

CALL FOR PROPOSALS

Deadline: January 15, 2021

Global Disruptive Tech Challenge 2021: Restoring Landscapes in the Aral Sea Region

- **BUILDING NEW REALITY | INNOVATION CHALLENGE | LANDSCAPE RESTORATION | ARAL SEA**
- **BECOMING A PART OF THE ARAL SEA HISTORY AND HELPING CHANGE MILLIONS OF LIVES**
- **RECOGNITION & AWARDS (CASH, MENTORSHIP PROGRAM, KNOWLEDGE PRODUCTS, etc.)**

OVERVIEW

The Disruptive Technology and Innovation Challenge in the Aral Sea region aims to identify and support disruptive technologies and innovative approaches to landscape restoration in Central Asian degraded lands. The challenge will select four innovators (individuals or entities) from around the world to change the lives of millions of people in the Aral Sea region. Proposals obtaining the best scores will obtain Recognition and Awards in the form of cash and/or in-kind.

The challenge is organized with the support of the Central Asia Water and Energy Program (CAWEP) a multi-donor Trust-Fund financed by the European Union, Switzerland and the United Kingdom. The challenge is administered by the World Bank and will inform the Resilient Landscape Program in Central Asia RESILAND CA +, currently under preparation. It is implemented by the Kazakh-German University (DKU), the Global Landscapes Forum (GLF) and Plug and Play (P&P).

THEMATIC FOCUS

WHY THE [ARAL SEA](#) REGION?

The Aral Sea (formerly the world's fourth largest body of inland water) almost disappeared due to more than 30-years' overuse of water resources to grow water-intensive crops, such as cotton and rice. This led to a dramatic impact on the environment, social wellbeing and economic situation reaching far beyond the shores of the sea. To illustrate the catastrophe: the Aral Sea shrinkage resulted in the desertification of about 5 million hectares, and the dislocation of thousands of people as their livelihoods dried up and their health was threatened by toxic dust from the seabed. The region continues to be disproportionately affected by global climate change.

The degradation of the Aral Sea has affected millions of people - from the southern part of Kazakhstan to the northern part of Uzbekistan. Today, it is ever more important to

reduce the destructive impact of the Aral Sea crisis on livelihoods and the environment. On the other hand, landscape degradation affects other areas of Central Asia in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.

HOW CAN YOUR SOLUTION HELP?

Innovative technologies and approaches have the power to substantially “disrupt” the status quo of development paradigms. Disruptive technologies can help alleviate the negative impacts on landscapes from natural and human induced factors, while also addressing the needs of economic growth and sustainable development.

Innovators are invited to propose their disruptive and innovative solutions to landscape restoration issues in the Aral Sea region. Is your solution key to taking action, to building a new, better and greener reality for the people of the Aral Sea?

WHAT ARE THE FOCUS THEMES?

Land resources, along with other natural resources, are the foundation of existence and development of mankind. Despite the unconditional importance of land resources for human and society well-being, the amount of land which characterized by a decrease or complete loss of its biological and economic productivity continues to increase. This happens due to a number of factors, including unsustainable agricultural and forestry practices, climate change, urban sprawl, infrastructure development, and mining boom.

This challenge evolves around four focus themes:

1 - Agriculture and land management: solutions that contribute to sustainable development, e.g. sustainable land management, irrigated and rainfed agriculture, grazing land/pastures, water saving and irrigation, and cost-effective technologies to rehabilitate degraded lands.

Additional Context: Agriculture plays an important role in the lives of rural people in Kazakhstan and Uzbekistan. Almost half of the population in the mentioned countries belong to rural areas and are users of natural resources. Thus, their lives are tied to the welfare of land resources.

During the Soviet Union period, inappropriate land use, including intensive irrigation, overgrazing in steppes in vast arid areas with limited ecological resources, caused numerous environmental consequences. In particular, extensive reclamation of new irrigated lands associated with an overuse of water resources caused a drop in the level of the Aral Sea.

At the moment, the most serious environmental problems threatening the Kazakhstan and Uzbekistan’s natural resources include increasing soil salinity and water pollution, wind and water erosion, overgrazing, deforestation and loss of biodiversity, also declining arable land productivity. Over the past 15-20 years there has been extensive pasture

degradation due to overgrazing, lack of proper pasture management and other anthropogenic factors.

