Payments for Environmental Services in Costa Rica

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Payments for environmental services
Methods and design in developing and developed countries
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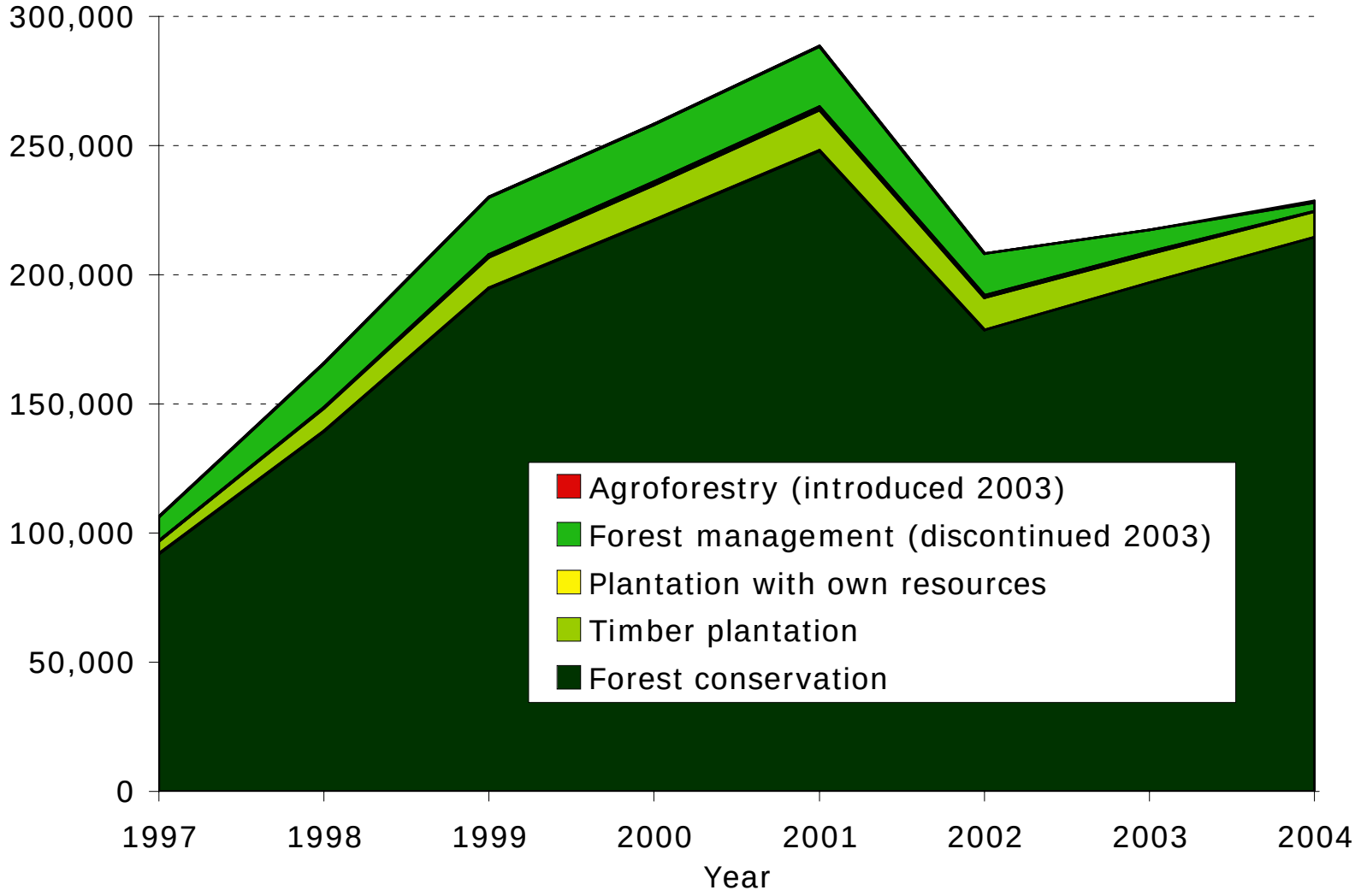
In the beginning… Forest Law No.7575 (1996)

- Recognizes four environmental services provided by forest ecosystems:
  - Mitigating greenhouse gas emissions
  - Conserving biodiversity
  - Providing hydrological services
  - Providing scenic beauty for recreation and ecotourism
- Establishes that the program will be financed through a tax on fossil fuel sales (5%, later 3.5%)

But didn't start from scratch

- Inherited from earlier timber industry subsidy program:
  - Contract form
  - Modalities
    - 'Reforestation' (= timber plantation)
    - Plantation with own resources
    - Sustainable forest management
    - Conservation of natural forest
  - Payment amounts

