
Cambridge Centre for Carbon Credits: Bringing Scale and Trust to Carbon Credits

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Crises



Climate

Crises



Climate



Biodiversity loss

Nature-based solutions address both

Forest conservation

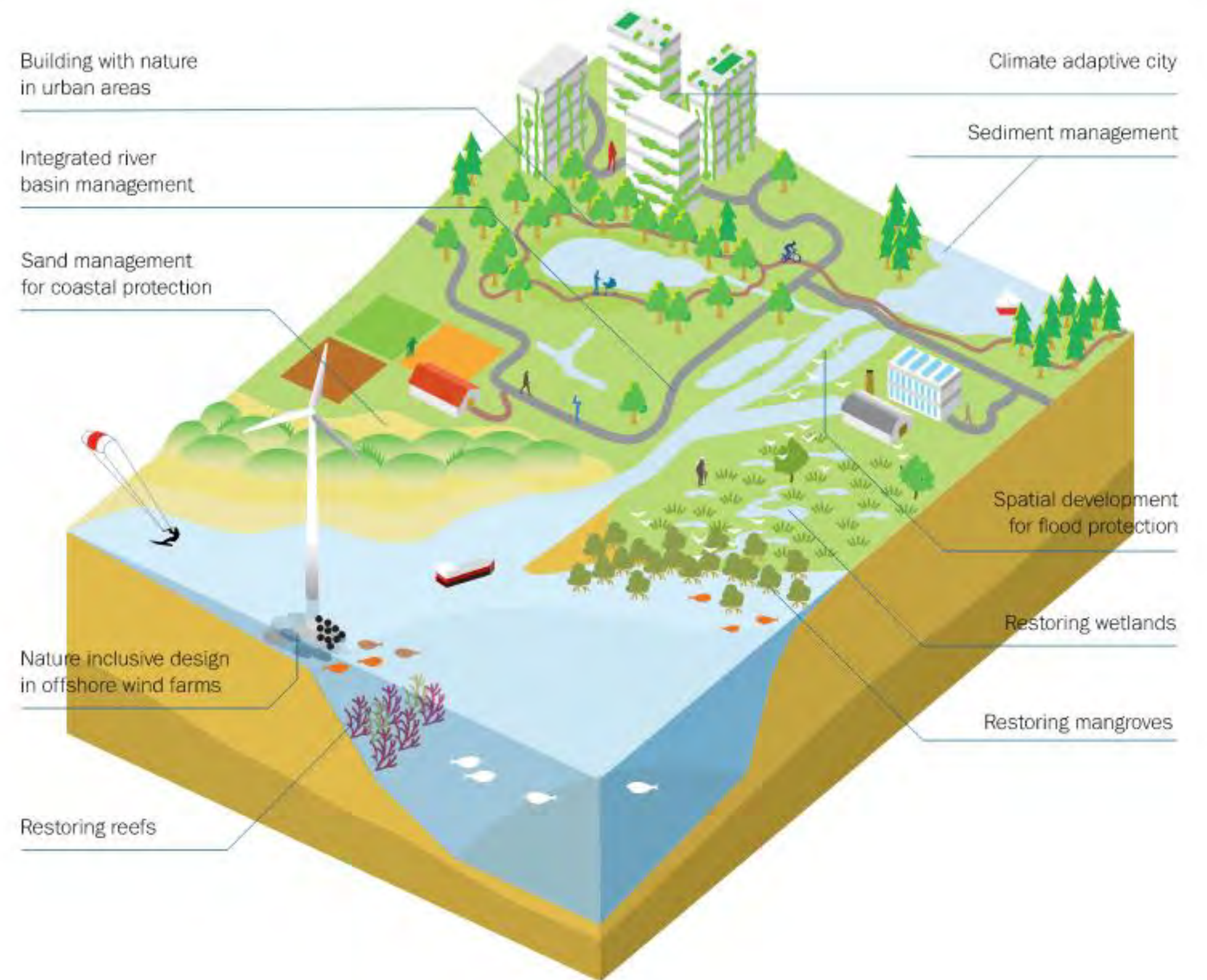
Re-forestation in woodlands and forests

Peatlands renewal

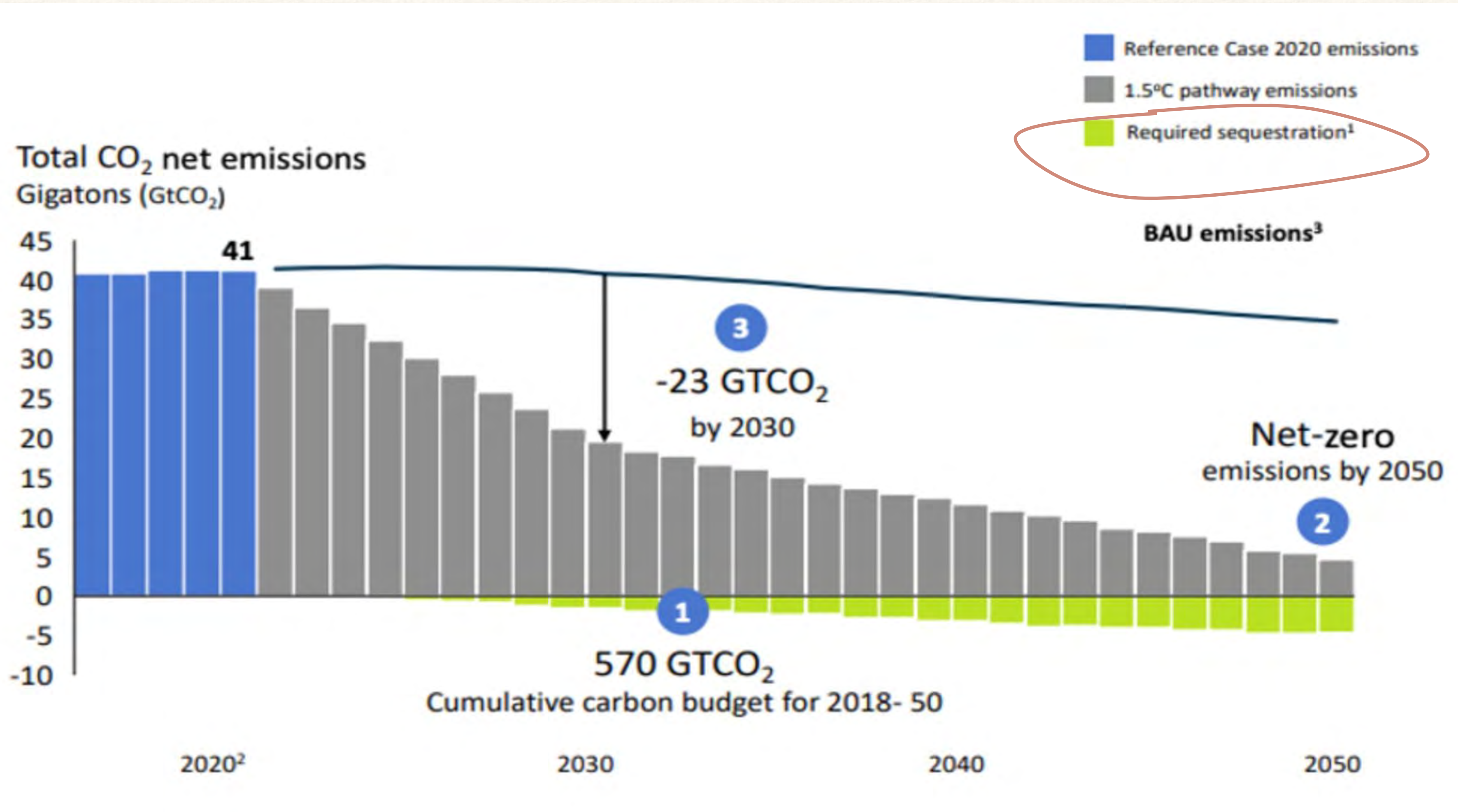
Seagrass and mangrove plantations

Re-wilding agricultural land

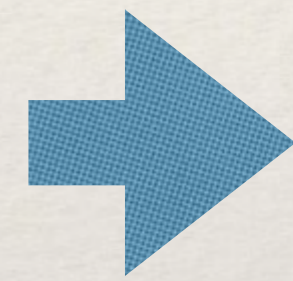
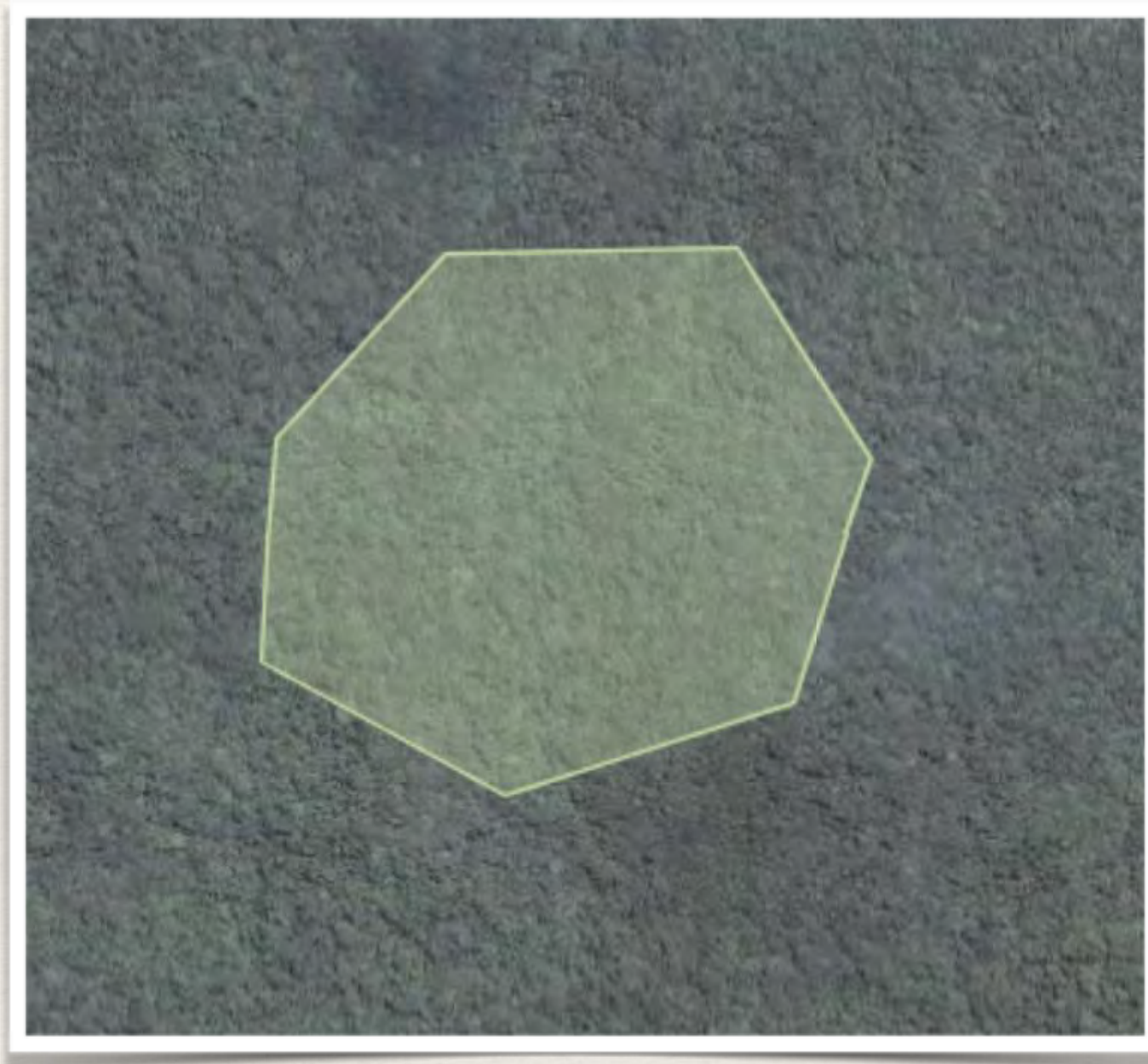
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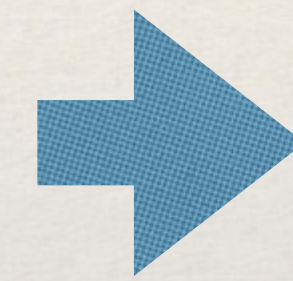
Path to net zero



Funding NbS via carbon credits today



Gold Standard®



Credits

Old schemes and scams are lurking under the shadow of the “nature-based solutions” umbrella

By Coraina de la Plaza, GFC, Spain

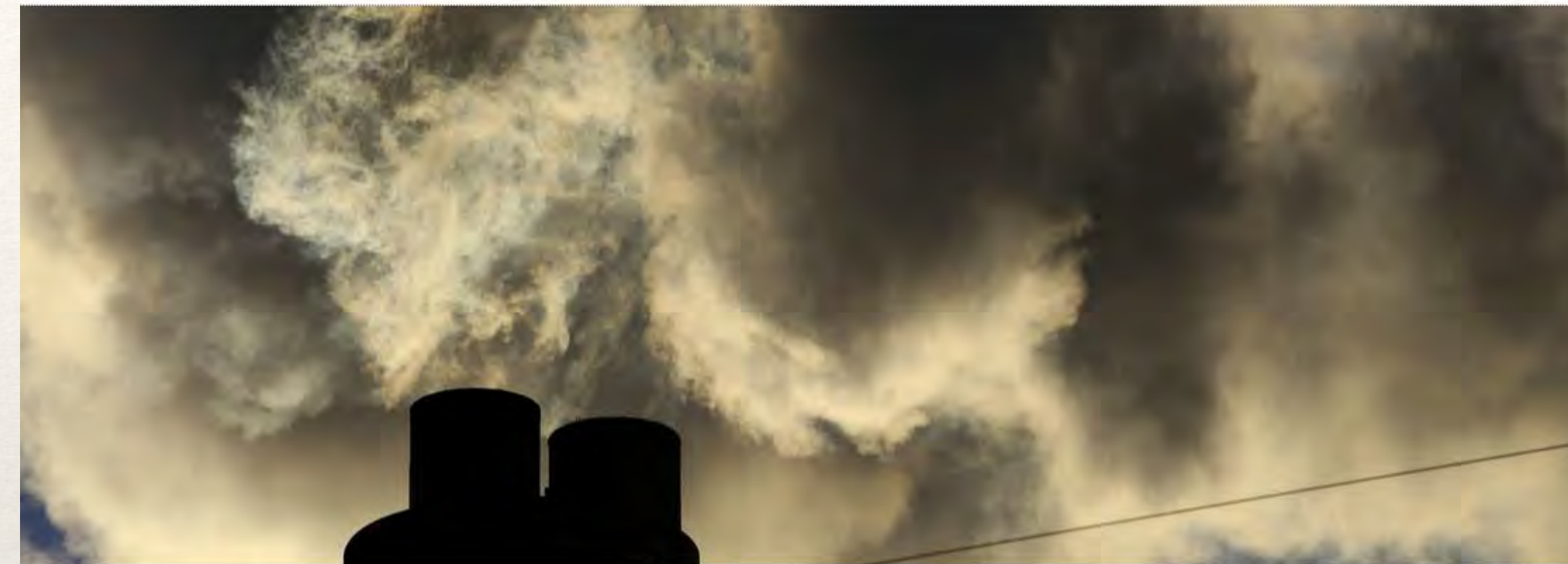
<https://globalforestcoalition.org/forest-cover-61/#fc6102>

Our Nature is Not Your Solution – and FAO’s Plantations are even less of a Solution!



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Photographer: Chris Ratcliffe/Bloomberg

QuickTake

Why ‘Carbon Offsets’ Don’t Do All That They Promise

By [Akshat Rathi](#) and [Ryan Williams](#)

15 August 2020, 05:00 BST

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SUSTAINABILITY

Greenhouse Gas Emission Offsets May Be Fraudulent

Offsets for the emissions that cause climate change from around the globe may have been faked

<https://globalforestcoalition.org/faos-plantations/>

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Hard to quantify

Hard to verify

Hard to scale

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SUSTAINABILITY

Greenhouse Gas Emission Offsets May Be Fraudulent

Offsets for the emissions that cause climate change from around the globe may have been faked

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Scaleable, trusted carbon credits can unlock funds

