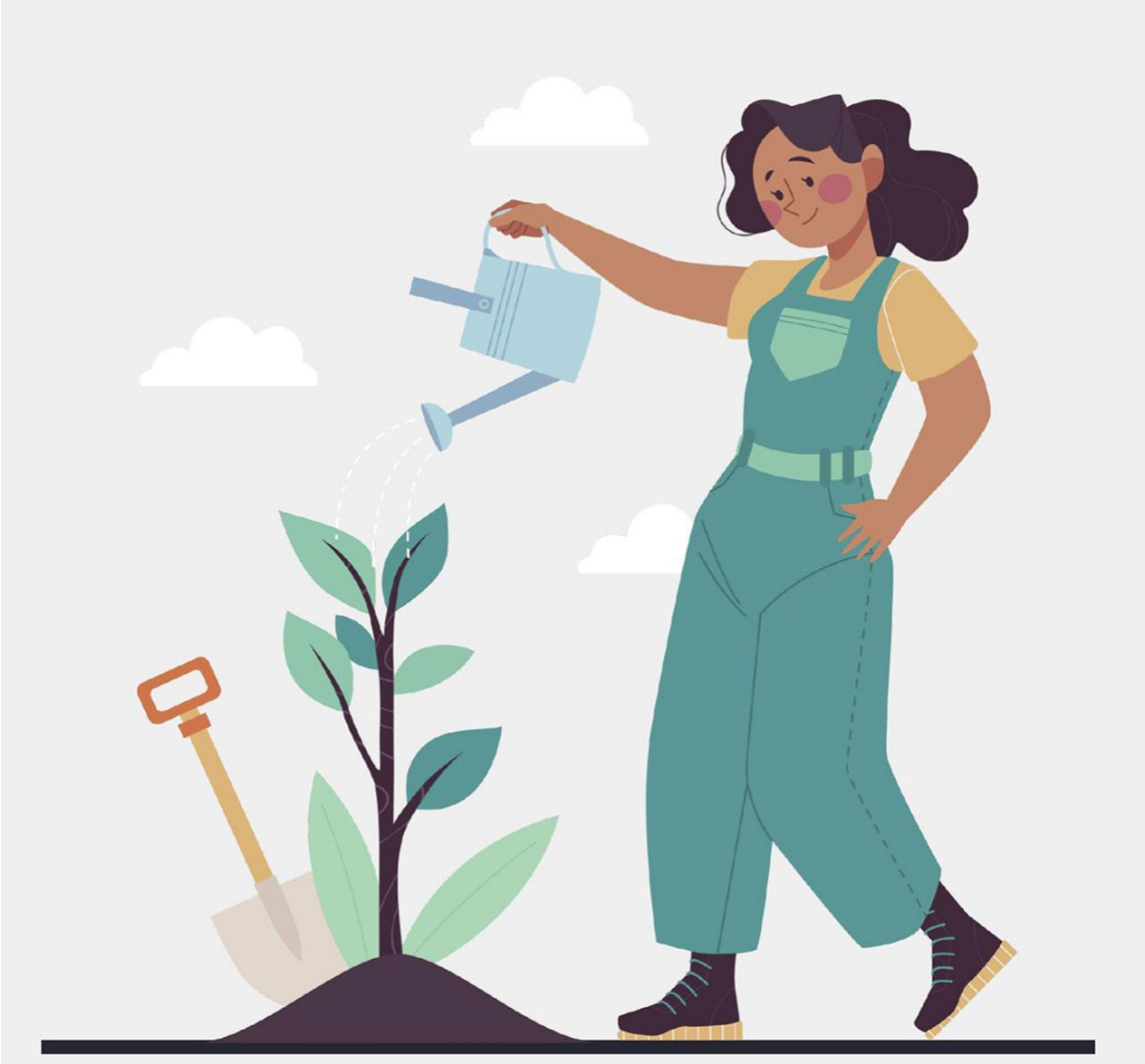
Count4Climate

Dokumenteret Klimahandling



Hvad er en ”ægte” klima-kompensation

Den centrale idé bag en klima-kompensation er, at den kan erstatte de drivhusgas-emissionsreduktioner, som en organisation ville have foretaget på egen hånd. For at dette er sandt, skal verden have det mindst lige så godt, når du bruger en klima-kompensation, som den ville have været, hvis du havde reduceret dit eget klima-aftryk. Når vi taler om "kvaliteten" af en klima-kompensation, henviser vi til den grad af tillid, man kan have til, at offsetmetoden opfylder dette grundlæggende princip.