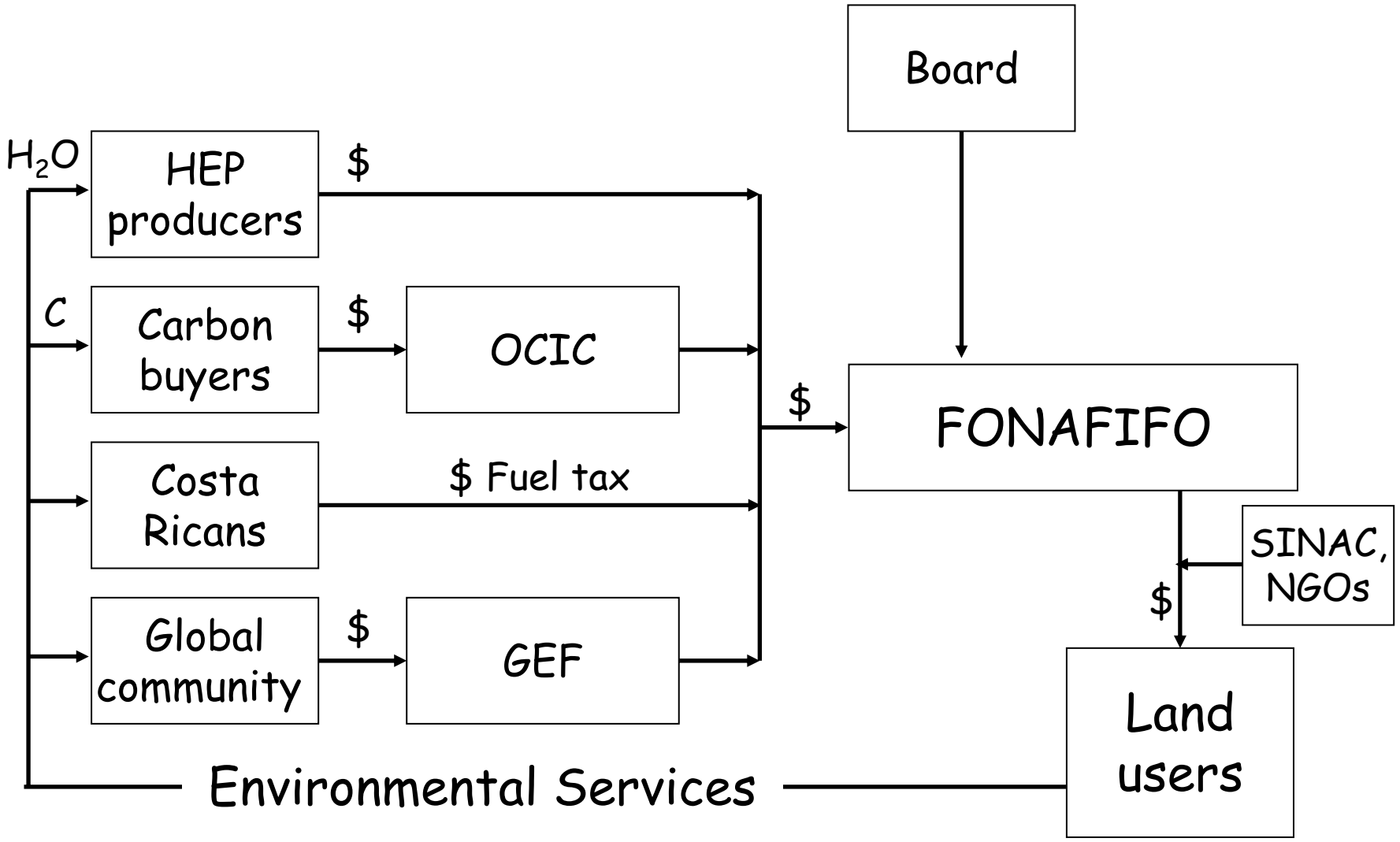
Area contracted



Who is paying?

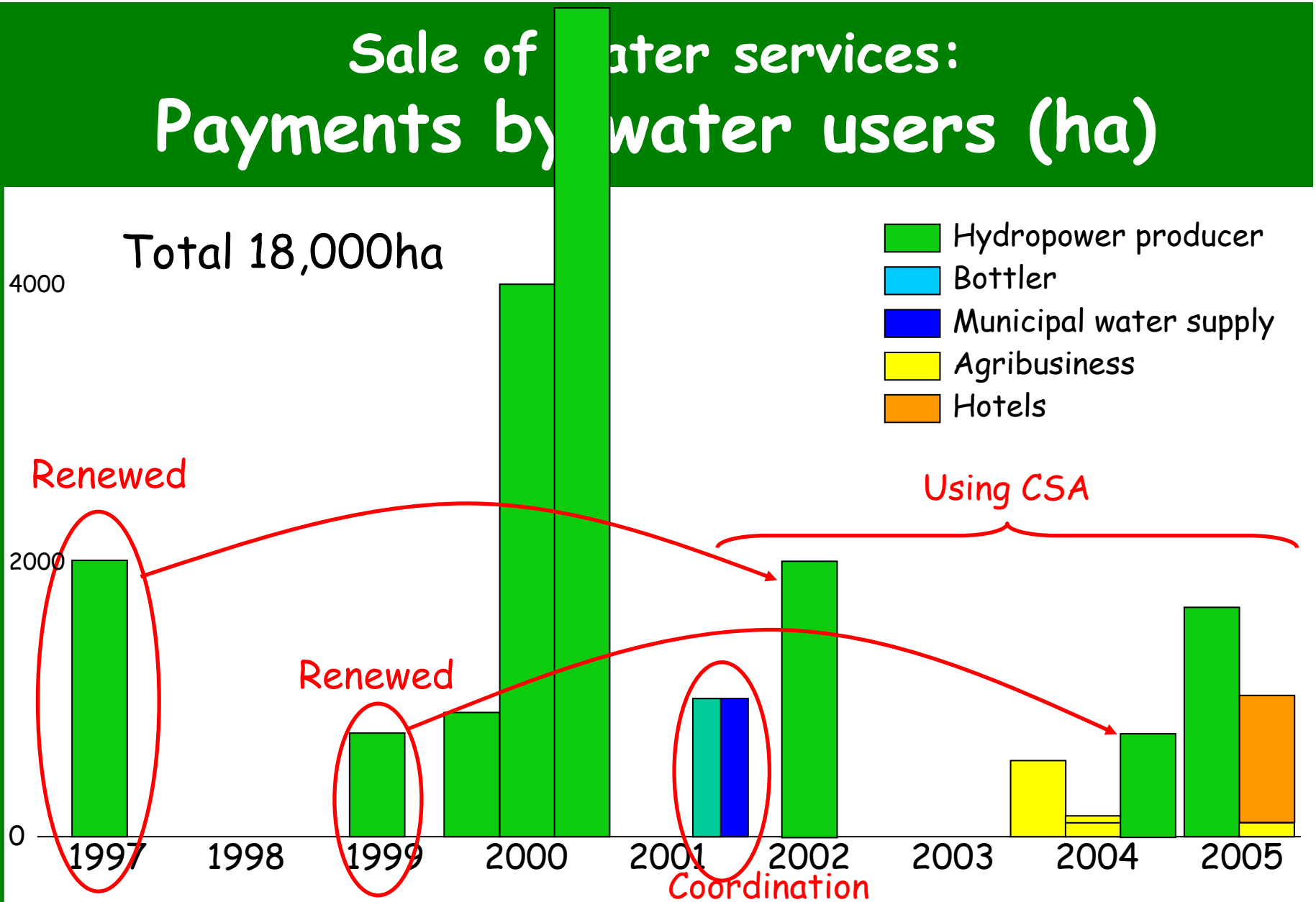
- Main income: 3.5% of fuel tax (ca US$3-4 million/year)
- Sale of water services:
  - Agreements with water buyers: ca US$0.4-0.5 million/year
  - Prospective new water tariff
- Sale of biodiversity services:
  - GEF grant (Ecomarkets project): US$8 million over 5 years
  - GEF grant (Silvopastoral project): ca US$0.5 million over 5 years
  - CI contracts: ca US$0.5-0.8 million over 3 years
- Sale of carbon services:
  - Sale of CTOs to Norway, 1997: US$2 million
  - GEF grant (Silvopastoral project): (see above)
  - Prospective sale of CERs
- Other:
  - KfW grant: US$11.2 million over 5 years