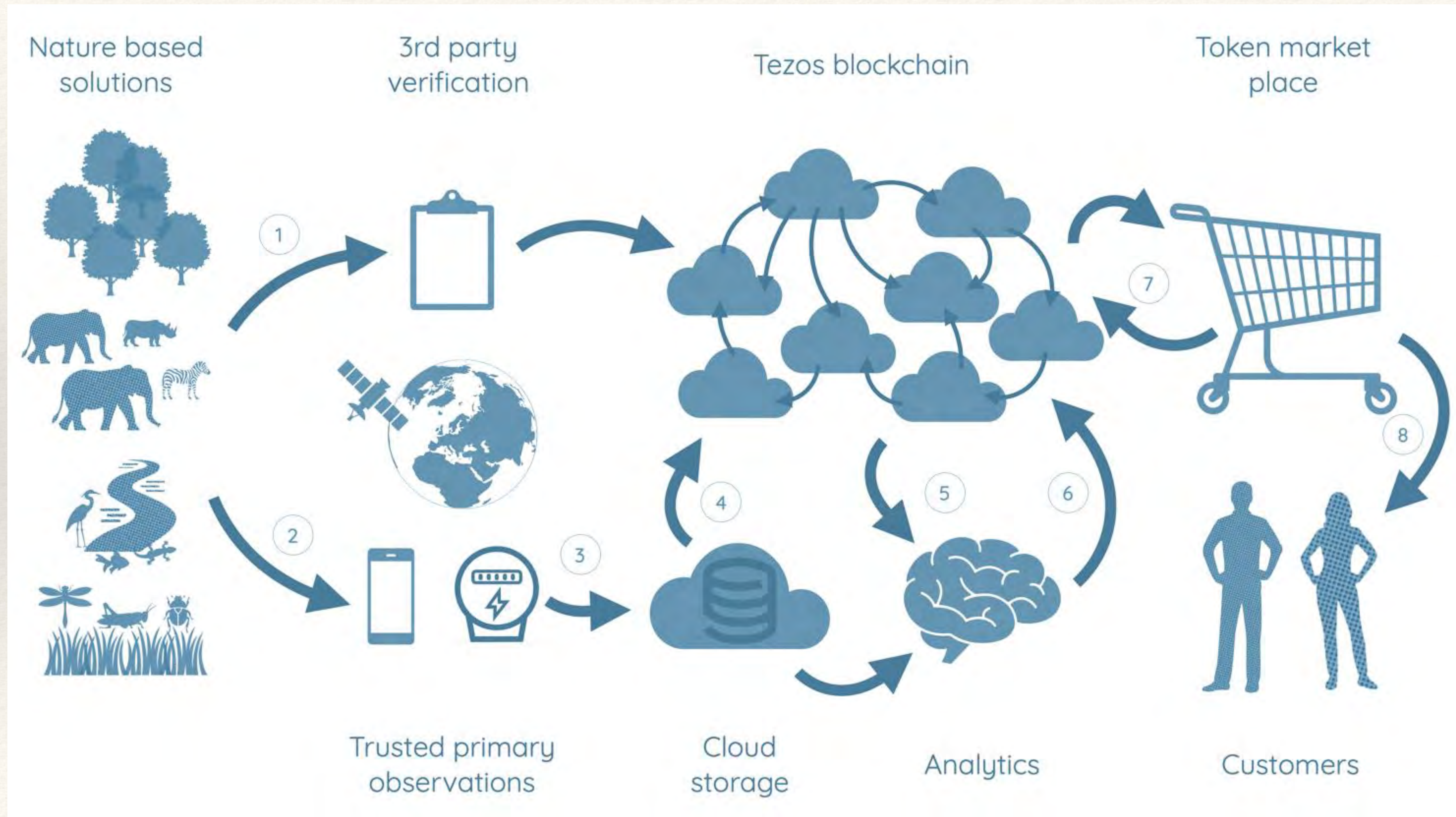
*“Total **assets in sustainable funds** hit a record of almost **\$1.7tn**, up **50 per cent** over the year, on the back of a record year for sustainable fund sales.”*

— Financial Times, Feb 6, 2021

Cambridge Centre for Carbon Credits

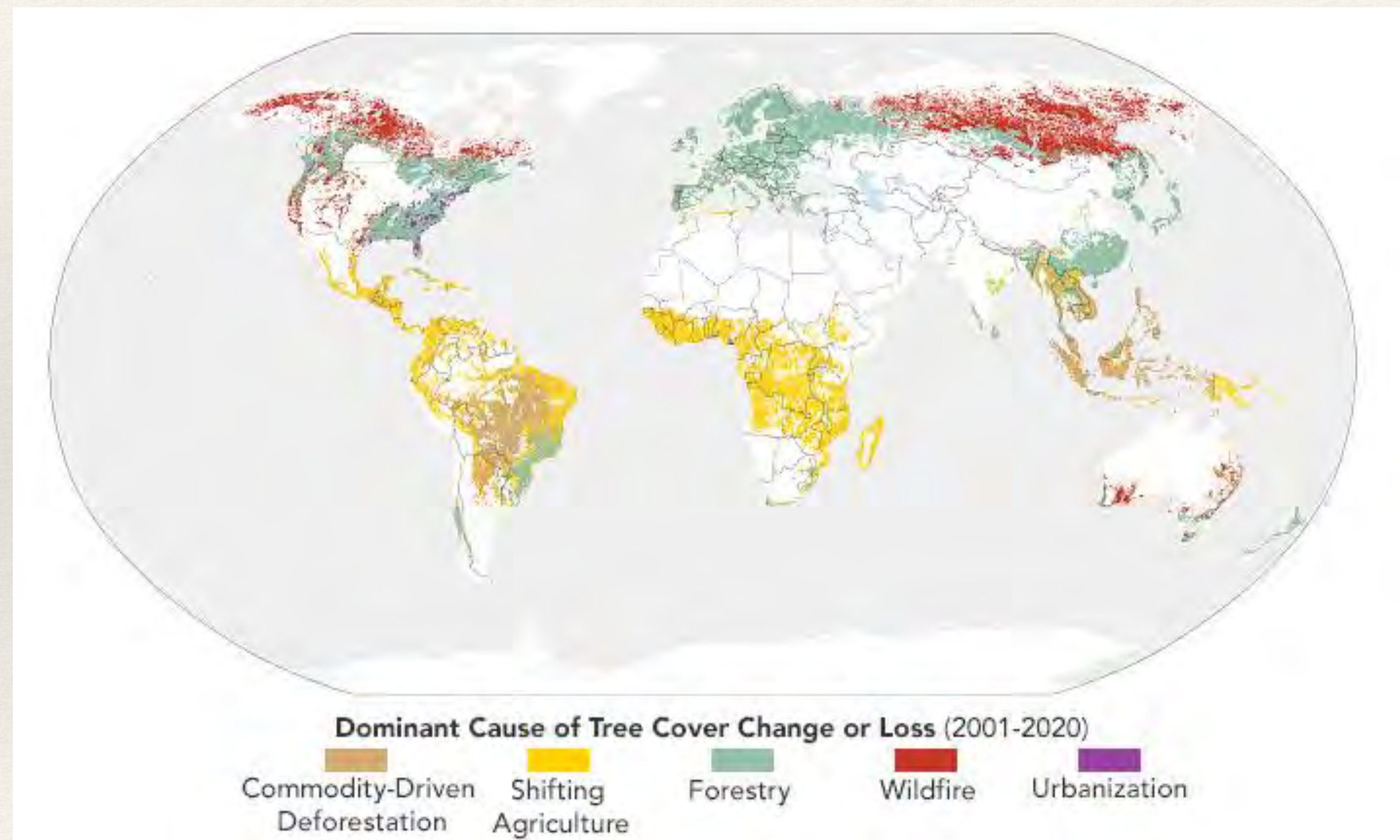
Goal: to establish a **global** framework to issue **trusted carbon credits** that finances **independently verifiable** and **accountable nature-based solutions**

Framework



Primary observations

Detect deforestation from satellite imagery (GEDI-4, Landsat, MODIS)
No need for “boots on the ground”



Analysis

Peer-reviewed counterfactual algorithms to measure:

- Additionality
- Permanence
- Leakage

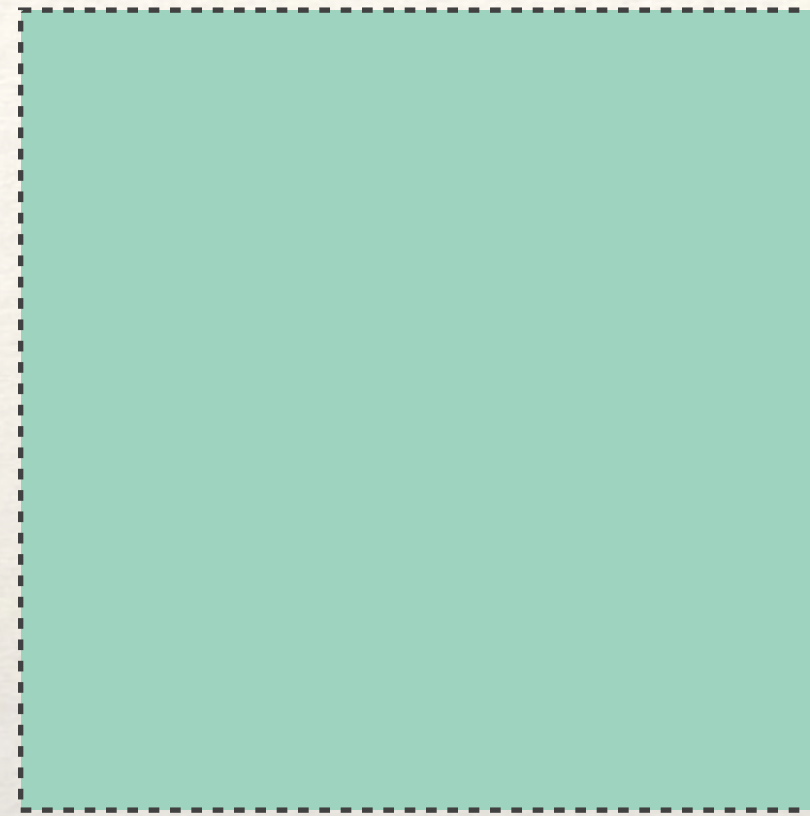
Estimate co-benefits:

