Sustainable Energy to Iron industry

CEBDS
10th November 2006

Plantar Group: a history of success...

In February 1967, Plantar started a new concept in the forest-based industry, leading to the establishment of the Plantar Group:

The Plantar Group operates 6 different activities related to the forestry industry: from the production of sprouts up to carbon credits...

1967 - Forestry Management Services

1967 - Production and commercialization of sprouts (*Own forests, managed forests & third parties'*).

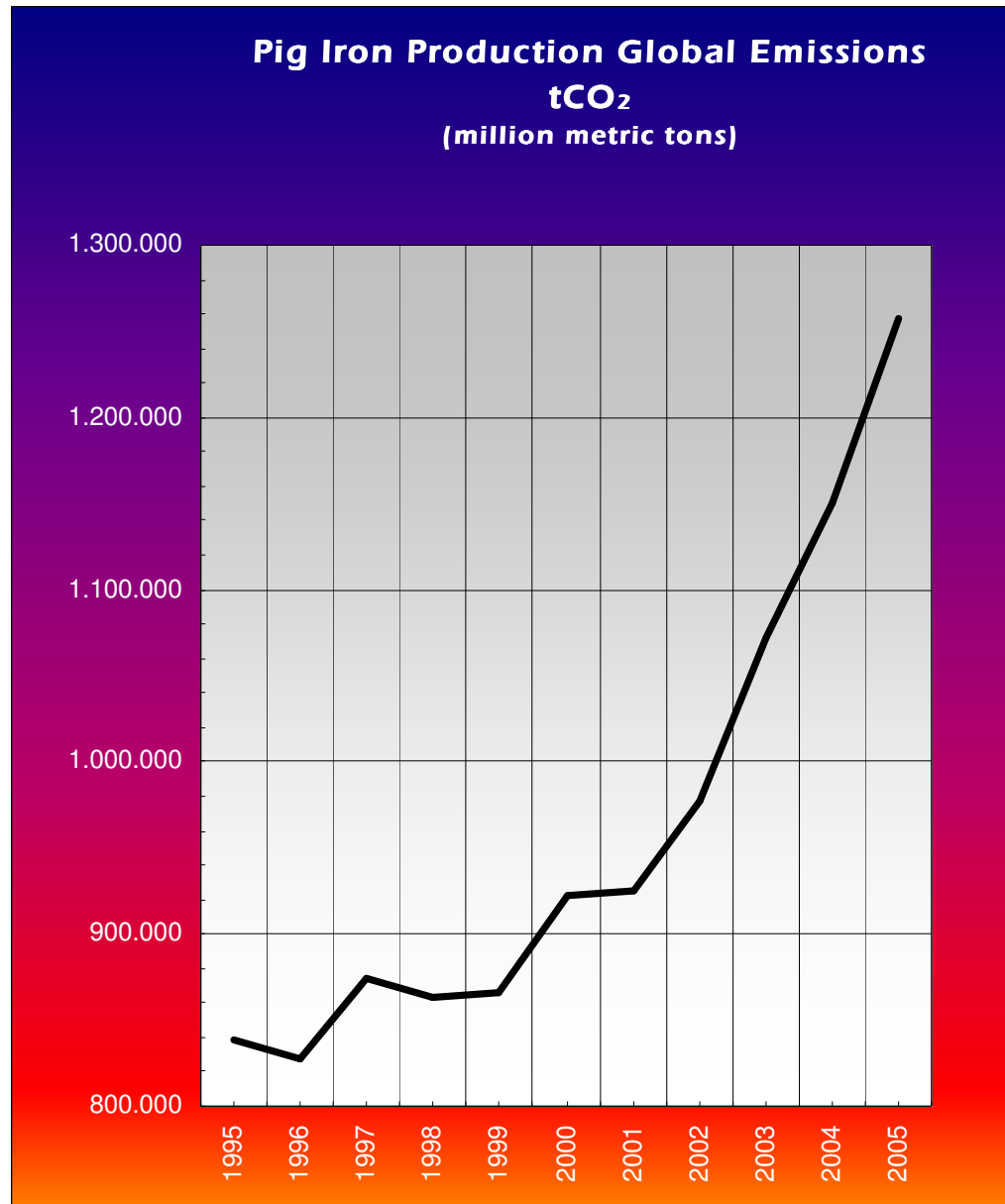1985 - Pig Iron Production (*domestic and foreign markets*)