Components of the PSA program



Payments for environmental services in Costa Rica

Sale of water services: Payments by water users (ha)



Sale of water services:
Proposed new water tariff

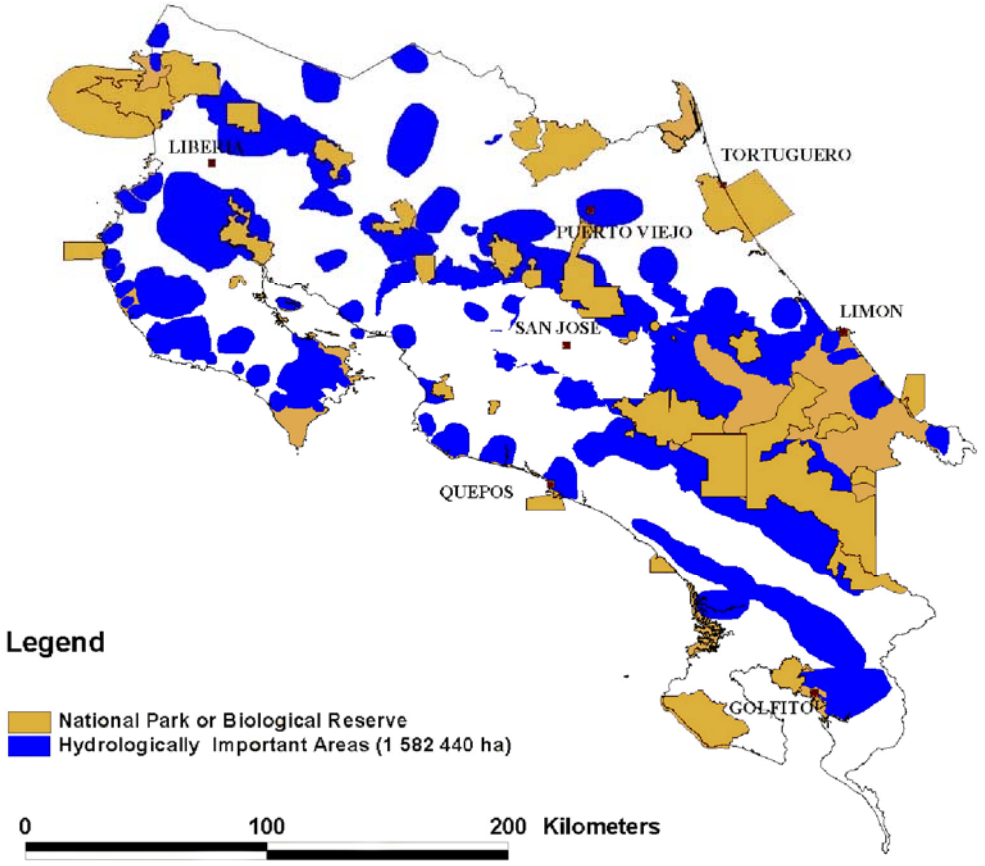
(colones/m^3 at full implementation)

	Fee for water use		*Fee for watershed protection*	*Total fee*	
	Surface water	*Underground water*		*Surface water*	*Underground water*
Domestic use	0.46	0.63	1.00	1.46	1.63
Industry and Tourism	1.64	2.25	1.00	2.64	3.25
Agriculture sector	0.29	0.40	1.00	1.29	1.40
Hydroelectric power sector	0.06	-	0.06	0.12	-

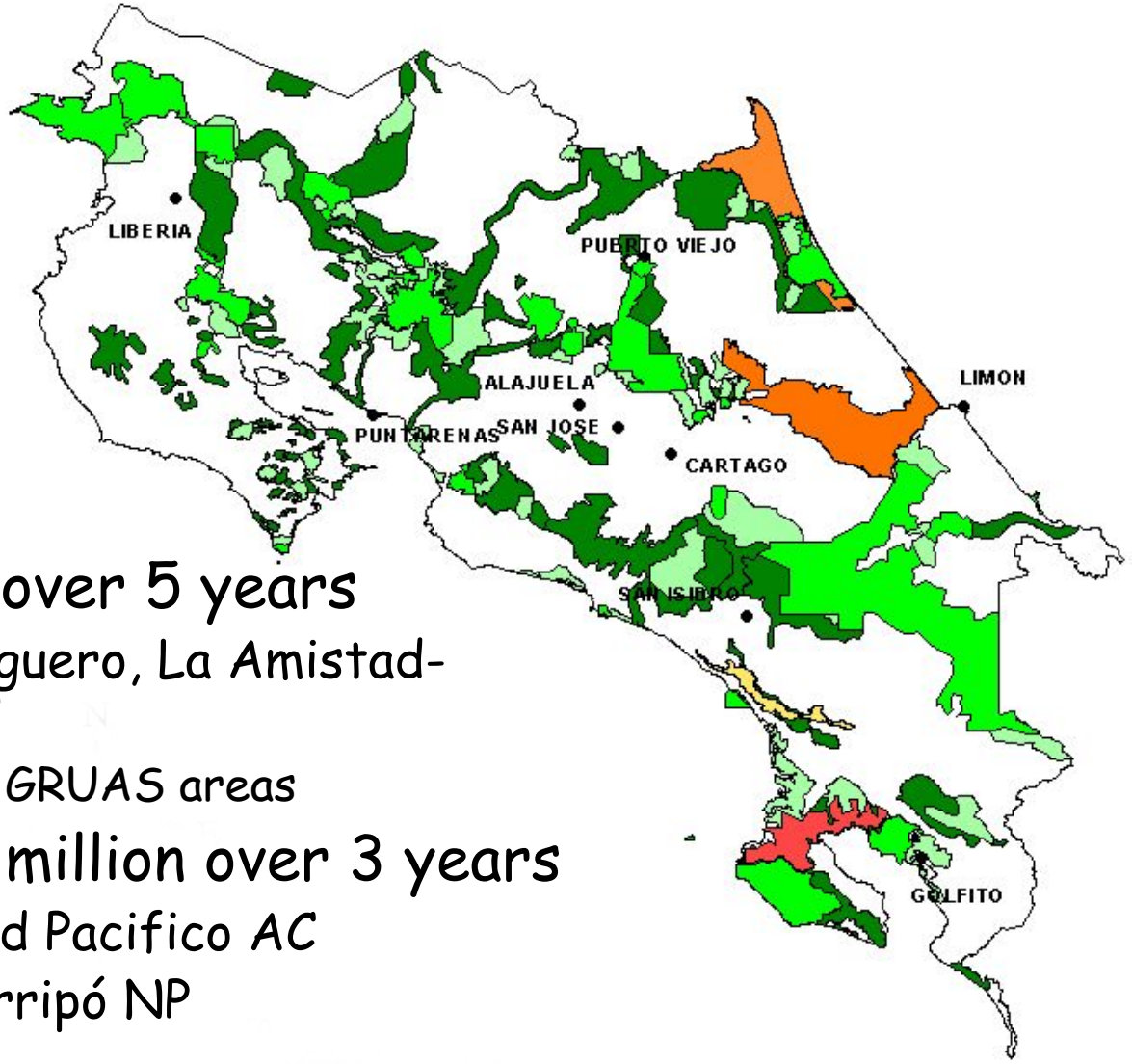
28% water dept, 36% PSA, 36% protected areas

