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Mapping global evidence of forestry and land use impacts on greenhouse gas emissions and human well-being

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Forestry and land use sectors represent 24% of anthropogenic greenhouse gas emissions with the potential to sequester an additional 10% of current emissions through reforestation. The importance of land use change and forests is also increasingly being recognized for its links to human well-being. Though the potential for policies related to the forestry and land use sector to have significant outcomes for emissions and human well-being is widely recognized, the specific effects of different policies is less well understood. Insights on the effects of past interventions are necessary for guiding evidence-informed policy that will realize the mitigation potential of the forest and land use sector and contribute to improved human well-being. Existing evidence is however scattered, inconsistent and inaccessible to many policymakers and practitioners. We show an evidence gap map, linking forestry and land use interventions to carbon sequestration, avoided emissions, and overall human well-being. An evidence gap map is a thematic synthesis which visually illustrates the extent and diversity of evidence across both peer-reviewed and grey sources. Relevant studies were identified through a search of online publication databases, specialist websites, and key informants. Data were extracted on characteristics of the study, different types of forestry and land use interventions ranging from protected areas and sustainable agriculture to direct payments and education programs targeting behavior change, and emissions- and human well-being related outcomes. Our synthesis focuses upon impact evaluations and systematic reviews, which utilize high-quality study designs and employ randomized controls using experimental approaches or statistical modelling. By identifying the frequency and occurrence of global evidence on the impacts of land and forestry policies on GHG emissions and human well-being, our map can be used by policymakers and researchers to rapidly find data on policy impacts, highlight areas where more detailed synthesis on impacts is needed, and identify priorities for increased or higher quality evaluation and research.