



Annual report

2022





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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IIASA IN 2022



Michael Clegg, Chair of the IIASA governing Council

IIASA marked its 50th anniversary in 2022, making it clear that the fundamental model of an international institute composed of many member countries is viable in the long term.

The institute is now entering what could be characterized as its third epoch. The first was its founding as an “East-West institute” in 1972 at the height of the cold war. Following the end of the Soviet Union in 1990, IIASA entered its second epoch by pivoting to become a global institute including new member countries from Africa, Asia, the Americas, and the Middle East. During this 30-year period, the dominant themes were globalization, open markets, and the free exchange of ideas. We now appear to be entering a new epoch that looks to be more fragmented and less open to the free exchange of ideas. IIASA will need to find ways of extending its relevance in this new era, but there can be little doubt that the fundamental values of IIASA are more important to global survival than ever.

Today IIASA is fully into the post-pandemic era. It is a remarkable testament to the resilience of the institute that metrics of scientific productivity were unaffected by the long period of remote work. If anything, the scientific accomplishments of IIASA staff and collaborators appear to have exceeded earlier periods. This is a strong testament to the outstanding scientific and administrative staff that form the core of IIASA.

The IIASA Council has had a very busy period. It marked the completion of a long period of internal reform with the adoption of a thoroughly revised Charter document. IIASA is also undergoing an important leadership transition in 2023 with the retirement of Albert van Jaarsveld. The Council would like to use this opportunity to thank Albert for his wise and steady leadership during the last five years. We have been working hard to identify a successor for Albert and look forward to welcoming new leadership as IIASA transitions into its third epoch.

The Council has had to deal with some instability in the IIASA membership occasioned by often unpredictable political events, leading to a small decline in the number of IIASA member countries. The largest disruption is a result of the tragic war between two members, Russia and Ukraine. A challenge for the future will be to expand the membership of IIASA to include more countries and to continue to provide a neutral ground to address the large global issues confronting the 21st century world.

A handwritten signature in black ink, appearing to read "Michael Clegg". The signature is fluid and cursive, with a large, stylized initial 'M'.



IIASA IN 2022

Albert van Jaarsveld, Director General

The year 2022 marked 50 years since IIASA was founded to build bridges between the East and West. We celebrated the occasion with a series of events around the world to reinforce the important role that IIASA continues to fulfill across political divides.

As a case in point, the Russian invasion of Ukraine had important geopolitical, economic, social, and societal consequences. Most important from an IIASA perspective was the damage that was precipitated to the global multilateral system by all parties, especially the multilateral science system.

The research and policy work conducted by IIASA, that focuses on addressing global and shared problems that no nation state can resolve on their own, requires an effective system of multilateral cooperation. The last year was a major setback to a system that had been carefully crafted since the Second World War. As both Ukraine and Russia are IIASA members, the war also had direct financial consequences for IIASA, which were absorbed internally and through some membership expansion.

The volatile situation in Ukraine and its multilateral consequences further sparked internal reflections at IIASA about its historic roots, its *raison d'être*, and its membership approach. These reflections led to the publication of the Vienna Statement on Science Diplomacy, a document advocating for a renewed global commitment to international scientific cooperation to help countries build stronger relations for the benefit of all of humanity. The statement has been endorsed by more than two hundred eminent personalities from the academic and policymaking community, reaffirming the institute's role as an international platform for Science Diplomacy and its commitment to remain true to its DNA, irrespective of the prevailing geopolitical climate.

I would like to thank all IIASA staff for their contributions in 2022. Your collective efforts ensured that IIASA had a very successful research year and continued to produce excellent science and valuable policy contributions to advance the global sustainability and climate change agendas, despite the challenging conditions of the times.

A handwritten signature in black ink, appearing to be 'A. van Jaarsveld', written in a cursive style.

Research in 2022





To advance systems analysis

Systems analysis is an immensely powerful way to bring scientific insights into policy. In 2022, the institute continued to advance its capabilities in this field through the development of new state-of-the-art systems tools incorporating, among others, data science, machine learning, agent-based modeling, and decision support to provide the world with the analytical underpinnings to achieve its sustainability goals within the desired time frames while ensuring equitable and just outcomes.

SELECTED HIGHLIGHTS:



548

scientific publications were made freely available in 2022, with the full text being published in the institute's online repository PURE. By making all IIASA-authored publications open-access, the institute ensures the distribution of its systems analysis knowledge worldwide. Many IIASA models are also freely accessible on demand.



3

countries were assessed on mitigation actions related to the COVID-19 pandemic as part of an integrated computational framework for decision policy, and to mobilize better response strategies for other relevant future scenarios and potentially more serious pandemics. The framework was recommended as best practice in the EU under the European Open Science Cloud (EOSC), COVID-19 Fast Track Funding.



2

sets of global scenarios until 2050 were compared to develop a global systematic approach for evaluating the potentials to reduce emissions of greenhouse gases and air pollutants from the implementation of circular municipal waste management systems.



550

participants from the community of researchers, policymakers, and practitioners attended a two-day hybrid event on how systems analysis can contribute to solving many of today's challenges. The event was organized by IIASA and the Austrian Academy of Sciences (OeAW), and opened by H.E. Dr. Martin Polaschek, Federal Minister of Education, Science and Research.

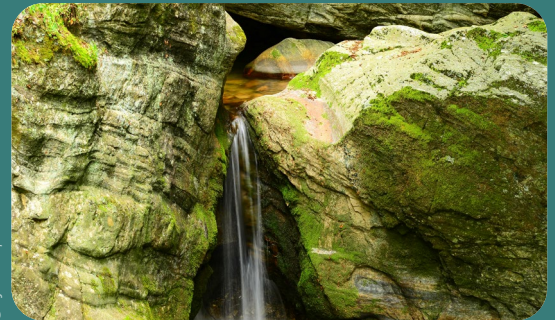
**RESEARCH
IN 2022
TO ADVANCE
SYSTEMS
ANALYSIS**



© IIASA

Developing an agent-based model for macroeconomic forecasting

An IIASA-led research team has developed the first agent-based model that is competitive with traditional models for macroeconomic forecasting. The model combines data from various sources to create a detailed picture of the economy, including all its different sectors and actors. The effectiveness of the model was demonstrated by forecasting the effects of the COVID-19 lockdown measures in Austria.



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Modeling framework to assess surface and groundwater resources

Climate change and rising water demands stress the need for tools to adequately model water availability. IIASA researchers developed a model that links surface water to groundwater and allows for estimating water resources at a high spatial resolution, which can be used to model water cycles and study the impact of future water management plans, land cover changes, or climate change.



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Strategy for balancing human and natural resource use

Through the BALANCE project, IIASA researchers are developing a strategic tool for decision-making that enables policymakers to evaluate alternative strategies for a circular bioeconomy in terms of the goals of value creation and employment, greenhouse gas emission reduction, and resource efficiency.



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Tools for engaging stakeholders

Addressing the complex challenges of climate change requires dialogue between stakeholders on various levels of society. Through the ENGAGE project, IIASA researchers are designing tools and methods for collecting stakeholder input for co-designing cost-effective and socially and politically feasible methods to meet the objectives of the Paris Agreement.

RESEARCH
IN 2022

To enhance policy impact

Informing policy with the best science to enable decision makers to balance human needs with those of nature, and build sustainable, resilient societies lies at the core of the IIASA research agenda. To this end, the institute applies its systems methodologies to co-design policy options and catalyze change processes in current governance systems to address global and universal transformation issues.

SELECTED
HIGHLIGHTS:

17

emission reduction measures targeting black carbon and ozone precursors could reduce future global warming by 0.5°C, according to calculations based on the Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) model. The GAINS meeting 2022 established a community of users and modelers who are applying the model in different policy contexts.

37

policy documents cited research from IIASA in 2022, according to the Overton database. Examples include Building Financial Resilience to Climate Impacts by the OECD, and Accelerating Clean, Green, and Climate-Resilient Growth in Vietnam: A Country Environmental Analysis, by the World Bank.

29

IIASA researchers contributed to high-level working groups such as the Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC).

8

project partners contributed to the IIASA project “makingAchange”, in which school and university students in Austria can participate in a peer-to-peer training, gaining technical knowledge and developing methodological skills to become a contact person in daily climate change debates and discussions.

2

IIASA researchers were part of a group of 50+ researchers from 23 countries who delivered a synthesis to governments of the science informing and underpinning 21 targets proposed in the draft post-2020 Global Biodiversity Framework being negotiated under the UN Convention on Biological Diversity.

**RESEARCH
IN 2022
TO ENHANCE
POLICY IMPACT**



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Informing biodiversity policy negotiations

In December 2022, the parties to the Convention on Biological Diversity agreed on a landmark environmental agreement, the Kunming-Montreal Global Biodiversity Framework. IIASA expertise on spatial prioritization of restoration and conservation actions as well as global modeling activities provided substantial input to the final steps of the negotiations through a range of policy briefs and papers.



