

INTERNATIONAL SEDIMENT INITIATIVE NEWSLETTER

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NEWS

Nature and water for people: UNESCO's ecohydrology approach for a new water culture at the United Nations General Assembly



The lifeline linking people, nature and water was explored during the United Nations Nature for Life Hub on 24 September 2020. Organized during the United Nations General Assembly, the Hub reflects the essential systemic transformations we must see if we are to bend the curve on nature loss. UNESCO Director-General Audrey Azoulay participated in the conversation to share some of the nature-based solutions offered by UNESCO to ensure access to water for all.

The hydrological cycle teaches us that water is finite. Water melts, evaporates, condensates and circulates – but it is not created. Human demand for water, however, is far from finite. As COVID-19 has spread across the globe, this paradox – of finite resources and growing demand – has been brought into sharp relief.
—Audrey Azoulay, UNESCO Director-General

Nature plays a fundamental role in ensuring that the world's 7.6 billion people have enough water to drink, grow food and maintain sanitary conditions. Yet we are facing a global water crisis, with 1 out of 3 people living without safe drinking water. By 2050, up to 5.7 billion people could be facing some level of water scarcity, which will inevitably have an adverse impact on the enjoyment of human rights.

The 2018 World Water Development Report* demonstrated that working with nature improves the management of water resources, helps achieve water security for all, and supports the core aspects of sustainable development. Healthy natural ecosystems play an essential role to increase water quality and availability, and reduce risks associated with climate change, such as floods and droughts. Using Nature-based solutions (NBS), which use or mimic natural processes, for water management is effective and helps to reduce costs.

UNESCO's Intergovernmental Hydrological Programme has been applying nature-based ecohydrological solutions for over 20 years.

Twenty-six demonstration sites in 19 countries around the world support their development, in close collaboration with the local communities to ensure their sustainability.

In Ethiopia, for instance, the Burkitu reservoir was restored using ecohydrological solutions. As a result, this reservoir, which had been polluted by intensive agriculture, is now an alternative source of drinking water for the city of Asella.

Ecohydrology can also be used to protect water-related heritage. In Ecuador, an ecohydrological approach to the ancestral water system of Los Paltas helped supply water to the city of Catacocha, located in UNESCO's Bosques de Paz Biosphere Reserve. Local wetlands were restored, and small dykes were built to capture and retain rainwater. This project also led to the discovery of rock carvings, showing the close ties between humans and water.

Our interactions with water have shaped human history, enabling diverse cultures to evolve in phase with their environments..

—Audrey Azoulay, UNESCO Director-General

We have the solutions we need to restore the relationship between people and their environment, to maintain the lifeline. It is up to us to use them to create a new water culture and build the future we want.

*United Nations World Water Development Report 2018: Nature-based Solutions, published by UNESCO on behalf of the UN-Water family.

(Source: UNESCO).

First Ministerial Meeting of Lancang-Mekong Water Resources Cooperation held in Beijing



The first Ministerial Meeting of Lancang-Mekong Water Resources Cooperation took place in Beijing on Dec.17, with the participation of the Ministers of Water Resources from China,

Cambodia, Laos, Myanmar, Thailand, and Vietnam, six countries along the Lancang-Mekong River.

Focusing on the theme of "Enhancing Water Partnership for Sustainable Development," the conference saw the approval of a joint statement and proposal list for Mekong-Lancang Cooperation projects and the signing of a memorandum of cooperation between the Lancang-Mekong Water Resources Cooperation Center and the Mekong River Commission Secretariat.

In his speech at the meeting, E Jingping, Minister of Water Resources of China, pointed out that cooperation between Lancang-Mekong Water Resources should fully respect the rights and interests of countries in the rational development and utilization of water resources, and fully take into account each other's major concerns. (Source: LMC China Secretariat)

Water info-sharing platform launched for Mekong nations



China Daily, 2020-12-01: China launched an online information-sharing platform on water resources in Beijing on December 1st 2020 as part of its efforts to help Mekong River countries address the challenges of climate change.

The launching of the website comes as the Lancang-Mekong River Basin faces escalating problems from flooding and drought. Both are becoming more frequent and intense because of climate change, E Jingping, Minister of Water Resources, said in an address at the opening ceremony.

The Mekong River, known as the Lancang River in China, is a vital waterway for cross-border shipping for China, Laos, Myanmar, Thailand, Cambodia and Vietnam.

"Drinking the water from the same river, the Lancang-Mekong countries are as close as one family living in a community with a shared future," he said. "As the most upstream country, China has always given full consideration to the concerns of the downstream countries, and has made important contributions through practical

actions to flood control, disaster mitigation and the water security of downstream countries."

On November 1st 2020, China extended its sharing of hydrological data for the river with other Mekong countries from the flood season alone to the whole year. This important step demonstrates China's goodwill and sincerity as a responsible upstream neighbour, he said.

