WASWAC

# HOT NEWS

## 08, 2026

# HOT NEWS

ISSUE 08 2026

WASWAC

## CONTENTS




Editor: Pengfei DU

Assistant Editor: Songdi YANG

# COP17 Advances US$1.3 Billion for Land Restoration, with Rangelands at the Centre

Ulaanbaatar, Mongolia, 24 August 2026 — Governments, development banks, funds and companies meeting at the seventeenth session of the Conference of the Parties to the UN Convention to Combat Desertification (UNCCD COP17) have announced US$1.3 billion in new and pipeline finance for land restoration and drought resilience, spanning commitments in 23 countries across five continents.

At the centre of the new finance is a major push on rangelands — an issue of particular importance to host country Mongolia. The Rangelands Flagship Initiative, currently valued at US$1.2 billion across 45 named projects, was launched in Ulaanbaatar during the United Nations International Year of Rangelands and Pastoralists in 2026, a designation championed by Mongolia. It is the largest single mobilisation for rangelands in the Convention's history.

Of the finance announced at COP17, US$644.5 million is currently identified as new finance, with US$216.4 million already confirmed and moving towards implementation.

Mongolia came to COP17 with a series of measures aimed at bringing more domestic finance into land restoration. These include sector-wide sustainable finance principles, a national green taxonomy, and a target of 10 per cent green lending by 2030.

Mongolia also launched a national Business4Land (B4L) Hub, bringing the Convention's private-sector platform to the country level for the first time. Russia followed with a hub of its own, while Luxembourg moved to establish a Business4Land Foundation and Germany funded the B4L Finance Expert Group.

Rangelands cover more than half of the world's land surface and support the livelihoods of around two billion people, including some 500 million pastoralists. Yet up to half of these ecosystems are degraded or at risk, making investment in their restoration critical for food security, livelihoods and drought resilience.

The economic case for that investment is significant. Rangelands generate benefits estimated at US$21–47 trillion a year, including through food production, water, carbon storage and biodiversity. Restoring rangelands typically returns US$4–6 for every dollar invested — and, when wider public benefits

such as water supply are included, returns can reach as high as US$36 for every dollar invested.

The Global Environment Facility (GEF) supports coordination of the Rangelands Flagship Initiative through a US$3.3 million investment in the UNCCD COP17 Legacy Project. Over the past four years, GEF has also approved more than 50 projects worth over US$300 million supporting sustainable rangeland management and restoration, as well as pastoralist livelihoods.

The Asian Development Bank put US$113 million behind the Green Inclusive Regional Agribusiness Fund, while the Green Climate Fund backed two projects in Botswana and Mongolia and TWENDE in Kenya with the International Union for Conservation of Nature (IUCN).

The Adaptation Fund committed US$9.1 million to locally led adaptation with Indigenous Peoples and local communities across Africa, while the German Agency for International Cooperation (GIZ) and the German Federal Ministry for Economic Cooperation and Development (BMZ) backed Forests4Future (US$76 million) and three further programmes across Southern Africa. Peace Parks Foundation and Conservation International brought Herding for Health (US$35 million), while the International Livestock Research Institute (ILRI) brought the STELARR Investment Hub (US$22 million).

Twelve of the projects are delivered with the United Nations Development Programme (UNDP), six with the United Nations Environment Programme (UNEP) and three with the Food and Agriculture Organization of the United Nations (FAO) — showing how the UN system and development partners are beginning to converge around a common implementation agenda for rangelands.

**News Source**

https://www.unccd.int/news-stories/press-releases/cop17-advances-us13-billion-land-restoration-rangelands-centre

# FAO Launches CropSuit App to Help Farmers Grow the Right Crops in the Right Places

Farmers, extension workers and governments now have a powerful new tool to help identify the crops best suited to specific parcels of land, enabling more efficient use of resources and greater resilience to climate change.

The Food and Agriculture Organization of the United Nations (FAO) today launched CropSuit, a free web-based application that combines soil information with climate information, topography, land cover and other environmental data to identify the crops most likely to perform well in a given location.

By helping farmers plant the best crop for local conditions, CropSuit supports better yields, improved incomes, more efficient fertilizer use and more sustainable land management. The tool comes at a critical time when 1.7 billion people around the world live in areas where land degradation is reducing agricultural productivity.

The application was unveiled during FAO's Global Conference on Smart Farming, which gathered ministers, policy makers, researchers and private-sector representatives from around the world to discuss how digital innovation can improve food production while making agriculture more resilient and sustainable.

"Technology does not replace farmers. It gives them better information to make better decisions, at the right time and in the right place. CropSuit is one example of how innovation can turn science into practical support for farmers," said Lifeng Li, Director, FAO Land and Water Division. "The challenge is no longer whether smart farming works. It is whether we can ensure that these tools reach the farmers who need them most," he added.

The CropSuit application is part of FAO's Soil Mapping for Resilient Agrifood Systems (SoilFER) programme, an initiative funded by Japan and the United States of America that helps countries in Africa and Central America strengthen their soil information systems by combining advanced soil data, geospatial data integration, crop modelling and digital decision-support tools.

It builds on the Global Agro-Ecological Zoning (GAEZ) framework developed through collaboration between FAO and the International Institute for Applied Systems Analysis (IIASA) and expands access to information on a wide range of crops, including nutrient-dense, traditional and indigenous species with

significant potential to improve food security and nutrition.

The CropSuit app further expands the capabilities of the SoilFER Geospatial Platform by providing an intuitive and user-friendly interface for exploring this open-access data.

The value of the CropSuit app is already being demonstrated through FAO's programme in Zambia. Using detailed soil maps alongside rainfall and other environmental data, the application showed that while maize performed well on some fields, neighbouring plots with different soil characteristics were better suited to crops such as cassava, cowpea and fonio. The result is more informed crop selection, greater climate resilience and stronger production potential.

