

**THE GHOSTS OF MOYNAQ: ENVIRONMENTAL SECURITY AS A NON-
DEROGABLE HUMAN RIGHT IN THE ARAL SEA BASIN**

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**ARTICLE
INFORMATION**

ABSTRACT:

ARTICLE HISTORY:

*Received: 25.01.2026
Revised: 26.01.2026
Accepted: 27.01.2026*

KEYWORDS:

*Aral Sea,
Environmental Security,
Human Rights, Moynaq,
Climate Refugees,
International Law.*

The Aral Sea crisis has evolved from a localized environmental disaster into a systemic violation of fundamental human rights. This paper explores the legal vacuum surrounding "environmental security" and the lack of protection for climate-displaced persons. Drawing on personal observations from the "Cemetery of Ships" in Moynaq and analyzing the biomedical impact of toxic salt storms, the study argues that international law must transition from seeing ecological restoration as "charity" to recognizing it as a "legal obligation." The research proposes a framework for codifying environmental security within the global human rights context, utilizing the "Polluter Pays" principle.

The Aral Sea crisis is not a past tragedy recorded in history books; it is a living, breathing legal challenge that I have witnessed firsthand. As a native of the region who has walked through the dust-covered streets of Moynaq, I have seen the world's fourth-largest lake retreat into scattered pools of brine. This desiccation has left behind more than just a dry seabed; it has left a legacy of vanishing livelihoods, deteriorating health, and an unrecognized loss of human dignity. For the people of Karakalpakstan, this is not just a change in geography—it is a direct threat to the "Right to Life." I have personally stood in the "Cemetery of Ships" at Moynaq, where rusted hulls remain stranded miles from any water. These vessels are the silent tombstones of a dead ecosystem. Furthermore, as a victim

of the toxic salt storms that frequently sweep across the dry bed, I have seen how the law ends where the dust begins.

When a salt storm destroys a family's crops in a single afternoon, the existing international environmental conventions—such as the Paris Agreement—offer no immediate justice or compensation. This paper argues that the consequences of environmental degradation in the Aral Sea basin reveal a deeper global issue: the absence of a legal recognition of environmental security as a non-derogable human right. Without this codification, communities facing ecological collapse remain invisible in the global legal order, unprotected by the norms designed to uphold justice. It is time to bridge the gap between environmental science and international law to protect those who have become hostages to a dying earth.

The geography and chemistry of a dying sea: a global hazard The Aral Sea is situated in the heart of Central Asia, bordered by the Republic of Karakalpakstan (Uzbekistan) and Kazakhstan. Once a vibrant terminal lake, it was sustained for millennia by two major rivers: the Amu Darya and the Syr Darya. In 1960, the sea spanned an immense 68,000 square kilometers, holding a critical place in the region's climate and economy.

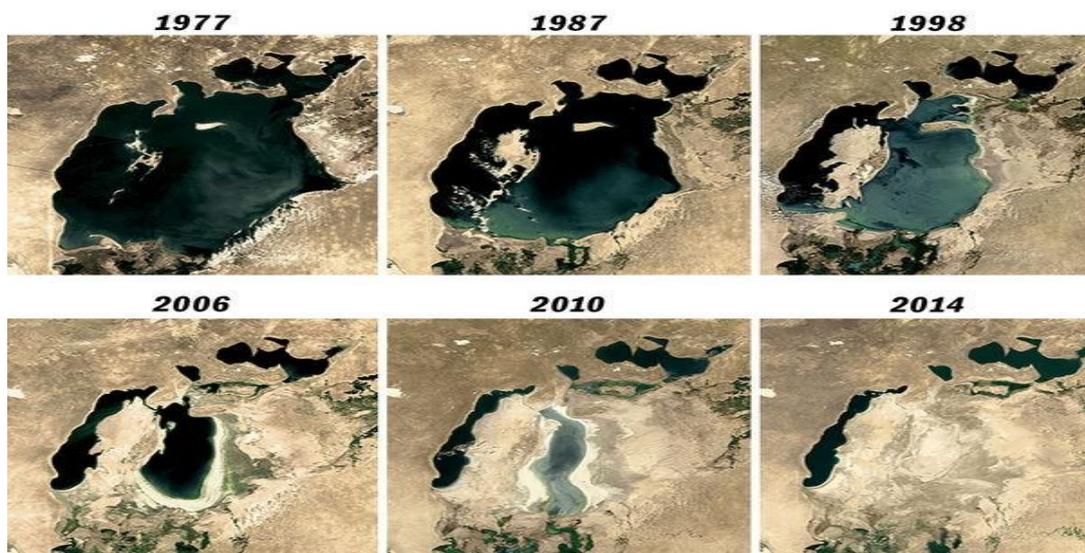
The desertification and salt accumulation As the water supply from the Amu Darya was diverted for massive irrigation projects, the sea began to shrink at an unprecedented rate. This led to the formation of the Aralkum Desert, a 5.4 million-hectare seabed exposed to the elements.

Total salt volume: Scientific estimates suggest that the dry bed now contains over 10 billion tons of salt, dust, and toxic residues accumulated over decades.

The chemical cocktail: This is not common sea salt. It consists of a lethal mixture of sodium chloride, sodium sulfate, and magnesium sulfate, often combined with pesticides and fertilizers washed down from cotton fields.

The Salt "Aerosol": These toxic particles are lifted by high-velocity winds, creating "salt-dust storms" that transport between 75 million and 150 million tons of dust annually across the globe.