Sale of water services:
Proposed new water tariff

- Once fully implemented (in 7 years), will generate ca US$7.5 million/year for PSA
- Must be used in watershed where it is generated
- 1.6 million ha of water priority areas
- Ca 0.3 million ha overlap with biodiversity priority areas



Sale of biodiversity services:
Biodiversity conservation priority areas ('GRUAS areas')

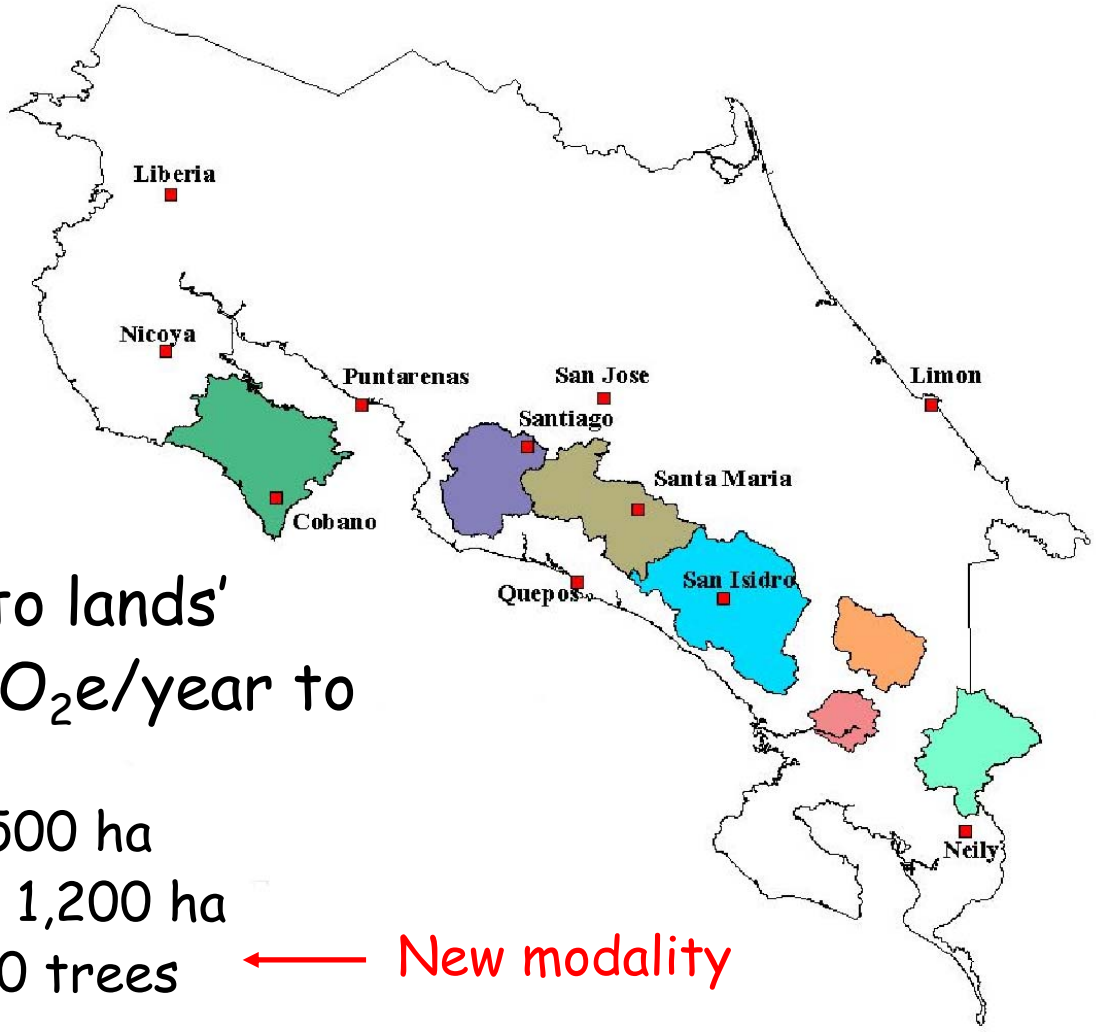


- GEF: US$8 million over 5 years
  - 50,000 ha in Tortuguero, La Amistad-Caribe, and Osa AC
  - 50,000 ha in other GRUAS areas
- CI: ca US$0.5-0.8 million over 3 years
  - Osa AC and Amistad Pacifico AC
  - Buffer zone of Chirripó NP

Sale of carbon services

- Participating land users cede right to C to FONAFIFO
- Development of Certifiable Tradable Offset (CTO): 1 tCO_2 emission reduction
  - Monitored + audited
  - Un-sold buffer
  - Specialized sales agency: OCIC
- 1997: Sold 200,000 TCOs to Norway for US$2 million (US$10/tCO_2)
- Avoided deforestation: no further sales
- Re-entering market for Kyoto-compliant ERs
- Exploring 'retail' (non-Kyoto) market
  - 100 ha forest conservation to Lifegate