CropSuit is part of an integrated suite of tools under the aegis of SoilFER, which pioneers new ground for the way it encompasses soil intelligence, addressing multiple issues and stretching from specialized chemical analysis to field advisory services.

SoilFER projects currently being implemented in Ghana, Guatemala, Honduras, Kenya, Zambia are designed around three core shareholders: national governments, who benefit from strengthened soil information systems, high-resolution mapping and capacity development; farmers, who gain access to better advisory services and decision-support tools offering economically valuable tips; and soil laboratories, whose analytical capacity is strengthened through equipment, training and standardized methods.

SoilFER strengthens national soil information systems by standardizing field surveys, expanding soil sampling, upgrading laboratories and improving data quality to generate practical recommendations on fertilizer use, crop suitability and sustainable land management. These insights are made available through a free web-based application that can be used by farmers, extension services, researchers, planners and policymakers. Depending on data availability, users can explore crop suitability assessments across participating countries and other areas covered by the GAEZ database.

**News Source**

https://www.fao.org/newsroom/detail/fao-launches-cropsuit-app-to-help-farmers-grow-the-right-crops-in-the-right-places/en

# UN Recognition Spotlights WFP-led Partnership Restoring Land and Strengthening Food Security in the Sahel

On 26 Aug 2026, the United Nations World Food Programme (WFP) welcomed the recognition of the Sahel Integrated Resilience Initiative as a United Nations World Restoration Flagship, recognizing the large-scale efforts to restore degraded land and strengthen food security across Burkina Faso, Chad, Mali, Mauritania and Niger.

Since 2018, the WFP-led initiative has worked with national governments, local communities and partners to improve livelihoods and food production for more than four million people, while rehabilitating more than 335,000 hectares of degraded land on the edge of the Sahara Desert and reducing communities' exposure to repeated shocks.

Announced during a high-level event at the seventeenth session of the Conference of the Parties to the United Nations Convention to Combat Desertification (UNCCD COP17) in Ulaanbaatar, Mongolia, the award places the Sahel initiative among three new World Restoration Flagships under the United Nations Decade on Ecosystem Restoration, which recognize large-scale and long-term examples of ecosystem restoration.

The Sahel Integrated Resilience Initiative combines land rehabilitation and ecosystem restoration with school meals, nutrition activities, support to smallholder farmers and capacity strengthening with local institutions.

“This recognition belongs first to the communities across the Sahel who are restoring their land, protecting their livelihoods and building

a more dignified future in some of the world's toughest conditions," said Kinday Samba, WFP Regional Director for West and Central Africa. "WFP is proud to stand with them as this work is recognized, and grateful to the governments, partners and donors whose sustained commitment has helped make it possible."

In Niger alone, WFP reached more than 1.4 million people in 2025 through integrated resilience interventions across hundreds of sites, making it WFP's largest programme of its kind in the region. New evidence shows that these investments are up to 3.5 times more cost-effective than humanitarian response and could help avoid up to USD 9.7 billion in future humanitarian assistance needs by 2055.

In Burkina Faso, Chad, Mali and Mauritania, WFP reached more than 2.4 million people in 2025 through integrated resilience interventions across almost one thousand villages. Evidence from satellite-based monitoring shows that 75 percent of WFP resilience sites recorded improved soil and vegetation conditions. Among households participating in the initiative, the proportion requiring humanitarian food assistance between harvests fell from 44 percent in 2020/2021 to 33 percent in 2024/2025, indicating that participating households maintained or improved their food security.

The recognition comes as conflict and displacement, compounded by climate shocks, economic pressures and environmental degradation, continue to drive food insecurity across the Sahel. An estimated 7.4 million people across the region were projected to face Crisis levels of food insecurity or worse (IPC Phase 3 or above) during the June to August 2026 lean season.

By 2030, the initiative aims to restore 475,000 hectares of land while supporting biodiversity, livelihoods and long-term food security. Sustained investment will be essential to expand these gains and help more Sahel communities thrive.

**News Source**

https://reliefweb.int/report/niger/un-recognition-spotlights-wfp-led-partnership-restoring-land-and-strengthening-food-security-sahel

## Lhasa's Nanshan Park Ready for Soil and Water Conservation Designation

Lhasa's Nanshan Park is seeking a soil and water conservation demonstration park designation after afforestation efforts that transformed a once-barren mountainside into one of the city's most popular public green spaces.

Nanshan Park sits across the Lhasa River from the Potala Palace. Afforestation in the area began in 2012 and accelerated after the Xizang autonomous region launched a large-scale greening campaign in 2021.

"We are working to develop the park into the only soil and water conservation demonstration park in the autonomous region," said Shilog Tsedan, head of Xizang Nanshan Park Management Service, which has managed the site since 2023.

The transformation was far from easy. At elevations ranging from 3,700 to 4,100 meters, workers initially relied on manual labor and pack animals to carry saplings up steep slopes. Irrigation pipes frequently froze during winter, making it difficult to keep newly planted trees alive, according to Xinhua News Agency. Drones were later introduced to transport saplings, while sprinkler irrigation and environmental monitoring systems were installed to support maintenance.

"The challenge was more than just getting the

trees up the mountain, but maintaining them after they had been planted," Shilog Tsedan told a delegation of Chinese and international journalists.

Covering about 2.3 square kilometers, the park includes roughly 107 hectares of planted land. According to its operator, it is home to more than 1 million trees representing over 80 species, with a survival rate exceeding 90 percent.

Now open free of charge, the park combines ecological restoration with hiking and sightseeing. It attracts more than 600,000 visits annually and was designated a national 4A tourist attraction last year.

Nanshan Park is part of Lhasa's broader greening initiative. According to the city's government work report, about 61,300 hectares of mountains around Lhasa have been afforested over the past five years. In 2026, the city plans to build, renovate or upgrade more than 30 parks and other urban green spaces.

