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1. Overview of major accomplishments and developments

Despite 2020’s myriad challenges due to the Covid-pandemic, this Annual Report 2020 attests how hard CIES scholars have worked to make progress on their research on global environmental issues. Next to ongoing projects, our CIES faculty members have also applied their expertise to the Covid-19 crisis. A few weeks into the first phase of the pandemic in Europe, we produced blog posts, podcasts, seminars, interviews in the press, and policy events to reflect on Covid-19 impact on the global environment. Our researchers had to start working remotely and our administrative team had to quickly adapt to this new reality to maintain our stream of activities.

Despite these challenges, the CIES administrative team continued their terrific work in supporting researchers to file research proposals during these exceptional times and 9 research proposals were submitted, out of which 5 were successfully awarded. Among the highlights of this year, we were thrilled to hear about the EUR 1.5 million ERC Grant awarded to Filipe Calvao, Associate Professor in ANSO on the “Future of Mining”. We very much look forward to developing this new area of research with him and his team over the coming years. Our Research Programme on ‘Agrarian Environment and Food Systems’ initiated a few years ago will also generate much activity in the future thanks to the SNF grant on “Accounting for Nature: Agriculture and Mitigation in the Era of Global Climate Change” awarded to Shaila Seshia Galvin.

The year 2021 promises to be one of new beginnings. Under the leadership of the newly appointed Director of the Graduate Institute, Marie-Laure Salles, the CIES will get the opportunity to reflect on its identity and how it inscribes itself into the Graduate Institute collective project. This offers a renewed perspective for broadening our scope of activities. We will also continue our efforts to better communicate our research results to a broader audience – we launched a few months ago our first new CIES Publication Newsletter – and to pursue our mission to be a trusted resource of research on global environmental issues for the International Geneva community.

Tim Swanson
CIES Co-Director

Liliana Andonova
CIES Co-Director

Joëlle Noailly
CIES Head of Research
1.1 CIES Research Impact – The Human Niche project

*CIES Research aims to have impact beyond academia. We present below some examples of how our latest research results resonate into society, policymaking, and business decision-making.*

Population Growth, Food Security and Global Land Use: Policies that develop human lives also limit the conversion of lands

The “Human Niche Project” has been funded by the MAVA Foundation from the outset of the CIES in 2010. In recent months, the results of the project have been published in a number of important scientific journals: *International Economic Review, Ecological Economics, American Journal of Agricultural Economics*, and most recently in a Special Issue of the *European Economic Review* edited by Prof Tim Swanson.

This project demonstrated within a global economic growth model that the problems of food security, population growth and global land use were all closely related. Population growth has often been an engine for development and innovation, while also requiring the expansion of lands used in global agriculture. This project examined various policy approaches to encouraging the expansion of food production in the absence of increased land use. Counter-intuitively, many of these policies focused on issues of education and innovation, such as policies to increase employment opportunities for women or to reduce the employment of children.

This work was toured across all continents, including presentations in Brussels to the European Commission (jointly with the EU project on Global Food Security) and at the Headquarters of the IUCN in Gland. In the USA, the work was presented to the International Food Policy Research Institute, Washington DC (an IARC centre) and at the Gates Foundation for International Development. In Africa, the work was presented at the University of Cape Town, and in China it was presented at the Development Reform Centre at Beijing University.

In Geneva, these policies were discussed within an international broadcast at the Graduate Institute Geneva, in which the FAO Chief Economist spoke as well to the problem of “Food Security in the Time of COVID”.

All told, the Human Niche Project has generated a dozen scientific papers, and many more presentations and discussions. It has contributed to the discussion about how global land use policy should be conceived in the long run. And it has demonstrated that many of the most important policies regarding global land use are also about the improvement of conditions and livelihoods for peoples in the poorest and most populated parts of the world.
1.2 CIES Research Impact – Partnerships for the SDGs

CIES Research aims to have impact beyond academia. We present below some examples of how our latest research results resonate into society, policymaking, and business decision-making.

From their initial endorsement at the 2002 Johannesburg Summit to their role as key means of implementation of the 2030 Agenda for Sustainable Development, partnerships between public and non-State actors have emerged as a key form of governance as part of global efforts to eradicate poverty, ensure human health and well-being, and fight environmental degradation. The results from the CIES project “Partnerships for the SDGs” has thus broad appeal for international policy and practice. In this context, on 16 November 2020, a public policy event has been organised on “Are Global Partnerships Effective in Advancing the Sustainable Development Goals?” with the participation of Prof Liliana Andonova (Academic Co-Director, Centre for International Environmental Studies and coordinator of the project), Prof Gilles Carbonnier (Vice President of the International Committee of the Red Cross), Dario Piselli (Affiliated Research Student, Centre for International Environmental Studies), Axel Michaelowa (Head of Research, International Climate Policy, University of Zurich), Rolph Payet (Executive Secretary, Basel, Stockholm and Rotterdam Conventions), Juan Coderque (Head of New Financing Models Unit, International Committee of the Red Cross), and moderated by Moira Faul (Executive Director, Network for International Policies and Cooperation in Education and Training, NORRAG). The event gathered more than 100 participants from around the world (more details on p.26).

As over 5200 partnerships initiatives and voluntary commitments have been already registered as part of the United Nations’ Partnerships for the SDGs platform, the conceptual framework elaborated by the project could serve as the basis of a new policy tool for assessing partnership effects from an early phase, and along the dimensions that are most appropriate for each specific initiative.

The results provide overall consistent evidence on the importance of certain characteristics of the structuring of partnerships, including sophisticated contracting, credible commitment of resources, and adaptability, that are likely to work together if partnerships effectiveness is to be achieved and sustained. In suggesting that lack of partnership effectiveness may be a direct consequence of inefficient partnering processes, the findings of the project thus have direct implications for practitioners that are setting up and designing new partnership initiatives. For example, practitioners from international organisations may want to use governance arrangements that help sustain the partnerships over time, such as financing mechanisms that anticipate (and prepare for) a full transition to public financing, capacity-building of local administrators and bureaucracies, and mechanisms for the participation of affected communities and civil society in decision-making.

