

Newsletter

January – March, 2024

**International Centre on Space Technologies for
Natural and Cultural Heritage under the Auspices of UNESCO**



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(January–March, 2025)

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Special Focus

HIST Convenes the 10th Session of its Governing Board

HIST Governing Board convened its 10th session on January 18, 2024 in Beijing, China. Prof. Guo Huadong, Director of HIST and Academician of Chinese Academy of Sciences(CAS), chaired the meeting. Prof. Liu Weidong, Director-General, Bureau of International Cooperation of CAS, representing Chairmanship of HIST Governing Board, made welcome remarks, highlighting that CAS will continue to support HIST's future development including HIST's renewal evaluation.

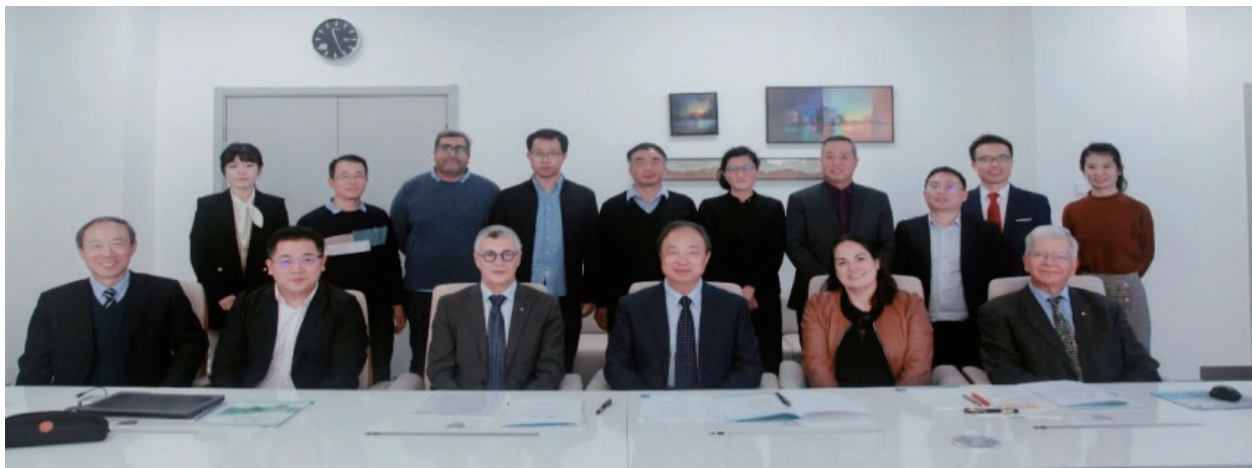
HIST's Triennial Work Report for 2021-2023, Biennial Work Plan for 2022-2023, Biennial Work Report for 2024-2025 were discussed and approved by HIST Governing Board. In the past three years, HIST has conducted international research projects in eight Member States such as Greece, Uzbekistan, Congo and organized three international workshops to train more than 400 site managers and technicians from 18 countries. Based on previous researches, it has written and published three books and over 70 academic papers in internationally recognized journals. Meanwhile, it has also established relationships with more than 10 international organizations, in particular, forged strategic partnership with three advisory bodies, as well as over 50 countries. Moreover, it has enhanced academic exchanges by organizing more than 20 seminars and conferences, including 4th Huangshan Dialogue, to attract 500 thousand participants from 20 international organizations and 50 countries. In the coming biennium, HIST will complete

its evaluation by UNESCO and the signing of the 3rd phase agreement, formulate a new Mid-term Strategic Plan for 2025-2030 to guide its third phase operation, continue to conduct international research projects in Uzbekistan and strengthen capacity building of site managers to contribute to sustainable development of UNESCO-designated sites.

Board members commended HIST's excellent achievements in the past three years, expressed its support to HIST's renewal evaluation and HIST's future development, and proposed that HIST's collaboration within UNESCO, other relevant international organizations, UNESCO Member States will be strengthened.

In his concluding remarks, Acad. Prof. Guo Huadong extended sincere thanks to the Board members and all staffs for their valuable contributions and excellent suggestions. He said that as international conservation community attaches greater importance to the use of space information technology for the monitoring, evaluation and conservation of UNESCO-designated sites, HIST will take coordinated actions with UNESCO and three advisory bodies to help UNESCO and its Member States to enhance conservation of heritage sites and promote their sustainable development.

