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Why Native Forest Restoration Matters

By Dr. Victoria Meyer and Lyndon Lee

Terraformation

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Natural climate solutions (NCS) offer one of our most valuable tools for tackling climate change. Researchers estimate that NCS alone could contribute close to 40% of the CO2 mitigation we need to achieve by 2030 in order to limit warming. Reforestation is a key part of this solution; it could represent up to one-third of all climate mitigation from NCS (Exhibit 1, cost-effective scenario).[1]

Scientific and economic research show that forests are the most proven, cost-efficient, and scalable way to sequester carbon — and that it's possible to plant forests without diminishing lands used for human habitat and agriculture. 1T.org[2] and other private sector–led organizations have responded to the challenge, garnering support for global forest restoration, raising funds, and planting trees in the process.

Despite this growing momentum, and increasing pledges from countries to allocate land for reforestation, we face a major problem. Almost half of the 292 million hectares committed for restoration under the Bonn Challenge and related initiatives rely on unsustainable monoculture plantations. These plantations harm rather than enhance the environment[3,4] and provide less diverse benefits for local people and economies.

To ensure forests sustainably and permanently capture carbon, planting initiatives need to shift toward native forest restoration. It is by far the best practice, not only in terms of carbon sequestration, but also biodiversity, ecosystem services, risk mitigation, and livelihood improvement. In order to spur this kind of restoration, we need to develop tools that allow carbon markets to recognize the value of biodiverse native forests.

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[1] Griscom, B. W., Adams, J., Ellis, P. W., Houghton, R. A., Lomax, G., Miteva, D. A., Schlesinger, W. H., Shock, D., Siikamäki, J. V., Smith, P., Woodbury, P., Zganjar, C., Blackman, A., Campari, J., Conant, R. T., Delgado, C., Elias, P., Gopalakrishna, T., Hamsik, M. R., … Fargione, J. (2017). Natural climate solutions. *Proceedings of the National Academy of Sciences, 114*(44), 11645–11650. https://doi.org/doi:10.1073/pnas.1710465114

[2] Global tree planting movement founded by Jane Goodall and Marc Benioff.

[3] Lewis, S. L., Wheeler, C. E., Mitchard, E. T. A., & Koch, A. (2019). Restoring natural forests is the best way to remove atmospheric carbon. *Nature, 568*(7750), 25–28. https://doi.org/10.1038/d41586-019-01026-8

[4] Jordan, R. (2020). *Poorly designed tree-planting campaigns could do more harm than good.* Stanford Woods Institute for the Environment. https://woods.stanford.edu/news/poorly-designed-tree-planting-campaigns-dould-do-more-harm-good

The benefits of native forests over tree plantations

Native forests are far superior to plantation forests when it comes to carbon sequestration, biodiversity, resilience, and ecosystem services. The Food and Agriculture Organization of the United Nations (FAO) defines plantation forests as "forests [that] are intensively managed, composed of one or two species, even-aged, planted with regular spacing, and established mainly for productive purposes."[5] These planted tree stands typically rely on a small number of non-native species.

In contrast, native forests are characterized by a species composition that occurs naturally in their region. Native forests typically grow through natural regeneration, when suitable surrounding conditions are available. Native forests can also grow from assisted regeneration and restoration efforts that ensure only native species are being planted. Native forests are naturally well-adapted to the environmental conditions of the restoration site, which allows them to become self-sustaining over time. They also foster biodiversity, both through the variety of planted trees and by creating conditions that allow more species of flora and fauna to grow.

It is critical to distinguish between plantations and native forests when evaluating solutions for carbon sequestration as well as biodiversity, ecosystem services, and local livelihoods.

First, native forests support more biodiversity. According to the Millennium Ecosystem Assessment, more than half of the world's terrestrial plant and animal species live in forests.[6] Plantation forests have 65% less diversity in terms of native plant species compared with primary forests.[7,8]

Higher diversity of tree species is important because it increases the number of ecological niches[9] and therefore the number of associated species such as understory plants and animals.[10] Native species that have co-evolved have more "complementarity,"

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[5] Food and Agriculture Organization of the United Nations. (2020). *Global forest resources assessment 2020: Main report*. FAO.