The results also suggest that existing monitoring and evaluation of partnership outcomes tend to fall short of addressing the link between such outcomes and the ultimate contribution of the partnership to problem-solving for the SDGs. The factors that are usually monitored and measured tend to address one specific dimension of effectiveness, which generally concerns nominal goal-attainment of creation of value for the partners. By contrast, the two areas where high-quality data is often limited are those relating the effects of partnerships on affected populations and to their spill-over effects on other initiatives and broader governance dynamics, both of which we regard as key dimensions of effectiveness. On the one hand, this warrants further effort by partnerships that have been implemented or those in the implementation and design phases to take these important aspects more explicitly into consideration. For example, the promotion of local livelihoods and socio-
economic components should be incorporated in all partnership strategies as a key driver of effectiveness, rather than as a complementary target. On the other hand, it calls for the development of innovative monitoring frameworks in which more fine-grained qualitative data is collected alongside the traditional reporting of project outcomes, in order to better measure effects of partnerships at the micro and macro-levels.

After the launch of its ‘Partnerships for SDGs’ platform, which gathers multi-stakeholder partnerships and voluntary commitments aimed at achieving the SDGs, the United Nations has focused on the creation of an enabling environment for partnerships that includes reviewing existing experiences, disseminating best practices, providing necessary training to public officials and building partnership skills and competences. Accordingly, the comparative insights and policy implications of the project (e.g. in terms of partnership design, evaluation and reform) are likely to be relevant for practitioners and private actors who engage in transnational networks and collaborative partnerships for sustainable development in different countries and in international organizations.

Finally, the main publication arising from the project, an edited volume on *Partnerships for Sustainability: Pathways to Effectiveness*, will hopefully provide an important teaching tool in the fields of international relations, development studies, environmental studies, business administration, public policy and other high-level interdisciplinary programs focusing on global politics, global governance and sustainable development issues.

### 1.3 Awards

The academic expertise of CIES researchers is widely recognised as attested by prizes, awards and other distinctions:

- **Joëlle Noailly**: Subaward Economics of Innovation in the Energy Sector, 2020, $2,500, NBER, MIT, Boston.
- **Susanna Hecht**: Interdisciplinary UCLA Campus Award: Culture and Climate Change. 2020.
- **James Hollway**: AAP Prose Award for Environmental Science (for GEO-6), 2020.
- **Eva Bortolotti** and **Bettina Kast**: Sawtooth Software Academic award.

### 1.4 CIES and teaching at the Graduate Institute

CIES faculty have contributed through their teaching to the creation of a strong interdisciplinary track on Environment Resources and Sustainability, offering a Master in International Affairs, and a Master in International Development. In 2020, the Interdisciplinary Masters Programmes were headed by CIES faculty Prof. Liliana Andonova and the Environment Resources and Sustainability Track was overseen by Prof. Susanna Hecht. The list below provides examples of courses by CIES faculty regularly taught in the Interdisciplinary programmes:

- Political Ecology (Marc Hufty)
- Social Movements and the Environment (Marc Hufty)
- Biodiversité : entre science et politique (Marc Hufty)
- Agrarian Transformation and Mobilization: Land, Labour, and Technology (Amalia Ribi-Forlcaz)
- Governance of Environment and Sustainability (Liliana Andonova)
- Global Environmental Governance; Politics and History (Liliana Andonova and Katja Doose)
- Global Food Systems from a Legal Perspective (Anne Saab)
- Climate Change and International Law (Anne Saab)
- International Environmental Institutions (James Hollway)
- Agrarian Worlds: Practice, Power, Place (Shaïla Seshia Galvin)
- Environmental Economics and Policy (Joëlle Noailly)
- Topics in Resource and Development Economics (Joëlle Noailly and Tim Swanson)
- Conservation and Sustainable Development (Tim Swanson, Marc Hufty and Susanna Hecht)
- Climates and History: What the Past Can Tell us about the Present and the Future (Susanna Hecht)
- Development and the Tropics (Susanna Hecht)
2. Staffing of the Centre

The Centre is led by an interdisciplinary Executive Committee of Professors at the Institute appointed in the area of environment, including Timothy Swanson (International Economics, Co-Director of CIES), Liliana Andonova (International Relations/Political Science, Co-Director of CIES), Susanna Hecht (International History, Head of Environment, Resources and Sustainability Track), and Marc Hufty (Development Studies). This Executive Committee is supported by other associated faculty members from various departments, namely: Amalia Ribi-Forclaz (International History), Anne Saab (International Law), Christophe Gironde (Development Studies), Filipe Calvao (Anthropology and Sociology), James Hollway (International Relations/Political Science), Joëlle Noailly (International Economics, Head of Research of CIES), and Shaila Seshia Galvin (Anthropology and Sociology).

Dr Joëlle Noailly also holds the function of Head of Research of CIES, overseeing the research programmes and projects of the Centre. As of January 2020, she started a new position as Associate Professor in environmental economics at the Vrije Universiteit Amsterdam (VU) on a part-time basis and thereby reduced her activities within the CIES. Andhina Kusumawidjaja is the Senior Coordinator and works on the day-to-day management of the Centre.

In 2020, the Centre’s Staff is composed of 1 Post-Doctoral Researcher and 24 Research Affiliates, among which 23 are fully funded PhD candidates and paid research assistants:

- Morgan Scoville Simonds, Post-Doctoral Researcher (Development Studies)
- Radu Barza, PhD Candidate (Development Economics)
- Laura Nowzohour, PhD Candidate (International Economics)
- Roxana Manea, PhD Candidate (Development Economics)
- Jamie Fraser, PhD Candidate (International Economics)
- Dario Piselli, PhD Candidate (International Law)
- Jonas Köppel, PhD Candidate (ANSO)
- Nicholas Brown Tyack, PhD Candidate (Development Economics)
- Matthias van den Heuvel, PhD Candidate (Technology Management), Visiting Researcher, EPFL
- Pedro Cayul, PhD Candidate (Development Economics)
- Helena Ting, PhD Candidate (Development Economics)
- Agnese Zucca, PhD Candidate (IR/PS)
- Henrique Sposito, PhD Candidate (IR/PS)
- Viktoria Vidahazy, PhD Candidate (International Economics)
- Simon Montfort, Research Assistant (IR/PS)
- Céline Kahn, Master’s student (Interdisciplinary Programs), Communication Assistant
- Deepashree Maledavar, Master’s student (Interdisciplinary Programs), Communication Assistant
- Eva Bortolotti, Master’s student (Interdisciplinary Programs), Research Assistant
- Till Fust, Master’s student (International Economics), Research Assistant
- Bettina Kast, Master’s student (Interdisciplinary Programs), Research Assistant
In 2020, Helena Ting, PhD Candidate in Development Economics, successfully defended her PhD thesis “Essays on Health and Development” on 26 November 2020. She was supervised by CIES faculty, Tim Swanson, Professor in Economics at the Graduate Institute.

