

January 2026

Green Lab Practices in the Netherlands: From Local Grassroots Initiatives to a National Ambition



university of
 groningen

faculty of science
 and engineering

Dr. Thomas Freese

CEO/CTO of Circolide
Co-founder of Green Labs UG
Sustainability Coordinator
PhD in Chemistry



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PhD in Chemistry & Co-founder of Circolide

- Sustainable Chemistry / Green Chemistry



- Photocatalysis

- Heterogeneous Catalysis



- Energy carriers

- Biobased Polymer and Coatings Chemistry



- Biomass conversion



A chemical manufacturing company
of renewable building blocks for
enabling a circular economy.



Ben Feringa
(Nobel Prize in Chemistry, 2016)



rijksuniversiteit
groningen



Green Labs RUG

- Sustainable lab practices
- Laboratory certification coordinator

SPARKHUB
Greener Research



Ben Feringa
(Nobel Prize in Chemistry, 2016)

rijksuniversiteit
 groningen

Extreme heat will kill millions of people in Europe without rapid action

Climate models predict that the number of heat-related deaths could soar in cities over the coming century, even when efforts are made to keep people safe.



Vandaag, 06:36

Meer uitstoot van broeikasgassen dan vorig jaar

De toegenomen uitstoot werd voornamelijk veroorzaakt door de energiesector.

Leaders | In the line of fire

The world is losing the war against climate change

Rising energy demand means use of fossil fuels is heading in the wrong direction

2024 first year to pass 1.5C global warming limit

10 January 2025

Global sea levels are rising faster and faster. It spells catastrophe for coastal towns and cities

UPDATED MAY 9, 2025

Publication

Natural catastrophes

Insured losses on trend to USD 145 billion in 2025

More than 80% of world's coral reefs hit by worst bleaching event in history

'We're looking at something that's completely changing the face of our planet,' scientists warn

NIEUWS

Het tempo waarin de wereldeconomie verduurzaamt is 'alarmerend' laag, waarschuwen onderzoekers

Klimaatverandering Op alle fronten gaat verduurzaming veel te langzaam om klimaatopwarming tegen te gaan, blijkt uit nieuw onderzoek. Zo stegen fossiele subsidies wereldwijd de afgelopen tien jaar.

Bobby Uilen

22 oktober 2025 • Leestijd 2 minuten

Extreme heat will kill millions of people in Europe without rain

Single-use plastics

Water

Data storage

Climate: Number of heat-related deaths could soar in cities over the coming century, even when efforts are made to keep people safe.

Rising energy dem

Animal-derived products

in the wrong direction

2024 first year to pass 1.5C global

Laboratories have a large footprint

Lab ventilation

Procurement

spells catastrophe for coastal towns and cities

Publication

More than 80% of world's coral reefs hit bleaching event

Cold storage

Air travel to conferences

Equipment

to USD 145 billion in 2025

that's completely changing the face of our

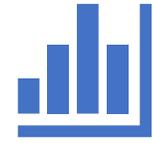
How did we get here?



Students in coffee corner

Green Labs team formed
(Chemistry & Neurosciences
 Researchers)

Green Office RUG



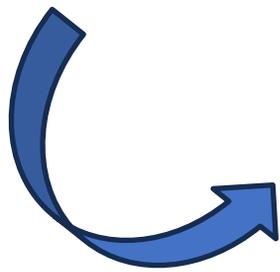
Local data



Prof. Adri J. Minnaard



Prof. Gerard Roelfes



Dr. Renate Kat



Dr. Suzanne Lanooij

29.06.2021
Greener Labs GELIFES



Dr. Thomas Freese



Dr. Meagan Beatty



Tanja Böllersen



Maurits de Roo



Dr. Gaël Schaeffer

10.01.2022
Stratingh
Sustainability
Committee



Dr. Roza R. Weber



Dr. Daniel Sauer



Dr. Michael M. Lerch



Organizational chart

Sustainability program / Green Office

Staff committees

Food Group
Green Labs
...



Dick Jager
Program manager
Sustainability



Nils Elzinga
Green Office coordinator
& project leader



Marijke Nieborg
Project leader
Sustainability in
Research & Education



Francine Nijp
Communication
advisor Sustainability



Project leader
Mobility

Advisory Body

Student team



Verena Erich
Education
& Research



Nellie Schätzle
Communication &
events



Harm Verbeek
Ambassador
coordinator



Meerke Romeijnders
Office Management



Noa Eleveld
Research & Climate
impact



Josh Bruegger
Green Subsidies &
Labels

Sustainability
Sounding Board

Green Embassies

Honours College
Faculty of Arts
Faculty of Law
Faculty of Spatial Sciences
Faculty of Economics & Business
Faculty of Science & Engineering

Fac. of Behavioural & Social Sciences
Campus Fryslân
UMCG
University College
Faculty of Philosophy
General Ambassadors

Chemical Education



A guidebook for sustainability in laboratories

25 April 2024, Version 4

Working Paper

[Thomas Freese](#) , [Renate Kat](#) , [Suzanne D. Lanooij](#) , [Tanja C. Böllersen](#),
[C. Maurits De Roo](#) , [Nils Elzinga](#) , [Meagan Beatty](#) , [Brian Setz](#) ,
[Roza R. Weber](#) , [Irene Malta](#), [Timea B. Gandek](#) , [Arjen Krikken](#) , [Peter Fodran](#),
[Robert Pollice](#) , [Michael M. Lerch](#) 

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This content is a preprint and has not undergone peer review at the time of posting.

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 Cite

 Comment



Version History

[Apr 25, 2024 Version 4](#)

[Feb 29, 2024 Version 3](#)

[Dec 01, 2023 Version 2](#)

[Nov 28, 2023 Version 1](#)

Version Notes

Added a biological safety statement. Updated information on polystyrene boxes, autoclaves, and recycling. Addition of...

