

# Carbon sequestration & regreening by Kenyan smallholder farmers

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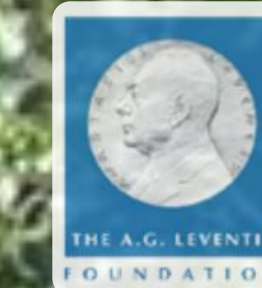
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The International Small Group and Tree Planting Program



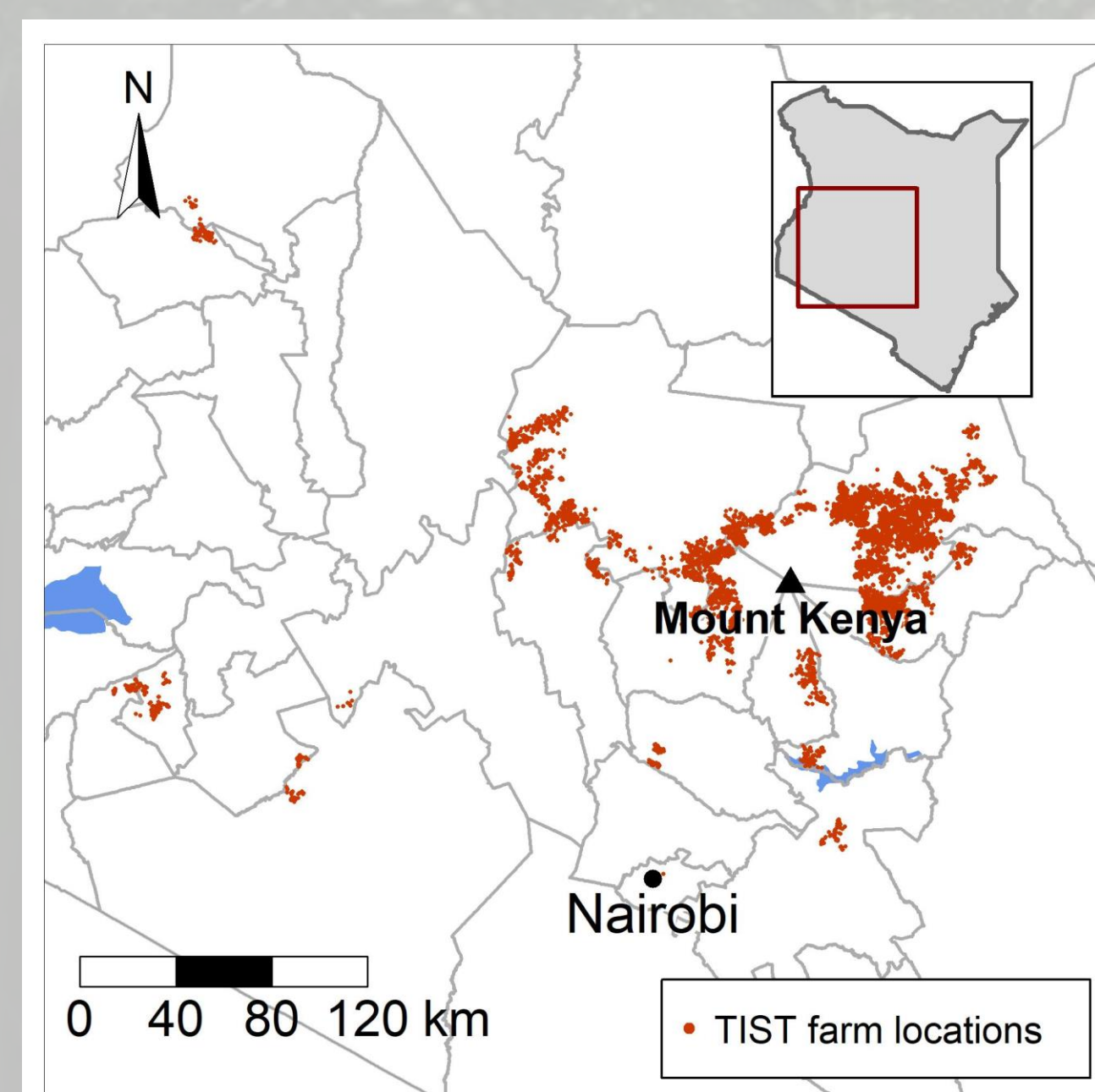
**TIST** is a network of more than **90,000** farmers in four countries. TIST members have planted and maintained more than **19 million** trees on their farms since 1999



TIST is a **farmer-led** programme, generating and sharing best practices for **agroforestry** and conservation farming among subsistence farmers in Tanzania, Uganda, Kenya and India: [www.tist.org](http://www.tist.org).