Sale of carbon services



- 1.1 million ha of 'Kyoto lands'
- Pilot sale: 54,000 tCO_2e/year to BioCarbon Fund
  - Timber plantation 2,500 ha
  - Natural regeneration 1,200 ha
  - Agroforestry 180,000 trees

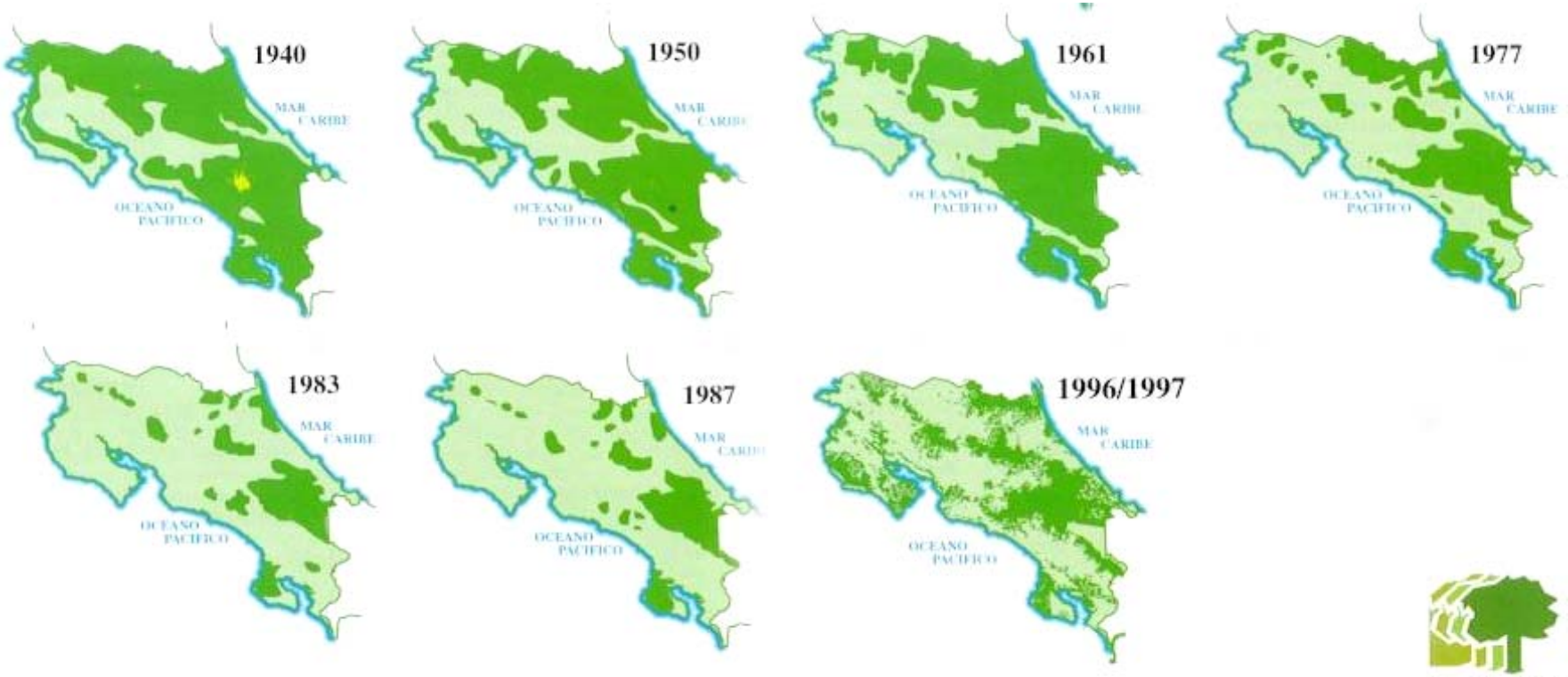
← New modality

Payments to participating land users

	Amount of payment (US$/ha)	*Distribution of payment (year)*				
		1	*2*	*3*	*4*	*5*
Timber plantation	538	269	108	81	54	27
Forest conservation	210	42	42	42	42	42
Agroforestry (150 trees)	116	75	23	17		

How effective has the PSA program been?