[Show more](#) 

Metrics



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 Researchers)

Green Office RUG

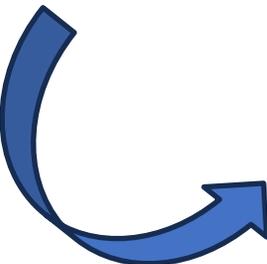
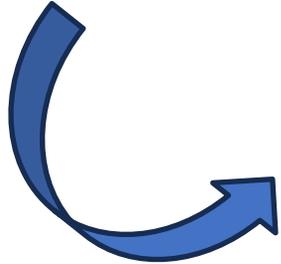
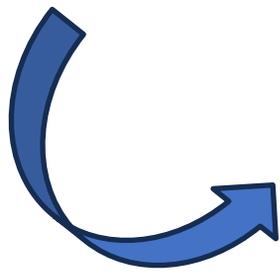
FSE is going green (Faculty support)



Green Lab team expanded and supported through several other organizations

- Health and Safety department RUG
- Real Estate department of RUG
- PIs
- Faculty Management
- UMCG
- Green Office (Roadmap)

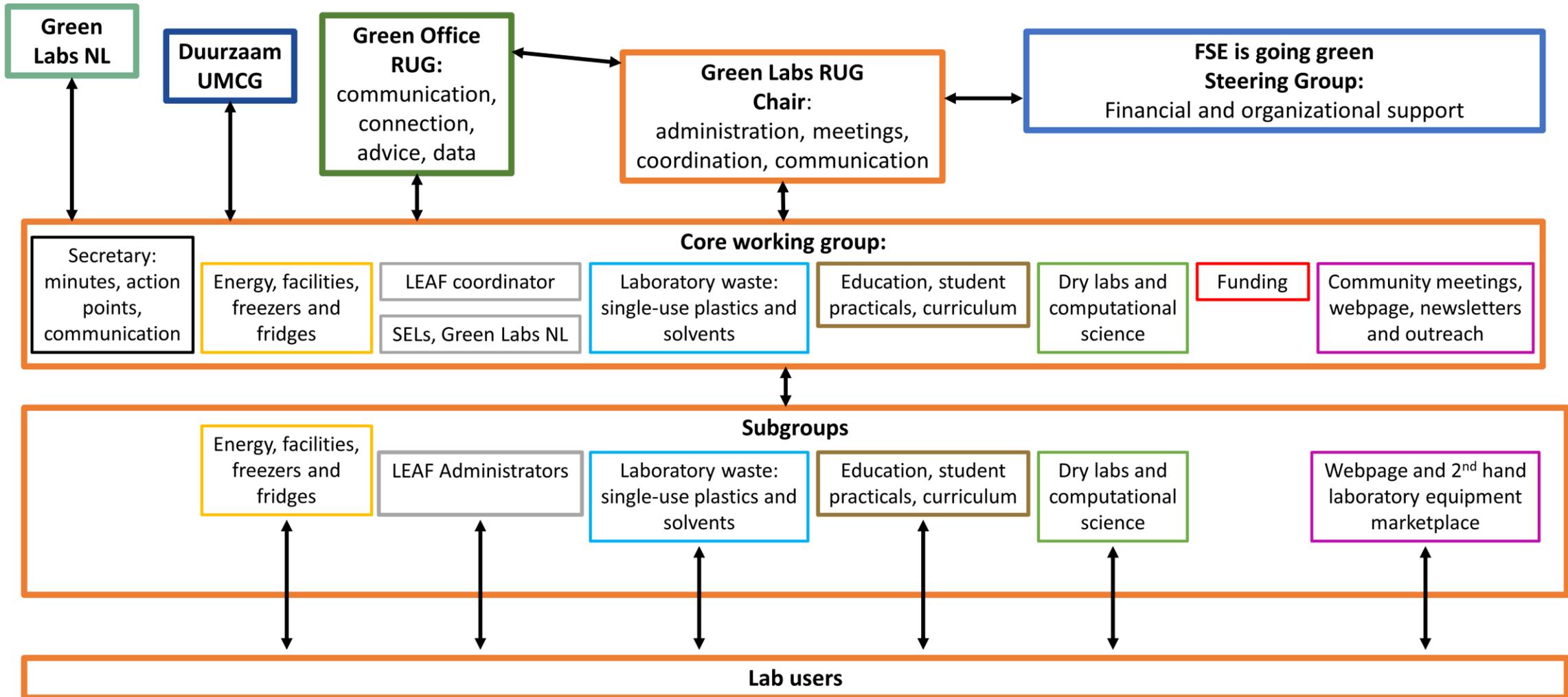
Official roles are being created/exist



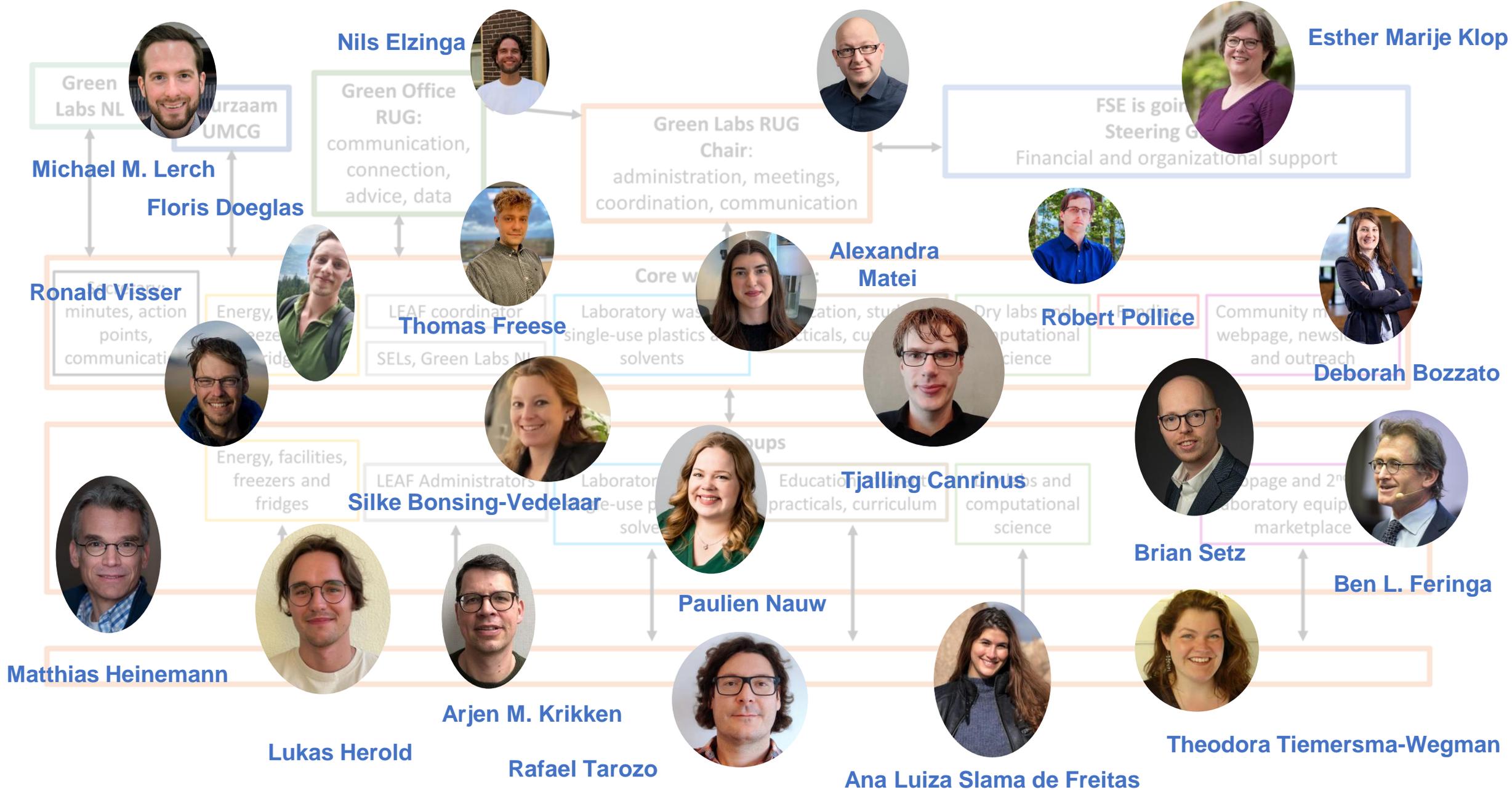
Local data



Communication angle:
 Safety
 Money
 Sustainability



Environmental footprint of laboratories



How did we get here?



