Supplementing REDD+ with finance for multiple forest services

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Based on:

•Busch, J., Strassburg, B., Cattaneo, A., Lubowski, R., Bruner, A., Rice, R., Creed, A., Ashton, R., Boltz, F. (2009). Comparing climate and cost impacts of reference levels for reducing emissions from deforestation. *Environmental Research Letters*, 4:044006.

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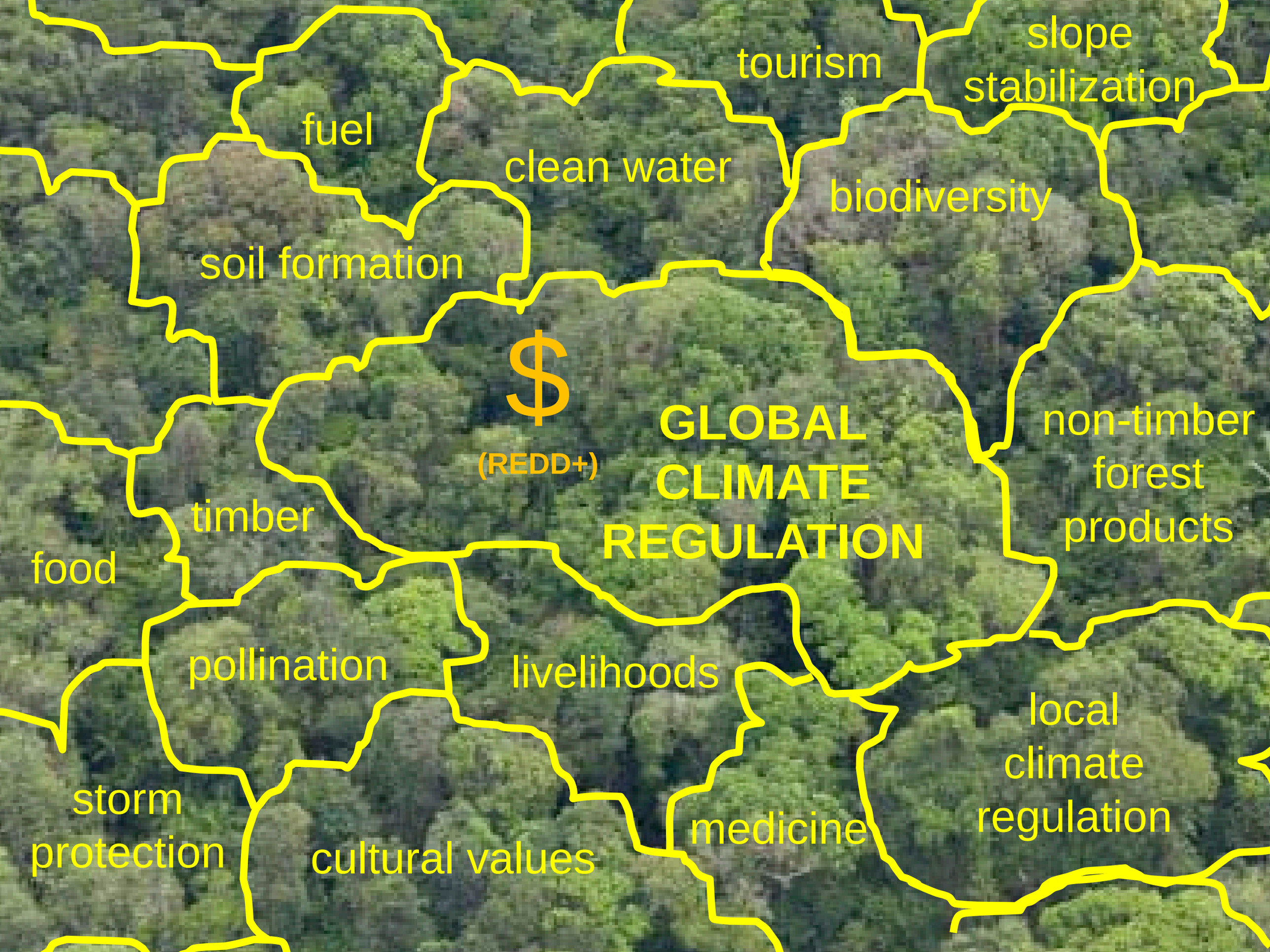
•Busch, J., Bruner, A. (2009). An investment strategy for the Tropical Forest Account in Global Environment Facility – 5.

GLOBAL
CLIMATE
REGULATION


$
(REDD+)
GLOBAL
CLIMATE
REGULATION


tourism
slope stabilization
fuel
clean water
biodiversity
soil formation
$
(REDD+)
GLOBAL CLIMATE REGULATION
non-timber forest products
timber
food
pollination
livelihoods
local climate regulation
storm protection
cultural values
medicine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To what extent would REDD+ enhance biodiversity conservation?

tourism

slope stabilization

fuel

clean water

biodiversity

$

(biodiversity)

soil formation

$

(REDD+)

GLOBAL CLIMATE REGULATION

non-timber forest products

timber

food

pollination

livelihoods

To what extent would REDD+ enhance biodiversity conservation?
How to pay for additional forest biodiversity in the context of REDD+?

protection

cultural values

tourism

slope stabilization

fuel

clean water

biodiversity

$

(biodiversity)

soil formation

$

(REDD+)

GLOBAL CLIMATE REGULATION

non-timber forest products

timber

food

pollination

livelihoods

To what extent would REDD+ enhance biodiversity conservation?
How to pay for additional forest biodiversity in the context of REDD+?
To what extent would paying for biodiversity enhance climate mitigation?

protection

cultural values

Supplemental finance options for biodiversity and other forest services

1. Buyers interested in biodiversity voluntarily purchase additional REDD+

2. Existing REDD+ buyers pay a premium for carbon from biodiverse forests (e.g. CCBA/CARE Social and Environmental Standards for REDD+)

3. Bundling of payments for carbon by REDD+ buyers, payments for biodiversity from biodiversity buyers (e.g. GEF)

    i. fund pays for reductions in countries' biodiverse forests; countries sell resulting carbon abatement to the REDD+ mechanism

    ii. fund buys carbon abatement from countries' biodiverse forests above market price; resells to REDD+ mechanism at market price

    iii. REDD+ mechanism pays for countries' carbon abatement; fund pays for countries' contribution to biodiversity conservation

