International Institute for Applied Systems Analysis

IIASA

ANNUAL REPORT

2025

The International Institute for Applied Systems Analysis (IIASA) is an independent, international research institute with National and Regional Member Organizations in Africa, the Americas, Asia, and Europe. Through its research programs and initiatives, the Institute conducts policy-oriented research into issues that are too large or complex to be solved by a single country or academic discipline. This includes pressing concerns that affect the future of all of humanity, such as climate change, energy security, population aging, and sustainable development. The results of IIASA research and the expertise of its researchers are made available to policymakers in countries around the world to help them produce effective, science-based policies that will enable them to face these challenges.

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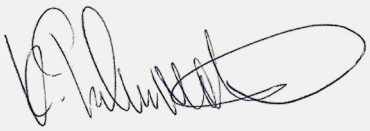

Kazuhiko (Kazu) Takemoto

IIASA was founded on the belief that scientific collaboration across borders can help societies better understand complex global systems and the choices that shape our collective future. More than five decades later, this principle still guides the Institute and its international community.

As Chair of the IIASA Council, I see firsthand how this collaboration is sustained through the engagement of the Institute's National and Regional Member Organizations. Their participation ensures that IIASA remains a truly international platform for systems analysis, research partnerships, and evidence-based dialogue.

Throughout 2025, the Council worked closely with the Director General and the Institute's leadership as IIASA navigated a demanding period. Our discussions focused on strengthening the institutional foundations that enable the Institute to deliver high-quality scientific work while adapting to a changing global environment.

A central responsibility of the Council is to ensure that IIASA is well positioned for the years ahead. This includes maintaining a strong membership base, providing effective governance, and helping guide the Institute's strategic direction. In a world where many challenges extend across borders and disciplines, institutions that connect knowledge, perspectives, and communities play an increasingly important role.

The Council also welcomes the continued commitment of the Institute's members. China's decision to increase its membership contribution beginning in 2026 is an encouraging sign of confidence in IIASA and in its mission to advance international scientific collaboration.

Looking ahead, the Council will continue working with the Institute's leadership and members to strengthen IIASA's partnerships, expand its global reach, and foster collaboration across disciplines and regions. By bringing together diverse expertise and perspectives, IIASA is well placed to contribute knowledge that informs policy and helps societies navigate complex challenges.

On behalf of the Council, I extend my sincere appreciation to the Executive, the Institute's staff, and our National and Regional Member Organizations for their dedication to IIASA and its mission.

Message from the Director General

Hans Joachim (John) Schellnhuber

The past year has tested the resilience of institutions and international cooperation alike. In a world marked by geopolitical tensions and economic uncertainty, IIASA has remained committed to its mission: advancing systems science and fostering collaboration across nations to address the complex challenges of our time.

This period required difficult adjustments, but it also highlighted the strength of the IIASA community. I would like to express my sincere gratitude to our staff for their commitment and solidarity during this demanding time. Many colleagues contributed not only through their research but also through contributions and measures that helped stabilize the Institute's financial situation.

At the same time, the Institute's scientific work continued to move forward with energy and creativity. Our researchers produced important insights into climate mitigation, sustainable development, energy transitions, and the social and economic dimensions of global change. By combining rigorous systems analysis with international wisdom, IIASA continues to generate the insights that help decision-makers navigate complexity and identify pathways toward a more sustainable and resilient future.

Looking ahead, there are encouraging signs. China's decision to double its membership contribution beginning in 2026 will provide important support for the Institute's financial stability. Together with our evolving strategy, this development strengthens the foundation on which IIASA can continue to build its research and international partnerships.

The broader global context also reminds us why IIASA was founded. When cooperation between nations is strained, institutions that bring people together through science become especially important. Since its creation during the Cold War, IIASA has provided a space where dialogue, evidence, and shared inquiry can help bridge divides.

We have now begun to refocus on science diplomacy, strengthening the Institute as a place where intellectual exchange can support constructive engagement across borders.

The achievements outlined in these pages reflect the dedication of a global community working together to better understand the systems that shape our future. By bringing nations together through science, IIASA continues to expand our understanding of the world and support evidence-based solutions to global challenges.

Karen Lips

Karen Lips

Message from the Deputy Director General

Strengthening connections between science, policy, and society has been a priority in my role as Deputy Director General over the past year. In a rapidly evolving global landscape, IIASA's mission depends not only on producing excellent science, but on ensuring that knowledge drives action, informs decisions, and empowers communities. In 2025, I focused on five interconnected priorities: scientific leadership, education, science diplomacy, public engagement, and external relations.

Advancing high-impact, policy-relevant science remains at the heart of IIASA's mission. Over the past year, I worked to elevate the visibility and influence of our research through high-level engagement and dialogue. A key example was ***Science in Action: Five Global Challenges, One Shared Future***, held in the United Kingdom in collaboration with the Royal Society and UK Research and Innovation. By bringing together scientists, policymakers, and research leaders, the event highlighted how interdisciplinary approaches can translate knowledge into meaningful responses to global challenges.

Investing in the next generation of systems scientists is essential to shaping a more resilient future. In 2025, I worked with our Capacity Development and Academic Training team to advance the Vanguard initiative, which aims to integrate research, education, and policy engagement. By bringing together researchers from IIASA Member Organizations to collaborate on targeted challenges, it fosters interdisciplinary thinking and connects learning directly with real-world impact.

Science diplomacy is an increasingly vital dimension of IIASA's work, enabling collaboration across borders and supporting constructive international dialogue. My participation in the TWAS-AAAS Science Diplomacy Course in Trieste, Italy, reinforced IIASA's role as a trusted partner in bridging science and global policy.

Ensuring that scientific insights resonate beyond academia is critical to maximizing impact. In September, we welcomed Lisa Palmer as IIASA's first Journalist in Residence, working with the Directorate to develop compelling narratives that highlight the relevance of our research and strengthen engagement with media and policy audiences worldwide.

Deepening relationships with our National and Regional Member Organizations remains fundamental to IIASA's success. Throughout 2025, I focused on aligning our activities with their priorities while strengthening policy engagement and collaboration. Initiatives such as the UK event mentioned above, demonstrate how strong partnerships can amplify impact and advance shared national and global ambitions.

Looking ahead, I am committed to further strengthening IIASA's role at the interface of science, policy, and society. By advancing scientific excellence, investing in people, and fostering collaboration across borders and disciplines, we can help shape pathways toward a more sustainable, inclusive, and resilient future.

RESEARCH IN 2025

Advancing Systems Analysis Program

Citizen science and the challenge of measuring urban sustainability

Cities are expected to track sustainability progress with data that are often incomplete, outdated, or available only at national level. Research led by IIASA in collaboration with UN-Habitat finds that citizen science could address these gaps and support nearly 70% of global sustainability indicators, yet is currently used in only 4% of cases.

The study provides the first comprehensive review of how citizen science can contribute to the Global Urban Monitoring Framework (UMF), developed by UN-Habitat. The UMF brings together 77 urban indicators drawn from the Sustainable Development Goals and other international frameworks and is increasingly used to track progress toward safe, resilient, and sustainable cities.

Researchers found that citizen science aligns with 52 of the 77 indicators, particularly in environmental and social areas such as air quality, biodiversity, access to basic services, public space, mobility, and community wellbeing. Yet it currently contributes directly to only three indicators.

“This study highlights a missed opportunity in how cities track sustainability,” says co-lead author Inian Moorthy. “Citizen science is suitable for contributing to most of the framework we reviewed, but it is currently contributing to only a handful of indicators.”

An analysis of 466 cities also revealed that fewer than 20% of indicators are reported at city level, leaving local realities underrepresented. The findings suggest the main barrier is not data scarcity but integration. By incorporating citizen science into official monitoring, cities can strengthen sustainability assessments and better reflect lived urban experience.

Further information:
pure.iiasa.ac.at/21224

Resilience investments in a world of polycrisis

As global crises become more interconnected, policymakers face growing challenges in managing risks that span sectors and regions. IIASA research highlights how investments in disaster risk reduction can generate benefits far beyond preventing losses.

The concept of polycrisis – a situation where multiple crises interact and reinforce each other – has gained increasing attention in recent years in policy circles. Climate change, economic instability, energy security, and food systems are closely linked, meaning that shocks in one area can cascade across others.

The research extends the Triple Dividend of Resilience (TDR) framework, which shows that investments in disaster risk reduction (DRR) and climate change adaptation (CCA) can generate multiple benefits. In addition to reducing disaster losses, such measures can unlock development opportunities and create co-benefits such as safer infrastructure or more energy-efficient housing.

Despite growing recognition of these advantages, investment in risk reduction remains insufficient. The researchers suggest this gap is partly due to limited awareness of the broader social and economic gains that resilience measures can deliver, as well as challenges in measuring these benefits across sectors and scales.

“Sustainable-oriented investments ought to do more than prevent risks. They may also create additional benefits for society as well as support development and transformation,” says lead author Reinhard Mechler. “Recognizing all these resilience dividends can help policymakers make better decisions.”

The research also informed a webinar on Coping with polycrisis and systemic risks, where experts discussed how approaches such as integrated risk assessment and adaptive governance can help manage cascading crises and strengthen resilience.

Further information:
pure.iiasa.ac.at/20802

Smarter SDG priorities for greater impact in China

Achieving the Sustainable Development Goals (SDGs) requires careful prioritization of efforts, especially when resources are limited and targets interact in complex ways. A 2025 study presents an analytical model to help policymakers identify where action is most urgent, where greater investment is needed, and where progress can be achieved more efficiently.

The study introduces a three-dimensional model that integrates systemic impact, feasibility, and urgency. Unlike many existing approaches, it captures both high-order synergies and trade-offs across the SDG network. It distinguishes between temporal priority, reflecting how urgently a target requires action, and resource priority, indicating the level of investment needed. This supports more targeted and cost-effective strategies.

Applied to China using network and time-series data from the Institute for Global Environmental Strategies SDG Interlinkages database, the model distinguishes between time-critical targets and those constrained primarily by structural barriers. It shows that only 12% of SDG targets require immediate action, particularly in biodiversity conservation and forest management. In contrast, 27% are less time-sensitive but face systemic obstacles requiring greater resource investment, especially under SDG 12 (Responsible Consumption and Production), SDG 15 (Life on Land), and SDG 16 (Peace, Justice, and Strong Institutions). In contrast, SDG 13 (Climate Action) benefits from positive spillovers and can advance with more moderate inputs.

“Effective SDG implementation is not just about doing more, but about acting strategically,” says lead author Yuanhui Wang, a former Young Scientists Summer Program participant from Beijing Normal University, China. “Our model helps identify where interventions can deliver the greatest systemic benefits.”

The framework offers a clear, transferable tool to maximize overall SDG impact.

Further information:
pure.iiasa.ac.at/20925

Tracking compliance with social-distancing using digital platform activity data

Digital platform activity data from mobility to e-shopping can reveal how closely people follow social-distancing measures and how this behavior influences pandemic dynamics as shown by IIASA-led research.

During the early stages of the COVID-19 pandemic, social-distancing was the main policy to slow virus transmission. It came with social and economic costs, however, and its effectiveness varied across locations and over time. Understanding how closely people follow social-distancing guidelines is crucial for designing effective public health responses.

Researchers explored whether digital platform activity data could help measure people-to-people contact intensity in real time. Using the case of Yandex’s self-isolation index, an indicator built from aggregated user activity data, the team analyzed self-isolation patterns in Moscow and St. Petersburg, Russia, during the COVID-19 outbreak.

The researchers applied statistical methods inspired by the classical infectious-disease model (SEIR) to test whether changes in the self-isolation index are linked with the dynamics of the outbreak reflected by the official records of new COVID-19 cases and deaths. The analysis found evidence supporting this hypothesis and uncovered policy-relevant delays between introduction of social-distancing measures and observable effects.

“Our results show that digital activity indicators can provide a reliable picture of how people adjust their behavior during a pandemic,” says lead author Piotr Zebrowski. “This kind of real-time information can help governments calibrate social-distancing policies effectively.”

The findings highlight the potential of commercial digital platforms to serve as unique, rapid, and scalable data sources for monitoring public behavior and supporting evidence-based responses to future health crises.

Further information:
pure.iiasa.ac.at/21005

Biodiversity and Natural Resources Program

Powering low-emission aviation in China

China's aviation sector is growing rapidly, making it a major source of emissions and a difficult-to-decarbonize sector. Working with the ClimateWorks Foundation, IIASA researchers explored whether renewable electricity and captured CO_2-based synthetic e-fuels could reduce China's aviation emissions and achieve cost competitiveness over 2020–2050.

The study examined how renewable energy supply, water availability, infrastructure, Direct Air Capture (DAC) technology development, and policy support influence e-fuel costs and production potential. Research also compared this pathway with an alternative strategy combining DAC carbon storage with continued use of conventional jet fuel.

The results show that e-fuel prices depend mainly on the cost of capturing carbon dioxide from the air and electricity prices. If electricity becomes cheaper and the technologies improve over time, e-fuel costs could fall to about US$1,000–1,300 per ton. The study also found that solid-absorbent DAC technologies may work better in water-scarce and high-demand regions such as Beijing, Shanghai, and the Guangdong–Hong Kong–Macau area.

In an ambitious scenario, China could produce up to 102 million tons of e-fuels by 2050, meeting about 84% of aviation fuel demand. However, this would require large amounts of renewable electricity and water.

"Our findings show that e-fuels could play a significant role in reducing aviation emissions in China if deployment aligns with regional resource constraints and long-term infrastructure planning," says lead author Shubham Tiwari. "However, no single pathway exists – decarbonizing aviation requires a portfolio of technologies rather than one solution."

Further information:
pure.iiasa.ac.at/20515

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Balancing nature restoration and land use in Europe

Can nature restoration and economic development go hand in hand? IIASA researchers showed that ambitious biodiversity goals in the European Union can be achieved without undermining food production or other land-based industries.

