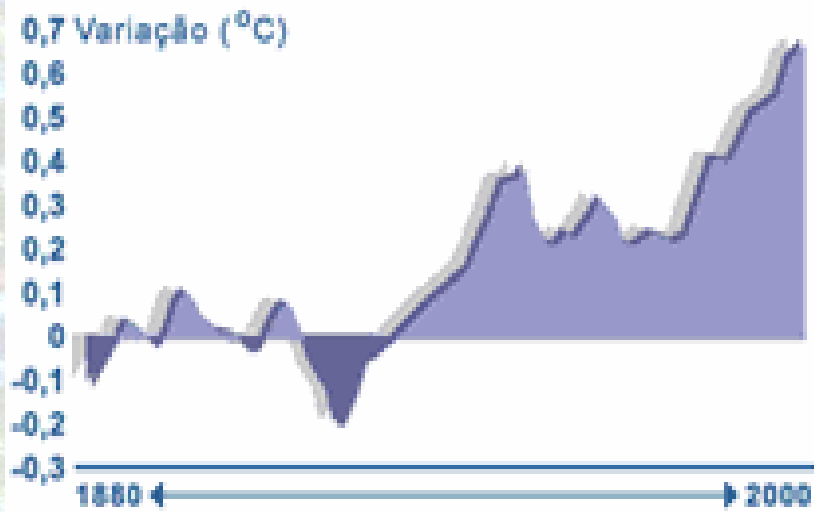


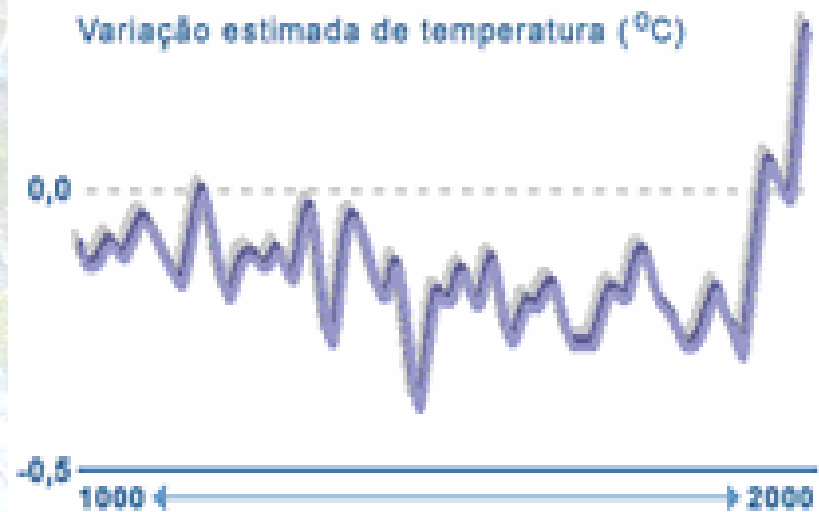
Climate Change & the pig iron industry: the Plantar Case

IAPA Meeting, 2006 - Rio de Janeiro - BRAZIL

Aumento da temperatura



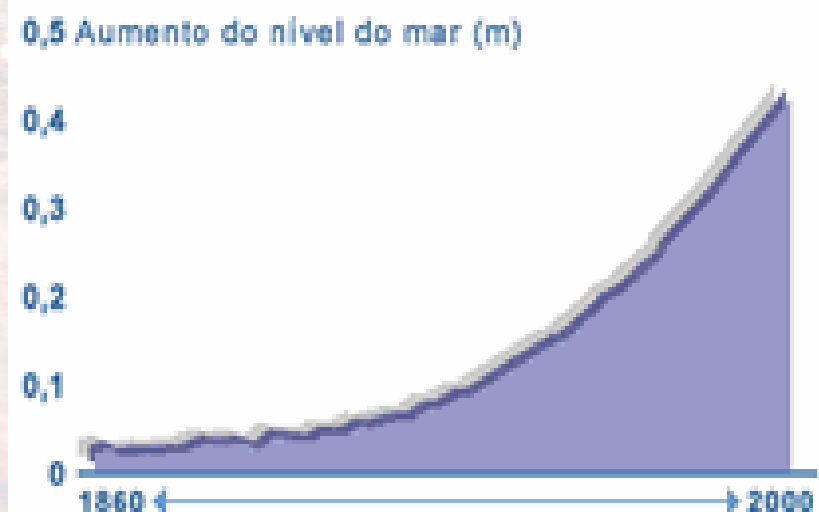
Mudanças a longo prazo



Ártico



Nível das águas



Fighting Against Global Warming

- Pre-Rio92 period
- Rio 92 (UNCED): Agenda 21

**Principle:
Sustainable
Development**

**Rule:
GHG
Reduction**

UNFCCC - United Nations Framework
Convention on Climate Change.
(Principle of common but differentiated
responsibilities)