1993 - Charcoal for barbecue - Brazilian's 1st final product certified by FSC (*domestic and foreign markets*)

1998 – Conception of the Carbon Credits Project (*Clean Development Mechanism*)
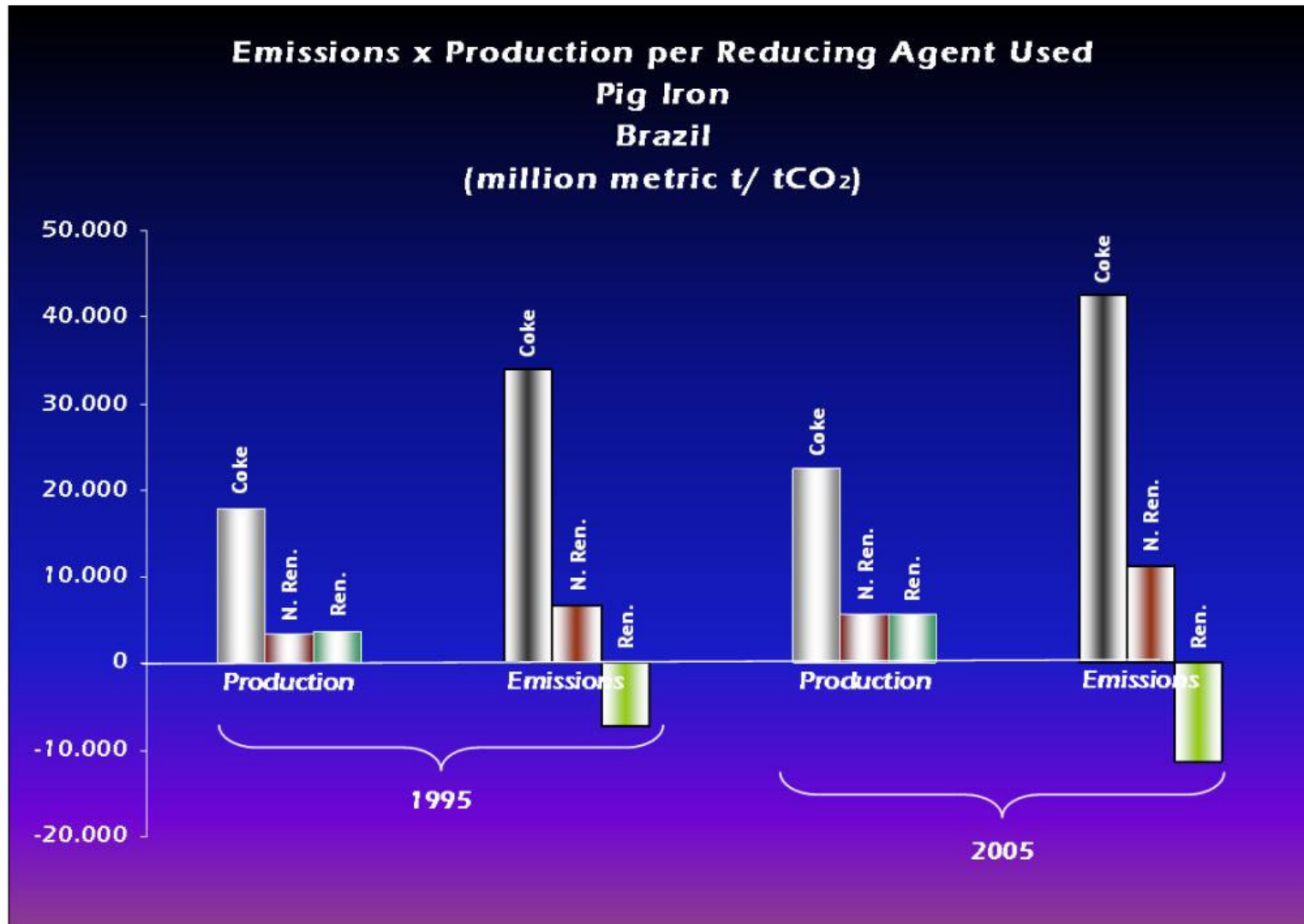
2005 - Wood Poles

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Baseline Assessment

Pig Iron Production Global Emissions tCO₂ (million metric tons) — line chart showing emissions rising from ~840,000 in 1995 to ~1,255,000 in 2005.