Europe has adopted ambitious targets under the EU Nature Restoration Law to restore degraded ecosystems and improve biodiversity. At the same time, demand for land is rising as societies require more biomass for food, animal feed, energy, and fiber, raising concerns that conservation efforts could conflict with economic development. To address this challenge, researchers developed an integrated spatial planning approach that considers conservation, agriculture, forestry, and climate goals together. By analyzing where restoration actions and production activities could occur across Europe, the team identified strategies to reduce land-use conflicts while maintaining agricultural and forest production.

The results show that strategic planning can create "win-win" outcomes that minimize trade-offs between biodiversity protection and the bioeconomy. Restoration targets covering about 12.2–15.1% of EU land could be achieved without jeopardizing areas used for food production, energy crops, or timber while still benefiting biodiversity.

Restored ecosystems also support services such as pollination, water purification, and carbon storage. The study found that restoration could increase total above- and below-ground carbon stocks by 6–19%, depending on whether efforts focus on species-rich or carbon-rich areas, supporting the EU's long-term carbon-neutrality goals. These findings can help guide EU Member States in designing restoration plans that support both biodiversity and sustainable land use.

Further information:
pure.iiasa.ac.at/20539

Forests and the bioeconomy: Navigating climate and biodiversity goals

Europe's forests are central to the continent's growing bioeconomy, providing renewable materials for construction, energy, and other products. At the same time, forests must continue to store carbon and protect biodiversity. IIASA-led research shows how these goals can be balanced under a changing climate.

Two studies resulting from the Horizon Europe-funded ForestNavigator project examined how forest management and policy choices could shape the future of Europe's forests.

The first study linked the Global Biosphere Management Model (GLOBIOM) and the Global Forest Model (G4M) to assess how climate change may affect forest growth and management across the European Union. The results indicate strong regional differences. Forest productivity could increase in parts of northern Europe but decline in southern regions as climate conditions become more challenging. The study shows that adaptive management such as adjusting thinning practices, harvest levels, and the length of forest-growing cycles, can help maintain wood supply while supporting forest carbon storage and other ecosystem services.

A companion study explored how conservation policies might affect Europe's forest-based industries, finding that implementing the EU Biodiversity Strategy for 2030, including protecting 30% of EU land, would have only a limited impact on overall woody biomass supply within the EU. However, stricter protection could shift some production outside Europe and reduce the international competitiveness of EU wood industries.

Together, the studies highlight how integrated modeling can help policymakers understand trade-offs and design strategies that support both forest conservation and a sustainable forest-based bioeconomy.

Further information:
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pure.iiasa.ac.at/20465


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Scaling nature-based solutions for water-resilient food systems

Climate change is intensifying droughts, floods, and water scarcity in many of the world's major food-producing regions. In 2025, IIASA researchers coauthored a report with The Nature Conservancy, highlighting how nature-based solutions can help reduce these risks while strengthening food systems and protecting ecosystems.

The report examines how climate impacts on water resources are increasingly linked to challenges for food production and biodiversity. As extreme weather events become more frequent, agricultural landscapes face growing pressure to maintain productivity while safeguarding water supplies and ecosystem health.

To address these challenges, the study introduces a framework of "archetypes" that connects specific water-related climate risks with suitable nature-based solutions and the enabling conditions needed to implement them. These solutions include restoring wetlands and floodplains, improving soil health, protecting watersheds, and integrating trees and vegetation into agricultural landscapes. Such measures can help regulate water flows, reduce flood risks, and improve drought resilience while also supporting biodiversity.

The authors also emphasize that scaling these solutions requires more than technical knowledge. Effective policies, financing mechanisms, and cross-sector collaboration are essential to support adoption at the landscape level. By mapping where water risks, food production, and biodiversity pressures intersect, the framework provides practical guidance for governments, businesses, and development organizations seeking to build more resilient agricultural systems.

The findings highlight the potential of nature-based solutions to deliver multiple benefits, including strengthening water security, supporting food production, and protecting ecosystems, while helping societies adapt to a changing climate.

Further information:
pure.iiasa.ac.at/20985

Economic Frontiers Program


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Mining in Brazil: Economic gains, environmental costs

Mining is often promoted as a pathway to economic development. However, research shows that its economic benefits may be short-lived, while environmental costs, especially from informal mining, can be severe.

Researchers from IIASA, the Vienna University of Economics and Business (WU), and the University of São Paulo combined satellite imagery with official economic statistics to analyze mining's impacts across more than 5,000 municipalities. The study compared large-scale industrial mining with informal small-scale mining, known as garimpo, tracking both environmental and economic outcomes over time and across neighboring regions.

"Mining is frequently promoted by political and business leaders as a pathway to prosperity, but we found that the reality on the ground is much more complex and often disappointing," explains lead author Sebastian Luckeneder from WU. "Our results show that in many cases, the economic boost is short-lived and comes at the cost of lasting environmental damage."

Results show that garimpo mining is closely associated with deforestation, particularly in the Amazon. Industrial mining, while less directly linked to forest loss, also failed to generate stable long-term economic growth in many regions.

"Our findings challenge the idea that mining is a reliable engine for local development," notes IIASA researcher Tamás Krisztin.

The authors emphasize that stronger regulation and oversight are essential to reduce environmental harm and ensure that mining activities contribute meaningfully to sustainable development.

The study was partly conducted during the 2021 IIASA Young Scientists Summer Program (YSSP) as part of Luckeneder's YSSP project.

Further information:
pure.iiasa.ac.at/20760

Rethinking poverty

Despite decades of global efforts to reduce poverty, many people still lack reliable access to the basic services and infrastructure needed for a decent life. Research led by IIASA offers a broader way to understand poverty: one that looks beyond income to whether people can meet fundamental physical and social needs.

Using household data from 75 low- and middle-income countries, the study applies the Decent Living Standards (DLS) framework developed at IIASA. The analysis shows that 94.9% of households lack at least one of ten essential living standards, while nearly two-thirds fall short in at least one-third of them, significantly higher than estimates based on conventional poverty measures.

"Income doesn't tell us enough," explains IIASA researcher, Roman Hoffmann, the study's lead author. "It's about whether people can meet their basic needs. When we look at access to essential services, resources, and infrastructure, deep and persistent inequalities become apparent."

The DLS framework evaluates ten dimensions of wellbeing, including housing, nutrition, sanitation, education, mobility, and communication. Across the dataset, the largest gaps were found in modern cooking facilities, healthcare access, housing quality, and sanitation.

Regional disparities remain stark. Sub-Saharan Africa recorded the lowest attainment of decent living standards, and the divide between rural and urban areas has remained largely unchanged over the past three decades.

By developing a subnational dataset on multiple deprivations, the researchers aim to support more targeted policies and help governments design strategies that address poverty in all its dimensions.

Further information:
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Designing fair and effective carbon taxes

Who should pay for carbon emissions and how can climate policies treat different generations fairly? Research shows that while taxing firms can reduce emissions effectively, additional measures may be needed to balance impacts across society.

CO_2 emissions are a classic economic externality: companies generate them during production, but their impacts are felt by society as a whole. At the same time, individuals often perceive their own contribution as too small to influence the overall problem. These dynamics make designing effective and fair climate policies particularly challenging.

IIASA researchers collaborated on a study addressing this issue by developing an economic model that links firms producing goods – and emitting CO_2 – with an age-structured population. Unlike many previous models, the approach accounts for life-cycle effects and differences between generations, recognizing that climate impacts and policy costs are experienced differently over time and across generations.

The researchers compared outcomes in a decentralized market with a socially optimal scenario and examined how different tax policies perform. Their results show that taxing firms is sufficient to reach the socially optimal level of emissions. However, ensuring a fair distribution of consumption across age groups is more complex.

“Our results show that firm-level carbon taxes are sufficient to achieve the socially optimal level of emissions,” explains coauthor and IIASA researcher, Stefan Wrzaczek. “But along the transition to that equilibrium, additional age-specific taxes may be needed to distribute the economic burden fairly across generations.”

The findings highlight the importance of considering demographic structure and intergenerational fairness when designing climate policies.

Further information:
pure.iiasa.ac.at/20227

Making climate models more policy-relevant

Integrated Assessment Models (IAMs) are central to climate policy, computing least-cost mitigation pathways by tracking energy flows and emissions under carbon budgets. A 2025 review offers an insider perspective on their methodology while identifying limitations and proposing complementary approaches.

Recent advances have expanded IAM capabilities, including greater sectoral detail, broader technology portfolios, integration of industrial policies, and dynamic models for transport and industry. These improvements help models better reflect real-world energy transition dynamics.

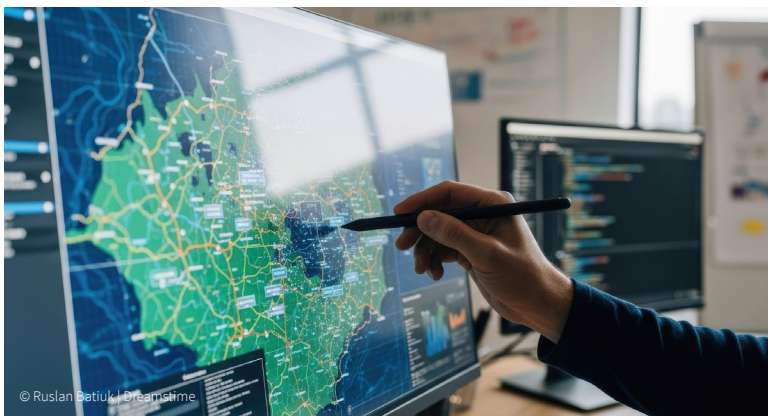
However, significant challenges persist. The authors identify three types of limitations: those fixable within the current framework, such as improving resolution and moving beyond aggregate carbon pricing as the dominant policy lever; inherent methodological constraints, including the inability to model profit-driven innovation, strategic pricing, and heterogeneous decision-making; and challenges facing all quantitative models, particularly capturing institutional change and the social processes underlying past transitions.

The study surveys three complementary approaches. Directed Technical Change models show how policy incentives and R&D investment steer innovation and knowledge accumulation toward clean technologies. Agent-based models simulate diverse actors and non-smooth adoption dynamics, improving baseline scenario realism. Game theory addresses strategic fossil fuel pricing, geopolitical resource competition, and incumbent-newcomer market dynamics.

“These approaches cannot replace integrated assessment models,” says coauthor and IIASA researcher, Ibrahim Tahri. “But they can complement them by capturing behavioral dynamics, innovation processes, and political economy factors that are difficult to represent in traditional frameworks.”

Together, these methods can broaden the scenario design space and strengthen the policy relevance of climate mitigation modeling.

Further information:
pure.iiasa.ac.at/20533



Energy, Climate, and Environment Program

Safe underground carbon storage may cut warming by just 0.7°C – far less than earlier estimates

Storing carbon underground is often seen as a key climate solution. IIASA research shows its safe, practical potential is far more limited than previously assumed.

Carbon capture and storage (CCS) has long been promoted as a powerful tool to tackle climate change. However, an IIASA-led study reveals that the amount of carbon dioxide that can be safely stored underground is much smaller than earlier estimates suggested.

By mapping geological formations worldwide and accounting for risks such as earthquakes and groundwater contamination, the researchers identified a "prudent" global storage capacity of around 1,460 billion tons of CO_2. This is almost ten times lower than previous estimates that did not fully consider environmental and safety constraints.

The study also shows that even if all safe storage capacity were used exclusively to remove carbon from the atmosphere, it would reduce global warming by only about 0.7°C – far less than earlier projections of up to 6°C.

"We can conclude that carbon storage should be treated as an exhaustible, intergenerational resource, requiring responsible management," says lead author Matthew Gidden. "Hard choices must be made about how and where it is used."

The findings highlight a clear gap between what is technically possible and what is safe in practice. They also raise important questions about fairness, as countries with the largest fossil fuel industries often have the greatest storage potential.

The study underscores that carbon storage can support climate action but cannot replace rapid and sustained reductions in greenhouse gas emissions.

Further information:
pure.iiasa.ac.at/20859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Cutting emissions by rethinking energy demand

Reducing energy demand helps bring down greenhouse gas emissions and increases energy security. IIASA research shows that demand-side policies in buildings and transport could deliver major benefits.

Energy use in buildings and transport accounts for more than 20% of global greenhouse gas emissions. A series of recent studies involving IIASA researchers show that rethinking energy demand through a mix of technology, policy, and behavior can reduce these emissions.

A scoping study found that comprehensive demand-side strategies could cut emissions from buildings by 51–85% and from transport by 37–91%, compared to current policy pathways. Measures such as heat pumps, insulation, and shifts toward public transport not only reduce emissions but also improve air quality, energy security, and overall wellbeing.

Diving deeper into European buildings highlights the importance of targeted policy design. Existing measures, such as emissions trading, are not sufficient on their own. Instead, combining carbon pricing with strong incentives for heat pumps and support for building insulation can deliver more effective and cost-efficient decarbonization.

Finally, harvesting this potential requires scaling up already available demand-side policies in an integrated policy approach. Coordinated policy packages combining technological innovation, behavioral change, and targeted incentives are essential to unlock the full potential of demand-side action and accelerate progress toward net-zero emissions.

Further information:
pure.iiasa.ac.at/20388
pure.iiasa.ac.at/20653
pure.iiasa.ac.at/20567

Wealth inequality drives climate extremes

Who is responsible for climate change and its impacts? IIASA research shows that global warming is linked to income inequality, with the richest individuals around the world driving a disproportionate share of emissions and associated climate impacts.

The study examined the link between income inequality and climate impacts, finding that emissions from the richest individuals around the world are closely tied to increases in extreme events such as heatwaves and droughts both within and outside the regions they reside.

Using a novel modeling framework that combines economic and emissions data with rapid climate impact emulation, the researchers traced emissions across global income groups and assessed their contribution to modeled climate extremes. The results show that the top 1% of emitters contributed 26 times more than the global average to extreme heat events and 17 times more to droughts in the Amazon.

