





# No seeds, no trees: Building up seed supply for meeting multi-million hectare restoration targets

Riina Jalonen

FLR conference, Manila, the Philippines, 25 February 2019

### How far have we come?





- Hectares pledged: 170.43 million
- Seedlings needed: up to 170.43 billion?
- Nurseries established or expanded: ??
- Seed sources established: ???

http://www.bonnchallenge.org/ (22.2.19)





# Siamese rosewood Dalbergia cohinchinensis







## Where to get seedlings for a typical restoration project?

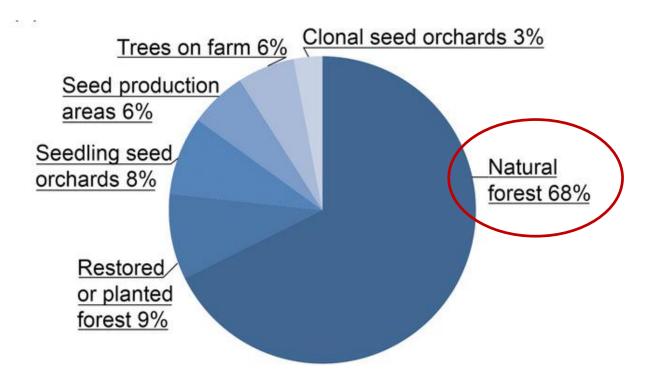




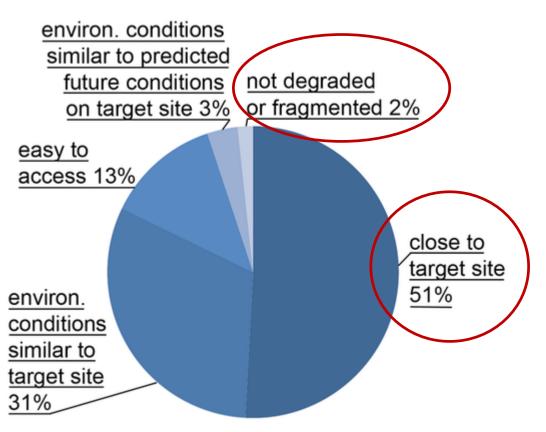
## Typical seed sourcing strategies

(n=139 FLR projects worldwide; Jalonen et al. 2018)

## Most common seed source, % projects



## Most important criteria for seed source selection, % projects







Contents lists available at SciVerse ScienceDirect

#### **Biological Conservation**



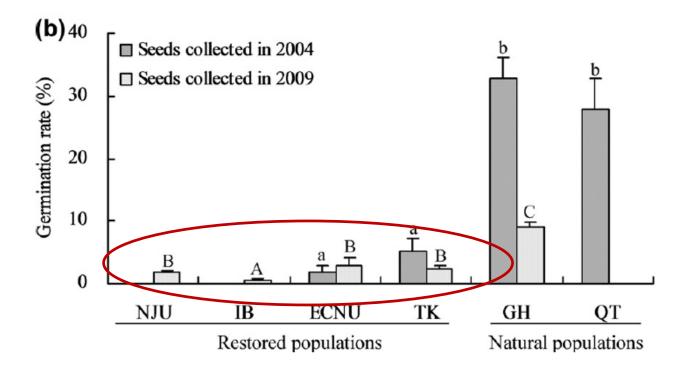


#### Short communication

### Too early to call it success: An evaluation of the natural regeneration of the endangered *Metasequoia glyptostroboides*

Yuan-Yuan Li a, Eric Po Keung Tsang b, Min-Yan Cui a, Xiao-Yong Chen a,\*

<sup>\*</sup>School of Resources and Environmental Sciences, Tiantong National Observation Station of Forest Ecosystems, East China Normal University, Shanghai 200062, China b Department of Science and Environmental Studies, Hong Kong Institute of Education, Hong Kong, China





## Should we be more critical of remnant seed sources being used for revegetation?

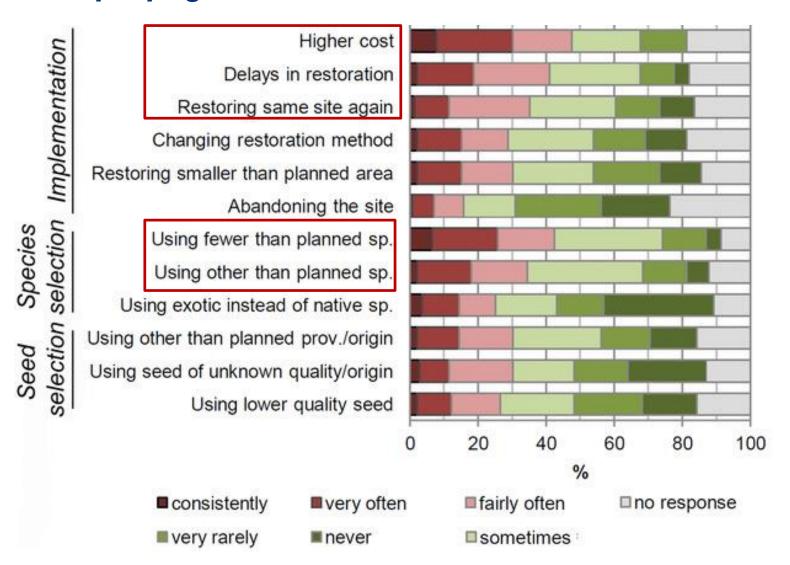
By Linda M. Broadhurst, Tom North and Andrew G. Young