TIST members have access to peer support and training. Tree planting brings multiple direct benefits including **firewood, fodder, fruit** and **shade**.

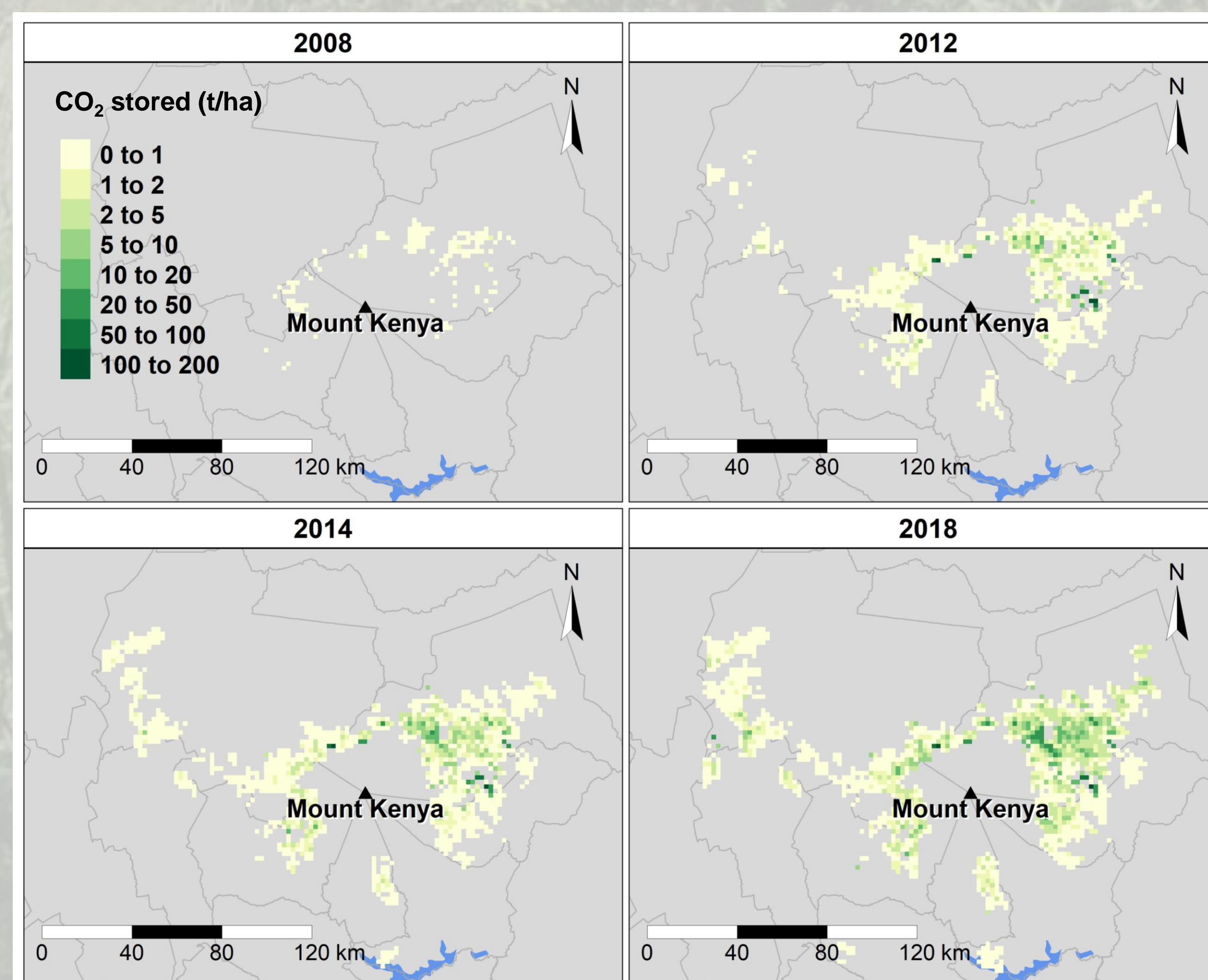
Trained farmers are employed by the programme to visit each farm and quantify tree growth, generating verified **carbon credits**. This 'virtual crop' is sold on the international voluntary carbon market, with profits returned to the farmers.



