

Selected research highlights

Experience from 2021 floods in the Netherlands



In the summer of 2021, a part of the Netherlands was affected by severe flooding. Research led by [Thijs Endendijk](#) (2023) of our Environmental Economics section, in collaboration with Deltares and TU Delft, provided into household impacts and experiences after this event. Their survey, answered by 1,500 (nearly-) flooded households, shows that flooded households experienced on average €52,000 euro of damages. This amount was reduced with 10-20% by implementing building-scale flood-proofing measures. Flood risk information before and during the flood event plays a pivotal role in these disaster preparedness activities. Households that were aware of flood risks took more adaptive actions to reduce flood damage. Additionally, households who received a warning about flooding in time, were more likely to both evacuate and take emergency actions, such as elevating possessions and placing sandbags. These findings highlight the importance of both flood risk information provision and early-warning systems to make societies more resilient to future disasters.

> [Link to paper](#)

Economic factors are not sufficient for facilitating uptake of sustainable agricultural practices

Global agricultural systems are currently failing to both ensure food security and contribute to environmental sustainability. Agricultural practices play a crucial role in achieving sustainability targets, yet we lack generalisable knowledge on why farmers apply sustainable practices. Understanding farmers' motivations for adoption is crucial for transformations of agricultural systems. Research led by [Rebecca Swart](#) (2023) of our Environmental Geography section presents a quantitative assessment of all available articles on farmers' motivational factors for implementing sustainable agricultural practices across Europe. The results indicate that attitude, intention, and perceived usefulness are most important for practice adoption, while economic outcomes and environmental awareness are of less importance. This underlines that economic incentives alone might lead to limited sustainability improvements. Instead, policies that target a mix of socio-psychological factors may be more effective in transitioning toward sustainable agricultural systems.



> [Link to paper](#)

The Geopolitics of the impending global energy transition

Our thirst for fossil fuels is at the root of the climate crisis, (colonial) wars, economic recessions and other misery. That is why we need a global energy transformation. Now, the first steps are being taken. As we reduce our dependence on oil, coal and gas, renewables will form the backbone of a new system. Will this transformation make the world a safer place? A



FEATURED RECENT PUBLICATIONS

Dissertations:

Pedja Ignjačević (27 October 2023): [Calming the Waves: A local scale benefits assessment of global climate change mitigation](#)

Tadzio Holtrop (8 November 2023): [An Ocean of Colors](#)

Chiem van Straaten (20 November 2023): [Machine Learning to improve and understand sub-seasonal forecasts of European temperature](#)

Markus Glatt (8 December 2023): [Combining choice experiments and agent based modeling to analyze preference uncertainty](#)

Katharina Schulze (8 December 2023): [Mapping 'Life on Land': Methodological improvements for assessing land use implications from achieving SDG 15](#)

Job Dullaart (24 January 2024): [Facing the storm: Assessing global storm tide hazards in a changing climate](#)

Bep Schrammeijer (6 February 2024): [Incorporating human nature in urban ecology: Measuring functional quality of Urban Green Space](#)

Claudia Parra Paitan (13 February 2024): [The telecoupled sustainability impacts of global agricultural value chains: Assessing the cross-scale sustainability impacts of the cocoa sector](#)

Max Tesselaar (7 March 2024): [The social security for climate change risks: Assessing policy trade-offs to future-proof flood insurance](#)

Books and reports:

Blondeel, M. & de Jong, M. (2023). Staat de wereld in brand? Over geopolitiek, energie en een klimaat in crisis. De Klimaatesays, 156 pp.