All of the above-mentioned problems are also typical for the Kazakh part of the Aral Sea basin, which includes two regions by administrative-territorial division - Kyzylorda and Turkestan provinces. The total area of land resources in the Kyzylorda province is 24,041 thousand hectares, 2 639 thousand hectares of which are agricultural land and 6,506 thousand hectares are forest land¹. In the Turkestan province, the area of land resources is 11,725 thousand hectares, 4,131 thousand hectares of which are agricultural land and 3,014 thousand hectares are forest land².

The three largest categories of land in Uzbekistan are: lands for agricultural use (46.1%); forest lands (21.7%), reserve lands (27.6%)³. In total, these land categories cover more than 42 million hectares (95% of the country's territory). There is land degradation throughout the country, but the most affected areas are concentrated in the Bukhara, Navoi and Kashkadarya regions and the lowlands of the Amu Darya river basin, as well as in the Fergana Valley and the so-called Hungry Steppe of the Syr Darya river basin. The drying up of the Aral Sea and the delta of the Amu Darya River has led to a significant ecosystem dysfunction, and this problem is considered as the most serious of the man-made disasters in Uzbekistan, which is also characterized by global significance.

2- Sustainable forestry: this section refers to the disruptive technologies and innovations for sustainable forestry, as well as solutions within the forestry supply chain, to preserve biological diversity, productivity, resilience, viability and ability of the forests to perform important environmental, economic and social functions.

Additional context: Afforestation measures stabilize the soil and constitute a protecting barrier against the winds, preventing toxic sand storms. Such measures also facilitate climate-resilient landscape management of drylands and ecosystems.

The imbalance between flow of water into the sea and evaporation has led to an increase in water mineralization from 10 to 46 grams per liter⁴. Currently, fish can be found only in the northern part of the Aral Sea, while in the southern part, aquatic biodiversity is limited to salt-tolerant organisms. The declining sea level has affected the groundwater level and contributed to the erosion of the Syr Darya and Amu Darya river beds. This has also caused the drying up of wetlands in the deltas of both rivers.

¹ <http://newecodoklad.ecogofond.kz/2016/kyzylordinskaya-oblast/>

²

<https://atameken.kz/files/orc/%D0%9E%D0%A0%D0%9A%20%D0%9B%D0%B5%D1%81%D0%BD%D0%BE%D0%B5%20%D1%85%D0%BE%D0%B7%D1%8F%D0%B9%D1%81%D1%82%D0%B2%D0%BE%20%D0%B8%20%D0%B6%D0%B8%D0%B2%D0%BE%D1%82%D0%BD%D1%8B%D0%B9%20%D0%BC%D0%B8%D1%80%20-%20%D0%90%D0%BD%D0%B0%D0%BB%D0%B8%D0%B7%20%D0%BE%D1%82%D1%80%D0%B0%D1%81%D0%BB%D0%B8.pdf>

³ <http://www.cawater-info.net/pdf/natdok-uz.pdf>

⁴ http://www.kz.undp.org/content/dam/kazakhstan/docs/research-and-publications/New_Vestka_part_1.pdf?download

The problem of salt storms from the dried bottom of the Aral Sea is very serious. Furthermore, some areas of salt deposits can be very toxic. The calculations performed to determine the annual volume of salt dust eroded from the surface of the Aral Sea dried bottom differ significantly.⁵ This dust spreads over large areas, making it difficult to measure the impacts caused by its deposition, and accurate data are unlikely to exist.

According to various sources, up to 66%⁶ of the entire territory of Kazakhstan can be considered as degraded lands, at the same time, according to the official data up to 70%⁷ of the territory of Uzbekistan is subject to desertification processes. There, the Aralkum desert has been formed with an area of 5.5⁸ million hectares as a result of the Aral disaster. Widespread afforestation of the Aralkum is needed to reduce ecological tension in the southern Aral region. Increased vegetation cover could help reduce the number of dust storms.