**News Source**

https://www.chinadaily.com.cn/a/202607/24/WS6a6314f7a310986e2b467276_1.html

## Healthy Soils Boost Portugal's Resilience to Drought and Wildfires

Portugal entered the 2026 fire season under intense heat and drought pressure. In July, Portugal requested firefighting support from the European Union, Spain, and Morocco, with more than 2,800 firefighters engaged at several blazes.

The report The Soil Carbon Sponge draws attention to a part of the story that receives far less attention: the state of the soil before drought and extreme heat set in. It identifies regenerative agriculture practices as a practical way to recover soil organic matter — the carbon-rich material that helps the soil form structure and retain water — and estimates that a 1% increase could add about 250,000 liters of water-retention capacity per hectare.

In The Soil Carbon Sponge report, Save Soil explains that soils with greater water retention can significantly reduce the impact of droughts and fires, helping crops and vegetation stay hydrated for longer, delaying the onset of extreme dryness in the landscape and easing pressure on water supply.

Across the European Union, the European Commission estimates that 60 to 70% of soils are not healthy. In Portugal, data from the European Commission's Joint Research Centre show that 5.2% of Portugal's agricultural land is affected by moderate to severe water erosion (data from 2016).

For Portugal, the issue is not only how to extinguish fires after they break out, but how to make landscapes that are productive more able to withstand long periods of heat and water stress.

Praveena Sridhar, scientific and policy advisor for Save Soil, states that "Portugal is seeing the consequences of drought in real time — pressure on crops, on water and on communities. Regenerative agriculture gives us a way to act before the emergency, restoring organic matter and soil structure so that more rain is retained in the soil."

"Keeping the soil covered, preserving living roots, diversifying crops, integrating trees and reducing unnecessary soil disturbance can help rebuild this natural sponge. We cannot control when it rains, but we can do much more to determine what happens to that water when it arrives at the soil."

In Alentejo, the European Climate-ADAPT platform documents the Freixo do Meio estate, where agroforestry, retention basins, soil cover, reduced disturbance and increased or-

ganic matter are used to improve infiltration and water retention and to build drought resilience.

It is a practical example of the same principle at the heart of the report: using agriculture and land management to keep more water in the landscape before drought intensifies.

The European Save Soil campaign, Healthy Soil, Healthy Future, argues that the EU's Soil Monitoring Law should work in concert with the upcoming Common Agricultural Policy (CAP) — the EU's main system of agricultural support and funding — so that farmers are rewarded for measurable improvements in soil health without bearing the cost of proving them.

The policy is being defined now: the current CAP runs until 2027; the European Commission proposed the next CAP for 2028–2034 on July 17, 2025; and EU agriculture ministers resumed debate on its contours on June 23, 2026. Save Soil calls for signing the campaign as governments of the EU and the Members of the European Parliament finalize the rules.

**News Source**

https://www.plusnews.org/healthy-soils-boost-portugals-resilience-to-drought-and-wildfires/

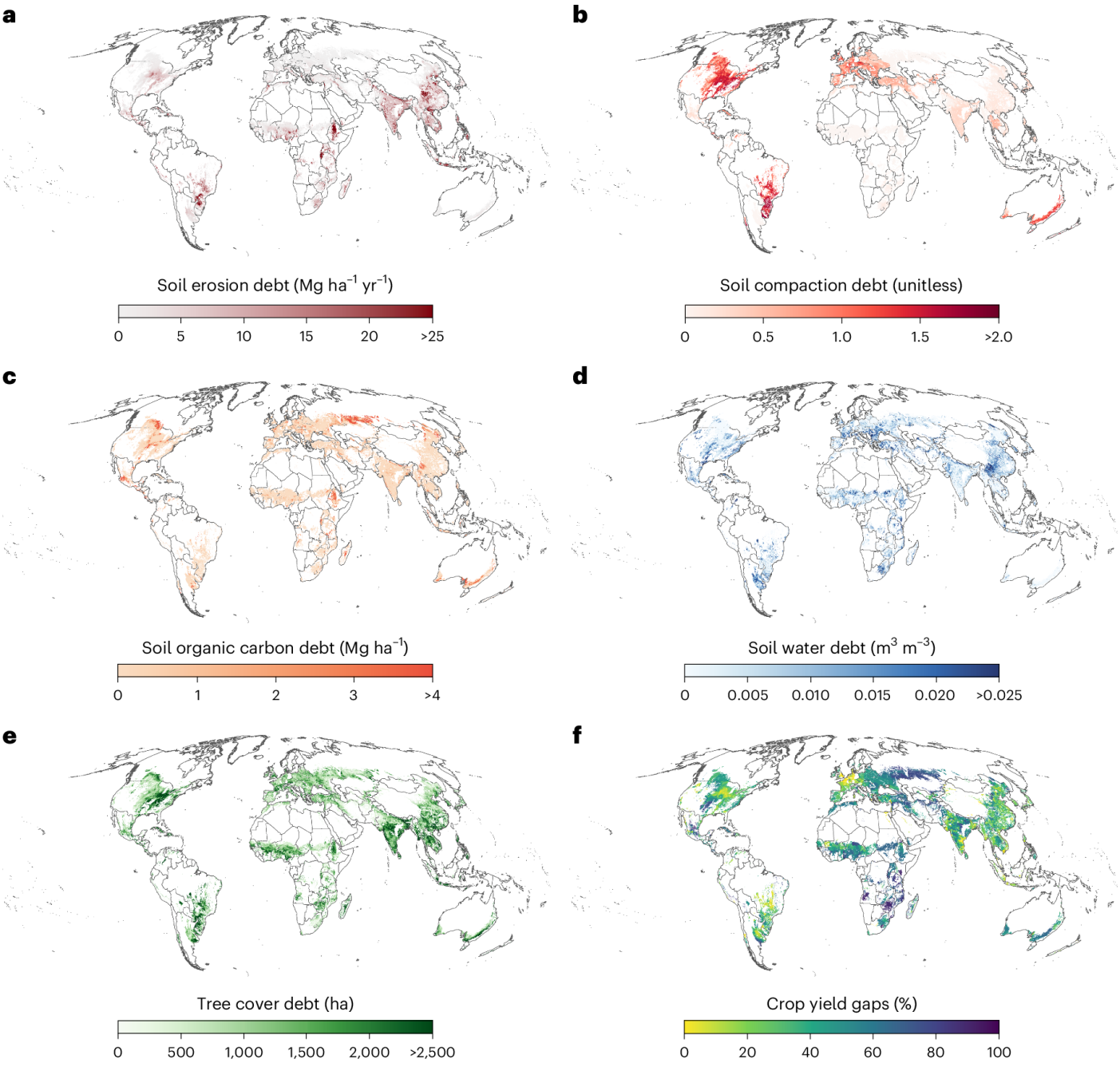
# Land Degradation is Associated with Larger Crop Yield Gaps Across Global Croplands