- Biodiversity
- Justice
- local livelihoods

Additionality

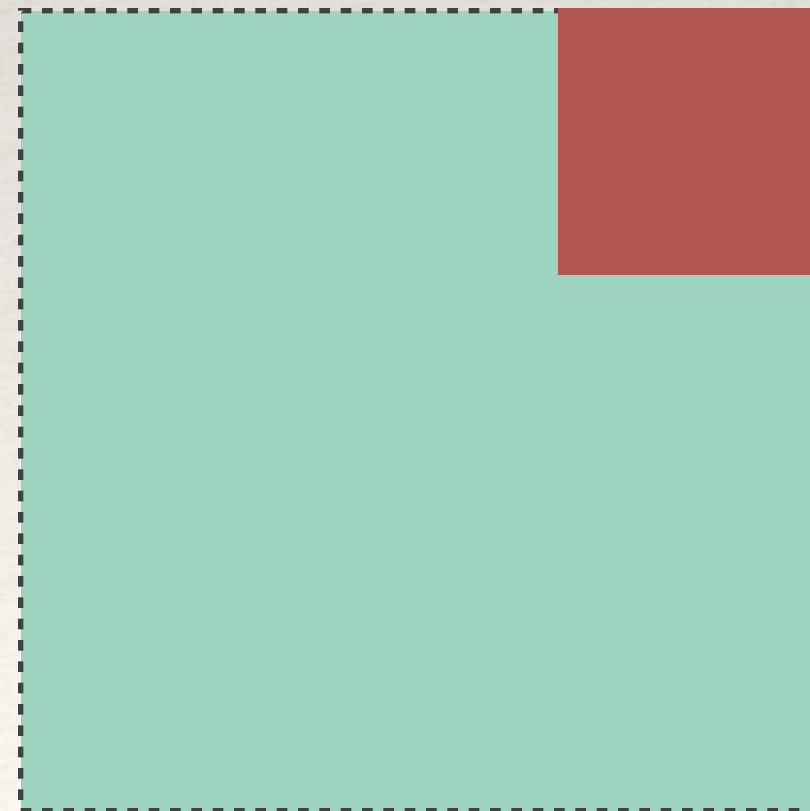
The net sequestration of CO₂_e as a direct consequence of an intervention

Treatment

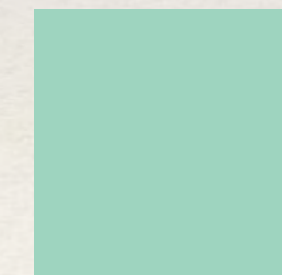


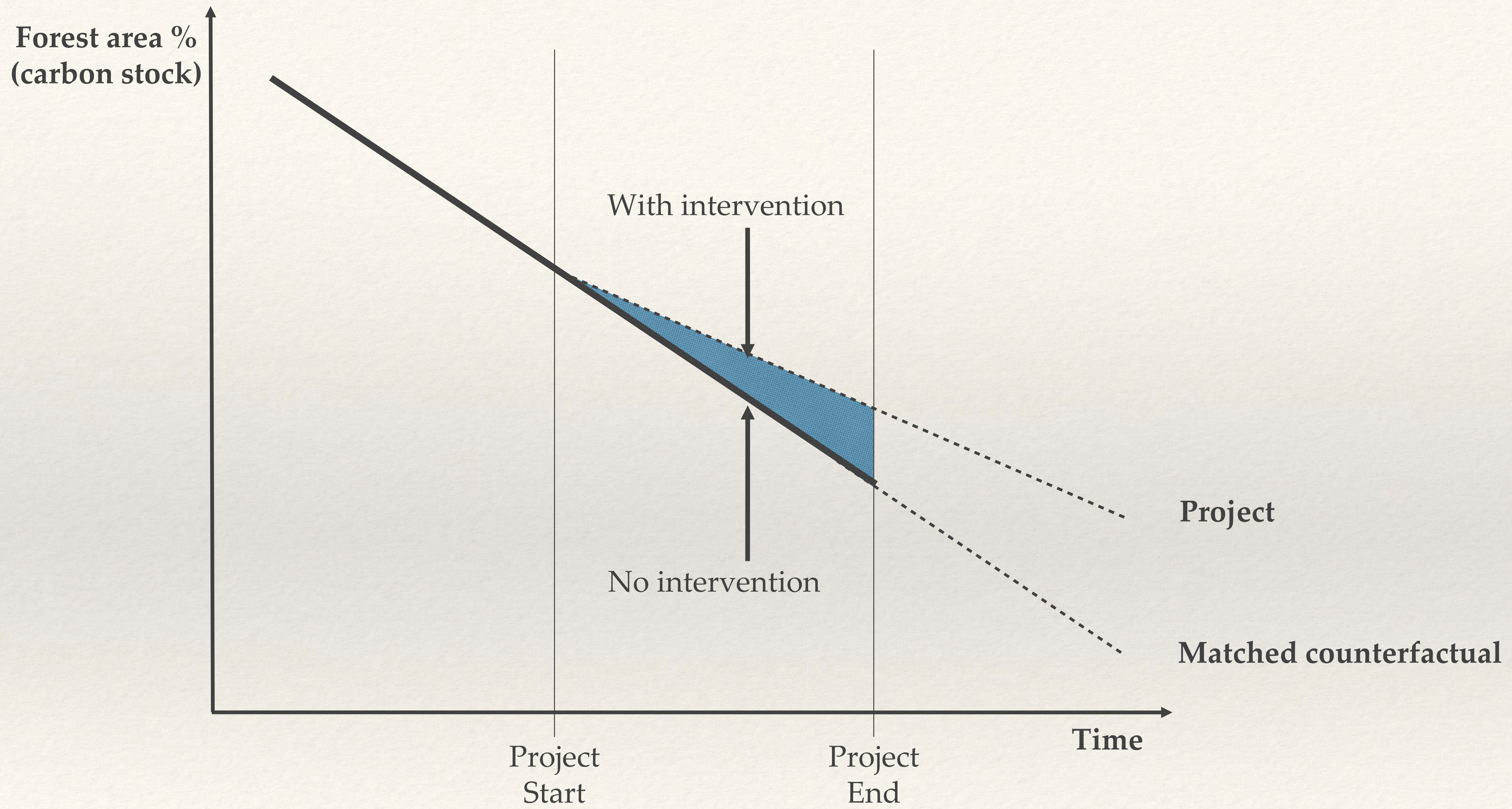
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Matched
counterfactual