Regulations

COP's - Kyoto Protocol (1997)

The Kyoto Protocol

- The Annex 1 Parties (developed countries) must reduce their emissions in 5,2%, in comparison to 1990 levels, until 2012;
- The Protocol came into force on February 16th, 2005;
- Flexibility mechanisms

The Clean Development Mechanism

Purposes:

- Help developed countries to meet their emission reduction targets
- Promote and finance clean development in developing countries

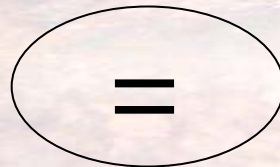
IMPORTANT: CDM credits are supplemental to domestic actions in Annex I countries. The main effort has to be done within Annex I geographical borders.

How is the carbon credit generated?

Establish the *Baseline Scenario*:
emissions that would occur in the absence of the Project



Establish the *Project Scenario*:
emissions when implementing the Project



CARBON CREDIT

CDM Project Possibilities

- Energy Efficiency
- Fuel switch
- Landfill gas flaring, etc.

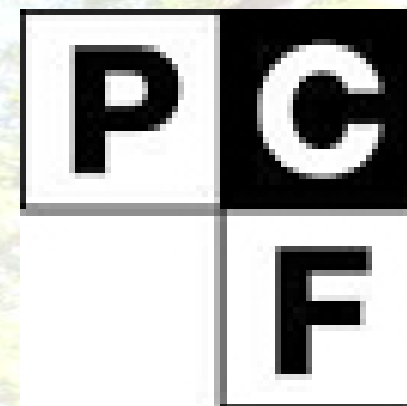
“LONG-TERM CREDITS”

...avoided emissions,
permanent benefits...

- Carbon Removals
(Sinks) by means of
afforestation and/or
reforestation

“TEMPORARY CREDITS” COP 9

... Permanence of credits is
conditional to the existence of
forests...



The Plantar Project

A Plantar-World Bank joint initiative

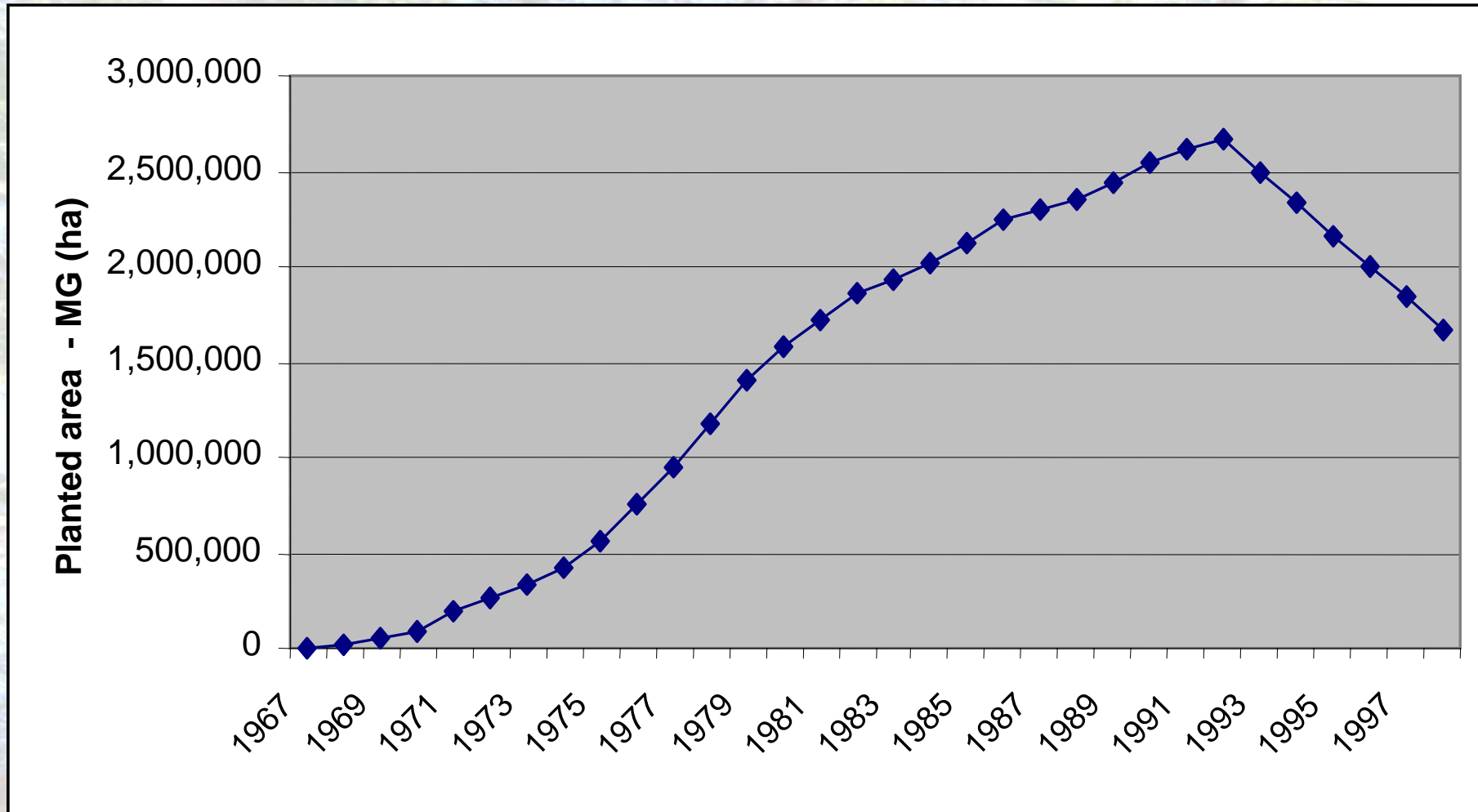
**Renewable energy and sustainable standards
for the iron industry and its supply chain**