There is a long-standing concern that land degradation reduces agricultural productivity, particularly in the long run. However, the empirical evidence on this issue remains inconclusive. Here, we present a global quantification of the link between land degradation, measured as the difference between current and historical conditions, and crop yield gaps, defined as the difference between attainable and attained yields. Our analysis establishes that, on average, a 10% increase in land degradation is associated with a roughly 2% increase in average crop yield gaps. Regionally, the loss can reach up to 6% for a 10% increase in land degradation in the globally most affected hotspots. These include northern and southern India, northeastern China, the US Midwest, as well as parts of Central and South America, particularly northern Argentina. Aggregated across the world's croplands, this translates into estimated losses of 20 million tonnes in crop production, corresponding to 52 trillion kcal, roughly the annual food calorie supply for 71 million people, and 4 billion USD in annual crop revenues.

Our empirical framework estimates the association between land degradation and crop yield gaps at the global scale, quantifying the percentage change in yield gaps associated with a percentage change in different land degradation processes. To account for interrelationships among degradation processes, all degradation indicators are included simultaneously. Beyond estimating the global average association, we also assess the spatial heterogeneity in these relationships using a machine learning approach.

Our empirical framework estimates the association between land degradation and crop yield gaps at the global scale, quantifying the percentage change in yield gaps associated with a percentage change in different land degradation processes. To account for interrelationships among degradation processes, all degradation indicators are included simultaneously. Beyond estimating the global average association, we also assess the spatial heterogeneity in these relationships using a machine learning approach.

We examine high-resolution land degradation variables and crop yield gaps. The empirical pattern shows that our measures of cropland degradation are a common by-product of in-




tensive agriculture, especially when practised for a long time. This explains why there is commonly a positive association between land degradation and crop yields. This suggests that it is important to control for confounding factors, such as technology and management choices (fertilizer use and irrigation), as well as other sources of spatial heterogeneity (soils, climate and geography).

Data on the global distribution of crop yield gaps is sourced from a recent comprehensive global assessment covering the ten most im-

portant global crops (wheat, maize, rice, barley, sorghum, cassava, soybean, rapeseed, oil palm and sugar cane), which together account for 83% of global calorie production. Crop yield gaps are defined as the difference between current, that is, actually attained yields, and the attainable yields, expressed as a percentage relative to attainable yields. Observed yields were obtained from census and survey records, whereas attainable yields were estimated empirically as the 95th percentile of observed yields under comparable biophysical conditions representing realistic farmer-attainable ('feasible') yields rather than theoretical agronomic potential. We acknowledge that, if land degradation is sufficiently widespread, even the 95th percentile may reflect somewhat degraded conditions, which would imply that our estimates of yield gaps—and consequently the role of land degradation—are conservative lower bounds. We use crop yield gap estimates for circa 2010 (mean of 2008–2012) to reduce sensitivity to short-term interannual variability, aggregated for all the ten crops using harvested-area weights.

Because land degradation manifests as different physical, chemical and biological processes, we assess several land degradation processes, that (1) are hypothesized to affect crop yields and have global footprints, (2) for which high-resolution global data are available, (3) crucially, reflect spatial variability in land conditions within croplands and (4) allow for assessment of long-term human-induced changes. These land degradation processes include soil erosion (rate) debt, soil compaction debt, soil organic carbon debt, soil water debt (based on satellite-measured soil moisture) and tree cover debt. While these five indicators certainly do not encompass all possible land degradation processes at any location across the globe, they represent key biophysical processes through which land degradation affects crop performance, including soil loss, fertility decline, soil structural deterioration and altered hydrological and microclimatic conditions. Unlike threshold-based approaches that classify degradation into binary or categorical classes, we analyse land degradation as a continuous phenomenon (intensity/magnitude) to assess its association with crop yield gaps.