Source: IISI

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Baseline Assessment

Emissions x Production per Reducing Agent Used
Pig Iron
Brazil
(million metric t/ tCO₂)

Source: AMS/ Sindifer

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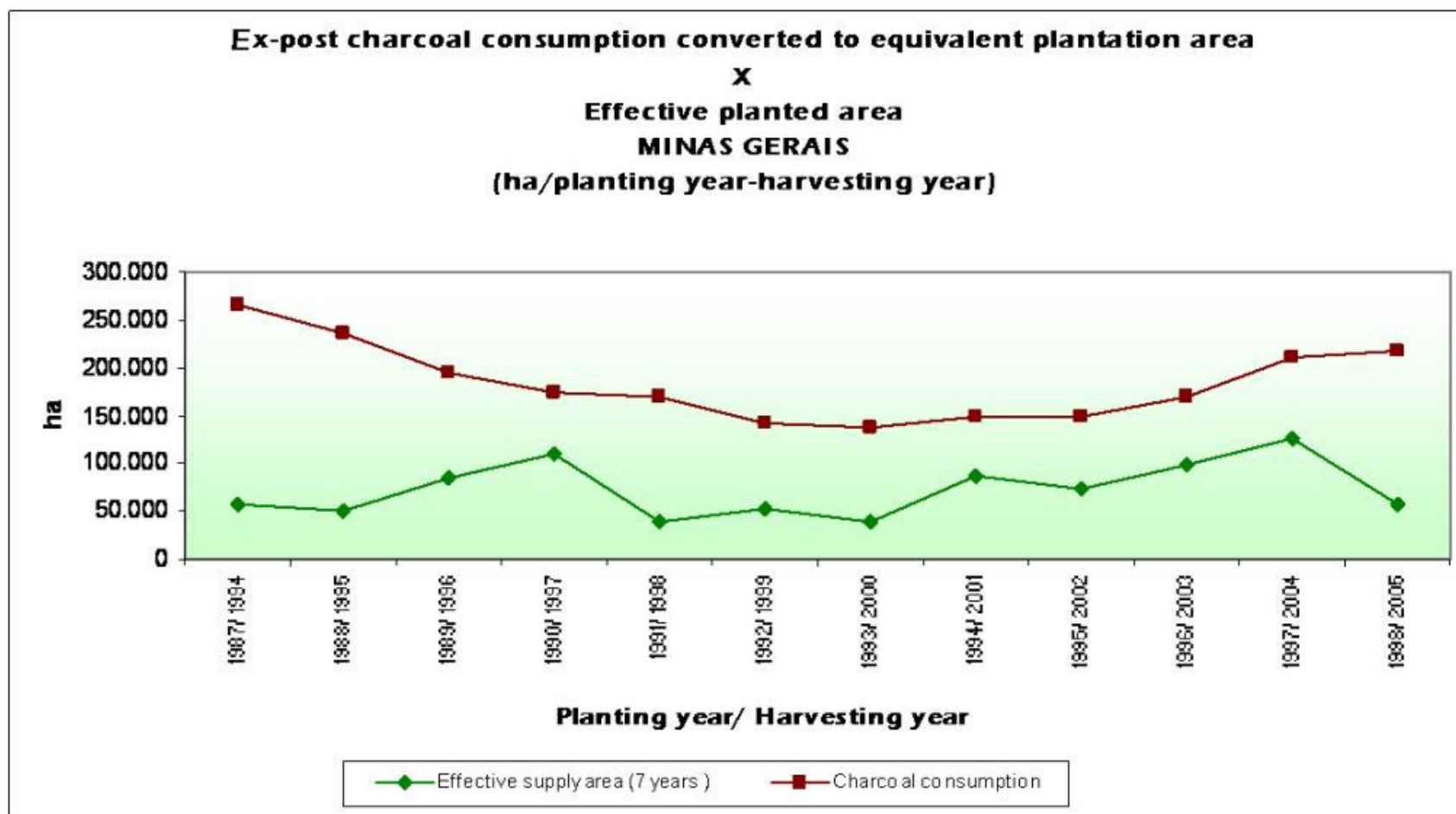
Ex-post charcoal consumption converted to equivalent plantation area
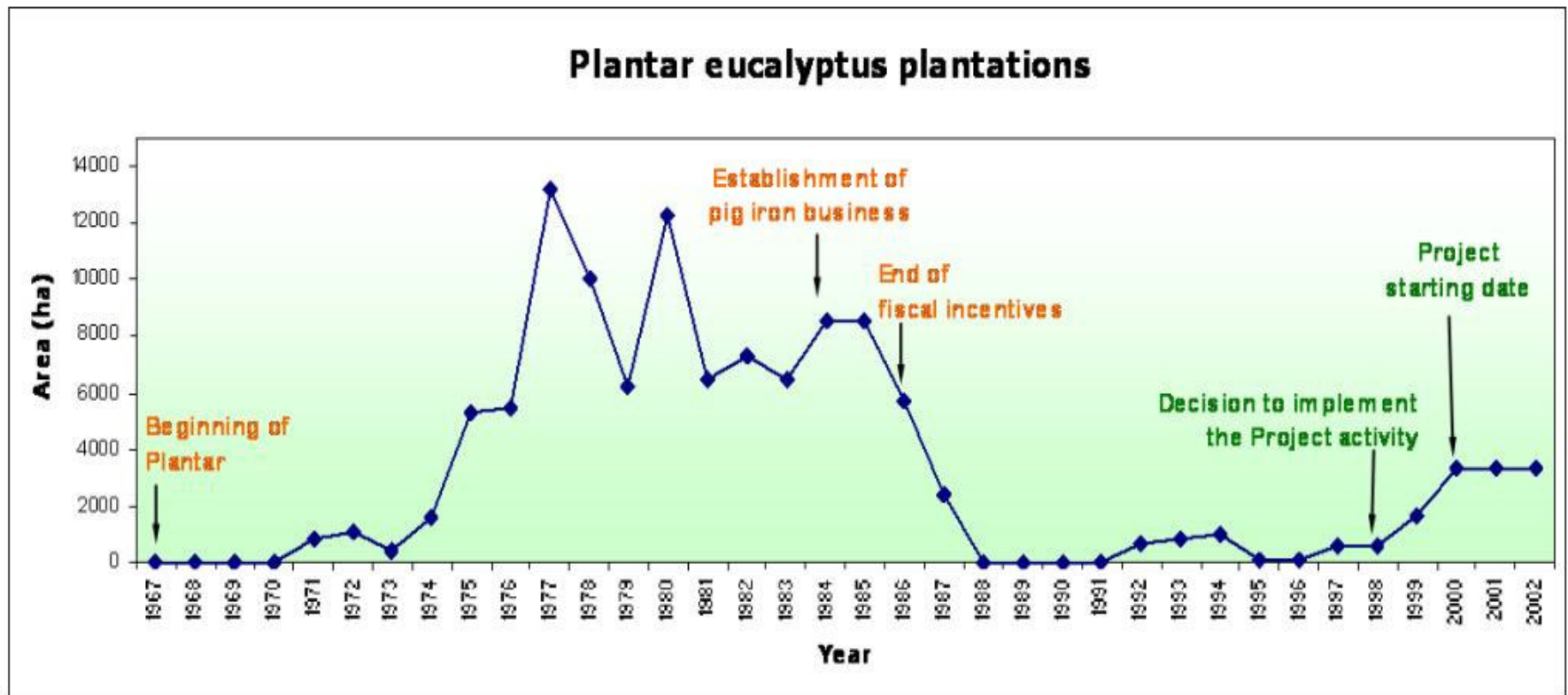X
Effective planted area
MINAS GERAIS
(ha/planting year-harvesting year)