Når man taler om "miljømæssig integritet" - lyder det ligetil, men virkeligheden kan være udfordrende at garantere i praksis. Kompensations kvalitet har to hovedkomponenter. Først og fremmest skal en kompensationen repræsentere noget yderligere, dvs. nye, permanente og ellers ikke tidligere indberettet CO2-fjernelser, som for eksempel fra træer. For det andet bør en kvalitetskompensations komme fra aktiviteter, der ikke bidrager til sociale eller miljømæssige skader.

En række udtryk bruges ofte til at definere kvalitetskriterier for kulstofkompensation, herunder at tilhørende drivhusgasreduktioner skal være "virkelige", "kvantificerbare" og "verificerbare". Disse termer har særskilte regulatoriske betydninger i henhold til amerikansk lovgivning, som ikke altid oversættes meningsfuldt til kulstofkompensation. Udtrykket "rigtig" har for eksempel ingen fælles aftalt definition på tværs af klimakompensationsprogrammer og -standarder, og bruges ofte som en vag opsamling.

Vi har derfor destilleret de væsentlige elementer ned til fem kriterier:
Kort sagt skal Klima-kompensation være forbundet med drivhusgasreduktioner eller -fjernelser, som er:
• Ekstra, (Dvs. via nye tiltag, som eks. at plante træer).
• Ikke overvurderet, (CO2 målingerne skal være konservative).
• Permanent, (Træerne skal sikres som en del af en langsigtet forvaltningsplan).
  Klima-kompensationen må ikke være gjort krav på af tredjepart.
• Plante aktiviteterne må ikke må ikke resultere i sociale eller miljømæssige skader.

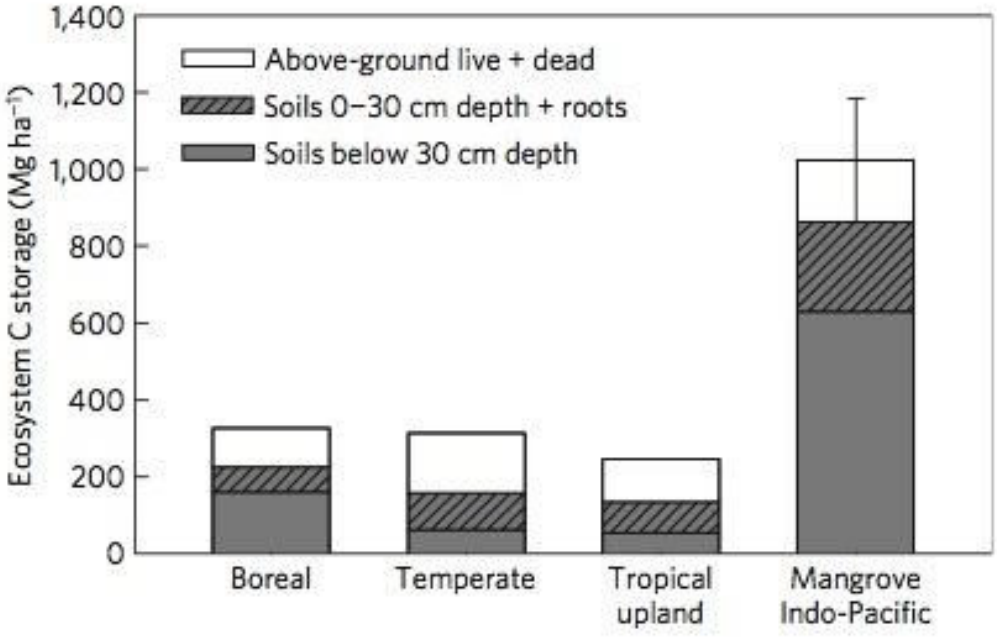
Mangrove CO2-Optag: En Transparent Tilgang (Eden Dokumentation)

Trees and Carbon

One of the key benefits of reforestation is that trees are extremely efficient at carbon sequestration and one of the most effective tools in the fight against dangerous Greenhouse Gases that contribute to climate change and global warming. Trees convert the carbon dioxide (CO 2) into plant matter, holding this material for the life of the tree and beyond.

Why mangroves?
Scientific studies have shown that Mangroves "sequester carbon at a rate two to four times greater than mature tropical forests", and contain "the highest carbon density of all terrestrial ecosystems." (Fatoyinbo et al,2017). Mangroves are also key part of coastal ecosystems, and "renowned for an array of ecosystem services, including fisheries and fibre production, sediment regulation, and storm/tsunami protection". (Donato et al, 2011) The key to mangroves is the large amounts of biomass stored underground in the extensive root system. These roots support the large trees in muddy coastal areas where mangroves thrive. (Komiyama et al, 2008)
Calculating CO 2 offsets from Mangrove forests

Based on the studies cited below, Eden has established a benchmark of 840 metric tons (t) of Carbon (C) per hectare of mature mangrove forest. This is based on an average tree growth life of 25 years. From this number, we can calculate the amount of CO 2 removed from the atmosphere and turned into plant biomass per hectare of forest and estimate the amount of CO2 sequestered per tree based on the growth life and planting density.



