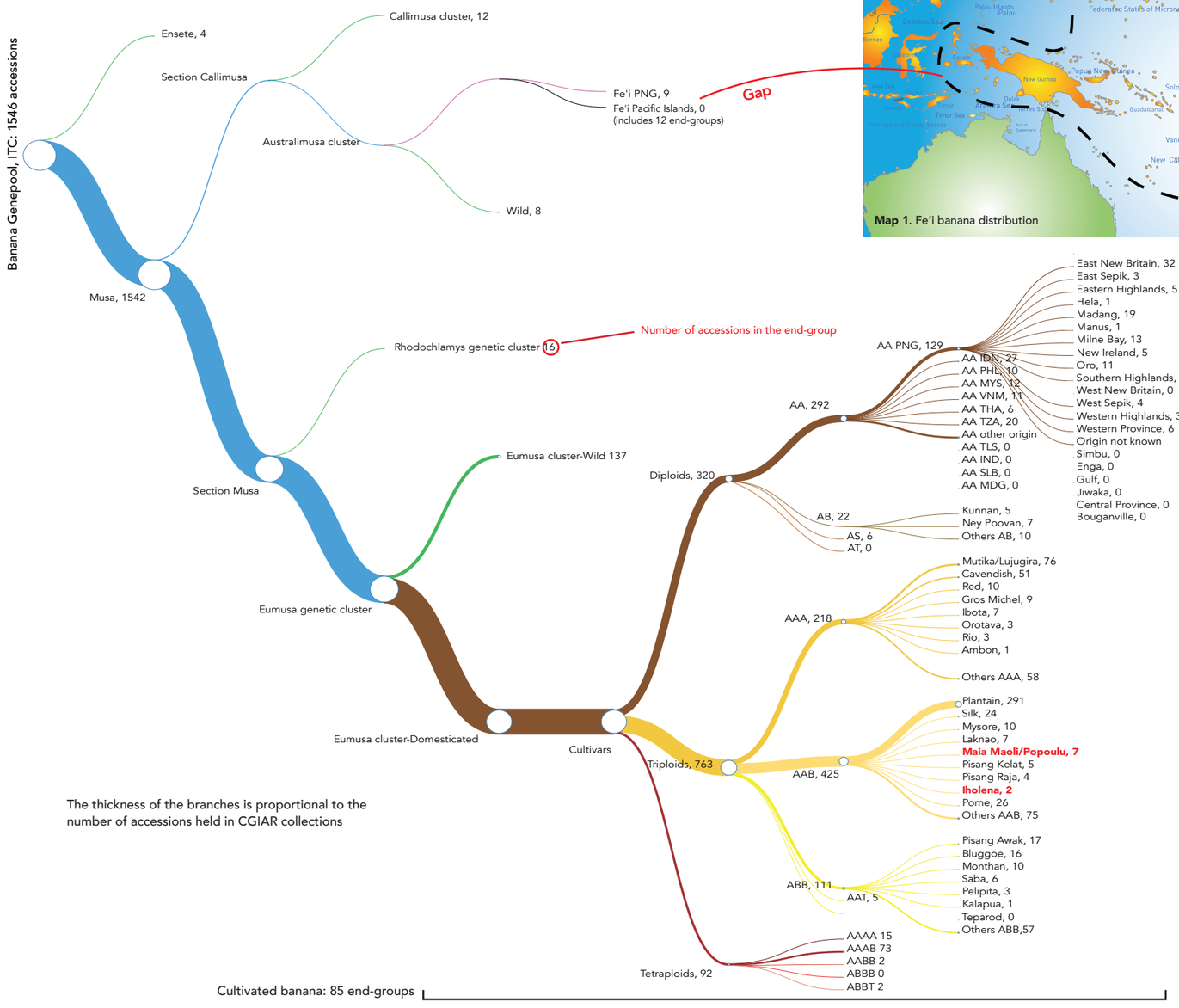
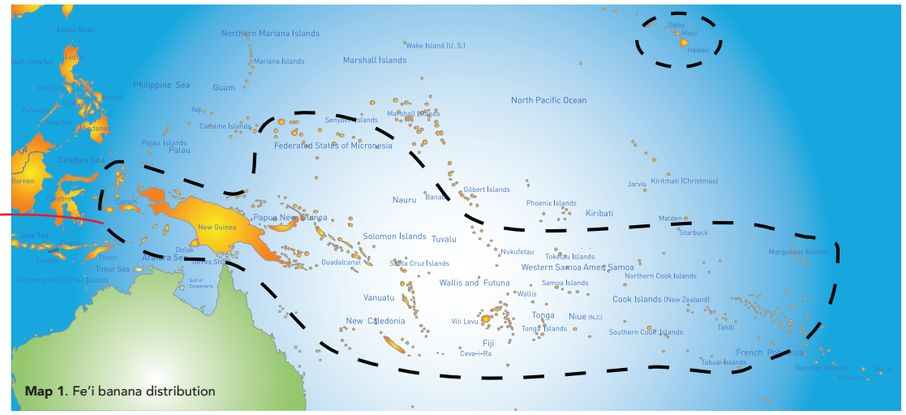
Banana diversity in the CGIAR collection: Finding and filling the gaps