Use planted eucalyptus instead of mahogany!

Additionality Assessment

Source: Plantar

Fighting the forestry blackout in Brazil

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 Comittee 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)

Oct/2006 - "A" rate for the carbonization activity methodology
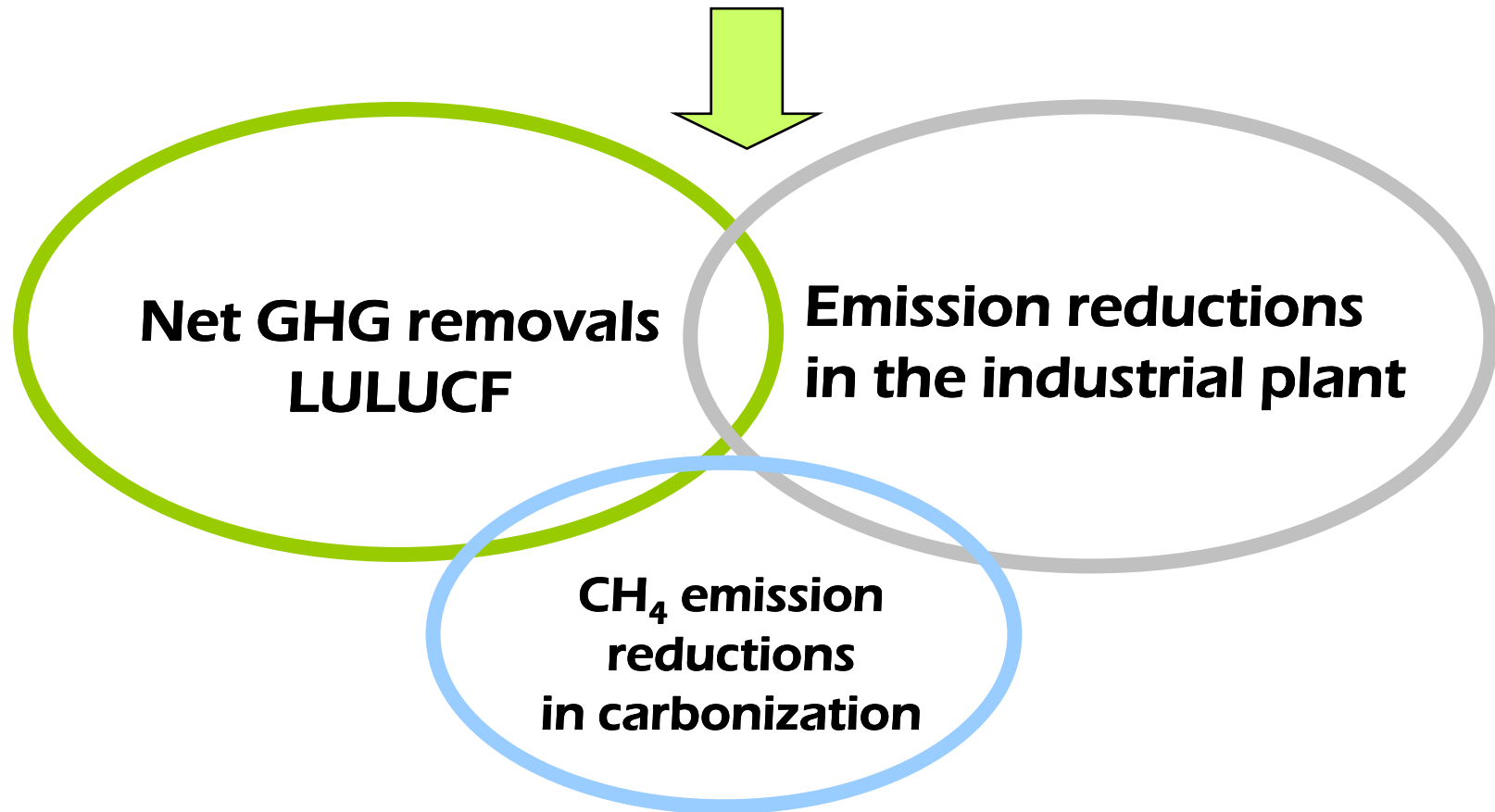
2007 - Other two methodologies and PDDs' approval

    - Validation conclusion

Learning by doing !