Plantar Group Main Activities

- **Forestry Management**
(Forestry management services for third parties)
- **Production and commercialization of sprouts**
- **Charcoal for barbecue - Brazilian's 1st final product certified by FSC** (domestic and foreign markets).
- **Pig Iron Production** (domestic and foreign markets).
- **Carbon Credits Project**
(Conceived under the Clean Development Mechanism)

Baseline assessment

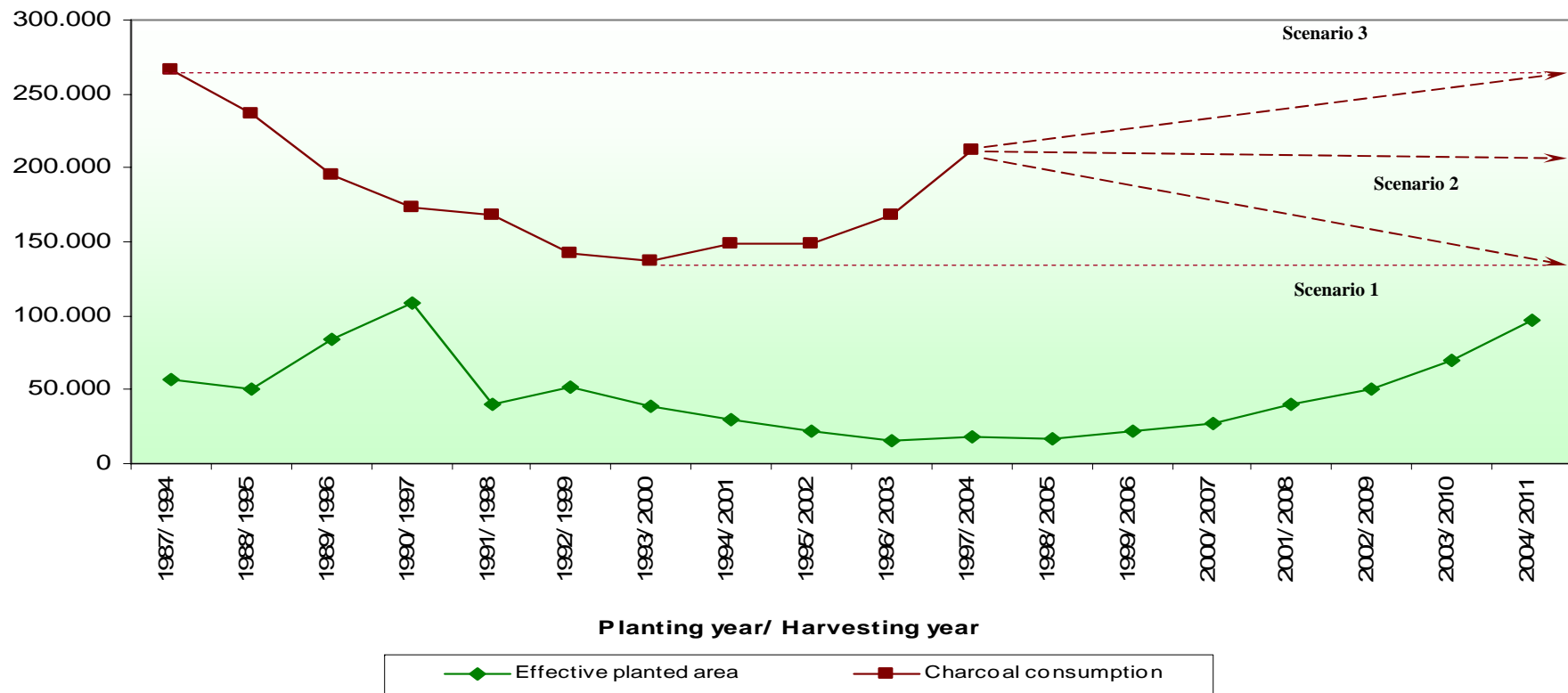


Source: IPEF (2000)

Curbing structural challenges

Baseline assessment

Ex-post charcoal consumption converted to equivalent plantation area
 X
 Effective planted area
 MINAS GERAIS
 (ha/planting year-harvesting year)



Source: AMS

Fighting the forestry blackout in Brazil

Baseline Scenario

Scarcity of planted forests for charcoal production and subsequent use in the iron manufacturing process