Three visiting fellows and researchers joined the Centre this year:

- Katja Doose, Postdoctoral Researcher and visiting lecturer, PhD in Eastern European History from the University of Tübingen;
- Noémie Laurens, PhD Candidate in political Science at Université Laval (Quebec city, Canada);
- Francesca Falco, PhD Candidate in biodiversity conservation policy at University of Tel-Aviv (Israel).

In 2020, Helena Ting, PhD Candidate in Development Economics, successfully defended her PhD thesis “Essays on Health and Development” on 26 November 2020. She was supervised by CIES faculty, Tim Swanson, Professor in Economics at the Graduate Institute.

Finally, through its faculty member, Shaila Seshia Galvin (ANSO), and in coordination with McGill University, the Centre was selected to integrate the Social Sciences and Humanities Research Council (SSHRC) Partnership Grant for 7 years (2018-2025). The partnership offers the possibility welcoming two affiliated visiting researchers per year at the Centre over the period of 7 years.

3. Active, ongoing research projects

The CIES is structured around the following research programmes:

- Environmental Governance
- Climate, Energy and Innovation
- Resources and Development
- Agrarian Environment and Food Systems

Under these programmes, there were 9 active and ongoing projects in 2020 that were externally funded from diverse sources, including Swiss public research funding organizations (SNSF and SNIS), and private foundations. One project, “Effectiveness of Partnerships for Advancing the Sustainable Development Goals: Behavioural Pathways and Impacts”, came to an end in 2020. Three new projects started in 2020 — “PANARCHIC: Power and Networks and the Rate of Change in Institutional Complexes”; “An Experimental Approach to Farmer Valuation of African Rice Genetic Resources”; and “Genetic Resources and Agricultural Productivity in the Developing World”.

3.1 Environmental Governance Research Programme

The Environmental Governance research programme studies the governance institutions of global environmental problems, including the negotiation and effectiveness of international environmental regimes and the emergence of private and hybrid systems of global environmental governance. The programme adopts an interdisciplinary perspective on the design, dynamics and impact of different institutional mechanisms.
Effectiveness of Partnerships for Advancing Sustainable Development Goals: Behavioral Pathways and Impacts

Partnerships between public and non-state actors for the provision of collective goods have become important instruments for addressing core issues on the sustainable development agenda such as health, education, humanitarian issues, or clean energy. The UN Sustainable Development Goals emphasize the role of partnerships in the implementation of sustainability. Yet, while the academic literature provides valuable insights on the rise of public-private partnerships (PPPs), we know considerably less about their variable effectiveness and impact.

The project contributes to scientific and practical progress by providing the first to our knowledge inter-disciplinary, integrated and comparative theoretical approach and data on the effectiveness of partnerships for sustainability. The methodology leverages original datasets and cases of partnerships by project participants, e.g. data and cases on partnerships in the multilateral system; data on PPPs which competed for the Roy Family Award managed by the Kennedy School of Government; data and cases from the business sector in collaboration with the UNIGE PPP Research Centre; data of partnerships for climate change, and data and cases from partner organizations – UNICEF and the WEF.

Accountability of International Organisations

This project will seek to develop a broadly generalizable theory that places a spotlight on explaining the variable accountability of international organisations (IOs), and how institutional design and political action affect the scope of international accountability. The theoretical framework will more specifically ask what features of international politics are likely to enable a greater number of accountability mechanisms to the broadest set of relevant accountability-holders. The theory will inform a comparative empirical analysis on the accountability of five IOs (ICRC, UNICEF, the World Bank, the IMF, and the WHO), selected according to the expected variation in their institutional structure and other explanatory variables. The scope of accountability of IOs will be measured, using innovative layering of methodologies from multiple social science disciplines, including analysis of historical archives and legal instruments, and inter-temporal and comparative analysis on who are the formal and informal accountability holders, and through what accountability mechanisms they access information, demand justification, or impose consequences.

The project aims to make substantial contributions to International Relations theories, the study and teaching of international institutions, and, importantly, to public policies and IO reforms.
3.2. Climate, Energy and Innovation Research Programme

The Climate, Energy and Innovation research programme brings together the various disciplines of the Centre to conduct research on issues of climate change, energy and technological developments.

Financing Investment in Clean Technologies

The overarching objective of this project is to investigate how society can steer financing towards cleantech investments. Greater understanding about the financing of cleantech is critical not only in light of the massive amount of investment needed but also because cleantech differs from other technologies on two important aspects.

First, clean technologies are largely dependent on public support as they suffer from a double externality: an environmental externality, which relates to the fact that firms do not bear the full costs of pollution, and a knowledge externality, which stems from the public good nature of knowledge. As a result, policy uncertainty, i.e. frequent changes in environmental and climate regulations, is particularly harmful to cleantech investments. Second cleantech investors differ from traditional investors in other technologies: they are of more dispersed, diverse and small-scale nature than traditional investors and may be driven by different (e.g., altruistic) motives. Much of the dynamism in the sector appears to be driven by new types of investors, rather than the traditional ones (e.g. incumbent energy firms). The research project is structured around two main goals. The first goal is to understand how uncertainty about the policy environment impacts cleantech investment. The second goal is to understand how new tools and financing models (e.g., crowd funding) can help attracting new investors into cleantech.
3.3. Agrarian Environment and Food Systems Research Programme

Connections among agriculture, environment, and food systems have many facets. The environmental impacts of agriculture and associated land use change span multiple scales, from local biodiversity to the earth’s atmospheric systems. This research programme brings together disciplinary perspectives from law, anthropology, political science and international relations, economics, and history, to address critical questions at the interface of agricultural production, food systems, and environmental change.

An Experimental Approach to Farmer Valuation of African Rice Genetic Resources

This project aims to investigate the value that rice farmers in Côte d’Ivoire place on both African rice landraces maintained by the AfricaRice genebank as well as advanced rice varieties developed through AfricaRice’s breeding programs such as the inter-specific hybrid ARICA varieties and the aromatic Oryza sativa variety ORYLUX. This will take place through a field experiment including the implementation of a payment for agrobiodiversity conservation services (Drucker and Ramirez 2020) programme for landraces and the assignment of seed of advanced rice varieties based on the willingness-to-pay (WTP) of surveyed farmers. Methodologically, it will combine a typical randomized controlled trial approach with a simplified version of the open selective trials methodology proposed by Chassang et al. (2012).