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Green Office RUG

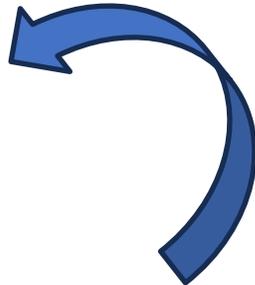
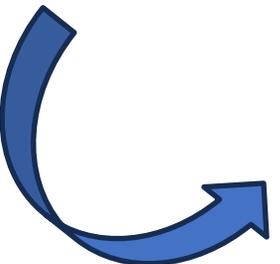
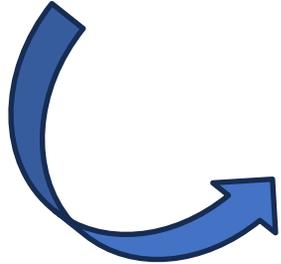
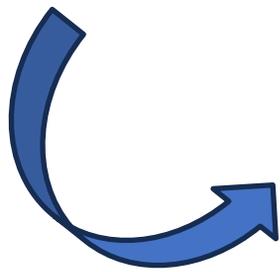
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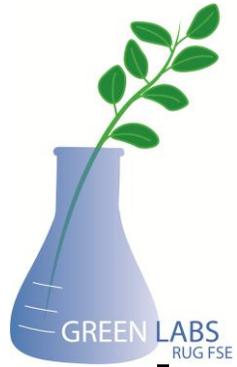


Communication angle:
 Safety
 Money
 Sustainability

Law Enforcement through Gemeente Groningen



Rewriting Lab Culture



RUG joins Laboratory Efficiency Assessment Framework (LEAF)



117 out of 557 laboratories accredited



2021

2022

2023

2024

2025



The **reduced carbon impact** of the first **46 laboratories** equals annual savings of **398 763 €** and **477 107 kg of CO₂** per year.



