

# The Climate Change Mitigation Potential of Fuel-efficient Biomass Cookstoves in Sub-Saharan Africa

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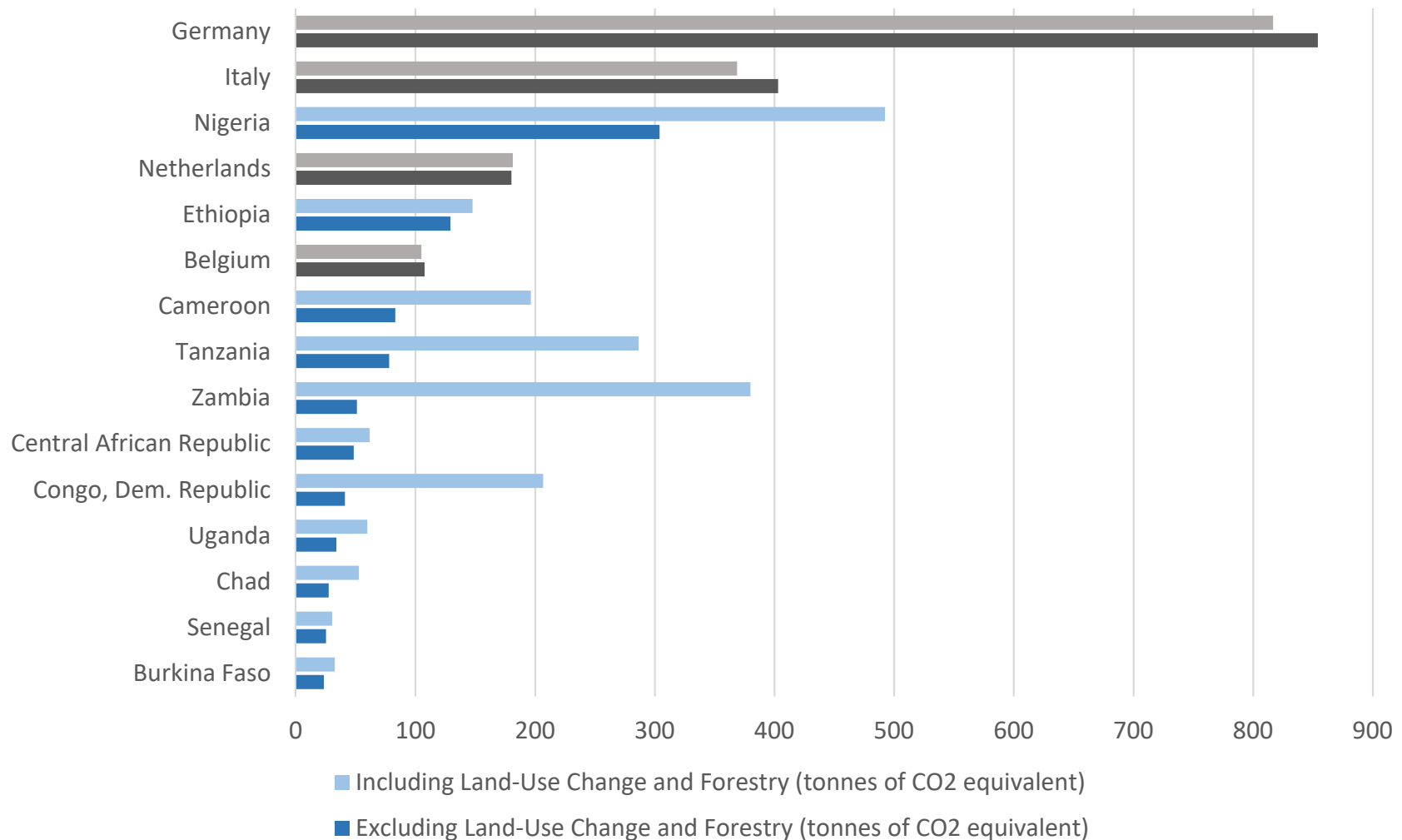
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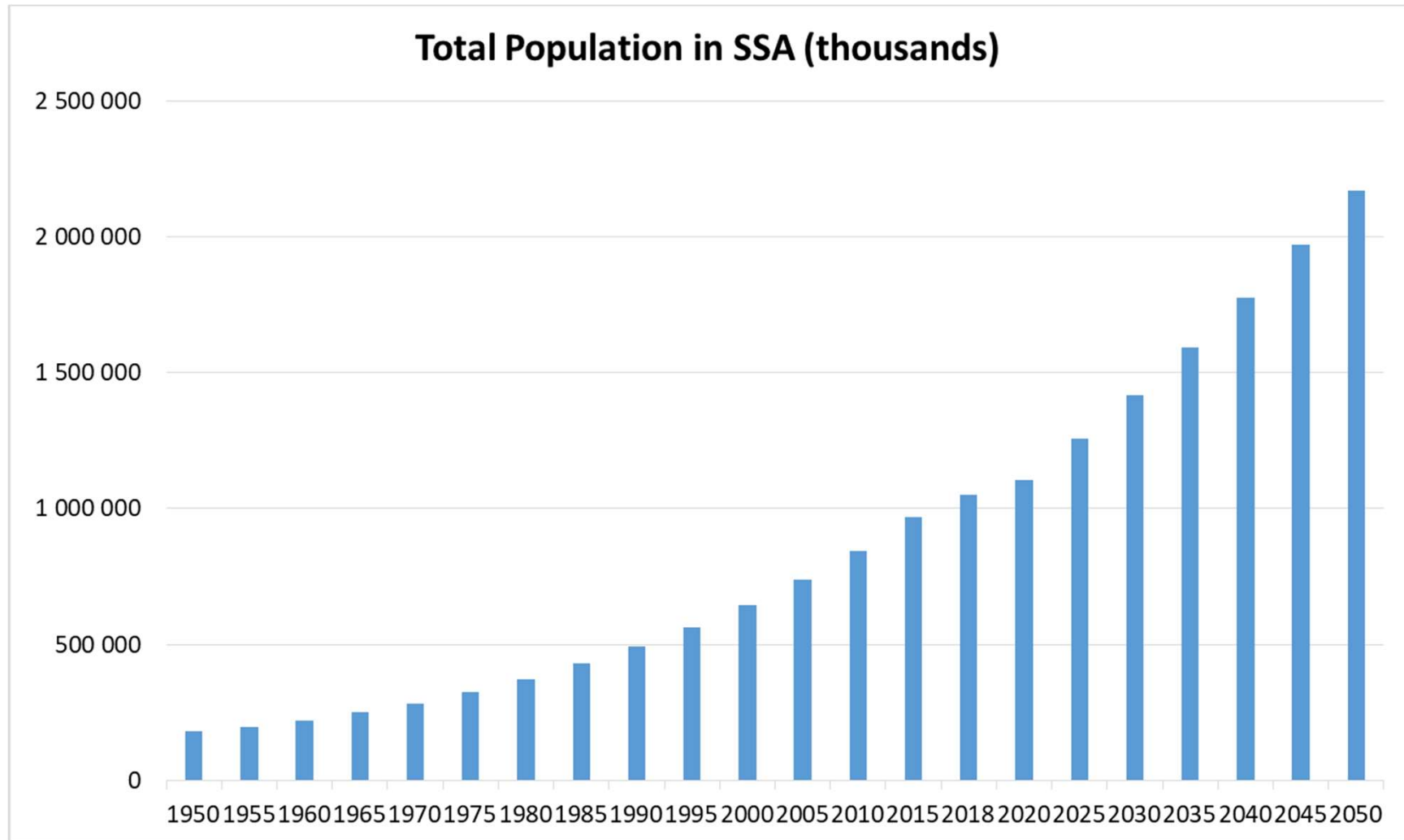
# Africa's relevance for GHG emissions

