



THE CRAWFORD FUND
For a Food Secure World

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PHOSPHORUS SCARCITY ALREADY CRITICAL Selling Nutrient Security Service Could be a Game Changer

Whilst not widely recognised, the reuse of phosphorus will be crucial to achieving future food security, supporting farmer livelihoods and buffering against emerging geopolitical risks. The fertiliser industry needs to move from selling a product to selling a 'service' like nutrient security.

This will be addressed by Dr Dana Cordell Co-founder of the Global Phosphorus Research Initiative and Research Director of the Institute for Sustainable Futures at the University of Technology Sydney speaking at the Crawford Fund's annual food security conference on 29 and 30 August. Titled 'Waste Not, Want Not: The Circular Economy to Food Security,' the event brings international and Australian specialists together to draw national attention to food loss and waste issues in production, in getting product to market, and in the management and reuse of waste.

"Phosphorus scarcity is one of the biggest emerging global sustainability challenges threatening food security: without phosphorus we can't produce food, yet global agriculture is dependent on finite phosphate rock – three-quarters of which is controlled by Morocco," said Dr Cordell who recently joined UNEP's Global Environment Outlook team as a global food security expert.

"These phosphate reserves are non-renewable, and becoming increasingly scarce and expensive. Already one in six farmers can't access fertilizer markets."

"At the same time, a staggering 80% of phosphorus is lost or wasted in the supply chain between mine, farm and fork. Much of this ends up in rivers and lakes leading to widespread nutrient pollution and algal blooms. The good news is phosphorus can be recovered and reused from all organic sources in the food system."

"Recycling nutrients from local organic wastes like food waste, excreta and manures can not only provide farmers with a more accessible and reliable source of fertilisers, it can buffer vulnerable import-dependent countries against geopolitical risks to their food system, such as fertiliser supply disruptions and price spikes," she said.

Dr Cordell explained that there is a whole suite of recycling technology options available – from low-tech, small scale like urine reuse, through to high-tech large scale like struvite recovery from wastewater treatment plants.

"We need to identify the appropriate recovery systems for each community, country or region."

"In a circular economy, new business models will be required too. For example, a shift in the fertiliser industry from selling a product to selling a 'service' like nutrient security could be a game changer, providing a win for farmers who improve productivity and a win for the environment with less nutrient runoff polluting rivers and lakes."

Dr Cordell will explain a path forward, including examples from Vietnam, Malawi and Australia.

A set of innovative case studies will be presented from Australia and around the world will highlight positive examples of what can be achieved to reduce food loss and waste and reuse wasted food. Other speakers will include:

- Dr Karen Brooks, Director, CGIAR Research Program on Policies, Institutions and Markets, who will look at the research and policy solutions needed to reduce losses and waste, improve livelihoods and benefit the environment
- Professor Louise Fresco, President of Wageningen University and Research, addressing 'The Future of Food' and her new book "Hamburgers in Paradise"
- Mr Brian Lipinski, Food Program, World Resources Institute, who was involved in the development of the new international Food Loss and Waste Protocol, will highlight how to reduce on-farm losses