**Article Source**

https://www.nature.com/articles/s43016-026-01382-5

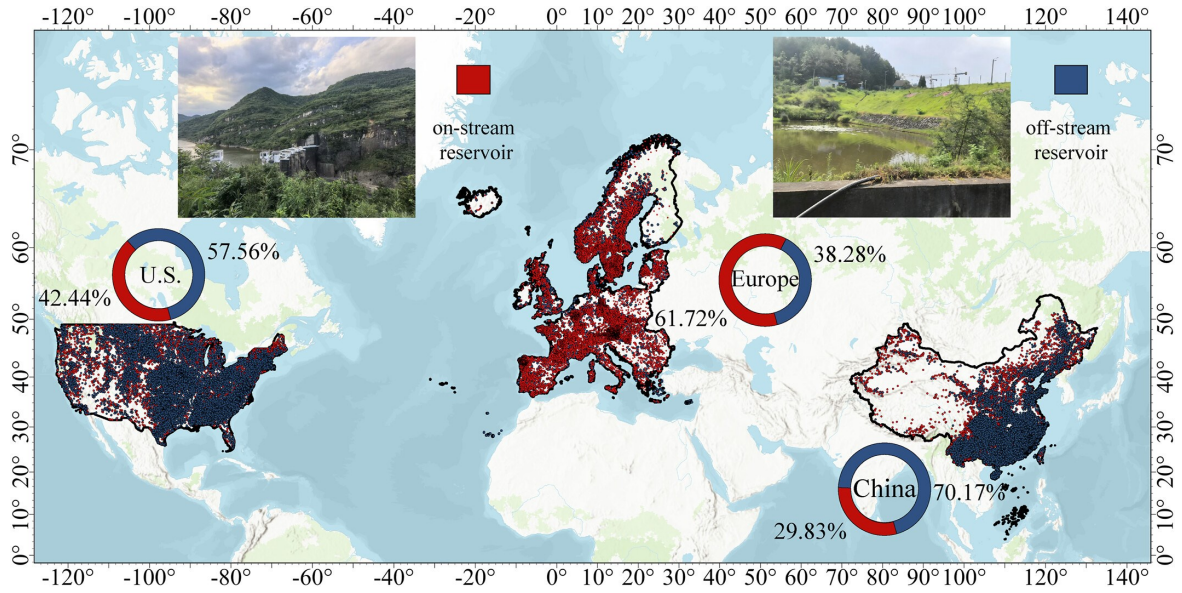
# Hidden Crisis in Off-Stream Reservoirs From Their High Sedimentation and Ageing Risks

**Abstract**

Aging dams and reservoir sedimentation pose a growing threat globally. While large dams on streams dominate scientific attention, the small, especially off-stream reservoirs are vital to rural communities but receive disproportionately less attention. This study first quantifies the proportion of off-stream reservoirs in the United States (58%), Europe (38%), and China (70%), indicating their substantial presence worldwide. We then focused on the densely dammed Upper Yangtze River Basin, where we compiled a comprehensive data set of 13,886 reservoirs and applied an enhanced sediment model to estimate cumulative sedimentation. Although on-stream mega dams dominate the control of basin-wide sediment flux, off-stream reservoirs play a critical but overlooked role in local sedimentation and safety. Results show that while on-stream large reservoirs (storage capacity ≥100 Mm3) dominate total storage (>97%) and trap the vast majority of sediment, off-stream reservoirs account for over 75% of all reservoirs and exhibit a markedly higher average sedimentation ratio (11.3%) than the basin average (3.3%) and that of on-stream large reservoirs (2.8%). By 2050, 137 reservoirs will exceed 100 years of age, 87% of which are off-stream. Alarmingly, 20% of these aging off-stream reservoirs also face severe sedimentation (sedimentation ratio ≥50%), representing an extreme failure risk. Our findings reveal a hidden crisis that off-stream reservoirs, despite their numerical dominance, face more acute aging and sedimentation challenges and are largely overlooked in current dam safety frameworks, highlighting an urgent need to integrate them into sustainable water infrastructure management.

**Results**

Based on reservoir databases of the U.S., Europe, and China, we found that off-stream reservoirs account for approximately 58%, 38%, and 70% of the total reservoir counts in these regions, respectively. All these indicate that off-stream reservoirs constitute a significant and non-negligible portion of the total reservoir count. Due to the lack of key information such as storage capacity and construction year for off-stream reservoirs, we subsequently focused on the UYRB to estimate and compare the aging and sedimentation conditions




among off-stream, on-stream small, and on-stream large reservoirs.

**Conclusions**

The important role of large dams on the river has been well recognized for sediment trapping. Yet, off-stream reservoirs take large part in terms of quantity but have little data regarding aging and sedimentation, which directly impacts reservoir safety and the risk of dam breakage. Our research encompasses large and small reservoirs both on- and off-stream and presents a comprehensive assessment of sedimentation over 13,800 reservoirs in the UYRB. The results reveal that while accumulative sediment only consumes less than 4% of total storage capacity, small reservoirs exhibit disproportionately severe sedimentation compared to larger structures. Off-stream reservoirs demonstrate particularly critical sedimentation issues, which are often overlooked in prior studies due to their negligible direct impacts on hydrological regimes and sediment transport. Given that off-stream reservoirs take a significant portion of the total reservoir inventory in the U.S., Europe, and China, our study provides critical information on reservoir sedimentation patterns and identifies off-stream dam safety as a priority requiring targeted management strategies. Such insights can help make basin-scale water infrastructure management more resilient to future uncertainties.