The online platform is expected to make the information sharing more comprehensive and quicker, to the benefit of the peoples of all countries in the river basin, he said.

"By sharing its own relevant information, China hopes to provide a model and reference for the six member countries to jointly build the information-sharing platform. Meanwhile, the beneficial results of Lancang-Mekong water resources cooperation will also be systematically showcased as evidence that we, the six member countries, are capable of doing a good job in water resources cooperation."

Myo Thant Pe, Myanmar's ambassador to China, said that since the inception of the Lancang-Mekong Cooperation Framework in 2016, water resources has been a prime area of cooperation among the Lancang-Mekong countries, citing the establishment of a Lancang-Mekong Water Resources Cooperation Center in Beijing in March 2017 as an example.

"As the cooperation mechanisms on water resources have been brought onto the fast track, we need to establish an information-sharing platform, which will help us better tackle climate change and natural disasters," he said. "I believe that the informative website will play a role to support not only the six Mekong-Lancang countries, but also the related agencies and the world to learn how our six countries are working in sharing the hydrological information on the Mekong-Lancang River through this new platform."

Data helps relieve droughts

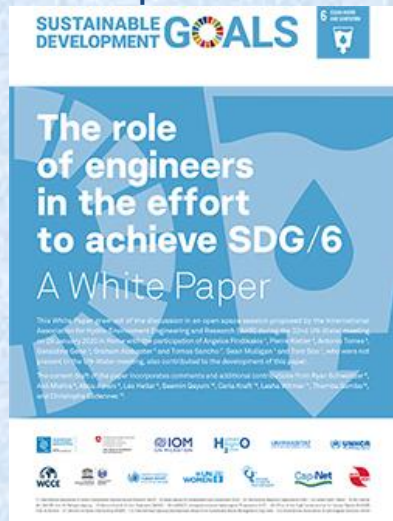
Tian Fuqiang, a professor at Tsinghua University's Department of Hydrological Engineering, said that the extension of China's hydrological information sharing will be a great help to the efforts of the Mekong countries' in dealing with the increasingly frequent and severe droughts caused by climate change.

"Two of the worst droughts in the past century occurred in the basin within the past five years, causing heavy damage to economies and the ecosystem along the river. The recent droughts have made it especially urgent for Mekong countries to get hydrological data about the Lancang River in the dry season," he said.

(Source: <http://www.chinadaily.com.cn/>)

Website of the Lancang-Mekong Water Resources Cooperation Information Sharing Platform: <http://www.lmcwater.org.cn/>

The role of engineers in the effort to achieve SDG 6. A White Paper



The purpose of this white paper is to provide an overview of the contribution of engineering to the effort to achieve the water-related Sustainable Development Goals (SDGs) of Agenda 2030 and discuss what more they should be doing, including expanding their horizons beyond the confines of their traditional engineering education and the importance of embracing a human rights-based approach. In addition, it explores how the modern paradigm of engineering, which inherently integrates nature-based approaches, contributes and enables national stakeholders to achieve the SDGs through gender-responsive, human rights-based approaches.

The white paper grew out of the discussion in an open space session proposed by IAHR during the 32nd UN-Water meeting on 29 January 2020 in Rome and is the result of a collaborative effort by representatives of IAHR, the Swiss Agency for Development and Cooperation (SDC), the International Organization for Migration (IOM), Human Right 2 Water, UN-Habitat, the UN Refugee Agency (UNHCR), the World Council of Civil Engineers (WCCE), UNESCO's Intergovernmental Hydrological Programme (IHP), the Office of the High Commissioner for Human Rights (OHCHR), UN Women, the Women for Water Partnership (WfWP), the International Capacity Development Network for Sustainable Water Management (Cap-Net), and the International Association of Hydrological Sciences (IAHS). The white paper can be downloaded at:

<https://static.iahr.org/upload/file/20201201/1606819114867529.pdf> , or

<http://isi.irtces.org/isi/uploadfile/2020/12/02/20201202155315369.pdf>

(Source: IAHR)

Experimenting with Underwater Sediment Slides

Sediment-laden currents caused by breaching flow slides are hazardous to flood defenses and seabed infrastructure. New research shows that these phenomena must be accounted for in erosion simulations.

Underwater flow slides, which occur when submerged sediments destabilize and accelerate down a slope, can damage or undermine crucial seafloor and hydraulic structures. Flow slides caused by breaching are especially concerning to engineers because they trigger destructive, sediment-laden turbidity currents capable of destroying telecommunications cables as well as pipelines, wellheads, and other offshore drilling infrastructure.

Because of their unpredictability and broad areal extent, turbidity currents generated by breaching have rarely been studied, even in the laboratory. Researchers now report results from a series of unique, large-scale experiments on breaching flow slides that may have implications for protecting seafloor structures.