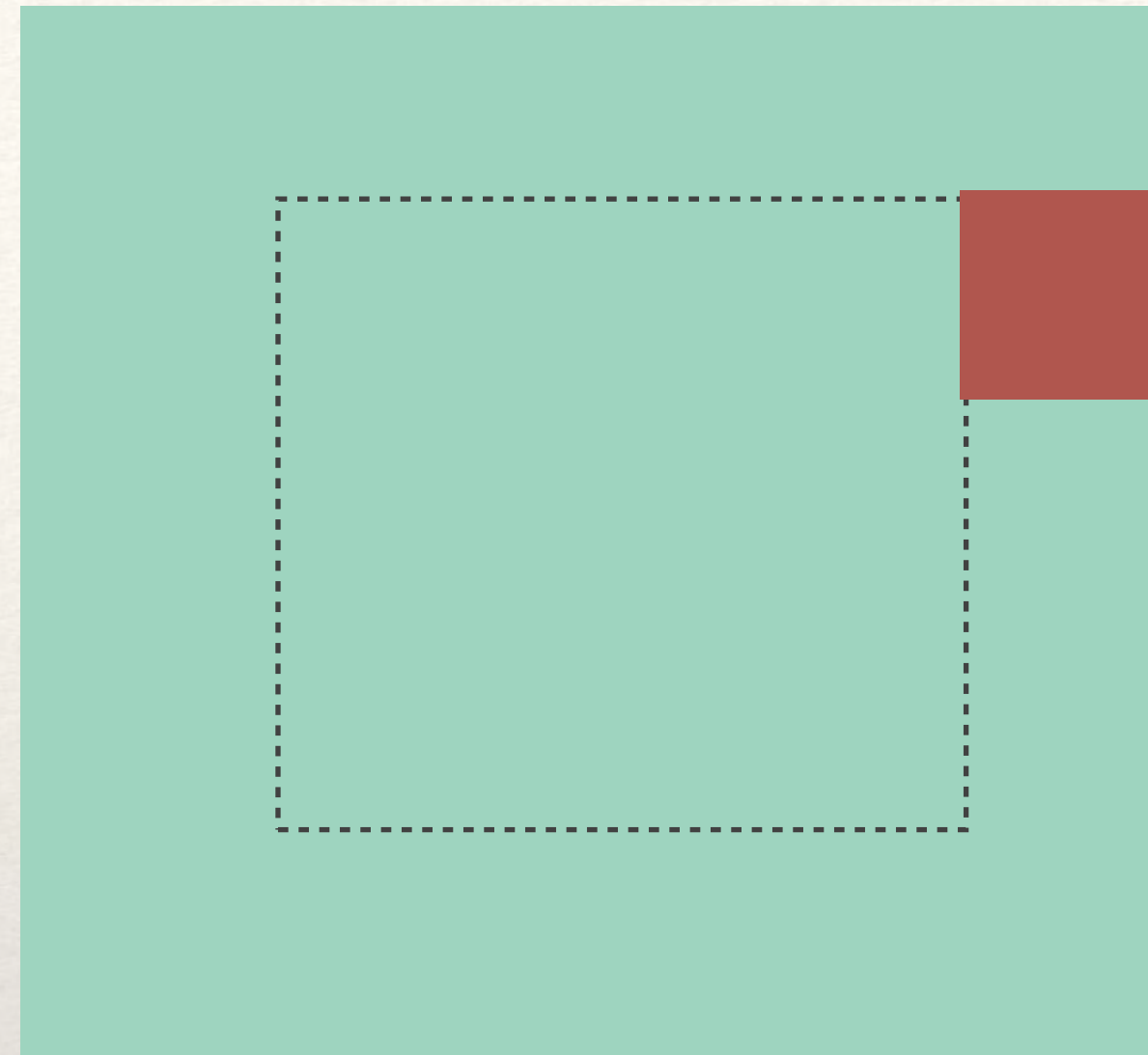
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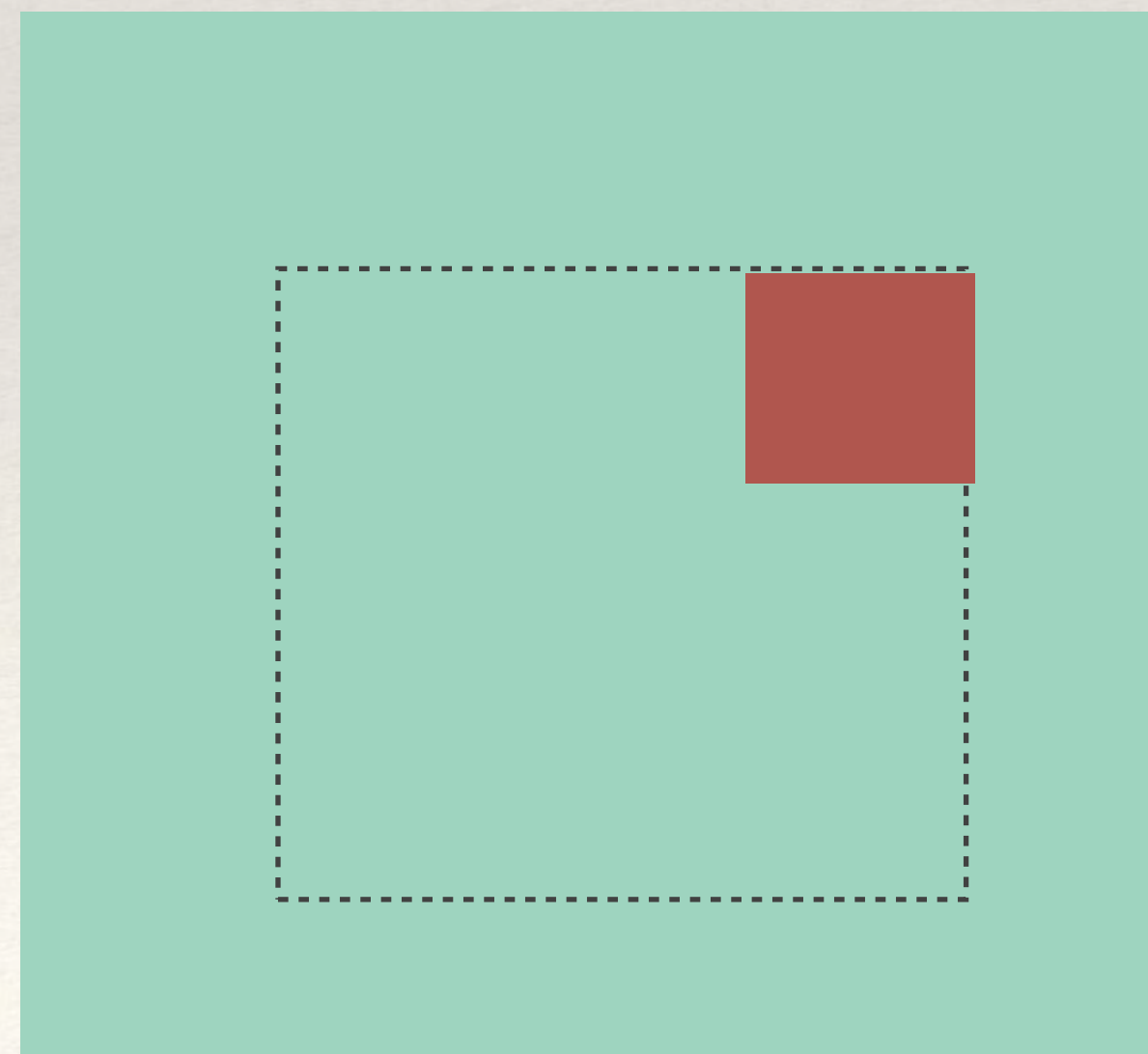
Local leakage

Treatment



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Matched
counterfactual



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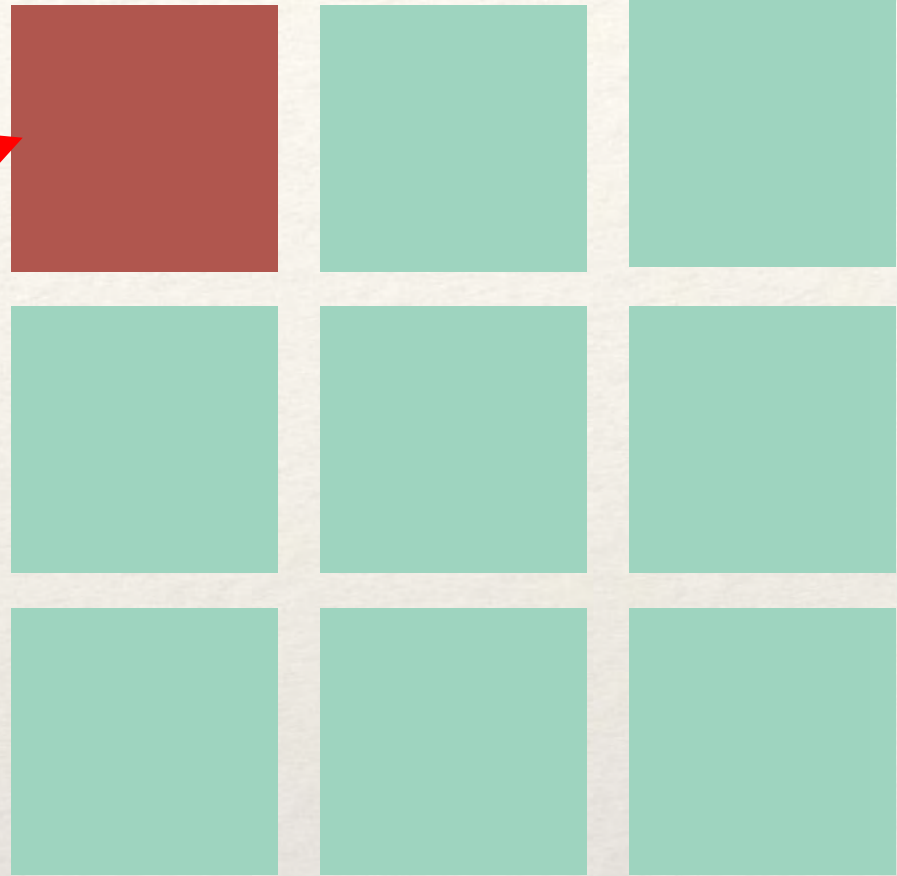
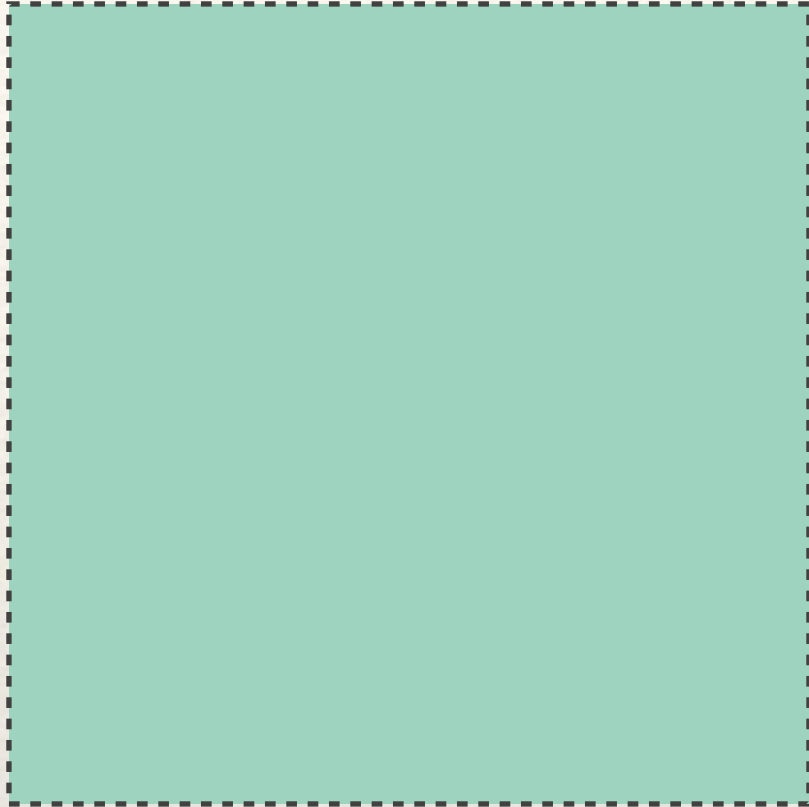