**Article Source**

https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2026WR043620

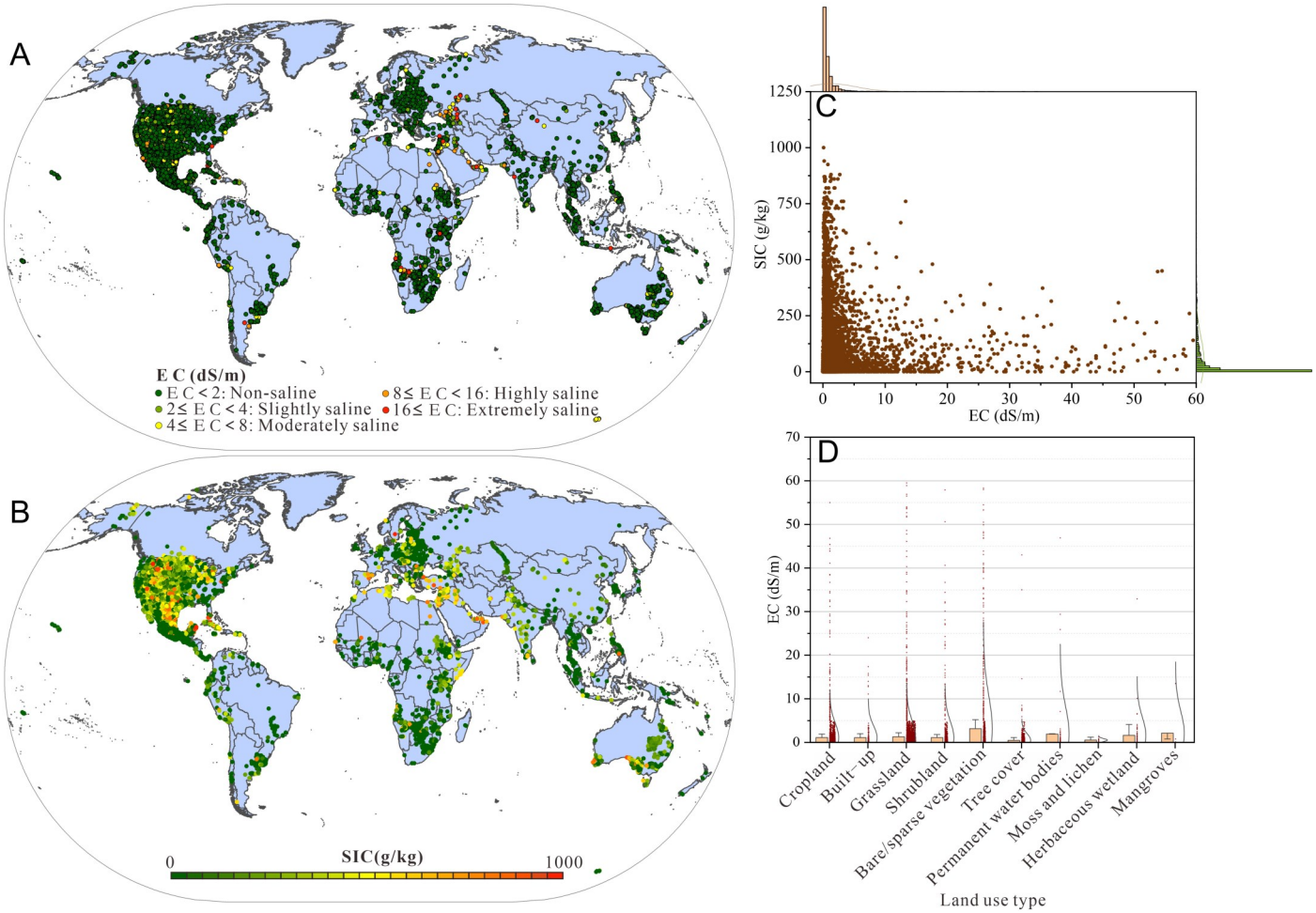
# The Contribution of Increased Global Soil Salinity to Changes in Inorganic Carbon

Soil salinization poses a serious environmental challenge, but the impact of global salinity on SIC (Soil Inorganic Carbon) remains unclear. Using 94,515 samples from 0 to 200 cm depth, combined with subregional classification (such as soil type, land use, climate, geomorphology, and soil texture) which helps address spatial heterogeneity, we obtain relatively accurate global distribution data for EC (Electrical Conductivity) and SIC. EC of 0 to 40 cm layer positively influences SIC in most taxonomic subregions, which may be due to the inorganic CO2 absorption influenced by pH and salinity. EC of 80 to 100 cm layer sometimes negatively influences SIC due to the increase of soil depth. When EC is below 4 dS/m, EC often positively influences SIC. When EC increases by 2 to 4 dS/m, the mean global SIC in 0 to 20, 20 to 40, and 80 to 100 cm layers increases from 66.15, 78.75, and 117.39 to 174.47 to 190.38, 132.76 to 154.98, and 149.14 to 161.37 g/kg, respectively. The increase is relatively high but similar overall, which deserves high attention. These findings elucidate the dynamics of carbon–salt coupling in the soil–atmosphere–water system, offering pivotal scientific insights for carbon-neutrality strategies.

The Role of Subregional Classification Methods in Addressing Spatial Heterogeneity.

Many studies exhibit notable spatial heterogeneity. One relatively effective approach to addressing regional limitation is the classification of the whole region. To minimize the confounding effects of complex soil-forming factors such as climate, geomorphology, LUCC (Land-Use Land-Cover Change), and other factors such as soil texture and soil type, we calculate the correlation coefficients within subregions categorized according to these factors. In the absence of any subregion classification, the highest correlation coefficient between EC (Electrical Conductivity) and other parameters is 0.43 based on the 0 to 20 cm soil depth from 94,515 soil samples. The strongest correlations between EC and other parameters for 0 to 20 cm soil depth, after classification by soil type, land use, soil texture, climate, and geomorphology, are −0.95, −0.84, −0.62, −0.49, and 0.68, respectively, which are better than those before classification. We identify the 10 parameters with the highest correlation coefficients to EC within each subregion. After subregion classification, parameters with strong

correlations to EC primarily include SIC, climatic factors, and several soil parameters. The correlation between SIC and EC is consistently strong in many subregions after classification. Among the parameters that are most highly correlated with EC in each classification category, SIC appears seven times [one geomorphological type (DEM ≤ 200 m), two soil texture types (loamy sand and silt loam), one LUCC type (bare/sparse vegetation), and three soil types (Arenosols, Chernozems, and Gleysols)], highlighting its significant association with EC. For example, the correlation between EC and SIC in the Gleysols subregion is as high as 0.74 when 0 to 20 cm soil layer is classified according to soil type to obtain subregion. These phenomena also occur in other soil layers and subregions in some cases.




