Ecogenomics Consortium

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consortium

Using the full genetic potential of the soil

The soil plays a critical role in guaranteeing a healthy environment, food and drinking water. The quality of soil is largely determined by the so-called soil functions, including the soil's capacity to absorb nutrients, inactivate contaminants, suppress pathogens and support the growth of plants. (Micro-) organisms are vital to these functions: the interaction between these organisms and the internal and external environment determines the dynamic range of the soil functions. But very little is known about the biological and biochemical dynamics of soil functions.

In 2003 the Ecogenomics Consortium was founded to generate more insight into the composition and functioning at a genetic level of microbes and other soil organisms. It focuses on the 'metagenome' of the soil, which comprises the genomes of all soil organisms. Insight into this genetic and molecular structure is vital for understanding essential soil functions. That knowledge can subsequently support efforts aimed at the sustainable use of soil for various social and economical purposes.

The Ecogenomics Consortium consists of 16 groups of researchers from universities, institutes and companies, forming a collaborative R&D entity. It operates like a virtual institute: a laboratory without walls. The R&D programme is centred on the crossroads of several different disciplines: soil and environmental sciences, ecology, bioinformatics and molecular biology.

The researchers focus on issues defined in three research areas:

- → Health of the soil-plant system: Detection and suppression of plant pathogens.
- → Pollution detection and soil remediation.
- → Technology platform, bioinformatics, valorisation and societal aspects.

The research activities within these themes must create a deeper insight into the functioning of the living soil. This is needed to use the soil to its full potential and to ensure its quality. Especially in a densely populated country as the Netherlands, where the soil is put to intensive use and nature management, housing, recreation and agriculture impose a heavy burden on the soil quality.

In addition, these research activities are aimed at exploring and mining nature for novel traits, and biofunctional metabolites (antibiotics, enzymes) from (un)culturable micro-organisms.

The Ecogenomics Consortium is supported by NGI and forms part of its Sustainability cluster.

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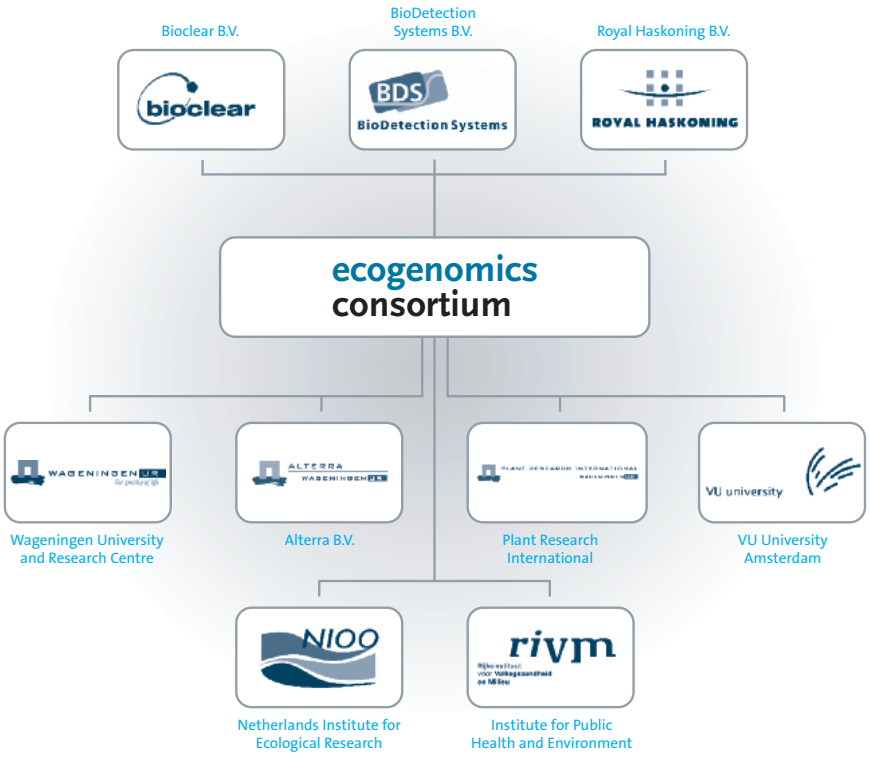

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