## Total Greenhouse-gas emissions (2014)



Source: CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute.

## Population growth and woodfuel demand

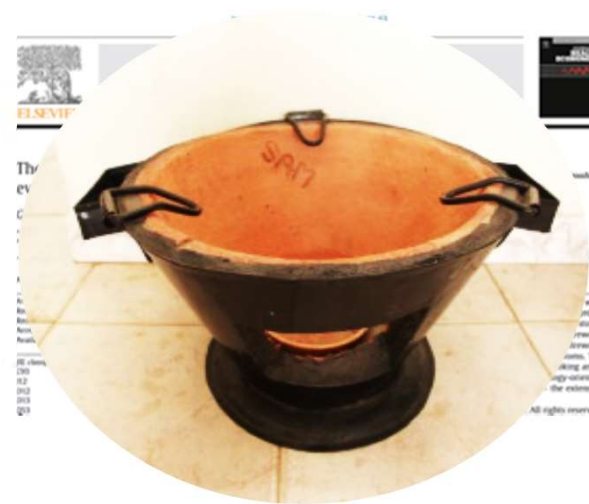


Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision.

# What we do in this paper

We take Rob's and Omar's amazing carbon footprint data

...and our own real-world fuel savings results from ICS usage



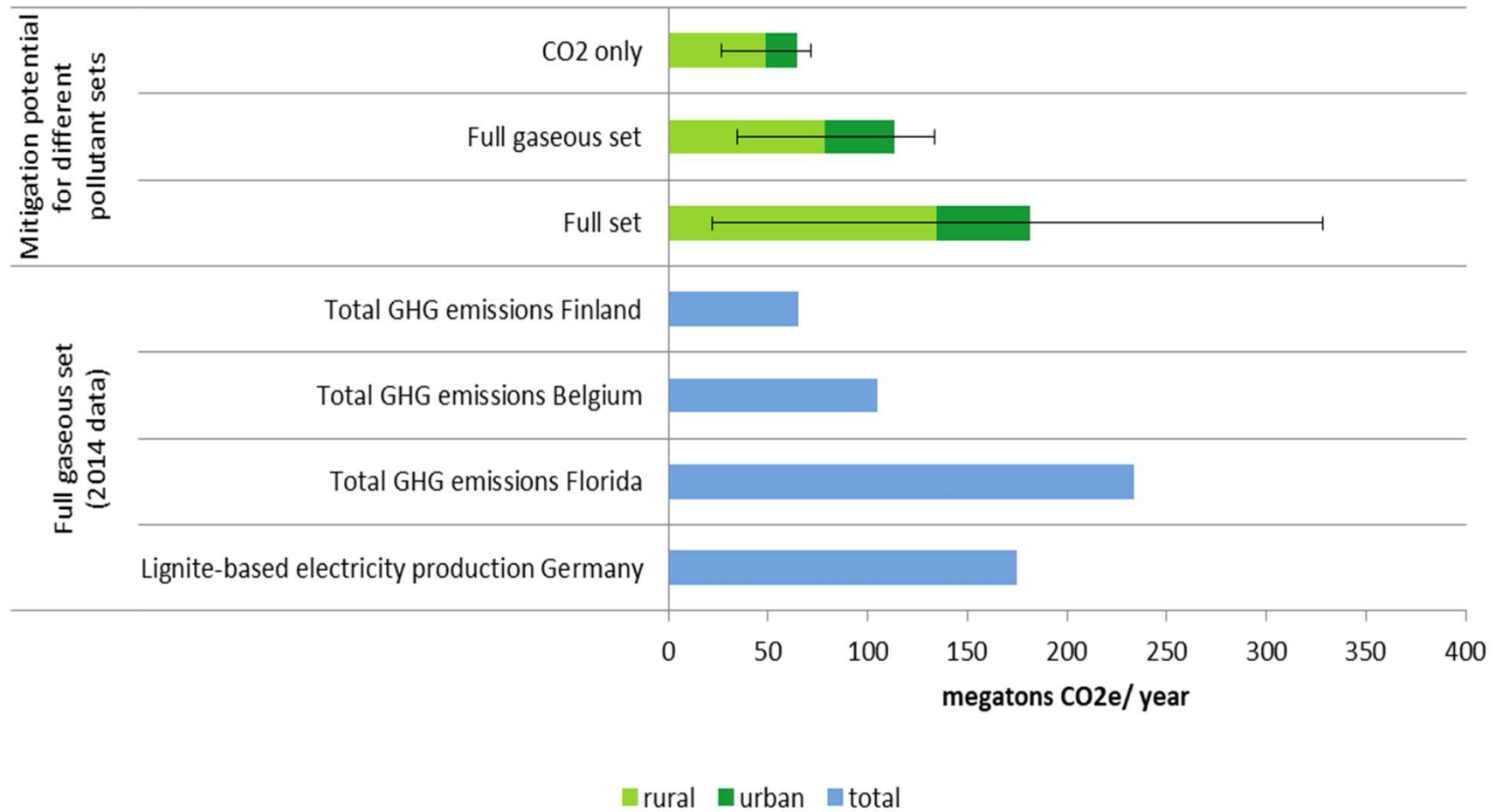
...to estimate the potentials for ICS to reduce climate forcing pollutants



How do different scenarios alter the climate change relevance of woodfuels?

