

Selected research highlights

Blue-green roofs to prevent flooding and provide cooling



Blue-green roofs can help reduce street flooding while also helping to keep buildings cool, researchers working on the [RESILIO project](#) at IVM have found. The project is a collaboration between Vrije Universiteit Amsterdam and eight other partners, including the City of Amsterdam.

Over the past three years, a network of fourteen blue-green smart roofs has been installed in Amsterdam. Together, the roofs measure over 12,000 square metres, allowing for the collection of more than 650,000 litres of water. In parallel with the RESILIO project, VU Amsterdam has also constructed its [own blue-green smart roof](#). The roofs have the ability to store water (blue) underneath a layer of plants (green), retaining or discharging water based on the weather forecast. Among other things, the IVM investigated how these roofs contribute to reducing flooding and drought and how weather forecasts can be used for optimal control. The results were published in the [Journal of Environmental Management](#).

> [Read more](#)

Energy communities can be powerful partners in the energy transition



The IVM led 'NEWCOMERS' project, which investigated the role of new clean energy communities in the energy transition, was recently finalized with a set of recommendations for policy makers at all levels of governance. The project consortium underpins its final recommendations with three key principles: Recognise, Prioritise and Simplify.

Recognise: clean energy communities offer multiple benefits to their members, which should receive political recognition. This includes social benefits of engagement with energy communities (e.g. community spirit, social recognition and social approval, connecting and acting with like-minded people), political aspects (e.g. self-sufficiency and energy independence), and also aspects of personal development (e.g. acquiring specific skills and knowledge). Policy makers at all levels should clearly recognize these benefits as a contribution to their jurisdiction.

Prioritise: policy makers are encouraged to prioritise energy communities in supportive policies and formal legislation. This starts with clear and nationally adapted definitions of the term energy community to provide legal clarity and also includes supportive policies and legislation that are explicitly targeted at energy communities. Further support could be given by formulating explicit targets for energy communities

FEATURED RECENT PUBLICATIONS

Dissertations:

Liselotte Hagedoorn (2 June 2022): [Time is money: Valuing the benefits of nature-based solutions in a developing country context](#).

Joël Foramitti (6 September 2022): [Agent-based modeling of climate policy](#)

Marthe Wens (9 September 2022): [Farmers facing droughts: Capturing adaptation dynamics in disaster risk models](#).

Floris Leijten (3 October 2022): [Assessing the effectiveness of zero-deforestation commitments](#).

Timothy Tiggeloven (2 November 2022): [Sea Change to Nature-based Solutions - A Coastal Flood Risk Perspective](#).

Inaugural address:

Dim Coumou (12 May 2022): [Anticipating surprises: Climate extremes in the next decade](#).

Pieter van Beukering (23 June 2022): [Alles zonder waarde is weerloos: de rol van milieueconomie in het versterken van natuurlijk kapitaal](#).

Books and reports:

Negacz, K., de With, M., Petersson, M., Widerberg, O.E., Kok, M. T. & Pattberg, P.H. (2022), [Bio*: Mapping the landscape of international and transnational cooperative initiatives for biodiversity: Third edition](#). 10 Jul 2022, Amsterdam: IVM Report.

Selected journal articles:

Appelt, J.L., Garcia Rojas, D.C., Verburg, P.H. *et al.* (2022). Socioeconomic outcomes of agricultural land use change in Southeast Asia. *Ambio* 51, 1094–1109. <https://doi.org/10.1007/s13280-022-01712-4>

Armstrong, A., Hope, R. & Koehler, J. (2022). Piped water revenue and investment strategies in rural Africa. *Environmental Research: Infrastructure and Sustainability*, 2(3), 035003. <https://doi.org/10.1088/2634-4505/ac61f8>

Bloemendaal, N., de Moel, H., Martinez, A.B., Muis, S., Haigh, I.D., van der Wiel, K., Haarsma, R.J., Ward, P.J., Roberts, M.J., Dullaart, J.C.M. & Aerts, J.C.J.H. (2022). A globally consistent local-scale assessment of future tropical cyclone risk. *Science Advances*, 8(17), eabm8438. <https://doi.org/10.1126/sciadv.abm8438>

Davis, J., Magadzire, N., Hemerijckx, L.M., Maes, T., Durno, D., Kenyana, N., Lwasa, S., Van Rompaey, A., Verburg, P.H. & May, J. (2022). Precision approaches to food insecurity: A spatial analysis of urban hunger and its contextual correlates in an African city. *World Development*, 149, 105694. <https://doi.org/10.1016/j.worlddev.2021.105694>

de Boer, J. & Aiking, H. (2022). How meat reduction differs from other personal climate actions: Distinct concerns and cultural barriers

and by offering preferential treatment of and dedicated incentives for energy communities.

Simplify: many energy communities experience bureaucracy, legislative and administrative burdens as barriers to their emergence and development. Policy makers should therefore make efforts to simplify administrative and regulatory requirements for energy communities as much as possible, and to offer clear information and support services to those who aim to set up and scale clean energy communities.