Koloffon Rosas, M. & Pattberg, P.H. (2023). Partnerships for SDGs: Facilitating a Biodiversity-Climate Nexus?. In Partzsch, L. (ed.), Environment in Global Sustainability Governance: Perceptions, Actors, Innovations (pp. 297-316). Bristol University Press

Selected journal articles:

Banerjee, S., Galizzi, M.M., John, P. & Mourato, S. (2023). Sustainable dietary choices improved by reflection before a nudge in an online experiment. *Nature Sustainability*, 6(12), 1632–1642. <https://doi.org/10.1038/s41893-023-01235-0>

new book by [Mathieu Blondeel](#) (2023) from our Environmental Policy Analysis section, argues that we should avoid exchanging our dependence on fossil fuels for one of lithium, cobalt and nickel. This, evidently, will not solve the (geopolitical) issues that we have been dealing with in the fossil fuel era. Today, there are already calls to set up production cartels similar to those of OPEC (for oil) around lithium and nickel. The risks of newly emerging, 'green' dependencies are clear. The challenges and obstacles are therefore enormous, because while the world is changing at a rapid pace, the impact on the energy sector cannot be underestimated. The book brings together issues at the intersection of geopolitics, energy and the climate crisis and tries to formulate answers to the mounting challenges that we face.

> [Link to book](#)

Insurance companies impact the development of flood risk

Besides a changing climate, the growth of exposure in floodplains is an important driver of increasing flood risk. Floodplains may be attractive locations for households and firms to settle because of geographic suitability, economic advantages, or aesthetic appeal. The disadvantage of settling in floodplains – the potential danger of floods – is often discounted, particularly when floods occur rarely.



Research led by [Max Tesselaar](#) (2023), along with colleagues from our Water and Climate Risk section, shows that insurance has a considerable impact on the decision whether to settle in a floodplain. Particularly when flood insurance is characterized by a high degree of risk-sharing, as is the case in many countries including France, Belgium, and Spain, households face no financial consequences of their choice to settle in flood-prone areas. An insurance system with risk-based premiums, where premiums are more sensitive to the flood risk faced by individual policyholders, does send such a signal. Besides improving physical flood defences, including flood barriers, retention basins, and nature-based solutions, risk-based insurance premiums are an important complementary tool to stimulate climate change adaptation.

> [Link to paper](#)

“Climate Breakdown” Podcast

The VU Climate Expertise Centre's new podcast “Climate Breakdown” is an exclusive and limited podcast series hosted by VU Assistant Professor Mathieu Blondeel. Together with world-leading experts from VU Amsterdam and beyond, Mathieu delves into the complex challenges of the global climate crisis from various angles.

The climate breakdown podcast is now complete, with all episodes published. Now available on [Spotify](#) and [Apple Podcast](#).

Prizes, awards and grants

IVM awarded COST Grant to lead network on sustainable use of salt-affected lands

The Institute for Environmental Studies (IVM) at VU Amsterdam has been awarded an EU-funded COST (European Cooperation in Science and Technology) grant to lead a ground-breaking network dedicated to addressing the sustainable utilisation of salt-affected lands. This initiative marks a significant step forward in the quest for innovative solutions to one of the world's most pressing agricultural and environmental challenges. Salt-affected lands, characterised by increased salt concentrations in the soil and water, are a major hindrance to agricultural productivity and environmental health. Such areas pose a substantial obstacle to sustainable food production, as they sometimes require resource-intensive mitigation efforts. Recognising the urgency of this issue, IVM is set to spearhead a collaborative network of experts from across Europe and beyond to find sustainable solutions. [Kate Negacz](#) is the MC chair.



> [Read more](#)

Blondeel, M., Price, J., Bradshaw, M., Pye, S., Dodds, P., Kuzemko, C. & Bridge, G. (2023). Global energy scenarios: A geopolitical reality check. *Global Environmental Change*, 84, 102781.

<https://doi.org/10.1016/j.gloenvcha.2023.102781>

Davis, J.T.M., Verburg, P.H. & May, J.D. (2023). Diverse actor perspectives on African urban food systems: lessons from participatory food system modeling in Worcester, South Africa. *Ecology and Society*, 28(4), 26. <https://doi.org/10.5751/ES-14285-280426>

Diogo, V., Bürgi, M., Debonne, N., Helfenstein, J., Levers, C., Swart, R., Williams, T.G. & Verburg, P.H. (2023). Geographic similarity analysis for Land System Science: opportunities and tools to facilitate knowledge integration and transfer. *Journal of Land Use Science*, 18(1), 227–248.