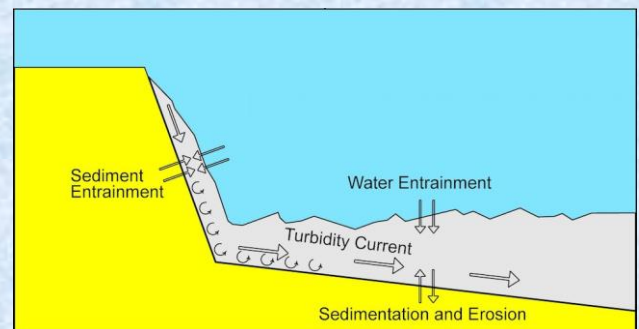


Diagram of processes that occur during breaching-generated flow slides

Alhaddad et al. developed their experimental setup in a 2-meter-tall tank in which they created oversteepened, and thus unstable, slopes of sand at angles of between 50° and 80°. After removing a temporary confining wall to trigger a shower of sand that entrains surrounding water, the researchers used state-of-the-art instrumentation, including video cameras, ultrasonic velocity profilers, and conductivity meters, to document each resulting turbidity current.

The data they collected indicated that breaching-generated turbidity currents are self-accelerating, with their entrainment of sediment and acceleration connected in a positive feedback loop. The results also showed that the lower portion of each breach face erodes faster than the

upper part, leading to an oversteepening of the slope. This oversteepening in turn creates an overhang that eventually fails, generating a surface slide that temporarily increases the rate of erosion, as well as the suspended-sediment concentration. Ultimately, these changes make turbidity currents denser and faster, although the degree to which these effects influence real-world turbidity currents remains uncertain.

This is the most comprehensive experimental study to date on breaching-generated turbidity currents. The study's findings apply to submerged portions of riverbanks as well as to steep areas of the seafloor, the authors noted, indicating that these phenomena must be incorporated into future erosion models to predict accurately how they could affect submerged infrastructure. (Journal of Geophysical Research: Earth Surface, <https://doi.org/10.1029/2020JF005582>, 2020)

—Terri Cook, Science Writer

Citation: Cook, T. (2020), Experimenting with underwater sediment slides, *Eos*, 101, <https://doi.org/10.1029/2020EO150194>. Published on 08 October 2020. (Source: <https://eos.org/>)

Successful soil and water conservation measures to restore the coal mined areas



China Daily, 2020-11-25: Coal extraction is being undertaken in tandem with measures to restore the mined areas and greatly improve the local environment and ecosystems.

Hou Liqiang reports from Yulin, Shaanxi.

Dozens of heavy-duty trucks were at work, busily transporting soil and rocks from an enormous pit. Just a few hundred meters away, where the debris had once lain, the land had not only been leveled, but crops had been planted, including oilseed rape and wheat.

Without prior knowledge, visitors would hardly know they were standing in a coal mine. No heaps of coal are visible, and the familiar black color can only be glimpsed occasionally at the pit's bottom because a large swath of the land is covered by crops.

Welcome to the Xiwan open pit coal mine, 60 kilometers from the Yellow River as it flows through Shaanxi province.

As China ramps up measures to harness the world's most heavily sediment-laden waterway, the mine, in Shenmu County, Yulin City, is just one example of efforts being made to improve soil and water conservation in the river basin.

A 250-hectare section that has been leveled and planted with crops accommodates surface soil removed to aid construction of the coal mine, which started in 2015.

"Covered by sand and dotted with a few patches of grass, the area was so barren it could hardly support any crops," said Lei Zhiyong, Chief Engineer of Shaanxi Shenyan Coal, the mine's operator.

Yulin is located in the area bordering the Mu Us Desert—one of China's four major deserts—and the Loess Plateau, which is blanketed by deep, fine, wind-blown soil. The Yellow River gets its name because of the amber water that appears as it picks up the sediment during its passage across the Loess Plateau.

In the river's lower reaches, sedimentary deposits have caused the riverbed to rise above the surrounding plain, making the section "a river above the ground".

Soil remediation measures — designed to cleanse and revitalize the land—were rolled out soon after construction of the mine started.

While leveling the area, Shaanxi Shenyan Coal invited experts from Northwest A&F University in Xianyang, Shaanxi, and the China University of Geosciences in Wuhan, capital of Hubei province, to analyze the soil's composition, Lei said.

Based on the analysis, crops were chosen for experimental cultivation, he added, pointing to a plot of oilseed rape. The plants are thinly scattered and mostly short, though some have blossomed, and Lei said efforts will be made to improve the soil and grow trees and crops.

Though the mine only went into production in July last year, remediation efforts have also been made across another 50-hectare site. So far, total investment in water and soil conservation at the mine has reached 170 million yuan (\$26 million), he said.

Lei noted that soil and rocks dug out of the pit are used to fill mined areas, thus ensuring that the pit's size remains relatively unchanged.

Similar planting projects will be carried out in the newly filled band as operations continue in the 50-square-kilometer mine.

