



Reducing emissions from Deforestation and Forest Degradation

Forest Carbon Partnership Facility



Understanding the Costs of REDD

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Diseño de Actividades REDD para la Mitigación del Cambio Climático
CATIE, Turrialba, Costa Rica, October 29, 2008



Need for
agreed
methods

What costs?

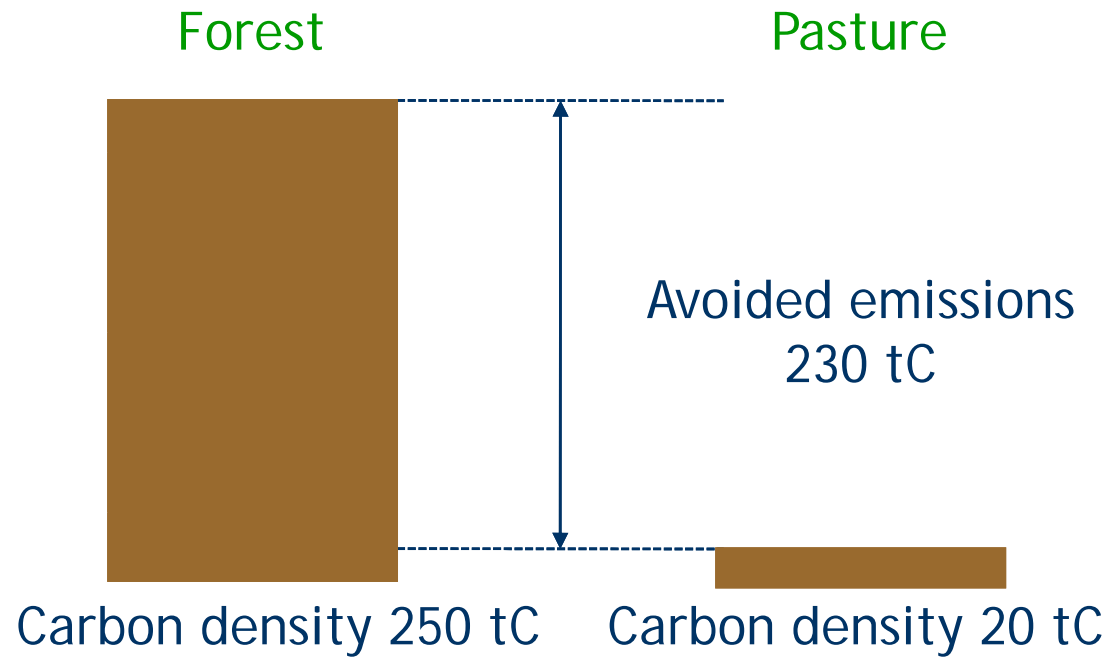
- Opportunity costs
- Implementation costs
- Transaction costs

Costs to whom?