<https://doi.org/10.1080/1747423X.2023.2218372>

Geagea, D., Kaika, M. & Dell'Angelo, J. (2023). Reconnecting water: Crossing thresholds under citizen-driven remunicipalisation. *Urban Studies*, 60(16), 3294–3311.

<https://doi.org/10.1177/00420980231169612>

He, S., Blasch, J., Robinson, P. J. & van Beukering, P. (2024). Social comparison feedback in decision-making context: Environmental externality levels and psychological traits matter. *Ecological Economics*, 216, 108047.

<https://doi.org/10.1016/j.ecolecon.2023.108047>

Robinson, P.J., van Beukering, P. & Brander, L. (2023). A global analysis of coral reef conservation preferences. *Nature Sustainability*, 6, 1600–1606. <https://doi.org/10.1038/s41893-023-01213-6>

Schrieks, T., Botzen, W.J.W., Haer, T. & Aerts, J.C.J.H. (2024). Drought risk attitudes in pastoral and agro-pastoral communities in Kenya. *Journal of Behavioral and Experimental Economics*, 108, 102143.

<https://doi.org/10.1016/j.socecon.2023.102143>

Stolte, T.R., de Moel, H., Koks, E.E., Wens, M.L.K., van Veldhoven, F., Garg, S., Farhad, N. & Ward, P.J. (2023). Global drought risk in cities: present and future urban hotspots. *Environmental Research Communications*, 5(11), 115008.

<https://doi.org/10.1088/2515-7620/ad0210>

Swart, R., Levers, C., Davis, J.T.M. & Verburg, P.H. (2023). Meta-analyses reveal the importance of socio-psychological factors for farmers' adoption of sustainable agricultural practices. *One Earth*, 6(12), 1771–1783.

<https://doi.org/10.1016/j.oneear.2023.10.028>

Tesselaar, M., Botzen, W.J.W., Tiggeloven, T. & Aerts, J.C.J.H. (2023). Flood insurance is a driver of population growth in European floodplains. *Nature Communications*, 14(1), 7483.

<https://doi.org/10.1038/s41467-023-43229-8>

van Loon, A.F., Wanders, N., Bloomfield, J.P., Fendeková, M., Ngongondo, C. & van Lanen, H.A.J. (2023). Human influence. In In Tallaksen, L.M. & van Lanen, H.A.J. (eds.), *Hydrological Drought: Processes and Estimation Methods for Streamflow and Groundwater* (pp. 479–524). 2nd ed. Elsevier. <https://doi.org/10.1016/B978-0-12-819082-1.00007-2>

ASI 2024 Seed Money Grants Awarded

[Sanchayan Banerjee](#) and his team won a grant for their research *Empowering Climate Education: Motivating Curriculum Change at VU Amsterdam*



[Marije Schaafsma](#) and her team (including from IVM [Pim van Tongeren](#) and [Mario Torralba](#)) also won a grant for their research *The Evolving Canvas: Art, Nature, and Visual Thinking in Higher Education for Transformative Learning, Empowering Sustainability Leaders of Tomorrow*



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Arne Richter Award for Outstanding Early Career Scientists

[Nadia Bloemendaal](#) has been awarded by the [EGU \(European Geosciences Union\)](#). She receives this award for her research into better risk assessment of tropical cyclones.



Division Outstanding Early Career Scientist Award

[Marleen de Ruyter](#) has been awarded by the [EGU \(European Geosciences Union\)](#). She receives this award for her research into risks from natural disasters.



Spinoza award for Joyeeta Gupta

[Joyeeta Gupta](#), a respected and appreciated member of the IVM family, was awarded last year 2023 October the Spinoza Prize by [NWO \(Dutch Research Council\)](#), the highest distinction in Dutch science.

Joyeeta Gupta, professor of Environment and Development in the Global South at the [University of Amsterdam](#) received the prize, sometimes called the “Dutch Nobel Prize”, for her outstanding, pioneering, and inspiring scientific work focused on a just and sustainable world.



