

The Threat of Desertification in 110 Countries will Increase National and Regional Security Risks

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Abstract

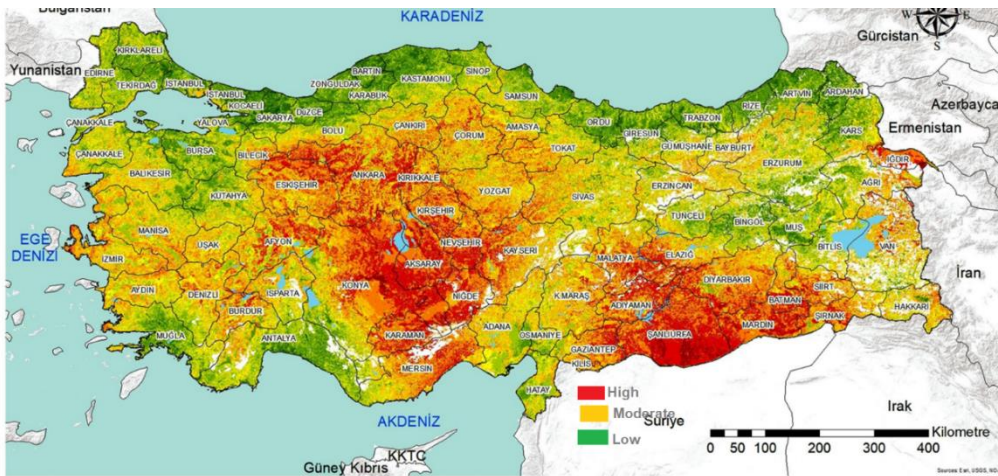
Climate change, along with desertification, erosion, drought, and land degradation, stands out as a prominent global issue. The United Nations (UN) has declared June 17 as the World Day to Combat Desertification and Drought since 1994. Countries are working to raise awareness about this issue that affects the whole world. It is obvious that The threat of desertification in many countries will increase national and regional security risks

Therefore it is worthwhile to analyze how to combat drought, desertification, and erosion in a changing climate.

Keywords: drought, desertification, erosion

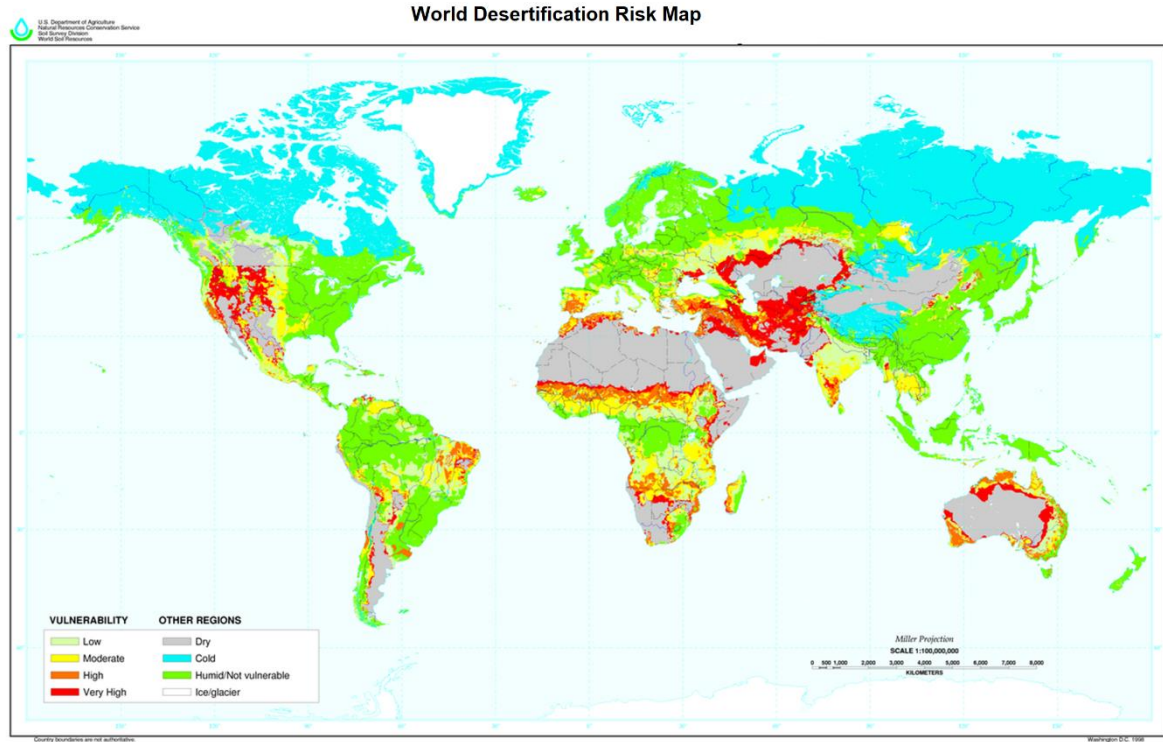
Introduction

While an average of 24 billion tons of agricultural land is lost annually due to soil erosion worldwide, 110 countries are facing the threat of desertification due to erosion(1). Factors influencing desertification include insufficient rainfall, drought, overgrazing, deforestation, improper/excessive irrigation, and soil pollution. When the vegetation cover on the soil disappears due to these factors, sand and dust carried by wind erosion render the fertile soil unusable. The cycle of drought, erosion, and desertification becomes an interlinked spiral. Therefore, combating drought, desertification, and erosion should be addressed together.