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Supporting policy for clean air

IIASA researchers led the work on the third edition of the Clean Air Outlook that assesses the prospects of achieving the objectives of the National Emission reduction Commitments Directive (NEC Directive) for 2030 and beyond, in terms of reducing emissions of air pollutants and subsequent impacts on air quality, health, ecosystems, and the economy.



© APAdpa/Boris Roessler

Closing knowledge gaps in addressing losses and damages

IIASA contributed to a new policy brief by the Zurich Flood Resilience Alliance that highlights the urgent need to address climate-related losses and damages. It outlines how implementing climate mitigation and adaptation requires attention to financial and social protection mechanisms, as well as a strong post-disaster event response.



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Analyzing the economic consequences of lockdown policies

IIASA researchers used the National Transfer Accounts methodology to assess the potential long-term economic consequences of the COVID-19 pandemic on different generations. The results show that COVID-19 is affecting the financial situations of people aged 25 to 64 and their children more than those of older people. This work was financed by the United Nations Population Fund (UNPFA), and it was featured in several UNPFA and United Nations Department of Economic and Social Affairs (UNDESA) seminars.

RESEARCH
IN 2022

To exploit the digital revolution

The unprecedented speed at which digitalization and other new technologies are being introduced is having major impacts across the globe and is in some cases exacerbating existing inequalities. Through its strong focus on understanding how technological advances impact science and societies, IIASA aims to harness the opportunities arising from the digital revolution to enrich integrated systems science research and support the transition to a more sustainable future.

SELECTED
HIGHLIGHTS:

360+

times IIASA publications were downloaded from PURE, the institute's publications repository, which is provided as a service by the IIASA Library.

19

years is the span of a study integrating existing irrigation maps, observed data on irrigated cropping systems, and statistics through a synergy approach, to map irrigated areas in China (from 2000 to 2019). It also incorporates past information on actual irrigation to avoid divergence between observations and statistics from its fluctuation.

1269

tweets associated with the discussion on COVID-19 conspiracy theories between January 2020 and November 2021 were the subject of a study to analyze conspiracy narratives. The analysis highlights several behaviors in the discussion of conspiracy theories and categorizes them into four groups.

10m

individual farm households were the focus of a study employing the Geographical, Environmental and Behavioral (GEB) model – a coupled agent-based hydrological model that simulates the behavior and daily bi-directional interaction of households with the hydrological system on a personal laptop.

1.3m

sample plots of a global forest inventory database with individual tree information and local biophysical characteristics were used to produce a high-resolution map of local tree species richness.

**RESEARCH
IN 2022
TO EXPLOIT
THE DIGITAL
REVOLUTION**

© Aashish Yadav | Unsplash



Measuring economic wellbeing from space

IIASA researchers combined measurements of nighttime lights by satellites with the world settlement footprint to predict global economic wellbeing. Using this method, they were able to predict and map the wealth class of 49 countries based on the percentage of unlit settlements with 87% accuracy.

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Highly advanced numerical models made open source

IIASA researchers implemented an algorithm that is able to solve the highly intricate two-stage optimal control problems in their general form in the programming language “Julia”. The researchers made use of advanced computational techniques such as parallel computing and made the package open-source and open-access.

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Exploring the role of digitalization for future energy demand

Researchers at IIASA are exploring how digitalization could alleviate energy demands in the future. Through ambitious projects such as EDITS and CircEUlar, researchers aim to enhance modeling, analyze and communicate solutions for climate mitigation, as well as discover the potential of circular economy strategies for reducing greenhouse gas emissions.

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Estimating internal migration in the face of climate change

Despite being the most common form of migration, internal migration is still lacking data that is comparable across nations. To fill this gap, IIASA researchers used census microdata for 72 countries to estimate the impacts of increased drought on internal migration worldwide and found evidence of a sizable impact of drier conditions on human mobility.

RESEARCH
IN 2022

To anticipate and respond to emerging issues

IIASA research aims to address the increasingly complex interdependencies in our world through scientific innovation, creativity, and experimentation with methods and applications of systems analysis. Through its research programs, the institute follows a robust, transdisciplinary approach to anticipate and swiftly respond to emerging challenges and opportunities, to reduce risks, maximize potential gains, and support and inform sustainable and just policy decisions.

SELECTED
HIGHLIGHTS:

54bn

US\$ was the cost of damage from floods in Europe in 2021. IIASA research looked at how climate shocks might affect economic growth adversely and differentiated in times of recession or recovery in high-income economies, such as Austria, supporting ongoing research investigating non-linear responses of the macroeconomy to climate shocks.

3x

faster has the Arctic annual mean surface temperature warmed than the global average between 1971 and 2019. A tighter integration of modeling frameworks for climate and air quality is urgently needed to assess the impacts of clean air policies on future Arctic and global climate. IIASA research combined a new model emulator and comprehensive emissions scenarios for air pollutants and greenhouse gases to assess climate and human health co-benefits of emissions reductions.

26

European countries were part of a study investigating the relationship between partial working life expectancy and general, physical, and cognitive health important for the employability of women and men between the ages of 50 and 59, as well as 60 and 69.



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Putting inequalities in human wellbeing at the center of transitions

High-income countries are urged to undergo post-growth and degrowth transformations to mitigate the ecological crisis caused by the large inequalities in global resource extraction. IIASA researchers emphasize that looking beyond the issue of resource extraction, we need to focus on human wellbeing in a broader sense, and measure and set targets for reducing multiple inequalities.



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Addressing population decline in Ukraine

Since the start of the Russian invasion of Ukraine in February 2022, many Ukrainians have fled their homeland. A report from IIASA and the Joint Research Centre (JRC) shows that this population decline is likely to continue over the next decade. In fact, even the most optimistic projections show a decline of 21% by 2050. This research underscores the need for strong leadership on life-long learning, citizen engagement, and migrant reintegration to address rapid aging and loss of human capital.

**RESEARCH
IN 2022
TO ANTICIPATE
AND RESPOND
TO EMERGING
ISSUES**



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Assessing policy implications of carbon removal technologies

Carbon dioxide removal (CDR) technologies will likely play a crucial role in meeting the climate targets set out in the Paris Agreement. To help the integration of new CDR technologies into policy decisions, IIASA has published a case study on integrating bioenergy with carbon capture and storage technology in local energy systems in India.



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Predicting droughts to prepare for adaptation measures

IIASA researchers used hydrological simulations to predict the emergence of droughts under different emission scenarios. They predicted that certain regions will experience unprecedented drought conditions within the next 30 years regardless of the scenarios, highlighting the importance of preparing for droughts and taking adaptation measures in advance.



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Identifying barriers to estimating carbon release in a warming Arctic

The warming permafrost in the Arctic is a looming threat, as it contains almost half the world's soil carbon. Despite this, our understanding of potential carbon release from this region remains incomplete. In a study, researchers at IIASA identified barriers to estimating the magnitude of future emissions and suggested avenues for the research community to address them.



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Advocating for fairness in global mitigation investments

Considerations of equity in directing global financial flows for regional climate mitigation investments are critically important. An IIASA-led study helped inform the negotiations at COP27, exploring how global investments could be divided among the countries in the world while keeping fairness at the forefront.

RESEARCH
IN 2022

To further research excellence

IIASA works with a wide range of stakeholders, its member countries, and leading scientific- and international organizations all over the world to achieve outstanding, impactful results. The institute has robust processes in place to make the results of its work, as well as its data and models openly accessible, thereby enhancing the ability of research users to benefit from the institute's research outputs and system analytical tools.

SELECTED
HIGHLIGHTS:

49K+

citations of IIASA publications were recorded in 2022 by the citation database, SCOPUS. This was a significant increase of 15% from 2021, demonstrating the high regard in which IIASA researchers are held in the scientific world.

11

IIASA researchers were among the 1% of most highly cited scientists in 2022 according to the Institute for Scientific Information. Yoshihide Wada is one of only 219 researchers recognized in two fields, while Keywan Riahi is one of only 28 researchers recognized for showing exceptionally broad performance being highly cited in three or more fields.

47

articles by IIASA researchers were published in prestigious high-impact journals such as *Nature journals*, *Science*, *PNAS*, and *The Lancet*.

389

peer-reviewed journal articles, contributed by IIASA researchers and focusing on how systems analysis methodologies developed to address various global challenges, were published throughout 2022. The number comes from SCOPUS – the independent abstract and citation database maintained by Elsevier.

66

International Science Council (ISC) Fellows were announced in 2022, and IIASA Director General Albert van Jaarsveld was one of them. The Fellowship is the highest honor that can be conferred on an individual by the ISC.