To promote sustainable use, the company has also changed the way it obtains land use rights.

Instead of buying the rights from farmers—a common practice nationwide—the company rents the land, paying 22,500 yuan per hectare annually.

"When all of the land has been leveled and the soil improved, we will return it to the farmers," Lei said.

"Through consistent efforts, we expect to transform the rough, sandy area into quality farmland that will support large-scale agricultural operations and guarantee handsome incomes for the farmers," he said.

He noted that a forest belt will be planted to anchor the sand and prevent the wind from eroding the soil, and added that all the wastewater generated in the mine is collected for concentrated processing before being reused.

Worst hit area

The water and soil conservation work at the mine is a microcosm of the efforts made by the industry in the resource-rich area that straddles the provinces of Shanxi, Shaanxi and the Inner Mongolia autonomous region, which is a major contributor to the river's high concentration of sediment.

Resource exploitation means the area is the place worst hit by water and soil loss in the river basin, according to the local soil and water conservation supervision bureau.

Established in 1992 to tackle the problem, the bureau is the country's only soil and water conservation governmental body overseeing an area that falls under the jurisdiction of different provincial-level governments.

"About 70 percent of the major zones that contribute coarse sediment to the river in the basin are located in the area," according to the bureau, an affiliate of the Yellow River Conservancy Commission.

Analysis of monitoring data shows that 120 million metric tons of soil and solid waste were discarded by local coal mines from 1986 to 1994, which raised the sediment density in rivers by almost 27 percent.

With four major coalfields, the area boasts proven reserves of 280 billion tons, the bureau said. Meanwhile, local authorities have said there are currently more than 200 coal mines in Yulin alone.

All new major construction projects in the area have to roll out water and soil conservation measures, said Yu Quangang, the bureau's head. He added that in recent years all conservation

plans for new projects have been inspected and approved by the body.

Yu said satellite remote sensing can help monitor any work, operations or activity that result in disturbance of the earth in an area as small as 0.1 hectare—about the size of two basketball courts.

This has saved bureau officials from visiting mines frequently to supervise work, he said.

In addition to traditional approaches to soil conservation, such as tree planting, authorities have also worked to transform traditional mining operations to prevent water and soil loss.

Experiments

At the Xiaobaodang underground coal mine, also in Shenmu, experiments have been carried out since August last year to identify an operating norm that would prevent leaks of shallow groundwater.

The efforts have borne fruit. Based on close monitoring of the leaks and underground fissures that can occur under a range of extraction methods, experts have formulated a preliminary operating norm. It provides specific suggestions about approaches under different conditions, including various thicknesses of impermeable layers of earth and rock that prevent water from penetrating the mining seams.

Xie Yongli, chief engineer of Xiaobaodang Coal, said the company drilled 23 observation wells to assist the monitoring work prompted by experiments.

As far as he is aware, prior to the experiments, there was no similar monitoring of the disturbance mining causes to underground water sources in China.

He said the company plans to apply the preliminary norm to new seams while carrying out more experiments and monitoring to further improve the system.

The company has also taken other measures to prevent soil erosion in the 220-sq-km mine.

For example, it has planted over 11,100 trees and invested 112.7 million yuan in water and soil conservation, a huge increase on the 32.2 million yuan cited in its initial plan.

Benefits to society

As the Xiaobaodang experiments continue, a series of trials have lasted for decades at the Xindiangu field research station in Yulin's Suide county.

Established in 1952, the station is dedicated to exploring potential solutions for water and soil conservation in the Loess Plateau.

While conducting experiments on construction work, such as silt arrestors—small dam-like structures that can help separate solids and suspended sediment and stop them from being carried by the runoff—it also operates experimental plantations to test the abilities of different plants to aid water and soil conservation across an area of 1.44 sq km.

As a result of the efforts, the vegetation coverage has risen from 3.5 percent in 1953 to about 75 percent today, while soil loss has been reduced by 80 percent, said Cui Le, the station's deputy head.

The lessons learned from the research have been promoted in other areas. For example, about 59,000 silt arrestors have been built across the Loess Plateau.

Thanks to the efforts of different regions and sectors, half of the area affected by water and soil loss in the plateau has been preliminarily treated. Meanwhile, various measures have resulted in the average annual volume of sediment entering the river from the plateau being reduced by 435 million tons in recent years, according to the Ministry of Water Resources.

As work continues at Xindianguo, researchers plan to introduce more water and soil conservation measures that will generate economic benefits.

"We have managed to transform barren slopes into lush mountains with lucid water (in the valleys). In the next step, we are going to make the lush mountains and lucid water into valuable assets," Cui said.

The concept of lucid waters and lush mountains as invaluable assets was introduced by President Xi Jinping during a 2005 visit to Anji, Zhejiang province, when he was provincial Party secretary.