[6] Brockerhoff, E. G., Jactel, H., Parrotta, J. A., Quine, C. P., & Sayer, J. (2008). Plantation forests and biodiversity: Oxymoron or opportunity? *Biodiversity and Conservation, 17*(5), 925–951. https://doi.org/10.1007/s10531-008-9380-x

[7] Primary forest is a forest that has never been logged and has developed following natural disturbances and under natural processes, regardless of its age.

[8] Bremer, L. L., & Farley, K. A. (2010). Does plantation forestry restore biodiversity or create green deserts? A synthesis of the effects of land-use transitions on plant species richness. *Biodiversity and Conservation, 19*(14), 3893–3915. https://doi.org/10.1007/s10531-010-9936-4

[9] A species' ecological niche can be defined as the range of resources and conditions allowing the species to maintain a viable population. Polechová, J., & Storch, D. (2019). Ecological niche☆. In B. Fath (Ed.), *Encyclopedia of ecology* (2nd ed., pp. 72–80). Elsevier.

[10] Larjavaara, M. (2008). A review on benefits and disadvantages of tree diversity. *The Open Forest Science Journal, 1*(1), 24–26. https://doi.org/10.2174/1874398600801010024

meaning that the species use resources in ways that are complementary, reducing competition.[11]

By contrast, exotic plants can impact native communities over time by reducing native seed production, competing with native plant species for resources and habitat, and changing soil microbial communities, among other factors.[12]

Non-native forests, including tree plantations, can lead to biodiversity loss when they replace natural forests. This has been well-documented in Chile, where forest subsidies by the government between 1986 and 2011 expanded exotic-species plantations and reduced native forest cover. This not only decreased biodiversity but also failed to increase the total carbon stored in aboveground biomass.[13]

Second, species-rich forests are more resilient to pests, diseases, extreme weather conditions such as drought, and other environmental fluctuations.[14,15] Dozens of publications, reviewed in a meta-analysis in 2007, have shown that biodiverse forests and mixed stands are significantly less affected by pest insects than monocultures, regardless of the biome.[16] They are also more resistant to fungal pathogens and are less prone to fire and windstorms.[17]

This is especially pertinent against the backdrop of climate change. A biodiverse ecosystem is more likely to bounce back from a disturbance than a monoculture, where all trees will be affected the same way. Monocultures are less resilient due to their lower genetic diversity — both in terms of inter-specific diversity (fewer species) and intra-specific diversity (less genetic variation among trees of the same species). Uniform stand age also makes these forests more vulnerable to this lack of resilience.

Third, native and biodiverse forests maximize carbon sequestration. Differences in carbon sequestration potential between natural forests and monoculture plantations depend on plantation species, practices, and forest type. Although in the short term (10–20 years), monoculture plantations may accumulate carbon faster, native forests sequester more carbon in the long term. That is because:

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[11] Cardinale, B. J., Wright, J. P., Cadotte, M. W., Carroll, I. T., Hector, A., Srivastava, D. S., Loreau, M., & Weis, J. J. (2007). Impacts of plant diversity on biomass production increase through time because of species complementarity. *Proceedings of the National Academy of Sciences, 104*(46), 18123–18128. https://doi.org/doi:10.1073/pnas.0709069104

[12] Cook-Patton, S. C., & Agrawal, A. A. (2014). Exotic plants contribute positively to biodiversity functions but reduce native seed production and arthropod richness. *Ecology, 95*(6), 1642–1650. https://doi.org/10.1890/13-0782.1

[13] Heilmayr, R., Echeverría, C., & Lambin, E. F. (2020). Impacts of Chilean forest subsidies on forest cover, carbon and biodiversity. *Nature Sustainability, 3*, 701–709. https://doi.org/10.1038/s41893-020-0547-0

[14] Jactel, H., Bauhus, J., Boberg, J., Bonal, D., Castagneyrol, B., Gardiner, B., Gonzalez-Olabarria, J. R., Koricheva, J., Meurisse, N., & Brockerhoff, E. G. (2017). Tree diversity drives forest stand resistance to natural disturbances. *Current Forestry Reports, 3,* 223–243.

[15] Osuri, A. M., Gopal, A., Shankar Raman, T. R., DeFries, R., Cook-Patton, S. C., & Naeem, S. (2020). Greater stability of carbon capture in species-rich natural forests compared to species-poor plantations. *Environmental Research Letters, 15*(3), 034011. https://doi.org/10.1088/1748-9326/ab5f75

[16] Jactel, H. & Brockerhoff, E. G. (2007). Tree diversity reduces herbivory by forest insects. *Ecology Letters, 10*(9), 835–848.