- Population growth
- fNRB change
- Access to LPG and electricity

# Climate change mitigation potential of ICS

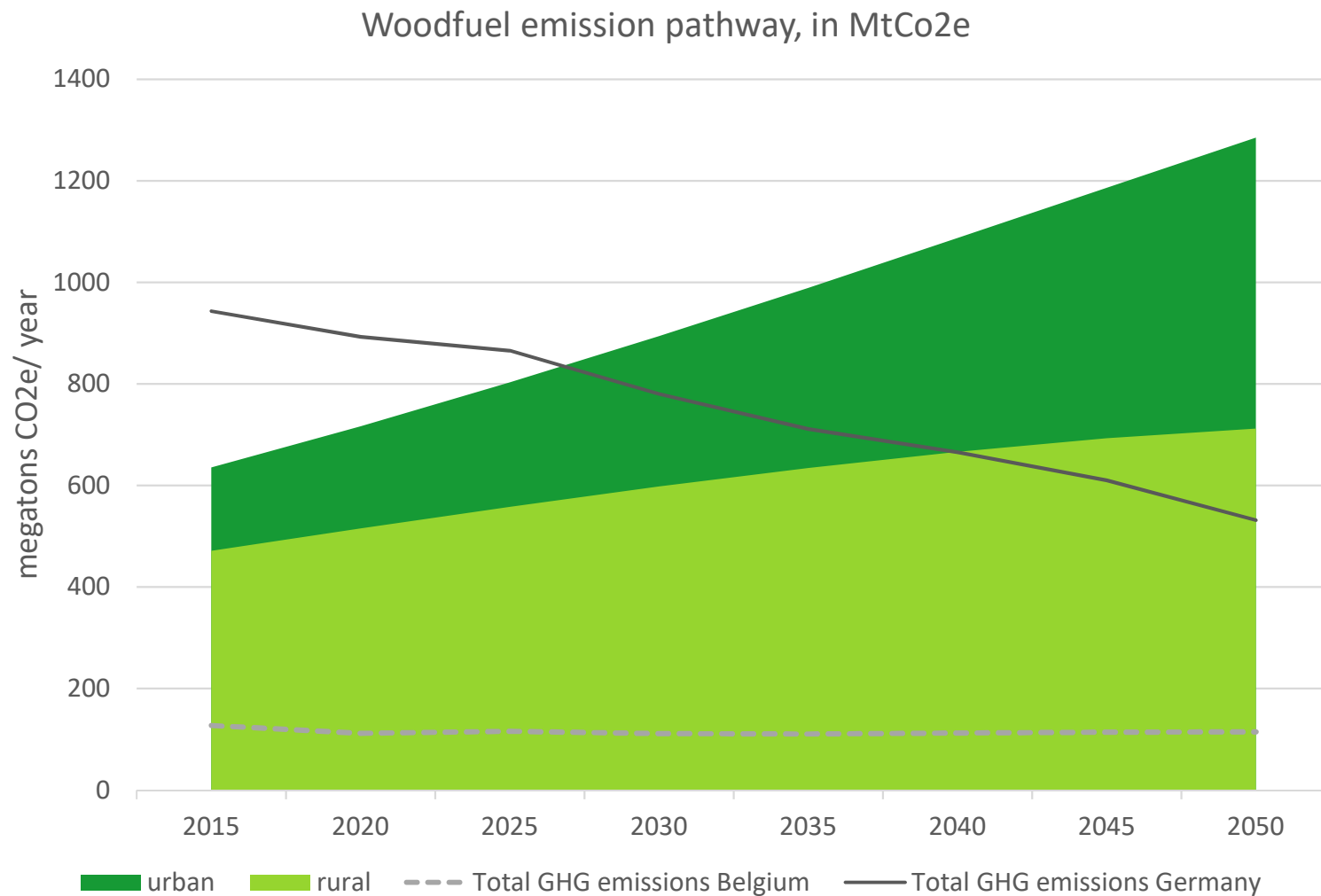


## Climate change mitigation potential of ICS

**Message 1: ICS offer considerable climate change mitigation potentials**

What happens to woodfuel demand in the future?