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Project Scenario

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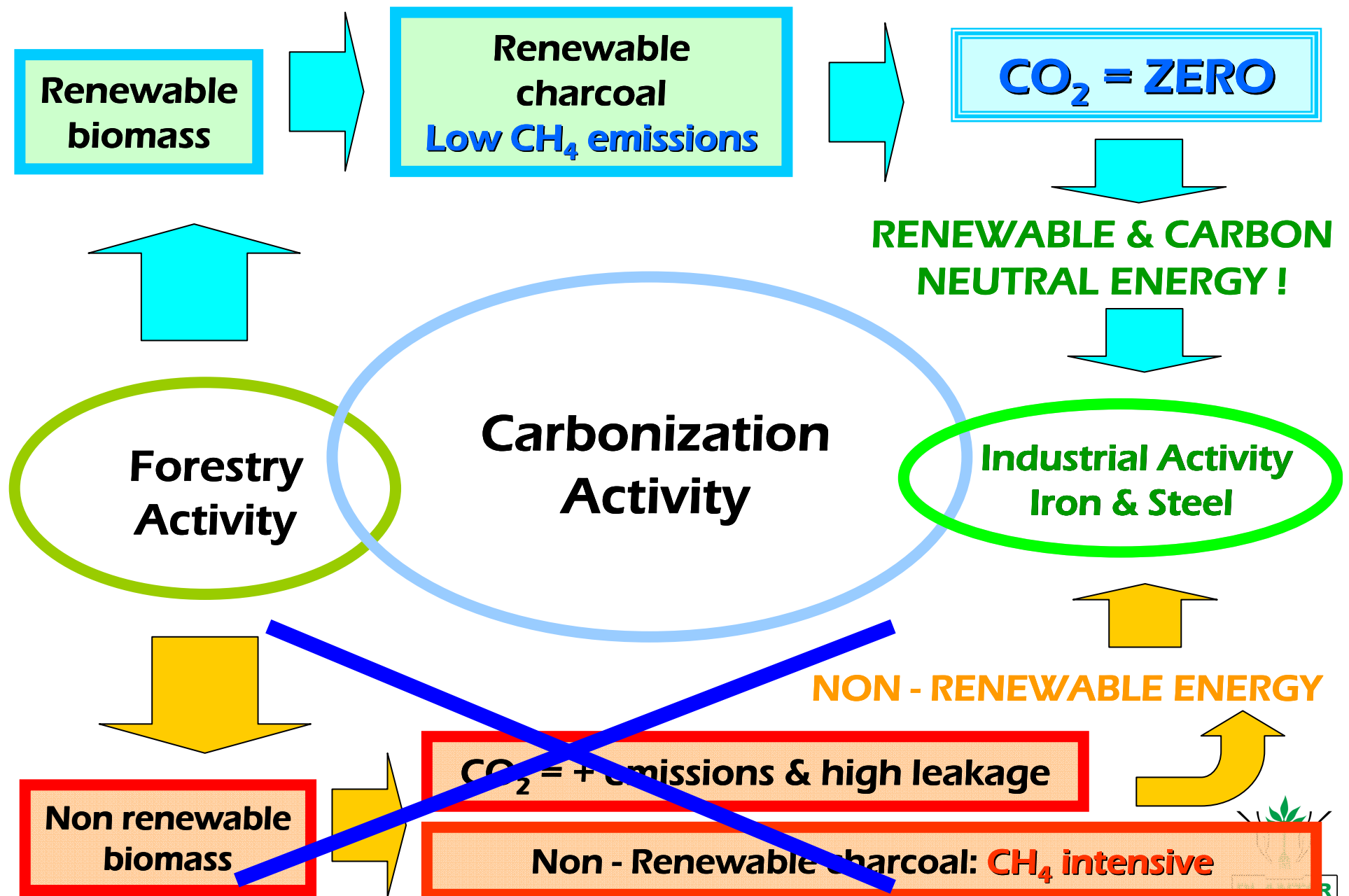
Net GHG removals LULUCF

Emission reductions in the industrial plant

CH_4 emission reductions in carbonization

Integrated benefits to the climate

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The Project Activities

Project Activity	Baseline	Project	Additional benefits to the climate
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
Cerrado restoration	Pastureland	Cerrado	470 ha

Transforming technical advantages into comparative advantages

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Energy Efficiency

Renewable biomass → Renewable charcoal Low CH_4 emissions → $CO_2 = ZERO$

RENEWABLE & CARBON NEUTRAL ENERGY !

Forestry Activity

Carbonization Activity

Industrial Activity Iron & Steel

NON - RENEWABLE ENERGY

Non renewable biomass → $CO_2 = +$ emissions & high leakage

Non - Renewable charcoal: CH_4 intensive

Current Status

- Methodology for CH_4 Emission Reductions in the Carbonization Process: "A" rated (Executive Board 27 meeting): AM 0041;

- Forestry Methodology: submitted and preliminarily rated "B" (waiting for the A/R WG's review)

- Industrial Methodology: being developed...