**Table 1.** Mean seed, germination and survival data for Gold-dust Wattle seed sources. Values with the same symbol do not differ significantly (Tukey's test,  $\alpha$  = 0.05). Standard errors in parentheses

Population	Seed pod <sup>-1</sup>	Seed wt (g)	Final % germination	Final % survival
Lower Thule S1	3.32†‡ (0.28)	0.40‡ (0.02)	54.4‡ (2.3)	89.3‡ (3.2)
Lower Thule S2	3.77‡ (0.18)	0.52§ (0.02)	43.7†‡ (2.7)	89.9‡ (2.4)
Nth Moama	2.71† (0.36)	0.30† (0.01)	40.5† (5.0)	73.8† (6.7)



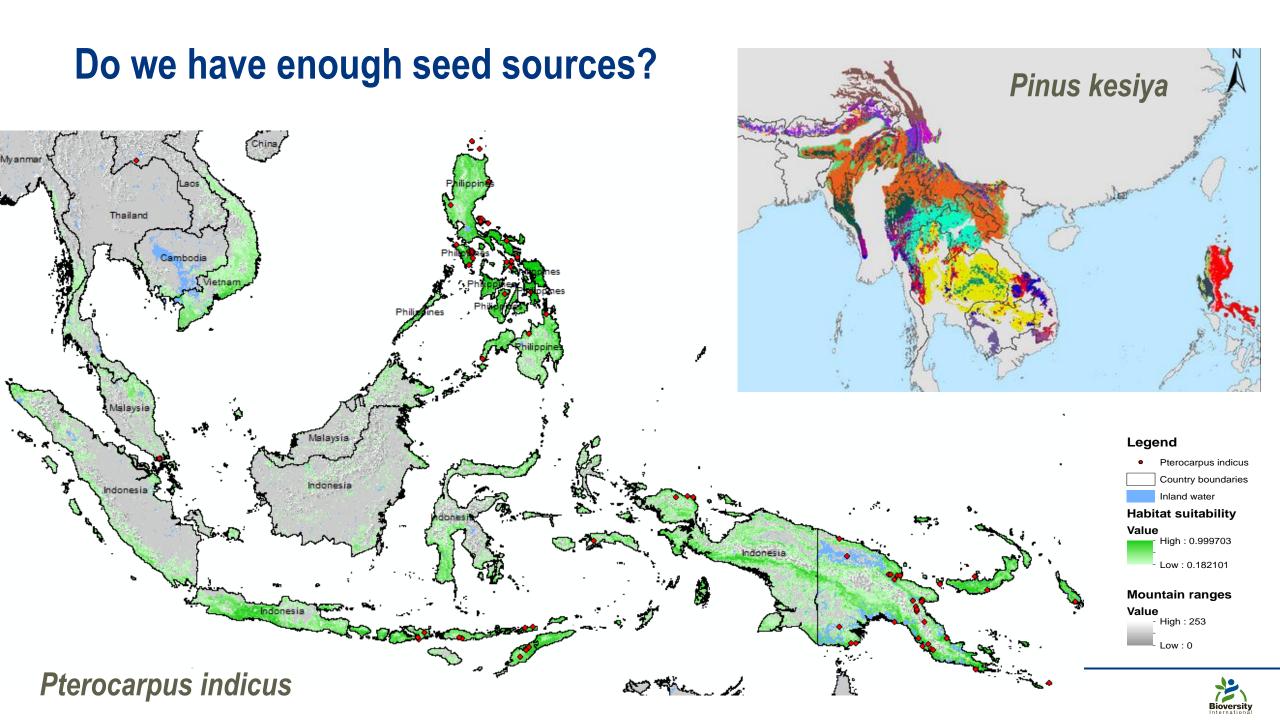
## Q: In all the projects that you have worked on, how often have problems with propagation material resulted in:



139 FLR projects worldwide

Jalonen et al. (2018)





#### http://www.diversityforrestoration.org/

### **Tools for practitioners**

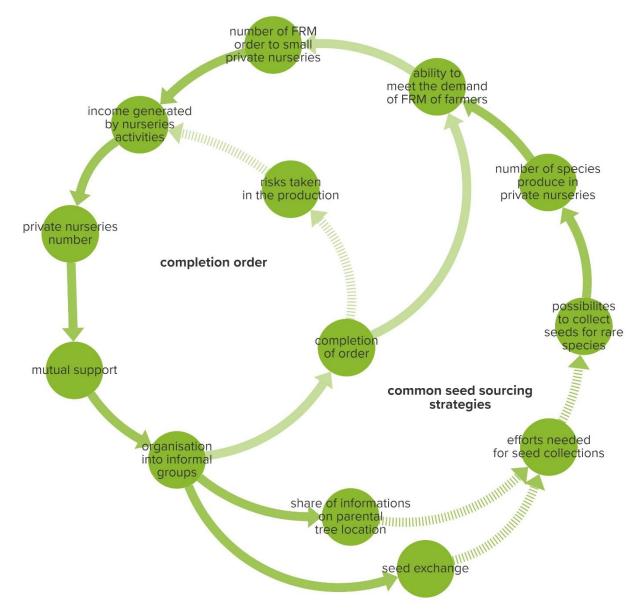






### How to link farmers to seed markets?









ASIA PACIFIO FOREST GENETIO RESOURCES PROGRAMME







The best time to plant a seed tree is twenty years ago. The second best time is now.



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