

# Lab sustainability acceleration within the Dutch University Medical Centers

By Joep Sprangers, Marit de Kort & Florijn Dekkers  
*Green Labs NL Foundation & University Medical Centre Utrecht (UMCU)*



## Background

In an ongoing movement, more labs are adopting more sustainable practices. Green lab programs, like the Laboratory Efficiency Assessment Framework (LEAF) from University College London (UCL), help researchers adopt sustainable practices (1). LEAF offers bronze, silver, or gold accreditation through a user-friendly framework. In September 2021, Green Labs NL launched the LEAF in the Netherlands (LEAF in NL) project, supported by the Ministry of Health, Welfare, and Sport (Ministry of VWS) (2). Phases 1 & 2 concluded successfully in October 2022, with 14 Dutch research organizations enrolled. A community for knowledge sharing was established, alongside guides for starting green teams and sustainable lab programs. Barriers and facilitators for LEAF updates were explored. Reports were published summarizing project results, including avoided CO<sub>2</sub> emissions and financial savings (3,4).

## Acceleration of lab sustainability within all UMCs (Oct 2023 - March 2024)

Building on previous initiatives, lab sustainability efforts continued by the Netherlands Federation of University Medical Centers (NFU) as part of the execution plans of the Green Deal for Sustainable Healthcare 3.0, supported by the Ministry of VWS. The overall objective was to expedite the LEAF rollout in UMCs already engaged in the program, to onboard the three UMCs not yet participating and to further drive lab sustainability in Dutch UMCs via green teams within research and diagnostic departments and newly issued LEAF certifications. The project contained central coordination by Green Labs NL, local coordination at each UMC, and LEAF licenses for the three institutes new to the program. Central coordination by Green Labs NL involved four people and local coordination at each UMC varied in the number of designated individuals (local coordination managed by one person in 4 UMCs, two people in 2 UMCs and four people in 1 UMC).

## Results

All seven UMCs received a LEAF license and are now actively working with the platform. During the project, 8 additional lab groups registered for the online LEAF tool, and 9 new bronze certificates, as well as 5 new silver certificates we obtained (**Figure 1**). Furthermore, in the UMCs new to LEAF, laboratory green teams were established, and these UMCs officially joined the LEAF in NL program by obtaining LEAF licenses. Green Labs NL organized an additional community meeting in January 2024 as part of this project, with at least one representative of each UMCs participating, to further develop the Dutch LEAF community, encourage collaborations, exchange experiences and share resources. Feedback from project participants overall indicated a positive experience, with regards to project coordination and the LEAF tool for guiding the sustainable transition in labs.

## Challenges

One of the main challenges faced during the project was the reorganization at LEAF UCL at the beginning of the project in October 2023. This led to uncertainty regarding the possibility of enrolling new institutions in LEAF and caused significant delays in obtaining LEAF licenses compared to our experiences in Phases 1 and 2 of implementing LEAF. Local coordinators highlighted a strong interest from numerous lab groups eager to start using LEAF once the tool is embedded. Participants also noted occasional difficulties in aligning internal communication to apply for licenses efficiently.

## Outlook

For the follow-up of the lab sustainability program, our goal is to further support the growing sustainable science community and assist local employees in making their working environments more sustainable. We aim to explore the establishment of sustainability targets for laboratories, improve current governance, develop policies to guide sustainable laboratory practices, and promote efforts to quantify reductions in CO2 emissions and budget savings resulting from lab sustainability initiatives. Additionally, we plan to support a data cleaning challenge and freezer cleaning challenge in institutes to free up storage space and reduce environmental impact. We will focus on identifying knowledge gaps and conducting research on sustainable laboratory practices, for instance through student projects. These efforts will contribute to the goals outlined in the Green Deal for Sustainable Healthcare 3.0.



Figure 1 - Group pictures taken at Amsterdam UMC, UMC Utrecht and UMC Groningen, when awarding LEAF certificates.

**Acknowledgements:**

We thank Kelly Nijhof (UMCU), Marleen Kristen (Inreda Diabetc), Joep Sprangers (Green Labs NL & UMCU), Marit de Kort (Green Labs NL & UMCU) and Florijn Dekkers (Green Labs NL & UMCU) for their contributions in central project coordination. We thank Joep Sprangers (Green Labs NL & UMCU), Sven van Kempen (UMCU), Pelle van Bekerom (Radboud UMC), Aram de Haas and Lonneke Michiels (Amsterdam UMC), Thijs Elzer (LUMC), Winde Rerren (MUMC+), Anouk de Boer (UMCG), Onno Roovers, Marie Joan Heijne den Bak-Glashouwer, Esmee Kasteleijn and Yvette van Strien (Erasmus MC) for their contribution in local project coordination. We thank Celina Kroon, Ed Harms and Edo Brinksma (UMCU) for their support.

**References**

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- (2) [www.greenlabs-nl.eu/leaf-project](http://www.greenlabs-nl.eu/leaf-project)
- (3) [Green Labs NL LEAF Phase 1 Report](#)
- (4) [Green Labs NL LEAF Phase 2 Report](#)