**RESEARCH
IN 2022
TO FURTHER
RESEARCH
EXCELLENCE**



© IIASA

The Scenarios Forum 2022

In June 2022, IIASA organized and hosted the Forum on Scenarios for Climate and Societal Future. The event brought together a diverse set of communities who are using or developing scenarios for use in climate change and sustainability analysis to exchange experiences, ideas, and lessons learned.



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New Strategic Initiatives selected in 2022

In 2022, IIASA selected two new Strategic Initiatives. The TRUST project researches trust in science through participatory science activities and aims to mainstream participatory science activities and trust considerations among scientists, while the goal of the RESIST project is to develop a multidisciplinary systems-thinking approach that integrates scientific evidence on ecosystem processes driving climate change and socioeconomic aspects steering stakeholder decision-making.



© Geo-Wiki

Lessons learned from Geo-Wiki

The Geo-Wiki platform provides citizens with the means to engage in monitoring of the Earth's surface by labelling satellite, drone, or ground-level imagery to train modern classification algorithms. In two new studies drawing on over 10 years of experience running global crowdsourcing campaigns, IIASA researchers provided key observations and lessons learned for the future of citizen science.



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Reflexivity in knowledge co-production processes

Integrated assessment models are increasingly driving science-informed sustainability action worldwide. To improve the usability of integrated assessment, IIASA researchers summarized the lessons learned regarding knowledge co-production and identified the analytical frontiers of reflexivity in a study.

Enhancing impact



ENHANCING
IMPACT
IN 2022

Building capacity

As part of its commitment to strengthen capacity in systems analysis both at IIASA and beyond, the institute continuously strives to strategically develop its flagship training platforms such as the Young Scientists Summer Program (YSSP) and postdoctoral programs, while also supporting regional or national initiatives through training programs, courses, and workshops.

SELECTED
HIGHLIGHTS:

48

Young Scientists Summer Program (YSSP) participants visited IIASA in person over the summer.

32

YSSP participants received funding from IIASA National and Regional Member Organizations (NMOs/RMO).

11

Postdoctoral fellows were hosted by IIASA and its partner organizations in 2022.

34

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

12

Postdoctoral fellows were funded by IIASA and its partner organizations.

88

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

**ENHANCING
IMPACT
BUILDING
CAPACITY**



Immersing young researchers in the IIASA research environment

The IIASA Young Scientists Summer Program (YSSP) welcomed 48 participants from 21 countries – 85% of whom were from IIASA National and Regional Member Organization (NMOs/RMO) countries and 63% of whom received financial support from an NMO/RMO. The program was run entirely in-person for the first time since 2019, allowing for rich interaction between participants and mentors. Three YSSP participants received awards for their work: the Peccei Award went to Melissa Chapman from the University of Berkeley, USA; the Mikhalevich Award was awarded to Xander Huggins from the University of Victoria and the Global Institute for Water Security in Canada; and Romain Clercq-Roques from the London School of Hygiene and Tropical Medicine in the UK received the newly established IIASA Special YSSP Award.

Growing postdoctoral talent and capacity

IIASA hosted 12 postdoctoral fellows through bilateral fellowship schemes with National and Regional Member Organizations (NMOs/RMO) countries. This included four fellowships with China, through Peking University; three fellowships with the UK through NERC; three Israeli postdoctoral fellows; and one Korean postdoctoral fellow through the NRF. One additional fellowship was funded by the Friends of IIASA in the USA. In addition, IIASA hosted 32 postdoctoral researchers in IIASA research programs, typically through externally funded projects, and another 15 postdocs visited IIASA for varying periods of time. In 2023 IIASA will offer one postdoctoral fellowship unilaterally while working towards expanding bilateral arrangements with NMOs/RMO to reach a critical mass of 25 NMOs/RMO funded postdocs as a hub of excellence by 2024.



Building capacity in systems analysis beyond IIASA

In 2022, IIASA offered several sessions of its foundational systems analysis course in a virtual format. The course was presented in Jordan, Korea, and India as part of the institute's 50th anniversary celebrations. A one-day version of the course was also presented for the International Science Council (ISC). In addition, IIASA contributed to the presentation of the Diploma Course in Systems Analysis for the Northern African Applied Systems Analysis Center (NAASAC) in Egypt as well as to a session at the Sustainability Research and Innovation Congress held in South Africa at the end of 2022.



IIASA further built capacity on its flagship tools, including through two GAINS model trainings presented in India for staff of the State Pollution Control Boards of Uttar Pradesh and Maharashtra, highlighting the immediate relevance and utility of IIASA tools to policymakers and the need to further disseminate good practices in the management of environmental challenges.

ENHANCING
IMPACT
IN 2022

Science diplomacy

The particular geopolitical challenges of 2022 not only highlighted the role of IIASA as an independent platform to address emerging global problems with evidence-based science, but also the importance of continuing to pursue its science diplomacy mandate. Consequently, IIASA continued to reinforce its international scientific cooperation, which is vital for reaching goals such as the Paris Agreement and the United Nations 2030 Agenda for Sustainable Development. Building bridges among nations in strife remains part of the DNA of IIASA and these efforts were increased in 2022.

SELECTED
HIGHLIGHTS:

10

IIASA is a member or observer of **10 major intergovernmental organizations** in order to enhance the reach and impact of its research.

200+

eminent personalities from across the globe endorsed the Vienna Statement on Science Diplomacy during the first weeks of its release.

18

cooperation agreements were concluded in 2022, including with the Intergovernmental Panel on Climate Change (IPCC), the United Nations Environment Programme (UNEP), the International Energy Agency (IEA), and partners from Austria, China, Germany, Japan, Korea, Slovakia, South Africa, UK, Ukraine, and five other countries, among which are former IIASA members: Canada, the Czech Republic, and the Netherlands.



IIASA and the Foreign Ministries Science and Technology Advice Network

IIASA was at the core of the Foreign Ministries Science and Technology Advice Network (FMSTAN)'s creation and has been actively involved in the process from the early stages by, for instance, hosting the 2016 International Dialogue on Science Diplomacy, co-organized with the Fletcher School of Law and Diplomacy and the International Network for Governmental Science Advice (INGSA). IIASA Interim Deputy Director General for Science, Wolfgang Lutz, was invited to speak at the 2022 FMSTAN meeting, which was part of the annual summit of the Geneva Science and Diplomacy Anticipator. Lutz addressed the audience with a presentation on Science Diplomacy and Hostile Geopolitics – the Past as a foundation for the Future. He spoke about the creation of IIASA and what it has meant for science diplomacy. He also reflected on the challenges that international research institutions like IIASA face.

**ENHANCING
IMPACT
SCIENCE
DIPLOMACY**

Pleas for peace: the urgent need for more diplomacy and science diplomacy efforts in Ukraine

IIASA endorsed two letters emphasizing that, for the future of humanity, nations must make every effort to find a diplomatic road to peace in Ukraine and that critical links between scientists from all countries should be maintained. One letter was published in *Nature* and signed by IIASA Director General Albert van Jaarsveld and the presidents of the International Science Council, the Sustainable Development Solutions Network, and the International Network for Government Science Advice. Like IIASA, these institutions have spent decades building bridges between nations in strife, and the authors say that abandoning their founding principles now would cause irreparable harm. The second letter – a message of the Sustainable Development Solutions Network (SDSN) – was signed by members of the SDSN Leadership Council and community, including the IIASA Director General and dozens of other senior academics, business leaders, and heads of non-profit organizations. The letter highlights, that even if science diplomacy has little impact on the immediate crisis, it keeps a channel open for the future and is a way to help recover and mend future relations.



IIASA joins the EU Science Diplomacy Alliance

IIASA became a member of the EU Science Diplomacy Alliance, a collaborative initiative launched under the auspices of several Horizon 2020 science diplomacy projects. IIASA is ideally positioned to support and contribute to the objectives of the alliance, which serves as a hub for cooperative activities between its members. These objectives include, among others, knowledge sharing between members, raising awareness around pressing issues, institutional capacity building, connecting and nurturing science and innovation in support of the diplomatic community, and providing advice to science diplomacy stakeholders. As a new member of the alliance, IIASA contributed to the New Horizons for Science Diplomacy – InsSciDE Horizon 2020 Concluding Conference in Paris (an official event of the French Presidency of the Council of the European Union hosted by UNESCO and Sorbonne University). During the event senior scholars, policy experts, and government officials examined possible pathways to a shared science diplomacy for Europe.

The Vienna Statement on Science Diplomacy

The Vienna Statement on Science Diplomacy – a document that proclaims a common vision for science diplomacy into the future – emphasizes the benefits that science diplomacy can bring to addressing the global challenges of our time, and outlines the principles needed to foster science diplomacy worldwide.