"We plan to introduce more agricultural measures in the research field to seek potent solutions that will control water and soil loss while generating financial benefits for local people," Cui said. (Source: <http://www.chinadaily.com.cn/>)

Online trainings on “Flood Early Warning, Hazard Mapping and Contingency Planning in the Niger and Volta River basins, West Africa” developed by UNESCO, ICHARM and AGRHYMET

Within the framework of the WADiRE Project (Water Disaster Platform to enhance climate resilience in Africa), 258 participants, from 11 countries in West Africa, have followed the e-Learning Training Course on “Flood Early

Warning, Hazard Mapping and Contingency Planning in the Niger and Volta River basins, West Africa” during the three training sessions organized in September, November and December 2020.

The project aims to enhance flood disaster resilience of the Niger and Volta Basin countries: Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Ghana, Guinea, Mali, Niger, Nigeria and Togo.

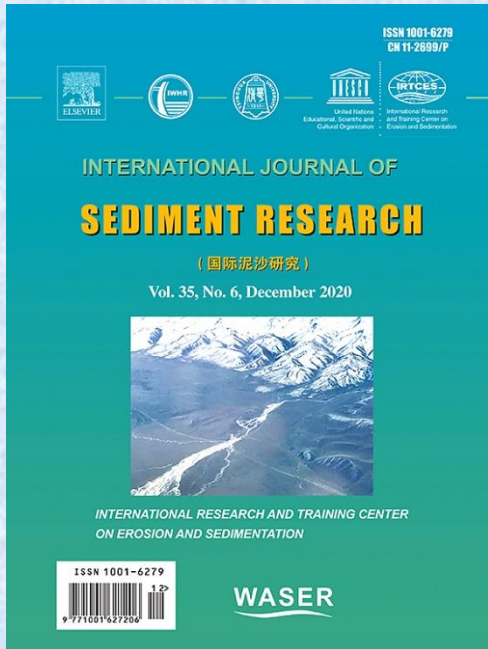
UNESCO, in cooperation with the International Centre for Water Hazard and Risk Management (ICHARM) in Japan, a Category II Centre under the auspice of UNESCO, and AGRHYMET Regional Center in Niamey, Niger, are collaborating to provide tools to address flood related challenges and provide a knowledge base strengthen resilience during flood disasters.

Despite the global pandemic, the project resulted in the development of a Flood Early Warning System (FEWS) which is being disseminated through an e-learning training programme. The training workshops are expected to reach up to 300 experts from the subregion by January 2021. Two training of trainers workshops are also foreseen in February 2021 in order to train up to 40 facilitators on flood management. The project also establishes a methodology for dealing with water-related disasters during the pandemic. This methodology will be outlined in a policy document which will be disseminated to international community at the end of the project.

PUBLICATIONS

Papers Published in the International Journal of Sediment Research Volume 35, No. 6, 2020

Pages 563-678 (December 2020)



Erosion rate of sand and mud mixtures
Chamil Perera, Jarrell Smith, Weiming Wu, David Perkey, Anthony Priestas
Pages 563-575

Large-eddy simulation of flash flood propagation and sediment transport in a dry-bed desert stream
Ali Khosronejad, Kevin Flora, Zexia Zhang, Seokkoo Kang
Pages 576-586

Numerical modeling of the propagation and morphological changes of turbidity currents using a cost-saving strategy of solution updating
Peng Hu, Yue Li
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Influence of diversion angle on water and sediment flow into diversion channel
Nashwan Kamaldeen Alomari, Badronnisa Yusuf, Thamer Ahmad Mohammad, Abdul Halim Ghazali
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Mass flows and river response in rapid uplifting regions – A case of lower Yarlung Tsangpo basin, southeast Tibet, China
Guo-An Yu, Jianyin Lu, Liqun Lyu, Lujie Han, Zhaoyin Wang
Pages 609-620

Post-analysis simulation of the collapse of an open sabo dam of steel pipes subjected to boulder laden debris flow
Toshiyuki Horiguchi, Vincent Richefeu
Pages 621-635

Circulation cells topology and their effect on migration pattern of different multi-bend meandering rivers
Fariba Sadat Esfahani, Alireza Keshavarzi
Pages 636-650

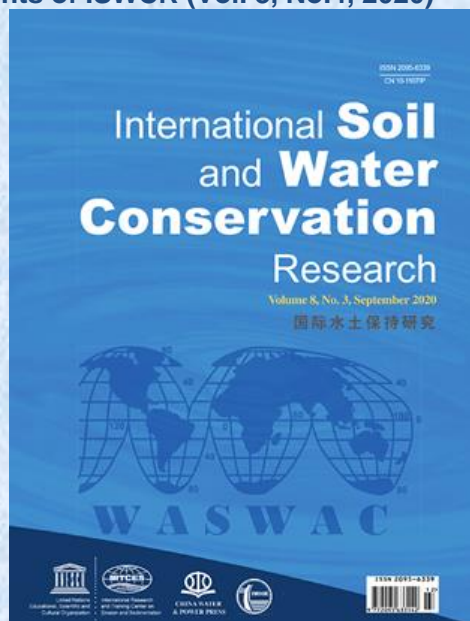
Comprehensive evaluation method for sediment allocation effects in the Yellow River
Xujian Chen, Chunhong Hu, Yuqi An, Zhihao Zhang
Pages 651-658