HIST's deputy directors, staff members at HIST secretariat and representatives of research teams joined the meeting as observers.



Meeting group photo

HIST to Collaborate with UNESCO Regional Office for East Asia on Protecting UNESCO-Designated Sites in the Region

On February 26, 2024, a working group from the International Centre on Space Technologies for Natural and Cultural Heritage (HIST) under the auspices of UNESCO was invited to visit the UNESCO Regional Office for East Asia to discuss future cooperation with its Natural Sciences Sector.

Dr. Ai Sigiura, Head of the Natural Sciences Sector at the UNESCO Regional Office for East Asia, welcomed the HIST delegation, commended HIST for its past achievements, and expressed her anticipation for further deepening collaboration with HIST. Liu Shaobo, Deputy Secretary-General of HIST, expressed sincere gratitude for the office's long-standing strong support. He introduced the outcomes of HIST's second-phase development and proposed cooperation in areas such as project collaboration, capacity building, and conference organization to contribute to the protection of UNESCO-designated sites.

Both sides mainly discussed the development of a heritage

information platform (including an app), training for heritage site managers in Northeast Asia, participation in the International Symposium of UNESCO C2Cs in the field of Natural Sciences, the 2024 Climate Action and Disaster Reduction Hackathon, and the 5th Huangshan Dialogue on UNESCO-designated Sites and Sustainable Development. Both sides reached preliminary cooperation intentions regarding data sharing, event organization, and capacity building. In the future, the two parties will develop detailed cooperation plans and promote their implementation.

Also attending the meeting were Mu Jianxin, Senior Advisor of the UNESCO Regional Office for East Asia; Li Li, Senior Programme Advisor; Cai Mansi, Programme Assistant; and Huo Sijia, Director of the Innovation and Planning Department of the HIST Secretariat.



Meeting group photo

HIST Delegation Attends the First "We Are Site Managers" International Symposium

At the invitation of George Town World Heritage Incorporated, Wang Xinyuan (Professor and Deputy Director of HIST), Liu Shaobo (Deputy Secretary-General), and Luo Lei (Associate Professor and Head of the First Research Department) of the International Centre on Space Technologies for Natural and Cultural Heritage (HIST) under the auspices of UNESCO attended the First "We Are Site Managers" International Symposium held in Penang, Malaysia, from March 1 to 5.

The symposium aimed to clarify the roles, responsibilities, and contributions of heritage site managers within the UNESCO World Heritage system, promote the sharing of experiences, opportunities, and challenges among site managers, encourage international exchange and cooperation between heritage site managers and stakeholders at home and abroad, and advance the protection, management, and sustainable development of heritage sites. More than 150 participants attended the forum, including representatives from the UNESCO World Heritage Centre, the UNESCO Jakarta Office, Category 2

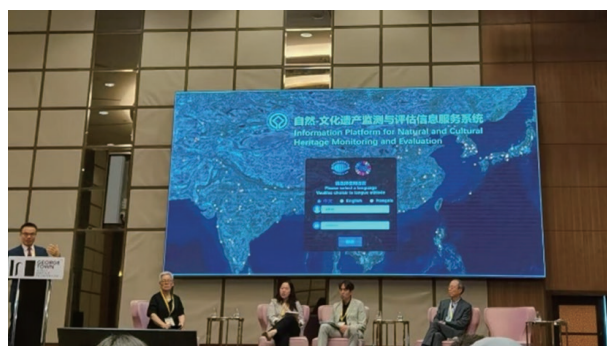
Centres and Chairs such as HIST, international organizations including the International Council on Monuments and Sites (ICOMOS), the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), and the Organization of World Heritage Cities, as well as representatives from 37 countries including China, Malaysia, Egypt, Germany, and Argentina.

At the symposium, the HIST delegation presented on the theme "Space Information Technology Safeguarding World Heritage," introducing the centre's major achievements in scientific research, capacity building, and international exchange in recent years, as well as future work plans. Participants highly praised the accomplishments of HIST.