- Country
- Land users
- Government



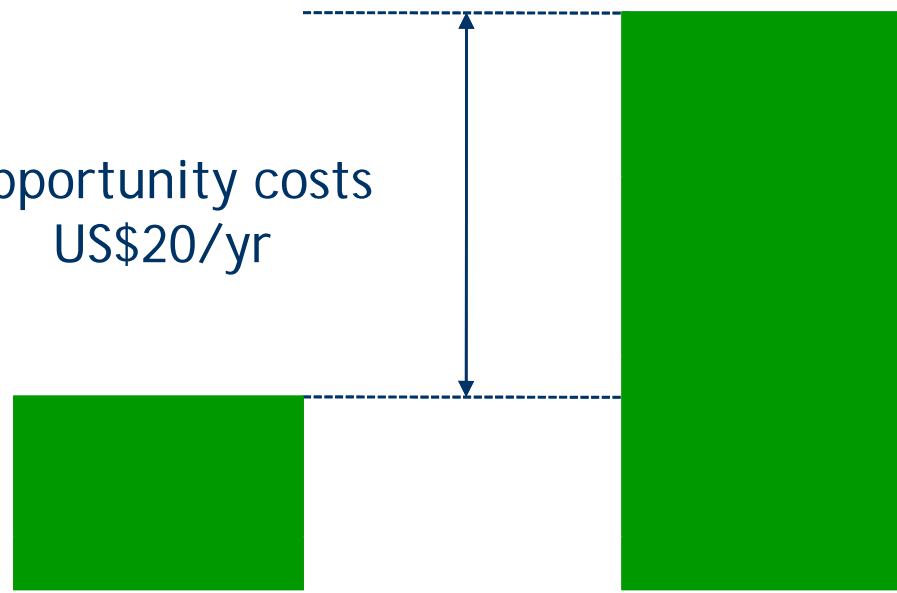
Opportunity costs



Opportunity costs US\$20/yr

Net returns US\$10/yr

Net returns US\$30/yr





Unit conversions

Avoided emissions 230 tC/yr

Opportunity cost \$20/ha/yr

Convert opportunity cost to PV

$PV = \$209/\text{ha}$ over 30 years, at 10%

Convert opportunity cost to /tC

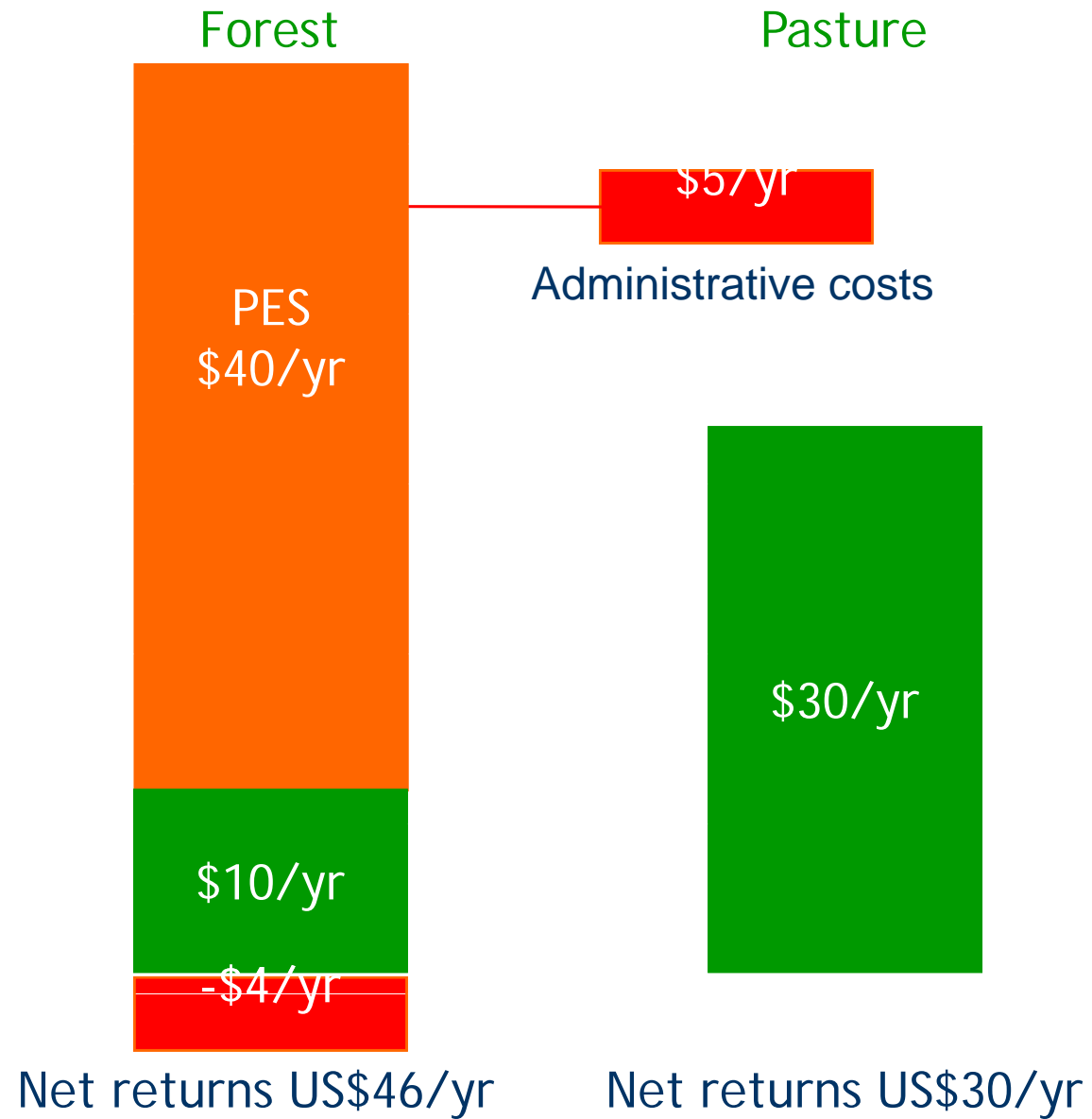
Cost of REDD = $209/230 = \$0.91/\text{tC}$