These impacts are felt most strongly in vulnerable regions, including parts of Southeast Asia and southern Africa – areas that have contributed least to global emissions. The findings highlight how the consumption and investment patterns of wealthy individuals shape climate risks worldwide.

“If everyone had emitted like the bottom 50% of the global population, the world would have seen minimal additional warming since 1990,” says Carl-Friedrich Schleussner, a coauthor of the study.

The **study** also emphasizes the importance of emissions linked to financial investments, suggesting that targeting high-income portfolios could significantly reduce global emissions.

The findings point to the need for more equitable climate policies that reign in the ultra-rich around the world and support vulnerable communities.

Further information:
pure.iiasa.ac.at/20568


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Advancing climate action in the cooling sector

Managing refrigerants and cooling technologies represents a major, yet underutilized, opportunity for climate mitigation. IIASA research shows that improved lifecycle management of refrigerants, combined with faster transitions to lower global warming potential and natural refrigerant alternatives and energy-efficient cooling technologies, can deliver substantial, cost-effective emission reductions.

Two recent studies highlighted how improved management of fluorocarbons – chemicals widely used in cooling technologies – can significantly reduce greenhouse gas emissions while providing additional environmental benefits. One study found that enhanced lifecycle management of “banked” fluorocarbons could avoid up to eight gigatons of CO_2-equivalent emissions in China by 2060. Much of this mitigation could be achieved at very low cost, while enabling reuse of materials and reducing the need for new production.

A second study focused on China’s rapidly growing cooling sector. It shows that combining a phase down of high impact refrigerants with improvements in energy efficiency could reduce emissions by over 12 gigatons of CO_2-equivalent, while also lowering air pollution and energy demand. Together, these measures could reduce global warming by up to 0.015°C by 2060.

“Fluorocarbon management offers a clear opportunity to deliver large scale emission reductions at relatively low cost,” says Pallav Purohit, coauthor of both studies. “By combining improved lifecycle management with efficient cooling technologies, we can achieve significant climate and air quality benefits.”

Together, these findings highlight that targeted action in the cooling sector can play a critical role in closing the global emissions gap while supporting sustainable development.

Further information:
pure.iiasa.ac.at/20783
pure.iiasa.ac.at/21295

Population and Just Societies Program

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Rethinking how we measure and respond to aging

Population aging is reshaping societies worldwide, raising new questions about how aging should be measured and addressed in policy. IIASA research advanced new approaches to demographic change.

A key study examined how aging is measured in research and policy. A review analyzed 211 studies in consumer behavior research and found that chronological age – simply counting years lived – remains the dominant measure. However, aging is more complex, reflecting differences in health, capabilities, and social participation across the life course. The study calls for stronger interdisciplinary approaches that draw on insights from demography and gerontology to develop more meaningful measures of aging.

Another line of IIASA research focused on population aging and demographic change. Sergei Scherbov, coauthor of the study, developed a framework that measures aging consistently from both cross-sectional and longitudinal perspectives, allowing researchers to better understand how populations age over time.

The work also explored strategies to address population decline in low-fertility countries, particularly in Eastern and South-Eastern Europe. The analysis showed that reducing premature mortality, through stronger health systems and disease prevention, could slow population decline more effectively than policies aimed at increasing birth rates.

“Governments have already made massive investments in citizens’ education and health,” says Scherbov. “When people die prematurely from preventable diseases, that societal investment is lost.”

Together, these studies highlight the importance of better aging metrics and stronger health policies to respond to demographic change.

Further information:
pure.iiasa.ac.at/20893
pure.iiasa.ac.at/21298

Supporting populations unable to escape climate change impacts

Climate change is often linked to displacement and migration, but a 2025 IIASA-led study highlights those who cannot move, revealing an urgent and often overlooked challenge for climate adaptation.

The research shows that many vulnerable groups remain “trapped” in high-risk areas due to economic hardship, social constraints, or political barriers, including people living in informal settlements, conflict zones, or regions with limited resources to support relocation. Their needs are frequently overlooked in climate and disaster planning, leaving them exposed to escalating risks.

“Involuntarily immobile populations are large and varied in their exposure to different threats,” explains lead author Lisa Thalheimer. “Cultural and legal barriers, limited access to humanitarian assistance, and other constraints, such as conflict and poverty, make the livelihoods of such populations particularly vulnerable to climate-induced threats.”

Conducted through a wide international collaboration including partners from IIASA member countries such as the United States and Germany, the study identifies practical ways to better support these populations. These include improving local infrastructure, strengthening basic services, and explicitly considering immobility in climate risk assessments and policy design. The findings emphasize that protecting people in place is as important as managing migration.

The study calls for more inclusive approaches that recognize different forms of vulnerability and ensure that adaptation strategies reach those most at risk. By shifting attention to immobile populations, the research broadens the scope of climate action, highlighting the need for solutions that safeguard both those who move and those who cannot.

Further information:
pure.iiasa.ac.at/20455


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Turning demographic trends into labor-market insights

Demographic change and evolving education patterns are reshaping labor markets across Europe. IIASA research advanced new tools to better understand future workforce dynamics and support policy decisions.

A recent study used the Link4Skills-Mic dynamic microsimulation model to project labor supply across the European Union up to 2060. Developed under the Horizon Europe **Link4Skills** project, the model integrates demographic and education dynamics to explore how workforce skills may align – or fail to align – with future job requirements.

The results point to growing structural mismatches. While the number of highly educated workers is projected to rise, this does not automatically translate into better labor-market outcomes. Instead, overqualification may increase in some sectors, while vacancies persist in others.

The researchers tested several policy options, including expanded training, increased migration, and longer working lives. The analysis shows that no single measure can resolve emerging skill gaps. Instead, coordinated policy packages will be needed to address labor-market imbalances in Europe's aging and increasingly knowledge-based economy.

The Link4Skills research builds on broader work strengthening the evidence base on human capital. Last year, the group advanced methods for education reconstruction, migration-flow forecasting, and subnational population projections.

IIASA researchers also launched **EduCohorts**, aimed at improving the demographic consistency of literacy data. In parallel, the Skills-in-Literacy Adjusted Mean Years of Schooling (SLAMYS) dataset was extended to 2025, providing improved global indicators of skills-adjusted human capital.

Further information:
pure.iiasa.ac.at/21058 **pure.iiasa.ac.at/20773**
pure.iiasa.ac.at/21056 **pure.iiasa.ac.at/20889**
pure.iiasa.ac.at/21055

Governing and financing nature-based solutions

Nature-based solutions (NbS) are increasingly promoted to address climate-related risks and support disaster resilience. However, turning these ambitions into real-world projects requires stronger governance frameworks and better financing mechanisms.

IIASA research advanced the understanding of how NbS can be implemented and scaled. Across projects including **HuT**, **NATURANCE**, **Firelogue**, and the completed **PHUSICOS** initiative, seven publications examined how governance structures, financing, and stakeholder collaboration shape the success of NbS for climate adaptation and disaster risk reduction.

A key study highlighted a persistent gap between political ambition and implementation. Although NbS are widely supported in policy discussions, their uptake remains limited due to governance challenges such as insufficient expertise, limited evidence on effectiveness, and conflicts among stakeholders. The research emphasizes that overcoming these barriers – through co-design processes, clearer guidance, and more coordinated governance – will be essential to move from planning to action.

Other studies explored pathways for scaling NbS through policy, finance, and capacity-building innovations. Achieving global goals will require integrating these approaches into land-use planning, regulatory frameworks, and public investment strategies. Additional research examined community insurance mechanisms supporting NbS, governance of urban green spaces, and lessons from disaster risk reduction and early warning systems.

Beyond academic research, IIASA researchers also contributed to a chapter of the European Commission expert report Policy Imperatives for a Competitive and Resilient Nature-Positive Economy (2025), synthesizing evidence from EU NbS projects to inform implementation and financing discussions.

Further information:
pure.iiasa.ac.at/20638 **pure.iiasa.ac.at/21049**
pure.iiasa.ac.at/20339

Strategic Initiatives Program

Throughout 2025, the Strategic Initiatives (SI) Program continued to foster close collaboration with IIASA's National and Regional Member Organizations, supporting targeted, solution-oriented research aligned with national and global priorities. Building on the initiatives already concluded and those still in progress in collaboration with IIASA Member Organizations, the program maintained its focus on co-designing research that responds to member needs while strengthening engagement across the IIASA community.

At the end of 2025, a strategic decision was taken to dissolve the Strategic Initiatives Program. The Institute is currently reviewing how to integrate the most valuable elements of the former program – particularly its strong member engagement model and flexible, initiative-based approach – into the evolving IIASA research and development vision, ensuring that these strengths remain embedded in the Institute's research agenda and continue to inform future activities.

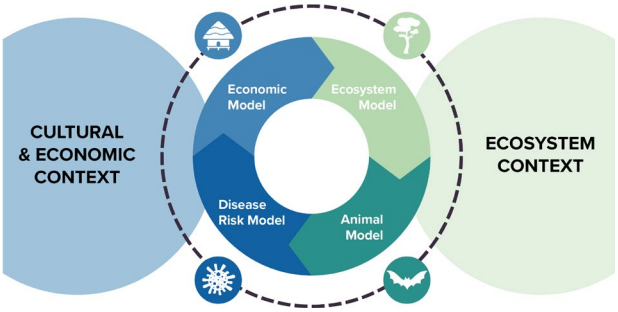
Initiatives:

BLOOM

The **Biodiversity and Land-use Objectives for Optimal Management (BLOOM)** project, launched in January 2025, aims to develop a quantitative systems analysis framework for One Health research to evaluate how conservation policies influence zoonotic disease spillovers. As IIASA's first One Health project, BLOOM integrates economics, ecology, epidemiology, and policy analysis within a single framework, using Ebola Virus Disease risk in Sierra Leone as a case study.

During its first year, the project focused on defining modeling, data, and policy requirements; developing the integrated framework; and establishing a stakeholder engagement strategy. Key outputs include a perspective article describing the framework (planned for submission to *Nature Sustainability* in 2026), a synthesis of economic and ecological datasets, and an integrated modeling structure currently being tested in Sierra Leone's Gola National Park.

The project also reviewed existing and planned governance policies and conducted a comprehensive stakeholder mapping exercise, resulting in preliminary scenarios and a stakeholder engagement framework. An online stakeholder workshop planned for July 2026 will help validate project assumptions against local socioeconomic and cultural realities.



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Fire&Ice

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The **Wildfires and Climate Change in the Boreal Zone (Fire&Ice)** project focuses on understanding how climate change is affecting wildfire patterns in the boreal region. A novel aspect of the project is the improved representation of demographic indicators and the assessment of health impacts from biomass burning emissions to better understand future wildfire risks and vulnerabilities. In 2025, the project made significant progress on its first case study in Sweden.

A key highlight was the development of detailed population projections to better assess how settlement patterns influence exposure and vulnerability to wildfires. Global future population scenarios (**Shared Socioeconomic Pathways**, or SSPs) were adapted to finer geographic scales, including counties, municipalities, and local districts. Population data for SSP2, which represents a "middle-of-the-road" future with moderate changes in birth rates, death rates, and migration, are now available for 2025–2100, broken down by age and sex.

A second highlight focused on improving wildfire modeling. The project reviewed the main factors influencing wildfires in the boreal zone and Sweden. In parallel, work progressed on improving and refining the Wildfire climate impacts and adaptation model (**FLAM**), which simulates wildfire behavior, through analyses comparing historical conditions with projected future changes under SSP585, a scenario assuming high greenhouse gas emissions and significant warming.

In addition, an emissions calculation component used to estimate pollution from fires was integrated into the model, providing a foundation for future research on air pollution and related human health impacts.

RESIST

The **Resilience of Ecosystem Services provided by Intact and Sustainably managed Terrestrial ecosystems (RESIST)** initiative made notable progress through enhanced collaboration with IIASA Member Organizations and international research partners. A central highlight is the establishment of coordinated case studies across Brazil, China, India, Israel, and the UK, enabling integrated data collection, stakeholder engagement, and model development.

Specifically, RESIST advanced field-based research by defining biodiversity conservation and restoration objectives supported by new data collection networks and stakeholder-driven field campaigns in India; generating early measurement data from the **AmazonFACE** experiment, which were successfully applied to model calibration and preliminary simulations in Brazil; securing a data-sharing agreement for model calibration in Israel, enabling future progress once geopolitical conditions stabilize; and leveraging international co-funding opportunities that led to several co-developed research proposals, including one on ecosystem stability and resilience funded by the National Natural Science Foundation of China.

Overall, RESIST strengthened its multidisciplinary modeling framework and global research network, delivering scientific outputs and laying the foundation for policy-relevant insights into ecosystem resilience, biodiversity conservation, and sustainable land management.

TRUST

The **Tools for Raising and UnderStanding Trust in systems science through citizen engagement (TRUST)** initiative concluded in December 2025, marking a year of empirical research and institutional synthesis. A primary highlight was the completion of a survey experiment involving more than 400 respondents across 12 countries. Using conjoint analysis, the study identified which specific design features of citizen science initiatives most effectively strengthen public perceptions of trustworthiness.

The project also contributed to research on scientific communication. At the 19th Conference of the European Chapter of the Association for Computational Linguistics, the team presented Communication as a *Complex System: Modeling the Feedback Dynamics of Trust and Credibility*, which examined how trust and credibility dynamics shape public understanding of scientific information. This work provided a theoretical framework for understanding the feedback loops driving “truth decay” and proposed human-centered strategies to reduce polarization.

Finally, the project achieved an institutional milestone by synthesizing findings from four workshops conducted over the three-year project timeline. This culminated in the co-production of the *IIASA Guidance on Stakeholder Engagement*. The document harmonizes participatory research approaches across programs and departments, successfully mainstreaming these methodologies to enhance the institutional visibility and impact of stakeholder engagement at IIASA.