3- Socio-economic development: focuses on solutions that link local communities with innovations for landscape restoration; e.g. improvement of current livelihoods and creating new livelihoods; cooperation and social sustainability; tourism, well-being, public health and other innovative financial and economic instruments, enabling communities to improve their welfare while restoring the landscape.

Additional context: According to state statistical services at the beginning of 2020, 41.2%⁹ of the total population in Kazakhstan and 49.5%¹⁰ in Uzbekistan live in rural areas. Most of them are directly or indirectly dependent on income from land activities. Land degradation and desertification have negatively impacted the overall productivity of crops, livestock and livestock in general. Limited access to high-quality drinking water, as well as dust and salt storms resulting from the degradation of ecosystems, led to a sharp deterioration in the health of the population. In recent years, in the considered countries, despite the decline in the share of the rural poor, there is an imbalance between overall economic growth and poverty reduction, particularly, in remote rural areas. Moreover, the highest level of poverty was registered in the territories with a higher percentage of degraded land. Rural poverty is usually connected to scarcity of jobs and low salaries. Rural populations often rely more on the use of natural resources. A private family plot of land or a small herd of livestock is often the only and significant source of income. In many villages, people use unsafe open drinking water sources or bring water from elsewhere. In areas where there are problems with land degradation, the population's standard of living is generally low, which cannot be overcome without external support.

4. Information and knowledge: Landscape restoration solutions that leverage data, remote sensing and mapping technologies, precise agriculture tools, and

⁵ http://www.kz.undp.org/content/dam/kazakhstan/docs/research-and-publications/New_Vestka_part_1.pdf?download

⁶ <https://carececo.org/main/news/obzor-problema-opustynivaniya-na-globalnom-i-regionalnom-urovnyakh/>

⁷ <https://www.uzdaily.uz/en/post/57814>

⁸ <http://kazaral.org/2018/08/24/>

⁹ <https://findhow.org/2649-onlayn-schetchik-chislennosti-naseleniya-kazahstana.html>

¹⁰ <https://stat.uz/ru/press-tsentr/novosti-komiteta/8336-436545654-2>

computing power to enable data-driven decisions by policy makers, public agencies, private service providers, and other users of the landscape.

Additional context: There is an incredible amount of information and knowledge about environmental situation in the Central Asia countries. However, most of the time, this information is fragmented, not regularly updated, or not always available. In the strategic and program documents in Kazakhstan and Uzbekistan, it is acknowledged that there is a need for improving the existing land management system as well as "technical" solutions in the form of projects to restore the required level of reclamation of agricultural lands. The documents also acknowledge the important role of scientific research in order to develop new, innovative technologies for the rehabilitation of degraded lands and the restoration of terrestrial ecosystems. In most cases, there is a need to implement a coordinated approach as well as develop solid information/decision support systems (land use planning, mapping (e.g. remote sensing, GIS, etc.), monitoring systems, knowledge portals, etc.) is indicated to achieve the basic provision of sustainable land management (SLM).

RULES

1. Eligibility criteria

This Challenge is open to participants ("Contestant") from member countries of the World Bank. Contestants may be individuals or organizations (profit, non-profit organizations, academia). Contestants are responsible for compliance with legal requirements of their country. They are invited to pitch their solutions on innovative landscape restoration.

Also, only solutions that are at minimum viable products (MVP)1 stage to more developed stages (e.g. already fully commercialized) are eligible for the challenge.

The submitted proposal can be part of different focus themes (e.g. Agriculture - Area 1- and Information & Knowledge – Area 4).

The challenge is open for both international and Central Asian participants:

- Individuals:
 - Individuals must be of minimum of 18 years old as of (date of submission)
 - An individual or a team may submit entries. Individuals who join teams must meet the eligibility requirements for Individual Contestants
 - Any national from a Bank member country can participate
- Companies, Organizations, Startups:
 - Must be legally established entities (profit, non-profit) in their respective countries

Staff, contractors and vendors of the World Bank Group (The World Bank Group consists of the International Bank for Reconstruction and Development, the International Development Association, the Multilateral Investment Guarantee Agency, the International Finance Corporation, the International Center for the Settlement of

Investment Disputes.), the members of the Evaluation and Finalist Judging Panel or any company or individual involved with the design, production, execution or distribution of the Challenge and their immediate family members (spouse, parents and step-parents, siblings and step-siblings, and children and step-children, aunt, uncle, niece and nephew) are not eligible to join the Challenge.