Convert to /tCO₂e

Cost of REDD = $0.91/3.67 = \$0.25/\text{tCO}_2\text{e}$



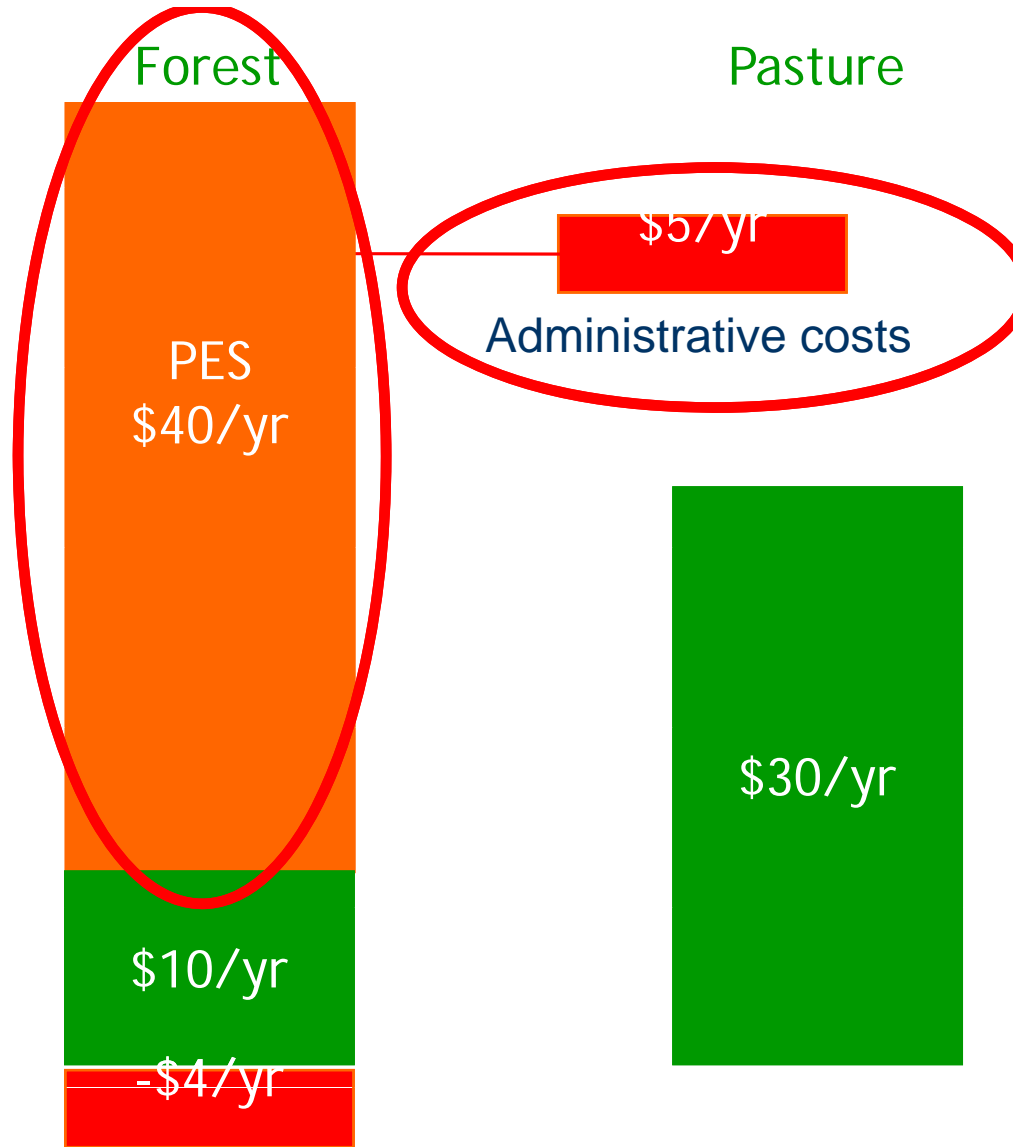
One possible approach to reducing forest loss