**TIST Kenya** is the largest branch of the network, with close to 76,000 members and >10 million trees planted since 2004.

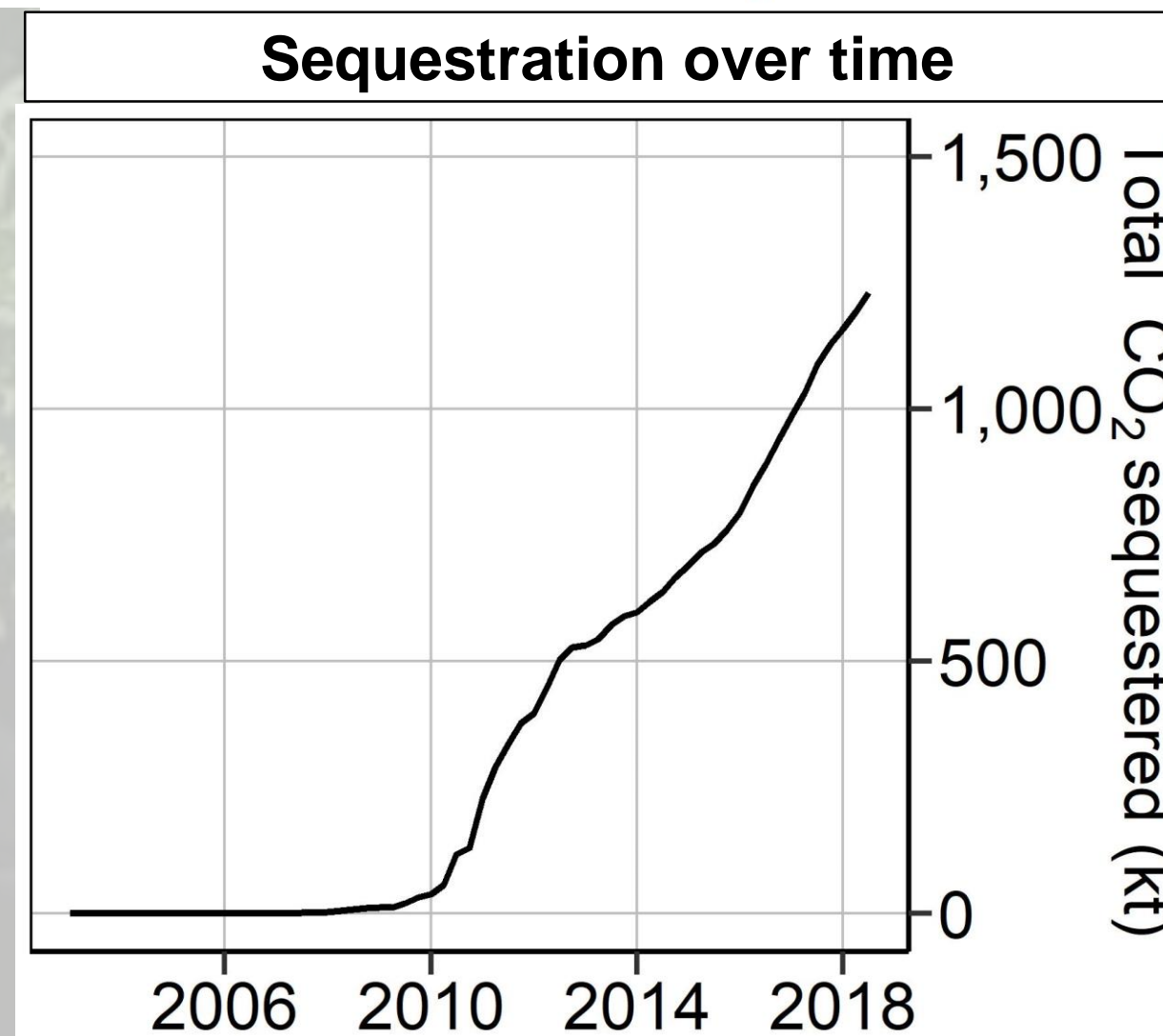
**University of Exeter** is working with TIST to quantify and understand TIST's impacts at **landscape scales** and on **multiple sustainable development goals**. Using TIST's observations, remote sensing and fieldwork we are assessing **carbon capture, regreening, vegetation resilience, soil health** and **biodiversity** impacts.