<https://quantify.earth>

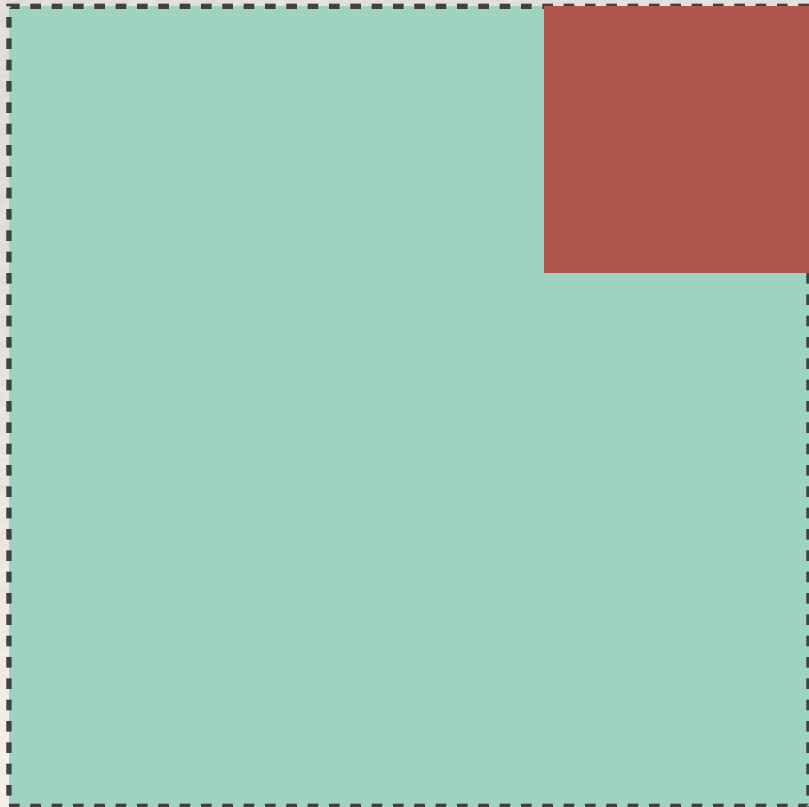
Global leakage

Treatment

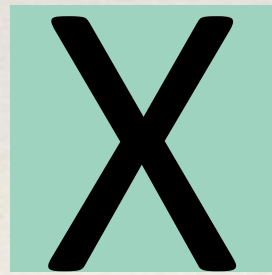
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Matched
counterfactual



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Permanence



Image courtesy Climeworks



Image courtesy Martin Wegmann/CC-BY-SA 3.0

Valuing impermanence

Is there value to impermanent carbon sequestration?

CO2 causes economic damage



Social cost of carbon

- ❖ **Long-term economic damage** due to emission of one additional ton of carbon dioxide into the atmosphere
- ❖ Can be projected into the future, based on Integrated Assessment Models

The Time Evolution of the Social Cost of Carbon: An Application of Fund

David Anthoff

University of California, Berkeley

Steven Rose

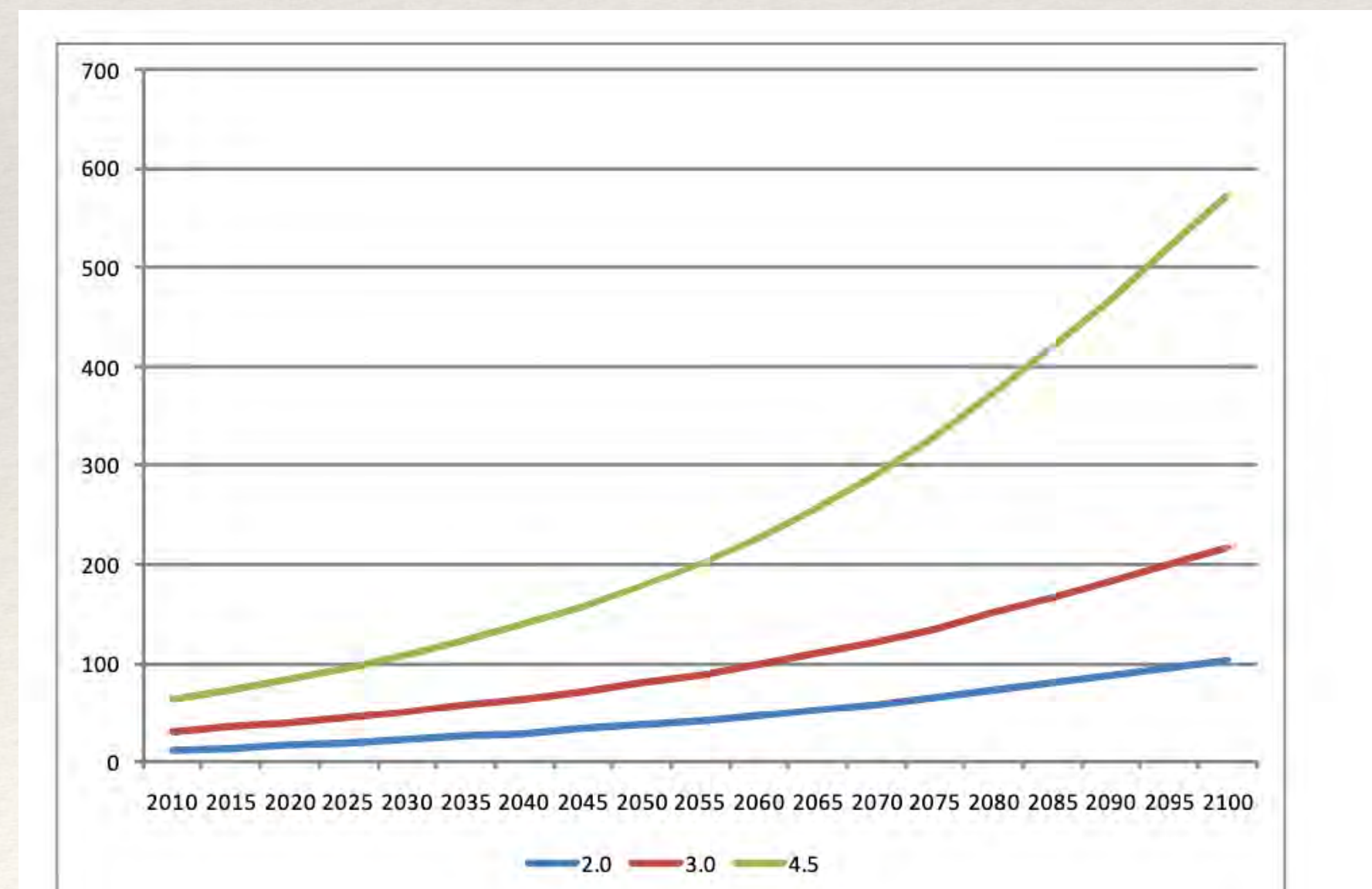
Electric Power Research Institute, Washington, D.C.