# Population growth and woodfuel-based CO<sub>2</sub>e-emissions



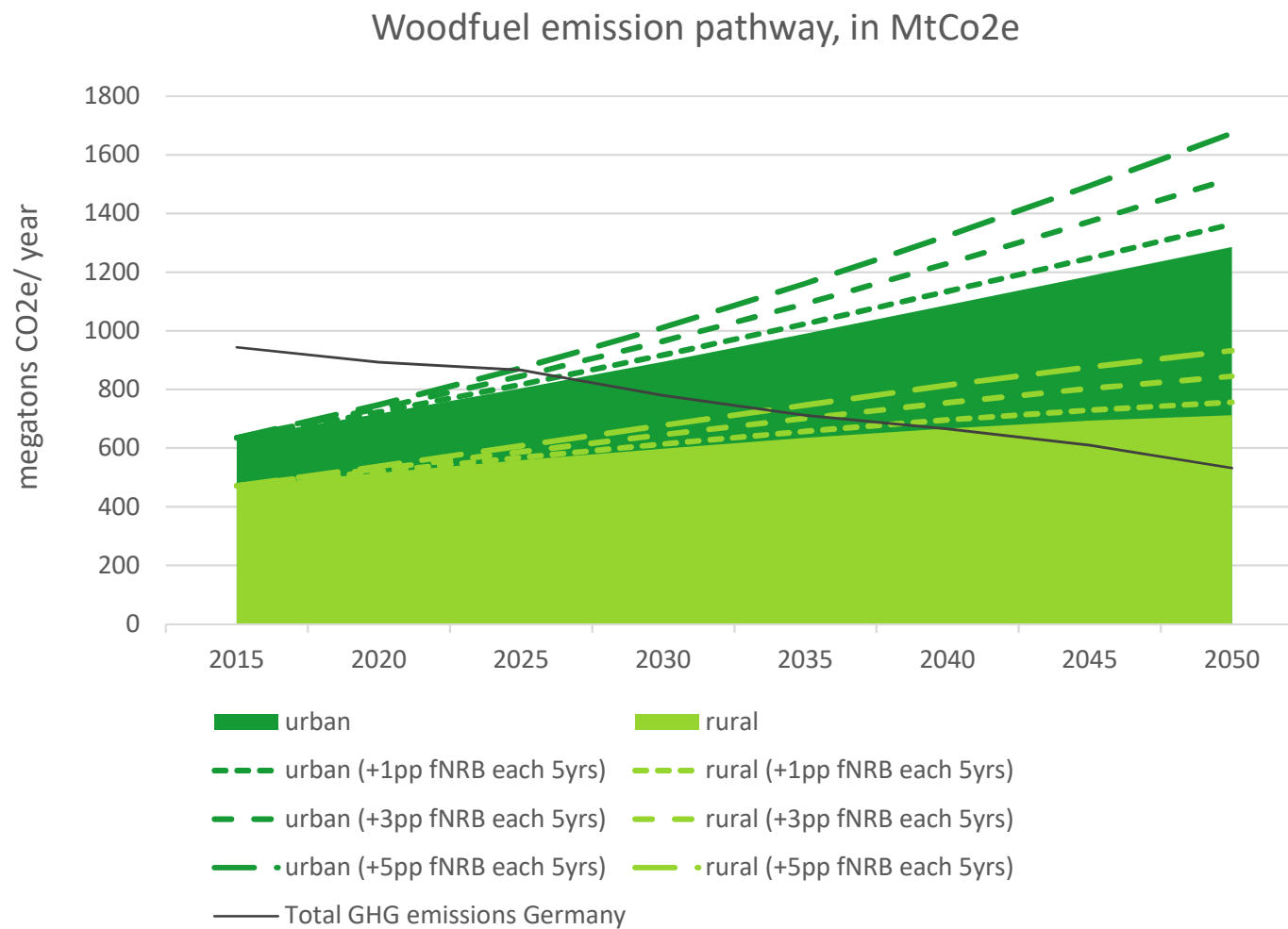
## Climate change mitigation potential of ICS

**Message 2:      Population growth and urbanisation will increase carbon emissions from woodfuel usage considerably**

What happens to the renewability of woodfuel extraction as the population grows?