[17] Jactel, H., Bauhus, J., Boberg, J., Bonal, D., Castagneyrol, B., Gardiner, B., Gonzalez-Olabarria, J. R., Koricheva, J., Meurisse, N., & Brockerhoff, E. G. (2017). Tree diversity drives forest stand resistance to natural disturbances. *Current Forestry Reports, 3,* 223–243.

- Monoculture plantations typically have a high stem density and rely on heavy fertilizers to speed growth for timber purposes, which explains their high accumulation rate as young forests. But these practices are not sustainable in the long term.

- Plantation trees are meant to be cut down and harvested every 10 to 20 years, which leads to very low overall carbon accumulation over time. Lewis et al. (2019) showed that planting and harvesting monoculture plantations would lead to 40 times less carbon sequestered by 2100, compared to restoration through native forests. This number includes accounting for emissions due to fertilizers.

- Even if monoculture plantation trees were to keep growing, the tree density would eventually decrease (competition for space, light, and nutrients), and the carbon accumulation rate would eventually slow down.

- Because monocultures are less resilient, they are more prone to mortality from natural disturbances such as droughts and floods than biodiverse native forests, and therefore sequester less carbon over the long term. Not only is the sequestered carbon more secure in natural forests as compared with plantations, but the rate of carbon capture is also more consistent. This is particularly true in drought conditions, during which the rate of carbon capture in plantation forests can drop to nearly 30% lower than in native forests.[18]

Studies show that mixed plantations and native forests range from capturing marginally lower carbon than monoculture plantations,[19] to more than twice the amount of carbon (Feng et al., 2022 — 25% higher;[20] Warner et al., 2022 — 77% more carbon;[21] Huang et al., 2018 — twice the amount of carbon;[22] etc.). The vast majority of these studies rely on data from plantations that are younger than 20 years, since limited data exists for older plantations, due to their very nature of being planted for the purpose of harvesting. There is a general positive correlation between biodiversity and forest productivity (the potential of a particular forest stand to produce above-ground wood volume):[23] Across all types of forests globally, a 10% loss in biodiversity leads to an

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[18] Osuri, A. M., Gopal, A., Shankar Raman, T. R., DeFries, R., Cook-Patton, S. C., & Naeem, S. (2020). Greater stability of carbon capture in species-rich natural forests compared to species-poor plantations. *Environmental Research Letters, 15*(3), 034011. https://doi.org/10.1088/1748-9326/ab5f75

[19] Bonner, M. T. L., Schmidt, S., & Shoo, L. P. (2013). A meta-analytical global comparison of aboveground biomass accumulation between tropical secondary forests and monoculture plantations. *Forest Ecology and Management, 291*, 73–86. https://doi.org/10.1016/j.foreco.2012.11.024

[20] Feng, Y., Schmid, B., Loreau, M., Forrester, D. I., Fei, S., Zhu, J., Tang, Z., Zhu, J., Hong, P., Ji, C., Shi, Y., Su, H., Xiong, X., Xiao, J., Wang, S., & Fang, J. (2022). Multispecies forest plantations out yield monocultures across a broad range of conditions. *Science, 376*(6595), 865–868. doi: 10.1126/science.abm6363

[21] Warner, E., Cook-Patton, S. C., Lewis, O. T., Brown, N., Koricheva, J., Eisenhauer, N., ... Hector, A. (2022). Higher aboveground carbon stocks in mixed-species planted forests than monocultures – A meta-analysis. *bioRxiv,* 2022-01. https://doi.org/10.1101/2022.01.17.476441

[22] Huang, Y., Chen, Y., Castro-Izaguirre, N., Baruffol, M., Brezzi, M., Lang, A., Li, Y., Härdtle, W., von Oheimb, G., Yang, X., Liu, X., Pei, K., Both, S., Yang, B., Eichenberg, D., Assmann, T., Bauhus, J., Behrens, T., Buscot, F., ... Schmid, B. (2018). Impacts of species richness on productivity in a large-scale subtropical forest experiment. *Science, 362*(6410), 80–83.