- First, calculate the ratio of CO_2 to Carbon based on the atomic weights of each molecule.

$$3.67 = \frac{(12+16+16)\ (atomic\ weight\ of\ CO_2)}{12\ (atomic\ weight\ of\ C)}$$

- Multiply this ratio by the amount of C per hectare of mangrove forest to get the amount of CO_2 sequestered per hectare of mangrove forest.

$$3{,}082.8\ t\ of\ CO_2\ per\ hectare = 3.67 \times 840\ t\ of\ C$$

- To calculate the annual CO_2 offset, we divide the total amount of CO2 per hectare by the growth life of the trees, or 25 years.

$$123.312\ tons\ of\ CO_2\ per\ year\ per\ hectare = \frac{3{,}082.8\ tons\ total\ per\ hectare}{25\ years}$$

- Eden plants mangrove trees at a density of 10,000 per hectare. Using this number, we can estimate the average CO_2 offset per tree per year, and the total offset per tree over the growth life of the tree. The actual offset is lower in the early years and peaks between 10 and 20 years after planting.

$$12.3\ kg\ of\ CO_2\ per\ tree\ per\ year = \frac{123.312\ tons\ of\ CO_2\ per\ hectare\ per\ year}{10{,}000\ trees\ per\ hectare}$$

Summary

Mangroves are one of the most effective and economic methods of offsetting carbon emissions. Each mangrove tree planted by Eden Reforestation Projects removes over 308kg (680lbs) of CO_2 from the atmosphere over the growth life of the tree. This calculates to an average of 12.3kg per year per tree.

	Units	Carbon Sequestered (C)	Equivalent in Carbon Dioxide (CO_2)
Carbon per Area Planted	Metric Tons / Hectare	840	3082.8
	US Tons / Acre	374.7	1,375.2
Carbon per Tree Planted*	Kg / Year (average)	3.4	12.3
	Kg Lifetime (25 years)	84	308.3
	lbs / Year (average)	7.4	27.2
	lbs Lifetime (25 years)	185.2	679.7

References

Fatoyinbo T, Feliciano E., Lagomasiano D, Lee S K, Trettin C (2017) Estimating Mangrove Aboveground Biomass from Airborne Lidar Data: A Case Study from the Zambezi River Delta

Donato D, Kauffman J B, Murdiyarso D, Kurnianto S, Stidham M, Kanninen M (2011) Mangroves among the most carbon-rich forests in the tropics. Nature Geoscience NGEO1123

Komiyama A, Ong J E, Poungparn S (2008) Allometry, biomass, and productivity of mangroveforests: A review. Aquatic Botany 89.

Hvorfor 95 kg CO2 per mangrovetræ?
Vores Udgangspunkt
Videnskabelige studier viser, at mangrovetræer under optimale forhold kan optage op til 300 kg CO2 i deres vækstperiode som er ca. 25 år. Som ansvarlig klimaaktør vælger vi at arbejde med et verificerbart og realistisk tal på 95 kg CO2 per træ.

Sådan når vi frem til 95 kg CO2
1. Vi starter med det optimale potentiale
- Maksimalt CO2-optag under ideelle forhold: 300 kg
- Baseret på videnskabelige studier af fuldt udvoksede træer [2]

2. Vi justerer for naturlig dødelighed
- 25% af træerne når ikke fuld modenhed
- 300 kg × 0,75 = 225 kg CO2

3. Vi tager højde for realistiske vækstforhold
- Variation i vandkvalitet og saltindhold
- Forskellige klimatiske forhold
- 225 kg × 0,70 = 157,5 kg CO2

4. Vi indregner tidsperspektiv og verificerbarhed
- Fokus på målbar effekt inden for 10-15 år
- 157,5 kg × 0,60 = 95 kg CO2

Hvorfor denne tilgang?
Troværdighed
- Vi baserer vores tal på dokumenterbar videnskab
- Vi lover mindre og leverer mere
- Vi følger forsigtighedsprincippet

Gennemsigtighed
- Klare beregninger
- Forståelig metodik
- Åben dokumentation

Vores Planter partner er:

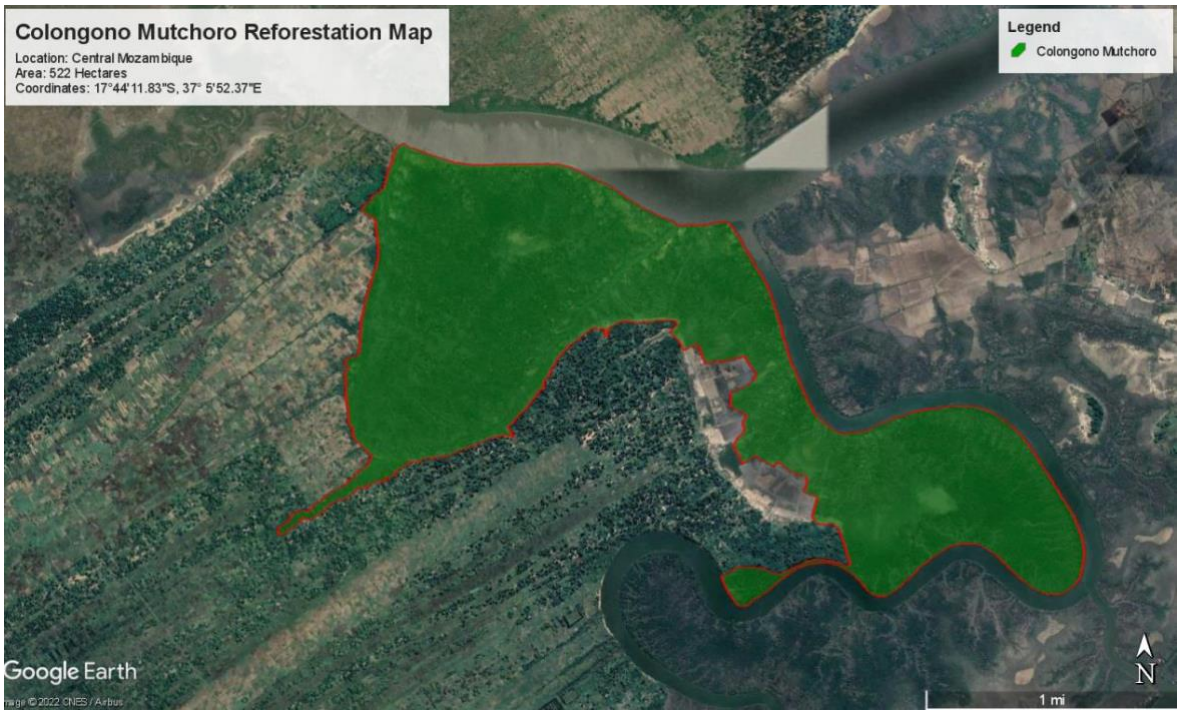
Eden: People + Planet
Formerly known as Eden Reforestation Projects

Platinum Transparency 2024 Candid.

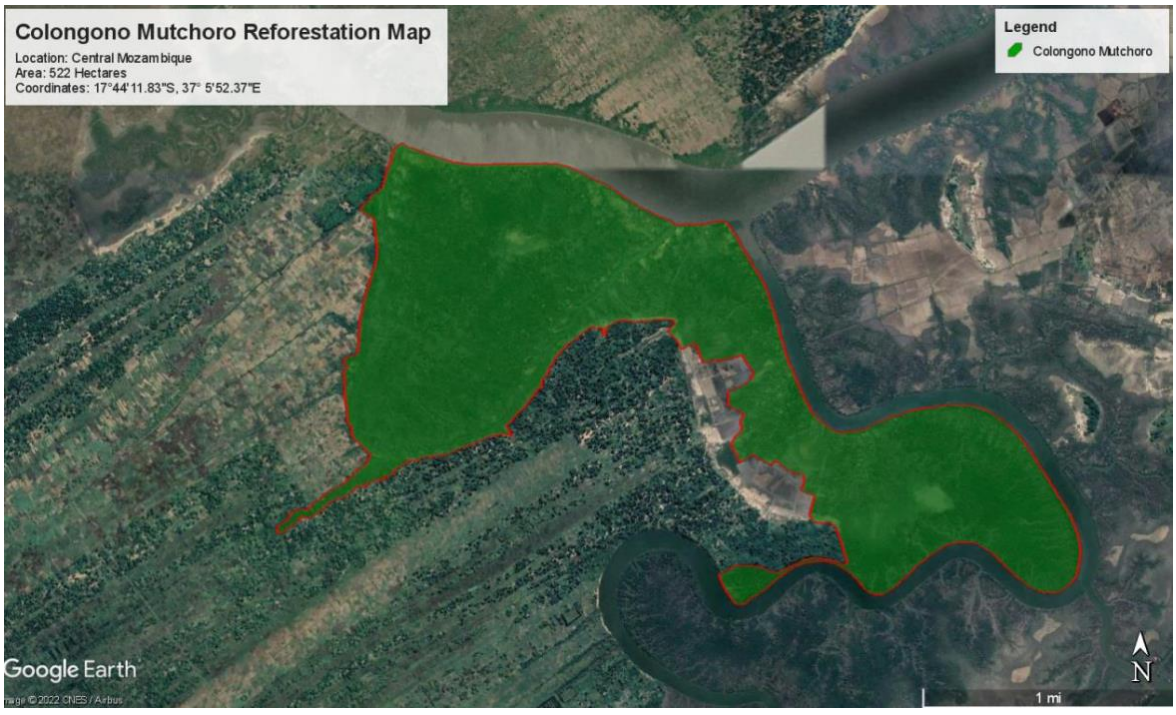
Address: 40960 California Oaks Rd Unit 845, Murrieta, CA 92562