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New report on saline agriculture initiatives



Salinisation (increased salt content of soil or water) is a main problem among the environmental issues that put food security under pressure. Adapting to the global phenomenon of salinisation through saline agriculture will increase food and water security and support sustainable development. Over the past 10 years, a myriad of international cooperative initiatives (ICIs) have emerged around the topic of salinisation and saline agriculture. These initiatives involve non-state and subnational actors, often working in collaboration with national governments and intergovernmental organisations. ICIs operate across national borders and perform governance functions related to implementation of salinity-related projects as well as provision of information and funds to achieve common goals. As such, they provide an opportunity to address the global challenge of soil and water salinisation. Within the framework of the [SALAD project](#), a team of researchers including IVM's Katarzyna Negacz and Pim van Tongeren, created and analysed a database containing 99 international and transnational cooperative initiatives on saline agriculture.

> [Read more](#)

Land use change impacts of cocoa production: look beyond the farm level

Increasing cocoa demand does not necessarily result in negative impacts for carbon stocks and biodiversity, if sustainable land management and sustainable intensification are adopted. Landscape-level impacts can be larger than farm level impacts or show completely opposite direction. This highlights the need to complement farm level assessments with assessments accounting for land use dynamics beyond the farm level.



In a recent paper published in '[Science of the Total Environment](#)' IVM's Claudia Parra Paitan and Peter Verburg analysed the impacts of two cocoa production systems, full-sun and agroforestry. They used life cycle assessment to calculate the impacts at the farm level and a combination of land use modelling with spatial analysis to calculate the impacts beyond the farm level. They applied this to three different future cocoa production scenarios. The impacts at the farm level showed that, due to lower yields, cocoa agroforestry performs worse than cocoa full-sun for most impact indicators. However, the impacts beyond the farm level showed that promoting cocoa agroforestry in the landscape can bring the largest gains in carbon and biodiversity. A scenario analysis of the impacts at the landscape level showed large nuances depending on the cocoa farming system adopted, market dynamics, and nature conservation policies.

> [Read more](#)

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Nirandjan, S., Koks, E.E., Ward, P.J. & Aerts, J.C.J.H. (2022). A spatially-explicit harmonized global dataset of critical infrastructure. *Scientific Data*, 9, 150. <https://doi.org/10.1038/s41597-022-01218-4>

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STAFF AND ORGANISATIONAL NEWS

Appointments

Wouter Botzen will be the new director of IVM as of 1 January 2023, succeeding Pieter van Beukering, who held this position since 2020.

He will hand over the position of Head of department Environmental Economics to Marije

Prizes, awards and grants

[Sem Vijverberg](#) has been selected for the first round of the Faculty of Impact, a new research programme of the Dutch Research Council NWO. His research proposal is titled 'Stabilizing electricity grids and maximizing feed-in of renewables with AI-based forecasts several weeks ahead'.



Upcoming events

Tuesday 22 November 2022, 9:45h, Aula VU Amsterdam: [PhD defence Dirk Eilander](#). Thesis title: *Towards global scale compound flood risk modeling*

Thursday 8 December 2022, 11:45h, Aula VU Amsterdam: [PhD defence Kees van Ginkel](#). Thesis title: *Exploring climate change induced socio-economic tipping points to support decision making*

Monday 12 December 2022, 11:45h, Aula VU Amsterdam: [PhD defence Cecilia Zagaria](#). Thesis title: *Mapping and modelling adaptation in Mediterranean agricultural landscapes*.

Thursday 30 March 2023, 13.45h, Aula VU Amsterdam: PhD defence Anaïs Couason. Thesis title: *The role of (in)dependence in flood risk assessments*

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

Schaafsma.

Hans de Moel became a member of the editorial team of the new [Journal of Coastal and Riverine Flood Risk](#).

Hello and goodbye

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

- In the section Water and Climate Risk (WCR): [Jannes van Ingen](#), [Marjolijn van Schendel](#), [Alicja Grudnowska](#) and [Stan van Manen](#) started as Junior Researchers. [Kushagra Pandey](#), [Sophie Buijs](#), [Tim Leijnse](#), [Lars de Graaff](#), [Siyu Gao](#), [Moongyeom Kim](#), [María Fonseca](#) and [Maurice Kalthof](#) are new PhD Candidates in WCR.
- In the section Environmental Economics (EE), [Laurine de Wolf](#) and [Stella Archontaki](#) became Junior Researchers. [Leonie Peiffer](#), [Marjan Nikoloski](#), [Guillermo García](#) and [Kevin Goes](#) embarked on PhD projects. [Sanchayan Banerjee](#) took up a position as Assistant Professor in EE.
- In the section Environmental Geography (EG), [Loes Verkuil](#), [Joshua Nooij](#), [Evelina Sandström](#) and [Anandi Sarita Namasivayam](#) started as PhD Candidates
- The section Environmental Policy Analysis (EPA) welcomed [Julia Grosinger](#) as a postdoc, [Mária Knoteková](#) as a Junior Researcher and [Noëlle Lasseur](#) as a PhD Candidate.
- [Cecilia Nicholson](#) is the new Management Assistant in IVM.

Fujin Zhou, Katharina Schulze, Levi Helm, Anne Elise Stratton, Atoesa Farokhi and Dave Huitema said goodbye to IVM to take up positions elsewhere. Frans Oosterhuis retired after almost 40 years of IVM staff membership.