[23] Forest productivity is the potential of a particular forest stand to produce aboveground wood volume. Source: Skovsgaard, J. P., & Vanclay, J. K. (2007). Forest site productivity: A review of the evolution of dendrometric concepts for even-aged stands. *Forestry: An International Journal of Forest Research, 81*(1), 13–31. https://doi.org/10.1093/forestry/cpm041

average 3% decrease in forest productivity, according to a study published in 2016.[24]

Fourth, native forests provide more robust ecosystem services than mono-species plantations. Forest ecosystem services refer to the many benefits to human well-being and the environment provided by healthy forests — including fresh water, medicines, pollination, and wildlife habitat. According to the latest empirical research published in *Science*,[25] assessing 25,950 records from 264 studies in 53 countries, diverse native forests consistently performed better in key ecological services compared to monoculture trees in plantations. Native forests fared better in preventing soil erosion and water provisioning, although less favorably for timber production compared to monoculture forests. The table below summarizes the key findings from this latest research and previous empirical research.

Table: Native Forests vs. Plantation Forests on Ecosystem Services[26]

Category	Ecosystem Services	Higher Performance: Native vs. Plantation
Provisioning Services: production of market commodities	Timber production	Plantation
	Food production	Native
	Medicines	Native
	Freshwater	Native
Regulating Services: contributions to functioning of local ecosystem	Carbon sequestration	Native[27]
	Natural hazard regulation	Native
	Soil erosion protection	Native
	Fresh air regulation	Native
	Groundwater recharge	Native
	Disease regulation	Native
Habitat Services: benefits to understory animals and plants	Pollination	Native
	Habitat for species	Native
	Maintenance of genetic diversity	Native

[24] Liang, J., Crowther, T. W., Picard, N., Wiser, S., Zhou, M., Alberti, G., Schulze, E.-D., … Reich, P. B. (2016). Positive biodiversity-productivity relationship predominant in global forests. *Science, 354*(6309), aaf8957. https://doi.org/doi:10.1126/science.aaf8957

[25] Hua, F., Bruijnzeel, L. A., Meli, P., Martin, P. A., Zhang, J., Nakagawa, S., … Balmford, A. (2022). The biodiversity and ecosystem service contributions and trade-offs of forest restoration approaches. *Science, 376*(6595), 839–844.

[26] Adapted from: Baral, H., Guariguata, M. R., & Keenan, R. J. (2016). A proposed framework for assessing ecosystem goods and services from planted forests. *Ecosystem Services, 22*, 260–268. https://doi.org/10.1016/j.ecoser.2016.10.002

[27] Note that the carbon sequestration is indicated to be higher for plantations in Baral et al.'s "A Proposed Framework for Assessing Ecosystem Goods and Services from Planted Forests." However, as the latest research from F. Hua et al., "The Biodiversity and Ecosystem Service Contributions and Trade-Offs of Forest Restoration Approaches," and our previous section on carbon sequestration have shown, native forests sequester more carbon in the long term, though monocultures may outperform in the short term (10–20 years).

Fifth, native forests can provide a range of social and economic benefits to local communities that far outweigh the ones provided by monoculture plantations. Many communities rely on native forests for non-timber forest products (NTFP), including food, oils, herbs, medicines, honey, and materials for goods and construction. The FAO has estimated that NTFP removals represented almost 8 billion USD in 2015.[28] This variety of products provided by native forests can make communities more resilient to market fluctuations.[29] Other sources of income for local people include ecotourism, collection and storage of native seeds, sustainable timber, and sustainable energy.

Native forest restoration helps keep local and Indigenous traditions alive, allowing communities to thrive. Healthy ecosystems can support cultural systems and traditional practices, while also providing resource sovereignty and protecting human relationships to the land. This is also known as biocultural restoration. Moreover, native species often do not require flat terrain or highly fertile soil in order to thrive. This makes native forest restoration more economical, since it can occur on lands which are in less demand for other uses.[30]

Challenges and solutions for planting native forests

Despite the myriad benefits of native forests over plantations, **nearly 50% of planted forests today are plantation forests.**[31] As mentioned above, nearly half of national forest restoration pledges rely on commercial tree plantations, which include planned harvests for products like pulpwood, charcoal, and sawlogs. As a result, these pledges fail to deliver long-standing forests.[32]

Land restoration with non-native species is concentrated predominantly in large emerging nations like Brazil, China, Indonesia, Nigeria, and the Democratic Republic of the Congo. Ninety-eight percent of forests planted in South America are non-native.[33]

There is a perception that native forests are not economically competitive with monoculture plantations, at least in the short term. This is largely because monoculture plantations use fast-growing non-native tree species, which are widely used in the

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[28] Food and Agriculture Organization. (2020). *Global forest resources assessment 2020: Main report.* FAO.

