Fighting Fraud in the Forest –World Forest ID at Kew; a georeferenced collection of wood and forest risk commodities

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Background

Royal Botanic Gardens, Kew (RBG, Kew) have been working with World Forest ID and its growing number of consortium members since 2019 to tackle deforestation.

The wood identification team (WoodID@kew.org) and forest risk commodity specialists working on soy, cocoa and oil palm, study the anatomical and chemical properties of collected reference samples as well as having access to Kew's vast collections, to help aid identification and verification:

- Economic Botany collection with c.**50,000** wood samples and objects.
- Microscope slide collection with c.**40,000** slides of timbers.
- The Herbarium which holds around **7 million** vouchers of plants and fungi (of which 1.3 million fungi are held in the Fungarium).

Species identification as well as provenance of samples are verified using a range of different chemical and morphological analyses including stable isotope ratio (SIRA), trace element (SE), microbiome metabarcoding and direct time of flight mass spectrometry (DART-TOFMS). Data from these analyses is used to train AI origin-models to provide scientific proof to support or refute claims of origin or species by enforcement agencies.

Wood collections at RBG, Kew.

Sections of wood, cut in 3 different planes, for the slide collection.
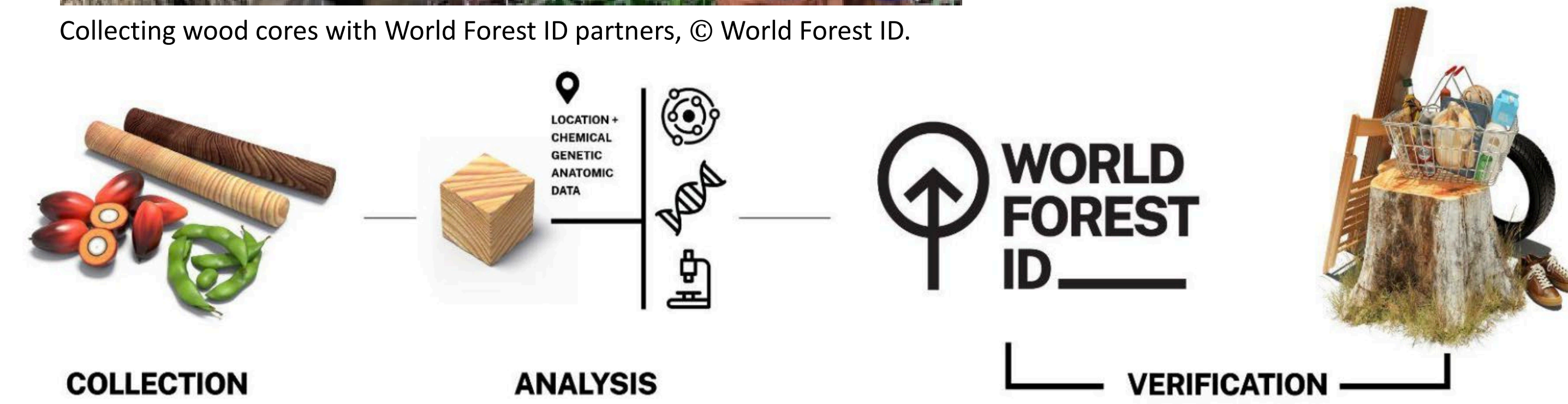
World Forest ID