During the symposium, the HIST delegation presented scientific research publications to Himalchuli Gurung, Head of the Asia-Pacific Unit, UNESCO World Heritage Centre; Fatma Twahir, Chair of the African World Heritage Site Managers Network; Abdulelah Al-Tokhais, Director of the Research



Presentation of HIST representatives at the symposium



HIST representatives presenting research publications to Himalchuli Gurung, Head of the Asia-Pacific Unit, UNESCO World Heritage Centre



HIST representatives presenting research publications to Abdulelah Al-Tokhais, Director of the Research and Development Centre at the Saudi Heritage Preservation Society

and Development Centre at the Saudi Heritage Preservation Society; among others. They also engaged in extensive exchanges with representatives from over 30 countries, reaching preliminary cooperation intentions with delegates from Malaysia, Thailand, Ghana, Uganda, and other nations.

Through this event, HIST gained a deeper understanding of

the latest developments in the field of World Heritage. The participation facilitated international exchange and cooperation between HIST and World Heritage site managers, enhanced HIST's international influence and voice, and contributed to the progress of HIST's second-phase evaluation and third-phase renewal process, as well as the formulation of the HIST Medium-Term Strategic Plan (2024–2030).

HIST News

Professor Lin Hui, Director of HIST's Nanchang Base, Listed in 2023 Global Scholar Academic Influence Ranking (Lifetime Academic Influence List)

Recently, the Chinese academic database "Global Scholars" released the "2023 Global Scholar Academic Influence Ranking (Lifetime Academic Influence List)." The ranking is based on a comprehensive evaluation of scholars' research output, Google Scholar Metrics journal scores, H-index, citation counts of publications, and the authors' positions in their published works, among other parameters. A high average score indicates a scholar's tendency to publish in high-

quality journals, while the comprehensive score places greater emphasis on the scholar's overall research output. A total of 8,029 Chinese scholars were included in the list. Globally, 914 scholars in the field of geography were listed, including 22 Chinese scholars in the discipline. Among them, Professor Lin Hui, Director of HIST Nanchang Base, was included in the ranking.

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学者名

中国

机构名

地理学

[排名方法与规则](#) [分析报告](#) [完整数据下载](#)

学者总数: 22 排序选择 更新日期: 2023年12月01日

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序号	学者	国家	机构信息	学科	论文总评分	论文篇均评分	H指数	论文数	全球总排名
16528	Mei-Po Kwan	中国	香港中文大学 (香港)	地理学	953533.250147	2771.890000	63	344	16528
22408	Kusky, Timothy	中国	中国地质大学 (武汉)	地理学	806591.467518	2954.547000	66	273	22408
23558	薛伟德	中国	清华大学	地理学	785253.993015	5099.051000	47	154	23558
29659	黎夏	中国	华东师范大学	地理学	687260.641193	3138.176000	69	219	29659
34352	李新	中国	中国科学院	地理学	627953.097371	1626.821000	61	386	34352
36790	黄昕	中国	武汉大学	地理学	602709.810989	2925.775000	55	206	36790
39464	唐春安	中国	大连理工大学	地理学	575755.791330	1142.372000	65	504	39464
39939	刘纪远	中国	中国科学院	地理学	571475.774410	2829.087000	63	202	39939
41112	李召良	中国	中国农业科学院	地理学	561208.394871	1512.691000	46	371	41112
43822	吴博龙	中国	南京大学	地理学	538635.873826	3026.044000	50	178	43822
56191	龙笛	中国	清华大学	地理学	459046.728314	4211.437000	53	109	56191
56225	张泽明	中国	中国地质科学院	地理学	458801.824266	2143.933000	61	214	56225
57126	杨世伦	中国	华东师范大学	地理学	454076.183482	5045.290000	43	90	57126
65638	George C.S.Lin	中国	香港大学	地理学	412866.097569	3467.950000	38	119	65638
69300	陈伟	中国	西安科技大学	地理学	397262.048474	3009.560000	68	132	69300
74571	李焯芬	中国	香港大学	地理学	376400.171898	3550.945000	38	106	74571
79072	王伦徽	中国	中国地质大学 (武汉)	地理学, 大气科学	360078.447830	1674.783000	45	215	79072
79336	朱同兴	中国	南京师范大学	地理学	359257.803329	1217.823000	55	295	79336
86944	刘瑜	中国	北京大学	地理学	334944.829688	1674.724000	44	200	86944
94122	Loo, Becky P. Y.	中国	香港大学	地理学	314529.413046	1691.018000	32	186	94122
96784	林琛	中国	江西师范大学	地理学	307819.483327	967.985000	50	318	96784
99925	黄润秋	中国	成都理工大学	地理学	299831.087607	908.579000	53	330	99925

China Releases Second Phase of JLS-5M Satellite Data for Global Scientific Community

On January 2, 2023, the National Earth Observation Data Center affiliated with the Aerospace Information Research Institute (AIR) under the Chinese Academy of Sciences (CAS), unveiled the second phase of the global 5-meter resolution wide-band multispectral satellite dataset, known as JLS-5M.