[29] Di Sacco, A., Hardwick, K. A., Blakesley, D., Brancalion, P. H., Breman, E., Cecilio Rebola, L., Chomba, S., Dixon, K., Elliott, S., Ruyonga, G., & Shaw, K. (2021). Ten golden rules for reforestation to optimize carbon sequestration, biodiversity recovery and livelihood benefits. *Global Change Biology, 27*(7), 1328–1348.

[30] Viani, R. A., Holl, K. D., Padovezi, A., Strassburg, B. B., Farah, F. T., Garcia, L. C., ... Brancalion, P. H. (2017). Protocol for monitoring tropical forest restoration: perspectives from the Atlantic Forest Restoration Pact in Brazil. *Tropical Conservation Science, 10*, 1940082917697265. doi:10.1177/1940082917697265

[31] Food and Agriculture Organization. (2020). *Global forest resources assessment 2020: Main report.* FAO.

[32] Lewis, S. L., Wheeler, C. E., Mitchard, E. T. A., & Koch, A. (2019). Restoring natural forests is the best way to remove atmospheric carbon. *Nature, 568*(7750), 25–28. https://doi.org/10.1038/d41586-019-01026-8

[33] de Jong, W., Liu, J., & Long, H. (2021). The forest restoration frontier. *Ambio, 50*(12), 2224–2237. https://doi.org/10.1007/s13280-021-01614-x

standardized industrial wood production process.[34] By comparison, native restoration projects tend to be more expensive to plan and execute than plantations. However, due to the benefits outlined above, native forests outcompete monoculture projects by many important measures in the short term and, in the long term, provide robust economic benefits and stability through their biodiversity and resilience.

Even within timber operations, species diversity makes a difference. With a mix of different species in a forest, taller species offer shade to shorter species. Moreover, nurse plants can help adjacent trees and/or species of trees grow faster by improving microclimate conditions such as increased water and nutrient availability.[35] Larger species can also intercept pests and provide shelter.[36] Mixed plantations generally include more than two or three species and can grow in more optimal conditions, improving the wood quality and strength of the trees harvested for timber.[37,38,39]

Seed infrastructure

Part of the higher costs of native forest restoration compared with plantation plantings can be attributed to the additional infrastructure and higher human capital needed to support native forest restoration, particularly access to native seeds and forestry talent who understand local ecology.[40]

In native forest restoration, it is critical to determine which native species were previously growing in the degraded area. Obtaining the seeds of the native species is a difficult undertaking because many seeds of native species cannot be found in the degraded forests and lands. Even if the seeds are present, it still requires time, expertise, and tools for processing, cleaning, counting, and storing the seeds. Often, projects need to begin planning and sourcing seed supply at least one year in advance. In many cases today, forest planters have to resort to seed banks, many of which are underfunded and only have a limited type and number of seeds *ex situ*.

To meet this challenge, the world needs a decentralized network of seed banks capable of operating in the most remote reaches of the globe. To help achieve

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[34] Brundu, G., Pauchard, A., Pyšek, P., Pergl, J., Bindewald, A. M., Brunori, A., Canavan, S., Campagnaro, T., Celesti-Grapow, L., de Sá Dechoum, M., Dufour-Dror, J.-M., Essl, F., Flory, S. L., Genovesi, P., Guarino, F., Liu, G., Hulme, P. E., Jäger, H., Kettle, C. J., … Richardson, D. M. (2020). Global guidelines for the sustainable use of non-native trees to prevent tree invasions and mitigate their negative impacts. *NeoBiota, 61*, 65–116. https://doi.org/10.3897/neobiota.61.58380

[35] Padilla, F. M., & Pugnaire, F. I. (2006). The role of nurse plants in the restoration of degraded environments. *Frontiers in Ecology and the Environment, 4*(4), 196–202. https://doi.org/10.1890/1540-9295(2006)004[0196:TRONPI]2.0.CO;2

[36] Petit, B., & Montagnini, F. (2006). Growth in pure and mixed plantations of tree species used in reforesting rural areas of the humid region of Costa Rica, Central America. *Forest Ecology and Management, 233*(2), 338–343. https://doi.org/10.1016/j.foreco.2006.05.030

[37] West, P. W. (2006). *Growing plantation forests.* Springer.