STOCK

Lack of
carbon stocks
(LULUCF)
Decision 19/CP.9



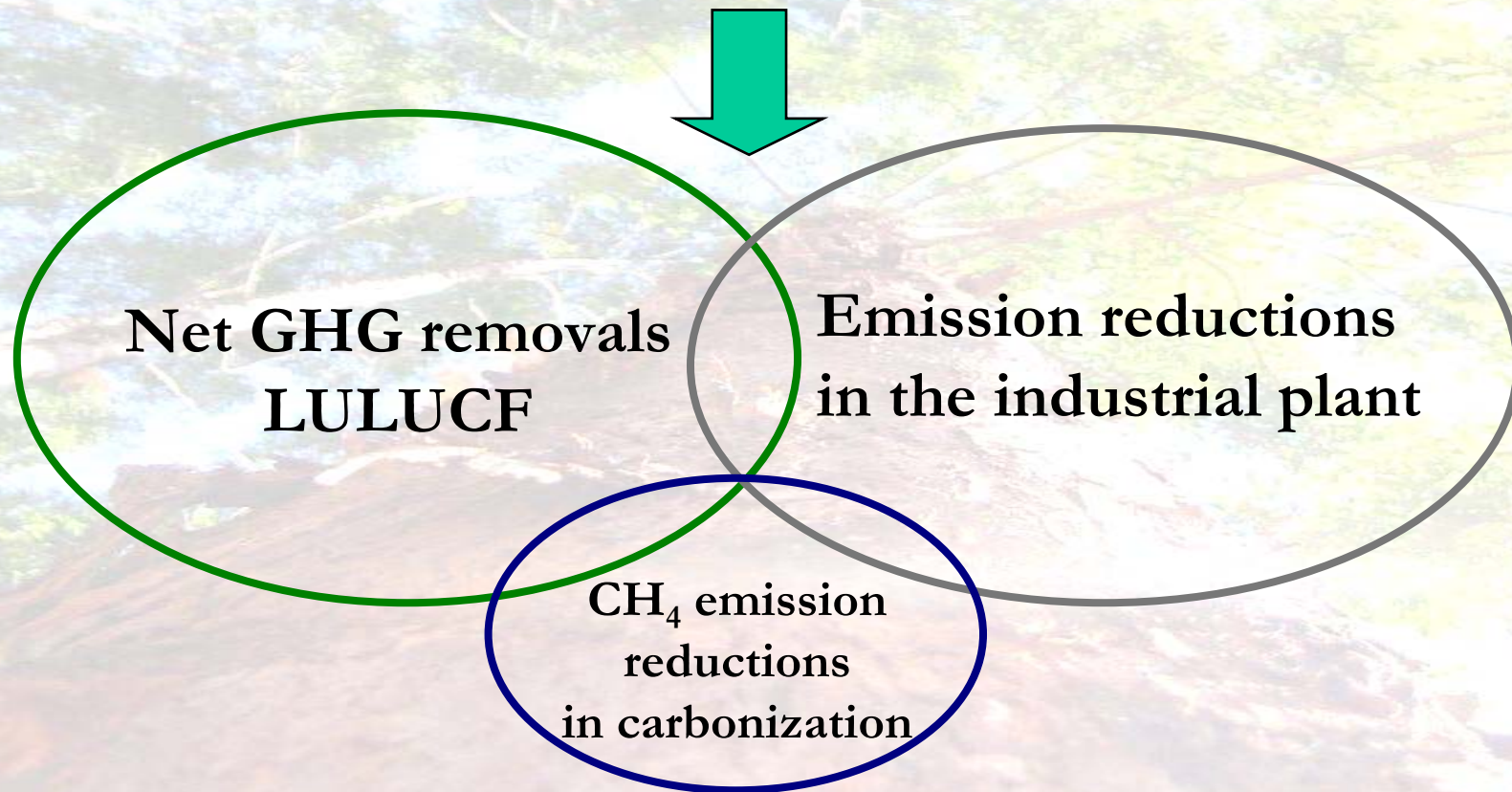
USE

CO₂ emissions from
the use of non-renewable
biomass or coal coke
in iron production process
Decision 17/CP.7

Renewable wood = Renewable energy

The Project Scenario

Establishment of planted forests for sustainable pig iron production, *totally* supplied with renewable charcoal



Integrated benefits to the climate

The Project Components

<u>Project Activity</u>	<u>Baseline</u>	<u>Project</u>	<u>Additional benefits to the climate</u>