1 The Banana Diversity Tree is a representation of the structure of the banana genepool obtained by dividing it into hierarchical clusters.

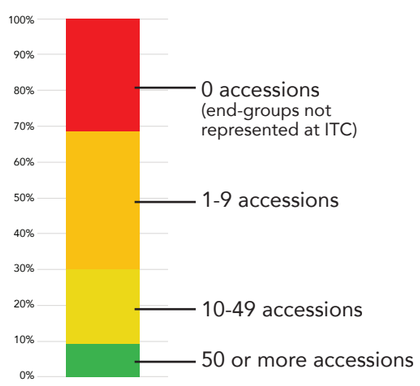
2 Accessions conserved at the Bioversity International *Musa* Germplasm Transit Centre (ITC) were mapped onto the end-groups in the tree and Fe'i bananas from the Pacific Islands were identified as gaps in the collection.



3 Fe'i, Maia Maoli/Popoulu and Iholena bananas are rare and endemic to Oceania (Map 1). Fe'i bananas have distinctive features such as orange flesh rich in pro-vitamin A, erect bunches, and purple sap. Fe'i are preferentially eaten cooked.



Map 1. Fe'i banana distribution



Coverage of the cultivated end-groups at ITC

4 Collecting missions in Cook Islands and Samoa were conducted in the summer of 2019 to fill these gaps. The missions were organised with the support of SPC, the Ministry of Agriculture of Cook Islands and the Ministry of Agriculture and Fisheries of Samoa.

5 11 new Fe'i accessions, 10 Maoli-Popoulu (AAB), one Iholena (AAB), and a new unknown AAB variety were collected and added to the ITC collection.

Drying suckers in Samoa ready for shipping to the genebank.

6 31% of the 85 cultivated end-groups are not represented in the ITC collection. Molecular studies suggest that several subgroups, such as Plantain, East African Highland Bananas (Mutika/Lujigiara) and Gros Michel, are highly homogeneous. Given that, what is the minimum number of accessions, for each subgroup, that should be conserved *ex situ* to have a good representation of their genetic diversity?

Acknowledgments: Thanks to those who helped contribute to the collecting missions – Nicolas Roux and Julie Sardos (Bioversity International), Michel Ghanem (Secretariat of the Pacific Community), William Wigmore (Ministry of Agriculture of Cook Islands) and Tolo Iosefa (Ministry of Agriculture and Fisheries of Samoa).

For more information, visit http://bit.ly/banana-tree or scan the below QR code

CGIAR Genebank Platform · CROP TRUST · Bioversity International · Pacific Community Communauté du Pacifique · Ministry of Agriculture Government of the Cook Islands · Ministry of Agriculture and Fisheries Samoa