[38] Russo, D., Marziliano, P. A., Macrì, G., Zimbalatti, G., Tognetti, R., & Lombardi, F. (2019). Tree growth and wood quality in pure vs. mixed-species stands of European beech and Calabrian pine in Mediterranean mountain forests. *Forests, 11*(1), 6. doi: 10.3390/f11010006

[39] Saranpää, P. (2003). Wood density and growth. In J.R. Barnett & G. Jeronimidis (Eds.), *Wood quality and its biological basis* (pp. 87–113), Blackwell Biological Sciences Series. CRC Press.

[40] Fargione, J., Haase, D. L., Burney, O. T., Kildisheva, O. A., Edge, G., Cook-Patton, S. C., … Guldin, R. W. (2021). Challenges to the reforestation pipeline in the United States. *Frontiers in Forests and Global Change, 4*, 629198. https://doi.org/10.3389/ffgc.2021.629198

this, Terraformation has published a global seed bank index[41] and has developed technology for storing seeds, along with software that enables accurate tracking of seed collection and storage in the field.

Carbon markets need to recognize biodiversity

Today, few mechanisms exist to compensate project teams and investors for the biodiversity and ecosystem services their work enables. Carbon markets are not well structured to fully account for these benefits, nor do they penalize for the extra water or fertilizer needed to raise non-native, exotic trees. According to the OPIS (Oil Price Information Service) Global Carbon Offsets Report in June 2022,[42] projects labeled under Verra's Climate, Community & Biodiversity Standards traded for only a $2.50 premium. This is a one-time premium that does not fully account for the enhanced biodiversity and ecosystem services provided by native forests. Based on Terraformation's experience, this is insufficient to cover the higher operating and capital expenditures involved in native forest restoration projects.

A biodiversity scale

One solution is to design a scale that fully accounts for the growth in biodiversity impact and ecosystem services over a reforestation lifecycle. After 30 years, a mature native forest boasts significantly more plant and animal biodiversity than it did in year 1, when it was first planted, or even year 5. A related issue and its resolution can be found in consumer finance, in which credit scores are dynamically updated according to real-time consumer spending, allowing lenders to more accurately price credit risk. Similarly, a scale with more regular and comprehensive biodiversity accounting could enable recurring and larger biodiversity payments over a forest's lifetime.

To scale native forests, teams need resources

Native forest restoration maximizes carbon sequestration, supports biodiversity, and creates more resilient ecosystems. Each of these contributes to climate change mitigation. As a medium for economic change and community impact, native forests provide more robust ecosystem services and are more effective in supporting communities.