The project significance is its combined investigation of how farmers value both newer advanced rice varieties bred through AfricaRice’s programmes as well as rice landrace varieties conserved by the AfricaRice genebank (including both O. sativa and O. glaberrima landraces). In addition, the study’s use of an extended randomized controlled trial / open selective trials methodology through a field experiment will be used to investigate how farmer heterogeneity impacts the valuation of rice genetic diversity (both traditional and improved) in the West African context.

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Genetic Resources and Agricultural Productivity in the Developing World

The Green Revolution was a major public sector investment in the development of improved crop varieties, especially for rice and wheat, which led to the adoption of a modern set of fertilizers and crop varieties to high yield in many developing countries. This research project aims to examine how these investments in the development and dissemination of improved crop varieties have contributed (or have not contributed) to the convergence of productivity and the reduction of yield gaps for a number of crops in the developing world. It examines data for several crops (including wheat, rice, sorghum and maize) and also studies the impact of investments in research and development, the level of intellectual property protection and the potential for hybridization of crops as factors contributing to successful dissemination. This project contributes to the international development discourse and is of interest both for the perspectives it can provide by looking backwards - how investments in breeding more productive crops have impacted the capacity of developing countries to “catch up” with the technological frontier with respect to crop yields - and also by looking to the future, as it provides an analysis of the extent to which investments in breeding better plant varieties could help increase agricultural productivity in developing countries in the coming century.

- NICHOLAS TYACK, PhD candidate, Graduate Institute (co-applicant)
- Funding by SNSF Doc.Mobility: CHF 44,884
- Project duration: November 2020 to August 2021

3.4. Resources and Development Research Programme

Developing countries are crucial to the resolution of global problems, especially their choices regarding development. This programme considers how environmental and resource challenges, such as land use or biodiversity loss, affect development paths of developing countries.

A Sustainable Human Niche? Managing Global Land Use (Extension of the initial project)

This project analyses the sustainability of the continued expansion of the human niche due to the continued conversion of lands to food production. Global land use determines several outcomes jointly: aggregate food production; feasible human population; stability of the food production system; and availability of genetic resources. Together these outcomes determine the sustainability of the entire food production system, and consequently the capacity for the human niche to be supported. This project enables the examination of various pathways for land use – and demonstrates the joint outcomes along each pathway that result (food production, population, stability, genetic resources availability). In this way the issue of global land use is assessed within a framework very similar to that applied elsewhere by Stern (2006) in the analysis of climate change and growth pathways. We also simulate how aggregate outcomes vary across different assumptions concerning discounting, hazard rates, and technological change. In this way it is possible to examine the sustainability of various alternative global land use pathways – given the impact of land use on growth, systemic stability and resultant human welfare.

- TIMOTHY SWANSON, Professor in International Economics, Graduate Institute
- ROXANA MANEA, PhD Candidate in Development Economics, Research Assistant
- HELENA TING, PhD Candidate in Development Economics, Research Assistant
- Funded by the MAVA Foundation: CHF 298,382
- Project duration: February 2020 to August 2022
The Global Political Ecology of Lithium Commodity Chain

Due to their ability to store large amounts of energy in lightweight compact form, lithium-based technologies are now at the cutting-edge of research and development in energy storage. Reflecting this interest, the global demand for lithium is expected to multiply tenfold by 2050 and its price is increasing rapidly. Lithium has become one of the planet’s most strategic commodities. The aim of this project is to take stock of the lithium commodity chain from a political ecology and governance perspectives. Can lithium, as a symbolic commodity for the green economy, be produced and consumed in a socially equitable and environmentally sustainable way? What are the implications of present and future market configurations for the metal? And what are the obstacles for a sound governance regime of this natural resource?

• MARC HUFTY, Professor in Development Studies, Graduate Institute (main applicant)
• MORGAN SCOVILLE-SIMONDS, Postdoctoral Researcher, Development Studies
• Jonas Köppel, PhD Candidate in ANSO, Research Assistant
• Funded by SNF: CHF 569,322; Selected through a competitive process
• Project duration: June 2017 to May 2021

The Impact of Compulsory School Laws in a Developing Country Context: Examining Impacts and Explanations in Sub-Saharan Africa

This research aims to assess the impact of compulsory schooling laws (CSLs) in a developing country context, with special reference to sub-Saharan Africa (SSA). The project focuses on the impact of CSLs on household bargaining outcomes, with special reference to issues of fertility, child labour and the allocation of tasks within the household. The project shapes an agenda for future research regarding the role of CSLs in engendering development and behavioural changes, within the context of severely constrained households in SSA. The aim is to further the understanding of the capacity of CSLs to have impacts for individuals and societies in this context, and to further understanding of the institutional and development constraints that limit the effectiveness of such laws.

• TIM SWANSON, Professor in International Economics, Graduate Institute (main applicant)
• MARTINA VIARENGO, Professor in International Economics, Graduate Institute (co-applicant)
• RADU-NICOLAE BARZA-NICOARA, PhD candidate, Development Economics, Research Assistant
• ROXANA MANEA, PhD candidate, Development Economics, Research Assistant
• Funded by the SNSF: CHF 487,661; Selected through a competitive process
• Project duration: July 2018 to June 2022

LITHIUM PROJECT UPDATE

«As the Corona pandemic is bringing the world to a standstill our research on the global lithium industry and its governance is equally put on hold. In our partner countries Argentina, Bolivia, and Chile quarantine measures have made fieldwork impossible, while institutions such as universities have effectively stopped working. The lithium industry itself is being increasingly affected by disruptions in global consumer markets and supply chains.

While no one really knows how the world will look like after this disruption, the current dynamics in the lithium sector herald a certain readjusting of global supply chains towards relocation, as countries such as France seek to become less dependent on distant places to supply them with increasingly critical raw materials such as lithium.»

— Jonas Köppel’s testimony on his fieldwork experience during the COVID19 Pandemic (21 April 2020).
4. Proposals submitted in 2020

During the year 2020, CIES researchers submitted 9 proposals to external funders among which 5 were successfully awarded and 4 are currently under review.

