

By Invitation | Landmines in Ukraine

Clearing Ukraine's mines is crucial for global food security, say Howard Buffett and Tony Blair

With the right sort of technology and financing, it needn't take a century



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UKRAINE IS NOW the most heavily mined country on Earth, with up to 139,300 square kilometres of land—an area larger than England—studded with millions of landmines. It is a huge impediment to Ukraine's post-war recovery and economic development—and to safeguarding the food security of millions of the world's most vulnerable people. Clearing those mines will require a historic investment and new approaches to demining.

Landmines have been a problem in Ukraine since Russia's illegal annexation of Crimea in 2014. However, the scale of their deployment increased significantly following Russia's full-scale invasion in February 2022. Vast minefields were left behind by Russian troops who advanced and were then forced to retreat, in some of the most productive agricultural soil in the world. The war has also led to the proliferation of other unexploded ordnance, including grenades and cluster munitions, which can retain the ability to detonate for years.

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Beyond their humanitarian impact, the presence of landmines and other explosive remnants of war (ERW) poses an enormous challenge for the Ukrainian economy. In particular, landmines and ERW have forced farmers to abandon large swathes of land, threatening the productivity of the country's agricultural sector. In a [new report](#), "From Economic Recovery to Global Food Security: The Urgent Need to Demine Ukraine", produced in co-operation with Ukraine's Ministry of Economy, the Tony Blair Institute for Global Change (TBI) estimates that landmines and ERW cost the Ukrainian economy \$11.2bn in lost GDP each year—equivalent to 5.6% of the country's pre-war GDP. Agricultural exports have been most affected; the TBI estimates that annual Ukrainian exports are \$8.9bn (13.2%) lower than they otherwise would be owing to landmines and ERW.

The costs stretch far beyond Ukraine's borders. Hundreds of millions of people worldwide rely on Ukrainian agricultural production. Loss of agricultural exports from Ukraine has hit the most food-insecure communities of the global south hardest. Before the war, nearly 80%

of Ukraine's wheat exports went to food-insecure countries in Africa and Asia. As those exports approach a ten-year low, it is imperative that Ukraine's agricultural land is demined as quickly as possible to ensure the affordability and availability of food to the most at-risk communities across the world.

It will take significant funding—the World Bank estimates \$34.6bn—and extraordinary innovation to demine Ukraine safely and at a pace that ensures its ability to recover economically. At current levels of funding and using conventional approaches to demining, it would take more than 100 years. To meet the Ukrainian government's target of returning 80% of potentially mined land to productive use within ten years, funding will need to rise to approximately \$2.8bn annually and Ukraine will have to set a new standard for demining that increases speed without sacrificing safety.

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The Ukrainians are already making progress on both fronts. More than 35,000 square kilometres have been surveyed and marked as safe in the past year and a half, and new technologies for verifying land as mine-free are being tested and manufactured in-country. Nevertheless, the funding available for demining is still far short of what Ukraine needs.

Innovative financing models can help Ukraine tap into new pools of private capital. Two such models that have proven successful in similar development contexts were identified in a report by the Geneva International Centre for Humanitarian Demining and Symbio Impact: front-loading funding and thematic bonds. An agricultural bond market for demining Ukraine, for example, could help finance the clearing of economically productive land, with repayments made via cash flows generated after clearance. A front-loading funding mechanism, meanwhile, would use long-term government-donor pledges to raise bonds on capital markets, with the proceeds being used to fund demining immediately.

In terms of innovations in mechanised demining, the combination of drone surveys and AI technology has shown great promise in driving down the cost of demining and increasing the effectiveness and safety of operations. Using autonomous or semi-autonomous machinery with guidance systems and GPS-mapping can help speed up the surveying of large agricultural fields where landmines or ERW are suspected but not confirmed, giving