Cropland is crucial for supplying humans with biomass products, above all, food. Globalization has led to soaring volumes of international trade, resulting in strongly increasing distances between the locations where land use takes place and where the products are consumed. Based on a dataset that allows tracing the flows of almost 450 crop and livestock products and consistently allocating them to cropland areas in over 200 nations, we analyze this rapidly growing spatial disconnect between production and consumption for the period from 1986 to 2009. At the global level, land for export production grew rapidly (by about 100 Mha), while land supplying crops for direct domestic use remained virtually unchanged. We show that international trade on average flows from high-yield to low-yield regions: compared to a hypothetical no-trade counterfactual that assumes equal consumption and yield levels, trade lowered global cropland demand by almost 90 Mha in 2008 (3-year mean). An analysis using yield gap data (which quantify the distance of prevailing yields to those attainable through the best currently available production techniques) revealed that differences in land management and in natural endowments contribute almost equally to the yield differences between exporting and importing nations. A comparison of the effect of yield differences between exporting and importing regions with the potential of closing yield gaps suggests that increasing yields holds greater potentials for reducing future cropland demand than increasing and adjusting trade volumes based on differences in current land productivity.