World Forest ID acts as data hub and facilitator to its consortium members.
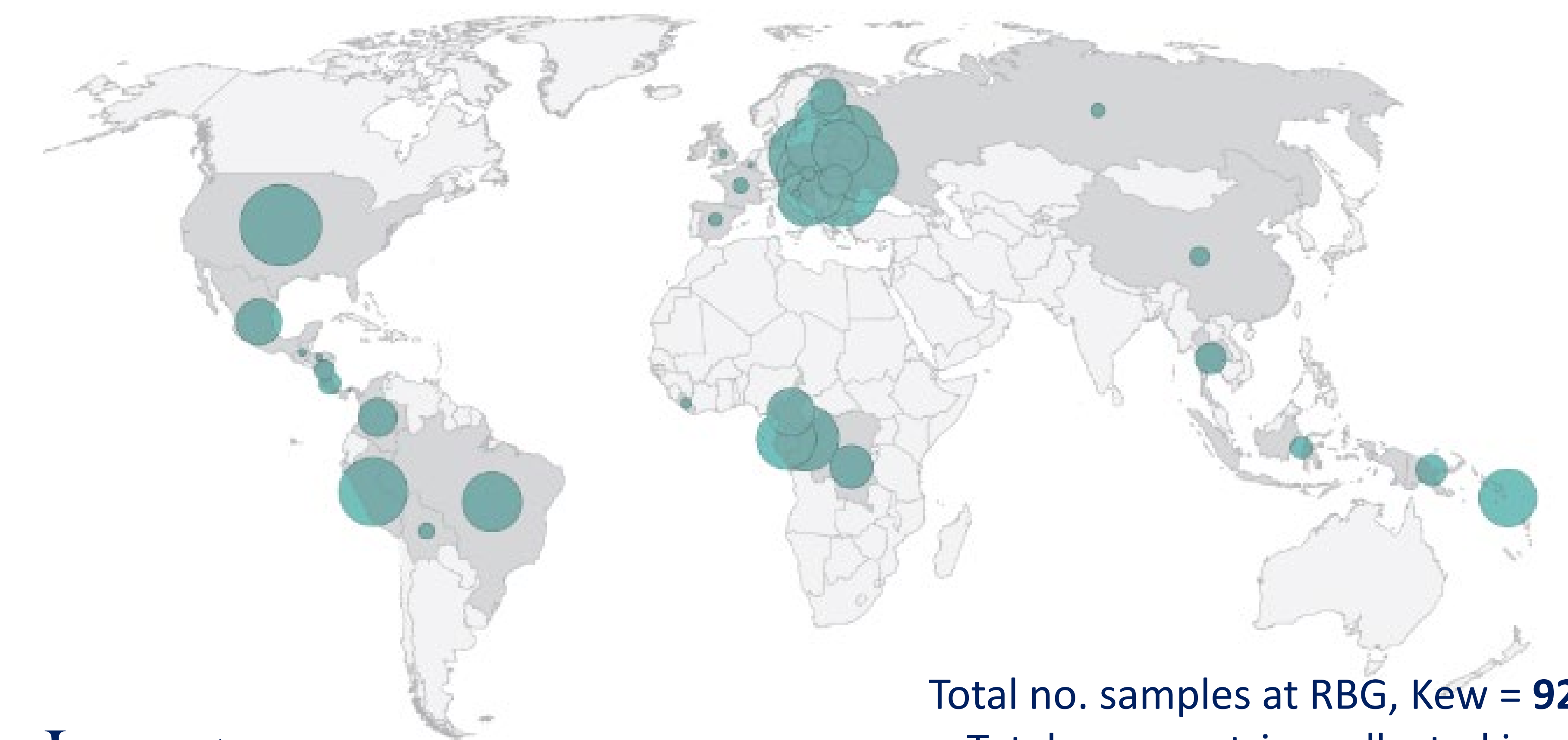

Collecting wood cores with World Forest ID partners, © World Forest ID.

- Coordinates work in country to arrange collection of samples, following all national and international laws, with a fully documented chain of custody.

- Samples are sent to RBG, Kew, where they are analysed, verified and stored in the World Forest ID georeferenced collection.

COLLECTION   ANALYSIS   VERIFICATION

- Focused on developing tools to scrutinize location of harvest claims for forest-connected products.

- Creates unique non-proprietary reference material for enforcement of environmental laws.

- Works with multiple stakeholders including governments, companies and scientists to establish protocols and norms for use of science in enforcement.

Georeferenced Collections

Total no. samples at RBG, Kew = **9214**
Total no. countries collected in = **39**

Map showing location of timber collections, © World Forest ID.

Impact

Research paper published in Nature Plants which introduces World Forest ID's AI-enabled 'origin-model'.

Find out more:

https://www.linkedin.com/company/world-forest-id/
https://www.instagram.com/worldforestid/

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