## Different fNRB-scenarios



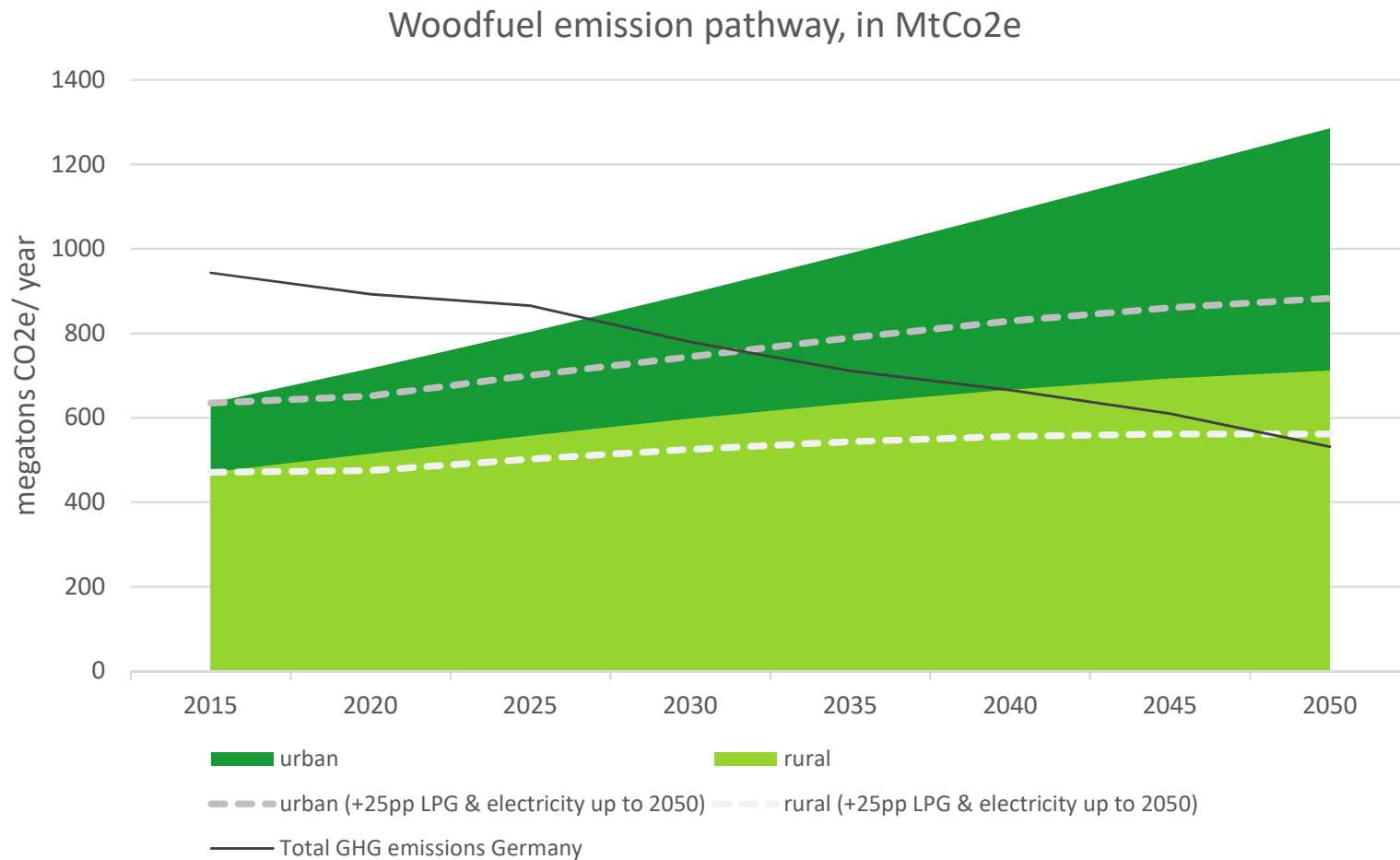
*Scenario: 35pp increase in fNRB until 2050*

## Climate change mitigation potential of ICS

**Message 3:      If population growth additionally leads to increases in the fNRB.... (which we think is likely...?)...  
...carbon emissions from woodfuel usage might rise dramatically**

Do optimistic LPG/electricity dissemination scenarios change this?