Climate gain of 3 tons of CO_2e for each ton of iron produced

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Project Numbers*

- Forestry activity: average stock of 4,5 million tCO_2e, in 28 years – credits to be claimed in accordance with the t'CER approach (2001-2029)

- Industrial activity: 7,9 million tCO_2e, in 21 years (2008-2029)

- Credits negotiated with PCF: 1,5 million tCO_2e

- PCF Transaction value: US$ 5,3 million

- 1,200 direct employment

- Project numbers can be affected by changes in regulations and methodology submissions

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Applicability of the Methodology

‣ **As a source of renewable energy in several industries:**
  ‣ Iron & steel, heating, lime, ceramics, cement;

‣ **As a source of renewable raw materials:**
  ‣ Furniture industry, civil construction, replacement of plastic appliances, etc.
  ‣ Domestic use: firewood

‣ **Possibility of integration with industrial-based projects (Decision 17/CP.7);**

‣ **Stimulates the incorporation of several sustainable development indicators in forestry-based plantations.**

High potential for replication

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Social and Environmental Indicators

Resources	2001	2005	Indicators	# of indicators	Weight	2001 Index	2006 Index
Biodiversity	2	3	1. Flora and Fauna Local Information	4	0,8	1	4
			1.2 Endangered Species		0,7	2	5
			1.3 Protected Areas Conservation Integrity		0,9	3	5
			1.4 Use of Biodiversity by stakeholders community		0,6	2	3
Natural Resources	2	3	2.1 Project's total protected area	4	0,7	3	5
			2.2 Protected Areas Connectivity		0,9	2	4
			2.3 Soil Conservation and Soil Management		0,6	3	5
			2.4 Water Quality and Quantity		0,9	3	4
Financial Resources	2	4	3.1 Increase of Government taxes collection	2	0,6	3	5
			3.2 Development of local market		0,8	3	5
Human Resources	2	3	4.1 Quality of working conditions	6	0,6	3	4
			4.2 Illiteracy		0,7	4	5
			4.3 Education		0,6	3	5
			4.4 Safety (Work)		0,8	2	3
			4.5 Health (Work)		0,8	2	4
			4.6 Leisure Access		0,7	3	4
Social Resources	1	3	5.1 Social Management	5	0,9	2	4
			5.2 Community and local stakeholders relationship		0,8	2	4
			5.3 Social and Development Support		0,7	2	4
			5.4 Selection and Support to social projects		0,8	1	4
			5.5 Suppliers Relations		0,5	1	2
Carbon	3	3	6.1 Transactions Costs	3	0,7	1	3
			6.2 CDM Eligibility		0,7	6	5
			6.3 Social and Environmental benefits from the projects implementation		0,9	3	5

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Social and Environmental Indicators

Social and Environmental Indicators
Plantar CDM Projects
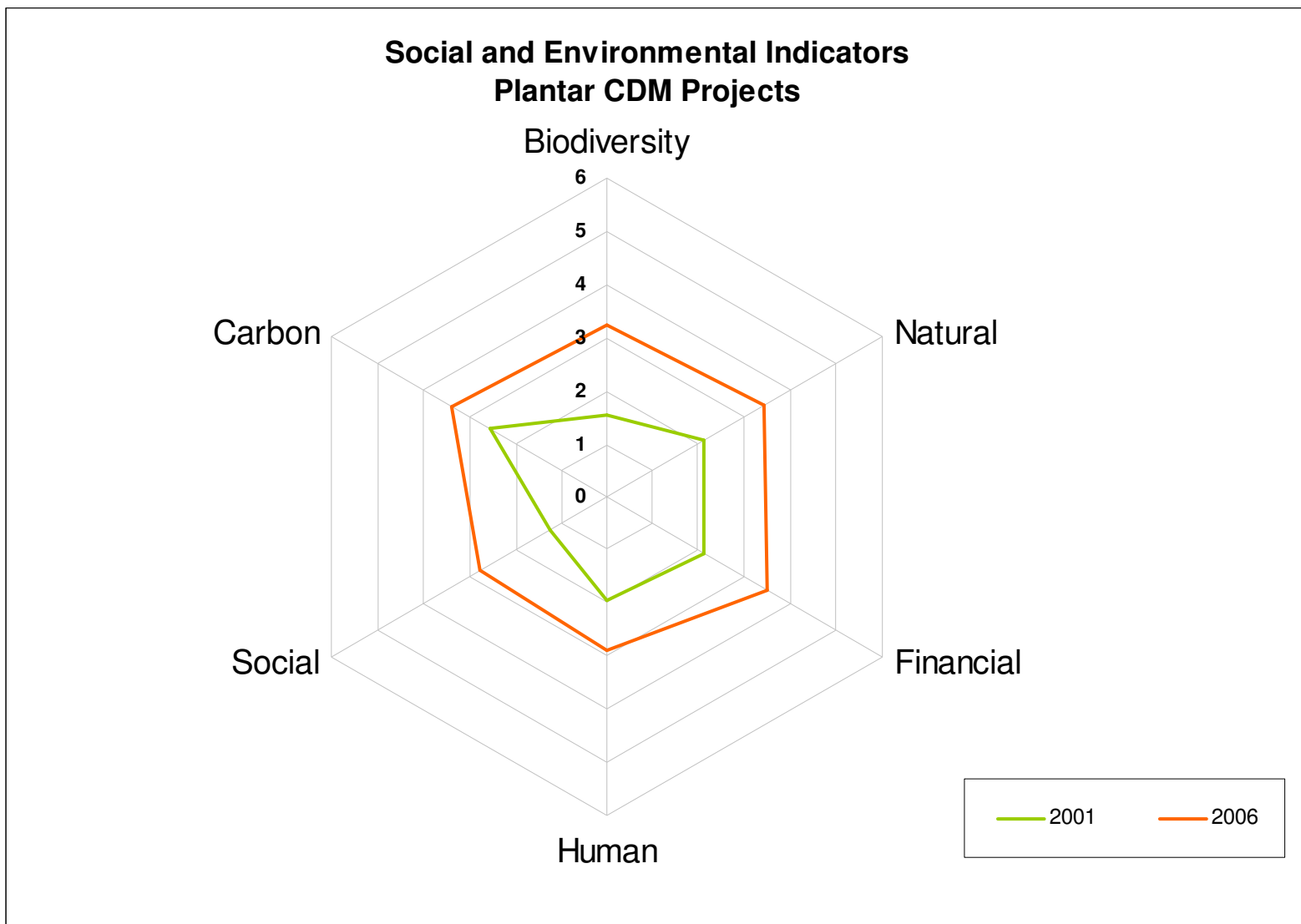
Sustainable development in industrial scale