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Modeling REDD with OSIRIS

(Busch et al, *Env Res Letters*, 2009)

- 84-country partial equilibrium model
- National incentives based on reference levels
- Leakage
- Country-by-country outputs:
  - -deforestation (Ha/yr)
  - -emissions (ton CO_2e/yr)
  - -revenue ($/yr)

- Caveat: Designed to compare climate and cost impacts across REDD policy designs, rather than to predict absolute magnitude of impacts

- New output: Estimated rate of extinction of endemic forest-dwelling mammal and amphibian species, as predicted by species-area relationship

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Comparing climate and cost impacts of reference levels for reducing emissions from deforestation

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Abstract

The climate benefit and economic cost of an international mechanism for reducing emissions from deforestation and degradation (REDD) will depend on the design of reference levels for crediting emission reductions. We compare the impacts of six proposed reference level designs on emission reduction levels and on cost per emission reduction using a stylized partial equilibrium model (the open source impacts of REDD incentives spreadsheet; OSIRIS). The model explicitly incorporates national incentives to participate in an international REDD mechanism as well as international leakage of deforestation emissions. Our results show that a REDD mechanism can provide cost-efficient climate change mitigation benefits under a broad range of reference level designs. We find that the most effective reference level designs balance incentives to reduce historically high deforestation emissions with incentives to maintain historically low deforestation emissions. Estimates of emission reductions under REDD depend critically on the degree to which demand for tropical frontier agriculture generates leakage. This underscores the potential importance to REDD of complementary strategies to supply agricultural needs outside of the forest frontier.

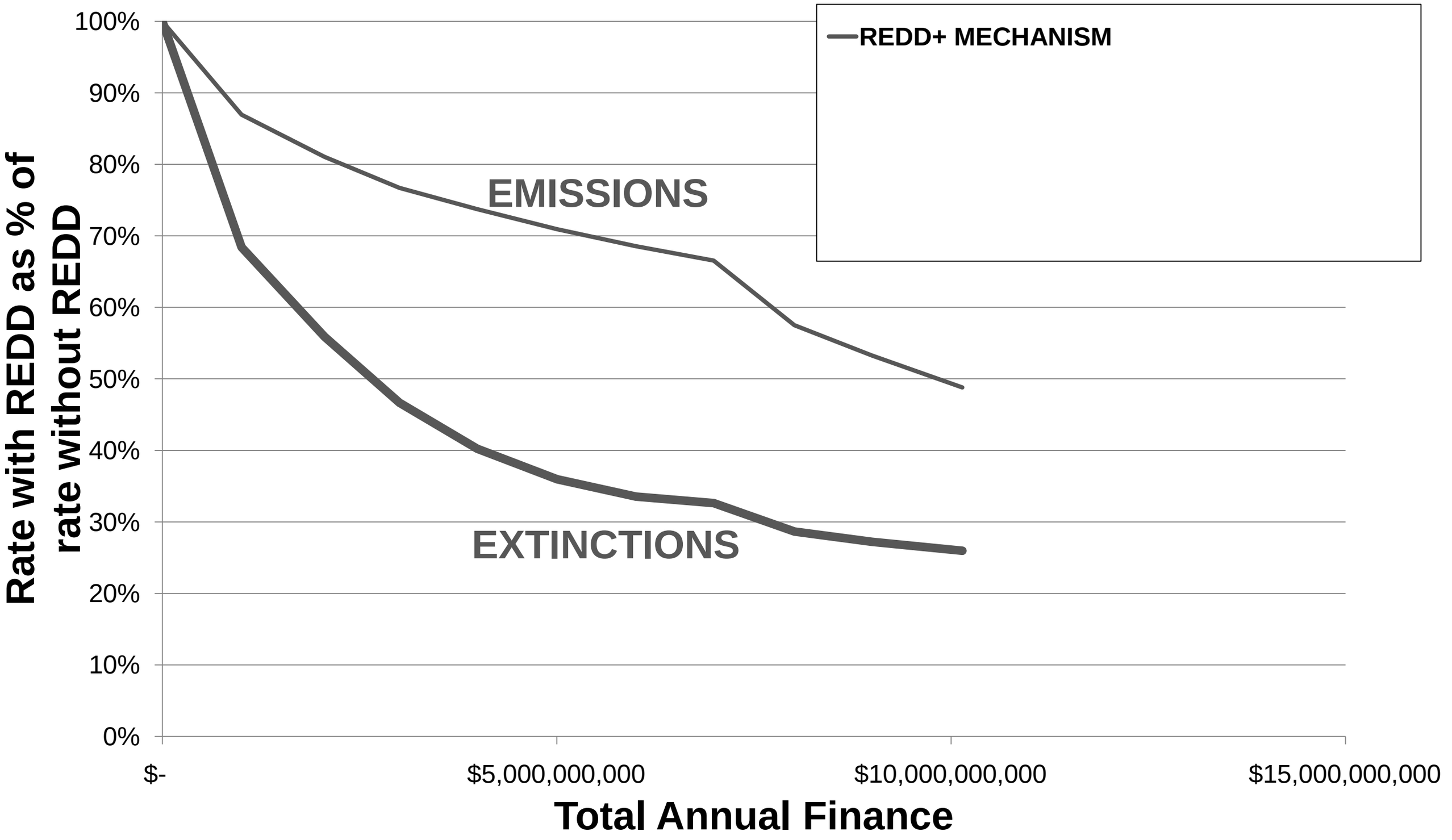
Keywords: climate change, deforestation, land use, reduced emissions from deforestation and forest degradation (REDD), reference levels