This statement is the product of a high-level event organized by IIASA in June 2022. By signing the statement, signatories agree to, among others, promote freedom and access in the conduct of science and to recognize activities of institutions worldwide in the field of science diplomacy by practicing science diplomacy in their everyday activities, doing research on science diplomacy, or teaching science diplomacy as a discipline. The statement has since been signed by more than 200 eminent international personalities, including President of the International Science Council, Sir Peter Gluckman, 11th President of the Republic of Finland, Tarja Halonen; 8th UN Secretary-General, Ban Ki-moon, Executive Director of The World Academy of Sciences, Romain Murenzi (on behalf of UNESCO), 2001 Nobel Prize in Physiology or Medicine laureate, Sir Paul Nurse, Secretary General of the Association of Technical Universities and Polytechnics in Africa, Jahou Samba Faal, Quebec Chief Scientist and President of the International Network for Governmental Science Advice (INGSA), Remi Quirion, as well as the former Executive Secretary of The Royal Society of London and Secretary at the IIASA Charter signing ceremony in 1972, Peter Warren, and several ambassadors.



ENHANCING
IMPACT
IN 2022

Strengthening partnerships

The institute's role in delivering trans-disciplinary solutions to global and shared problems is enabled by its worldwide community of research partnerships, alumni, and collaborators. These relationships, developed by the international research teams at IIASA, mean that the impacts of the work are relevant not only to National and Regional Member Organizations (NMOs/RMO), but to countries all over the world. The IIASA 50th anniversary celebrations during 2022 further built and developed these relationships.

SELECTED
HIGHLIGHTS:

741

collaborating institutions and organizations from government, academia, and the private sector from across IIASA NMOs/RMO countries worked with IIASA researchers in 2022.

2870

coauthors from **1360 different institutions** in **114 countries or regions** around the world collaborated to author **389 journal articles**.

148

externally funded projects were either led by IIASA or included IIASA as a partner.

4491

alumni from **100 countries**, of which 71% were from IIASA NMOs/RMO, formed part of the IIASA network by the end of 2022.

156

events were hosted, organized, or co-organized by IIASA around the world. As well as the IIASA 50th celebrations, these included international scientific conferences, project-related workshops, training on IIASA models and tools, and scientific sessions at large international events.

ENHANCING IMPACT

STRENGTHENING PARTNERSHIPS

New Sub-Saharan Africa Member Organization

In 2022 IIASA increased its global membership footprint through the Sub-Saharan Africa Regional Member Organization (SSARMO), as part of a new regional approach to participation in IIASA research and capacity building activities. The SSARMO is the first regional member to IIASA and is comprised of 17 African countries* who are participating in the Science Granting Councils Initiative (SGCI) in Sub-Saharan Africa. SGCI is a multi-partner, multi-institutional initiative established in 2015 aimed at strengthening the institutional capacities of SGCI in the region. SSARMO will develop integrated systems solutions and policy insights to current, emerging, and novel regional sustainability challenges and opportunities. This program will build on IIASA and the SGCI's extensive collaborative network of partners in Africa and beyond, providing an organizing framework that will increase the momentum of addressing sustainability challenges.

* Botswana, Burkina Faso, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Uganda, Zambia, Zimbabwe



IIASA participation in the Sustainability Research and Innovation Congress 2022 in South Africa

The Sustainability Research and Innovation Congress (SRI) brings together research leaders, experts, industries, and innovators from around the world with the aim of inspiring action and promoting a sustainable future. IIASA was a sponsor of SRI 2022 in Pretoria, South Africa. The event took place from 20 to 24 June. IIASA Network and Alumni Officer, Monika Bauer, was a member of the conference program committee and five IIASA researchers participated in interactive sessions, workshops, training sessions, networking events, innovation demonstrations, and satellite events. IIASA convened sessions on the following topics: citizen science and the UN Sustainable Development Goals (SDGs), women voices at the SRI Conference 2022, regional approaches to systemic sustainability analysis, knowledge sharing and capacity building, and developing systems thinking and transdisciplinary science for North Africa and the broader Middle East and North Africa (MENA) region.



IIASA success in Horizon Europe projects

IIASA continued to build on its success in winning grants from the European Commission in 2022. IIASA research programs successfully won seven projects under the new Horizon Europe funding instrument where the institute is also the consortium lead. These project teams include 89 partners across Europe and the world and have a net worth of 38,503,506 EURO. These grants span research programs at IIASA and will look at a range of topics including wellbeing, developing climate resilience, and developing models to monitor greenhouse gas levels. These projects will continue to build the institute's international research relationships, working with colleagues from around the world.



IIASA Connect

Launched in the fall of 2020, IIASA Connect brings together the global systems analysis network by linking research engagements and connecting the institute's international, regional, and national communities. An example of how the platform supported virtual events is the 2022 Scenarios Forum. 531 participants registered through the platform, where 520 members were in the IIASA Connect group with 48 sessions, 112 posters along with conference materials, video presentations, and session engagements. Currently there are over 2,000 members on the platform, comprising IIASA staff, alumni, NMO/RMO communities, and collaborators from across the globe. The platform is a tool that allows researchers to search for colleagues by research area and/or geographic region. It acts as a mechanism for researchers to find new professional opportunities within the global systems analysis community and provides scope for knowledge exchange and co-creation.



Highlights from the 50th Anniversary



Celebrating 50 years of global collaboration

IIASA organized a series of celebratory activities with its member organizations throughout 2022 to celebrate 50 years of groundbreaking systems analysis research and explore opportunities to strengthen partnerships and collaborations with the global scientific community.



United Kingdom – Webinar on biodiversity from a systems analysis perspective

21 February 2022 | 116 attendees

This virtual event jointly organized by IIASA and UK Research and Innovation (UKRI) highlighted the significance of biodiversity-related research that could benefit systems thinking. A critical dialogue between IIASA researchers and the UK community addressed the need for systemic changes to bend the curve of ongoing biodiversity loss.



Jordan – Workshop on systems analysis to tackle global challenges and achieve the Sustainable Development Goals (SDGs)

1-2 March 2022 | 30 attendees

IIASA scientists shared their experiences in the use of systems analysis to tackle global challenges through systems thinking, models and scenarios, and other practical applications with the Jordanian research community during this virtual anniversary event. The workshop helped to build Jordanian capacity in systems analysis.



Austria – Sustaining biodiversity: A challenge for science and policy

7 April 2022 | 28 in-person and 117 virtual attendees

Researchers from IIASA and the Austrian scientific community gathered for this hybrid scientific exchange to highlight the importance of biodiversity and citizen science initiatives, including a critical reflection on the current trends in biodiversity science and policy, and their implication on environmental governance.

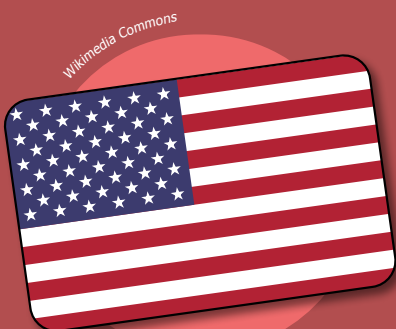
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Israel – Workshop on models for environmental and energy policy analysis

27 April 2022 | 15 attendees

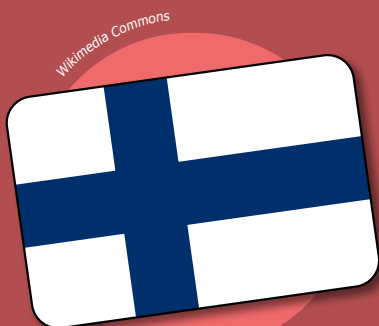
This event gave IIASA researchers and Israeli colleagues the opportunity to discuss energy and integrated assessment modeling within the MESSAGEix framework. Discussions also explored development scenarios for the Israeli energy sector, energy transport analysis, and air quality co-benefits.



United States – Workshop on international cooperation for global challenges: 50 years of building research bridges at IIASA

26 May 2022 | 47 attendees

IIASA delegates and members of the US scientific community gathered in Washington to reiterate the importance of international research cooperation and its pioneering role as an instrument of science diplomacy. The event also provided an opportunity for US alumni of the IIASA Young Scientists Summer Program (YSSP) to share their experiences and accomplishments as participants of the program.



Finland – Seminar on systems analysis: Science-based support for policymakers

2 June 2022 | 33 in-person and 12 virtual attendees

The Finnish IIASA Committee, the Academy of Finland, and IIASA jointly organized this hybrid event in Finland, which welcomed speakers from IIASA and Finland, as well as IIASA alumni in the country to broaden networking opportunities and strengthen links with the Finnish research community.

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Iran – Seminar on systems analysis

7 June 2022 | 105 attendees

This event was co-organized by IIASA and the Iran National Science Foundation (INSF) to show how global, regional, and local challenges can be addressed with systems analysis. It also highlighted systems approaches to deal with urban risk, energy, and climate issues. The event took place online and featured two keynote presentations and a panel discussion.



