

MEDIA RELEASE

Wednesday 16 September

From the Vietnam to Ukraine wars, scientists uncover the environmental legacy of conflict

New research from Vietnam and Ukraine has revealed the vastly different environmental legacies that warfare can leave, from Agent Orange contamination persisting for more than 50 years in Vietnam to chemical contamination in Ukraine's bomb-scarred agricultural land.

The research, being presented today at the CleanUp 2026 conference in Adelaide, highlights the importance of understanding the scale and type of contamination left by conflict, to safely and effectively remediate land.

In Ukraine, the Food and Agriculture Organization of the United Nations (FAO) Mine Action and Land Rehabilitation Team and the United Nations Development Program (UNDP), with funding support from Luxembourg and the Netherlands, is investigating whether conventional munitions have left chemical contamination that could affect agricultural recovery.

Researchers have mapped around 1.6 million munition craters across war-affected areas of eastern Ukraine and are investigating whether the density of these craters can help predict the level and types of chemical contamination. Despite the extraordinary physical damage to the landscape, preliminary findings are showing encouragingly low levels of contamination.

Nathan Park, FAO Ukraine's soil and water contamination expert, has been investigating contamination levels in the soil profile, wheat, and groundwater about 40km from the front line. He said clearing land for a safe return to agriculture cannot wait.

"Farmers can't afford to wait for humanitarian demining to take place," Mr Park said. "Their economic situation leaves them no choice but to farm. They're armouring up their equipment and driving out there. I've seen a number of destroyed tractors and combines out there because they've hit either a landmine or unexploded ordnance."

Mr Park and his team have collected and analysed more than 1,000 samples to date. At individual munitions craters, results indicate localised hotspots of inorganic and organic contaminants, with a limited number of samples exceeding guideline values. These exceedances were not evident at the field scale, suggesting a lower overall concern for agricultural production and food safety. This field-scale assessment reflects FAO's food-security mandate by evaluating the potential for contaminants to transfer from soil to crops.

Mr Park cautioned that the research is ongoing, with results for metals, groundwater, subsurface soils and wheat still to come. He also explained that areas closer to the current front line, where fighting has been static for longer and is more intense, could not yet be safely investigated, and are predicted to have higher levels of contamination. "Once the concentration is better defined, it will be essential to advise farmers on how to mitigate the transfer of contaminants into production, through crop choice, land use and management practices," said Mr Park.

Professor Ravi Naidu, Chair of the FAO of the UN International Network on Soil Pollution, has led the organisation of military-impacted land for the past 2 years. He said this was the first time that the CleanUp conference had featured dedicated sessions on military-impacted land.

"Military activities, no matter where they occur, can adversely affect the environment, sometimes in ways that can never be fully reversed," Professor Naidu said. "It is critical that these research discussions are happening on an international stage."

Far from Ukraine, Vietnam demonstrates why early understanding of wartime contamination matters. More than half a century after the Vietnam War, soils at former military sites remain contaminated with dioxin associated with Agent Orange. At Bien Hoa Airbase, one of Vietnam's largest remaining dioxin hotspots, researchers are testing a remarkably simple remediation tool: grass.

Associate Professor Dr Ngo Thi Thuy Huong from Phenikaa University said vetiver grass is seen as a miracle solution. "Vetiver is very cheap, easy to grow, breaks dioxin into less and non-toxic substances, and is non-invasive. We call it miracle grass," she said.

After the 40-month trial, dioxin in the soil was reduced by up to 40%. The grass also reduced contaminated soil runoff by roughly two-thirds.

Dr Ngo said the plant's dense roots help hold contaminated soil in place, preventing dioxin from spreading into the surrounding environment. The roots, together with bacteria and fungi living around them, also help break down dioxin into less toxic substances, reducing its spread through the environment and the food chain.

Dr Ngo cautioned that the 3-year experiment was not long enough to show that vetiver could completely remediate heavily contaminated soil, but said it could have significant potential across larger areas with lower contamination. Dr Ngo's vetiver research was funded by Vietnam's Ministry of Natural Resources and Environment and by USAID United States.

Both of these studies will be presented at CleanUp 2026 in Adelaide today.

CleanUp 2026 is in Adelaide from 14 to 17 September. The host, crcCARE, is a partnership of organisations dedicated to developing new ways of dealing with and preventing contamination of soil, water and air.

The conference program is available [here](#).

Media enquires

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Presentation: Vetiver grass phytoremediation of dioxin-contaminated soils at past military-impacted sites in Vietnam: evidence from Bien Hoa Air Base, 9:30am Wednesday 16 September (Hall N, Adelaide Convention Centre)

Virtual presentation: Assessing munitions-related chemical contamination in Ukrainian agricultural soils, 2:45 pm Wednesday 16 September (Hall N, Adelaide Convention Centre)

Media: Complimentary, free media passes are available for any accredited media personnel who wish to attend the conference in person.