Plantation Establishment (Decision 19/CP.9)	Pastureland	New planted forests	Net CO ₂ removals/ additional carbon stock
Improved carbonization process	Charcoal production with high levels of methane emissions	Charcoal production with low levels of methane emissions	CH ₄ emission reductions
Sustainable iron reduction	Pig iron production based on non-renewable biomass or coal coke	Pig iron production based on charcoal from planted forests	CO ₂ emission reductions
<i>Cerrado restoration</i>	<i>Pastureland</i>	<i>Cerrado</i>	470 ha

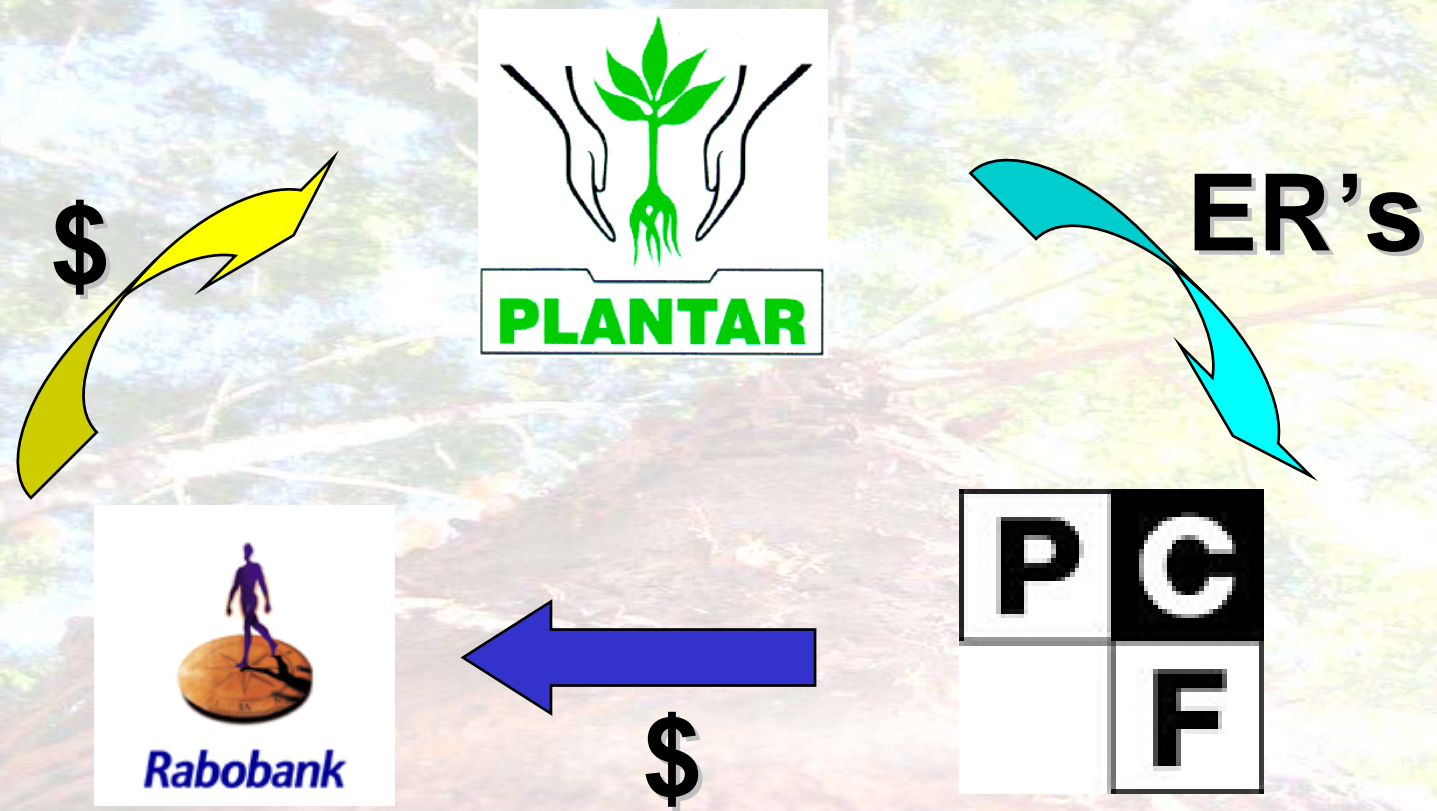
Transforming technical advantages into comparative advantages