Forest cover in Costa Rica, 1940-1996

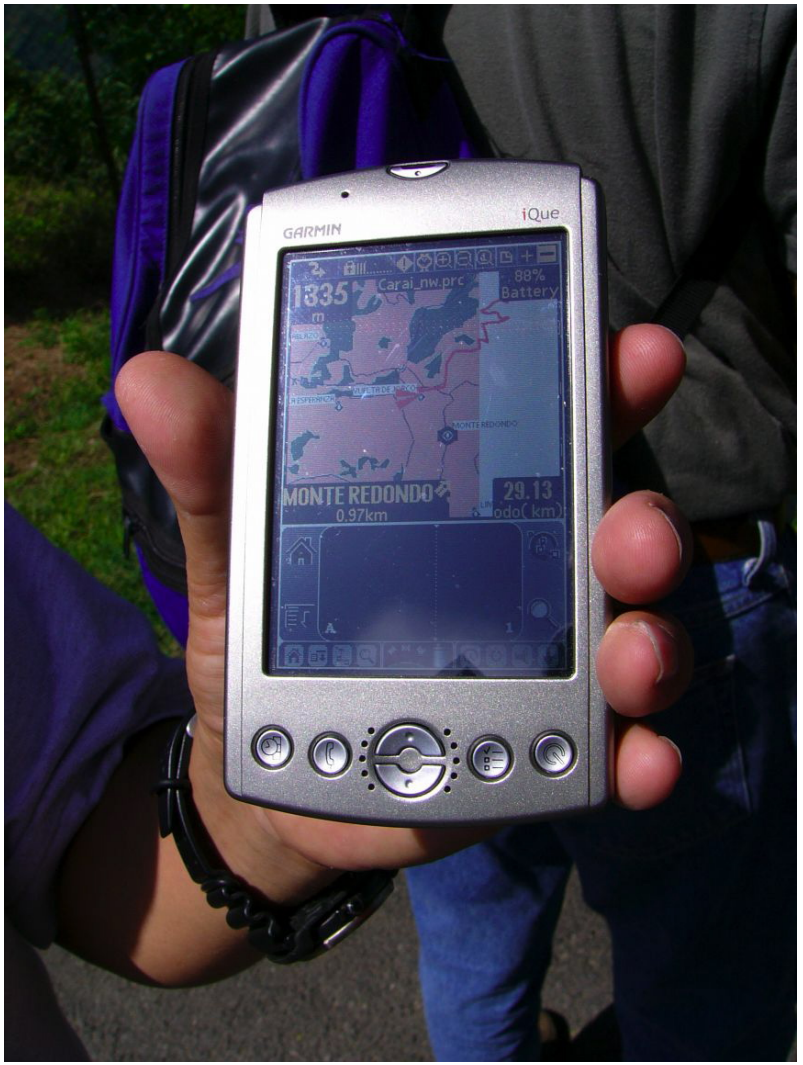


Fuente: FONAFIFO

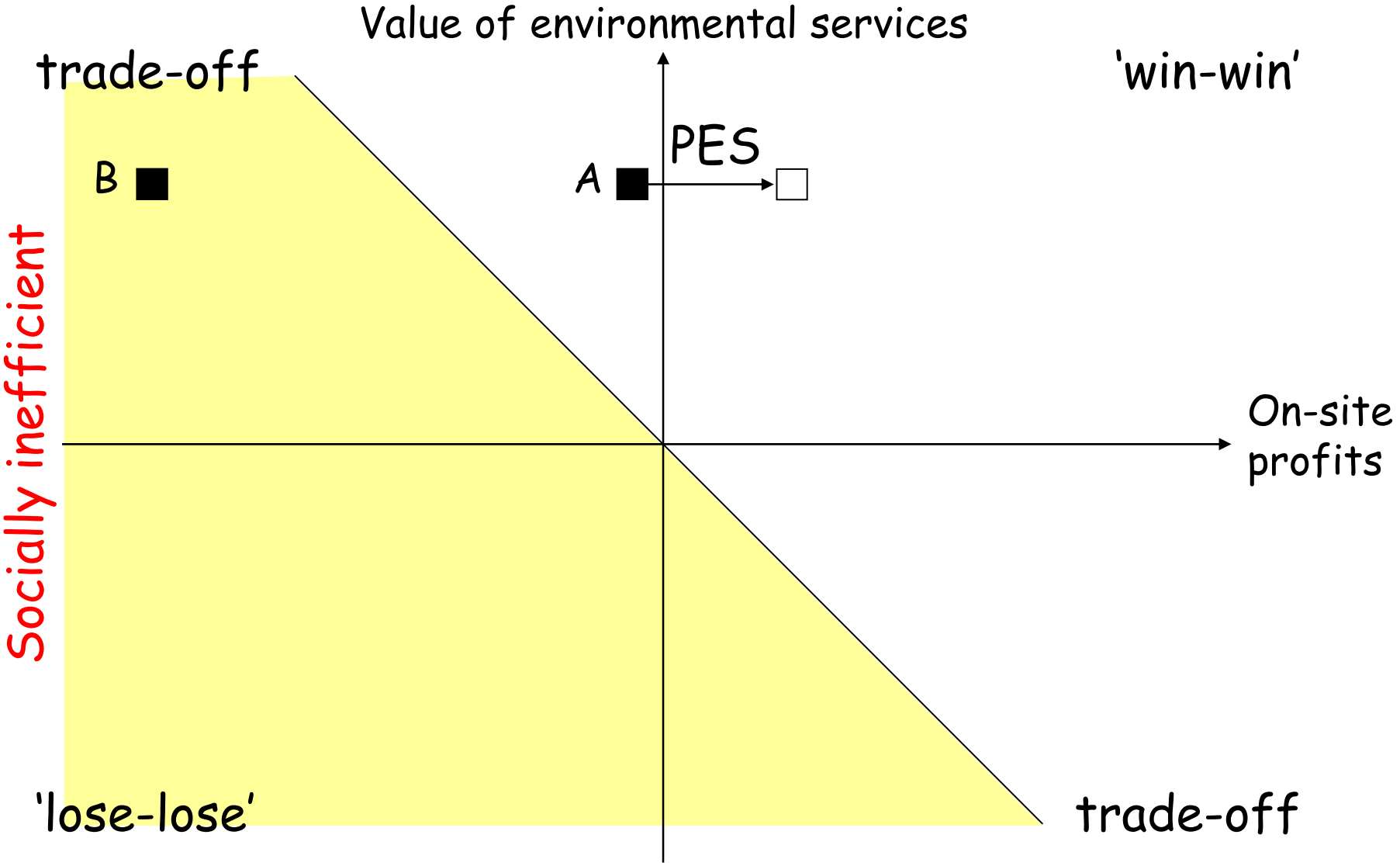
FONAFIFO

Monitoring results

- State of the art monitoring of compliance
- *No* monitoring of effectiveness

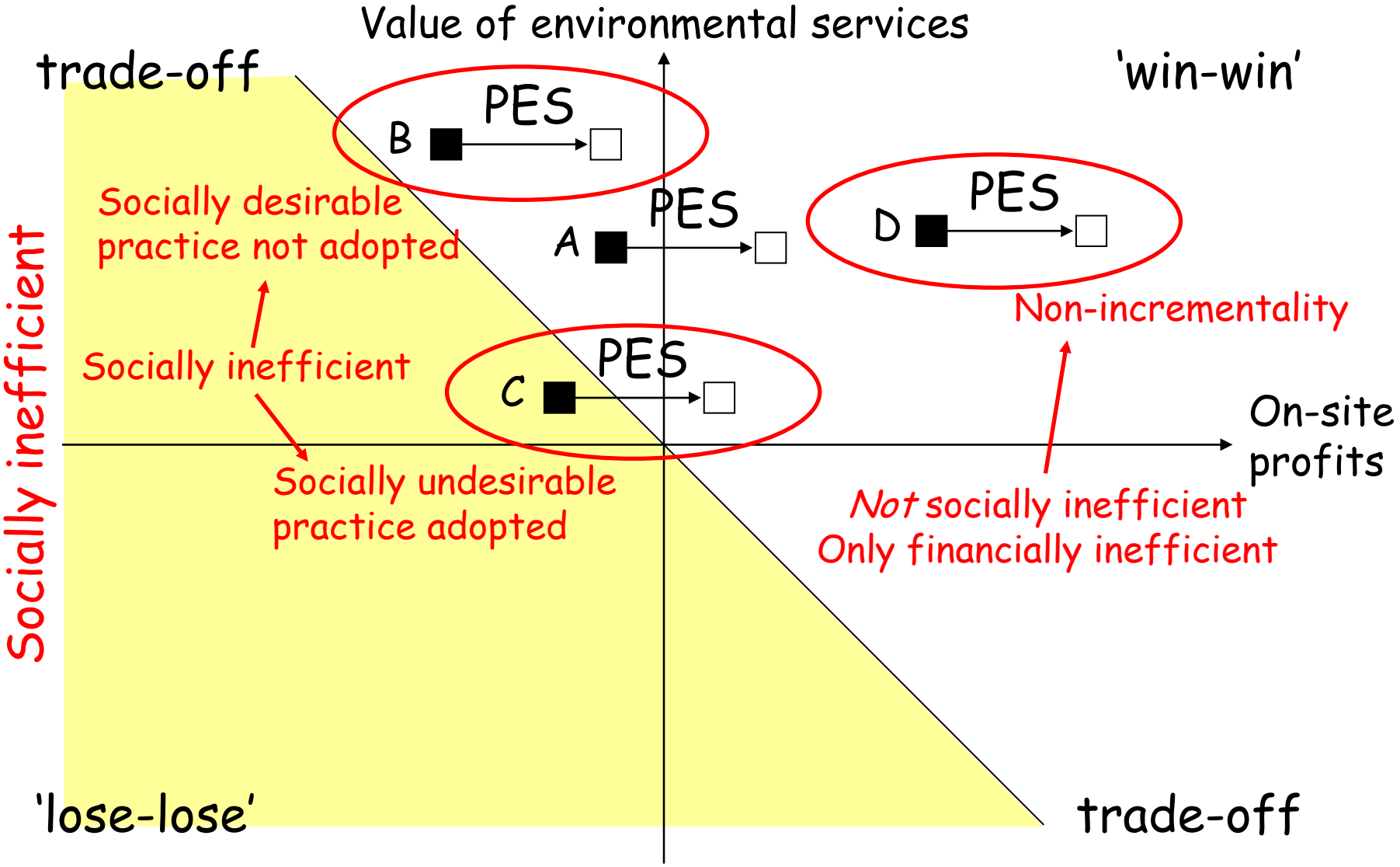


Efficiency of PES programs: A framework

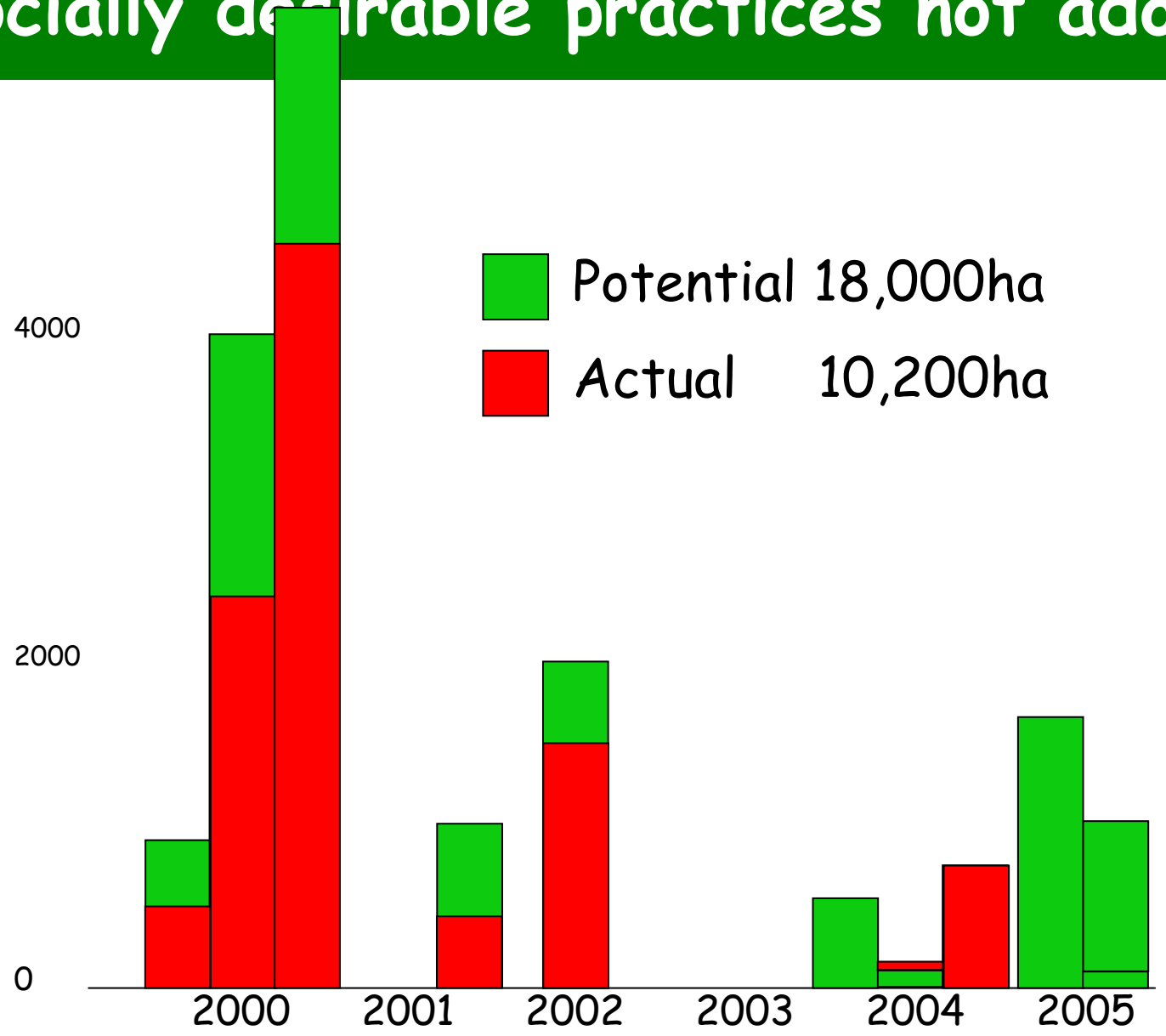


Source: Pagiola, 2005

Efficiency of PES programs: Sources of inefficiency



Sale of water services:
Socially desirable practices not adopted



Sale of biodiversity services: Socially desirable practices not adopted

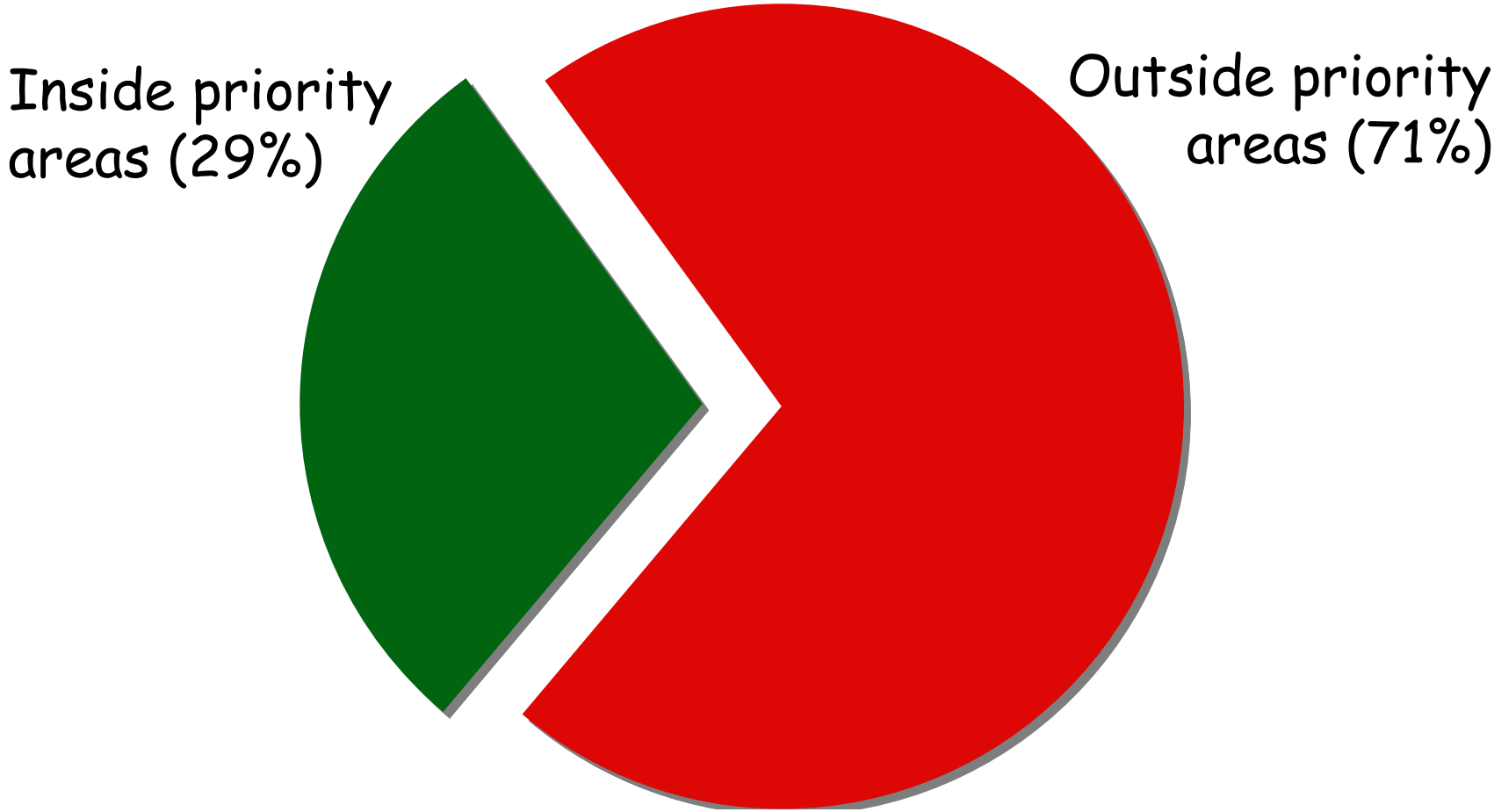
Enrolled area inside biodiversity conservation priority areas
(1997-2001 contracts)

Modality	*Area (ha)*	*As % of enrolled area*	*As % of priority areas*
Timber plantation	17,281	6	1
Forest conservation	62,417	22	4
Forest management	3,462	1	0
Total	83,159	29	5

But: Substantial improvement since 2003

Sale of biodiversity services: Socially undesirable practices adopted

(1997-2001 contracts)



But: Substantial improvement since 2003

Payments for environmental services: Non-incrementality

- 230,000 ha contracted at end 2004