Accounting for Nature: Agriculture and Mitigation in the Era of Global Climate Change

Led by Prof. Shaila Seshia Galvin

This project envisions utilizing the theoretical perspectives and methodological approaches of anthropology to develop a more holistic understanding of climate change mitigation and address several important lacunae in current knowledge. The project focuses on the role of accounting practices in mitigation, which have received little attention within the available anthropological literature on climate change and explores how accounting shapes and conditions the way that both climate change, and the work of mitigation, is interconnected within agriculture.

Agricultural activities have long remained on the margins of mitigation efforts and have proved controversial within climate negotiations. Preliminary research conducted for this project indicates that agriculture’s potential in achieving future emissions reductions is increasingly recognized. While both Canada and India, being significant emitters of greenhouse gas emissions, are very different in the structure and composition of their agriculture sectors and in terms of broader economic and human development. These two countries will be the locations for the project, offering strikingly different contexts for studying mitigation in agrarian settings. The outputs from the project will not only be useful in understanding the mitigations of greenhouse gases within the complex agrarian setting, but will also be useful to the ongoing negotiations on climate change under United Nations Framework Convention on Climate Change.

- SHAILA SESHIA GALVIN, Associate Professor in ANSO, Graduate Institute
- Submitted to SNF: CHF 811,818 (4-year)
- Status: Accepted; Selected through a competitive process

SYNTHETIC LIVES: The Futures of Mining

Led by Prof. Filipe Calvao

The global extractive industry is undergoing three critical transformations: the advent of synthetic or lab-grown minerals, the creation of fully automated mining operations, and the introduction of digital data and disintermediation technologies for mining management and traceability. This project responds to these changing conditions with a novel conceptualization of the emergent relationship entangling synthetic and natural objects, humans and machines, material and digital spaces.

It asks: What is the role of humans and non-human nature in increasingly synthetic, automated, and digital mining economies?

Through a multi-sited and multi-methods study, Synthetic Lives assists policy-making on environmental, employment, and social-digital issues, and inaugurates a debate of anthropological import: What are the political, epistemological, ecological, and economic consequences of a future that promises to be entangled in synthetic properties, autonomous machines, and digital technologies?

- FILIPE CALVAO, Associate Professor in ANSO, Graduate Institute
- Submitted to the European Research Council (ERC): EUR 1.5 million (5-year)
- Status: Accepted; Selected through a competitive process
Dimensions of Regulations: Individual Choice, Individual Motivation and Societal R&D - Case Studies in Regulation as Applied to the Provision of Public Health

Led by Prof. Tim Swanson

The research project is formulated to examine three of the main facets of public health problems (individual consumption, individual motivation, societal R&D), and to further the discussion regarding these important facets for regulating the supply of public goods in this context.

- TIM SWANSON, Professor of International Economics, Graduate Institute

Project partners:
- SEAN LARCOM, Lecturer in Environmental Economics, University of Cambridge
- EMMANUELLE AURIOL, Professor of Economics, Toulouse School of Economics
- XIABO ZHANG, Distinguished University Chair Professor of Economics, National School of Development, Peking University
- JOHN VĂN REENEN, Professor of Management and Economics, Massachusetts Institute of Technology
- Submitted to SNF: CHF 966'102 (3-year)
- Status: Submitted - Under review

Emotions and International Law

Led by Prof. Anne Saab

The overall objective of the project is to open up a space to explore the role of emotions in International Law. This space for emotions and IL includes acknowledging and examining the influence of emotions on IL, as well as the influence of IL on emotions.

- ANNE SAAB, Associate Professor of International Law, Graduate Institute
- Submitted to SNF: CHF 729,000.- (4-year)
- Status: Submitted - Under review

Russian Climate Science in Transition

Led by Dr. Katja Doose

With the focus on the history of Russian climate science, the project enquires whether the understanding Soviet and Russian scientists built of climate may contribute to explain anthropogenic climate change denialism in today’s Russia.

- KATJA DOOSE, Visiting Lecturer, Graduate Institute
- Submitted to Marie-Curie IEF Fellowship; EUR 203’150 (2-year)
- Status: Submitted - Under review


This research proposes to study 20th Century dam proliferation's role in the emergence and consolidation of the international governance of the environment, crossing environmental history and sciences and techniques studies to offer new decentralized global narratives of the Anthropocene’s great acceleration.

- NATHALIA CAPELLINI, Post-doctoral Researcher at Sciences Po, Paris (under the supervision of Prof. Susanna Hecht)
- Submitted to Marie-Curie IEF Fellowship; EUR 203’150 (2-year)
- Status: Submitted - Under review
Erasmus+ Grant for Jean Monnet Module “European and International Environmental Law”

The Jean Monnet Module on European and International Environmental Law (EIEL) aims to provide students, practitioners and civil society with in-depth knowledge about the state of the art of European and international environmental law and policy, its achievements and challenges, and its interaction with emerging environmental issues and landmark intergovernmental processes. Two overarching themes run through the Module: (a) the emphasis on the most pressing and emerging issues in European and international environmental law, including the interconnected planetary crises of climate change and biodiversity loss; (b) the particular focus on implementation and enforcement at the level of the EU and its Member States.

The core component of the EIEL module is represented by its teaching programme, which includes 50 hours of lectures and seminars on European and International Environmental Law to be hosted each year by the University of Siena. The EIEL module also hosts an annual series of keynote lectures and a series of webinars, and plans to release at least two academic publications by the end of the project’s implementation.

• DARIO PISELLI, PhD Candidate in International Law, Graduate Institute
• Submitted to EIEL: EUR 26,145
• Status: Awarded

An Experimental Approach to Farmer Valuation of African Rice Genetic Resources

The project significance’s is its combined investigation of how farmers value both newer advanced rice varieties bred through AfricaRice’s programmes as well as rice landrace varieties conserved by the AfricaRice genebank (including both O. sativa and O. glaberrima landraces). In addition, the study’s use of an extended randomized controlled trial / open selective trials methodology through a field experiment will be used to investigate how farmer heterogeneity impacts the valuation of rice genetic diversity (both traditional and improved) in the West African context.