Approved by Armicos, HSE, Biological Safety Officers

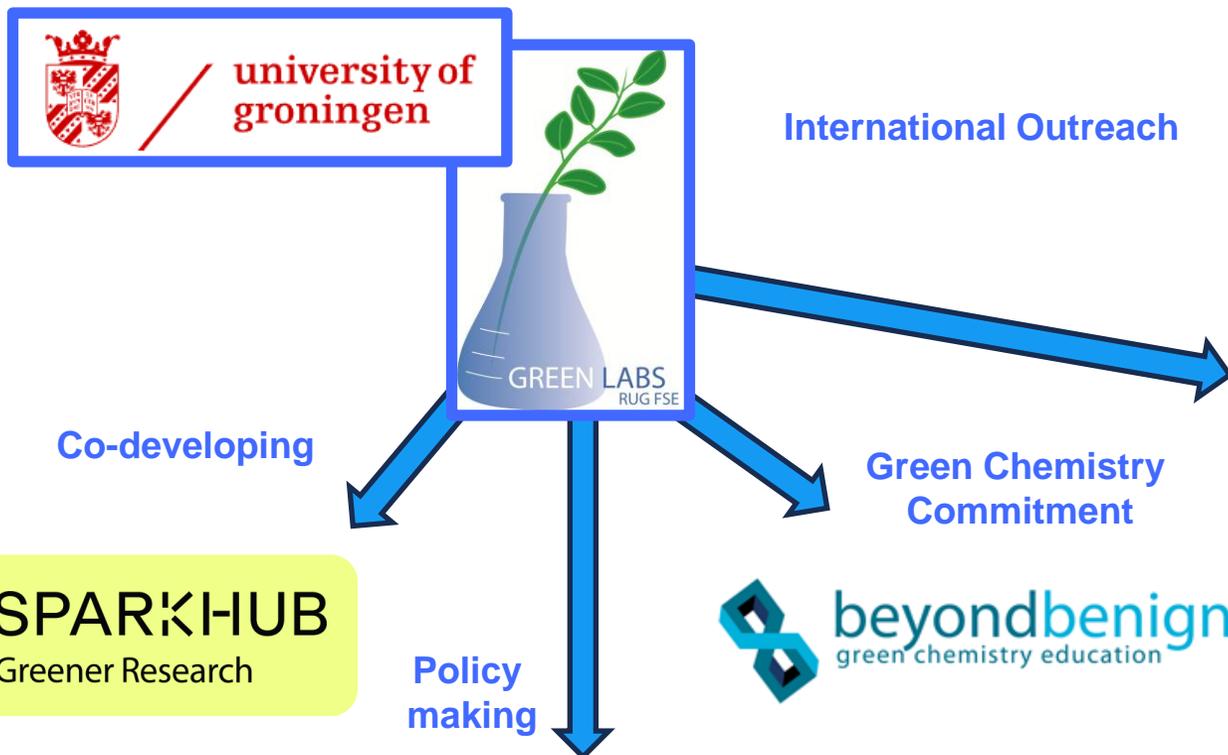


A guidebook for sustainability in laboratories

SPARKHUB
Greener Research

Open-access

From local to international policymakers



SPARKHUB
Greener Research

beyondbenign
green chemistry education

GA LLIME GALWAY

TARTU ÜLIKOOL UNIVERSITAS TARTUENSIS 1632

GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN IN PUBLICA COMMODA SEIT 1737

UNIVERSIDAD del País Vasco Euskal Herriko Unibertsitatea

UNIVERSITÉ de BORDEAUX

UNIVERSITEIT GENT

ENLIGHT

u^b UNIVERSITÄT BERN

- Supporting **international governments and policymakers** on sustainable research practices (US and others)



National Academy of Sciences, Engineering, and Medicine

National Science Foundation



NATIONAL ACADEMIES *Sciences Engineering Medicine*



From the journal: **RSC Sustainability**

The relevance of sustainable laboratory practice

Thomas Freese, ^a Nils Elzinga, ^b Matthias Heinemann, ^c Michael...

Author affiliation

university of groningen

founded in 1614 - top 100 university

Education ▾ Research ▾ Society/business ▾ Alumni

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University of Groningen leader in green labs movement

29 May 2024

c&en
GLOBAL ENTERPRISE

Enter search terms

SUSTAINABILITY How Groningen's labs are going green

Bethany Halford
C&EN, 2024, 102 (21), pp 20–21 | July 15, 2024

Cite this: C&EN 102, 21, 20...

RIS Citation GO

nature

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nature > spotlight > article

SPOTLIGHT | 25 September 2024

The trials and triumphs of sustainable science

With efforts to promote sustainability on the rise, researchers are making gains – but doing science in a green way isn't always easy.

By [Chris Woolston](#)



www.rug.nl/greenoffice



chemistry labs are going green: The drive is in the young generations'

21 NOVEMBER 2022 NEWS



HOME REGISTER NEWS FEATURES MEDIA ADVERTISING C2W (DUTCH) COLLECTIONS ARTICLES FRANÇAIS



Improving sustainability starts in your own lab

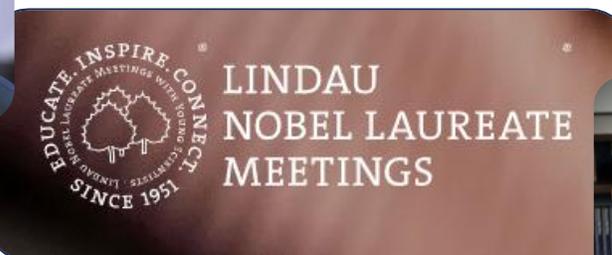
Renske Casarius-Mooselaar | 15 mei 2024

International outreach, policies and education:

- Presentation at **Nobel Symposium** and Stockholm Declaration



- **Lindau Nobel Laureate Meeting** – Invited for Panel on Sustainability in Research



Call to Action:

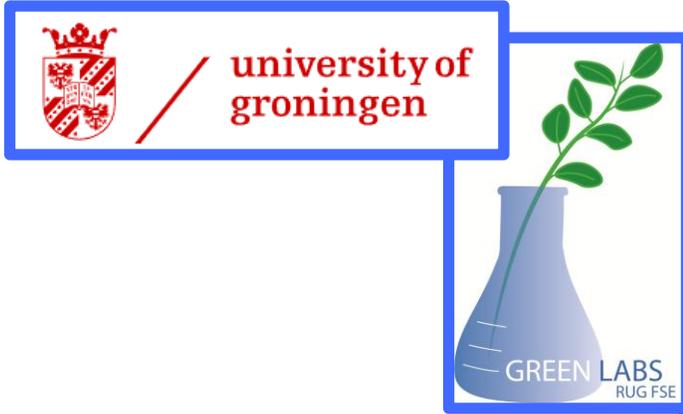
Read and Sign the Stockholm Declaration on Chemistry for the Future

On Friday, May 23, 2025, leading voices from science, industry, education, and policy convened at the Nobel Prize Museum for the official launch of the Stockholm Declaration on Chemistry for the Future.

