

Using The Global Biodiversity Standard (TGBS) in Madagascar to promote biodiversity conservation and human wellbeing in rehabilitative and restorative projects

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Madagascar has committed to an ambitious tree planting project, aiming to reforest 4 million hectares by 2030, replacing some of the island's lost forests and contributing to global carbon sequestration targets. This well-intentioned initiative risks being dominated by alien tree species that, if planted in the wrong place, could harm Madagascar's environment and biodiversity. To reduce this risk, Missouri Botanical Garden is working in the country, as part of the Botanic Gardens Conservation International's prestigious TGBS certification scheme, to incentivize practices in landscape rehabilitation and restoration that lead to positive outcomes for both human wellbeing and biodiversity. Central to TGBS certification is the promotion of native trees, especially threatened native trees, – in reconstructive restoration work. As such, botanic gardens everywhere can be important contributors to projects seeking TGBS certification.

Field evaluation of ecosystem health is central to TGBS certification. The challenge is to define standard evaluation protocols that reliably provide quantifiable data on the condition of an ecosystem, and how it changes over time. Importantly too, the protocols must be scientifically valid yet quick and cheap to apply. If the evaluation is too expensive then TGBS certification would be accessible only to well funded projects. Initially, the TGBS team in Madagascar relied heavily on expert opinion in making trial evaluations but, whatever the level of expertise, subjective evaluation does not provide the required transparency. Hence, we, in collaboration with those in other TGBS hubs, have worked to develop a basket of simple but effective protocols, sometimes taking advantage of new technologies, that together can provide the data that, when uploaded into the TGBS scoring framework, can provide a relatively standardised and objective evaluation of the ecological health (and especially changes in ecosystem health) of the ecosystem under consideration. These field methods are summarised here.