Following the official sharing of the world's first JLS-5M dataset in April 2023, this latest release represents a significant milestone in satellite remote sensing. Developed collaboratively by Changguang Satellite Technology Co., Ltd. and AIR, the dataset encompasses 20 spectral bands, achieving a spatial resolution of 5 meters for images in key spectral segments.

The creation of this dataset involved the utilization of Level-1 standard data collected by the Jilin-1 Spectral 01/02 satellites between 2021 and 2023, covering 72 countries along the "Belt and Road" initiative. The meticulous development process included the application of atmospheric correction

algorithms to eliminate adjacent pixel effects, on-orbit absolute radiometric calibration techniques such as site calibration and cross-calibration, as well as validation through index product assessments. The result is a dataset with over 90% coverage and robust support for quantitative remote sensing applications.

The dataset is poised to enhance precision in fields such as land use, resource management, and environmental monitoring. Furthermore, it contributes to elevating the global influence of domestically produced high-quality satellite data resources.

The shared dataset comprises over 18,200 scenes, with a total data volume exceeding 80 terabytes. Researchers and scientists worldwide can access and download the data free of charge through the National Earth Observation Data Center, promoting international collaboration and advancing scientific endeavors in Earth observation and remote sensing.



国产中分辨率宽波段多光谱卫星数据集 (JLS-5M) (第二期)

2023-11-24 18:05:18

JLS-5M数据集是在国家重点研发计划国际合作专项(2019YFE0127000)支持下研制的一带一路国家大区域卫星遥感数据集(第二期)。由长光卫星技术有限公司、中国科学院空天信息创新研究院等单位组成的项目团队研发。该数据集同时具有中高分辨率(最高5米)和丰富的多光谱波段(19个),也是国际首个支持定量应用的5米多光谱大区域数据集。

数据下载绿色通道

 数据集 吉林一号光谱量 (JL1GP02-5M) - 摩尔多瓦 (2021-2023) 访问量: 9 下载量: 0 查看数据 在线申请	 数据集 吉林一号光谱量 (JL1GP02-5M) - 缅甸 (2021-2023) 访问量: 9 下载量: 0 查看数据 在线申请	 数据集 吉林一号光谱量 (JL1GP01-5M) - 缅甸 (2021-2023) 访问量: 11 下载量: 0 查看数据 在线申请	 数据集 吉林一号光谱量 (JL1GP02-5M) - 厄立特里亚 (2021-2023) 访问量: 45 下载量: 0 查看数据 在线申请
			