Participants who are ineligible to receive Bank funds under the Bank's Anti-Corruption Guidelines, procurement rules, and other rules such as on anti-money laundering and anti-terrorism are ineligible to receive cash or any prize under this Challenge.

Contestants should apply **online**, providing a description of their project proposals. For more information, see **general guidelines for proposals**.

2. CHALLENGE SUBMISSION

The Challenge is hosted on the [online platform](#):

Submission Period begins on November 19, 2020 at 5:00 PM Eastern Daylight Time ("EDT") and ends on January 25, 2020 at 11:59 PM EDT.

Contestants should complete their application through the [online registration form](#)

2.1 Submission Requirements

2.1.1 Structural requirements:

- Submissions must comply with the format provided on the [online platform](#).
- Contestants must fill out the online application form (in English)
- Contestants must attach a completed project proposal and a cover letter (in English)
- Contestants must be available to attend all events, bootcamps and preparatory activities throughout the Challenge
- Follow the provided template; all documents must include the name, organization and thematic area chosen;
- Contestants may submit more than one submission. However, overlap between submissions should be avoided, and only one cash prize can be allocated to the same contestant.
- Each submission must be in English. Proposals that do not comply with the structural requirement will not be considered.

2.1.2 Quality criteria:

The submitted proposal are scored by the following quality criteria:

- Be applicable and relevant to socio-economic and environmental conditions of the Aral Sea watershed (Kazakhstan & Uzbekistan) as well as to World

Bank environmental projects under preparation and implementation in Central Asia.

- Demonstrate a potential for scaling-up to other regions of Central Asia (from the mountains to the plains);
- Establish a clear path towards practical application of the solution on the ground (indicative implementation road map / draft business plan);
- Demonstrate positive impacts for local communities (at the environmental and socio-economic levels);
- Identify result's indicators to monitor and evaluate the proposal outcome over time

2.2 Intellectual Property rights:

Intellectual property rights of Submissions will be owned by the Contestants but must be made available [via] public licenses that permit re-use without restrictions. All submissions will be made publicly available on [Tech Challenge website](#) and attributed to the individual or organization as its creator and intellectual property right owner.

3. PROGRAM STEPS:

3.1 Shortlist selection: Submissions which meet the Eligibility and Structural Criteria will be evaluated based on the Quality Criteria by a selection committee consisting of representatives of partner organizations, representatives of the World Bank, Global Landscapes Forum, DKU and counterpart representatives in Kazakhstan and Uzbekistan. The selection committee will prepare a Short list of 12-16 applicants based on the evaluation results (scoring).

3.2 Pre-Challenge Bootcamp: Shortlisted candidates will receive in-kind support (provided by the Bank and the implementing partners) to prepare for the challenge day (e.g. technical, business and soft skills trainings, networking, etc.). After completion of the bootcamp, shortlisted candidates will present their projects on the Challenge Day (January 2021), where the finalists will be identified by the Judging Panel.

3.3 Four (4) Challenge winners will be selected during the pitch session on the Challenge Day by event (February 2021) in front of the judging panel. The judging panel will consist of representatives of partner organizations, representatives, from the World Bank, Global Landscapes Forum, DKU and counterpart representatives in Kazakhstan and Uzbekistan as well as experts. The final winners will receive recognition and awards (e.g. Cash, mentorship program, etc.).

KEY DATES:

Q&A session: December 15, 2020

Deadline for application: January 15, 2021

Challenge Event (online): February 2021

Capacity building program (online): January – February 2021

Mentorship program (online): February – June 2021

Questions about the challenge can be sent to the following email address: zhumagazina@dku.kz (Balzhan Zhumagazina, Project Coordinator). A Q&A video session will be organized on December 15, 2020. Detail will be shared on the challenge website.

4. CHALLENGE OFFICIAL RULES

4.1 Intellectual property rights of Submissions are owned by the Contestants. By joining this Challenge, you grant the World Bank the right to publicly disclose the Submissions for public display, informational or awareness purposes. You acknowledge that any public disclosure of a new, inventive technology by the World Bank may affect its patentability under applicable law and agree to said public disclosure. The Bank may at its sole discretion, decide not to expose any Submission on its website.

