TREE PLANTATIONS (ON DEGRADED LAND)

SUPPORT SINKS › Land Sinks (/sectors/land-sinks) › *Use Degraded Land*

22.24–35.94
GIGATONS
CO2 EQUIVALENT
REDUCED / SEQUESTERED
(2020–2050)

$16.67–72.09
BILLION $US
NET FIRST COST
(TO IMPLEMENT SOLUTION)

$-259.5–-164.86
BILLION $US
LIFETIME NET
OPERATIONAL SAVINGS

$2.15–3.38
TRILLION $US
LIFETIME
NET PROFIT

Degraded lands present potential locations for tree plantations. Managed well, they can restore soil, sequester carbon, and produce wood resources in a more sustainable way.

IMPACT: *As of 2018, 294.1 million hectares of land were used for tree plantations on degraded land. Establishing tree plantations on an additional 112-174 million hectares of marginal lands can sequester 22.2-35.9 gigatons of carbon dioxide by 2050. The use of marginal lands for afforestation also indirectly avoids deforestation that otherwise would be done in the conventional system. At an initial cost of cost of $17-72 billion and lifetime operational cost of $164.8-259.5 billion to implement, this additional area of timber plantations could produce a lifetime net profit of $2.1-3.4 trillion.*

Technical Assessment References (PDF) (https://drawdown.org/sites/default/files/solution_references/Drawdown2020_TreePlantations_References.pdf)

VIEW TECHNICAL SUMMARY (/SOLUTIONS/TREE-PLANTATIONS-ON-DEGRADED-LAND/TECHNICAL-SUMMARY)

SOLUTION SUMMARY*

Creating new forests where there were none before is the aim of afforestation. Degraded pasture and agricultural lands, or other lands corrupted from uses such as mining, are ripe for strategic planting of trees and perennial biomass.

Afforestation can take a variety of forms—from seeding dense plots of diverse indigenous species to introducing a single exotic as a plantation crop, such as the fast-growing Monterey pine, the most widely planted tree in the world. Whatever the structure, afforestation creates a carbon sink, drawing in and holding on to carbon and distributing it into the soil.

Plantations comprise the majority of afforestation projects and are on the rise globally, planting trees for timber and fiber and, increasingly, carbon offsets. Plantations are controversial because they are often created with purely economic motives and little regard for the long-term well-being of the land, environment, or surrounding communities.

To counter the ecological deserts of monoculture tree farms, Japanese botanist Akira Miyawaki devised a completely different method of afforestation. His fast-growing, dense plots of native species show that afforestation can draw down carbon, while supporting biodiversity, addressing human needs for firewood, food, and medicine, and providing ecosystem services such as flood and drought protection.

* excerpted from the book, *Drawdown* (https://www.amazon.com/dp/0143130447/?tag=drawdown-20)

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