**TIST Kenya farmers have sequestered over 1.2 million tonnes of CO<sub>2</sub> in trees planted since 2008**



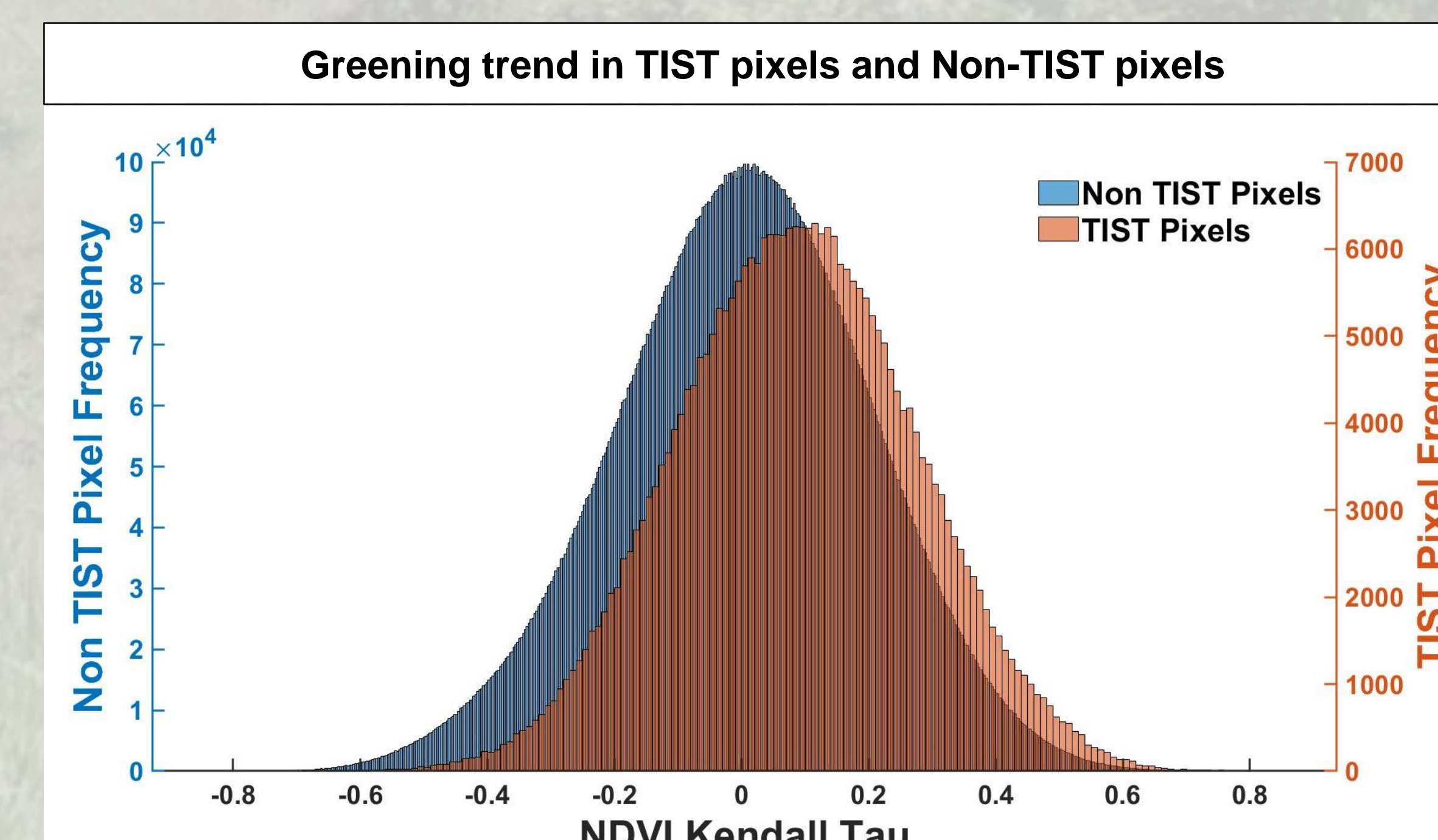
We use **allometric equations** to estimate carbon storage from tree circumference data on **over 53,000 verified TIST farms**.

Including as-yet unverified farms could nearly double this figure.