  - 94% for forest conservation (at US$40/ha/yr)
- Applications for > 800,000 ha pending
- Note: PSA program does *not* demand incrementality

Why the inefficiency, and what is being done about it?

1. Lack of targeting early in program
   - Location in GRUAS area enforced since 2003
   - Funds from service users have their own targeting
     - Watersheds with service user contracts
     - GEF/CI priority areas
     - Targeting of payments based on new water tariff
     - CDM-compliant activities in 'Kyoto Lands'

Why the inefficiency, and what is being done about it?

2. Undifferentiated payments country-wide
   - Ad hoc adoption of higher payments when needed
     - Río Segundo (cumulating Florida Ice & Farm and Heredia ESPH funding to pay US$67/ha/year)
   - Principle of differentiated payments accepted + will be introduced

Why the inefficiency, and what is being done about it?

3. Undifferentiated modalities country-wide
   - Development of new modalities
     - Agroforestry (2003): Better suited to small farmers
       - Allows agricultural production to continue
       - Payment per tree; can be done on small scale
     - Natural regeneration (2006): Needed for carbon sequestration: cheaper option than plantations
     - Likely many others, as assess needs to generate water services in areas with water tariff financing

Why the inefficiency, and what is being done about it?

4. Lack of information on actual impact of different land uses (excellent compliance monitoring, non-existent impact monitoring)
   - Collaboration on retrospective assessments
   - Design of improved impact monitoring system

Conclusions

- PSA is important part of package of measures
  - 'Carrot' that accompanied legal restrictions on clearing forests
- 'Mistakes' inevitable in a pioneering program
  - Partly due to origin in earlier timber subsidy program
- Strong focus on innovation and adaptation

Challenges ahead

- Improving monitoring to allow better targeting, selection of modalities, setting payment levels
- Ensure funding flows are sustainable
  - Payments need to be long-term, but all biodiversity funding is short-term
  - In GRUAS area:
    - 0.2 million ha with potential for C funding
    - 0.3 million ha with potential for water tariff funding
    - 0.9 million ha with no significant potential for either
  - Capitalize trust fund