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## Is deforestation hindering refugee integration? The case of the Mantapala settlement in rural Zambia

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### Abstract

Refugee numbers are notably high in Africa and integration instead of repatriation is an increasingly popular approach. In order to ensure a successful and sustainable integration, it is essential to investigate long-term effects of refugees on the hosting area. As refugees usually arrive in large numbers, there is high pressure on forest stocks in the host country. On the one hand, space and materials are needed for housing in refugee settlements, and on the other hand, refugees require firewood and charcoal for daily life. Although literature on effects of refugees on their host environment is increasing, agent-based models, which enable a simulation of future developments, rarely focus on refugees' effects on their host community. This study applies an agent-based model to investigate the impact of refugees on deforestation in their host area. In the model, host and refugee households interact with each other, as well as the environment and this individual behaviour adds up to deforestation on a bigger scale. The paper aims (1) to identify how refugee settlements and host communities affect forest resources in developing countries, (2) to predict which settlement capacity is sustainable in the forest context and (3) to analyse how labour cooperation and the corresponding expansion of slash and burn agriculture affect the deforestation rate. The analysis utilises a 2018 dataset from a refugee hosting area in rural Zambia including 277 households. Secondary data on forest composition, contact probability, etc. complements the dataset. Preliminary results show the maximum sustainable yield of forest resources, as well as an effect of labour cooperation on slash and burn activities and the availability of these resources. The analysis enables the derivation of policy recommendations on building refugee settlements more sustainably in the future to counter deforestation and support integration.

**Keywords:** Africa, agent-based modelling, deforestation, forest management, host society, refugees, rural development, sustainability, Zambia