Social and Environmental Sustainability

Support to neighboring communities

- Restoration and conservation of local roads

- Support to regional events

- Constant dialog with community leaders

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Social and Environmental Sustainability

Internal projects and campaigns

- Health Week
- Trainings, labor gym
- Support to day care nurseries
- Employee discounts network

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Social and Environmental Sustainability

Projects to raise local income

- **Local Producers Market** (Curvelo)

- **Brown sugar factory** (Morada Nova)

- **Apiculture** (Felixlândia)

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Social and Environmental Sustainability

Other projects

- Gardens and kitchen gardens

- "Estética Interiorana"

- Children's art (www.aviva.com.br)

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Social and Environmental Sustainability

Monitoring of biodiversity

Monitoring of water quality

10 monitoring points checked quarterly. In each station, 43 parameters are analyzed (physical, chemical and bacteriological parameters)

Cerrado: initial regeneration phase

Cerrado: advanced regeneration

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Social and Environmental Sustainability

Monitoring of Biodiversity – Flora & Avifauna

Purpose: to monitor local biodiversity

Flora: phytosociological structure (each 5 years)

Average # of species: 237 / Endangered species: 4

Avifauna: communitarian structure (each 2 years)

Average # of species/ avifauna: 168; Mammals: 34
Endangered species (mammals & avifauna): 14

Euterpe edulis
"palmito
verdadeiro"

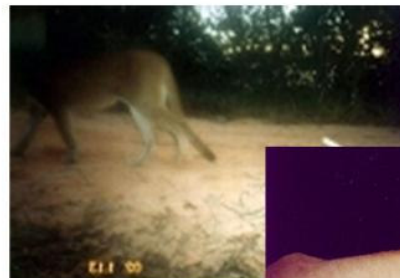### Fauna Characterization Camera trap photos

Maned wolf -
Felixlândia/ MG

"Tamanduá-bandeira"
Felixlândia e Morada Nova de Minas/MG

Camera trap

Jaguar

Cattleya walkeriana
orchid

Duguetia furfuracea
"araticum seco"

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Social and Environmental Sustainability

"Love the Rhea"
Project

"Not all Wolves are
big bad Wolves"
Project

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Certification

ISO 9001-2000
Plantar S/A

ISO 14001
Plantar
Siderúrgica

ISO 9001-2000
Plantar
Siderúrgica

FSC – Forest Stewardship
Council

Abrinq – Plantar S/A e
Siderúrgica

THANK YOU!

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