ARAGORN KoM

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ARAGORN – a new project set to help remediate and restore contaminated soil

ARAGORN is a new EU-funded project with the goal of to addressing the critical need for immediate action towards restoration and remediation for polluted soils, by selecting contaminated sites with specific characteristics, assess persistent pollutants interferences and develop site-specific solutions and tools. The ultimate goal is to deliver benefit for both the soil itself and the communities living in proximity.

Recent data has unveiled a looming crisis for European soils, with up to 70% classified as unhealthy. A common driver of unhealthy soils is contamination by persistent pollutants: these include per- and polyfluoroalkyl substances (PFAS), organo-chlorines and -bromines (OCB), peteroleum and coal residues (PETCO), and toxic metals. These contaminants have serious ecological impacts, including on animal and human health, and on the soils ability to produce food and filter water. The threat caused by these persistent pollutants remind us of one important aspect: that soil is a finite resource, and it is necessary to restore soils and the ecosystems they support to a healthy status.

ARAGORN uses a multi-dimensional strategy, encompassing scientific research, data collection, site selection, and an in-depth collaboration with stakeholders, particularly site owners. Its ultimate vision is to ensure simplicity and clear guidance for site owners throughout Europe to have restore their polluted soils.

“Chemical pollution is never easy to deal with once it is spread in the environment. I consider it the responsibility of us as scientists to not only refine, but also to translate the science, into an operational form across European countries with its varied geographies, cultures and financial situations” stated ARAGORN’s coordinator, Xenia Trier. “With ARAGORN, we really want to provide the knowledge and the tools to empower

landowners and communities to identify and decide on the best options to remediate pollution and the restore the soils. With the great project team and thanks to the EU and Swiss funding I'm confident that we are in a good position to deliver – and thereby can start turning these aspects of the ambitions of the EU Soil Mission of the European Green Deal into reality."

The project started in October 2023 when the 17-strong consortium met at Denmark's Dragsholm Castle, located on ancient land which epitomises the importance and value of European soils.

The meeting featured a visit to Korsor site, the 'ground-zero' for the wider public awareness and debate in Denmark of PFAS and contaminated sites. Korsor is a PFAS contaminated site with allotment gardens, landfill, a lake, a firefighting training site, a meadow, and an erstwhile area of groundwater interest. In 2020, media headlines dubbed it the "Giant Poison Site" and highlighted alarming findings of cattle consuming contaminated grass, leading to elevated PFAS levels in both human blood and animals.

A discussion was held in a panel where partners asked questions to the Region Sjaellands chief of soil protection and groundwater and a representative of the community of Korsor, who shared a touching story of how he and his family discovered that they had eaten polluted meat from their grazing cows resulting in very high levels of PFAS in their blood. Not knowing what health effects to expect and how to deal with it individually and as a community, was the worst part of it, he stated. The situation was made worse by the lack of mechanisms from authorities to coordinate a common response to address the situation and communicate to the affected citizens, who felt left on their own.

While studies are being launched, the discussion on remediation emphasises the collaborative effort led by Korsor community and experts to use the gathered data and knowledge in testing potential remediation models. The prospective remediation will mitigate future impacts on cattle, envisioning the return of grazing animals in these areas within two decades, and prevent more harm to the environment.

Hans Peter Arp from the Norwegian Geotechnical Institute (NGI) and the Norwegian University of Science and Technology (NTNU), who is also the site and impact manager, quoted: "ARAGORN's purpose will be to provide guidance throughout Europe towards what steps owners of contaminated land can take to remediate and restore that land. From the kickoff I felt motivation and momentum from our interdisciplinary consortium across Europe to achieve this vision".

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