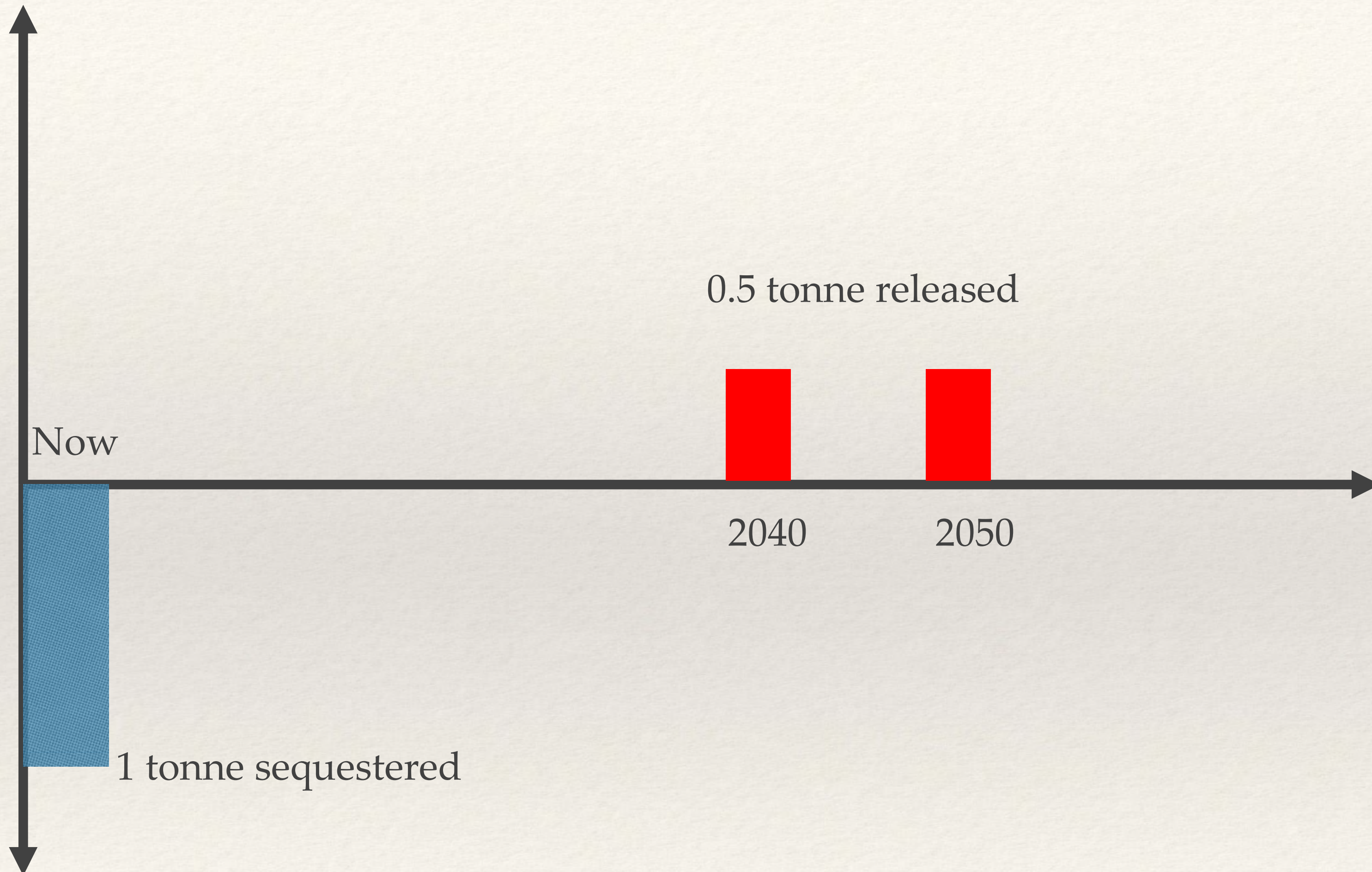
Richard S.J. Tol

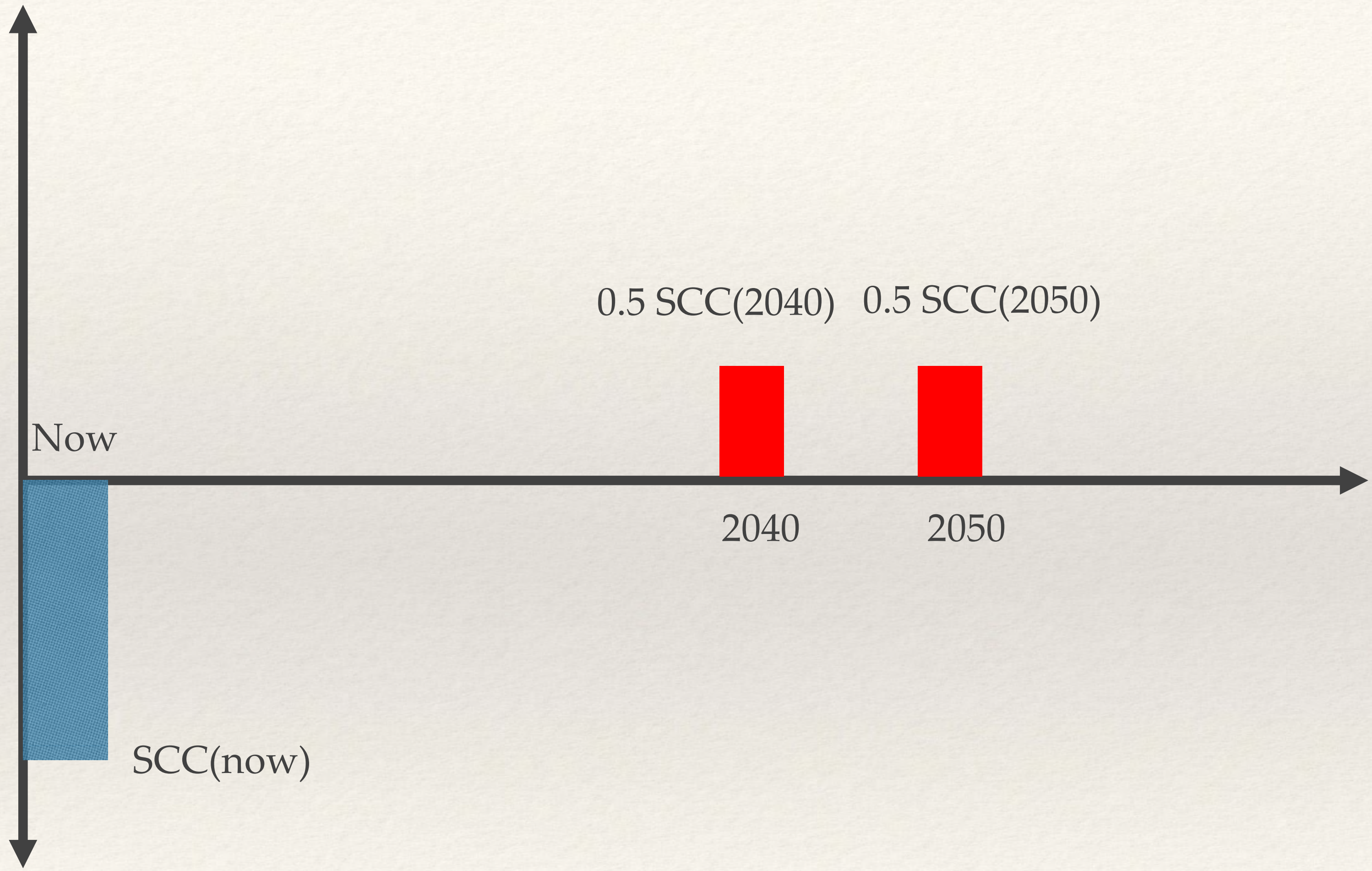
University of California, Berkeley and Vrije Universiteit, Amsterdam