Publications and open access

Publications statistics

794
IIASA publications

In 2025, IIASA researchers produced **794 publications** of which **539 were peer-reviewed** journal articles.

111
countries

These journal articles co-authored with collaborators from **111 countries**.

About **224 publications (28% of total)** included women as either first authors or coauthors, and **55 publications (7% of total)** had IIASA women scientists as first author.

224
publications

Contributed to over
65,000
citations

282 h-index compared to 263 h-index in 2024: This h-index measures the productivity and impact of all publications by IIASA authors in the Web of Science database of peer-reviewed literature.

With **79% of articles** available as open access through its PURE repository, IIASA remains committed to open science and global knowledge sharing.

79%
of articles

Number of IIASA publications, peer reviewed journal articles, citations:

	2021	2022	2023	2024	2025
IIASA publications in PURE	735	754	746	819	**794**
Number of peer-reviewed journal articles in PURE	505	440	438	516	**539**
Peer-reviewed journal articles according to Web of Science (WoS)	412	397	394	454	**478**
Citations of IIASA publications according to SCOPUS	44,022	47,491	49,641	56,505	**65,214**

Open science driving global impact

Open access to scientific publications and data remains central to IIASA's mission to advance global knowledge. As a signatory of the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, the Institute ensures that its research outputs are freely accessible to both the scientific community and the public. Through its institutional repository, **PURE**, IIASA researchers can deposit peer-reviewed publications, which are made publicly available within 12 months of publication.

IIASA supports researchers in publishing open access by helping identify funding opportunities for publication fees, providing financial support for open-access charges, and assisting with negotiations for open-access book publications. The Institute also promotes open access to the **models, tools, and datasets** developed by its researchers, which are widely used to analyze global challenges and inform policymaking for sustainable development. By advancing open science, IIASA increases the visibility and impact of its research while strengthening international collaboration. Of the 539 peer-reviewed journal articles published in 2025, 79% are openly accessible.

To support this commitment and strengthen research data management, each IIASA program has a dedicated Data Steward who works with the Open Science Coordinator to advise researchers and help expand access to IIASA's research outputs.

Open access articles – publications

Number of IIASA authored journal articles published as green and gold open access:

	2021	2022	2023	2024	2025
Peer-reviewed article in PURE	505	440	438	516	**539**
Full text available	379	347	347	426	**423**
Gold open access (published version available)	284	300	297	371	**405**
Green open access (accepted version available)	94	44	45	47	**18**

Download stats of the repository for 2025 (compared to prior years):

	2021	2022	2023	2024	2025
Downloads	344,541	307,466	315,950	399,259	**718,148**

Shaping global discussions on climate

Climate change research continued to feature prominently in news and social media feeds throughout 2025. IIASA researchers contributed to seven out of the 25 most mentioned papers in news and social media feeds, with one lauded as the most featured paper ranking at #1. IIASA-affiliated authors contributed to the following papers:

#1: **Indicators of Global Climate Change 2024: annual update of key indicators of the state of the climate system and human influence**
#5: **The EAT-Lancet Commission on healthy, sustainable and just food systems**
#8: **Systematic attribution of heatwaves to the emissions of carbon majors**
#13: **High-income groups disproportionately contribute to climate extremes worldwide**
#15: **The 2025 report of the Lancet Countdown on health and climate change: climate change action offers a lifeline**
#22: **Emerging climate impact on carbon sinks in a consolidated carbon budget**
#25: **A prudent planetary limit for geologic carbon storage**

Awards, appointments, and honors in 2025

IIASA researchers were again recognized across multiple disciplines through awards, honors, and international appointments. These achievements span contributions to global scientific assessments, leadership in research communities, and advances in data-driven sustainability research.

Several IIASA scientists were appointed to **author teams** for the Intergovernmental Panel on Climate Change (IPCC) Seventh Assessment Report (AR7). Across the three Working Groups, IIASA researchers selected for author roles include **Marina Andrijevic**, **Jarmo Kikstra**, **Leila Niamir**, **Shonali Pachauri**, **Narasimha Rao**, **Keywan Riahi**, **Joeri Rogelj**, **Carl-Friedrich Schleussner**, **Chris Smith**, and **Bas van Ruijven**. In addition, IIASA guest researchers **Alaa Al Khourdajie**, **Shinichiro Fujimori**, **Matthew Gidden**, and **David McCollum** were also selected.

Biodiversity and Natural Resources Program Director, **Petr Havlík**, was awarded an **honorary doctorate by KU Leuven** in recognition of his contributions to research in agricultural, food, climate, and environmental economics.

Energy, Climate, and Environment Program Director, **Keywan Riahi**, was reappointed to the **European Scientific Advisory Board on Climate Change** for a second term from 2026 to 2030. The Board provides independent scientific advice on EU measures and climate targets, which will underpin the EU's climate action and efforts to reach climate neutrality by 2050.

Population and Just Societies Program Director, **Anne Goujon**, was elected Secretary-General and Treasurer of the **International Union for the Scientific Study of Population (IUSSP)**, the world's leading association of population scientists.

Migration and Sustainable Development Research Group Leader, **Roman Hoffmann**, was selected as a member of the **Young Academy** of the Austrian Academy of Sciences. In addition to this membership, Hoffmann received the IPUMS Research Award together with IIASA colleagues **Guy Abel** and **Raya Muttarak** for their research that provided new insights into how shifts in climate patterns influence population movements. Most recently, Hoffmann was named a recipient of the EAERE Award for European Research Council Grants Laureates in the field of environmental and resource economics.

In 2025, **Muttarak** was also appointed as an expert to the **United Nations High-level Advisory Board** where she contributes her expertise and insights to help provide strategic guidance to the UN development system on pressing economic and social challenges.

IIASA Distinguished Emeritus Research Scholar and Sherpa for Asia, **Wolfgang Lutz**, was awarded the **Austrian Decoration for Science and Art** (Österreichisches Ehrenzeichen für Wissenschaft und Kunst) in recognition of his outstanding scientific contributions and long-standing impact on the national and international research landscape.

Further recognition came through the **Frontiers Planet Prize**. IIASA researchers **Gregor Kiesewetter**, **Fabian Wagner**, and **Laura Warnecke** were among the authors of the award winning 2023 report of the **Lancet Countdown on health and climate change**, which was selected to represent the United Kingdom as a National Champion, distinguishing itself among hundreds of entries for its contribution to planetary health and Earth system science.

IIASA and its partners received the 2025 **Group on Earth Observations Sustainable Development Goals (SDG) Award** for work combining citizen science, Earth observation, and AI to address marine litter data gaps in Ghana. Led by IIASA senior research scholar, **Dilek Fraisl**, the initiative supported the integration of citizen science data into official SDG reporting and national statistics.

IIASA affiliated researchers, including its Director General, **Hans Joachim (John) Schellnhuber**, were also again recognized in the **Clarivate Highly Cited Researchers™ list**. IIASA researchers have been consistently featured in these annual recognitions, reflecting the lasting influence of the Institute's work and its role in shaping knowledge and solutions for global sustainability challenges. The following IIASA researchers were included on the 2025 list: **Oliver Fricko**, **Petr Havlík**, **Zbigniew Klimont**, **Volker Krey**, **Michael Obersteiner**, **Keywan Riahi**, **Yusuke Satoh**, and **Carl-Friedrich Schleussner**. Havlík and Riahi were among only 227 researchers recognized in two fields (environment and ecology, and social sciences). Four researchers with IIASA listed as their secondary affiliation were also included: **Shinichiro Fujimori**, **Andreas Richter**, **Joeri Rogelj**, and **Chris Smith**.

In **Research.com's 2025 rankings**, IIASA researchers and alumni recognized across several fields included **Markus Amann**, **Jinfeng Chang**, **Ulf Dieckmann**, **Steffen Fritz**, **Petr Havlík**, **Zbigniew Klimont**, **Florian Kraxner**, **Nebojsa Nakicenovic**, **Keywan Riahi**, **Linda See**, **Anatoly Shvidenko**, **Piero Visconti**, and **Wilfried Winiwarter**.

These distinctions highlight the range of contributions made by IIASA researchers, from advancing scientific knowledge to supporting international policy processes and strengthening global research collaboration. They also reflect the dedication and impact of the Institute's research community, whose work continues to inform and shape global discussions.

Further information:
iiasa.ac.at/awards

ENHANCING RESEARCH IMPACT

Policy impact

As part of its mission, IIASA provides scientific guidance to policymakers by applying systems analysis to global challenges.

Through interdisciplinary research and international collaboration, the Institute delivers independent, robust scientific insights into critical policy issues, supporting informed decision-making on challenges such as climate change, energy security, and sustainable development. According to the Overton database, in 2025, IIASA's research was cited in **973 policy documents** across **39 countries**, reinforcing its reputation as a trusted source of scientific evidence for policymaking.

From advancing air quality management through the GAINS model to shaping global climate, agriculture, and energy policies and supporting integrated climate-development strategies, IIASA played a critical role in translating complex systems analysis into impactful policy solutions that advance global sustainability goals. Below are selected examples of how IIASA research has informed policies relevant to its Member Organizations.

Informing clean air action in South Asia

IIASA played a key role in advancing air quality management across South Asia through its Greenhouse Gas and Air Pollution Interactions and Synergies (**GAINS**) model. Under the Air Quality Management in the Indo-Gangetic Plain and Himalayan Foothills (**IGP-HF**) project, GAINS provided robust analytical and technical foundations for data-driven clean air policies in India, Pakistan, and Nepal.

By integrating emissions data, health impacts, and cost-effective mitigation strategies, GAINS enabled governments to identify priority pollution sources and design targeted interventions. The model directly informed large-scale programs such as **India's Uttar Pradesh Clean Air Management Program**, supporting World Bank-backed financing and implementation planning.

Addressing a crisis affecting nearly one billion people and causing around one million premature deaths annually, IIASA's work has strengthened regional cooperation and policy alignment. By linking science with investment decisions, the GAINS model has accelerated coordinated clean air action, contributing to improved public health, economic resilience, and sustainable development across the region.


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Advancing global climate action

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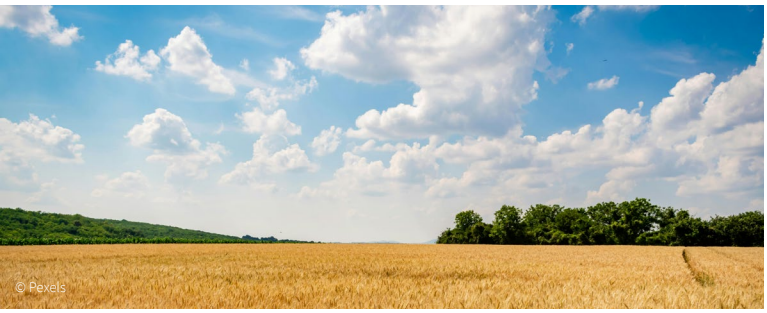
In 2025, IIASA contributed to three major international reports advancing climate and environmental policy. Under the United Nations Economic Commission for Europe (UNECE) Convention on Long Range Transboundary Air Pollution, IIASA supported the development of **National Nitrogen Budgets (NNBs)**, a policy tool to monitor and manage nitrogen pollution. With key input from IIASA researchers, the framework was formally adopted, strengthening countries' capacity to address interconnected environmental challenges.

IIASA researchers also contributed to the **Emissions Gap Report 2025** by the United Nations Environment Programme, highlighting that current climate pledges remain insufficient to meet Paris Agreement goals. IIASA contributions reinforced the need for rapid, equitable transformation.

In Europe, IIASA expertise informed the report on scaling up carbon dioxide removals by the **European Scientific Advisory Board on Climate Change**, guiding policies to responsibly expand carbon removals. Together, these contributions demonstrate IIASA's impact in translating science into actionable global solutions.

Aligning EU agricultural policy with climate and biodiversity goals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A policy brief from the **LAMASUS project** highlighted how strategic agricultural de-intensification can deliver significant climate and biodiversity benefits across the EU. With contributions from IIASA researchers, the analysis shows that reducing inputs such as fertilizers, pesticides, and livestock density in targeted areas could cut agricultural emissions and support ecosystem recovery with limited economic trade-offs.

The study identifies "win-win" areas where action on just 7% of EU agricultural land could reduce emissions by around 12 million tons of CO_2-equivalent annually, while also enhancing biodiversity. IIASA's work helped pinpoint where these interventions would be most effective and economically viable.

Crucially, the findings reveal that current Common Agricultural Policy funding is not always aligned with high-impact areas. By informing more targeted, results-based approaches, IIASA supports more efficient policy design to advance climate neutrality, biodiversity protection, and sustainable agricultural systems.

Linking climate and development for greater impact

A global report released in September highlighted the potential of aligning climate and sustainable development action, with key contributions from IIASA. The **Third Global Report on Climate and SDG Synergies**, co-convened by the United Nations Department of Economic and Social Affairs and the United Nations Framework Convention on Climate Change, shows integrated approaches can improve public spending efficiency by up to 40% while delivering multiple co-benefits. IIASA analyses demonstrate how coordinated policies enhance outcomes across sectors such as health, biodiversity, and urban development.

Building on this integrated perspective, IIASA also advanced policy-relevant research through the **ClimMigSEE** project. In 2025, the project informed an Organization for Security and Co-operation in Europe (OSCE) report on climate, human mobility, and security in South-Eastern Europe.


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The report highlights how climate risks interact with socioeconomic vulnerabilities to shape mobility patterns and calls for coordinated approaches linking adaptation, migration, and security. IIASA led quantitative analysis, scenario development, and stakehholder engagement, supporting evidence-based, regionally coordinated policy responses.

