

Extensive loss of forest and non-forest natural land covers driven by global agricultural supply chains

Topic: Input-Output Analysis: Sustainable Production and Consumption Policies - VIII

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Intact forest landscapes (IFLs) have exceptional conservation value considering the range of ecosystem services they deliver, like regulating climate and harboring biodiversity. The continued loss of unfragmented IFLs despite numerous global conservation initiatives indicates the need for improved knowledge of proximate and underlying drivers. Attention has focused on agriculture as a primary cause of deforestation. However, non-agricultural activities like logging, mining, or road clearing also compromise the ecological value of intact forests and sometimes precede and enable agricultural encroachment. Therefore, we focus on IFL loss (including deforestation, forest degradation and fragmentation) caused by various economic activities and investigate the influence of global consumption and trade via the multi-regional input-output model. For IFL loss associated with the 2014 world economy, over 60% was related to final consumption of non-agricultural products. More than one-third of IFL loss was linked to export, primarily from Russia, Canada, and tropical regions to mainland China, the EU, and the United States. Of IFL loss associated with export, 51% and 26% was directly caused by logging and mining or energy extraction, respectively. The dispersed nature of IFL loss drivers and their indirect links to individual final consumers call for stronger government engagement and supply chain interventions.