Hosted by the organizing committee of the Nobel Symposium and supported by the Stockholm University Center for Circular and Sustainable Systems (SUCCeSS), this event spotlighted chemistry's critical role in addressing global challenges through



From local to national ambition



Local

University Hospital in Groningen



umcg



Fachhochschule Groningen



National





Leids Universitair Medisch Centrum



UMC Utrecht



Erasmus MC



HUBRECHT INSTITUTE



Naturalis Biodiversity Center



university of groningen



Amsterdam UMC



Utrecht University



Green Labs NL

Our mission

To accelerate the transition towards a just and sustainable laboratory environment and scientific landscape in the Netherlands and beyond

What we do



Sustainable
European
Laboratories
Network



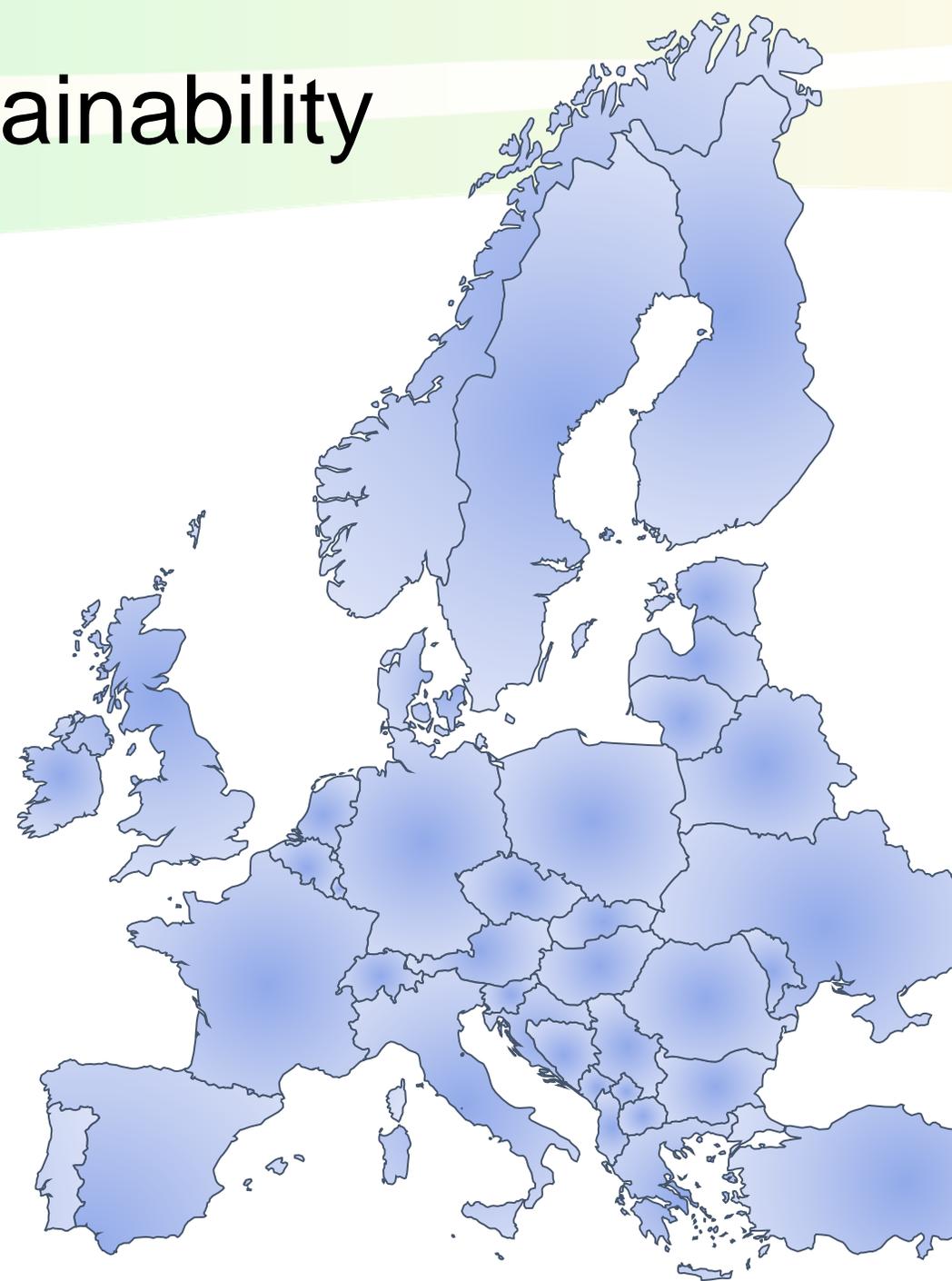
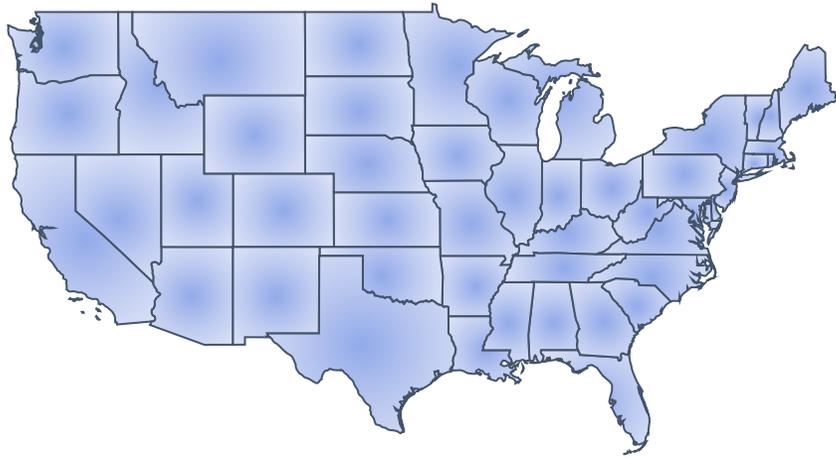
- **We share** information at conferences, symposia and via our website
- **We unite** sustainability professionals and green teams on a national level via our community
- **We coordinate** various projects on national level
- **We connect** with the international sustainable science network and contribute to international projects

bs NL
Community

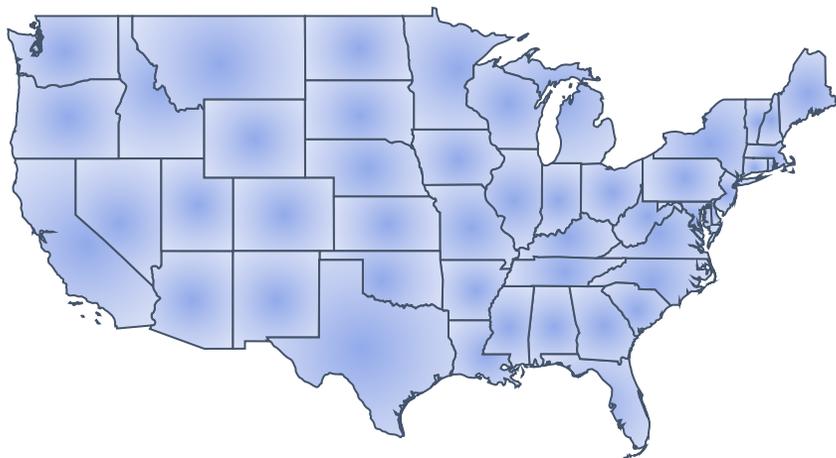
of tomorrow.