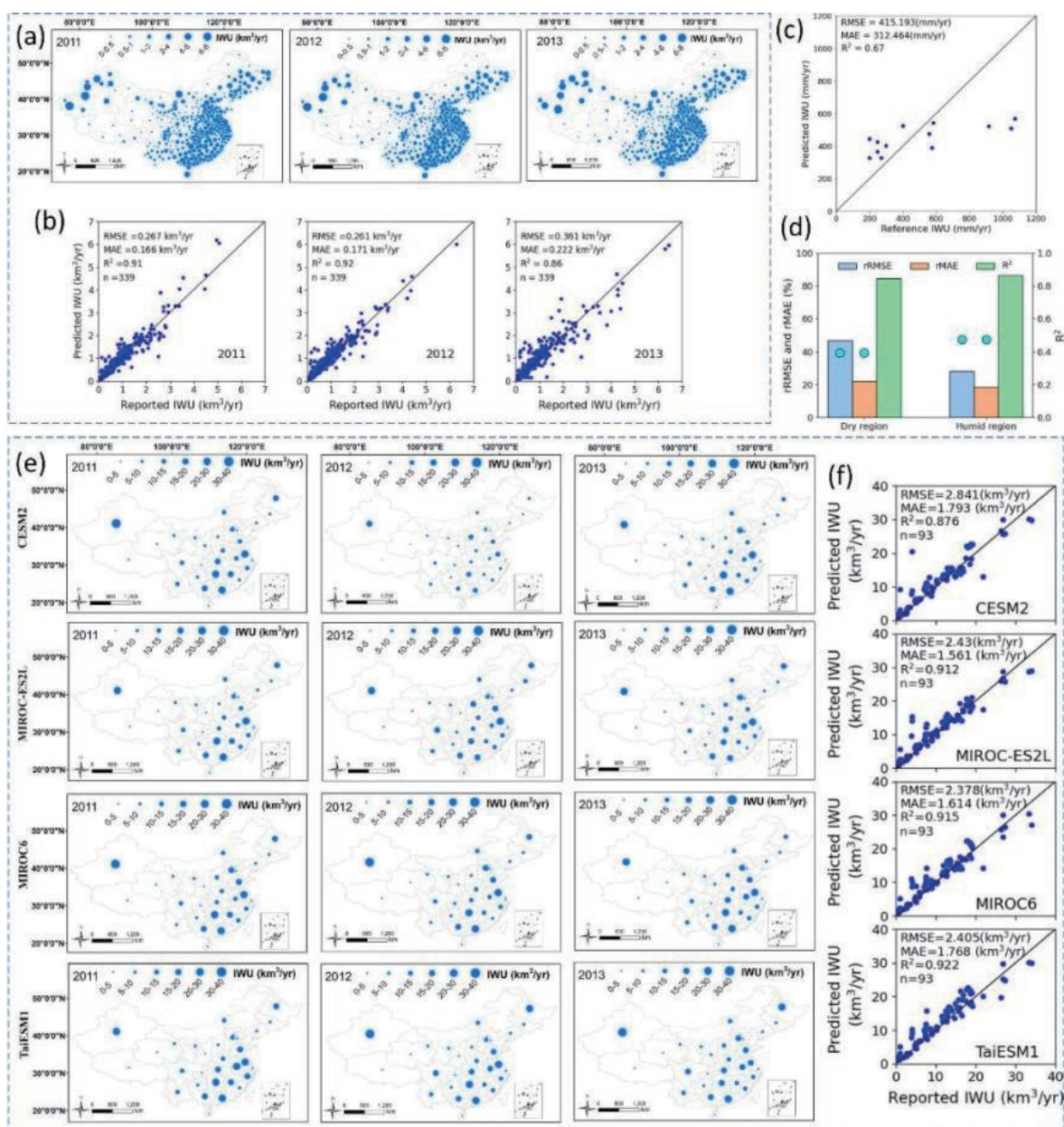
Researchers Uncover Future Variations of Irrigation Water Use in China

Researchers have developed a new method using machine learning and multiple data sets to estimate irrigation water use (IWU) across China, and also revealed how water use might change in the future based on different climate and economic scenarios.

Irrigated agriculture accounts for about 20 percent of global croplands and contributes more than 40 percent of food

production. China is home to the world's largest irrigated farmland, accounting for over half of the country's arable lands.

Therefore, water for irrigation is critical to the crop growth and yields. Accurately characterizing changes in IWU is conducive to formulating optimal water resource allocation policies, particularly in the context of climate change.



Validation and assessment of the irrigation water estimation framework at the national scale and under future climate change scenarios

However, due to limited data availability and model constraints, it is hard to use existing IWU estimation methods on a national scale or under future climate change scenarios.

The researchers from the Aerospace Information Research Institute under the Chinese Academy of Sciences developed a new machine-learning model to estimate nationwide IWU under a data-driven framework.

The new model integrated a range of high-precision hydrological satellite remote sensing products, meteorological drivers, economic statistics and numerical model simulations. It showed high precision in IWU projections with over 90 percent accuracy rate.

Taking a series of climate and socioeconomic scenarios into consideration, the researchers combined the established machine-learning framework with four advanced Earth system models to forecast the future trends and additional costs of IWU across China over the next 70 years.