Project Numbers

- ▶ Forestry activity: average stock of 4,5 million tCO₂e, in 28 years – credits to be claimed in accordance with the t'CER approach (2001-2029)
- ▶ Industrial activity: 7,9 million tCO₂e, in 21 years (2008-2029)
- ▶ Credits negotiated with PCF: 1,5 million tCO₂e
- ▶ PCF Transaction value: US\$ 5,3 million

Environmental gain of 3 tons of CO₂e for each ton of iron produced

Financial Structure



Pioneering the Brazilian CDM market

Project's timeline

1998 - Conception

1999 - Aspen Forum presentation (São Roque/SP)

2000 - Non-objection letter by Brazilian Government

2001 - Signing of the Letter of Intention with PCF

PCF's Investors Committee approval

2002 - Signing of ERPA with PCF

2002 - Project's partial validation by DNV

2003 - Signing of LA with Rabobank

2003 - Initial Verification (Part I)

2005 - Initial Verification (Part II – Conclusion)

2005/2006 - Methodologies' submission

- Methodologies and PDDs' approval

- Validation conclusion

Learning by doing !

Social and Environmental Development

- ▶ More than 1200 direct jobs in rural areas.
- ▶ FSC certification in the region of Curvelo, Minas Gerais.
- ▶ Biodiversity and working conditions monitoring by World Bank.
- ▶ Other certifications: ISO 14001, ISO 9001, Abrinq Foundation.
- ▶ The project is strongly supported by local communities, neighbors, NGOs, state and federal authorities.
- ▶ Frequent consultation to stakeholders within FSC certification and World Bank monitoring programs.
- ▶ Brazilian government support to sustainable eucalyptus plantations (PNF).
- ▶ Committed with transparency and open dialogue.