*Spatial distribution maps of EC and SIC sample data and the statistical distribution characteristics. (A) Distribution map of the sample at different EC levels. Soil salinity levels are categorized as follows: nonsaline (EC < 2 dS/m), slightly saline (2 to 4 dS/m), moderately saline (4 to 8 dS/m), highly saline (8 to 16 dS/m), and extremely saline (EC*

*≥ 16 dS/m). (B) Distribution map of the SIC sample. (C) Scatter plot of the relationship between EC and SIC of the 0 to 20 cm soil layer. (D) EC statistical distribution of 0 to 20 cm soil layer with classification based on land use, which can better overcome regional heterogeneity issues than that based on climate, texture, geomorphology, and soil type.*

The distribution results of soil EC in different soil layers predicted by the model are consistent on a large scale, so we take 0 to 20 cm soil layer as the representative for analysis. The spatial distribution data of EC in the 0 to 20 cm soil layer indicate that salinization is primarily concentrated in low-lying areas at altitudes below 500 m above sea level. In terms of soil types, those most susceptible to salinization include Cryosols, Regosols, Leptosols, and Arenosols. Regarding land use types, salinization is most prevalent in grassland and bare/sparse vegetation areas. Climatically, the most widespread saline soils are found in arid regions, followed by semiarid and semihumid regions. Similar distribution patterns are observed in other soil layers. The HWSD data likely underestimate the extent of highly saline and extremely saline soils, because many salt-affected soils are only mildly affected by salt, followed by moderately, extremely, and highly saline soils. The FAO has also released data on global regions affected by salinization after 2020. The countries with the largest extents of salt-affected soils include Australia, Argentina, Kazakhstan, the Russian Federation, the United States, the Islamic Republic of Iran, and Sudan. The predicted spatial distribution map of soil salinity for 2016 identifies slightly saline and moderately saline soils in Central Asia, West Asia, North Africa, and southern North America, consistent with the findings of this study. This confirms the reliability of the model in this study, laying the foundation for further analysis of the relationship between SIC and EC.

**Article Source**

https://www.pnas.org/doi/10.1073/pnas.2522643123

## Contents of Issue 3, 2026 for ISWCR

**Heterogeneous patterns of change for annual and seasonal precipitation extremes in China over the past 60 years**

Jiajia Su, Chiyuan Miao, Jinlong Hu

Article 100600

https://www.sciencedirect.com/science/article/pii/S209563392500139X

**Assessment of the influence of plant shape and porosity on the wind shadow area based on numerical simulation**

Xuyang Liu, Chunlai Zhang, Liqiang Kang, Xueyong Zou, Zhuoli Zhou

Article 100612

https://www.sciencedirect.com/science/article/pii/S2095633926000043

**Straw incorporation improves soil health by maintaining ecosystem multi-functionality at relatively high levels in semi-humid regions**

Shiqi Chen, Guanghui Zhang, Chengshu Wang

Article 100627

https://www.sciencedirect.com/science/article/pii/S2095633926000195

**Aggregate stability thresholds and sediment sorting governed by soil net force under different woodland restoration types**

Mao Qiu, Xiangjun Pei, Xiaochao Zhang, Hongchao Xi, ... Shuang Wang

Article 100628

https://www.sciencedirect.com/science/article/pii/S2095633926000201

**Effects of long-term cultivation on soil aggregate stability and transport processes in karst sloping cropland of Southwest China**

Guiwan Yan, Yusong Deng, Tieguang He, Gairen Yang, ... Xiaoqian Duan

Article 100630

https://www.sciencedirect.com/science/article/pii/S2095633926000225

**Steady-state migration of barchan dunes: Field evidence from the dynamic equilibrium of sediment flux**

Yuxin Liu, Xin Gao, Yuanwei Lin, Rui Liu, ... Jiaqiang Lei

Article 100631

https://www.sciencedirect.com/science/article/pii/S2095633926000237

**Optimizing soil and water conservation at the sub-basin scale: a multi-objective approach balancing ecosystem services, costs, and erosion control**

Hualin Li, Xiuchun Yang, Yang Yu, Fan Zhang, ... Shouhong Zhang

Article 100632

https://www.sciencedirect.com/science/article/pii/S2095633926000249

**Quantifying vegetation cover effects on overland flow velocity under rainfall conditions**

Youdong Cen, Kuandi Zhang, Mingwang Zhang, Ronghua Liu, Xuemei Wang

Article 100633

https://www.sciencedirect.com/science/article/pii/S2095633926000250

**Predicting particulate phosphorus removal efficiency in vegetative filter strips: A particle size-based model coupled with VFSMOD-W in black soil region of northeast China**

Qi Cui, Yang Ou, Liming Yan, Shujiang Pang, Baixing Yan

Article 100634

https://www.sciencedirect.com/science/article/pii/S2095633926000262

**Water demand and surface water supply dynamics in the changing climate of semi-arid basins**

Rania Bou Said, Rabi H. Mohtar, Roger Moussa

Article 100635

https://www.sciencedirect.com/science/article/pii/S2095633926000274

**Evaluating black soil thickness under straw return practices by using ground penetrating ra-**

**dar**

Chang Liu, Gang Liu, Chenxi Dan, Ya Liu, ... Kaishan Song

Article 100636

https://www.sciencedirect.com/science/article/pii/S2095633926000286

**Mechanisms controlling the inhibiting effects of roots on soil detachment through the growth of herbaceous plants in Southwest China**

Yun Chen, Na Ou, Weihao Ning, Binghui He, Guangpei Wang

Article 100637

https://www.sciencedirect.com/science/article/pii/S2095633926000298

**Quantifying additional overland flow resistance induced by changes in vegetation distribution patterns**

Youdong Cen, Peng Ling, Xiaomin Sun, Kuandi Zhang, ... Chenxin Yang

Article 100638

https://www.sciencedirect.com/science/article/pii/S2095633926000304

**Regionalization and projection of CLIGEN input parameters based on machine learning technique**

Yumeng Yang, Wenting Wang, Jiaqi Pan, Bofu Yu, ... Shuiqing Yin

Article 100639

https://www.sciencedirect.com/science/article/pii/S2095633926000316

**How much water do we really appropriate? A revised water footprint and its application in the agriculture and forestry of south-central Chile**

