, as well as wetland and aquatic species of amphibians, reptiles, mammals and birds - will be put under the threat of complete extinction.

First of all, these are two species of sturgeon endemic to the Amu Darya basin: the small and large Amu Darya false sturgeon (*Pseudoscaphirhynchus hermanni*³³ and *Pseudoscaphirhynchus kaufmanni*³⁴). Both are recognized by the International Union for Conservation of Nature (IUCN) as critically endangered species (status - CR) and are included in the Red Book of Turkmenistan and Appendix 2 of the Bonn Convention. Along the Amu Darya and Vakhsh also migrates the Pike Asp (*Aspiolucius esocinus*³⁵), assessed by the IUCN as a threatened species (EN) and listed in the Red Book of Turkmenistan.

The impact of the Rogun HPP project on these fish and ways to increase their chances of survival under appropriate environmental flow design and control should be an integral part of the ESIA and environmental and social management plans.

The impoverishment of the population due to the loss of agricultural resources will also lead to an increase in the illegal harvesting and consumption of wild flora and fauna. These and other important indirect and secondary mechanisms of impacts on ecosystems, biological resources and endangered species of biota are not considered in the EIA of the Rogun HPP.

Conclusion

The serious concerns of the applicants and organizations supporting our call for inspection, as well as the rapid analysis of the threats listed above, indicate a large public demand for a serious study on the impact of the construction and operation of the Rogun HPP downstream of the Vakhsh cascade and its impact on the ecosystems of the Amu Darya basin.

To our great regret, such public demand and consultations to explore public opinion (in the downstream parts) were not even planned for in the ESIA procedures of the Rogun HPP, although its construction and operation - is guaranteed to have a dramatic impact on all ecosystems of the Amu Darya and on the fate of 8 to 10 million people living in this region.

³³ <https://www.iucnredlist.org/species/18600/156719289>

³⁴ <https://www.iucnredlist.org/species/18601/120872031>

³⁵ <https://www.iucnredlist.org/species/39462/156728608>

Deliberately ignoring the above problems threatens the ecological and economic collapse of this region of Central Asia, due to the exacerbation of problems that already have their own sad history, including in the form of the world-famous environmental disaster of the Aral Sea.