Quasi-stationary flow structure in turbidity currents
Shun Nomura, Giovanni De Cesare, Mikito Furuichi, Yasushi Takeda, Hide Sakaguchi
Pages 659-665
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Influence of surface roughness of dune bedforms on flow and turbulence characteristics
Veysel Sadan Ozgur Kirca, Seyed Mahdi Saghebian, Kiyomars Roushangar, Oral Yagci
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Full papers are available at ScienceDirect:
<https://www.sciencedirect.com/journal/international-journal-of-sediment-research> with free access to the paper abstracts.

Contents of ISWCR (Vol. 8, No.4, 2020)



Soil erosion assessment tools and data; creation, consolidation, and harmonization – A special issue from the Global Symposium on Soil Erosion 2019 (Rome, FAO HQ).

Edited by Richard Cruse, Costanza Calzolari, Lucia Anjos, Nigussie Haregeweyn, Clara Lefèvre

Volume 8, Issue 4,
Pages 333-452 (December 2020)

Guest editorial – soil erosion assessment, tools and data: A special issue from the Global Symposium on soil Erosion 2019

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Evaluation of soil erosion risk and identification of soil cover and management factor (C) for RUSLE in European vineyards with different soil management
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Assessing spatial variability and erosion susceptibility of soils in hilly agricultural areas in Southern Italy
Carmen Maria Roskopf, Erika Di Iorio, Luana Circelli, Claudio Colombo, Pietro P.C. Aucelli
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Impacts of horizontal resolution and downscaling on the USLE LS factor for different terrains
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Effect of time resolution of rainfall measurements on the erosivity factor in the USLE in China
Tianyu Yue, Yun Xie, Shuiqing Yin, Bofu Yu, ... Wenting Wang
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The use of remote sensing to detect the consequences of erosion in gypsiferous soils
Maria Jose Marques, Ana Alvarez, Pilar Carral, Blanca Sastre, Ramón Bienes
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Assessment of deforestation impact on soil erosion in loess formation using ¹³⁷Cs method (case study: Golestan Province, Iran)
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Integrated nuclear techniques for sedimentation assessment in Latin American region
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Soil erosion: An important indicator for the assessment of land degradation neutrality in Russia
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COMING EVENTS

ISI – Training Workshop on ‘River Basin Sediment Monitoring and Management’ (Koblenz, Germany, postponed from 2020)

Date: 2021 (To be decided)

Venue: Federal Institute of Hydrology, Koblenz, Germany

Organizer: International Centre for Water Resources and Global Change under the auspices of UNESCO, German Federal Institute of Hydrology

Co-sponsors: International Sediment Initiative (ISI) of UNESCO IHP, International Research and Training Center on Erosion and Sediment Research (IRTCES).

Summary: The workshop on River Basin Sediment Monitoring and Management focuses on training and capacity building with a particular attention to:

- i) monitoring sediment dynamics in relation to (planned) river management or reservoir measures,
- ii) evaluation of monitoring results in terms of impact analysis and management and
- iii) communication and outreach of expert knowledge on sediment dynamics to support sustainable sediment management solutions, which highlight the need for integrated river basin management plans.

Major questions of the WS will be: What are main technical issues in sediment monitoring programs and how to cope with them? How simple/complex do we need to measure (e.g. simple flux measure to complex sediment budget) to provide empirical evidences for the specific management solution?

The workshop aims to provide knowledge on sediment measurement and monitoring, how to transfer measurement and monitoring results to management solution, how to improve current sediment management strategies to find sustainable solution and how to evolve from local river management to integrated landscape management. Although we will focus on inland waters, we also want to highlight possible impacts on downstream areas, including estuaries and coastal zones.

After a general introduction to the topic (1st day), the participants will conduct hands-on workshops on monitoring techniques and data analysis (2nd and 3rd day). During a field trip at the River Rhine, the participants will be introduced to various sensors and techniques for measuring suspended sediment characteristics and loads. On subsequent days the field data will be analyzed by the workshop participants. Their results will be presented in a best-practice guide on suspended sediment monitoring (4th day). Additionally, we offer an excursus about data management and data sharing principles in collaboration with the ISI database as well as with the GEMS/Water Data Centre for Water Quality (gemstat.org) (5th day).

Organization & Contact:

Thomas Hoffmann (Thomas.Hoffmann@bafg.de) and Stephan Dietrich (Dietrich@bafg.de)

(The ISI Training Workshop might be postponed to other date due to the COVID-19, the updated information will be shown in the ISI website.)