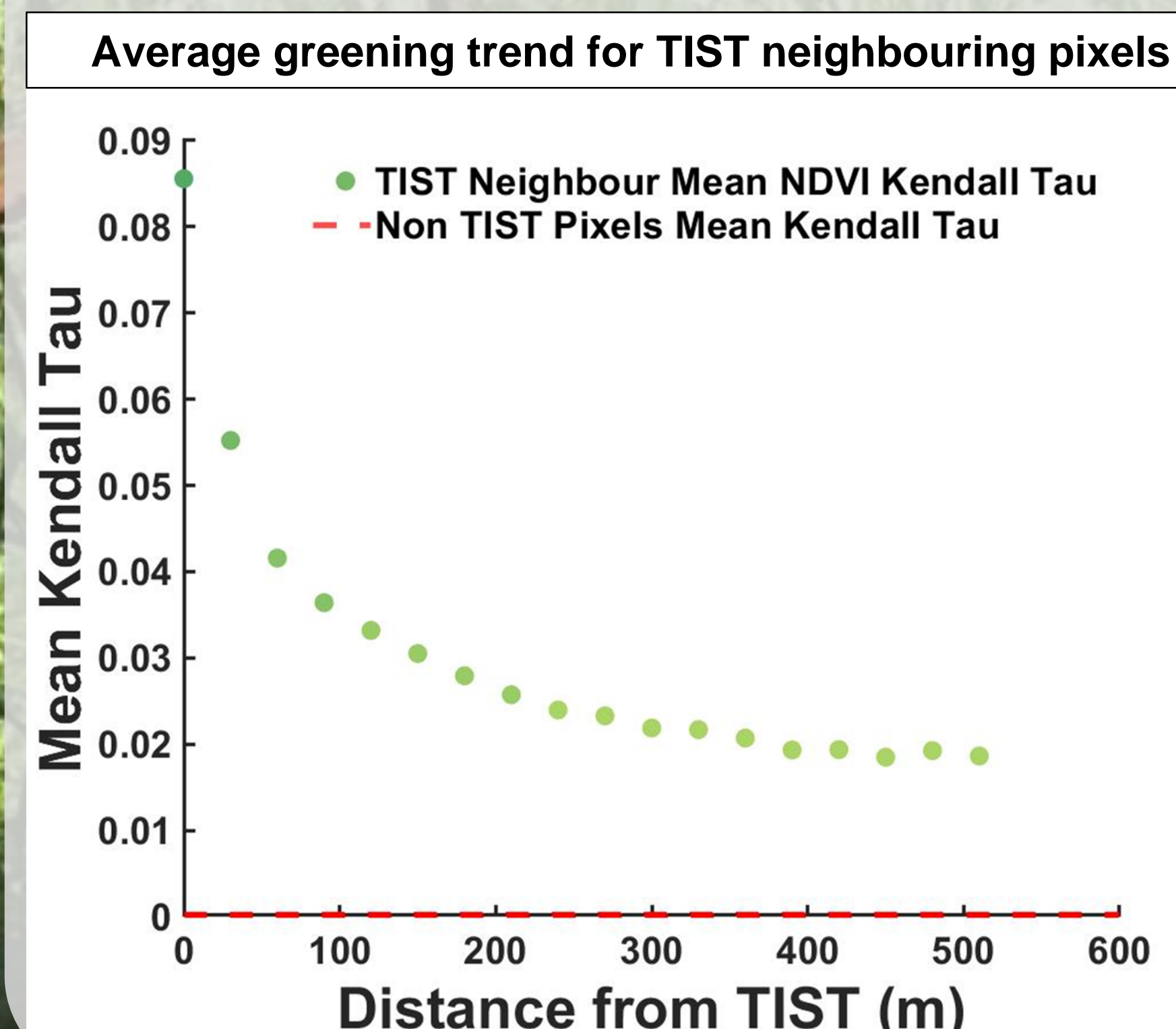


TIST impacts in Kenya can be seen from space, with **18,278 hectares** of smallholder farmland showing a greening effect

We use **2000-2019 Landsat 7** data to measure trends in **NDVI** across agricultural land near Mount Kenya. Kendall's Tau shows the trend of the NDVI time series.



The impact of TIST can be observed up to **~200m** away from groves on average



This could be due to microclimate or soil moisture effects or other TIST farming practices, and suggests that TIST may have an impact on up to **200,000 hectares** of land within the study area.

For more on TIST and our methods, please follow [this link](#)