Payment to conserve forest



Costs to the government



Net returns US\$46/yr

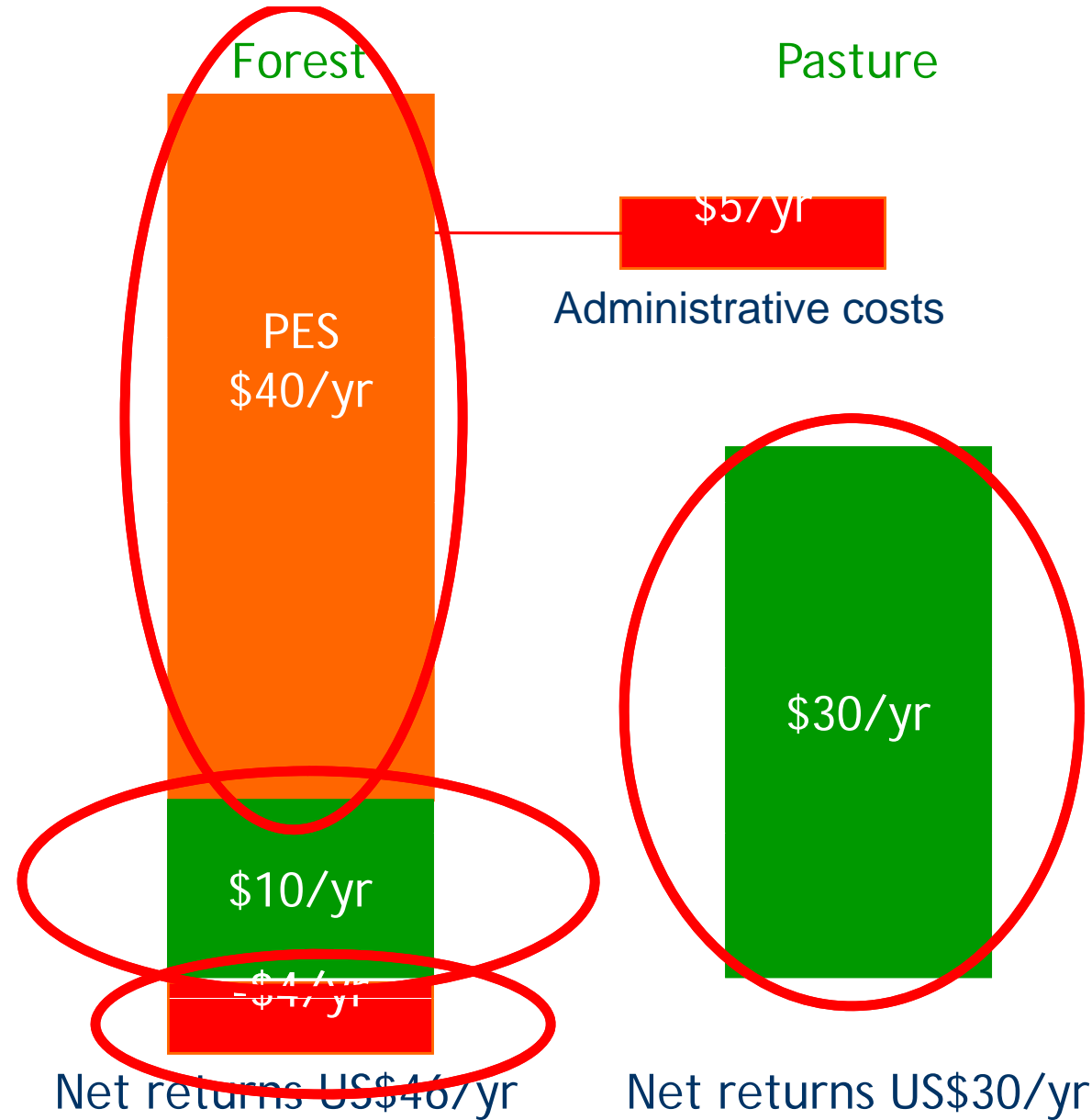
Net returns US\$30/yr

Budgetary cost of REDD *to the government*:

$$\$40 + \$5 = \$45 \text{ /ha/yr} = \$0.56 \text{ /tCO}_2\text{e}$$



Costs to
land users



Cost of REDD *to the land user*.

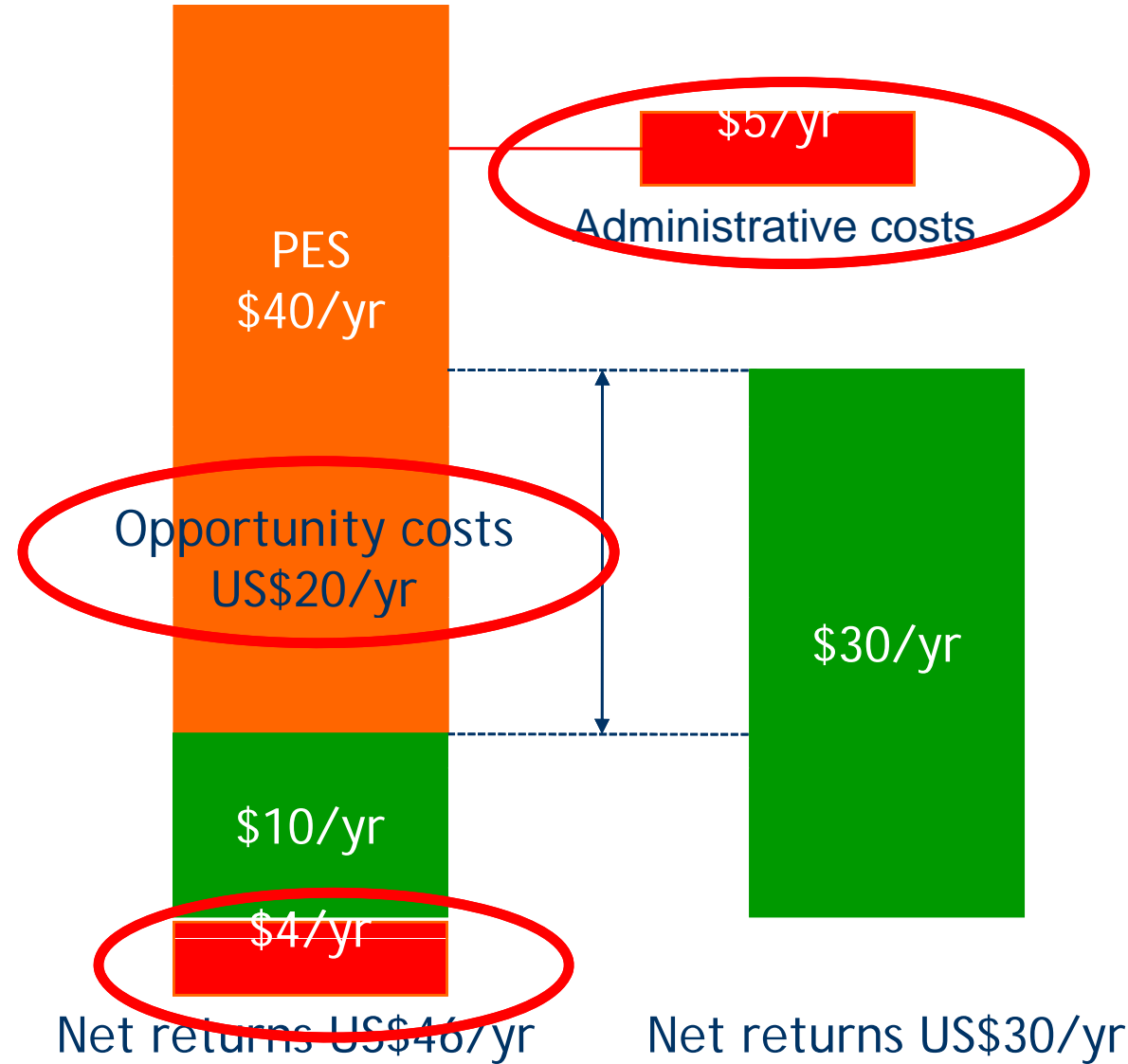
$$-\$10 - \$40 + \$4 + \$30 = -\$16 / \text{ha/yr}$$