Harnessing AI for Europe's energy transition


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A 2025 policy report by the European Energy Research Alliance highlighted how artificial intelligence can accelerate Europe's energy transition, with contributions from IIASA and a consortium of leading research institutions. The report provides concrete, actionable recommendations to guide EU policymakers in deploying AI across energy systems while managing associated risks.

IIASA contributed to the analysis underpinning a structured policy framework that emphasizes secure, transparent, and interoperable AI applications aligned with climate goals. Key recommendations include establishing an EU AI in Energy Mission Board, advancing Common European Energy Data Spaces, and integrating sustainability assessments into AI deployment.

The report is designed to inform the EU's forthcoming strategic roadmap on AI in energy, supporting more coordinated and future-proof policy development. By translating scientific and technical expertise into practical guidance, IIASA and its partners help strengthen Europe's competitiveness, energy system resilience, and leadership in the global green and digital transitions.

Science diplomacy

In 2025, IIASA reinforced its role as a trusted actor in science diplomacy by deepening engagement with international institutions and supporting research-informed policy dialogue across global platforms.

The Institute maintained an active presence as an observer in major intergovernmental organizations, contributing to international policy dialogues and multilateral cooperation. It also expanded its global network through new cooperation agreements with partner institutions across countries including Australia, Burkina Faso, the Czech Republic, Egypt, Germany, Italy, Japan, Mexico, Vietnam, and Yemen, as well as with organizations such as the World Health Organization, the Pan American Health Organization, the European Commission, the Royal Society, and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), strengthening collaboration between the Global North and Global South and reinforcing joint research, policy engagement, and science diplomacy worldwide.

Advancing science diplomacy at international fora

At COP30 in Belém, IIASA reinforced its role in global climate discussions by contributing scientific insights. Researchers participated alongside a diverse international community of policymakers, scientists, and civil society actors, including strong representation from Indigenous groups highlighting their role in protecting biodiversity.

Beyond the climate arena, IIASA also strengthened its role in global biodiversity diplomacy by hosting the first author meeting of the **IPBES Spatial Planning and Connectivity Assessment** in Laxenburg. The meeting brought together experts from around the world to launch work on a major international assessment exploring how spatial planning can better integrate biodiversity conservation and human wellbeing into decision-making.

IIASA researchers involved in the Building resilience to floods and heat in the maternal and child health system in Brazil and Zambia (**REACH) project**, were invited to develop a background document for the Belém Health Action Plan, providing evidence on how to sustain maternal and child health services during climate-related shocks, such as floods and heatwaves, based on research in Brazil and Zambia.

The team presented these findings at the pre-COP Global Conference on Climate and Health in Brasília, hosted by the World Health Organization, the Pan American Health Organization, and the Brazilian government, enhancing the science–policy interface. These engagements helped position the REACH project as a contributor to the implementation of the Belém Health Action Plan, which includes ongoing monitoring, reporting, and capacity-building activities for climate-resilient health systems.

IIASA Engagement at the European Science Diplomacy Conference and in North Africa

At the **2nd European Science Diplomacy Conference** in Denmark in December, IIASA Director General Hans Joachim (John) Schellnhuber delivered a plenary keynote highlighting IIASA's legacy as a bridge across geopolitical divides. He underscored the growing importance of scientific cooperation in addressing global challenges and supporting international collaboration in an increasingly fragmented world. The conference, convened by the European Commission and partners, brought together policymakers, scientists, and diplomats to advance Europe's global engagement. The discussions highlighted opportunities for continued engagement with European science diplomacy initiatives and strengthened IIASA's visibility as a trusted partner for evidence-based international cooperation.

In parallel, IIASA deepened regional cooperation through a **visit to Egypt** led by Deputy Director General Karen Lips. Engagements with the Institute of National Planning and participation in the Innovation Research Commercialization Expo reinforced collaboration on systems analysis, water security, and sustainable development, further developing the **North Africa Applied Systems Analysis Centre** as a hub for regional scientific cooperation. The visit also supported follow-up discussions on future joint research activities, regional capacity building, and stronger links between North African institutions and the wider IIASA research network.

Together for water: Science diplomacy in the MENA Region

IIASA brought together around 50 representatives from international organizations, research institutions, civil society, and diplomatic missions from across the Middle East and North Africa (MENA) for a high-level workshop titled, **Together for water**, to address water challenges in one of the world's most water-stressed regions. Building on its role as a neutral scientific platform, IIASA facilitated dialogue across political divides, including participants from countries in conflict, to explore cooperative solutions for transboundary river basins such as the Nile, Tigris-Euphrates, and Jordan.

The event, supported by partners including the Austrian government, also contributed to preparations for upcoming global forums.


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UK–IIASA collaboration on global challenges

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In 2025, IIASA, alongside UK Research and Innovation and the Royal Society, convened a **high-level event** bringing together scientific leaders to strengthen the United Kingdom's strategic engagement with IIASA across science, policy, and diplomacy.

The event showcased IIASA's integrative systems analysis approach in addressing global challenges, from climate change and health inequalities to energy innovation and artificial intelligence. A dedicated session highlighted IIASA's role as a neutral platform for fostering international cooperation in a fragmented geopolitical landscape, with particular emphasis on inclusive engagement with the Global South.

Across thematic sessions, IIASA contributed expertise on interconnected risks in the Anthropocene, climate overshoot, and sustainable energy transitions, demonstrating how systems-based approaches can inform policy and governance.

Bridging regions through science diplomacy

Engagements with partners in China and Austria formed an important part of IIASA's science diplomacy efforts in 2025, alongside collaboration with countries including Australia, Burkina Faso, the Czech Republic, Germany, Italy, Japan, Mexico, Vietnam, and Yemen. High-level meetings with national institutions and government representatives helped reinforce long-term cooperation, strengthen diplomatic ties, and identify new areas for joint research.

Across these interactions, IIASA welcomed several prominent diplomats, including ambassadors and senior representatives, creating space for dialogue between partners from both the Global North and Global South. Discussions focused on shared challenges and sustainable development, while emphasizing the importance of inclusive, science-based cooperation that reflects diverse regional priorities.

Among these was a visit from representatives of the US Mission to International Organizations in Vienna in July 2025, which explored planned activities in science diplomacy, including the Raiffa Center and Scientia Forum, alongside opportunities to strengthen IIASA-US collaboration across multiple fields. In September 2025, IIASA Deputy Director General Karen Lips also visited the US National Science Foundation (NSF), which will become IIASA's new National Member Organization (NMO) for the US, further strengthening institutional ties and opportunities for collaboration.

By engaging actors across regions and levels of development, IIASA continues to strengthen its role as a neutral platform for collaboration, supporting knowledge exchange and fostering partnerships that bridge divides and advance science-based solutions to global challenges.

Capacity development and training

In 2025, IIASA continued to advance global research capacity by nurturing early-career talent through its flagship programs, fellowships, and targeted training initiatives. These activities equipped participants with practical skills in systems analysis, strengthened interdisciplinary collaboration, and contributed to building a globally connected community of emerging researchers.

49

participants in the Young Scientists Summer Program (YSSP) held in person in Laxenburg.

26

nationalities made up the 2025 YSSP cohort.

37

YSSP participants received funding from NMOs.

19

postdoctoral fellows were funded by IIASA and its partner organizations in 2025.

95

IIASA research staff were engaged in guiding the research of IIASA postdoctoral fellows, YSSP participants, and other PhD students at IIASA.

22

papers were published with participation of at least one YSSP author, or an author whose contribution was based on research done during their YSSP.

Training tomorrow's systems thinkers

In 2025, IIASA hosted its second two-week Summer School for Systems Modeling in Laxenburg, bringing together 28 students from 15 countries. The program provided structured training in the development and application of mathematical and computational models, addressing data and process uncertainties, exploring solution spaces, and identifying policy-relevant insights. It aimed to equip master's and PhD students, as well as postdoctoral researchers, with a strong understanding of modeling practices and their limitations in the context of sustainability.

The Institute also delivered its first one-day workshop on Systems Analysis for 15 Public Policy Master's students from the Policy and Leadership Track at the Barak Leadership Center, Tel Aviv University, Israel. The workshop introduced key concepts of systems analysis and their relevance for science-based decision-making, while also broadening participants' exposure to topics such as science diplomacy.

Throughout the year, IIASA hosted school groups from Austria and contributed to selected university courses from Austria, China, and Korea, reaching more than 350 participants, while also continuing its year-long "Climate Champions" sustainability course aimed at dedicated high-school students, launched in 2024.

Outstanding contributions from the 2025 YSSP cohort

In 2025, IIASA welcomed 49 participants from 22 countries (26 nationalities of which 86% came from IIASA National and Regional Member Organizations to Laxenburg to participate in the Young Scientists Summer Program (YSSP). IIASA member organizations provided financial support for 75.5% of the participants. Over the course of the summer, a rich scientific program featured workshops on systems analysis, vibe coding, open AI data creation, geographic information systems (GIS), open data, public speaking, manuscript writing and editing, as well as a negotiations workshop, to name a few.

Ross Tieman
(AUS/AUS)

Ross received the Mikhalevich Award for his project titled, *Resilience as an Algorithm: Online Measurement of Algorithmic Complexity Provides Predictive, Unique, and Practically Relevant Early Warning Signals for Critical Transitions.*

Parisa Javadi
(IRN/USA)

Parisa won the Levien Award for her study titled, *The Role of Land and Ocean-Based Geochemical CO_2 Removal Pathways in Climate Mitigation.*

In addition, the following students from the 2025 YSSP cohort received an 'Honorable Mention' for their outstanding research, conducted at IIASA over the course of the summer:

Weiyi Gu, a third-year PhD candidate at the college of Environmental Sciences and Engineering at Peking University, China, was recognized for his research on *Mapping Cost-effective Adaptation Pathways to Global Quantity- and Quality-induced Agricultural Water Scarcity.*

Tom Hackbarth, a PhD researcher at the Institute for Environmental Studies at the Vrije Universiteit Amsterdam, received an honorable mention for his innovative work on *Designing Nature-Positive Pathways for Europe's Land and Food Systems.*

Sanda Ny Avo Mamiharimalala, a PhD researcher at INRAE and affiliated with the Université Paris-Saclay in France, received an honorable mention for her work titled, *Disaggregating Non-Renewable Energy Use in EU Crop Systems: From Raw FADN Data to Robust Allocation Models.*

Veronika Schick, a second-year PhD student in the Department of Natural Resource Policy at ETH Zürich, was recognized for her research on *Making Climate Adaptation Acceptable in a Polarized World – The Role of Identity for Distributive Justice Preferences.*

Strengthening postdoctoral research capacity

Postdoctoral researchers are central to the vitality of any research institution. In the past year, IIASA hosted 19 postdoctoral fellows through bilateral fellowship programs with member countries, including China and Korea; four were supported by the Marie Skłodowska-Curie Actions of the EU, and one was funded directly by IIASA. The bilateral fellowship scheme was further expanded to accommodate up to three candidates from Iran and up to two candidates from Israel each year.

In addition, IIASA hosted 59 postdoctoral researchers recruited through its research programs, typically supported by externally funded projects, while a further 15 postdoctoral scholars joined the Institute for periods ranging from three to twelve months or longer.

Supporting researchers across career stages

Since 2024, IIASA has actively promoted sabbatical opportunities, with three senior researchers spending more than three months at the Institute in 2025 to collaborate on a range of projects.

At the same time, IIASA hosted around 170 Early Career Researchers from 26 countries in 2025, many of whom will return to their home institutions and contribute to strengthening systems analysis capacity globally. To support their development, the Institute offers a structured portfolio of training in research methods, data management, academic writing and publishing, communication, science-policy engagement, and career development. In 2025, IIASA delivered 29 targeted workshops attended by over 500 Early Career Researchers.

Advancing global partnerships

Throughout 2025, IIASA expanded its international cooperation through new agreements, research initiatives, and high-level exchanges focused on sustainability, climate action, and systems science.

New agreements to advance global research

IIASA established various new agreements with international partners to strengthen cooperation in key research and policy areas.

A **renewed agreement** with the Food and Agriculture Organization of the United Nations (FAO) coincided with the launch of the latest version of the **Global Agro-Ecological Zoning (GAEZ) tool**, supporting improved assessments of land suitability and agricultural productivity.

IIASA partnered with Wageningen Social & Economic Research and researchers from three major Horizon Europe projects – **LAMASUS**, **BrightSpace**, and **ACT4CAP2027** – to examine how agriculture can support Europe's competitiveness, food security, and sustainability goals. The partnership resulted in a **joint perspective paper** presented at several European Commission events to inform discussions on the future Common Agricultural Policy.

In Eastern Europe, The Institute partnered with the United Nations Population Fund and Moldova's National Institute for Economic Research to **strengthen migration research and demographic projections** in response to rapid population decline.

In the United Kingdom, a **new agreement** with the London School of Hygiene & Tropical Medicine focuses on advancing research at the intersection of climate and health, including the development of integrated models and One Health approaches.

IIASA also continued its collaboration with the Bezos Earth Fund and the Integrated Assessment Modeling Consortium (IAMC) on the Scenario Compass initiative. The Scenario Compass provides a curated ensemble of science-based scenarios that are vetted for consistency with recent global trends and presented in a consistent, accessible format. Designed as an easy entry point to global, regional, and national climate change mitigation scenarios, the platform supports researchers, policymakers, and other stakeholders in navigating the rapidly expanding landscape of climate futures.

Deepening research and policy cooperation with China

IIASA further strengthened its scientific cooperation with leading institutions in China through partnerships focused on climate, air quality, and systems analysis. Collaborations with the Beijing Institute of Technology, **Peking University**, and Beihang University expanded joint research, academic exchange, and policy-relevant modeling, including continued development of the GAINS-Beihang model for air pollution assessment.