Impact on the local population. For the people of Karakalpakstan, this chemistry is a daily reality. The salt does not stay in the desert; it settles on our skin, our food, and our lungs. As a witness, I have seen our fields—once fertile and green—turn into white, barren lands after a single storm. This is the "Geography of Displacement", where the physical change in the soil forces a change in the human population.



The human rights vacuum: beyond humanitarian aid. Under current international legal frameworks, there is a profound silence regarding people like us. International law primarily recognizes refugees based on political or social persecution (1951 Refugee Convention). It does not yet formally recognize the "Climate Refugee" or the victim of "Slow-Onset Disasters" like the Aral Sea desiccation. The Legal Gap: When a salt storm destroys a village's water supply and agricultural potential, the inhabitants have no legal standing to claim international protection or environmental compensation.

Biomedical impact and the right to health: a generation under siege. The desiccation of the Aral Sea is not merely a landscape transformation; it is a profound physiological crisis. The exposure of the seabed has released a "chemical cocktail" that has directly compromised the biological security of the local population. In Karakalpakstan, the environmental collapse has translated into a localized health emergency where medical indicators deviate significantly and dangerously from national averages.

The human cost of ecological negligence. According to reports from the World Health Organization (WHO) and the Ministry of Health of Uzbekistan, the health crisis in the Aral Sea disaster zone is defined by three primary clusters of disease. First, the prevalence of chronic anemia among women of childbearing age and children in districts such as Moynaq reaches a staggering 70% to 80%. This is nearly double the national average of 40%. This phenomenon is not solely a result of nutritional deficiency; clinical evidence suggests that toxic residues and heavy metals in the local food chain interfere with iron absorption,



essentially creating a state of "biological poverty" for the next generation. Second, the respiratory health of the population is under constant assault. The "Aralkum" dust storms carry fine particulate matter mixed with corrosive sodium and magnesium sulfates. This toxic aerosol serves as a permanent irritant to the lungs, leading to an incidence of respiratory diseases that is two to three times higher than the national baseline. As a resident who has experienced these "salt-puffs" firsthand, I can testify that the air is often saturated with invisible toxins that cause chronic bronchitis and bronchial asthma to become endemic realities. Third, the mineralization of drinking water in the basin frequently exceeds safety standards by 5 to 10 times. The extreme hardness of the water, coupled with the high intake of atmospheric salts, has resulted in a "significantly high" and nearly epidemic rate of urolithiasis (kidney stones). For many in Karakalpakstan, the basic human need for water has become a slow-motion assault on kidney function and overall longevity.

The evidence provided by these biomedical indicators proves that the environmental mismanagement of the Aral Sea has led to a systematic violation of the Right to Health as enshrined in international human rights law. When 80% of children are born into a state of chronic anemia due to external ecological factors, the issue transcends environmental policy and becomes a clear human rights breach. International law must evolve to recognize these biological consequences as enforceable legal claims, moving beyond symbolic aid toward genuine environmental justice

Legal frameworks and the path to restoration: from apathy to action. The health and environmental data analyzed in the previous sections confirm that the Aral Sea basin is a zone of legal neglect. However, the region is now at a turning point where international law and local resilience must converge.

The "Polluter Pays" Principle and Global Responsibility. In international environmental law, the "Polluter Pays" principle dictates that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment. The desiccation of the Aral Sea was a result of transboundary water mismanagement during the Soviet era. Therefore, the rehabilitation of the region should not be viewed as "humanitarian aid," but as a legal restitution. The UN Multi-Partner Human Security Trust Fund, which has gathered significant international contributions, is a step in the right direction, but it lacks a binding treaty framework that guarantees long-term environmental security for the residents of Karakalpakstan. The "Green Shield": A Grassroots Legal Victory. While international legal debates continue, Uzbekistan has implemented one of the

most ambitious ecological projects in the world: the afforestation of the Aralkum Desert. By planting over 1.6 million hectares of Haloxylon ammodendron (Saxaul), the government is creating a "Green Shield" to stabilize the toxic seabed. This project is more than just an agricultural effort; it is a practical exercise of the "Right to a Healthy Environment." Each hectare of saxaul reduces the volume of toxic dust reaching the lungs of children in Moynaq. From a legal perspective, this project serves as a model for how states can fulfill their obligations to protect the physical security of their citizens against climate-driven disasters.

Toward an International Convention for Environmental Refugees. The Aral Sea crisis proves that the 1951 Refugee Convention is outdated. It does not recognize those displaced by "slow-onset" disasters like salt storms. I argue for the creation of a specific legal status for "Environmental Hostages"—people who cannot flee their ancestral lands but whose environment has become a threat to their survival. The Aral Sea tragedy serves as a stark reminder that environmental degradation is the ultimate disruptor of human rights. The transition from viewing ecological restoration as a voluntary act of aid to recognizing it as a non-derogable legal obligation is the only path toward sustainable justice. As analyzed in this paper, the interconnectedness of biological health, geographic stability, and legal protection suggests that "Environmental Security" must be codified as a fundamental pillar of international law. The "Ghosts of Moynaq"—the abandoned ships and the silenced harbors—are not just symbols of a lost sea, but evidence of a global legal failure. To protect the millions living in ecological disaster zones, the international community must move beyond symbolic gestures and establish enforceable legal frameworks that prioritize human life over industrial exploitation. The restoration of the Aral Sea basin is not just a regional necessity; it is a test of humanity's commitment to the universal right to a liveable planet.

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