“Eden has achieved the Platinum Seal of Transparency Rating on Candid (formerly Guidestar), the world's largest source. of information on non-profit organizations. This rating puts the Foundation in the top 0.1% of charities nationally in terms of transparency.”

Her planter vi træer i Central Mozambique: GPS-koordinater: 17°44'11.83"S, 37°5'52.37"E



Her planter vi på Madagaskar: GPS-koordinater: 15°34'46.88"S, 46°29'58.66"E



INDICATOR BANK

	CATEGORY	INDICATORS	MEANS OF VERIFICATION	APPLICABLE TO	
				4 RETURNS	SDGs
ENVIRONMENTAL	FOREST COVER	▪ Forest Canopy Density (% change) ▪ Proportion of primary forests and secondary forests ▪ Number of trees planted by species ▪ Survival rates of trees/ tree height	PLANTING DATA FOREST INVENTORY GIS ANALYSIS	NATURAL RETURN	13 CLIMATE ACTION 15 LIFE ON LAND
	BIODIVERSITY	▪ Abundance of key indicator species ▪ Percentage change in habitat connectivity			
	LAND DEGRADATION	▪ Percentage change in land cover ▪ Hectares under restoration ▪ Number of hectares restored (natural regeneration, active planting)			
	FOREST MANAGEMENT	▪ Percentage of degraded forest area ▪ Hectares under management ▪ Number of woodlots/hectares of woodlots			
SOCIAL	HOUSEHOLD ECONOMY	▪ Number of household assets (animals owned, equipment owned, land owned, mode of transportation) ▪ Income by household ▪ Number of unemployed persons in household ▪ Types of jobs created, time commitment (part, full time, number of months employed in a year) ▪ Number of jobs created (disaggregated by sex, age, disability, indigenous) ▪ Sources of income (should also include remittances)	HOUSEHOLD SURVEYS EMPLOYMENT DATA TRAINING RECORDS	SOCIAL RETURN FINANCIAL RETURN	1 NO POVERTY 4 QUALITY EDUCATION 8 DECENT WORK AND ECONOMIC GROWTH 10 REDUCED INEQUALITIES
	SKILLS AND TRAINING	▪ Ratio of population completed training (disaggregated by sex, age, disability) ▪ Number of people trained, types of training) ▪ Number of interested participants vs. trained participants; ▪ Number of trainings targeted for vulnerable groups (disaggregated by sex, age, disability, indigenous)			
GOVERNANCE	PRESERVATION OF CULTURAL ORGANIZATIONS AND TRADITIONAL KNOWLEDGE	▪ Number of cultural sites preserved ▪ Number of cultural representatives engaged (chiefs and/or spiritual leaders) ▪ Number of indigenous communities engaged	MEETING RECORDS	SOCIAL RETURN RETURN OF INSPIRATION	4 QUALITY EDUCATION 5 GENDER EQUALITY 16 PEACE, JUSTICE AND STRONG INSTITUTIONS
	GENDER EQUALITY IN SOCIAL ORGANIZATIONS	▪ Number of vulnerable group participants in community associations (includes women, youth, differently able and elderly – based on vulnerable groups identified in AOI) ▪ Number of women in leadership positions of community associations			
	COMMUNITY PARTICIPATION	▪ Number of associations developed ▪ Number of formalized community associations ▪ Number of management plans completed ▪ Number of partnerships with local organizations developed ▪ Number of public forums and awareness activities ▪ Number of landscape planning workshops ▪ Number of people engaged in landscape management workshops		