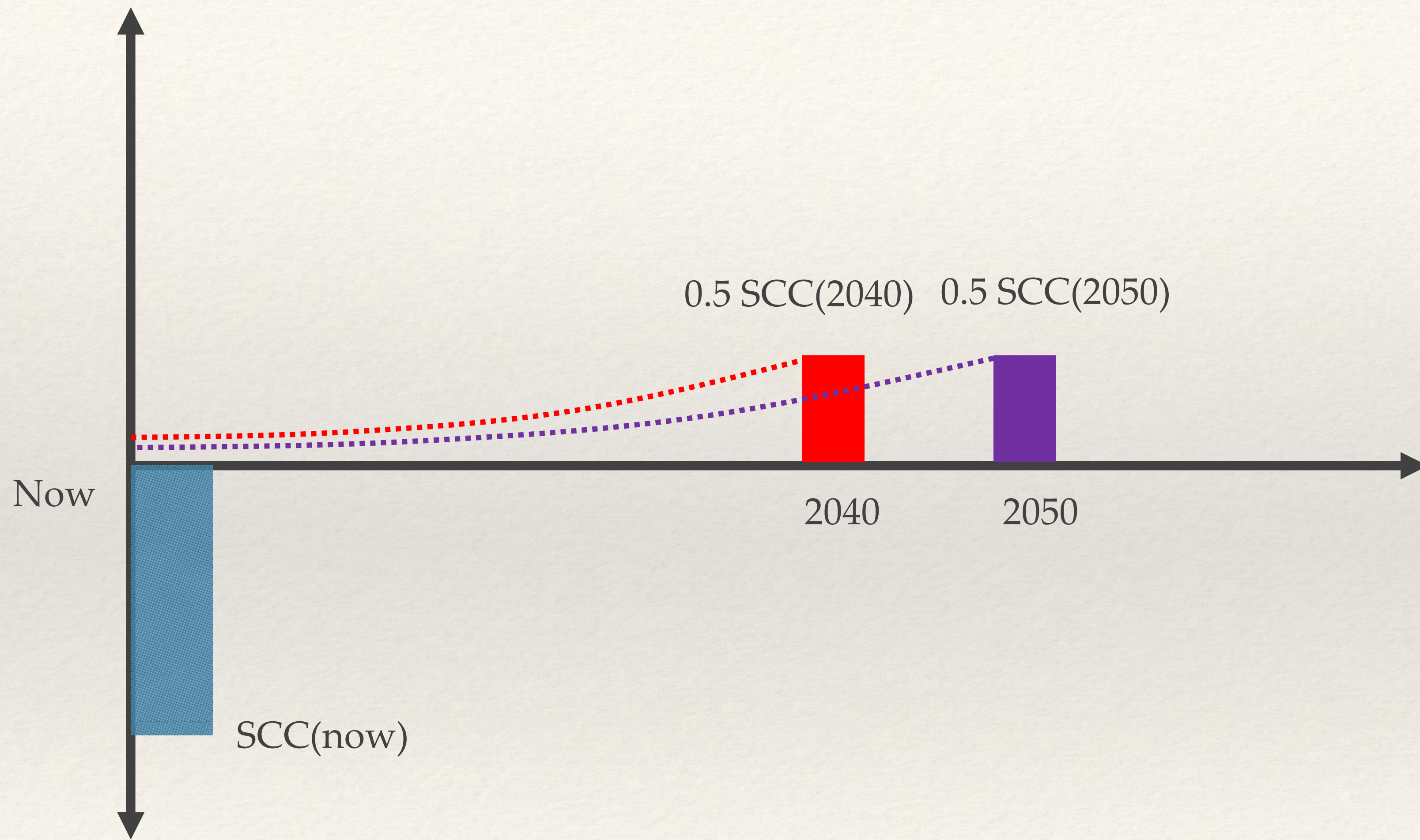
Stephanie Waldhoff

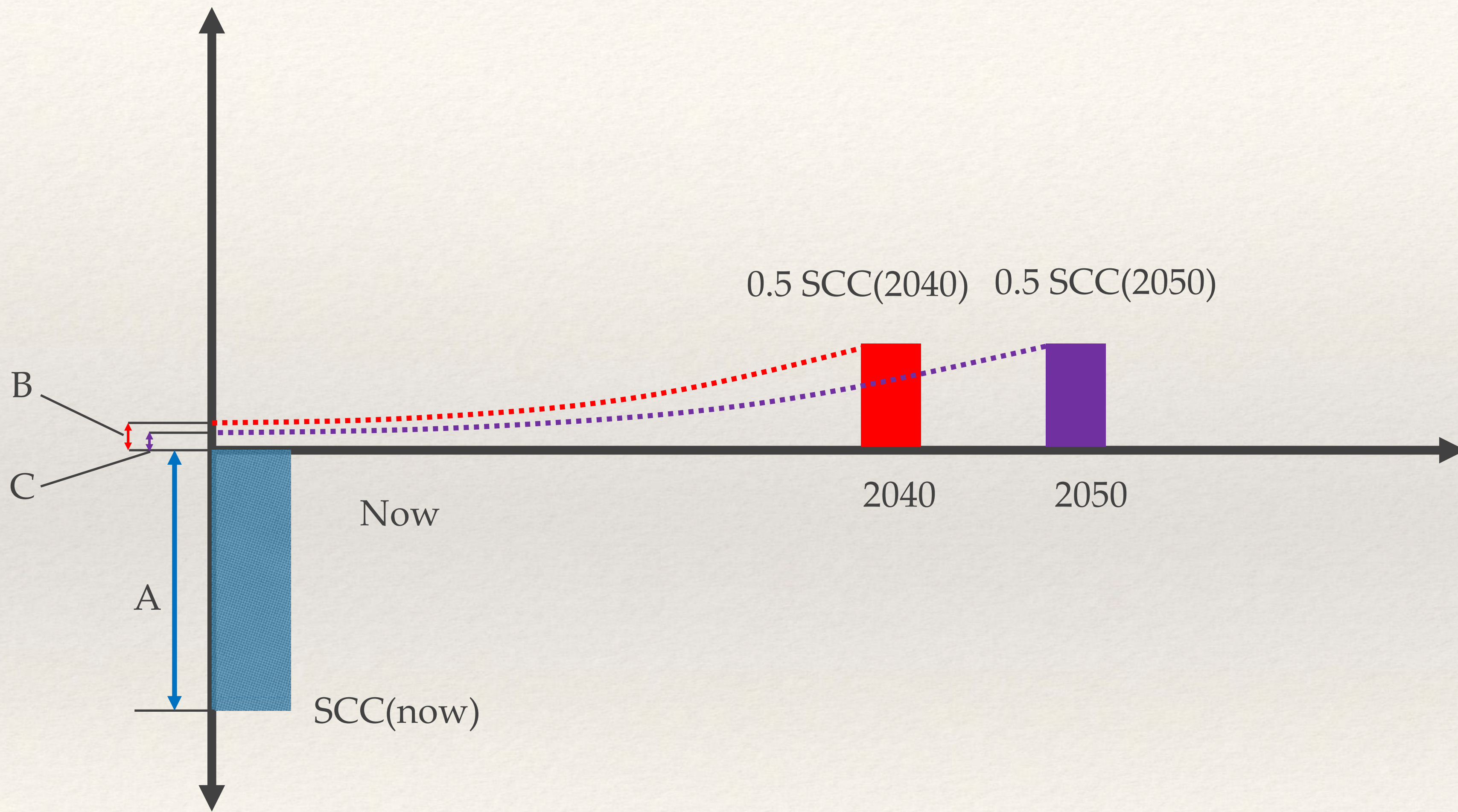
United States Environmental Protection Agency, Washington, D.C.

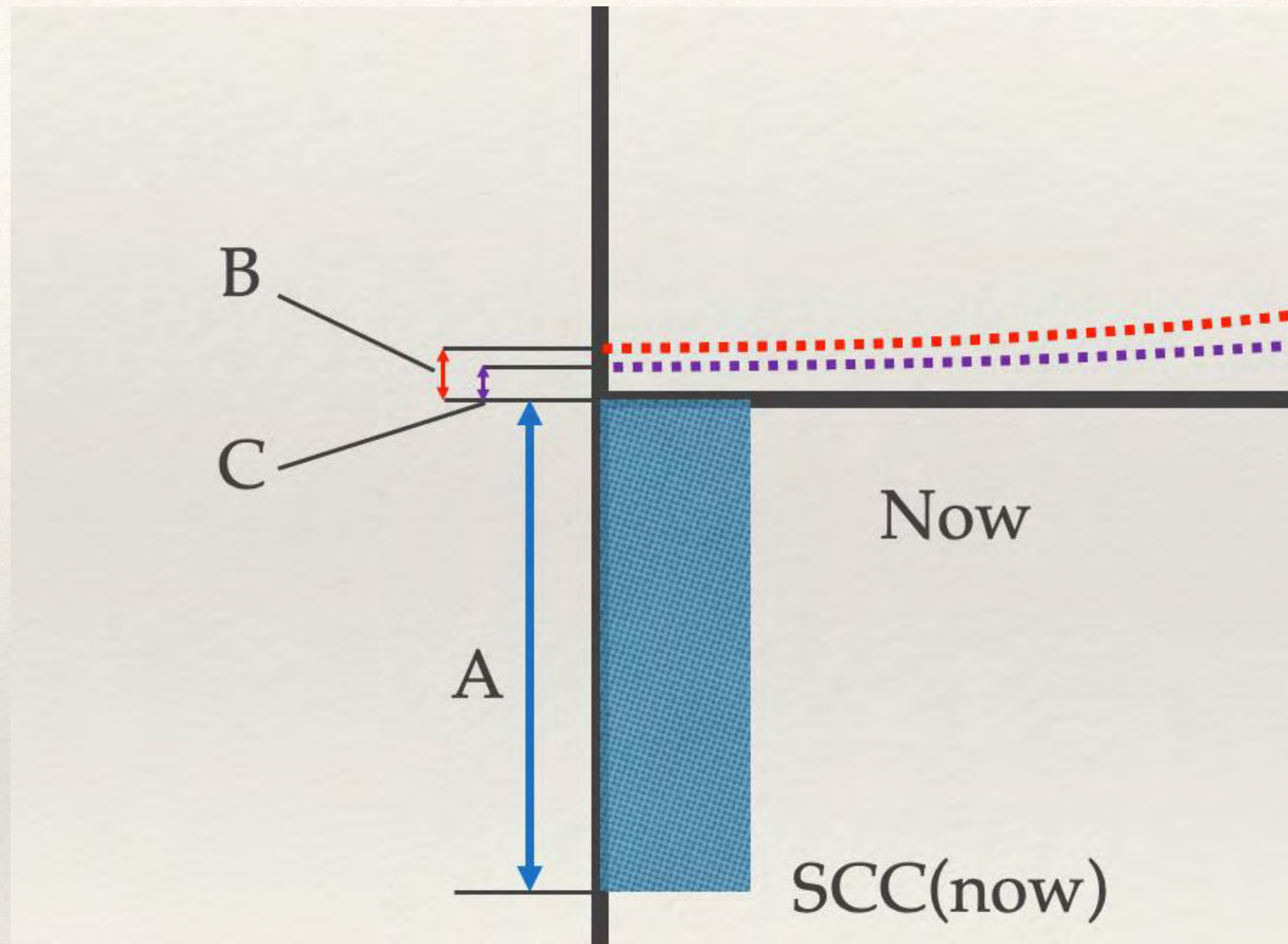












Equivalent permanence = $\frac{A-B-C}{A}$

$(A-L)*P = \text{Quantitative Pricing Algorithm}$

We compute a **counterfactual corrected measure** of the expected value of a project to society

Permanent **A**dditional **C**arbon **T**onne

Allows comparison across projects

Co-benefits

- ❖ Biodiversity gain
- ❖ Impact on social justice
- ❖ Impact on livelihoods
- ❖ We are working on quantitative and qualitative metrics for all three

Tezos Blockchain

- **Energy efficient** Proof-of-Stake chain
- Provide **transparency** in computation credit computation
- **Prevents double counting**
- Self-amending chain to ensure **long-term survival**
- **Automates payments** to project and data owners using smart contracts
- Settlement to **local fiat currency** for project managers

Conclusions

- ❖ **Nature based solutions** address both the climate and biodiversity crises
- ❖ Funding them through carbon credits is a good idea
 - ❖ but creating **trust and scale is critical**
- ❖ This is the **focus of 4C**: Cambridge Centre for Carbon Credits
 - ❖ Founded 2021
 - ❖ About 30 faculty, staff, students

Please get in
touch!

4c.cst.cam.ac.uk