

Doing your PhDs in the Netherlands (and Leiden University – CML)

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PhDs in the Netherlands / Leiden

1. Two ways of enrolling in a PhD program:

- Based on project funding or (rare) direct university funding -> open competition for the job, leading labor contract
- Based on a stipend or self – funded (people with foreign nationality at least need around 1300 Euro per month of income to get a (work) visa/residence permit)

2. The vast majority of PhDs from Indonesia are stipend based. How this works:

- See if you are eligible for a PhD stipend
- Find yourself a group / professor in an area in which you want to do your PhD; conversely, we see also that groups/professors look for interesting candidates
- Have mutual interviews to see if there is a good match. Important issues are language, skills with regard to the research field, paper writing skills, and mutual fit of interest for a research topic
- The relevant Graduate school will check if the MSc diploma allows admittance to the PhD program. Usually a MSc from a reputable Indonesian university (e.g. UI, UGM, UNPAD, Bandung Institute of Technology, etc.) is ok
- At this stage, a rough idea about research topics is sufficient.
- If there is a good match, usually the potential PhD and supervisor will work out jointly a research proposal for the stipend organization – and then hope you get it

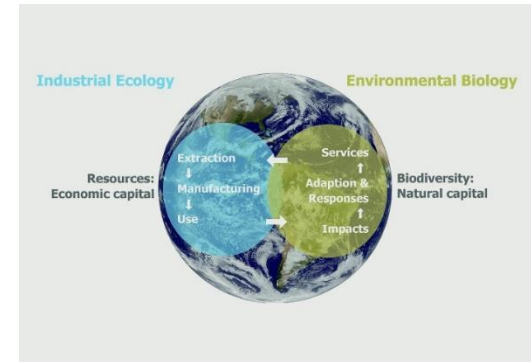
PhDs in the Netherlands / Leiden

1. The potential PhD is successful – either in getting a PhD job or stipend. What then?

- Formal registration in the Graduate school, appointment of the professor and supervisor, and writing a research & supervision plan
- Starting the research! Usually a 4 year period, depending on the subject full-time in the Netherlands, or split between the Netherlands and field work in the other country

2. How are PhDs placed in my institute (CML)?

- We are placed in the Faculty of Science
- We do research in environmental sciences: a) Environmental biology: Natural capital/biodiversity in the natural system and b: Industrial ecology: Circular/efficient resource use in the economic system
- We are 130 people (IE: 55; EB: 60; 10-15 support) including some 75 PhDs
- Our PhDs are integral part of the groups. We make no difference between PhD on jobs and PhDs on stipends – we all treat them as employees
- We try to create good cohesion and have a PhD committee with own social activities (.....ach...ooh COVID...)



PhDs in the Netherlands / Leiden

1. What is the PhD process and how do you graduate?

- A typical PhD is 4 papers around a coherent subject, with introduction and conclusions (1 paper per year)
- We typically have 2 supervisors and a promotor; supervisors talk every 2 weeks with the PhD, promotor joins every 2 months
- We try to cluster PhD subjects to avoid working too much alone
- The GS has 1-2 compulsory (short) courses on e.g. scientific ethics; we sent people to other courses and conferences according to needs (say 1 per year)
- After around 4 years, the PhD thesis should be ready
- -> approval by promotor and supervisors (probably biggest step – if committee rejects, promotor made a mistake)
- -> approval by a reading committee of 5-6 independent professors (= THE decision)
- -> then a nice graduation ceremony of 45 minutes in which you discuss with the committee



Typical research subjects at CML

1. Ecotoxicology, both in lab as field (metals, nanomaterials, microplastics)
2. Biodiversity and ecosystem services research
3. Environmental DNA research
4. Topics related to environmental – economic input output databases and environmental footprinting
5. Topics related to Life cycle assessment and ex-ante Life cycle assessment
6. Topics related to Material flow analysis and regional metabolism

[Enlarge the folder for more detail]