Austria – Science diplomacy event: The need for international scientific cooperation and multilateralism

14 June 2022 | 127 attendees

IIASA organized this high-level science diplomacy event in Vienna's Museums Quartier to discuss the crucial role of international scientific cooperation in enabling researchers to access additional expertise and gain new perspectives on research, unlocking scientific discoveries, and promoting scientific advancement for the benefit and interest of all humankind. Discussions during the event resulted in the Vienna Statement on Science Diplomacy, which in the period of a few weeks received endorsements from more than two hundred eminent personalities from the academic and policymaking community.



India – International conference on systems analysis for enabling integrated policymaking

10-12 August 2022 | 141 in-person and 62 virtual attendees

This hybrid conference in New Delhi was co-hosted by IIASA and the Technology Information, Forecasting and Assessment Council (TIFAC), with partners from China, Iran, Japan, and Jordan. It built on the expertise and interlinkages between the systems analysis communities in Asia to discuss and analyze transformative approaches to achieving sustainability across multiple stakeholders, sectors, and regions.

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South Africa – Systems Analysis Symposium

16 August 2022 | 45 attendees

The symposium brought together current students, alumni, and experts supported by NRF, DSI, IIASA, the British Council and other stakeholders during the past decade to share their journeys, successes, opportunities, and challenges. The symposium also provided an opportunity to present the new concept of the regional South Africa Systems Analysis Centre (SASAC) model, re-branded as the Sub-Saharan Africa Systems Analysis Centre (SASAC), which will drive regional systems programs.



Happy birthday IIASA

4 October 2022 | 220 attendees

On 4 October, the institute's official 50th birthday, IIASA hosted an informal celebration for those who compose and define the DNA of the institute: current IIASA staff, local alumni, IIASA Distinguished Visiting Fellows, collaborators from the Austrian scientific landscape, as well as local supporters from the Laxenburg community. Highlights of the event included a birthday cake and the sealing of a time capsule with, among other keepsakes, messages from IIASA staff and alumni to be opened after 25 years.



Austria – 50th Anniversary Combined Lecture: What can Systems Analysis offer to a World in Multiple Crises?

4-6 October 2022 | 100 attendees

Three IIASA Distinguished Visiting Fellows: Maria Uhle, Eric Lambin, and Dirk Messner, along with Serhii Pyrozhevskiy delivered combined lectures on the future of systems analysis in a world facing multiple crises.

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Korea – IIASA-Korea joint conference on systems analysis as a global approach

12 October 2022 | 118 in-person and 236 virtual attendees

IIASA and the National Research Foundation of Korea jointly hosted this hybrid conference in Seoul through the Korean IIASA Committee to highlight and consolidate ongoing collaboration. The conference also served to introduce the Young Scientists Summer Program (YSSP) and other IIASA capacity building programs to the Korean academic community and to discuss an expansion of the research agenda.



Hungary – Alumni reunion

28 October 2022 | 40 attendees

IIASA alumnus István Kiss brought together the IIASA community at the Hungarian Academy of Sciences in Budapest to celebrate the institute's 50th anniversary. Hungary was one of the first members of IIASA, and Kiss was an integral part of shaping the relationship between IIASA and Hungary.



Austria – Conference on systems analysis for reducing footprints and enhancing resilience

16-17 November 2022 | 550+ attendees | 60+ speakers

The two-day hybrid 50th anniversary event was co-organized by IIASA and the Austrian Academy of Sciences. It was held at the Austrian Academy of Sciences in Vienna and opened by the Federal Minister of Education, Science, and Research of the Republic of Austria. It demonstrated how systems analysis can contribute to solving many of today's global challenges and explored the future of this transdisciplinary field.

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Slovakia – IIASA-Comenius University: Lecture by IIASA Director General on Global change and systems solutions

24 November 2022 | 64 attendees

IIASA Director General Albert van Jaarsveld delivered a lecture at Comenius University in Bratislava on the occasion of the institute's 50th anniversary. Prior to the lecture, leaders of IIASA and Comenius University signed a Memorandum of Understanding for Scientific Cooperation. The document allows both institutions to develop closer collaboration through the exchange of expertise and conduct of research to better optimize the synergies from their respective fields of specialization.



Israel – Symposium on Sustainability Pathways empowered by Systems Analysis

28-29 November 2022 | 238 attendees

The event brought together the community of researchers, policymakers, and practitioners to highlight the power of systems analysis and to discuss new frontiers in this context. It particularly focused on the four topics of parallel sessions:

- Biodiversity and Agriculture
- Demography
- Energy and Transport Nexus
- Water



Sub-Saharan African Regional Member Organization – IIASA 50th Anniversary event in South Africa during the World Science Forum

4-7 December 2022 | 134 attendees

IIASA and the NRF organized two events to celebrate the institute's 50th anniversary and systems analysis, ahead of the World Science Forum. The high-level panel discussion brought together key stakeholders of the Sub-Saharan Africa Regional Member Organization (SSARMO), and the academic symposium showcased select projects funded under the African Science Granting Councils Initiative (SGCI). These events aimed to strengthen partnerships, share experiences, and discuss practices on emerging topics in Sub-Saharan Africa, marking an important milestone in IIASA history.

Institute performance





Governance and management

In 2022, IIASA continued to strengthen its governance, due diligence, and management processes and procedures by working with the IIASA Council as well as external and internal auditors. The IIASA approach of continuous improvement in its governance oversight to achieve its anticipated results more efficiently and effectively will also support sound financial outcomes in the future.



Council leadership and changes to senior management

In 2022, Michael Clegg (United States) continued as Council Chair—a position he has held since September 2017. Lea Kauppi (Finland), continued as Council Vice Chair until December 2022, and Kazu Takemoto (Japan) was appointed as second Council Vice Chair in January 2022.

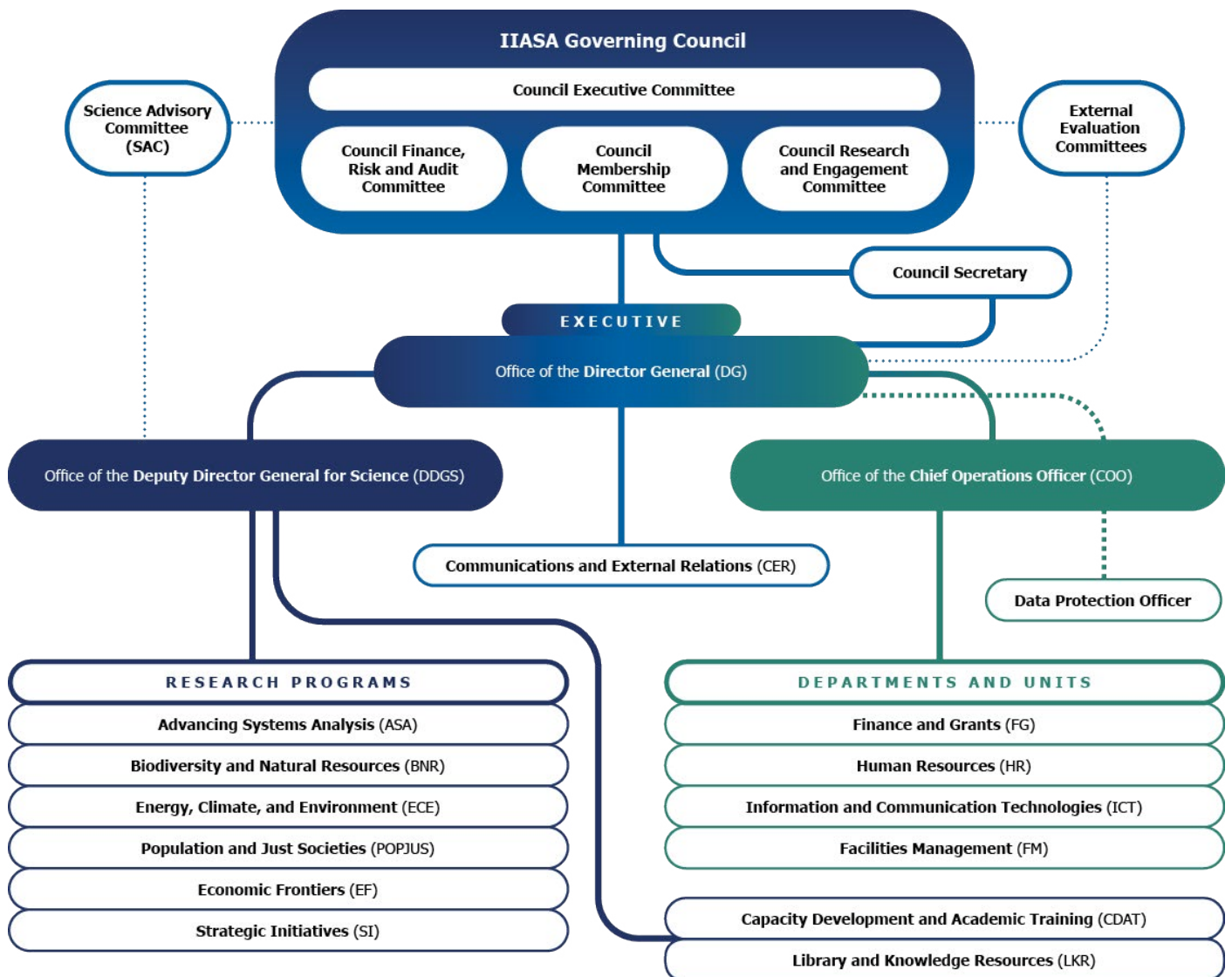
At program and department level, Tamas Galosi was appointed as Acting Head of Information and Communication Technologies in March 2022, and Gansen Pillay was appointed as Acting Head of Communications and External Relations for seven months starting from May 2022. In addition, Lion Huijers was appointed as the Head of Human Resources in June 2022 and Wolfgang Lutz was appointed as Interim Deputy Director General for Science in August 2022 following the departure of Leena Srivastava in July 2022.