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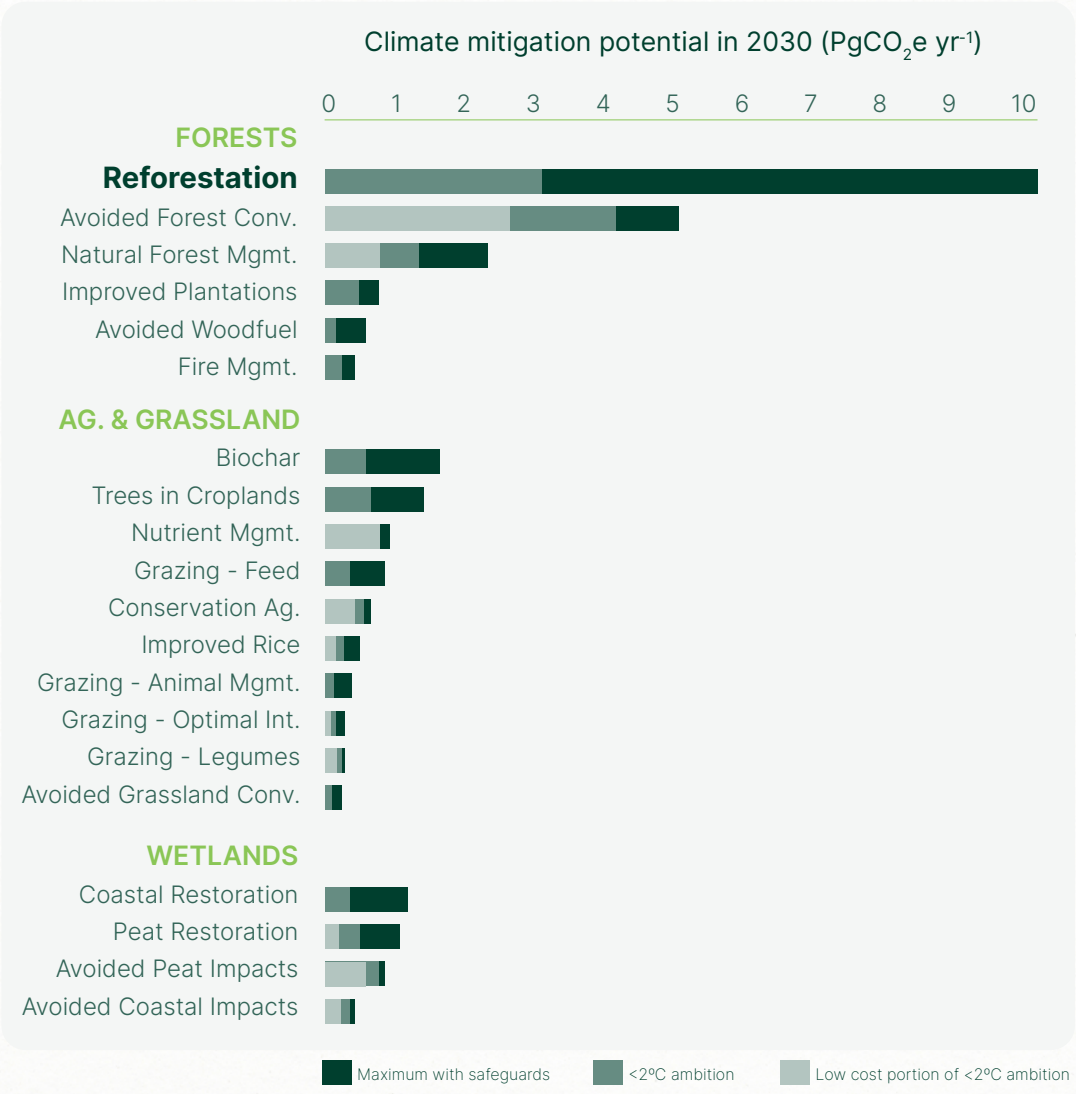
[41] Chau, M., Angelova, D., Di Sacco, A., Wagner, J., Castillo-Diaz, D., Meyer, V., & Goodale, U. (2022). The global seed bank index — *Thousands of seed banks are needed to address seed supply shortages in ecosystem restoration.* Terraformation.

[42] https://www.opisnet.com/product/pricing/spot/carbon-offsets-report/

Around the globe, forestry teams are already at work restoring biodiverse native ecosystems — but they often don't have the resources to get to scale. Many of these teams need technical support, forestry and business training, and tools to maximize transparency, manage risk, and rapidly adapt to conditions in the field. But first and foremost, they need funding.

Ninety-five percent of forestry teams surveyed by Terraformation in 2022 said they didn't have enough funding. To solve this gap and to enable global-scale ecosystem restoration, financial institutions, governments, corporate sustainability initiatives, and private investors can direct resources toward restoration efforts and carbon projects that prioritize biodiversity. With an infusion of investment and support, native reforestation efforts can grow forests that will survive — and draw down carbon — for generations.

Exhibit 1: Climate Mitigation Potential of 20 Nature-Based Solutions[43]



[43] Griscom, Bronson W., Justin Adams, Peter W. Ellis, Richard A. Houghton, Guy Lomax, Daniela A. Miteva, William H. Schlesinger, et al. (2017). Natural climate solutions. *Proceedings of the National Academy of Sciences, 114*(44), 11645–11650. https://doi.org/doi:10.1073/pnas.1710465114

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Lyndon Lee is a business analyst at Terraformation. He has co-authored papers with Imperial College Business School and the United Nations Development Programme. Lyndon received his Bachelor of Science, summa cum laude, from Duke University.

About Terraformation

Terraformation is dedicated to restoring the planet's forests to stabilize our climate, revive ecosystems, and build thriving communities.

Terraformation launched the Seed to Carbon Forest Accelerator in 2023 to meet the financing gap for forestry teams undertaking native, biodiverse ecosystem restoration. In addition to producing high-quality, verified carbon credits, these projects generate complementary sustainable revenue streams to support local economies.

The company's current partner network spans five continents and includes diverse landowners and organizations. It was founded in 2020 by Yishan Wong, former CEO of Reddit.

Learn more about how you can support forestry teams restoring native forests.

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