International lab sustainability



International lab sustainability





Lab sustainability certification

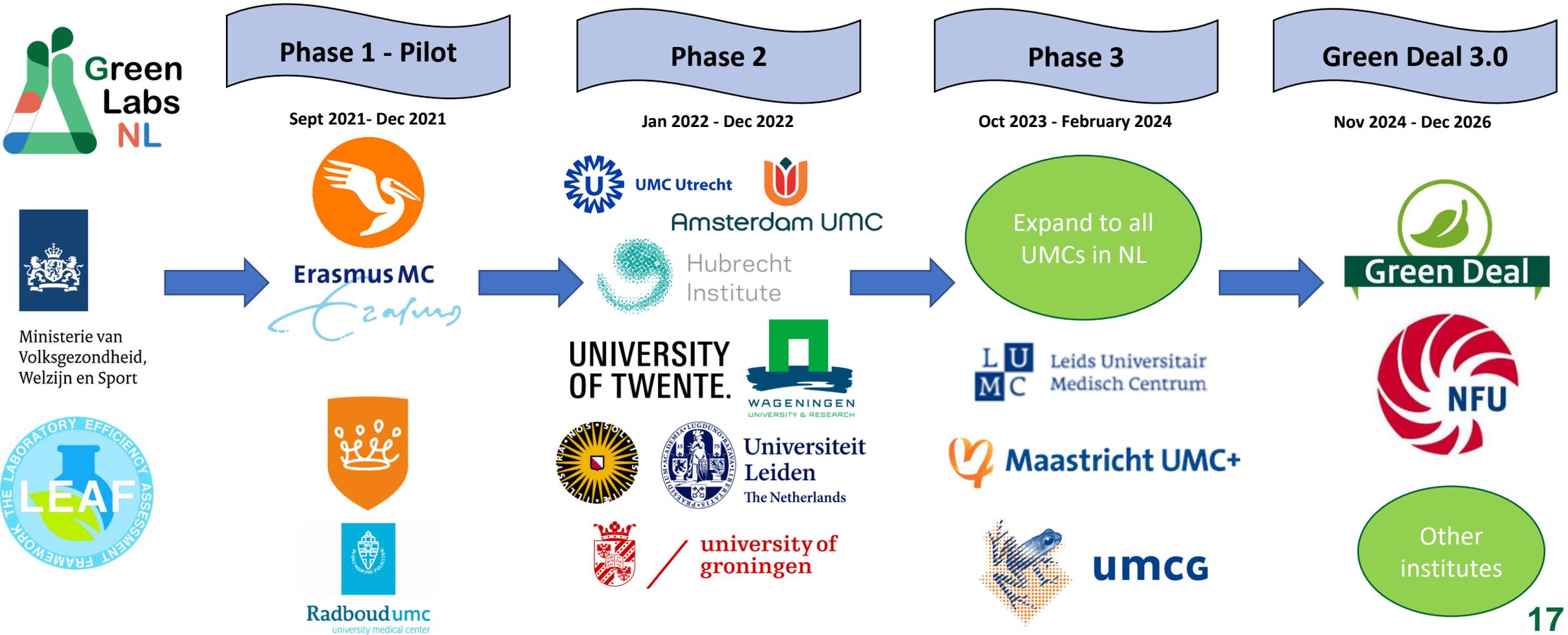


my green lab
certification.

Green labs NL projects

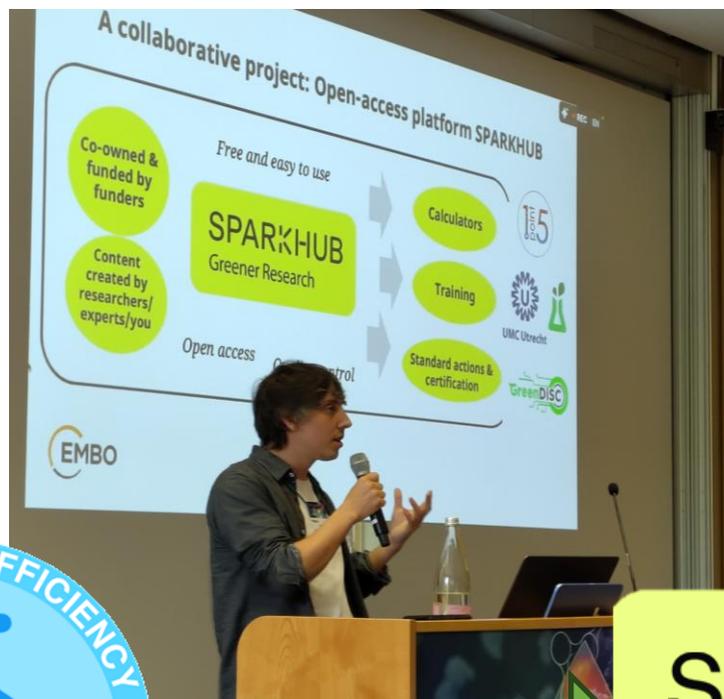
LEAF in NL

Results until 2024
20+ institutes working with LEAF or
are in the process of applying
120+ labs received LEAF certificates