Online training on “Flood Early Warning, Hazard Mapping and Contingency Planning in the Niger and Volta River basins, West Africa” from January 11th to 15th 2021 developed by UNESCO, ICHARM and AGRHYMET

Date: From January 11th to 15th 2021

Venue: Online training (via Zoom)

Organizer: UNESCO, ICHARM and AGRHYMET.

Summary: Within the framework of the WADiRE Project (see News item), UNESCO, ICHARM and AGRHYMET developed an e-Learning Training Course on “Flood Early Warning, Hazard Mapping and Contingency Planning in the Niger and Volta River basins, West Africa”. The last session of this e-Learning training will be held online January 11th to 15th 2021 and expected to reach up to 300 experts from the subregion.

The project contribute to enhance the flood disaster resilience of the Niger Basin and Volta Basin countries: Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Ghana, Guinea, Mali, Niger, Nigeria and Togo

Contacts: Anil Mishra (a.mishra@unesco.org)

3rd International Youth Forum on Soil and Water Conservation (Iran, May 16-21, 2021)

Date: May 16-21, 2021

Venue: Tarbiat Modares University, Noor, Iran

Organizers: World Association of Soil and Water Conservation (WASWAC); Faculty of Natural Resources and Marine Sciences, Tarbiat Modares University, Iran

Sponsors: World Association of Soil and Water Conservation (WASWAC)

Co-sponsors: Watershed Management Society of Iran; Gorgan University of Agricultural Sciences & Natural Resources; Chinese Society of Soil and Water Conservation; Institute of Soil and Water Conservation, CAS & MWR; Datum Technology

Secretariat: Faculty of Natural Resources and Marine Sciences, Tarbiat Modares University

Summary: The International Youth Forum on Soil and Water Conservation (IYFSWC) is a triennial event initiated by the World Association of Soil and Water Conservation (WASWAC). Two such conferences have now been held in Nanchang, China and Moscow, Russia in 2015 and 2018. With support from related international associations, and with the participation of experts and scholars worldwide, the IYFSWC has attracted wide attention and has become an important and popular event. The IYFSWC provides an opportunity for young scientists and early-career researchers to exchange ideas, research results and advanced techniques in soil and water conservation, and develop collaboration and friendships. The 3rd International Youth Forum on Soil and Water Conservation will be held in Tarbiat Modares University, Noor, Iran during May 16-21, 2021.

Overall Theme:

Soil and Water Conservation (SWC) under Changing Environments

Topics of the Conference (tentative):

1. Smart SWC
2. Adaptive SWC
3. Youth Roles in SWC
4. Climate Change and SWC
5. SWC in Developing Countries
6. Performance Evaluation of SWC Projects
7. Impacts and Possible Solutions of COVID-19 Pandemic on SWC Practices

URL: www.IYFSWC.modares.ac.ir

Contacts: IYFSWC@modares.ac.ir

World's Large Rivers Conference 2021 (Russia, August 2-6, 2021)

Date: August 2-6, 2021

Venue: Moscow, Russia

Summary: This WASER- / ISI-co-sponsored conference aims to provide a global forum for a wide-ranging discussion of key issues related to research on large rivers and to their effective and sustainable management, involving both scientists and decision makers. The conference will be organised by MSU - Lomonosov Moscow State University, Russia, and BOKU - University of Natural Resources and Life Sciences, Vienna, Austria. We kindly ask all interested authors to submit their work within the topics of

- Hydrology, Hydraulics & Hydroclimatic Impacts
- Sediment Transport & River Morphology
- River Pollution, Ecology & Restoration
- Integrated River Management

Special focus will be given this time to **Climate Change** and its impact - not only in general, but also specifically related to **Russian and Arctic Rivers**.

Supported by: WASER World Association for Sedimentation and Erosion Research; UNESCO United Nations Educational, Scientific and Cultural Organization; IAHR International Association of Hydro-Environment Engineering and Research; IAHS International Association of Hydrological Sciences; IAG International Association of Geomorphologists. All WASER- and ISI-members can benefit from a reduction of conference fees of 10%.
URL: <http://worldslargerivers.boku.ac.at/wlr/>

The 7th International Conference on Estuaries and Coasts (Shanghai, China, October 18-21, 2021)

Date: October 18-21, 2021 (Tentative)

Venue: East China Normal University, Shanghai, China

Organizers:

East China Normal University

Sponsors: International Research and Training Center on Erosion and Sediment Research (IRTCES); World Association for Erosion and Sediment Research (WASER)

Co-sponsors: International Association for Hydro-Environment Engineering and Research (IAHR).....(to be invited)

Secretariat: East China Normal University

Summary: The International Conference on Estuaries and Coasts (ICEC) is a triennial event initiated by the International Research and Training Center on Erosion and Sedimentation (IRTCES). Six such conferences have now been held in Hangzhou and Guangzhou, China; Sendai, Japan; Hanoi, Vietnam; Muscat, Oman, and Caen, France in 2003, 2006, 2009, 2012, 2015 and 2018. With support from related international associations, and with the participation of experts and scholars worldwide, the ICEC has attracted wide attention and has become an important and popular event. The ICEC provides an opportunity for scientists, engineers, researchers and decision-makers to exchange ideas, research results and advanced techniques, and develop collaboration and friendships. The 7th International Conference on Estuaries and Coasts (ICEC-2021) will be held in the East China Normal University, Shanghai, China during October 18-21, 2021.