• NICHOLAS TYACK, PhD candidate in Development Economics, Graduate Institute
• AMINOU AROUNA, AfricaRice (co-applicant)
• Submitted to Africa GeneBank: USD 14,000
• Status: Accepted

Genetic Resources and Agricultural Productivity in the Developing World

This research project aims to examine how these investments in the development and dissemination of improved crop varieties have contributed (or have not contributed) to the convergence of productivity and the reduction of yield gaps for a number of crops in the developing world. It examines data for several crops (including wheat, rice, sorghum and maize) and also studies the impact of investments in research and development, the level of intellectual property protection and the potential for hybridization of crops as factors contributing to successful dissemination.

• NICHOLAS TYACK, PhD candidate in Development Economics, Graduate Institute
• Submitted to SNF Doc.ch: CHF 44,884
• Status: Awarded
5. Publications

In 2020, CIES researchers contributed to 8 book chapters and 25 articles in academic journals. Another 10 articles and books contribution have been accepted for publication in 2020 and will be published in 2021.

In addition, 10 CIES publications (in the Research and Policy Paper series) were authored or co-authored by CIES staff. Finally, 2 Policy-oriented paper authored by CIES affiliated members were published.

5.1. Books, edited volumes and contributed chapters

Book chapter

Book chapter

Book chapter

Book chapter
5.2. Articles published in scientifically referred journals


Book review

5.3. In press

**Book**


**Edited Book Volume**


**Book Chapters**


5.4. Research papers, policy papers and other publications

The economics related CIES Research Papers are published on the CIES website as well as on RePec, the largest repository of research papers in economics online.

CIES Research Papers


CIES Policy Brief


Policy-oriented papers and other publications


Scientific output in other media (podcast)


5.5. Papers presented and talks at conferences by CIES researchers


Nowzohour, Laura. “Can Policy Uncertainty derail the Transition to Clean Technologies?” at the Alumni Conference conducted by the Study Center Gerzensee, on 2 November 2020.


Tyack, Nicholas. “Genetic resources and agricultural productivity in the developing world”, at 2020 Annual Meeting of the American Agricultural Economics Association, from 10 to 11 August 2020.

6. Events

In 2020, the CIES organised 5 well attended public events and 1 academic workshop. CIES also co-sponsored 2 public events, one with the FAO Liaison Office in Geneva and the other with the Global Governance Centre at the Graduate Institute. In addition, CIES affiliate members engaged in 15 other policy and public events.

6.1. The Geneva Dialogues on Global Environmental Problems

The Geneva Dialogues are a series of keynote speeches by leading academics bridging research and policy on a given theme. Attendees are made up in equal numbers from the Institute’s faculty and student body and from international organisations, including international NGOs. The purpose of inviting these lecturers, in addition to presenting an interesting subject with insight from their specialty, has been also to forge connections with CIES members in their field of expertise.

In 2020, a Geneva Dialogues Public Lecture was scheduled for 10 November 2020, with Jon Hutton, Director of the Luc Hoffmann Institute and chair of the IUCN Red List of Threatened Species. However, in light of restrictions on public gatherings due to the Covid-19 pandemic, the event was cancelled.

6.2. Academic and policy conferences, symposiums and workshops

6.2.1 Academic conferences, workshops and policy events organised by CIES

Academic workshop on “Are Global Partnerships Effective in Advancing the Sustainable Development Goals?” of the SNIS’ “Effectiveness of Partnerships” project on 19 March 2020.

The project, which started in Fall 2017, is coordinated by Prof. Liliana Andonova and hosted by the CIES of the Graduate Institute. Its objective is to bridge the gap between the growing role played by transnational partnerships as mechanisms of sustainability governance and the ongoing lack of sound methodological approaches and empirical studies that evaluate their actual effectiveness across different contexts and sectors. In particular, the project aims to develop a better understanding of the pathways and conditions that are likely to increase the effectiveness of partnerships, with a view to enhancing their contribution to the implementation of the 2030 Agenda for Sustainable Development.

The main purpose of the workshop was to bring the research team together, including the University of Geneva’s Public-Private Partnership Centre, the University of Zurich, the John F. Kennedy School of Government at Harvard University and the Grenoble Ecole de Management, in order to discuss the final versions of the research papers resulting from the project. At the same time, the meeting sought to define the next steps of project implementation, including the publication of an edited volume as the main research output, as well as a series of supporting dissemination activities.

Overall, the online workshop offered a valuable opportunity to continue project activities despite the recent disruptions that made it impossible to host the event at the Graduate Institute of Geneva. This dynamic collaboration, with participants working together across disciplines and issue areas (ranging from biodiversity to global health) will hopefully provide a timely contribution to the ongoing debate on strategies to increase partnership effectiveness for sustainable development.

The workshop was attended by 25 participants.
Online CIES Policy Event on “Covid-19 and Climate Change: Lessons and Challenges”, with Joelle Noailly, Head of Research at CIES, 16 April 2020

On April 16th, Joëlle Noailly, Head of the Centre for International Environmental Studies (CIES), presented an e-seminar on the impact of COVID-19 on climate change.

At first, we would think that the low economic activity and the drastic decrease in CO₂ emissions would be positive for the environment. Yet, with the recession underway, the price of carbon in the quota trading system, the main mechanism for regulating corporate emissions in the European Union and Switzerland, is collapsing. The price per tonne of carbon went from 25 euros and dropped to 15 euros within two months. With such a low price, companies have no incentive to innovate or find alternative solutions. At a national level, the upcoming economic crisis will soon be at the forefront of national agendas, possibly leaving behind the fight for climate change. This would also mean that directly after the health crisis, individuals would tend to use more emissions. Adding to that, most of international conferences, such as COP26, have been rescheduled to 2021 which delays the Paris Agreement objectives. We will need to await for European and Chinese decisions in the near future.

The event was attended by 55 participants.


On April 30th, the CIES had the pleasure to welcome to our e-seminar Rutger Hoekstra, Founder of MetricsForTheFuture.com and author of the book “Replacing GDP by 2030: Towards a common language for the Well-being and Sustainability Community”, published by Cambridge University Press.

Rutger Hoekstra first portrayed a broad picture of the emergence of Gross Domestic Product (GDP) in our society. Although only nine countries used this indicator in 1900, the concept became increasingly popular in the second half of the century and today more than 200 countries are using GDP to measure economic growth. GDP, however, is a very limited tool to measure economic activity and is not a metric of how successful societies are. It fails to measure the differences between the qualitative and quantitative aspects of economic growth and is for instance poorly suited to track digitalization and globalization. More importantly, GDP does not allow to take into account well-being, sustainability, and equity.