Lab sustainability certification





Scientific publications



Reduced carbon impact of
10 372 kg of CO₂e
and 8669 € per lab per year

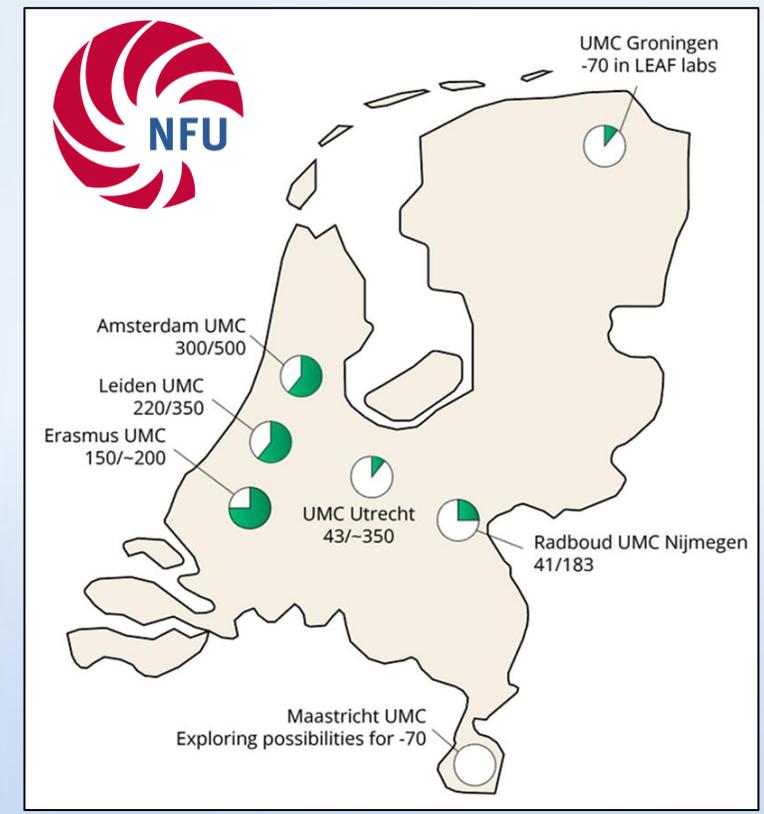


-70

is the new

-80

Going back to -70





Educational tools & training



Video





Green Movement in the Funding Landscape and Policies

Green Labs NL event
September 2023



Heidelberg Agreement
October 2024

The Heidelberg Agreement on Environmental Sustainability in Research Funding

Philipp M. Weber^{1*}, Sandra Bendiscioli^{1**}, Gerind Walton¹, Uwe von Ahnen², Anne Marie de Beaufort³, Marion Boland⁴, Florijn Dekkers⁵, Dominique Dunon-Bluteau⁶, Martin Farley⁷, Alyson Fox⁸, Stéphane Guillot⁹, Loïc Lannelongue¹⁰, Marta Lazarowicz-Kowalk¹¹, Brendan Rouse¹², Gabrielle Samuel¹³, Teresa Sanchez¹⁴, Susan Simon¹⁵, Mathew Tata¹⁶, Gisou van der Goot¹⁷ and Fiona M. Watt¹

Preamble

If we want to provide the basis for future generations to prosper, we need an urgent shift towards a culture of sustainability¹. At this critical time, the science sector is recognizing its important role in promoting sustainability and the need to understand its own environmental and social impacts.

Funding agencies play a central role in enabling researchers to conduct their work. Funders' strategic decisions can influence which questions are tackled by researchers. By setting conditions for their funding schemes, funders can change research practice towards sustainability. The responsibility of funding agencies to support the United Nations' 2030 Agenda for Sustainable Development was recently highlighted by the Global Research Council's Statement of Principles on Sustainable Research². To explore how funders can incentivise sustainable practices in research, they should align their goals and actions and enter a dialogue with researchers and their institutions.

The Heidelberg Agreement, a multi-stakeholder alignment, is the outcome of discussions at an EMBO workshop on *Funders' Role in Promoting Environmentally Sustainable Lab Research*³ that took place in Heidelberg in May 2024. For the first time, a group of representatives from funding agencies, research organisations, grassroots initiatives, social scientists and experts from nine different European countries (see Participant list on page 3) worked together to agree on principles

The Heidelberg Agreement was endorsed by the following European organisations attending the workshop:

Austrian Science Fund (FWF), Dutch Research Council (NWO), EMBO, European Molecular Biology Laboratory (EMBL), Foundation for Polish Science (FNP), French National Research Agency (ANR), German Research Foundation (DFG), Green Algorithms Initiative, Green Labs Netherlands (GLN), Institute for Bioengineering of Catalonia (IBEC), Medical Research Council (MRC), National Centre for Scientific Research (CNRS), UK Research and Innovation (UKRI) and Wellcome.

- ¹ EMBO, Heidelberg, Germany
- ² Austrian Science Fund (FWF), Vienna, Austria
- ³ Dutch Research Council (NWO), The Hague and Utrecht, The Netherlands
- ⁴ Daighe Eireann - Research Ireland, Dublin, Ireland
- ⁵ Green Labs Netherlands Foundation (GLN) and UMC Utrecht, Utrecht, The Netherlands
- ⁶ French National Research Agency (ANR), Paris, France
- ⁷ UK Research and Innovation (UKRI), London, UK
- ⁸ Wellcome, London, UK
- ⁹ National Centre for Scientific Research (CNRS), Paris, France
- ¹⁰ University of Cambridge and Green Algorithms Initiative, Cambridge, UK
- ¹¹ Foundation for Polish Science (FNP), Warsaw, Poland
- ¹² European Molecular Biology Laboratory (EMBL), Heidelberg, Germany
- ¹³ King's College London, London, UK
- ¹⁴ Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain

Heidelberg 2025: SuRe
Symposium & Policy workshop



London 2025: workshop
environmental sustainability for
European funders



Green Labs NL brings funders together to act for sustainability

Results of the workshop 'Sparking green movement in the funding landscape'