Institute of Environmental Sciences

PhD positions

Application deadline
Scholarships

Continuous
CSC or similar

| Topics offered (1 to 2 positions) | Admission Criteria | Application contact |
|---|--|--|
| Field-realistic predictions of how existing chemicals (e.g. pesticides, metals) and emerging chemicals (e.g. microplastics and nanoparticles) have interaction with other anthropogenic stressors (e.g. climate change, excess of nutrients) in affecting our natural environment. | Environmental sciences, physiology and/or (eco-)toxicology, english proficiency | Dring, M.G. Vijver vijver@cml.leidenuniv.nl |
| Mechanistic ecotoxicology, considering effects and responses at different levels of biological organization, from genes to populations and including aspects of engineered nanomaterials toxicokinetics and toxicodynamics in aquatic and benthic communities. | Environmental sciences, physiology and/or (eco-)toxicology, english proficiency | Dring, M.G. Vijver vijver@cml.leidenuniv.nl |
| Laying a biological and ecological foundation to the quantification of ecosystem services requires knowledge of ecosystem functioning, biodiversity impacts and societal demands. Models based on relevant indicators and process-based knowledge will be developed. | Ecology, environmental sciences or biogeography background, quantitative or modelling experience, english proficiency | Prof.ir. P.M. van Bodegom p.m.van.bodegom@cml.leidenuniv.nl |
| Molecular tools are increasingly used to understand biodiversity. Environmental DNA is determined at high precision with state-of-the-art tools to determine species abundances (and not presence/absence only), abundance of prey, disease vectors and other applications. | Molecular ecology, molecular (micro-)biology or bioinformatics background, english proficiency | Prof.ir. P.M. van Bodegom p.m.van.bodegom@cml.leidenuniv.nl |
| Topics related to environmental Input Output analysis & EXIOBASE: environmental footprints, circular economy, inclusion of Chinese regions in EXIOBASE, hybrid IO-city metabolism tables, forecasting with IO & dynamic models, IO assessments of renewable energy. | Environmental sciences, industrial ecology, economics, input output economics, economic modelling linear algebra, programming, database management, English proficiency | Prof. A. Tukker tukker@cml.leidenuniv.nl |
| Topics in the field of standard and anticipatory Life cycle (sustainability) assessment: recycling of building materials, renewable energy systems, novel energy systems, agriculture, biobased materials, mining of (critical) metals, related to ongoing EU H2020 projects | Environmental sciences, industrial ecology, life cycle assessment, linear algebra, programming, database management, English proficiency | Dr.ir. J.B. Guinée guinee@cml.leidenuniv.nl |
| Various topics in material flow analysis and materials intelligence: material flow analysis and system dynamics of major metals and critical materials, supporting a global materials intelligence and forecasting, related to CML work in the EIT Raw materials. | Environmental sciences, industrial ecology, material flow analysis, engineering, linear algebra, programming, database management, English proficiency | Dr. E.G.M. Klein and Dr. E. van der Voet klein@cml.leidenuniv.nl voet@cml.leidenuniv.nl |
| Various topics related to regional metabolism analysis and sustainable construction: life cycle assessment, (dynamic) material flow analysis to support construction and demolition waste management and energy efficiency improvement of building stocks; industrial symbiosis to support the development of eco-industrial parks and eco-cities, related to CML work in the Sino-Dutch SIP project. | Industrial ecology, life cycle assessment, material flow analysis, urban planning, architecture, engineering, building physics, construction management, linear algebra, programming, database management, English proficiency | Dr. M. Hu hu@cml.leidenuniv.nl |

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Some research by Indonesian PhD students at CML

1. Victor Pirmana (UNPAD): Economic and environmental accounts in Indonesia (co-supervised with Armida Alisjabana, current SG ESCAP)



2. Irlan Adiyatma Rum (UNPAD): International value chains of palm oil



3. Edi Wiloso (LIPI) – LCA of bio-energy



4. Abrainsyah – Sustainable forest management in Kalimantan



5. Achmad Adhitya – Seagrass and Water quality (grandson in law of...)



Thanks for your attention!

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<https://www.universiteitleiden.nl/en/research/studying-for-a-phd>



State visit of president Widodo to the Netherlands, April 2016. Left: Foreign affairs minister Retno Marsudi, ambassador Wesaka Puja, Mayor of Leiden Henri Lenferink, Minister of Education Jet Bussemaker, President Joko Widodo, Rector Carel Stolker in the Leiden University 'Zweetkamertje' ('Sweating chamber') where candidates used to await their exam, Right: president Widodo with Indonesian staff and PhDs in Leiden