A new Charter and operational procedures for effective operations

In 2022, the Council approved the revised IIASA Charter to guide the institute's activities into the future. In addition, improved management and compliance of the institute's accounts receivable and running activities was achieved by adopting relevant procedures and implementing related workflows. The establishment of a comprehensive performance evaluation system of departments and units will further contribute to a sustained improvement of the efficiency of IIASA operations and provide tools for their effective and agile management.

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MANAGEMENT**

23 COUNCIL MEMBERS representing 23 member organizations governed IIASA in 2022. The IIASA Council exercised its oversight responsibilities through a committee structure comprising of the Council Executive Committee; Council Finance, Risk, and Audit Committee; Council Membership Committee; Council Research and Engagement Committee; and a Science Advisory Committee (SAC) supported by external auditors that provided specialized input to the Council.



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IIASA Executive in 2022

EXECUTIVE
TEAM



Albert van Jaarsveld
Director General



Wolfgang Lutz
Interim Deputy Director General
for Science *(from August)*



Leena Srivastava
Deputy Director General
for Science *(until July)*



Christiane Pohn-Hufnagl
Chief Operations Officer

PROGRAM
DIRECTORS



Elena Rovenskaya
Advancing Systems Analysis
(ASA) Program



Keywan Riahi
Energy, Climate, and
Environment (ECE) Program



Yoshihide Wada
Biodiversity and Natural
Resources (BNR) Program



Anne Goujon
Population and Just Societies
(POPJUS) Program *(from April)*



Michael Kuhn
Economic Frontiers (EF)
Program



Steffen Fritz
Strategic Initiatives (SI)
Program

Research environment

IIASA has various policies and processes in place to ensure a research environment conducive to delivering on its vision of being the primary destination for integrated systems science and policy insights to current, emerging, and novel global sustainability challenges.



Changing with the times

The COVID-19 pandemic has changed the workplace landscape. IIASA adapted quickly to address the challenges and embrace the opportunities of this way of working. Among the policies instituted to support this mode of work is the IIASA Remote Access Policy, which covers information technology security measures necessary to protect the institute's data, information, and systems. In addition, the mailing system was upgraded and stabilized, and a secure remote access solution was implemented along with extended cloud computing possibilities. A cloud concept and consolidation plan for the Information and Communication Technology infrastructure of IIASA has also been provided.

Opportunities for researchers and software professionals

IIASA has introduced specific career pathways to enhance both established and early career research staff's ability to foster their careers at IIASA. The recognition process for researchers – now in its second year – allowed researchers to apply for reclassification based on their increasing profile. Applications were reviewed by an independent committee, and nine researchers successfully achieved recognition in a higher category.

A new policy on Profiles for Software Professionals was also approved by the IIASA Executive Committee in January 2022 to provide career development opportunities for software professionals working in the research sphere. It defines three distinct profiles applicable to IIASA software professionals depending on a set of specific criteria.

Policies for open access and increased compliance

The new IIASA Open Access to Models Policy aims to promote open science and ensure compliance with the expectations of National and Regional Member Organizations and other funders related to models and tools developed and maintained at IIASA.

To streamline and improve the management of third-party sponsored research and increase the institute's compliance with the requirements of external funders, IIASA has also adopted an External Funding Workflows Procedure, and an Allocation and Documentation of Staff Working Time in Projects Procedure.

Equity, diversity, and inclusion

IIASA values its people and is committed to creating an inclusive, respectful, and safe workplace built on engaged and motivated staff. To achieve this goal, the institute strives to enhance its working environment to attract and retain the best talent, enhance diversity and career development, and support all staff to reach their full potential.



467

researchers from 50 countries were affiliated with IIASA in 2022, of which 60% of full-time researchers were male and 40% female.



73%

(342) of researchers who worked at IIASA in 2022 came from National and Regional Member Organization countries.

Harnessing experience through emeritus positions

In recognition of their contributions to the fundamental scientific work at IIASA and to ensure their continued mentoring and network transfer that are of vital importance to the encouragement and nurturing of career growth and development of young and mid-career scientists, IIASA granted twelve scientists Emeritus Research Scholar status in 2022. They are:

Günther Fischer, Luis Gomez Echeverri, Arnulf Gruebler, Chris Heyes, Leena Ilmola-Sheppard, JoAnne Linnerooth-Bayer, Landis MacKellar, Nebojsa Nakicenovic, Georg Pflug, Hans-Holger Rogner, Anatoly Shvidenko, and Yuri Yermoliev†.

A new gender equality plan

Gender equality has become a fundamental value of IIASA and has been incorporated into the institute's policies and daily activities. These initiatives formed the basis for a project to meet the latest requirements of the institute and its stakeholders. After a careful selection process, IIASA engaged a specialized external consultant for guidance and support in the development of a new, tailor-made, and sustainable gender equality plan. The final result is expected in Q2 2023.

Embedding human resources principles at IIASA

In 2022 the Council Executive Committee approved the Human Resources Principles that govern the people management of IIASA. These principles are based on the IIASA values and focus on the delegation of authority, duty of care, diversity, equal treatment, dispute prevention, compliance, management of conflicts of interest, and social partnership. It touches upon key human resources management topics such as employee classification, performance management, transparency regarding outside employment, and recruitment standards.

Health and safety

Following the COVID-19 pandemic, IIASA staff started returning to the office in 2022. To ensure a safe and healthy work environment, the institute implemented a number of initiatives in addition to the mandatory monitoring of legal obligations in respect to health and safety regulations in the workplace.



Maintaining a safe and healthy work environment

Although the effects of the COVID-19 pandemic were much less severe in 2022, the Facilities Management Department continued to enforce the IIASA COVID-19 operations rules and preventive measures including the distribution of antigen tests, FFP2 face masks, and disinfectants to minimize any COVID-19 related risks for its staff and visitors.

In addition to these measures, IIASA organized two vaccination campaigns for staff members – one for tick-borne encephalitis (FSME) and one for influenza – and offered first aid training courses to all staff free of charge.

A health and safety officer from an external service provider confirmed the institute's compliance for 2022 with the legal requirements regulated by the company's quality management policy.

Following the retirement of the IIASA occupational physician, IIASA appointed a new occupational physician and external health and safety officer to start their engagement with IIASA in January 2023.

No major health and safety incidents were reported in 2022.

Building resilience and managing stress

As part of the IIASA People Strategy, the IIASA Human Resources Department launched an institute-wide training initiative on resilience in partnership with an award-winning resilience training company. All employees were invited to take part in skill-based stress and strengths workshops. A key aim of the training was to introduce a new common language and skillset to help staff members reduce stress, and identify and leverage strengths for increased wellbeing, performance, and strong relationships. IIASA managers were provided with more in-depth training focusing on not only the resilience and strengths of the managers themselves, but also on recognizing and promoting these skills in their teams.

Environmental performance

IIASA is committed to playing its part in making the world more sustainable by pursuing sustainable practices in its day-to-day operations.



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Monitoring progress on the race to zero

As part of the institute's participation in the UN-supported Race-to-Zero Campaign, IIASA produces an annual Green-House-Gases (GHG) inventory in accordance with its Race-to-Zero Policy. Previous internal GHG inventories were based on sophisticated manual calculations, but the assumptions for the CO₂ emissions were not comparable with reports of other institutions participating in the campaign. IIASA consequently procured specialized software to evaluate, report, and improve on its environmental performance. The main areas taken into consideration are energy, material, waste, water, business travel, and CO₂ compensations. Previous emissions factors are included as sub-indicators of the above-mentioned areas.

Reducing emissions one trip at a time

2022 saw additional investments in e-mobility at IIASA, including the installation of a new charging station for e-vehicles and two charging stations for e-bikes.