4.2 Individual/Organization Contestant declares, represents and warrants that Contestant is the rightful owner of the Submission, and of all the patents, copyrights, and/or trademarks associated with the Submission. By entering this Challenge, Contestant further declares, represents and warrants that Contestant has not (a) infringed on any third party rights, including copyrights, trademarks, industrial property, trade secrets, confidentiality obligations and rights of privacy and publicity, and that Contestant has obtained the necessary written release(s) or permission(s) to use any third party rights or intellectual property, including any trademarks appearing on Contestant's Entry, or (b) violated any applicable law(s) in any countries. By entering this contest Contestant further agrees that the panel of judges has the right to verify the ownership and originality of any entry and that upon request, Contestant shall submit a written copy of any release or permission Contestant has received from a third party granting Contestant the right to use such property. Contestant understands that in the event a submission is selected as a winning entry, and Contestant's ownership rights and the originality of Contestant's entry cannot be verified to the satisfaction of the Judge Panel or is in any other way ineligible, the Judge Panel may select an alternate winner from the Shortlisted Submissions.

4.3 Contestant shall not do any of the following:

- Defame, abuse, harass, stalk, threaten or otherwise violate the legal rights (such as rights of privacy and publicity) of others.
- Publish, post, distribute or disseminate any defamatory, infringing, obscene, indecent or unlawful material or information.
- Upload or attach files that contain software or other material protected by intellectual property laws (or by rights of privacy or publicity) unless Contestant owns or control the rights thereto or have received all necessary consents.
- Upload or attach files that contain viruses, corrupted files, or any other similar software or programs that may damage the operation of another's computer.

- Delete any author attributions, legal notices or proprietary designations or labels in any file that is uploaded.
- Falsify the origin or source of software or other material contained in a file that is uploaded.
- Advertise or offer to sell any goods or services, or conduct or forward surveys, contests, or chain letters. Download any file posted by another Contestant that Contestant knows, or reasonably should know, cannot be legally distributed in such manner.

4.4 The World Bank is not responsible for: (1) any false, incorrect or inaccurate information, whether caused by Contestants or the hosts; (2) unauthorized human intervention in any part of the submission process or the Competition; (3) technical or human error which may occur in the administration of the Competition or the processing of entries; or (5) any injury or damage to persons or property which may be caused, directly or indirectly, in whole or in part, from Contestant's participation in the Competition or receipt or use or misuse of any prize. No more than the stated number of prizes will be awarded.

4.5 Except where prohibited, participation in the Challenge constitutes winners' consent to the World Bank's use of winner's name, likeness, photograph, voice, opinions and/or hometown and state for promotional purposes in any media, worldwide, without payment or consideration.

4.6 Verification. If after announcing the winners the Judging Panel finds and/or determine that a winning Contestant has misrepresented, misstated, or mischaracterized Contestant's entry in any way or Contestant is not the rightful owner of the Submission, the Submission is automatically disqualified from the Challenge, and any privileges received by winning this Challenge shall be rescinded. Any determinations made by the Judging Panel in withdrawing and disqualifying any Submission is final and confidential. By entering this Challenge, Contestant agrees to keep any controversies between Contestant, the panel of Judging Panel and/or the World Bank, confidential.

4.7 Winners are responsible for all applicable taxes and fees associated with prize receipt and/or use. No transfer or substitution of a prize is permitted except by the World Bank. If a team of individuals, or an organization is selected as a prize winner, the prize will be awarded to the team/organization and it will be up to them to split or appropriately allocate the prize.

4.8 No Recourse to Judicial Procedures. To the extent permitted by law, the rights to litigate, to seek injunctive relief or to any other recourse to judicial procedure in case of disputes or claims resulting from or in connection with this Challenge are hereby excluded, and Contestant expressly waives any and all such rights. The World Bank can cancel the Challenge at any time and for any reason.

4.9 Preservation of Immunities. Nothing herein shall constitute or be considered to be a limitation upon or a waiver of the privileges and immunities of the World Bank, or any other member of the World Bank Group, which are specifically reserved.