In April, IIASA signed a Memorandum of Understanding with the Chinese Academy of Agricultural Sciences (CAAS) aiming to strengthen strategic cooperation in agriculture, resources, and environmental research, as well as to share resources and leverage complementary expertise in Earth Observation, geospatial analysis, and smart agriculture. In October, IIASA also welcomed a high-level delegation from the **Chinese Research Academy of Environmental Sciences (CRAES)** for an in-depth exchange on advancing systems analysis and environmental solutions. These activities also highlighted IIASA's broader role as a neutral platform for international scientific cooperation, which was reflected in a recent 2025 ***Nature* article** describing the Institute as a "safe zone" for collaboration amid geopolitical tensions.

At the national level, IIASA strengthened cooperation with the **National Natural Science Foundation of China**, its National Member Organization, with plans for expanded scientific exchange and participation in global initiatives.

Shaping open and sustainable research agendas in Europe

IIASA expanded its engagement with European research-policy networks through participation in the **Global Research Council** regional meeting, convened by Science Europe in Serbia.

Represented by Deputy Director General Karen Lips, IIASA contributed its systems analysis perspective to discussions on open science, artificial intelligence, and sustainable research systems. The meeting brought together leading research funding organizations to exchange best practices and discuss priorities for the 2026 Global Research Council Annual Meeting.

Several IIASA member countries, including Austria, Finland, Germany, Norway, Slovakia, Sweden, the United Kingdom, and Ukraine, were represented, highlighting strong alignment between IIASA and national research priorities. Discussions emphasized the importance of open, equitable, and data-driven research in responding to complex societal challenges.

This focus was also reflected in a new partnership between IIASA and Google DeepMind, combining AI capabilities with citizen science approaches to develop a global forest dataset supporting implementation of the EU policy on commodity-driven deforestation. The collaboration resulted in a **joint publication** in *Scientific Data* and is expected to expand further in 2026.

Expanding collaboration and capacity building in Africa

Last year, IIASA strengthened partnerships across Africa through cooperation with the Sub-Saharan Africa Regional Member Organization (SSARMO), the South African National Research Foundation and National Research Fund, and the University of Pretoria.

IIASA Deputy Director General Karen Lips participated in the 2025 **Global Research Council Sub-Saharan Africa Regional Meeting** and Science Granting Councils Initiative Academic Symposium, focused on strengthening African leadership in global research governance. The event also highlighted the role of SSARMO in supporting institutional capacity building, regional collaboration, and African-led science and innovation across 18 participating countries.

An IIASA delegation, including Lips, visited **Ghana and Ivory Coast** in 2025 to strengthen African research partnerships and advance science diplomacy and sustainable development cooperation. In Ghana, Lips participated in high-level discussions linked to the Accra Declaration on Science, Technology, and Innovation and engaged with partners including EURAXESS Africa and SSARMO to expand collaboration between African and international research networks.

IIASA also partnered with African institutions on a **G20 side event** exploring the role of systems analysis and science diplomacy in addressing interconnected challenges across food, energy, water, and climate systems. The dialogue highlighted longstanding cooperation through initiatives such as the South Africa Systems Analysis Centre and the South African Young Scientists Summer Program, while identifying new opportunities for research cooperation, policy dialogue, and institutional partnerships across the continent.

At a satellite event of the **Sustainability Research and Innovation Congress Africa**, IIASA co-hosted sessions and delivered systems analysis training focused on evidence-based policymaking, justice in resource planning, and science–society engagement. These activities strengthened regional cooperation and supported early-career researchers.

Expanding cooperation on disaster risk management

IIASA and the **Kyoto University Disaster Prevention Research Institute** renewed their Memorandum of Understanding, further advancing a long-standing partnership on disaster risk management and resilience research.

Both institutions are founding members of the Integrated Disaster Risk Management Society, which promotes cooperation between science, policy, and practice in addressing complex disaster risks. IIASA researchers continue to support the society through conference participation, editorial contributions, and collaborative research.

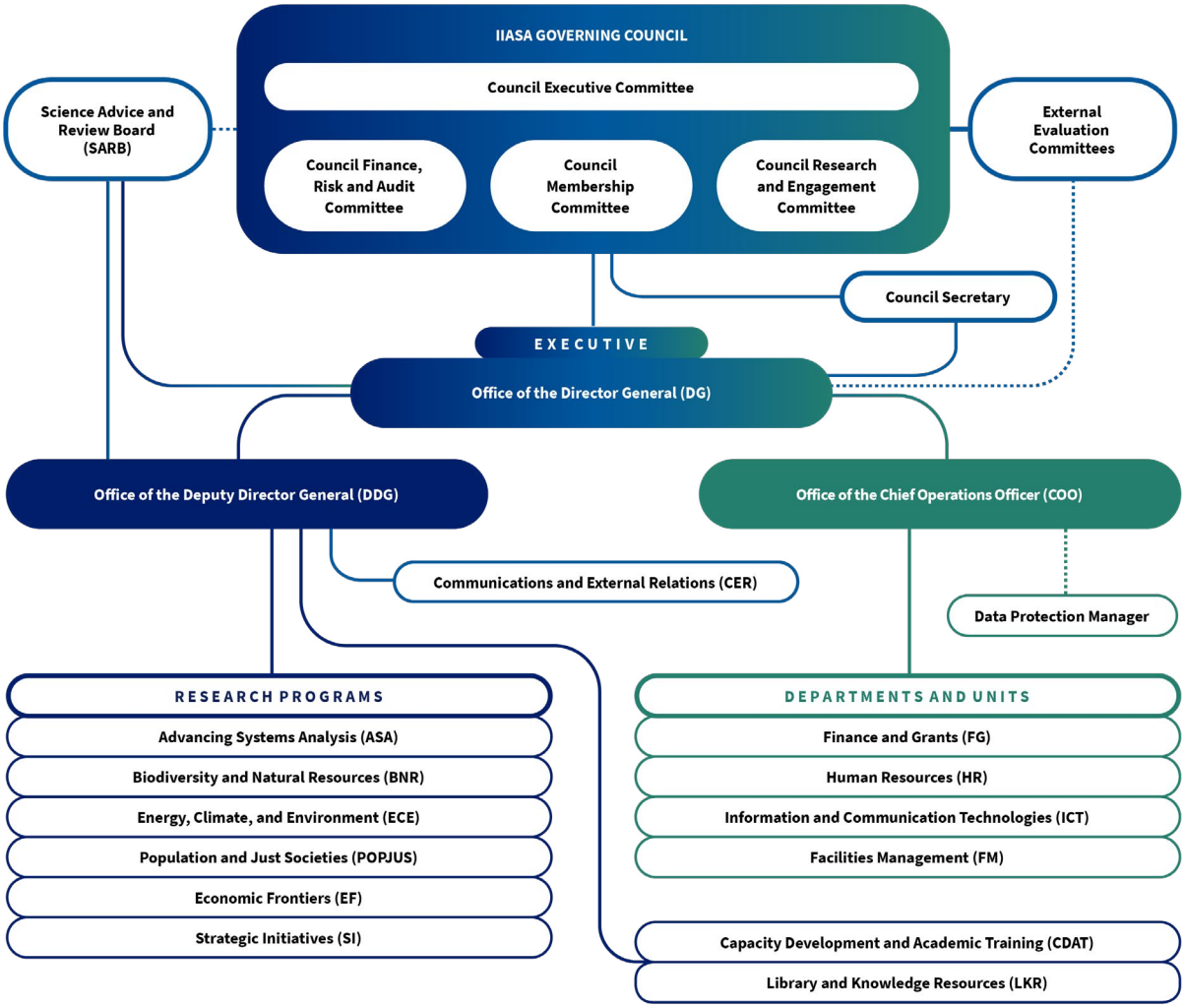
Several IIASA scientists participated in **IDRiM's 2025 annual conference** in Greece, focused on disaster risk reduction in islands and remote areas, contributing to international dialogue on systemic risk and resilience. The partnership also builds on earlier cooperation through initiatives such as the Polycrisis and Systemic Risk Symposium in Beijing, co-hosted by IIASA, which explored resilience dividends and the broader economic benefits of disaster preparedness.

INSTITUTE PERFORMANCE

Governance and management

IIASA is governed by a Council comprised of one permanent representative from each member organization. The Council convenes in person twice a year, in June and November. The Charter, the Council delegation of authority, and subsequent resolutions of the Council, document the role of the Council, its processes, and decisions. The Council holds governance oversight responsibilities, including setting strategic directions, approving the Institute's budget, and endorsing strategies and research priorities for IIASA. It ensures that IIASA's activities align with institutional objectives, adhere to the provisions of the Charter, and reflect the interests of its member organizations.

19 Council members representing 19 member organizations governed IIASA in 2025. The IIASA Council exercised its oversight responsibilities through a committee structure comprising of the Council Executive Committee; the Council Finance, Risk, and Audit Committee; the Council Membership Committee; the Council Research and Engagement Committee, and a Science Advice and Review Board (SARB) supported by external auditors that provided specialized input to the Council. These committees and ad hoc task forces of the Council convene virtually, as needed, throughout the year.



In 2025, IIASA management further strengthened its governance, membership engagement, due diligence, and management processes through close collaboration with the IIASA Council and the active involvement of both external and internal auditors.

The IIASA Council acknowledged the extensive work undertaken by the Committee for External Scientific Review (CESR), composed of world-class scientists, underscoring the importance of continuous improvement in research excellence, institutional effectiveness, and strategic alignment with global scientific and policy needs. The IIASA Council and CESR highlighted IIASA's enduring role in science diplomacy. The Institute continues to serve as a neutral platform for international collaboration and work on shared challenges, providing independent, science-based assessments that inform decision-making across governments, research institutions, and policy arenas even during periods of geopolitical strain. IIASA's long-standing contributions to systems analysis, together with its commitment to training the next generation of scientific leaders, remain central to IIASA's mission.

IIASA and its Council also gratefully acknowledge the five-year grant from the United States, which has provided essential support for the Institute's research and operations. This long-term contribution has strengthened IIASA's capacity to deliver high-quality interdisciplinary research and policy-relevant analysis addressing global challenges. The IIASA Council also expresses its gratitude for the supplementary financial contributions provided by Japan, which continue to play an important role in supporting the Institute's activities and strategic priorities.

Council leadership and changes to senior management

In August 2025, Dr. Sepo Hachigonta (Sub-Saharan Africa Regional Member Organization) was appointed Council Vice Chair, having previously served as Chair of the Council Membership Committee. Professor Kazuhiko (Kazu) Takemoto (Japan) continued to serve as Council Chair, while Professor Debra Knopman (USA) continued her role as Council Vice Chair, following her appointment in 2024.

Celebrating collaboration: IIASA Interaction Festival 2025

On 25 and 26 June 2025, IIASA held its second Interaction Festival – an annual gathering designed to foster collaboration, innovation, and networking across the Institute's diverse community.

"The IIASA Interaction Festival is the only annual occasion on which the entire IIASA family comes together – from staff and senior management to participants of the IIASA Young Scientists Summer Program (YSSP) and representatives of IIASA's National and Regional Member Organizations," says IIASA Director General Hans Joachim (John) Schellnhuber. "By deliberately creating a space that transcends disciplinary, sectoral, and generational boundaries, we reaffirm the collaborative ethos at the core of IIASA and strengthen our shared capacity to engage with an increasingly complex global landscape."

The festival featured a diverse program, including panel discussions, a session with funders, and a guest lecture that set the tone for forward-looking discussions on the Institute's future. Participants also explored new ideas and shared their work through 18 parallel workshops. Networking sessions and a musical performance reinforced the sense of community, with day one concluding with a football match organized by the IIASA Football Club.

IIASA Research Programs presented recent achievements and breakthroughs, highlighting cross-disciplinary impact, policy relevance, collaborations with Member Organizations, and transferable insights. A key theme across all programs was the growing complexity of the global polycrisis and the need for integrated approaches that combine disciplines, methods, and data sources. Researchers also emphasized the strength of collaboration within the IIASA community.

A central session brought together representatives of IIASA's National and Regional Member Organizations for a panel discussion reflecting on the value of IIASA membership and to explore how the Institute can evolve to meet emerging global challenges while maintaining its leading role in science and policy. Panelists noted the increasing interconnection of environmental, economic, and demographic pressures – particularly in rapidly developing regions – and emphasized the importance of identifying synergies, sharing best practices, and strengthening cross-border knowledge exchange.

An interactive session on external funding opportunities provided practical guidance for researchers at different career stages, including how to align research interests with national and multilateral funding instruments.

As part of the annual tradition, the festival also honored four exceptional scholars – Markus Amann, Joanne Linnerooth-Bayer, Sten Nilsson, and Sergei Scherbov – with the **IIASA Lifetime Achievement Award**. The ceremony was followed by a dialogue between the award recipients and early career researchers, fostering exchange across generations of systems scientists.

"The Interaction Festival provided an excellent environment, stimulating future research collaborations among IIASA scholars. It was great to see the heterogeneity of IIASA in this festival across the different projects and initiatives," says Viktor Bruckman, National Member Organization Secretary of the Austrian IIASA Committee. "Council members could directly meet the researchers and the participants of the Young Scientists Summer Program and engage with them. It was great to see IIASA continuing to build bridges between people and disciplines."

Operations updates

IIASA continued to strengthen its operational foundations in a year marked by both financial constraints and ongoing growth. The Institute focused on enhancing efficiency, resilience, and user experience across its digital infrastructure, facilities, and support services, while maintaining a strong commitment to sustainability and a high-quality working environment. These efforts ensured that IIASA remains well equipped to support cutting-edge research and collaboration, while adapting to evolving organizational and external demands.

Powering performance: Strengthening IIASA's digital backbone

In 2025, the Information and Communication Technologies (ICT) Department introduced key upgrades to strengthen IIASA's digital infrastructure and support growing data and computing needs.

A new high-performance, scalable storage system replaced the old solution, increasing data transfer speeds more than tenfold, from 10 Gbps to 120 Gbps. This was complemented by a central network upgrade, boosting core capacity from 40 Gbps to 100 Gbps.