1. Introduction

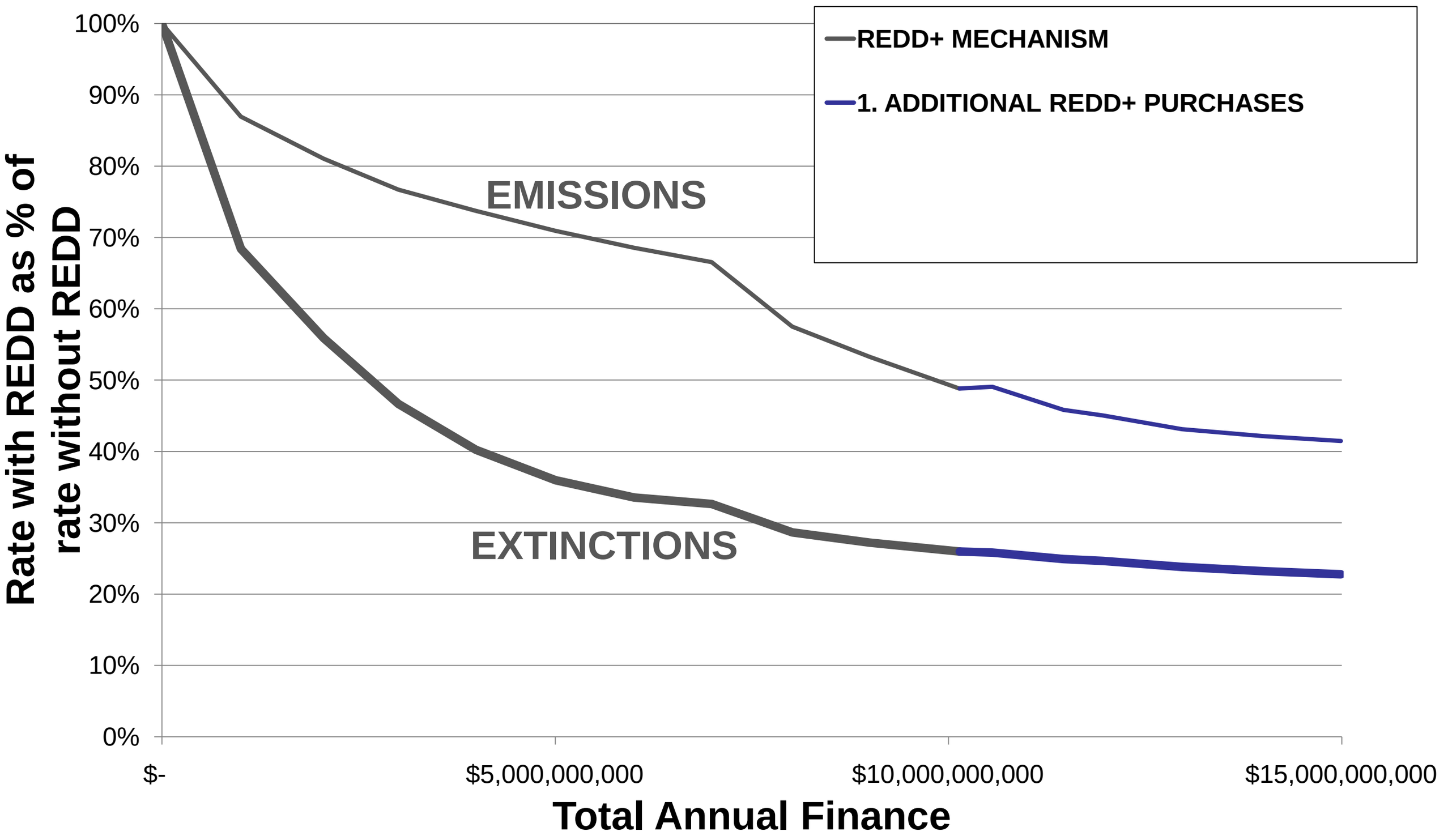
A climate agreement under the United Nations Framework Convention on Climate Change (UNFCCC) is expected to include a mechanism for the reduction of emissions from deforestation and forest degradation, conservation of carbon stocks, afforestation and reforestation, and sustainable management of forests ('REDD'; FCCC 2009a) to address the approximately 17% of recent greenhouse gas emissions from deforestation (IPCC 2007). Parties to the convention and policy-makers developing REDD at national and regional levels will soon need to resolve REDD methodological issues, including reference levels below which countries' emissions from deforestation could be credited as reductions. Parties and non-governmental organizations have proposed dozens of designs for setting national reference levels under a REDD

www.conservation.org/osiris

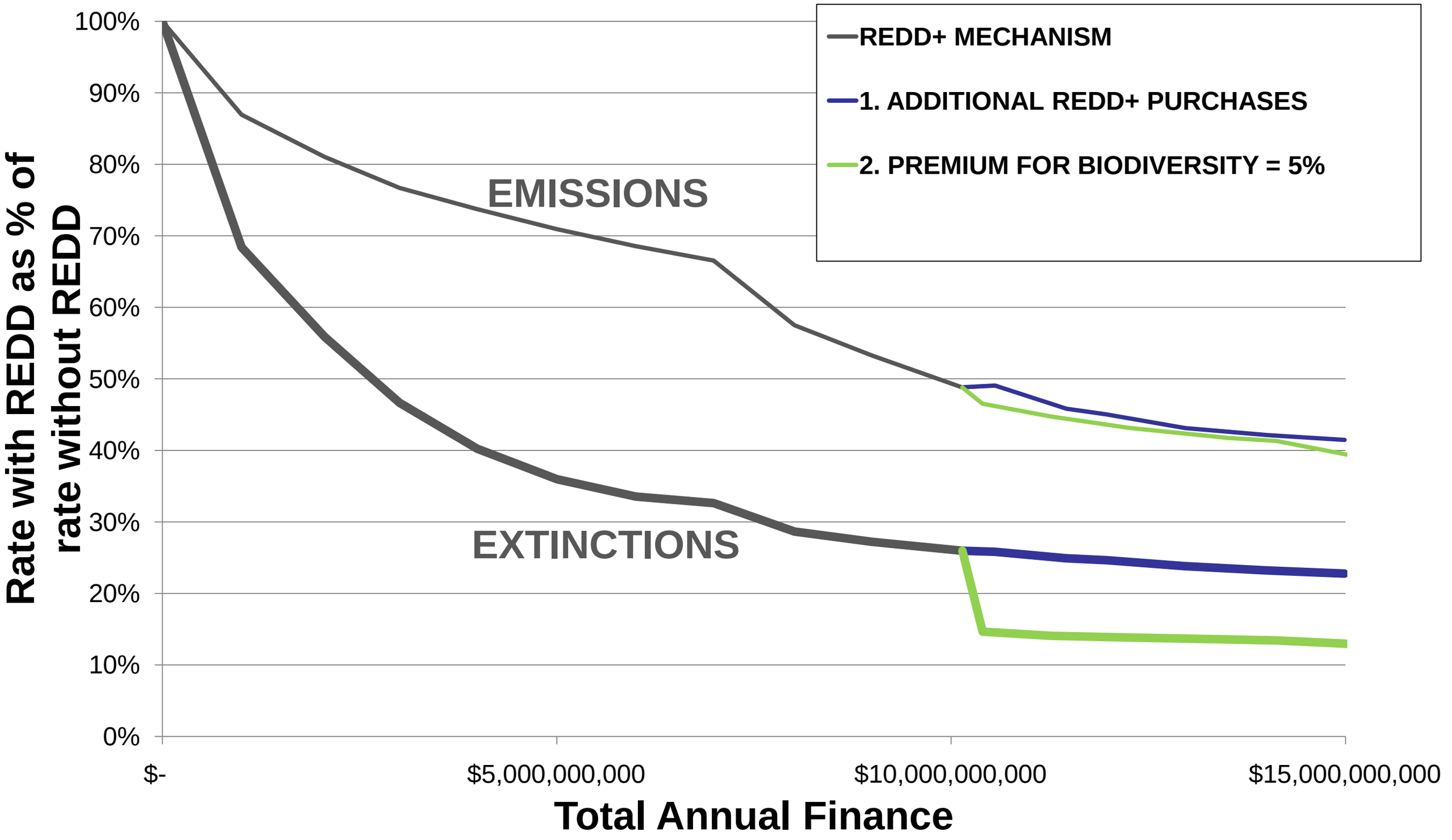
REDD+ reduces emissions from deforestation and extinction rate of forest species