Green Labs NL



📍 Nemo Amsterdam

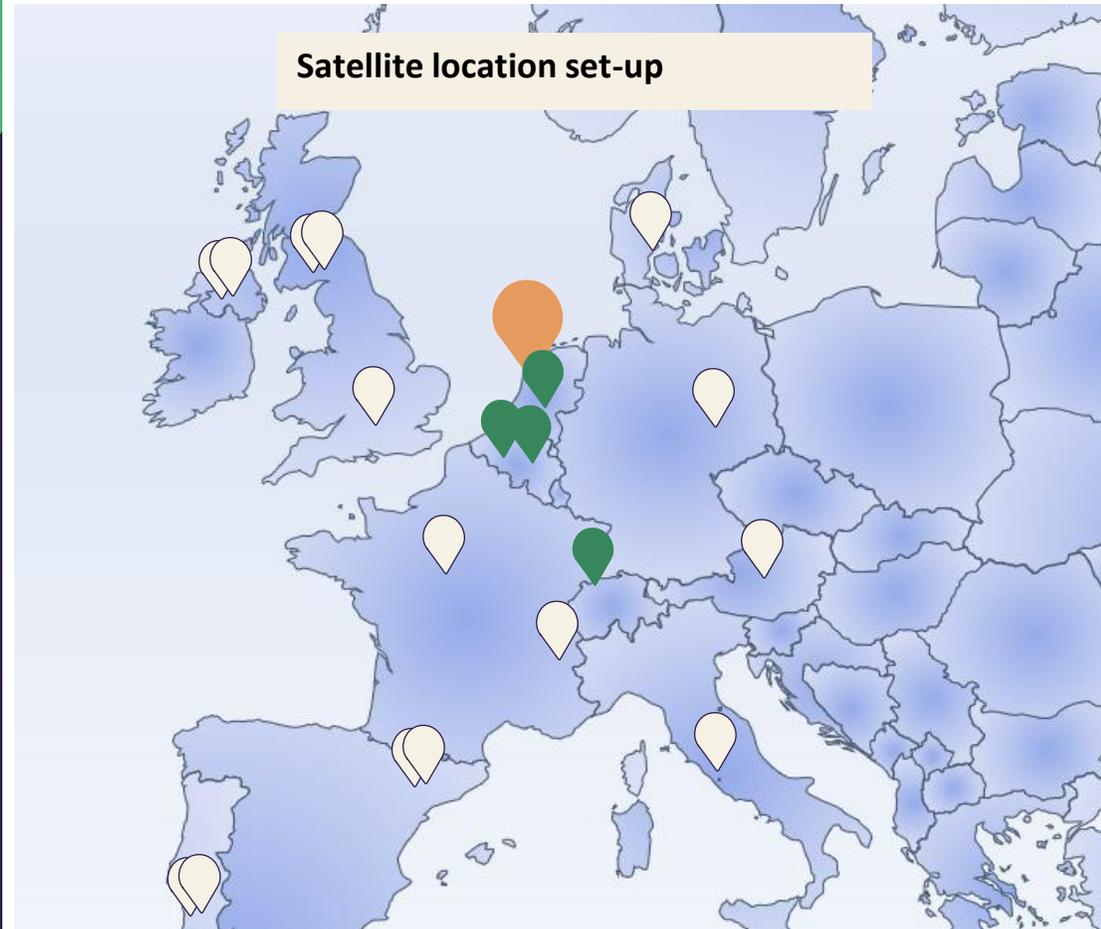
28 May 2026

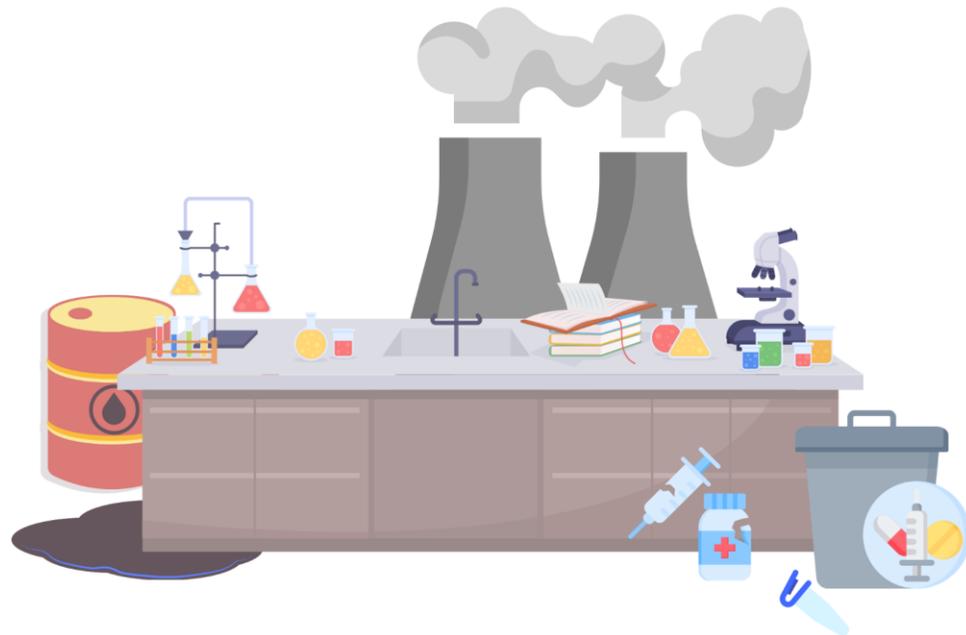
Green Science Festival

TRANSITIONING TO SUSTAINABLE
RESEARCH PRACTICES TOGETHER

- Plenary & parallel sessions with key changemakers in the sustainable science field
- Sessions on Funding, Education & Planetary Health, Science communication, Procurement, Data, Art & many more...
- Poster sessions with green solutions from companies and green teams

Satellite location set-up







If scientists do not lead by
 example, then who else will?





If scientists do not lead by example, then who else will?



Publication



Green Labs NL

info@greenlabs-nl.eu

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Guidebook