Steven Hidalgo-Toapanta, Pasiano Rivas-García, Patricio Neumann-Langdon

Article 100640

https://www.sciencedirect.com/science/article/pii/S2095633926000328

**Greenhouse gas sequestration estimates from agricultural conservation practices in Kansas, Oklahoma, and Texas: Merging USDA conservation program enrollment data with comet-planner model data**

Edwin Coleman, Franklin Bailey Norwood

Article 100641

https://www.sciencedirect.com/science/article/pii/S209563392600033X

**Spatial prioritization of terrace construction on the Chinese Loess Plateau using interpretable machine learning**

Rui Fan, Nufang Fang, Renjie Zong, Renjie Qiang, ... Zhihua Shi

Article 100642

https://www.sciencedirect.com/science/article/pii/S2095633926000341

**Rheological evaluation of soil microstructure stability during vegetation restoration on the Loess Plateau of China**

Lin Zhou, Xinyu Wang, Jiangwen Li, Chenyang Xu, ... Feinan Hu

Article 100643

https://www.sciencedirect.com/science/article/pii/S2095633926000353

**Decoupled spatial hotspots of carbon loss and sediment yield on typical black soil slopes**

Rui Qian, Lei Gao, Wei Hu, Tao Zhang, Xinhua Peng

Article 100655

https://www.sciencedirect.com/science/article/pii/S209563392600047X

**Detecting land use and land cover changes and quantifying soil erosion and sediment export using GIS and remote sensing in the GERD catchment, Ethiopia**

Simachew Bantigegn Wassie, Belay Zeleke Biru, Zewdu Siraw, Mamaru Talema, ... Tatek Belay

Article 100657

https://www.sciencedirect.com/science/article/pii/S2095633926000493

**Quantifying the impacts of gully erosion on farmers' land productivity: The case of Shafe catchment, southern Ethiopia**

Yibeltal Mekonnen, Jorien De Bleser, Matthieu Kervyn, Liuelsegad Belayneh, ... Matthias Vanmaercke

Article 100658

https://www.sciencedirect.com/science/article/pii/S209563392600050X

**Modelling Holocene riverine phosphorus concentrations in the Belgian loess belt: Integrating land-cover dynamics and population pressure**

Florian Lauryssen, Annabel Vandewalle, Francis Matthews, Gert Verstraeten, ... Erik Smolders

Article 100659

https://www.sciencedirect.com/science/article/pii/S2095633926000511

**Advancing precision conservation through machine learning for field-level prioritization of agricultural best management practices**

Md Bodrud-Doza, Wanhong Yang, Yongbo Liu, Ram Yerubandi, ... Evan D.G. Fraser

Article 100668

https://www.sciencedirect.com/science/article/pii/S2095633926000602

**Corrigendum to "Appraising trapping efficiency of vegetative barriers in agricultural landscapes. Strategy based on a probabilistic approach based on a review of available information" [International Soil and Water Conservation Research 12 (2024) 615-634]**

José-Antonio Muñoz, Gema Guzmán, María-Auxiliadora Soriano, José A. Gómez

Article 100664

https://www.sciencedirect.com/science/article/pii/S2095633926000560

**WASWAC Councilors**

Abdulvahed Khaledi Darvishan
Alfred Hartemink
Annie Melinda Paz-Alberto
Arora Sanjay
Baoyuan Liu
Bořivoj Šarapatka
Carmelo Dazzi
Chinapatana Sukvibool
Clemencia Licona Manzur
Dennis C. Flanagan
Duihu Ning
Eli Pavlova-Traykova
Fei Wang
Fenli Zheng
Goran Skataric
Ian Hannam
Ivan Blinkov
Ivan Minchev
Jorge A. Delgado
José Alfonso Gomez
Laura Bertha Reyes Sanchez
Lillian Øygarden
Mahmoud A. Abdelfattah
Mark Nearing
Michael Maerker
Moshood Tijani
Nigussie Haregeweyn Ayehu
Nikola Živanović
Panos Panagos
Paola Andrea Campitelli
Paulo Tarso S. Oliveira
Qin Chen
Qingbin Pan
Rachid Mrabet
Sergey Chalov
Sevilay Haciyakupoglu
Seyed Hamidreza Sadeghi
Shabbir Ahmad Shahid
Shachi Pandey
Stefanos Stefanidis
Thomas W. Goddard
Tijana Vulević
Tolga Görüm
Valentin Golosov
Velibor Spalevic
Wanwisa.Pansak
Xiubin He
Zachary Gichuru Mainuri

**WASWAC Advisors**

Chihua Huang
Coen Ritsema
Des E. Walling
Dingqiang Li
Donald C.Reicosky
Faouzi Bekkaoui
Franco Obando-Moncayo
Gustavo Henrique Merten
Hans Hurni
Illdefonso Pla Sentis
James Owino
Jean Poesen
Kingshuk Roy
Machito Mihara
Mike Fullen
Miroslav Dumbrovsky
Peter Strauss
Rattan Lal
Roberto A. Peiretti
Rosa M. Poch
Surinder Singh Kukal
Syaiful Anwar
Ted L. Napier
William Critchley
Xiaoying Liu

**WASWAC Honor Presidents**

Jose Luis Rubio
Miodrag Zlatic
Rui Li

(Names are arranged in alphabetical order)


**The Secretariat of WASWAC**
**No.20 Chegongzhuang Road West**
**Beijing 100048 P.R.China**
**Website: www.waswac.org.cn**
**Tel.: +86 10 6878 6579**
**Fax.: +86 10 6841 1174**
**Email: waswac@foxmail.com**
**waswac@vip.163.com**