Under different greenhouse gas emission scenarios, China's

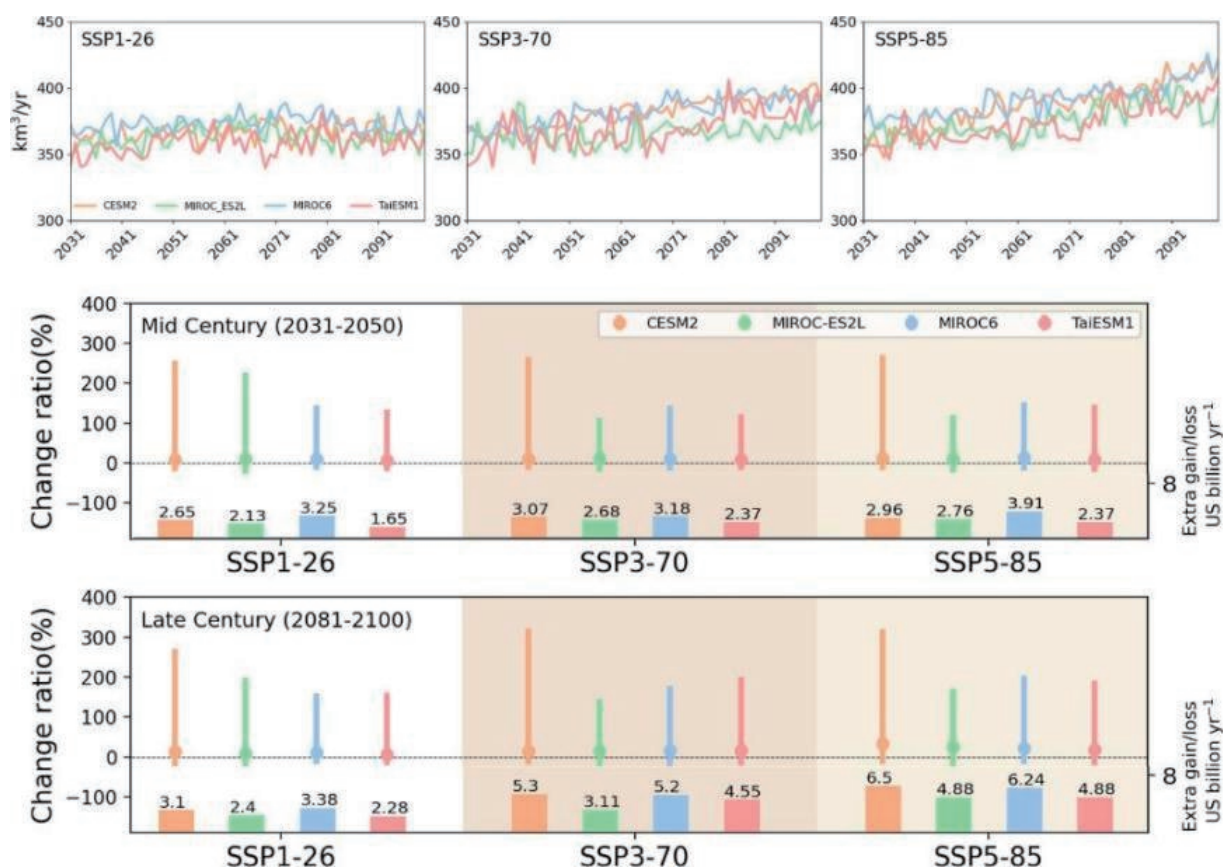
IWU is projected to increase in about 60 percent of provinces, especially in the northwest and northern regions.

IWU is also predicted to increase by 8.5 percent to 17.1 percent by 2050 compared to the historical period (1981-2010), with higher emissions leading to more significant increases.

This rise comes with an estimated additional cost of 1.65 to 3.91 billion U.S. dollars per year, highlighting the urgency for sustainable water management.

The research findings could provide crucial information for policymaking regarding agricultural water, contributing greatly to the sustainable use and management of water resources in the context of climate change and socioeconomic dynamics, the research team stated, adding that the results are also conducive for other countries confronted with increasing irrigation demands.

An article about this discovery was published in the journal *Earth's Future*.



Trends and economic impact of national irrigation water use from 2030 to 2100

Five exceptional researchers win L'Oréal-UNESCO For Women in Science International Awards 2024

Every year, the L'Oréal-UNESCO For Women in Science International Awards honour an exceptional woman from each of the five broad regions: Africa and the Arab States; Asia and the Pacific; Europe; Latin America and the Caribbean; and North America.

The laureates of this 26th edition have been selected from among 350 candidates worldwide by an independent international jury chaired by Professor Brigitte L. Kieffer, Research Director at the Inserm Research Institute, member of the French Academy of Sciences and past laureate of L'Oréal-UNESCO For Women in Science International Awards.