In his book, Rutger Hoekstra compares various alternative indicators to include well-being and sustainability. Economists themselves have proposed the metric of Genuine Progress Indicator (GPI), which includes environmental and social factors. The evolution of GPI over time suggests that society has not been making progress since the 1970s. In addition, the GPI presents some important limits as it emphasizes monetary values.

Instead, Rutger Hoekstra’s core argument is that we need to think more broadly about our narrative and develop a common language to promote an alternative set of indicators. The environment, economy, and society share the same features and language in relation to stock/flow accounting, networks, and limitations. Such a harmonized system can be created through a system of accounts with four layers. The first one includes the environmental system, the second one is the society, the third layer is the economy, and the last layer involves distribution. Policy organizations, such as the UN or the World Bank, can take a leading role in changing our narratives beyond GDP.

The event was attended by 62 participants.
Public Policy Conference “Are Global Partnerships Effective in Advancing the Sustainable Development Goals?” of the SNIS “Effectiveness of Partnerships” project on 16 November 2020

The panel discussed whether existing partnerships are actually contributing to the implementation of the 2030 Agenda. Do we have the right tools to measure partnerships’ successes and failures? What are the factors and conditions that can increase the effectiveness of partnerships? While the actual impacts of partnerships will often interact with contextual factors, such as political conditions or external shocks, different internal features can play a key role in driving partnership effectiveness, like – the specificity of partnership arrangements, commitment of partner resources, level of adaptability and deployment of innovative products, processes or services.

The panel underscored that in order to build strong effective partnerships, it is necessary to define the problem one is trying to solve. Innovative mechanisms, including finance, are essential for addressing the problems and a cornerstone for effective partnerships. At the same time, there is an emphasis on an effective consultation and participation of local communities and the civil society because understanding the problem as perceived by the people on ground. Overall, the event provided the basis for the drafting of the project’s policy recommendations and was attended by over 100 participants from around the world.

• Presentation by: Prof Liliana Andonova (Academic Co-Director of the Centre for International Environmental Studies) and Prof Gilles Carbonnier (Vice President of the International Committee of the Red Cross), Axel Michaelowa (Head of Research, International Climate Policy, University of Zurich) and Dario Piselli (Affiliated Research Student, Centre for International Environmental Studies).

• Roundtable discussion with: Mr Rolph Payet (Executive Secretary of the Basel, Rotterdam and Stockholm Conventions), Mr Juan Luis Coderque Galligo (Head of New Financing Models at the International Committee of the Red Cross), Prof Gilbert Probst (Director of the PPP Research Centre of the University of Geneva and Chairman of the Board of the Banque Cantonale de Genève).

• Moderation by: Moira Faul (Executive Director, Network for International Policies and Cooperation in Education and Training, NORRAG).


The policy talk highlighted the technological progress in solar energy, innovation and policies by addressing two questions – How it became so cheap? And why did it take so long? The international flow of knowledge was crucial in the promotion of solar energy – people, ideas, products and finance. In addition, the technological progress in solar energy and innovation was possible by the work and contributions done by five countries over three decades – USA, Japan, Germany, China and Australia, each of which built on the others work, and the policy environment in these countries.

In order to accelerate and keep the momentum for solar energy going, there is constant need for technology push, through continuous R&D, trained workforce and public procurement and demand pull, through robust markets, disruptive production and political economy.

The talk concluded on the note that multiple models are necessary for low carbon innovation.

The event was attended by 79 participants.
Online policy event on “Burdens of the Past, Burdens of the Future? Us Climate Policy in The World in a Time of Transition” with Susanna Hecht, Professor in International history and CIES affiliate, on 14 December 2020.

The policy talk revolved around how much of the Trump legacy can be undone, and what can Biden do to move forward? The event was moderated by Prof. Joelle Noailly, Head of Research of Centre for International Environmental Studies, witnessed 85 registered participants.

Prof. Hecht presented the Trump administration legacy, which led to weaken or wipe out more than 125 rules and policies aimed at protecting the nation’s air, water and land. In addition, with more than 40 rollbacks are still underway.

The upcoming Biden administration instead is proposing a goal of carbon-free electricity by 2035, re-joining the Paris Agreement and implementing strong climate policies, with an emphasis on environmental justice. Prof. Hecht stressed that “not all actions taken are reversible or even if it is, it would take time to undo them”. However, the new Biden administration offers a new hope.

The event was attended by 85 participants.

6.2.2 Other policy and public events co-organised by CIES

Swanson, Timothy. Moderator at the online event on “COVID19 and Food Security”, with Máximo Torero Cullen (Chief Economist and Assistant Director-General for the Economic and Social Development Department at the FAO). The event was co-organised by CIES with FAO Liaison Office Geneva, on 24 June 2020

Noailly, Joelle. Invited panelist on “Macroeconomic modelling, climate risks and stranded assets”, as part of the Bilateral Assistance and Capacity Building for Central Banks (BCC) 8th Conference on “Climate Change and Disaster Risks: What do they imply for emerging central banks”, the Graduate Institute, on 1 October 2020.

Galvin, Shaila Seshia. Seminar on “Responsible Agricultural Investments. How Are Agricultural Futures Governed at the International Level?”, as part of Global Governance Colloquium series of the Global Governance Centre at the Graduate Institute, moderated by Annabelle Littoz-Monnet, Professor of International Relations/Political Science and Director of the Global Governance Centre, the Graduate Institute, on 24 November 2020.

6.2.3 Other seminars, policy and public events with the participation of CIES faculty

Andonova, Liliana. Virtual expert meeting group of UNDES/UNCTAD/ITU on “Socially just transition towards sustainable development: The role of digital technologies on social development and well-being of all” from 4 to 7 August 2020.

Andonova, Liliana. High-level panel discussion at the UN75 Political Declaration on 25 August 2020.

Andonova, Liliana. Seminar on “Can green finance bridge the transatlantic divide on climate change?” at the Financing the green transition in Europe colloquium at University of Geneva on 16 October 2020.


Doose, Katja. “Climate Change and Agriculture in the Soviet Union and Russia, 1960s-2000s” at Climate and Society in Eurasia: Past, Present and Future, University of Illinois at Urbana-Champaign, from 22 to 23 June 2020.


