

Institute of Environment and Sustainable Development

The Institute of Environment and Sustainable Development, abbreviated in Dutch as IMDO, brings together the expertise on environment and sustainable development within the University of Antwerp, Belgium. IMDO offers multidisciplinary research and education programs that aim to support the complex challenges of society, industry and authorities on sustainability questions.



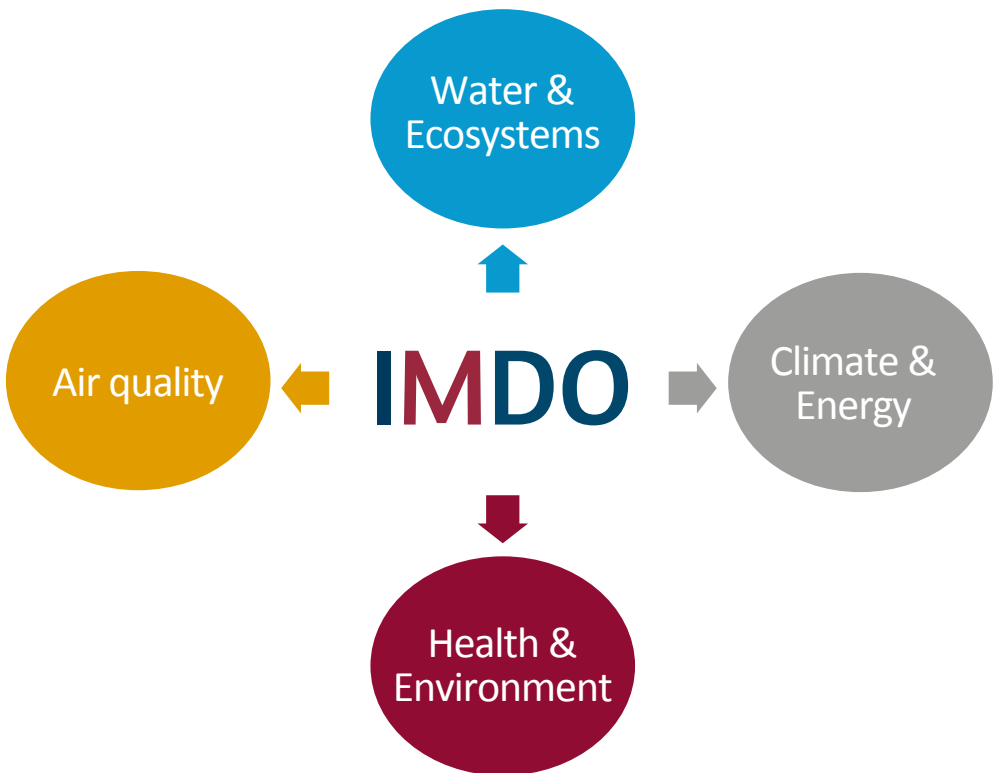
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IMDO

Institute of Environment & Sustainable Development
University of Antwerp

IMDO focuses on research and development in 4 cross-cutting clusters. Each cluster contributes to sustainable development and covers research in various disciplines, across faculties, ranging from engineering, to natural and social sciences, environmental economics and urban studies. Each cluster aims to provide holistic, multidisciplinary research on one of the 4 clusters.



CLUSTER 1

Water & Ecosystems

Research on solutions to mitigate the impact of human interventions on river basins, coastal zones and urban regions. Solutions are identified to improve ecosystem functionality together with sustainable economic activity while adapting to climate change.

Key expertise:

- River basin & coastal management: governance & policy evaluation
- Ecosystem services: Mapping, Valuation and Impact assessment
- Nature based solutions & global change
- Wetland ecology & biogeochemistry
- Ecotoxicology & risk assessment
- Waste water treatment: nutrient recycling, photocatalytic degradation of dyes, drugs and medicines

CLUSTER 2

Air quality

Covering a chain of aspects ranging from research & development towards clean air: research to reduce pollution sources, monitoring & chemical characterisation, technology for purification and stakeholder engagement.

Key expertise:

- Chemical characterisation of organic air pollution, incl. Volatile Organic Compounds (VOC), particulate matter and soot
- Photo- and plasmacatalytic purification of polluted indoor and outdoor gaseous environments
- Design and performance of urban green as a sink of air pollution
- Sustainable mobility and transport planning for cities and harbours
- Risk perception and communication, citizen science

CLUSTER 3

Climate & Energy

Research on a variety of disciplines ranging from the production of bioenergy and hydrogen, the capturing and utilisation of residual heat and carbon dioxide, in addition to research on the societal and governance barriers to change energy patterns.

Key expertise:

- Global carbon cycle & carbon sequestration
- Technology for carbon capture & utilisation: microbial, catalysts and ecosystembased solutions
- Photo-electrochemical cells for hydrogen production out of polluted air
- Crops for bioenergy, focusing on short rotation coppice
- Design of heat networks & installations
- Economic, social & governance incentives to support a transition to a zero carbon society

CLUSTER 4

Health & Environment

The health impact of environmental pollution is researched across disciplines, including the exposure to pollutants differentiated for social groups, the health risk and actual intake of pollutants in the human body, and preventive soft and green solutions to reduce the health risk.

Key expertise:

- Human biomonitoring: Monitoring of individual human chemical exposures (e.g. in blood) and monitoring at the community level based on sewage analysis.
- Health effects of human exposure to a wide range of pollutants including endocrine disruptors, flame retardants and Persistent Organic Pollutants (POPs) based on analyses of whole genome and epigenome responses
- Impact of nature based solutions and ecological behaviour on human health
- Risk perception, risk communication and engagement of socially vulnerable groups (environmental justice)



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