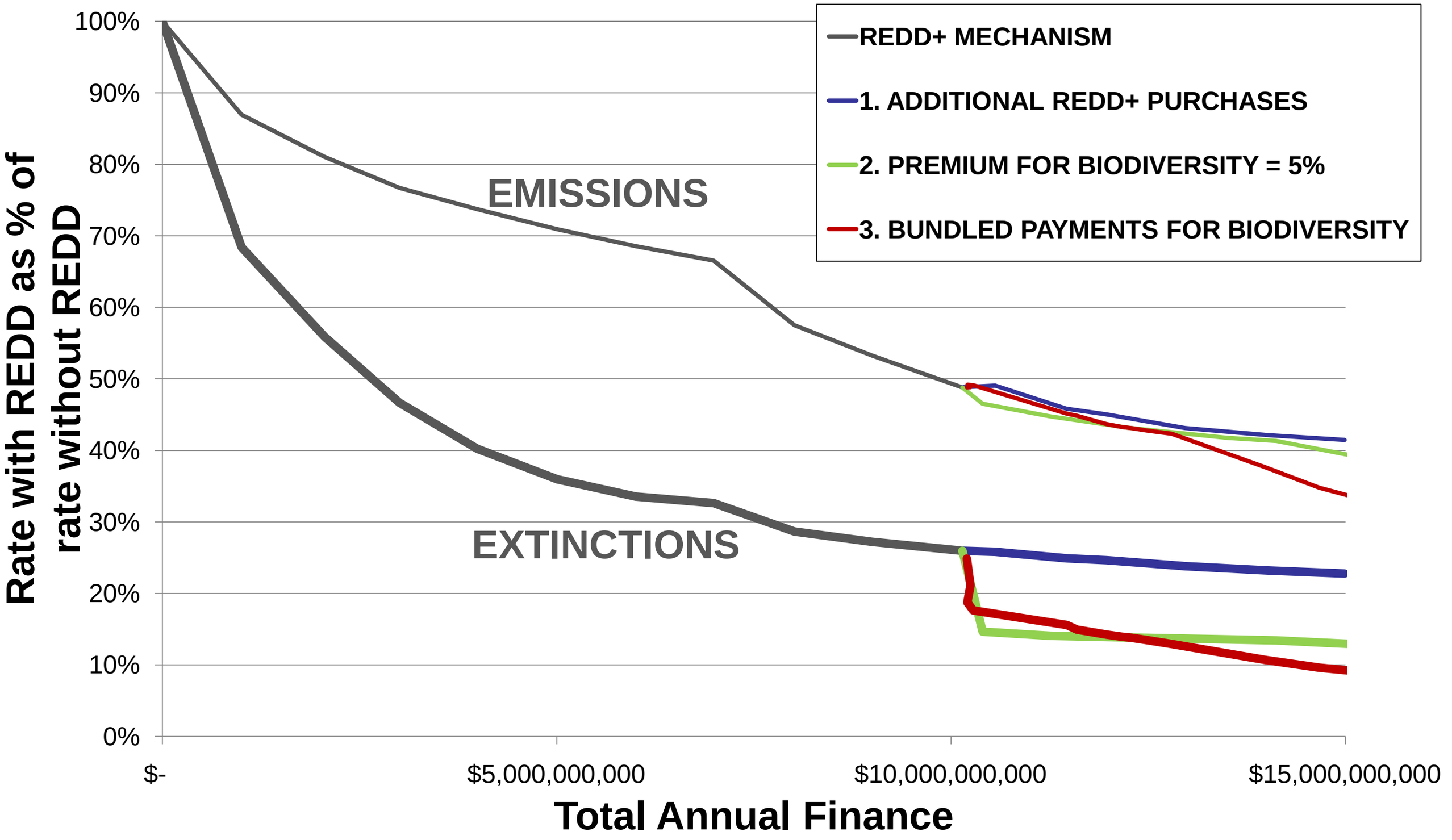
Purchasing additional REDD+ slightly reduces extinction rate of forest species