Through the excellence of their work, these laureates demonstrate that science needs women now more than ever, for example to meet major public health challenges, at a time when cases of cancer could increase by 77% by 2050, obesity affects 1 in 8 people worldwide, and there are still more than 249 million cases of malaria infection.

Laureates of the L'Oréal-UNESCO International Prize for Women in Science

Laureate for Africa and the Arab States

Professor Rose Leke – Immunology

Former Head of the Department of Infectious Diseases and Immunology, Faculty of Medicine and Biomedical Sciences, and Former Director of the Biotechnology Centre, University of Yaoundé 1, Cameroon

She is rewarded for her dedicated leadership, outstanding research and pioneering efforts to improve outcomes in pregnancy-associated malaria, support the eradication of polio and improve immunization in Africa, as well as for her efforts to improve the career path of young scientists. Dr Leke's national, regional, and global influence has had a profound impact on public health in her native Cameroon and across Africa. Her achievements position her as a role model, leading educator and advocate for young female scientists.

Laureate for Latin America and the Caribbean

Professor Alicia Kowaltowski – Biochemistry

Professor of Biochemistry, University of São Paulo, Brazil

She is rewarded for her fundamental contribution to the biology of mitochondria, which are “the cell's main energy source, acting as their batteries”. Her work has been critical for our understanding of the implication of energy metabolism in chronic diseases, including obesity and diabetes, as well as in aging. Her outstanding contribution as an investigator and mentor, as well as her advocacy for science in Latin America and its dissemination to the public, are an inspiration for young scientists.

Laureate for North America

Professor Nada Jabado – Human Genetics

Professor, Departments of Pediatrics and Human Genetics, Canada Research Chair Tier 1 in Pediatric Oncology, McGill University, Canada

She is rewarded for revolutionising our comprehension of the genetic defects responsible for aggressive pediatric brain tumours. Her seminal discovery of the first-ever histone mutations in human disease, referred to as oncohistones, has sparked a fundamental change in the cancer research sphere. Through her innovative research and effective leadership in establishing a global collaborative network, she has reshaped the medical approach to pediatric cancer, advancing both diagnostic capabilities and clinical treatments for young patients.

Laureate for Asia and the Pacific

Professor Nieng Yan – Structural Biology

University Professor, School of Life Sciences, Tsinghua University; Founding President of Shenzhen Medical Academy of Research and Translation; Director of Shenzhen Bay Laboratory, China

She is rewarded for discovering the atomic structure of multiple membrane proteins that mediate the traffic of ions and sugars across the cell membrane, revealing principles that govern crossmembrane transport. Her exceptional research has informed multiple disorders such as epilepsy and arrhythmia and guided the treatment of pain syndrome. As a leading authority in her field, Dr Yan inspires female scientists globally and is a strong advocate for gender equality in research and science education.

Laureate for Europe

Professor Geneviève Almouzni – Molecular Biology

Director of Research from the National Centre for Scientific Research (CNRS) at the Curie Institute, France

She is rewarded for her seminal contributions to understanding how DNA is packaged with proteins inside the cell nucleus. Her pioneering work in epigenetics has furthered our understanding of how cell identity is determined during normal development and disrupted by cancer. Her extraordinary successes in advancing research, training the next generation of scientists and promoting women in science are inspirational.

26 Years of Empowering Women in Science

Today, women still only account for one in three researchers globally (33 %) according to UNESCO data. Furthermore, the glass ceiling remains a reality – in Europe only a quarter of scientific leadership roles are currently held by women. Since the creation of the Nobel Prizes for science in 1901, there have been only 25 female laureates.

For 26 years, UNESCO and the Fondation L'Oréal have worked together to promote gender equality in science through the For Women in Science International Awards and the Young Talents Programmes covering more than 140 countries, shining the spotlight on female scientists and contributing to breaking the glass ceiling in science. An sign of this is the remarkable increase (+150 %) in the proportion of female laureates of the Nobel Prizes for science since 1998, compared to the previous period.

Since its creation, the L'Oréal–UNESCO For Women in Science programme has honoured more than 4,400 women for the excellence of their research, including 132 laureates of the International Awards and more than 4,000 young female researchers.

Among the laureates, 7 have received a Nobel Prize in science.



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