In addition, the IIASA Business Travel Policy was reviewed and approved. The policy considers the institutional and research benefits of business travel and weighs them against financial, environmental, social, and health impacts. To support a move away from air travel as the main mode of business travel for IIASA staff, the institute adopted a subsidy procedure to facilitate the use of the Austrian Klimaticket for business travel by train. As an additional measure to provide alternatives for travel to meetings and conferences, IIASA modernized and enhanced its facilities for virtual meetings by upgrading the institute's video conferencing tools and meeting rooms.

Ensuring more sustainable operations

High energy prices and the institute's commitment to improving the sustainability of IIASA operations, prompted the contracting of an external consultant to propose measures aimed at reducing the institute's environmental footprint and minimizing energy consumption and its costs, while prioritizing return on investment and sustainability. It is foreseen that this concept will be finalized early in 2023 after which a decision will be taken on which measures to apply.

Additional sustainability measures implemented in 2022 included the replacement of all light bulbs and tubes with LEDs in IIASA buildings, and the implementation of an automatic hibernation function to curb the power consumption of personal computers following a pre-defined period of inactivity.

Managing risk

Improving the effectiveness of organizational risk management, control, and governance processes remained one of the top priorities for the IIASA Council and Executive in 2022.



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Documenting and managing risks to IIASA operations

IIASA maintains a comprehensive risk register, which is continuously reviewed and updated. As per the Risk Register Terms of Reference revised and approved by the IIASA Executive in April 2021, the identification of potential risks is undertaken on an annual basis, while the review of existing risks is done biannually. Appropriate actions aimed at mitigating or removing organizational risks will continue to be undertaken to prevent potential negative impacts for IIASA.

The risk of IIASA institutional disruptions due to external financial and political decisions remains the top-rated risk. Its drivers – COVID-19 and current geopolitical tensions – continue to threaten the financial and operational stability of the institute. A new risk on long-lasting and widespread power failure has been added to the risk register considering the geopolitical unrest in Europe and the threat of possible destabilization of the European power grid.

Internal control and audit in 2022

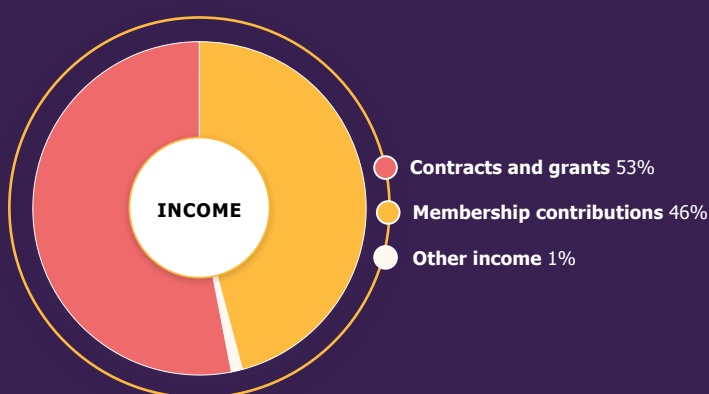
The purpose of the internal audit function established by the Finance, Risk, and Audit Committee of the IIASA Council and the IIASA Executive is to undertake professional audits of the relevant internal processes, governance, and internal controls at IIASA. This ensures compliance with the regulatory framework and enhances the performance, organizational learning, and the efficiency and effectiveness of IIASA operations. The implementation of the resulting findings was scheduled by the relevant stakeholders and reported to the Council Finance, Risk, and Audit Committee as well as the IIASA Executive Committee.

A large audit of HR processes (“Hire to retire”) and a small audit dedicated to the IIASA library services were processed in 2022. Furthermore, a large audit on the efficiency of the internal processes, procedures, and rules surrounding external funding was kicked off in November 2022. This audit will be processed in the beginning of 2023.

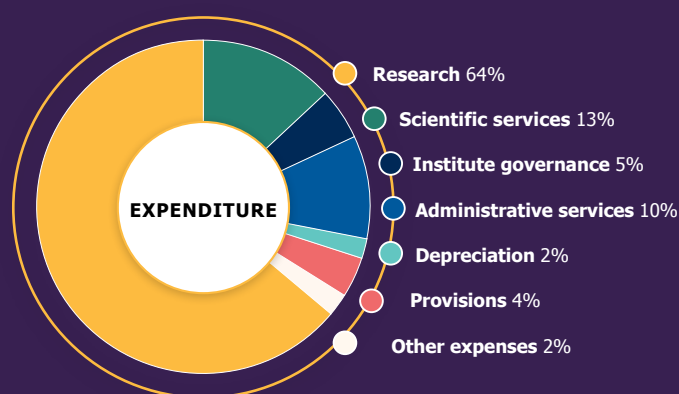
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Financial performance

The annual budget of IIASA in 2022 was €24.4 million of which just under half came from the institute's National and Regional Member Organizations located in Africa, the Americas, Asia, and Europe. Additional funding came from contracts, grants, and donations from governments, international organizations, academia, business, and individuals. These many diverse income sources enabled IIASA to perform truly independent research, and IIASA would like to thank all those who gave their financial support in 2022.



IIASA recorded an income of €24.4 million in 2022, 46% of which came from its National and Regional Member Organizations and 53% from contracts, grants, and donations.



Almost 80% of the institute's total spending in 2022, €18.3 million, was dedicated to research and scientific services; spending on administration services and institute governance was consolidated.

	31 December 2022	31 December 2021
INCOME		
Membership contributions	11,105,500	10,930,500
Contracts and grants	12,910,545	11,412,184
Other income	353,997	440,196
TOTAL INCOME	24,370,042	22,782,880
EXPENDITURES		
Research	15,208,197	14,321,640
Scientific services	3,132,758	3,018,251
Institute governance	1,287,721	1,318,887
Administrative services	2,230,402	2,110,603
Depreciation	529,836	460,138
Provisions	1,050,000	234,345
Other expenses	435,007	296,269
TOTAL EXPENDITURE	23,873,921	21,760,133
NET ASSETS		
Change in net assets	496,121	1,022,747

INSTITUTE PERFORMANCE FINANCIALS

Contracts, grants and donations

Funding of contracts and grants, took a sizeable step from €11.4 million in 2021 to almost €13.0 million in 2022. IIASA gratefully acknowledges this source of financial support and lists the funders thereof below. Within this overall amount, IIASA researchers have successfully won seven projects under the EU's Horizon Europe program for research and innovation where the institute is consortium lead. IIASA participates in networks involving 89 partners across the globe worth €38.5 million.

Funders:

- Austrian Agency for International Cooperation in Education and Research (OeAD-GmbH), 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
- Federal Ministry for Education, Science and Research (BMBWF), Vienna, Austria
- Federal Ministry for Sustainability and Tourism of Austria (BMNT), Vienna, Austria
- Interreg Alpine Space, Salzburg, Austria
- Lower Austrian Research and Education Association m.b.H. (NFB), Sankt Poelten, Austria
- The National Bank of Austria, Anniversary Fund (OeNB), Vienna, Austria
- World Data Lab, Vienna, Austria
- YSSP Annual Fund, Laxenburg, Austria
- European Association of Remote Sensing (EARSC), Brussels, Belgium
- European Commission, DG Climate Action, Brussels, Belgium
- European Commission, DG Energy, Brussels, Belgium
- European Commission, DG Environment, Brussels, Belgium
- European Commission, DG Mobility and Transport, Brussels, Belgium
- European Commission, DG for Neighbourhood and Enlargement Negotiations (NEAR), Brussels, Belgium
- European Commission, DG Research and Innovation (RIA), Brussels, Belgium
- European Commission, European Climate, Infrastructure and Environment Executive Agency (CINEA)
- European Commission, European Health and Digital Executive Agency (HADEA)
- European Commission, European Research Council Executive Agency (ERCEA), Brussels, Belgium
- European Commission, Executive Agency for Small and Medium-sized Enterprises (EASME), Brussels, Belgium
- European Commission, Innovation and Networks Executive Agency (INEA), Brussels, Belgium
- European Commission, Research Executive Agency (REA), Brussels, Belgium
- ICF Consulting Group, Brussels, Belgium
- Quebec Research Fund (Fonds de recherche du Quebec – FRQ), Quebec, Canada
- Beihang University, Beihang, China
- Global Energy Interconnection Development and Cooperation Organization (GEIDCO), Beijing, China
- The China Sustainable Energy Program (CSEP), The Energy Foundation, Beijing, China
- International Center for Tropical Agriculture (CIAT), Cali, Colombia
- Czech Ministry of Education, Youth and Sports, Prague, Czech Republic
- European Environment Agency (EEA), Copenhagen, Denmark
- Nordic Working Group for Climate and Air (NKL), Copenhagen, Denmark
- European Space Agency (ESA), Paris, France
- International Energy Agency (IEA), Paris, France
- International Science Council (ISC), Paris, France
- Organisation for Economic Co-operation and Development (OECD), Paris, France
- DBFZ German Biomass Research Center, Leipzig, Germany
- Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Berlin, Germany
- Federal Ministry of Education and Research (BMBWF), Bonn, Germany
- Frankfurt School of Finance and Management, Frankfurt, Germany
- German Agency for International Cooperation GmbH (GIZ), Eschborn, Germany
- Interreg Alpine Space, Munich, Germany
- Ministry of Environment Forests, and Climate Change of India (MOEFCC), New Delhi, India
- Swiss Federal Department of Foreign Affairs, Swiss Cooperation Office India, New Delhi, India
- European Commission, Joint Research Center (JRC), Ispra, Italy
- Food and Agriculture Organization of the United Nations (FAO), Rome, Italy
- Research Institute of Innovative Technology for the Earth (RITE), Kyoto, Japan
- Toyota Motor Corporation, Aichi, Japan
- Center for the Competition Policy Development and Protection Joint Stock Company (JSC), Astana, Kazakhstan
- United Nations Environment Programme (UNEP), Nairobi, Kenya
- Industry-Academic Cooperation Foundation of Konkuk University, Konkuk, Republic of Korea
- Jeonju University, Jeonju, Republic of Korea
- Konkuk University, Seoul, Republic of Korea
- National Research Foundation of Korea (NRF), Daejeon, Republic of Korea
- Asian Development Bank (ADB), Manila, Philippines
- European Climate Foundation (ECF), The Hague, Netherlands
- European Space Agency (ESA-ESTEC), Noordwijk, Netherlands
- Norwegian Ministry of Climate and Environment, Oslo, Norway
- The Research Council of Norway, Oslo, Norway
- Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa
- King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
- Commission of the European Communities, Directorate General Joint Research Centre (JRC), Sevilla, Spain
- Knut and Alice Wallenberg Foundation, Stockholm, Sweden
- Restor Eco AG, Zürich, Switzerland
- Swiss Re Management Ltd., Adliswil, Switzerland
- United Nations Economic Commission for Europe (UNECE), Geneva, Switzerland
- United Nations Office at Geneva, Switzerland
- Zurich Insurance Company Ltd., Switzerland
- Department for Business, Energy & Industrial Strategy (BEIS), London, United Kingdom
- International Institute for Environment and Development (IIED), London, United Kingdom
- Jeremy Coller Foundation, London, United Kingdom
- National Environment Research Council (NERC), Swindon, United Kingdom
- Quadrature Climate Foundation (QCF), London, United Kingdom
- Research Councils UK (RCUK), Swindon, United Kingdom
- Wellcome Trust, London, United Kingdom
- World Conservation Monitoring Centre (WCMC), Cambridge, United Kingdom
- ClimateWorks Foundation, San Francisco, USA
- Environmental Protection Agency (EPA), Washington, DC., USA
- Gordon and Betty Moore Foundation, Palo Alto, CA., USA
- Inter-American Development Bank (IADB), Washington, D.C., USA
- National Science Foundation (NSF), Arlington, VA., USA
- Rockefeller Philanthropy Advisors, New York, USA
- RTI International, Washington D.C., USA
- The Meridian Institute, Dillon, CO., USA
- The Nature Conservancy (TNC), Arlington, VA., USA
- The World Bank, Washington, D.C., USA
- UN Sustainable Development Solutions Network (SDSN Association), New York, USA
- World Resources Institute, Washington, D.C., USA

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IIASA member organizations and Council members

On 31 December 2022, IIASA had 23 member organizations, including two observers and one prospective member, represented by the following NMOs/RMO:

AUSTRIA

The Austrian Academy of Sciences (ÖAW)

Council member:

Professor Dr. Christian Köberl

BRAZIL

The Brazilian Federal Agency for Support and Evaluation of Graduate Education (CAPES)

Council member:

Professor Livia Pelli Palumbo

CHINA

The National Natural Science Foundation of China (NSFC)

Council member:

Professor Dr. Xincheng Xie

EGYPT

Academy of Scientific Research and Technology (ASRT)

Council member:

Professor Dr. Mahmoud M. Sakr

FINLAND

The Finnish Committee for IIASA

Council member: Dr. Lea Kauppi

GERMANY

Association for the Advancement of IIASA

Council member:

Professor Dr. Helga Weisz

INDIA

The Technology Information, Forecasting and Assessment Council (TIFAC)

Council member:

Dr. Pradeep Srivastava

INDONESIA (observer)

Indonesia National Committee for Applied Systems Analysis (INCASA)

Council member:

Professor Dr. Kuntoro Mangkusubroto

IRAN

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. Kazu Takemoto

JORDAN (prospective)

The Royal Scientific Society (RSS) of Jordan

Council member:

Dr. Amna Jrrar

KOREA, REPUBLIC OF

National Research Foundation of Korea (NRF)

Council member:

Dr. Kil-Choo Moon

MEXICO (observer)

Mexican National Committee for IIASA

Council member:

Dra. María Elena Alvarez-Buylla Roces

NORWAY

The Research Council of Norway (RCN)

Council member:

Mr. Thomas Hansteen

RUSSIAN FEDERATION

The Russian Academy of Sciences (RAS)

Council member:

Academician Professor Vladislav Panchenko

SLOVAKIA

Ministry of Education, Science, Research and Sport

Council member:

Ms. Anna Jurikova

SUB-SAHARAN AFRICA REGIONAL MEMBER ORGANIZATION (SSARMO)

National Research Foundation (NRF)

Council member:

Dr. Aldo Stroebel

SWEDEN

FORMAS – Swedish Research Council
for Sustainable Development

Council member:

Dr. Johan Kuylenstierna

UK

United Kingdom Research
and Innovation (UKRI)

Council member:

Dr. Sarah Webb

VIETNAM

Vietnam Academy of Science
and Technology (VAST)

Council member:

Professor Dr. Ninh Khac Ban

UKRAINE

The National Academy of Sciences
of Ukraine (NASU)

Council member:

Professor Olena Borodina

USA

The National Academy of
Sciences (NAS)

Council member:

Professor Dr. Michael Clegg

In particular, IIASA would like to thank the following Council members who left the Council in 2022 for their invaluable service and advice: **Dr. Kirsten Broch Mathisen (Norway), Professor Moti Herskowitz (Israel), Dr. Ingrid Petersson (Sweden), Professor Eaman Eftekhary (Iran), and Dr. Lea Kauppi (Finland).**

IIASA Science Advisory Committee

The Science Advisory Committee (SAC) provides scientific guidance and a research assurance function for the institute, and on 31 December 2022 its members were:

- Professor Jim Hall (SAC Chair), Oxford University, UK
- Dr. John R. Birge, The University of Chicago Booth School of Business, USA
- Professor Ruth Defries, Columbia University, USA
- Dr. Marianne Fay, The World Bank
- Professor Fu Bojie, Chinese Academy of Sciences, China
- Dr. Olga Kordas, Royal Institute of Technology, Sweden
- Prof. Dr. Christoph Meinel, Hasso Plattner Institute for Digital Engineering GmbH, Germany
- Professor Yacob Mulugetta, University College London, UK
- Professor Taikan Oki, The University of Tokyo, Japan
- Dr. Youba Sokona, The South Centre, Switzerland
- Prof. Dr. Diana Üрге-Vorsatz, Central European University, Austria
- Professor. Elke U. Weber, Princeton University, USA

In particular, IIASA would like to thank the following SAC members who left SAC in 2022 for their unique contributions and dedication: Prof. Fu Bojie, Prof. Jim Hall, and Dr. Youba Sokona.

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National and Regional Member Organisations:

On 31 December 2022, IIASA had 23 member organizations (2 observers and 1 prospective member) represented by the following:

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INDIA	Technology Information, Forecasting and Assessment Council (TIFAC)
INDONESIA (<i>observer</i>)	Indonesia National Committee for Applied Systems Analysis (INCASA)
IRAN, ISLAMIC REPUBLIC OF	Iran National Science Foundation (INSF)
ISRAEL	The Israel Committee for IIASA
JAPAN	The Japan Committee for IIASA
JORDAN (<i>prospective</i>)	The Royal Scientific Society (RSS) of Jordan
KOREA, REPUBLIC OF	National Research Foundation of Korea (NRF)
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NORWAY	The Research Council of Norway (RCN)
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SUB-SAHARAN AFRICA REGIONAL MEMBER ORGANIZATION	National Research Foundation (NRF), South Africa
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UKRAINE	The National Academy of Sciences of Ukraine (NASU)
UK	United Kingdom Research and Innovation (UKRI)
USA	The National Academy of Sciences (NAS)
VIETNAM	Vietnam Academy of Science and Technology (VAST)