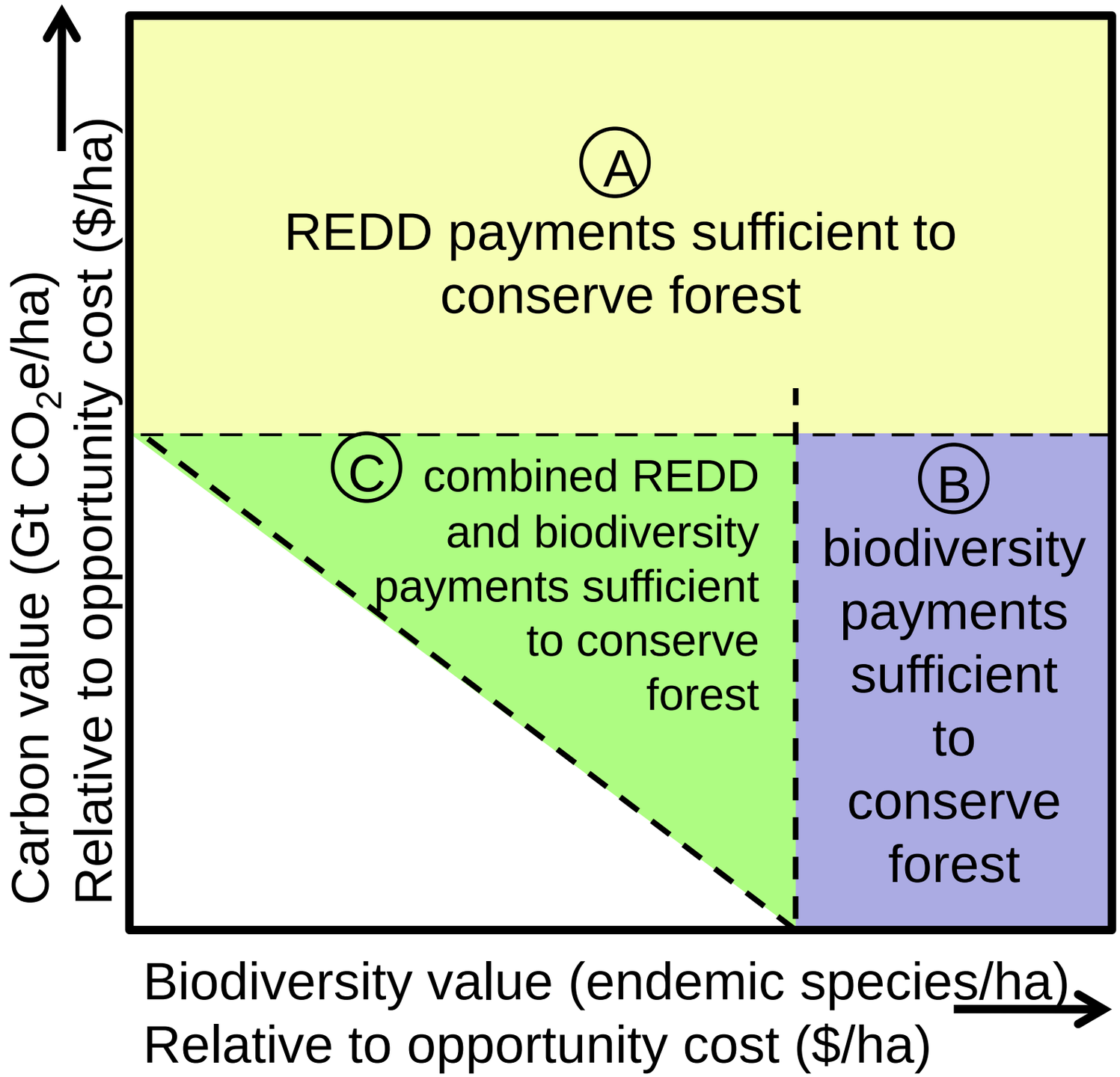
Premium for biodiversity substantially reduces extinction rate of forest species



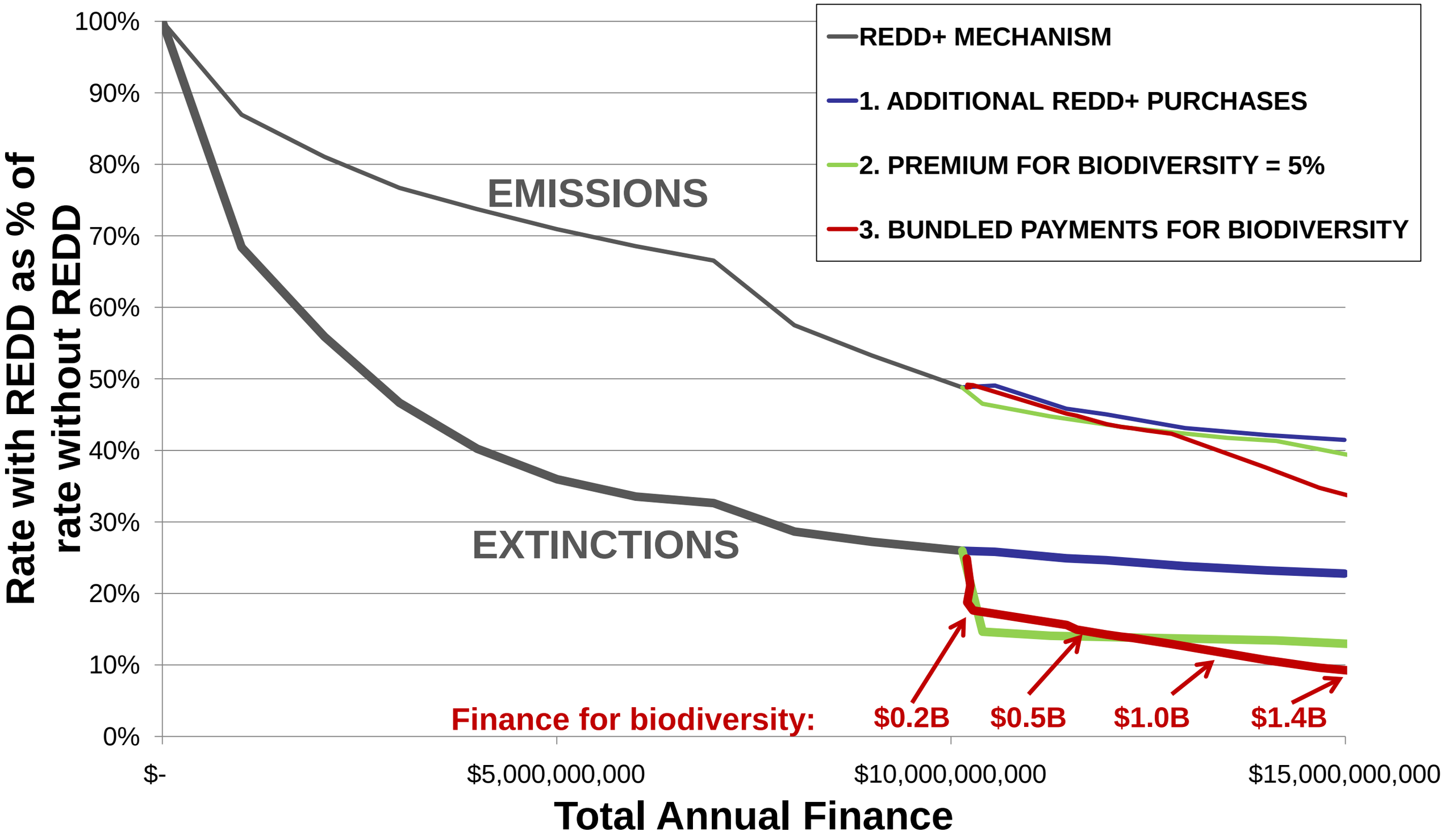
Bundled payments for biodiversity substantially reduce extinction rate of forest species