# Population growth, woodfuel demand and the fNRB

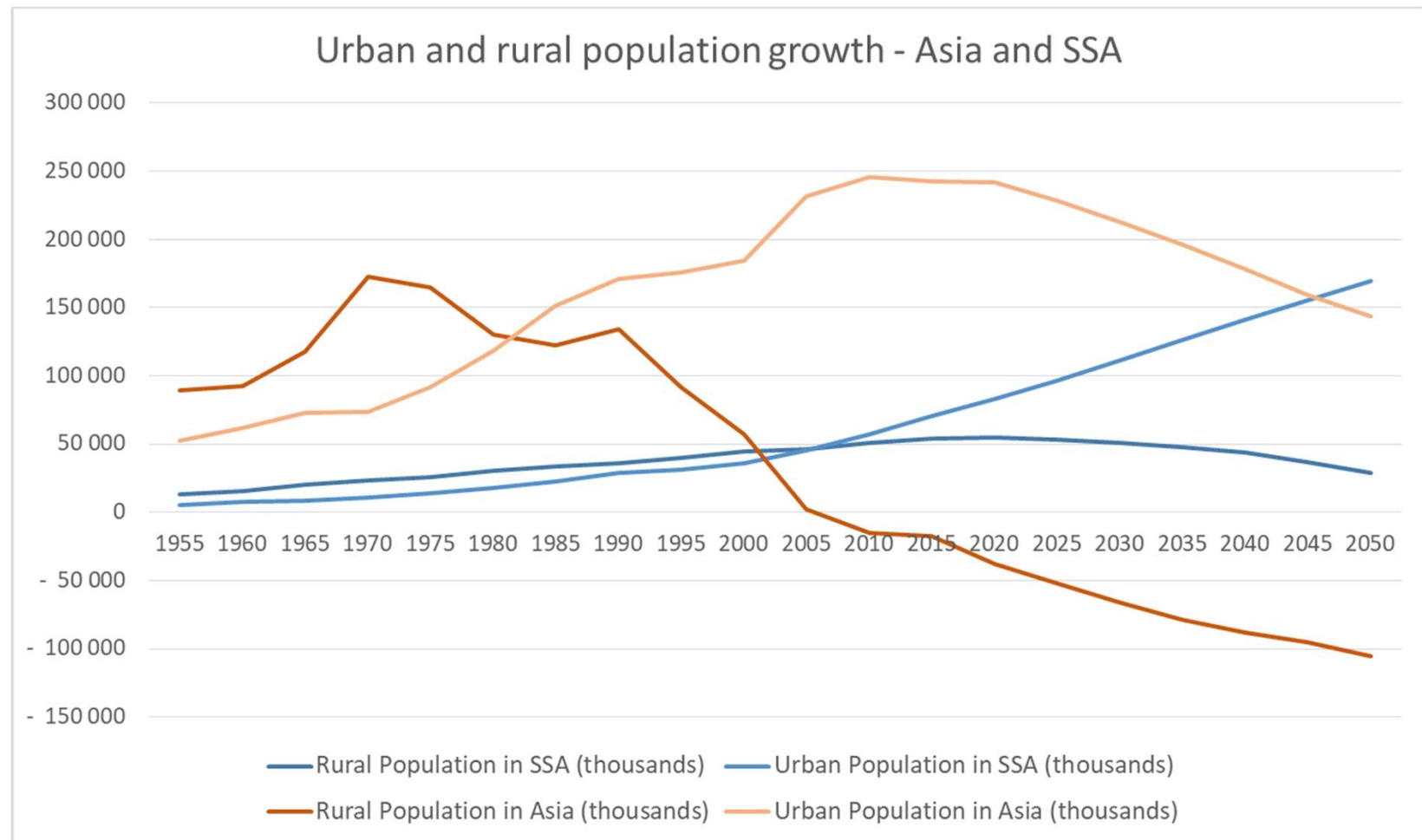


*Scenario: 25pp increase in share of households with LPG and electricity („baseline“: 4% rural and 25% rural)*

## Conclusion

Improved biomass cooking (even if not “clean”!)...  
...should be a high priority for international climate policy

# Population growth and woodfuel demand



Source: United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision, Online Edition.