Costs to the country

Forest

Pasture



Cost of REDD *to the country*:

$$\$20 + \$5 + \$4 = \$29 / \text{ha/yr} = \$0.36 / \text{tCO}_2\text{e}$$



Costs of REDD

Using payments for forest conservation
(\$/ha)

Summary

<i>Cost</i>	<i>Opportunity cost</i>	<i>Cost of implementation</i>		<i>Net</i>
		Payment	Admin etc	
To government agencies		40	5	45
To individual land users	20	-40	4	-16
To the country	20	0	9	29



Another approach to reducing forest loss

(not one we recommend)

Forest

Pasture

\$10/yr

Enforcement costs

\$30/yr

\$10/yr

Net returns US\$10/yr

Net returns US\$30/yr

Prohibition of cutting forest



Costs to the government

Forest

Pasture

\$10/yr

Enforcement costs

\$10/yr

\$30/yr

Net returns US\$10/yr

Net returns US\$30/yr

Budgetary cost of REDD *to the government*:

\$10 /ha/yr

= \$0.12 /tCO₂e



Costs to land users

Forest

Pasture

\$10/yr

Enforcement costs

Opportunity costs
US\$20/yr

\$10/yr

\$30/yr

Net returns US\$46/yr

Net returns US\$30/yr

Cost of REDD *to the land user*.

\$20 /ha/yr



Costs to the country

Forest

Pasture

\$10/yr

Enforcement costs

Opportunity costs
US\$20/yr

\$30/yr

\$10/yr

Net returns US\$10/yr

Net returns US\$30/yr

Cost of REDD *to the country*:

$$\$20 + \$10 = \$30 / \text{ha/yr} = \$0.37 / \text{tCO}_2\text{e}$$



Costs of REDD

Using prohibition of cutting forest
(\$/ha)

Summary

<i>Cost</i>	<i>Opportunity cost</i>	<i>Cost of implementation</i>	<i>Net</i>
To government agencies		10	10
To individual land users	20		20
To the country	20	10	30