Biodiversity payments attract additional carbon payments



Biodiversity payments catalyze additional carbon payments



Example of bundled payment: Forest Incentive Mechanism in GEF-5

- Formerly Tropical Forest Account (TFA) in GEF-4

- Attends to three international conventions (FCCC, CBD, CCD)

- Objective: achieve multiple global environmental benefits from the management of all types of forests and strengthen sustainable livelihoods for people dependent on forest resources.

- ~$180-400 million in GEF-5

- Expected to leverage further $700-1000 million from GEF STAR balances, plus additional leveraging

- Design under development

- For more information: Gustavo da Fonseca or Dirk Gaul

Concluding Messages

REDD+ expected to reduce emissions from deforestation and reduce extinction rate of forest species

Either premiums (e.g. CCBA/CARE SES) or bundled payments (e.g. GEF) could substantially reduce extinction rates further

Either premiums or bundling for multiple forest services would:

- lower price paid by REDD+ buyers
- increase price paid to REDD+ sellers
- attract additional carbon payments
- lead to additional reductions in emissions from deforestation

Thank you!

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Environmental Defense Fund
Woods Hole Research Center
University of East Anglia
Terrestrial Carbon Group
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Gordon and Betty Moore Foundation
Norwegian Agency for Development Cooperation

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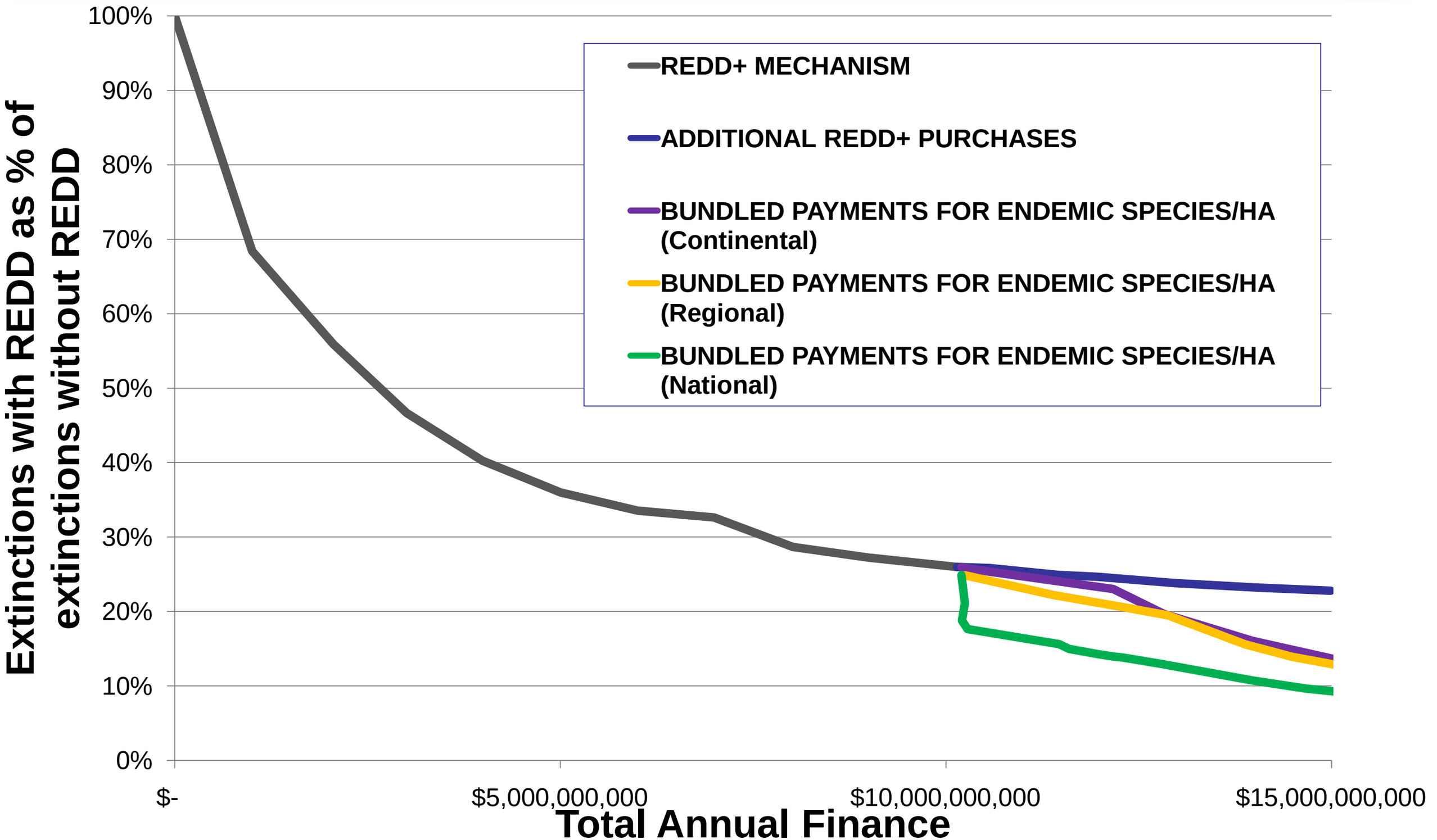
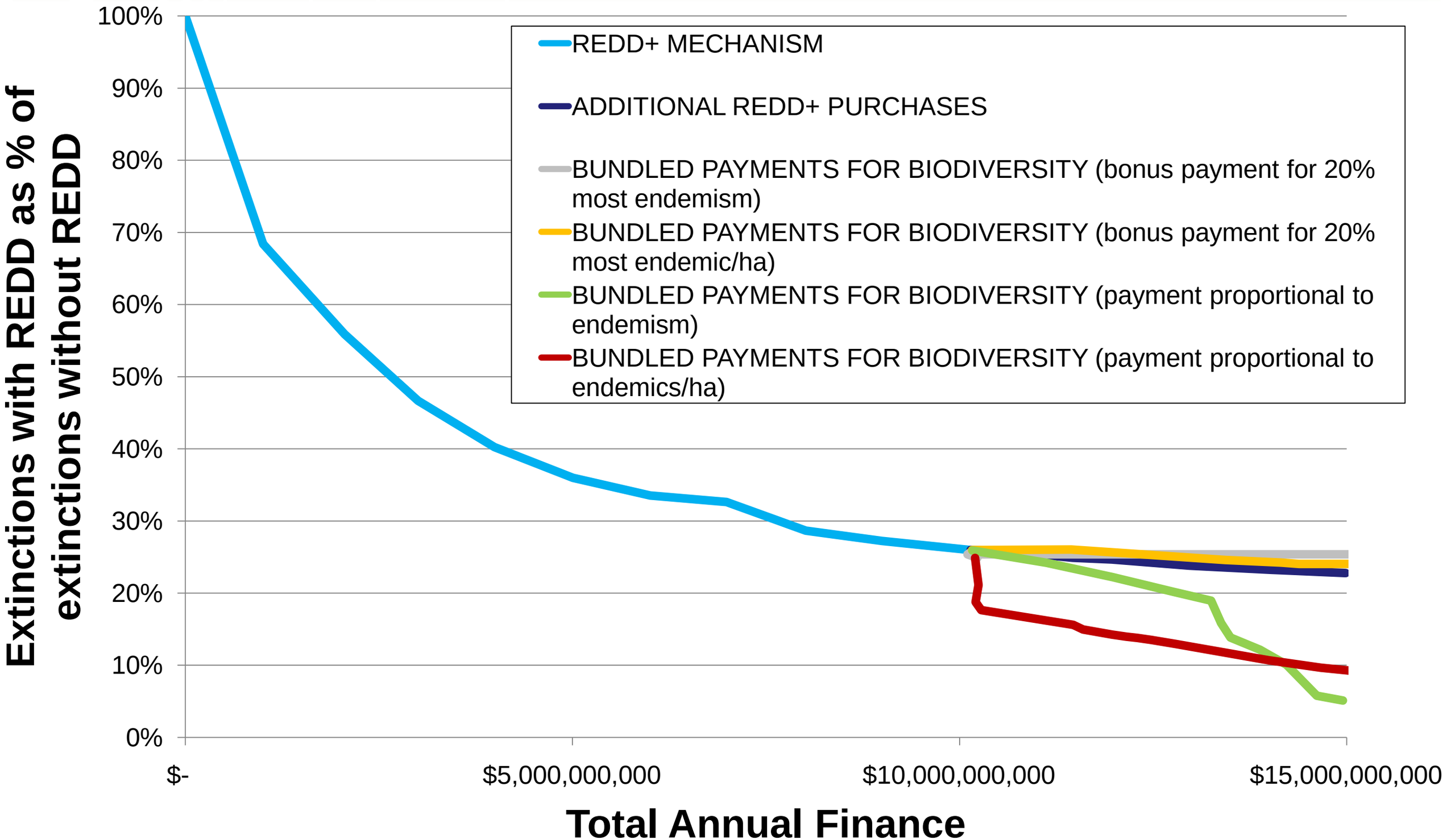
Finer scale of biodiversity metric reduces extinctions