Computing capabilities were further improved with the addition of graphics processing unit (GPU) support to the main cluster, allowing researchers to run more demanding tasks efficiently. A new web interface also made it easier for users to monitor their jobs and system performance.

ICT also introduced a local AI-powered web service to support everyday work and organized workshops on AI and parallel computing using MATLAB. Additional improvements included moving distribution lists to Exchange Online and deploying Cloudflare to enhance web security and performance.

Enhancing everyday spaces

The Facilities Management team continued to improve the working environment at IIASA through a series of targeted upgrades focused on safety, comfort, and functionality.

Staff kitchens were modernized with new appliances, improving usability and efficiency. One of the visitor apartments was fully renovated, including upgraded bathroom facilities and an updated guest room with new furniture, flooring, and air conditioning to better accommodate visiting researchers.

Infrastructure improvements included optimization of the cooling system in the Wodak room and the replacement of a key power transformer in the General Purpose Building, ensuring a more reliable electricity supply. Several sanitary facilities across the Schloss were fully refurbished, while new flooring in some offices enhanced safety and accessibility.

Security was also strengthened through the installation of a camera-equipped intercom system at the main gate and upgraded locks in key areas.

These projects reflect FM's ongoing commitment to providing a safe, functional, and welcoming environment for staff and visitors.

© IIASA

Navigating challenges and building resilience together

The Human Resources (HR) team supported IIASA through a challenging financial period while continuing to enhance the employee experience, strengthen processes, and foster a supportive workplace.

A key priority was implementing cost-saving measures responsibly and minimizing impacts on staff while safeguarding the Institute's ability to attract, retain, and develop talent. This effort was strongly supported by employees, who demonstrated exceptional solidarity through temporary individual cost-saving contributions. In addition, a coordinated effort across the Institute significantly reduced unused annual leave balances, contributing to improved financial stability.

HR also advanced scientific career development by refining frameworks that support researcher progression. The revised Recognition of Researchers Policy introduced clear, transparent criteria to guide professional growth and ensure contributions are appropriately recognized, while the updated Outside Activities Policy strengthened transparency around external engagements.

Further improvements included a new employee orientation program to support onboarding, as well as workflows in contract administration and internal information systems. In parallel, HR streamlined information resources for young families unfamiliar with local regulatory frameworks and launched the "HR Podcast," a series of online informative meetings on specific HR topics for supervisors and relevant stakeholders.

Despite financial constraints, IIASA continued to grow, reflecting its ongoing appeal as a leading international research institute. The Institute remained a highly attractive employer, receiving over 3,000 job applications for 30 vacancies – an average of more than 100 candidates per position.

Accelerating IIASA's sustainability transition through smarter energy use

IIASA made further progress in advancing environmental sustainability, building on earlier investments in renewable energy and efficiency.

Following the installation of photovoltaic (PV) panels on the General Purpose Building, a local energy community was established. This enabled solar energy to be shared across IIASA buildings via the public grid, significantly increasing the use of on-site generated electricity from around 32% to nearly 80%.

As a result, IIASA reduced its external electricity purchases to 513 MWh, down from 659 MWh in 2024, despite rising overall demand driven by expanded computing infrastructure. Notably, the ICT server environment now accounts for a substantial share of the Institute's electrical energy use, reflecting growing digital capacity.

To ensure accurate tracking, new metering systems and data connections were introduced to monitor internal energy flows. Additional sustainability efforts included replacing the gas-based heating system at the Director General's residence with a heat pump and advancing discussions on a more sustainable business travel policy, as business travel constitutes the largest share of CO_2-equivalent emissions within the organization.

These measures highlight IIASA's commitment to reducing its environmental impact while responsibly supporting the Institute's expanding research and technological needs.

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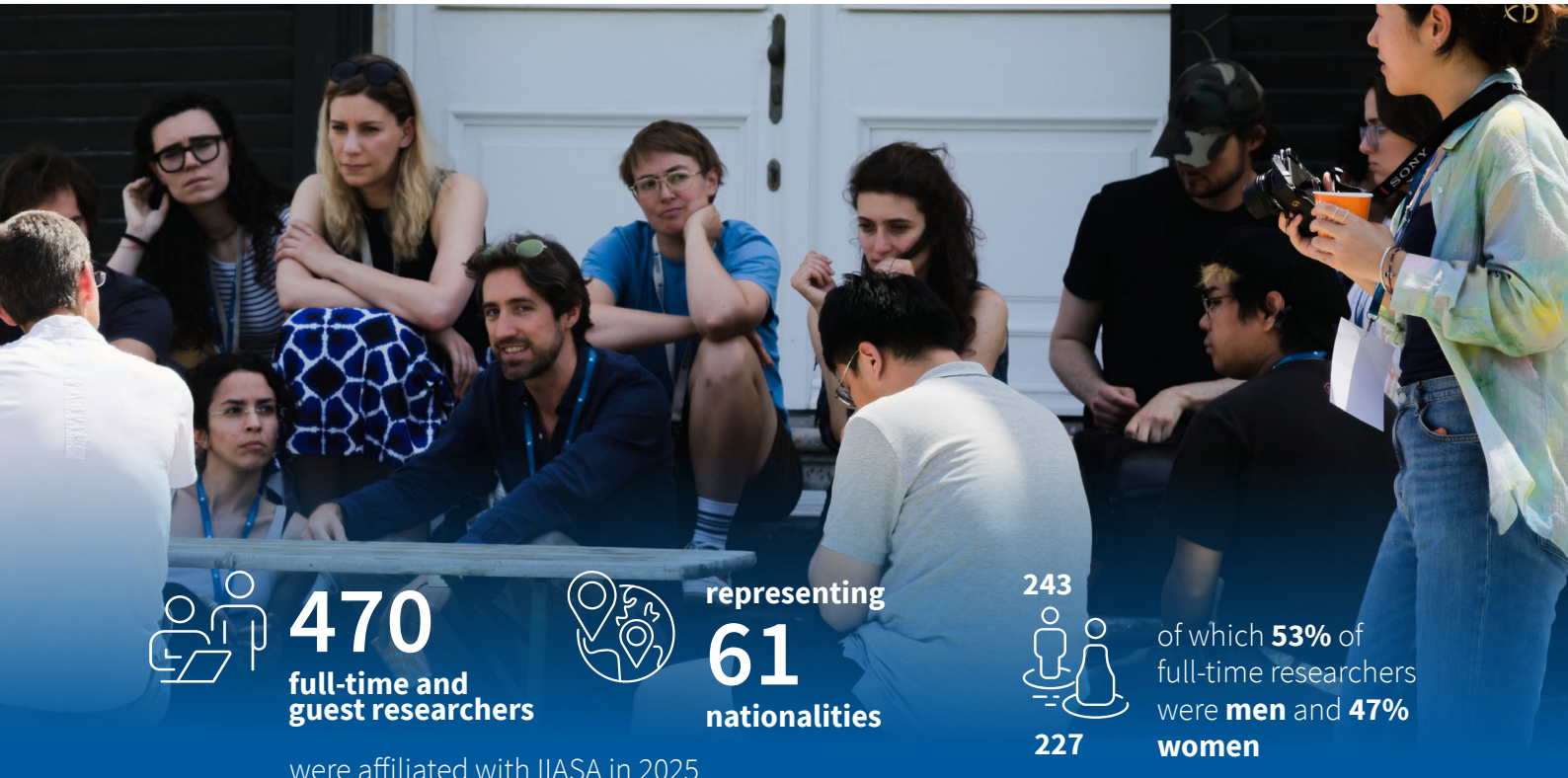
Diversity, equality, and inclusion

At IIASA, the principles of diversity, equality, and inclusion are embedded across its research, policies, and workplace culture, shaping an environment where diverse perspectives are valued and collaboration thrives. Building on this foundation, IIASA continues to strengthen representation, expand opportunity, and foster an inclusive community for staff from around the world.

In 2025, IIASA employed 470 individuals representing 61 nationalities, with 243 men and 227 women. Approximately 65% of staff originated from IIASA member countries, with Austria, China, Germany, India, Russia, the United Kingdom, and the United States forming the largest national groups. Gender representation varied across nationalities, and these trends continue to be monitored to ensure inclusive recruitment practices.

IIASA's workforce continued to reflect its research-driven identity, with 75% of employees working as researchers and software developers, and 25% serving in operational roles. In terms of full-time equivalents (FTE), the Institute recorded 362.35 FTEs, comprising 189.83 for men and 172.52 for women, including internships. The overall gender composition by FTE shifted slightly compared to previous years, with 53% men and 47% women, continuing the Institute's progress toward greater gender balance (2024: 55% men and 45% women; 2023: 56% men and 44% women).

Internal mobility also advanced, with five women and nine men across all research programs promoted within their respective career profiles.



470 **full-time and guest researchers** were affiliated with IIASA in 2025

representing **61** **nationalities**

243 of which **53%** of full-time researchers were **men** and **47%** **women** **227**

65% **researchers** who worked at IIASA in 2025 came from Member Organization countries.

75% researchers & developers and operational roles **25%**

Culture, wellbeing, and inclusive practices

IIASA remains committed to fostering a healthy, inclusive, and supportive workplace culture where employee wellbeing and work-life balance are integral to institutional values.

The Institute provides occupational health consultations, confidential psychological support, and dedicated assistance on health, wellbeing, and accessibility matters, working in collaboration with external consultancy services to support staff facing challenges that may impact their work.

In 2025, IIASA expanded its wellbeing initiatives to include awareness of menopause in the workplace, joining the #MenopauseAtWork campaign in partnership with the European Menopause and Andropause Society (EMAS).

The Works Council continues to advocate for fair working conditions, while the Staff Social and Cultural Association (SOCU) fosters community and inclusion through activities that strengthen social ties across the Institute.

Advancing equality in policy and practice

As part of the **IIASA Gender Equality Plan**, work-life balance remains a leadership priority, supported by transparent policies that promote fairness and inclusion. The Institute's comprehensive employee benefits package supports both international and local staff. Key benefits include home-office flexibility, extended leave options, relocation and family support, non-contributory insurance, and access to health and wellbeing services.

In 2025, the Institute further strengthened its commitment to accountability by launching a Zero Policy Campaign on sexual harassment, with nearly 70% of employees completing the associated training by year's end. Through these measures, IIASA continues to foster a workplace culture grounded in wellbeing, equality, and organizational care, ensuring that staff can thrive both professionally and personally

Health and safety

Over the past year, IIASA continued to prioritize the health, safety, and wellbeing of its staff through practical measures and ongoing improvements across the Institute. Building on previous efforts, the focus remained on prevention, accessibility of support, and fostering a safe and healthy working environment for all employees.

The Human Resources team supported staff wellbeing through a range of services designed to promote both physical health and day-to-day comfort. All employees were offered free on-site influenza and tick vaccinations provided by the occupational physician, alongside access to workplace-related physiotherapy consultations. The health, safety, and wellbeing page on the IIASAHUB was further developed, ensuring staff have clear, user-friendly access to essential information, guidance, and available support services.

Facilities Management complemented these efforts with targeted safety and infrastructure initiatives. Additional height-adjustable desks were introduced to meet specific ergonomic needs, improving comfort and reducing the risk of strain-related issues. Staff also participated in occupational health and safety training delivered by an external expert, increasing awareness of workplace hazards and appropriate preventive measures.

IIASA's compliance with Austrian health and safety regulations was reaffirmed through external review, while all required fire protection inspections and maintenance activities were completed as planned, ensuring that emergency equipment remains fully functional and accessible.

No occupational accidents, near misses, or unsafe situations were reported in 2025, highlighting the effectiveness of preventive measures and IIASA's continued commitment to a strong culture of care and responsibility.

Managing risk

In 2025, IIASA continued to strengthen its risk management and governance framework in response to an increasingly complex global environment.

With growing geopolitical uncertainty, evolving compliance requirements, and rapid information flows, the Institute maintained a proactive and structured approach to identifying, assessing, and mitigating risks, while ensuring that internal controls and audit processes effectively support transparency, accountability, and operational efficiency.

Improving the effectiveness of organizational risk management, control, and governance processes remained on the agenda of the IIASA Council and Executive in 2025. IIASA maintains a comprehensive Risk and Challenge Register, which is continuously reviewed and updated. Appropriate actions aimed at mitigating or removing organizational risks and challenges will continue to be undertaken to prevent potential negative impacts for IIASA.

The risk of institutional disruptions due to external financial and political decisions remains the top-rated risk as persistent geopolitical tensions continue to threaten the financial and operational stability of the Institute.

Internal control and audit in 2025

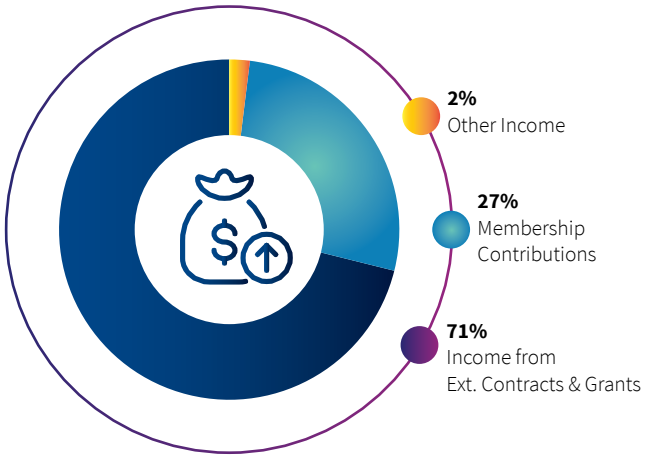
The internal audit function, established by the Finance, Risk, and Audit Committee, and the IIASA Executive, exists to independently review key internal processes, governance, and controls. Its goal is to ensure compliance while also supporting better performance, learning, and overall operational efficiency across IIASA.

In 2025, an internal audit focused on the Institute's Management Information System and identified several opportunities to improve efficiency. The work on implementing these recommendations is currently in progress.