> [Read more](#)

Educational Innovation Award 2024

Ana Clara Cassanti and her team received this award for their Diversity and Inclusion project, aimed at creating a safe and inclusive learning environment within the Earth Sciences and BETA programmes. Their work, which has yielded significant insights and recommendations for educational improvement, is now entering its second phase with a focus on expansion and institutionalisation.



> [Read more](#)

[van Straaten, C., Coumou, D., Whan, K., van den Hurk, B. & Schmeits, M. \(2023\).](#) Strengthening gradients in the tropical west Pacific connect to European summer temperatures on sub-seasonal timescales. *Weather and Climate Dynamics*, 4, 887-903. <https://doi.org/10.5194/wcd-4-887-2023>

West, T.A.P. (2024). Formal designation of Brazilian indigenous lands linked to small but consistent reductions in deforestation. *Ecological Economics*, 218, 108093. <https://doi.org/10.1016/j.ecolecon.2023.108093>

STAFF AND ORGANISATIONAL NEWS

Hello and goodbye

Over the past months, IVM has welcomed several new staff members:

- In the section Water and Climate Risk (WCR) [Nicole van Maanen](#) and [Shadi Shirazian](#) started as Postdocs. [Veerle Brill](#), [Anne-Sophie Sabino Siemons](#) and [Rikke Stoffels](#) are new PhD Candidates.
- The section Environmental Policy Analysis (EPA) welcomed [Janina Smaoui](#) as a new Junior Researcher.
- The section Environmental Economics (EE) welcomed [Madeline Werthschulte](#) as an Assistant Professor, [Georges Farina](#) as a Postdoc, [Bibiana Cepeda Santamaria](#) as a Junior Researcher, and [Jorn van Elden](#), [Marta Buso](#), [Zsóka Halászová](#), [Magdalena Lesch](#) and [Louison Thépaut](#) as PhD Candidates.
- In the section Environmental Geography (EG) [Alex Levering](#) started as a Postdoc. [Clara Jeanroy](#) is the new Assistant Project Coordinator. [Callum Blacow](#) and [Nuno Garcia](#) started as Junior Researchers. [Marijn van der Meer](#), [Paris Pencharz](#) and [Xuanya Huang](#) are new PhD Candidates.
- We welcome [Hélène van Laar](#) as our new Project Manager.

We said goodbye to [Mária Knoteková](#), [Dániel Petrovics](#), [Stella Archontaki](#), [Vita Bakker](#), [Constance Carrier](#), [Michelle Eichinger](#), [Job Dullaart](#), [Kiri van den Wall Bake](#), [Hanna Dijkstra](#) and [Leonie Peiffer](#).

IVM in the spotlight

IVM contribution to UNEP report

In 2023, temperature records topped, while storms, floods, droughts and heatwaves caused devastation.

UNEP's Adaptation Gap Report 2023: Underfinanced. Underprepared – Inadequate investment and planning on climate adaptation leaves world exposed finds that progress on climate adaptation is slowing when it should be accelerating to catch up with these rising climate change impacts.

> [Read more](#)

Upcoming events

Wednesday 3 April 2024, 11.45h, Auditorium VU Amsterdam: [PhD defence Mirja Schoderer](#). Thesis title: *Negotiating the nature of water- and miningscapes: Institutions, discourses and practices of governing natural resources*

IVM (Institute for Environmental Studies), Vrije Universiteit Amsterdam produces two newsletters per year to promote and communicate its research activities. They present a series of articles of our researchers on their newest findings in the fields of Environmental Geography, Economics, Policy and Governance, and Water and Climate Risk. You are receiving this newsletter because you have been in contact with us recently or in the past. Should you not wish to receive our information in the future please unsubscribe by [clicking here](#) (send the resulting e-mail as it is). If you receive our newsletter indirectly you can subscribe by [clicking here](#) (send the resulting e-mail as it is). For more information, please visit our website www.vu.nl/ivm or contact us through info.ivm@vu.nl