More precise biodiversity metric reduces extinctions



Supplemental finance options for biodiversity and other forest services

1. <u>Additional</u> voluntary purchases of REDD+

2. <u>Premium</u> from existing REDD+ buyers for carbon from biodiverse forests (e.g.CCBA)

3. <u>Bundling</u> of payments for carbon, biodiversity (e.g. GEF)

   i. fund pays for reductions in countries' biodiverse forests; countries sell resulting carbon abatement to the REDD+ mechanism

   ii. fund buys carbon abatement from countries' biodiverse forests above market price; resells to REDD+ mechanism at market price

   iii. REDD+ mechanism pays for countries' carbon abatement; fund pays for countries' contribution to biodiversity conservation

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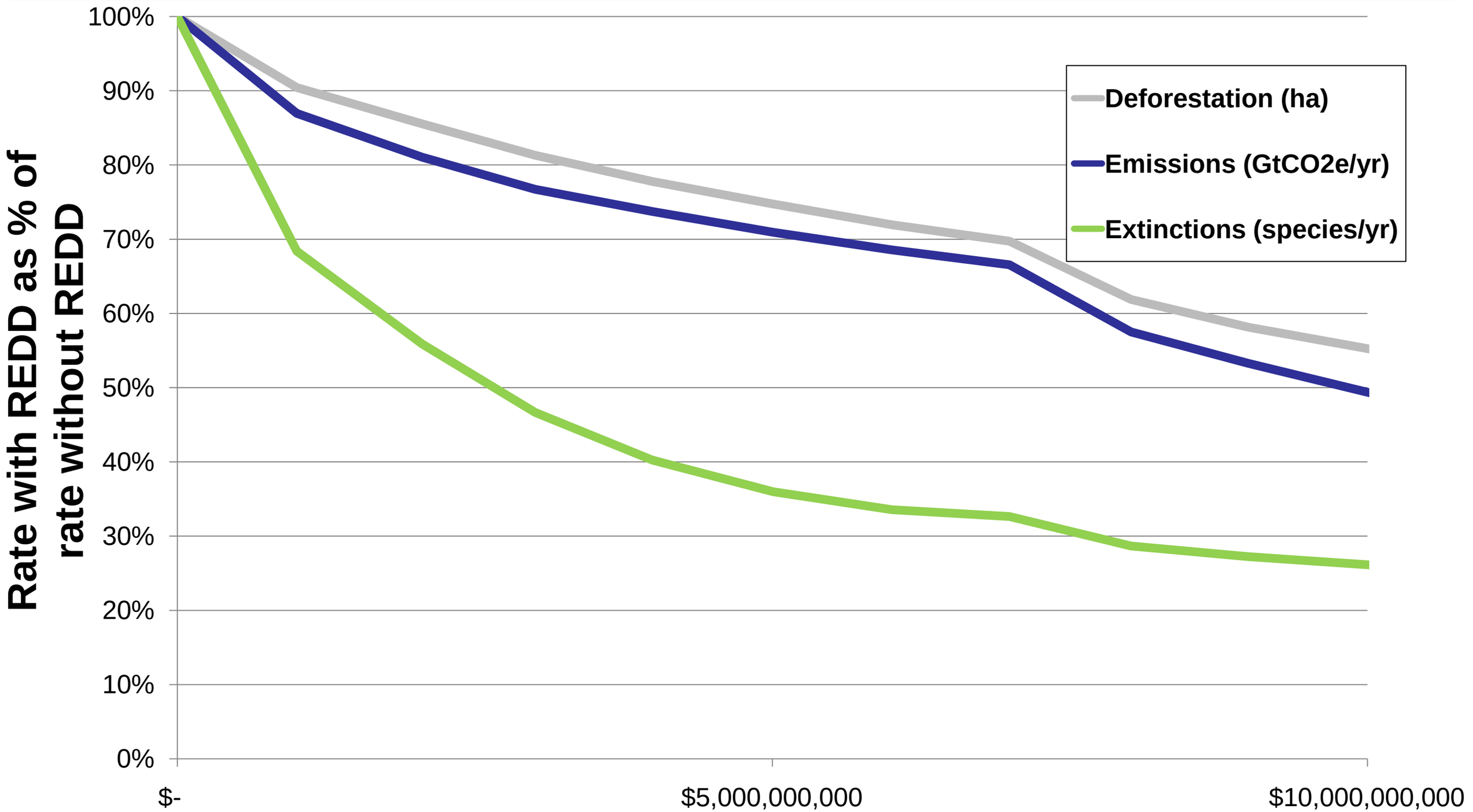
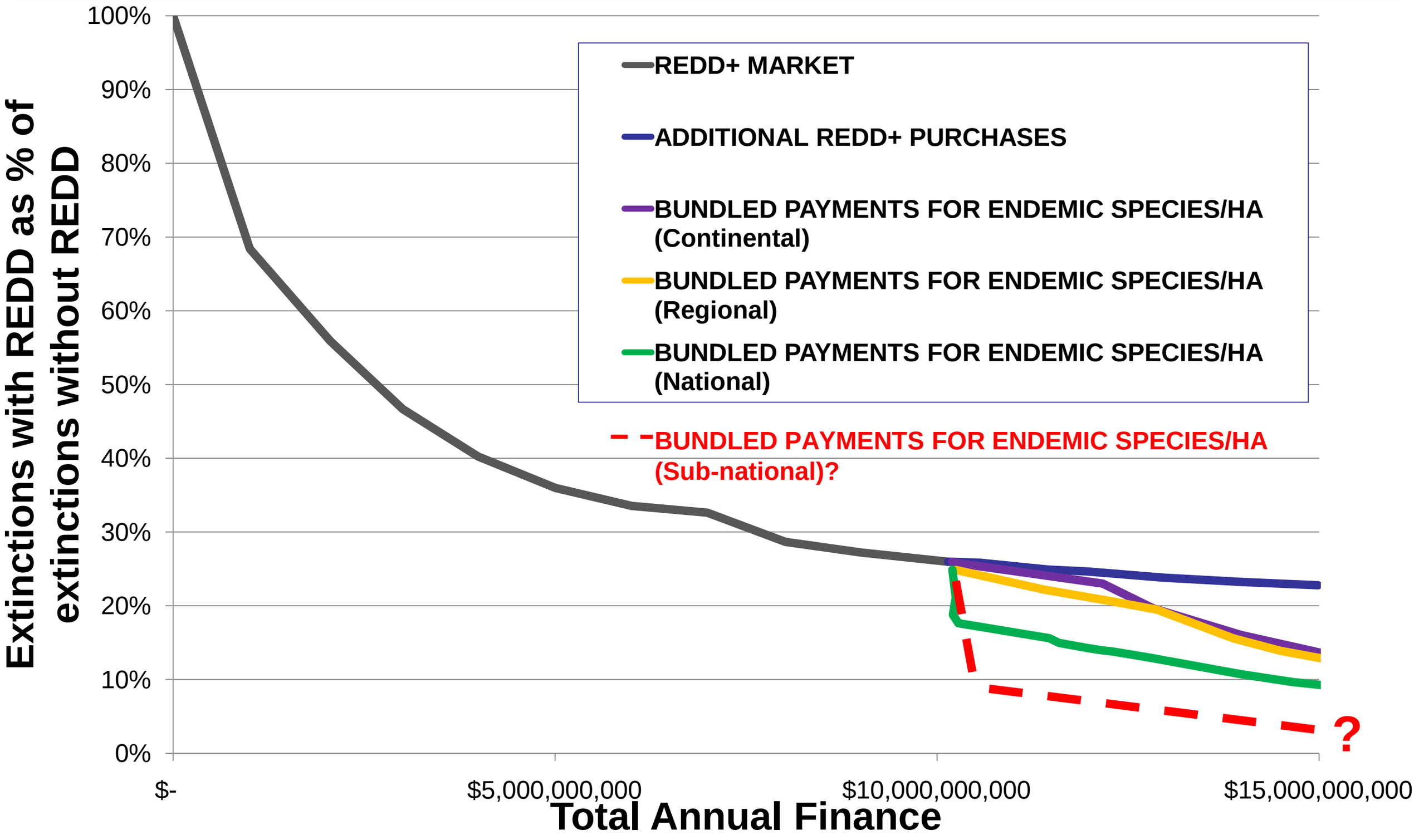
Co-benefit of REDD: Paying for forests' carbon reduces extinction rate of forest species

(Busch et al, in review)



Finer geographic scale for biodiversity metric generates greater reduction in extinction rate



Supplemental finance for biodiversity subsidizes REDD+