Overall Theme:

Anthropocene Coasts

Topics of the Conference (tentative):

1. Hydrodynamics in estuaries and coasts: tides, waves, circulations, and their interactions;

2. Sediment transport dynamics: sand, mud and their mixture;
3. Multi-scale morphodynamics: tidal flats, estuaries, deltas, beaches, dunes, eco-morphodynamics...;
4. Coastal management: flood defense, ecosystem conservation, human-nature interactions...

URL: <https://icec.ecnu.einsh.com/>

Contacts:

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15th International Symposium on River Sedimentation (Florence, Italy, September, 2022)

Date: September, 2022 (Three consecutive days at the end of August / beginning of September, 2022)

Venue: Florence, Italy

Organizer: University of Florence and University of Padua

Sponsors: International Research and Training Center on Erosion and Sediment Research (IRTCES); World Association for Erosion and Sediment Research (WASER)

Co-sponsors: International Association for Hydro-Environment Engineering and Research (IAHR).....(to be invited)

Secretariat: University of Florence, Italy

Permanent Secretariat: IRTCES

Summary: The triennial International Symposium on River Sedimentation (ISRS) was initiated in 1980. Since its foundation, IRTCES has served as the permanent secretariat of ISRS. WASER was inaugurated at the 9th ISRS in 2004, and the ISRS has since become the official Symposium of WASER. The objective of the ISRS is to provide a forum for scientists, engineers, researchers and decision makers to exchange ideas, research results and technical advances, , and to share experience and information relating to the study of sediment and its management.

Symposium Theme and Topics:

The theme of the symposium is

Sustainable Sediment Management in a changing Environment (tentative)

The symposium topics include (tentative):

1. Sediment transport
2. Reservoir sedimentation
3. River morphodynamics
4. Coastal morphodynamics
5. Ecomorphodynamics
6. Sediment related disaster
7. Plastic in river and coastal systems
8. Interaction between sediment dynamics and hydraulic structures
9. Integrated Sediment Management at the River Basin Scale
10. Social, economic & political problems related to sediment and water management

URL: (to be provided)

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Climate-Resilient Water Management Approaches: Adaptation in an Age of Uncertainty (Monthly webinar series)

Date: January 2021 (please follow the website for updates on the exact date and time)

Venue: Online via Zoom

Organizer: UNESCO's Division of Water Sciences, the Alliance for Global Water Adaptation (AGWA) and the International Center for Integrated Water Resources Management (ICIWaRM)

Summary: Over the past ten-plus years, various organizations have developed a set of complementary resilient water management tools and approaches that work to address climate risks and other uncertainties in a manner that can be integrated within existing planning, design, and operational decision processes. These "bottom-up approaches" differ from the dominant paradigm guiding water management for the past half-century — namely the assumption that we can use past hydrological and climatic data to confidently predict (and plan for) the future. The webinars, intended for technical water management professionals as well as individuals working in climate / water policy and planning, introduce the technical and practical components of bottom-up approaches, spanning a range of topics and underscored by examples of real-world applications.

URL: <https://en.unesco.org/news/adaptation-age-uncertainty-tools-climate-resilient-water-management-approaches>

Contact: a.mishra@unesco.org

Call for Speakers in the monthly webinar series by UNESCO, AGWA and ICIWaRM

A call for speakers was launched by UNESCO's Division of Water Sciences, AGWA and ICIWaRM, the co-organizers of the aforementioned webinar series on climate-resilient water management approaches. The purpose is to solicit expressions of interest from individuals willing to participate as speakers in the series. Based on the submitted information, the organizing team will review and select case studies meeting the webinar thematic criteria. Selected candidates will then be invited to carry out a presentation on their experience with implementing these so-called bottom-up approaches during one of the upcoming webinars in 2021.

Interested candidates are requested to submit to p.breskvar@unesco.org by 18 January 2021:

1. A CV showcasing their professional experience;
2. An application form (hyperlink).

URL: <https://en.unesco.org/news/adaptation-age-uncertainty-tools-climate-resilient-water-management-approaches>

<https://en.unesco.org/news/call-speakers-climate-resilient-water-management-approaches>

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Intergovernmental Hydrological
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UNESCO

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ISI URL: <http://www.irtces.org/isi/>

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Benggang erosion, Meixian County, Guangzhou, China, Dec. 8, 2020 (by Cheng LIU)