Greening Capitalism

The Project Region

Baseline scenario

X

Project scenario



Environmentally correct, socially fair and economically attractive

Labor conditions

Baseline scenario

X

Project scenario

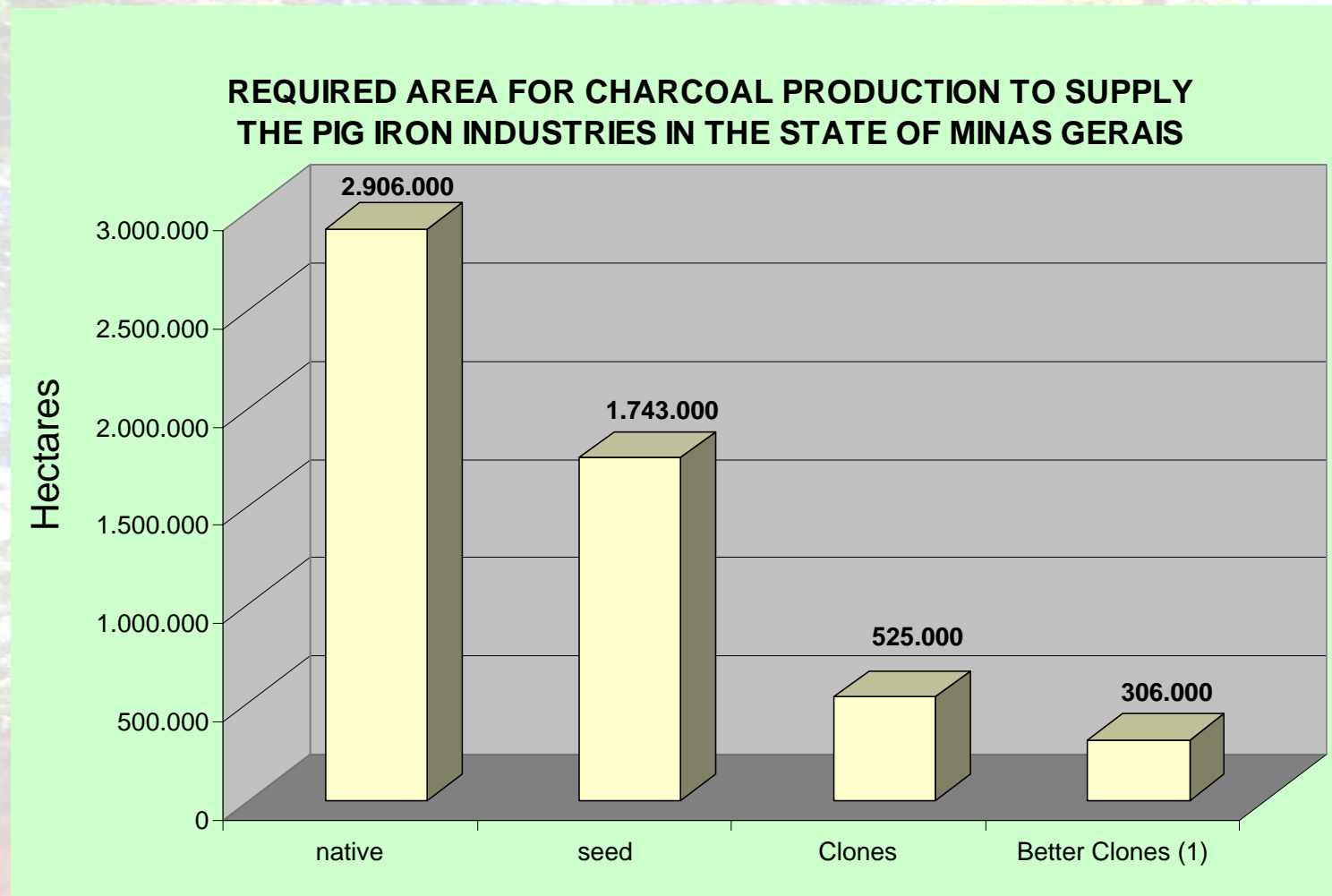


Environmentally correct, socially fair and economically attractive

Applicability of methodologies and the project's replication potential

- Pig Iron independent sector**
- Integrated sector (steel and iron)**
- Small, medium and major charcoal producers (CH₄)**
- Other energy related and forestry-based industries**

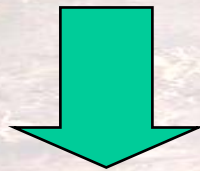
The strategic role of eucalyptus clonning technology



High technology ensures permanent benefits to the climate

Multiple benefits for Brazil

- ▶ High potential for net GHG removals and emission reductions, and more sustainability for a productive chain (iron/steel)
- ▶ In addition to the climatic benefits claimed as carbon credits, the project represents an effective alternative to mitigate Brazil's main source of emissions :



75% of the Brazilian emissions come from
LULUCF/deforestation

Use sustainable eucalyptus instead of mahogany

Main challenges ahead

- ▶ **Special circumstances in Brazil x global regulations (Reform areas)**
- ▶ **Transaction costs**

Strengthening the bottom-up approach

THANK YOU!



Fábio Marques
Project Manager

plantarproject@plantar.com.br

www.plantar.com.br