

Article title	Rebalancing global Nitrogen Management in Response to a Fertilizer and Food Security Crisis
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Abstract	Vulnerabilities of the global fuel-fertilizer-food nexus have been revealed by a regional geopolitical conflict causing sudden and massive supply disruptions. Across over- and under-fertilized agricultural systems, nitrogen (N) fertilizer price spikes will have very different effects and require differentiated responses. For staple cereal production in India, Ethiopia, and Malawi, our estimates of N-fertilizer savings show the value of integrated organic and inorganic N management. N-deficient systems benefit from shifting to more cost-effective, high-N fertilizer (such as urea), combined with compost and legumes. N-surplus systems achieve N savings through better targeted and more efficient N-fertilizer use. Globally, there is a need to re-balance access to N-fertilizers, while steering the right fertilizer to the right place, and managing N in combination with carbon through near-term interventions, while striving for longer-term sustainable management. Nationally, governments can invest in extension and re-align subsidies to enable and incentivize improved N management at the farm level.
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