Türkiye Desertification Risk Map

In Türkiye , 90% of our lands are exposed due to water erosion, and 1% due to wind erosion. Despite efforts to reduce it, we still lose approximately 140 million tons of soil to erosion each year (3).



Türkiye: a country under the risk of desertification

Turkey is a semi-drought country. The variability of rainfall is very high in some regions. In recent years, we have experienced significant regional droughts, which have primarily affected the agricultural sector. This highlights the risk to our water and food security due to desertification and drought.

We have insufficient vegetation cover on 64% of our pastures. As the vegetation cover on our pastures decreases due to drought, the threat of erosion also increases. Our agricultural lands, which are the most deprived areas in terms of vegetation cover, are the most sensitive to erosion. We are losing our productive soils due to erosion on 59% of agricultural lands.

Various degrees of erosion are observed on 59% of agricultural lands, 64% of pastures, and 54% of forest lands(2).

The Relationship between Desertification, Drought, and Water Management

Meteorological drought results in reduced rainfall and a decrease in the amount of water available for use. This initially creates concerns about our drinking water and water for daily use. During the agricultural drought phase, inadequate water supply to the soil puts agricultural production at risk. Ensuring food security, especially in grain production, becomes a concern. In order to manage and reduce the increasing risk of drought and desertification, we must use our water resources very efficiently. For this purpose, we need to transition to integrated water management at the river basin scale. We have nearly completed our plans for managing water

resources at the basin scale, but we need to enact draft water law and establish effective institutional capacity for implementation.

In short, the increasing threat of drought and desertification compels us to protect and use our water resources efficiently and manage them effectively.

What Should be Done to Address Desertification and Drought Threat?

Climate scientists and meteorologists emphasize that the threat of drought and desertification is increasing due to the growing climate variability. Particularly in the Mediterranean region, including our country, the expected temperature rise and decreasing rainfall trends will exacerbate the regional drought threat. Global cooperation efforts among countries are ongoing to combat climate change. However, threatened countries are also taking their own measures against drought and desertification.

In this context, we should protect and manage our water basins and water resources in terms of quality and quantity in a very rational, planned, and efficient manner. Efficient management and utilization of our groundwater resources are particularly crucial for overcoming drought periods with minimal problems. Therefore, we must allocate our groundwater resources very carefully and increase control measures to ensure the efficient use of existing allocations. Illegal groundwater use must be strictly prevented. Additionally, we should prevent unconscious excessive water consumption and treat wastewater for reuse. At the national level, an early warning monitoring infrastructure and management system for drought should be established.

While countries continue their efforts to adapt to climate change, they should also strive to create a resilient drinking water, agricultural, and industrial sector against drought. The most important aspect here is to align our thoughts on water management and water use with the new conditions and increase public awareness.

The precipitation regime in Türkiye is irregular. Moreover, climate variability affects the precipitation regime and seasonal distribution. Especially during the summer months, short but intense rainfall quickly flows away, causing flash floods, which are insufficient to combat desertification and drought. The increased variability of precipitation from year to year and seasonally also exacerbates the impacts of desertification and drought. Furthermore, we need measures to prevent soil erosion caused by rainfall in order to combat desertification effectively.

Increase in National and Regional Security Threats

Nature has been sending a message to the world for a long time. It seems that the developed West has correctly interpreted this message to protect its own interests. In this regard, they implement aid programs for food security in some underdeveloped countries. However, these aids are not sufficient for sustainable solutions to the problem. At the end of the day, underdeveloped countries that fail to correctly interpret or take preventive measures based on this message face increased risks to national security and stability.

The consequences arising from increased drought and desertification not only pose a threat to the security of these countries but also regional security and stability. This contributes to the

escalation of social and economic problems currently experienced, particularly in underdeveloped countries. This implies that in the future, there may be more intense domestic conflicts, climate migrations, and migrations due to poverty than what we are experiencing today. The developed West has long been working on preventing the threats posed by these migrations. Unfortunately, some inhumane practices related to these measures are increasing.

References

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Biography



Dursun Yıldız (Msc.) is a hydropolitics specialist and Director of the Hydropolitics Academy Association located in Ankara-Turkey. He is a civil engineer and used to be Deputy Director at State Hydraulic Works in Turkey; completed a hydroinformatics post graduate course at the IHE in Delft, a Technical training program in USBR-USA, and a master's degree in Hydropolitics at the Hacettepe University-Turkey. He has over 5 years of teaching experience in some Turkish Universities and now works as head of his own Hydro Energy & Strategy consulting company located in Ankara. He has published several international articles and 15 books. He received the Most Successful Researcher Award on International Water Issues from Turkish

Agricultural Association in 2008 and from the Central Union of Irrigation Cooperatives in 2016. He received the Professional Services Award of Excellence from İstanbul Çekmeköy Rotary Club in 2021. He becomes a part-time lecturer at the IZTECH International Water Resources Department in In the 2020-2021 academic year

June 22 2023