Gironde, Christophe. Seminar on “Food security and gender relations in Ratanakiri”, in Banlung city, Ratanakiri province, Cambodia, at the workshop on Land Commercialization, gender relations and food security, organised by the Ministry of Agriculture of Cambodia and Demeter research project at the Graduate Institute on 20 January 2020.

Gironde, Christophe. Guest speaker at the seminar series on “Agrarian transition in Southeast Asia: lessons from Vietnam and Thailand”, organised by the Faculty of Social Sciences, Chiang Mai University on 15 January 2020.


Hecht, Susanna. Seminar on “Amazonia Now: Perspectives on a region in crisis”, at the colloquium hosted by The Program of Portuguese at Florida State University, from 16 to 19 November 2020.

Hecht, Susanna. Seminar on “Political ecology and Latin American Environmentalism: from Biota to Black Lives, from Rural to Urban” event on “What has been the role of Latin America in the development of political ecology?”, organised by Université de la Sorbonne, online event, on 10 December 2020.

Piselli, Dario. Webinar of the Jean Monnet Module on EU Law and Sustainable Development: ‘The EU and the Modernization of the Energy Charter Treaty: What Could it Mean for Climate Action?’ with Elena Cima (Lecturer at the ISE/GEDT and Faculty of Law, University of Geneva) on 28 April 2020.

Piselli, Dario. SDSN Youth Live! Webinar with Sir Robert Watson (Former Chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services), May 23 2020.

Piselli, Dario. Webinar of the Jean Monnet Module on EU Law and Sustainable Development: ‘The Precautionary Principle under EU Law: A Brake or Lever for Sustainable Development?’ with Alessandra Donati (Senior Research Fellow at the Max Planck Institute Luxembourg for Procedural Law) on 13 July 2020.


6.3. CIES Seminars in Environmental and Resource Economics

The aim of the seminar series in Environmental and Resource Economics is to bring top scholars in Europe to CIES to give guest lectures on their recent research or research in progress. While a few seminars were scheduled for the year, only one seminar was successfully held due to Covid-19 restrictions.

→ “Pay it forward: Impacts of a rural livelihoods program with built-in spillovers” with Nicholas Magnan, Associate Professor, Agricultural and Applied Economics, University of Georgia (USA), co-organised with the Department of Economics, on 11 May 2020.
6.4. CIES lunch/Interdisciplinary seminars

The CIES lunch/interdisciplinary seminars series is a platform for CIES researchers and external researchers to share their research in progress. The series has also served as a way for CIES to promote itself within the Graduate Institute community. The series is organised by an interdisciplinary group of scholars.

After 16 March 2020, due to Covid-19 restrictions, the format was transformed from in-person to hybrid and online seminars. 10 seminars were held in 2020, which were attended on an average by 15 students and faculty.


Laurens, Noémie. PhD candidate in Political Science at Laval University (Canada) and CIES Visiting Fellow. “Negotiating Environmental Protection in Trade Agreements: a Regime Shift or a Tactical Linkage?” on 12 March 2020.


Kahn, Céline. Master’s student in Development Studies at the Graduate Institute. “Sustainable Financing of Marine Protected Areas (MPAs) in the Mediterranean” on 4 June 2020.

Noailly, Joëlle. Head of Research of CIES at the Graduate Institute, and Associate Professor, Environmental Economics, VU Amsterdam. “Heard the News? Environmental Policy and Investments in Clean Technologies” on 6 October 2020.


Calvao, Filip. Associate Professor at the Graduate Institute, “Synthetic Lives: The Futures of Mining” on 8 December 2020.

7. Professional Training

Given its research mandate, CIES does not engage in the organisation of the Executive Education programmes. As of 2020, Anne Saab will take over the directorship of the Executive Education programme in Environmental Governance and Policy-Making, which will contribute to strengthen the links between the CIES and the Executive Education.
8. Public Impact

CIES associated faculty members regularly intervene or are mentioned in local and international media. In 2020, CIES members were featured in the following media news:


03.08.2020 : Sci Dev Net, ‘Expertos se unen en un panel para preservar la Amazonía’. Susanna Hecht.

18.08.2020: The Conversation, ‘Russia’s skepticism of climate change explained by its scientific history’. Katja Doose.


03.10.2020 : RTS, ‘Allô la terre!’. Marc Hufty.


9. Relationship with International Geneva

The CIES maintains important relationships with many organizations part of International Geneva. Several international organizations are active partners into CIES research projects: WEF and UNICEF (SNIS - “Effectiveness of partnerships for advancing the SDGs”, Prof Liliana Andonova); OECD and GGKP (NRP73 – “Financing clean tech”, Joelle Noailly). In 2020, CIES interacted with IUCN, FAO and the Geneva Environment Network on policy events.

In addition, CIES researchers are regularly approached individually to participate in panel discussions and other policy-related events.

Finally, CIES Advisory Board had the honour to welcome a new board member in 2020, Michel Jarraud, former Secretary General of the World Meteorological Organization (WMO) – see box below.

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**CIES WELCOMED MICHEL JARRAUD AS NEW ADVISORY BOARD MEMBER IN 2020**

**Michel Jarraud** is a scientist and a meteorologist with degrees from the prestigious French Ecole Polytechnique and the École de la Météorologie Nationale. He is a fellow of the American Meteorological Society (USA), a member of the Société Météorologique de France, the Royal Meteorological Society (United Kingdom) and the African Meteorological Society, as well as an Honorary Member of the Chinese Meteorological Society and the Cuban Meteorological Society.

Mr. Jarraud started his career with the French National Meteorological Service, Météo-France, as a researcher (September 1976-May 1978). He joined Météo-France again in January 1986 as Director of the Weather Forecasting Department, until December 1989. He devoted part of his career to the internationally renowned European Centre for Medium-Range Weather Forecasts (ECMWF). He was appointed Deputy Director of the Centre in 1991, having been Director of the Operational Department since 1990.

Mr. Jarraud joined the World Meteorological Organization (WMO) Secretariat as Deputy Secretary-General in January 1995. From 2004 to 2015, he served as the Secretary General of the WMO. He was also appointed by three consecutive World Meteorological Congresses (WMC) – Fourteenth WMC on 1 January 2004; the Fifteenth WMC on 1 January 2008; and the Sixteenth WMC for a third and final four-year term, which commenced on 1 January 2012.

In 2012, he also assumed the Chair of UN-Water, the inter-agency mechanism that coordinates and strengthens the work of United Nations organizations and programmes on all issues relating to fresh water.