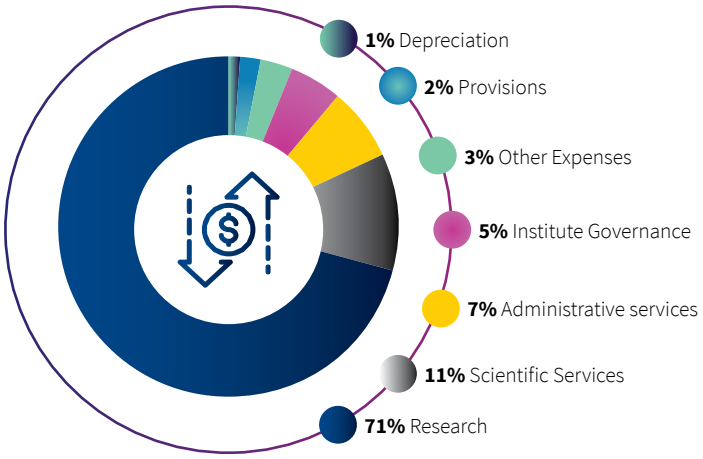
A key operational objective across departments was to simplify workflows and streamline decision-making, supporting more efficient day-to-day operations.

Financial performance

The Institute's annual budget rose to over €33 million in 2025, of which a little under 30% came from IIASA National and Regional Member Organizations. Significant additional funding came from contracts and grants from governments, international organizations, academia, business, and individuals, enabling IIASA to perform truly independent research.



IIASA registered income of €33.21 million in 2025. Around 27% of this amount was attributed to contributions from National and Regional Member Organizations, close to 71% from contracts and grants, and marginally over 2% from other revenue sources.



Over 80% of the Institute's total spending was dedicated to research and scientific services; spending on administration services and Institute governance was largely maintained despite inflationary pressures.

Income and expenditure 2025 and 2024

INCOME	31-Dec-2025	31-Dec-2024
Membership contributions	8,882,188	11,430,629
Contracts and grants	23,698,333	19,228,123
Other income	625,008	1,035,404
TOTAL INCOME	**33,205,529**	**31,694,156**
EXPENDITURES	**31-Dec-2025**	**31-Dec-2024**
Research	23,787,759	22,314,153
Scientific services	3,544,781	3,725,547
Institute governance	1,742,272	1,730,833
Administrative services	2,489,490	2,731,717
Depreciation	519,607	653,333
Provisions	559,643	2,683,450
Other expenses	960,520	110,919
TOTAL EXPENDITURE	**33,604,072**	**33,949,951**
CHANGE IN NET ASSETS	**-398,543**	**-2,255,794**

Contracts and grants

Funding of contracts and grants increased significantly from €19.23 million in 2024 to over €23.70 million in 2025. IIASA gratefully acknowledges this source of financial support and lists the funders thereof below. Within this amount, IIASA researchers have successfully won funding from diverse sponsors such the EU's Horizon Europe Program for Research and Innovation, and the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV). IIASA participates as a research coordinator or research partner in global networks involving approximately 500 partners (as recorded in consortium data), across 226 ongoing projects with a total value exceeding €65 million.

Funders

- Austrian Academy of Sciences (ÖAW), Vienna, Austria
- Austria's Agency for Education and Internationalisation (OeAD-GmbH), Vienna, Austria
- Austrian Climate and Energy Fund (KLI.EN), Vienna, Austria
- Austrian Climate Research Program (ACRP), Vienna, Austria
- Austrian Development Agency (ADA), Vienna, Austria
- Austrian Research Promotion Agency (FFG), Vienna, Austria
- Austrian Science Fund (FWF), Vienna, Austria
- Climate Innovation City Graz, Graz, Austria
- Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK), Vienna, Austria
- Federal Ministry for Education, Science and Research (BMBWF), Vienna, Austria
- Federal Ministry for Innovation, Mobility and Infrastructure (BMIMI), Vienna, Austria
- Interreg Alpine Space, Salzburg, Austria
- The National Bank of Austria, Anniversary Fund (OeNB), Vienna, Austria
- Office of the Provincial Government of Lower Austria, St. Pölten, Austria
- Organization for Security and Co-operation in Europe (OSCE), Vienna, Austria
- The United Nations Industrial Development Organization (UNIDO), Vienna, Austria
- Vienna Science and Technology Fund (WWTF), Vienna, Austria
- European Commission, DG Climate Action, Brussels, Belgium
- European Commission, DG Enlargement and Eastern Neighbourhood (ENEST), Brussels, Belgium
- European Commission, DG Environment, Brussels, Belgium
- European Commission, DG for Internal Market, Industry, Entrepreneurship and SMEs, Brussels, Belgium
- European Commission, DG Mobility and Transport, Brussels, Belgium
- European Commission, DG Research and Innovation (RIA), Brussels, Belgium
- European Commission, European Climate, Infrastructure and Environment Executive Agency (CINEA), Brussels, Belgium
- European Commission, European Health and Digital Executive Agency (HADEA), Brussels, Belgium
- European Commission, European Research Council Executive Agency (ERCEA), Brussels, Belgium
- European Commission, European Research Executive Agency (REA), Brussels, Belgium
- European Commission, Innovation and Networks Executive Agency (INEA), Brussels, Belgium
- European Commission, (Co-funding Interreg Programme Danube Region in Hungary), Brussels, Belgium
- UNESCO Institute for Statistics (UIS), Montreal, Canada
- Beihang University (BUAA), Beihang, China
- Global Energy Interconnection Development and Cooperation Organization (GEIDCO), Beijing, China
- The China Sustainable Energy Program (CSEP), The Energy Foundation, Beijing, China
- Ministry of Agriculture of the Czech Republic, Prague, Czech Republic
- European Environment Agency (EEA), Copenhagen, Denmark
- European Space Agency (ESA), Paris, France
- Expertise France, Paris, France
- International Energy Agency (IEA), Paris, France
- Organisation for Economic Co-operation and Development (OECD), Paris, France
- United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris, France
- United Nations Environment Programme (UNEP), Paris, France
- BASF SE, Ludwigshafen, Germany
- Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and consumer Protection (BMUV), Berlin, Germany
- Federal Ministry of Education and Research (BMBF), Bonn, Germany
- Federal Republic of Germany, represented by the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV), Berlin, Germany
- Frankfurt School of Finance and Management, Frankfurt, Germany
- The Foundation Remembrance, Responsibility and Future (EVZ), Berlin, Germany

- United Nations Convention to Combat Desertification (UNCCD), Bonn, Germany
- Yidan Prize Foundation, Central, Hongkong
- Commission of the European Communities, DG Joint Research Centre (JRC), Ispra, Italy
- European Space Agency (ESA-ESRIN), Rome, Italy
- Food and Agriculture Organization of the United Nations (FAO), Rome, Italy
- United Nations Children's Fund (UNICEF), Rome, Italy
- Research Institute of Innovative Technology for the Earth (RITE), Kyoto, Japan
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- United Nations Environment Programme (UNEP) HQ, Nairobi, Kenya
- Luxembourg National Research Fund (FNR), Esch-sur-Alzette (Belval), Luxembourg
- United Nations Population Fund (UNFPA), Maputo, Mozambique
- ICLEI East Asia Secretariat, Seoul, Republic of Korea
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- Jeonju University, Jeonju, Republic of Korea
- Korea University Research and Business Foundation (KU-RBF), Seoul, Republic of Korea
- Seoul National University R&DB Foundation, Seoul, Republic of Korea
- Centre for Research on Multinational Corporations (SOMO), Amsterdam, Netherlands
- Ministry of Infrastructure and Water Management, The Hague, Netherlands
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- Commission of the European Communities, Directorate General Joint Research Centre (JRC), Sevilla, Spain
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- ClimateWorks Foundation, San Francisco, CA., USA
- Environmental Protection Agency (EPA), Washington, DC., USA
- Future of Life Institute, Narberth, PA., USA
- Global Environmental Facility (GEF), Washington, D.C., USA
- Google LLC, Mountain View, CA, USA
- National Institute of Health (NIH), Bethesda, MD., USA
- National Science Foundation (NSF), Arlington, VA., USA
- The Energy Foundation, San Francisco, CA, USA
- The World Bank, Washington, D.C., USA
- Woodwell Climate Research Center, Falmouth, MA., USA
- World Resources Institute, Washington, D.C., USA

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IIASA member organizations and Council Members

On 31 December 2025, IIASA had 19 member organizations, represented by the following NMOs/RMO:

AUSTRIA
The Austrian Academy of Sciences (ÖAW)
Council Member: Professor Dr. Christian Köberl

CHINA
The National Natural Science Foundation of China (NSFC)
Council Member: Professor Lan Yujie

EGYPT
Academy of Scientific Research and Technology (ASRT)
Council Member: Professor Dr. Gina El-Feky

FINLAND
The Finnish Committee for IIASA
Council Member: Professor Olli Varis

GERMANY
Association for the Advancement of IIASA
Council Member: Professor Dr. Miranda Schreurs

INDIA
Technology Information, Forecasting, and Assessment Council (TIFAC)
Council Member: To be announced

IRAN, ISLAMIC REPUBLIC OF
Iran National Science Foundation (INSF)
Council Member: Dr. Ali Mohammad Soltani

ISRAEL
The Israel Committee for IIASA
Council Member: Professor Itai Sened

JAPAN The Japan Committee for IIASA
Council Member: Professor Dr. Kazuhiko (Kazu) Takemoto

KOREA, REPUBLIC OF
National Research Foundation of Korea (NRF)
Council Member: Professor Kil-Choo Moon

NORWAY
The Research Council of Norway (RCN)
Council Member: Dr. Tarjei Malme

RUSSIAN FEDERATION
The Russian Academy of Sciences (RAS)
Council Member: Academician Professor Vladislav Panchenko

SLOVAKIA
Ministry of Education, Science, Research and Sport
Council Member: Ing. Dr. Miroslav Blazenec

SUB-SAHARAN AFRICA REGIONAL MEMBER ORGANIZATION (SSARMO)
National Research Foundation (NRF)
Council Member: Dr. Sepo Hachigonta

SWEDEN
Formas – a Swedish Research Council for Sustainable Development
Council Member: Dr. Magnus Tannerfeldt

UKRAINE
The National Academy of Sciences of Ukraine (NASU)
Council Member: Professor Olena Borodina

UNITED KINGDOM
United Kingdom Research and Innovation (UKRI)
Council Member: Dr. Sophie Hodgson

UNITED STATES OF AMERICA
The National Academy of Sciences (NAS)
Council Member: Professor Debra Knopman

VIETNAM
Vietnam Academy of Science and Technology (VAST)
Council Member: Dr. Le Quynh Lien

In particular, IIASA would like to thank the following Council Members who left the Council in 2025 for their invaluable service and advice: **Dr. Eva Falleth (Norway)**, **Dr. Johan Kuylenstierna (Sweden)**, **Professor Dr. Lubica Lacinova (Slovakia)**, **Professor Dr. Pradeep Srivastava (India)**, **Professor Dr. Helga Weisz (Germany)** and **Dr. Sarah Webb (UK)**.

IIASA Science Advice and Review Board

The Science Advice and Review Board (SARB) – formerly the Science Advisory Committee (SAC) – provides scientific guidance and a research assurance function for the Institute. The following members served in 2025:

- Professor Yacob Mulugetta (Chair), University College London (UCL), UK
- Dr. Marianne Fay, The World Bank
- Professor Leiwen Jiang, Asian Demographic Research Institute (ADRI), Shanghai University, China
- Professor Barbara Keyfitz, Ohio State University, USA
- Dr. Olga Kordas, Royal Institute of Technology, Sweden
- Professor Dr. Christoph Meinel, German University of Digital Science, Germany
- Professor Dr. Taikan Oki, University of Tokyo, Japan
- Professor Ahti Salo, Aalto University School of Science, Finland
- Professor Dr. Sonia Seneviratne, ETH Zürich, Switzerland
- Professor Dr. Linda Steg, University of Groningen, The Netherlands
- Professor Dr. Diana Ürge-Vorsatz, Central European University, Austria
- Professor Elke Weber, Princeton University, USA

Committee for External Scientific Review

In 2025, the Committee for External Scientific Review (CESR) provided independent, high-level scientific assessment and guidance for the Institute, supporting continuous improvement in research excellence, institutional effectiveness, and strategic alignment with global scientific and policy needs. The committee comprised the following members:

Professor Rosina M. Bierbaum – Chair
Roy F. Weston Chair in Natural Economics, University of Maryland
Chair, Science and Technical Advisory Panel of the Global Environment Facility
Professor of Natural Resources and Environment Policy, School of Natural Resources and Environment
Professor, Environmental Health Sciences, School of Public Health, University of Michigan, USA

Professor Francesca Bria
Honorary Professor, Institute for Innovation and Public Purpose (IIPP), University College London
Chair, New European Bauhaus Facility Expert Group, European Commission
Member of the Spanish International Council on Artificial Intelligence
Senior Fellow, Stiftung Mercator

Professor John P. Holdren
Co-Director, Science, Technology, and Public Policy Program, Belfer Center for Science and International Affairs
Teresa and John Heinz Research Professor of Environmental Policy; John F. Kennedy School of Government
Professor of Environmental Science and Policy, Emeritus
Department of Earth and Planetary Sciences, Affiliated Professor in Environmental Science and Engineering, Emeritus
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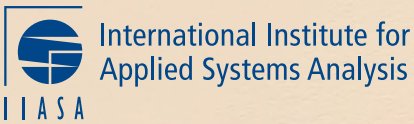
Professor Willem Schermerhorn Chair in Open Science from a Majority World Perspective, Faculty of Geo-Information Science, University of Twente
Honorary Professor, School of Life Sciences, University of KwaZulu-Natal, South Africa

Professor Tong Zhu
Boya Chair
College of Environmental Sciences and Engineering
Peking University, China



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