

Recursos Florestais – sistemas de produção

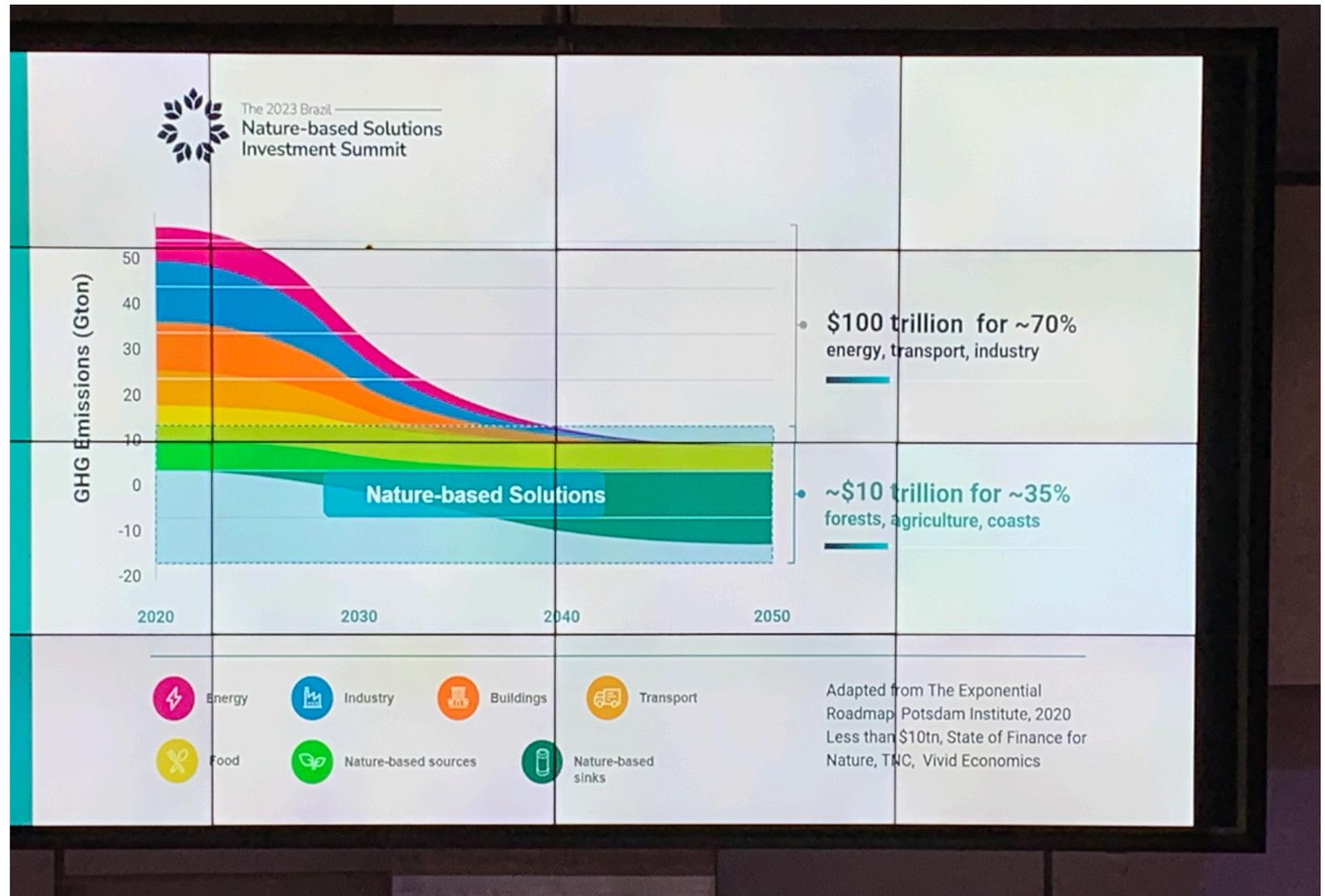
Weber Amaral, PhD

Sintese da "semana"

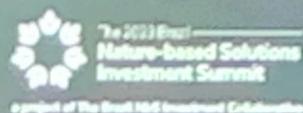
Agrishow

Preços da soja

Evento sobre investimentos em NbS – nature based solutions em SP



Global Capital is Moving Towards NbS



MARKET SHAPERS



THEMATIC DRIVERS



CAPITAL COMMITMENTS

IPCC consensus on role of NCS in achieving Net Zero

COP27 consensus on nature/climate nexus, Article 6

COP15 30 x 30 commitment

TNFD - task force for nature related financial disclosures

European Green New Deal

SFDR - sustainable investment disclosure rules

Natural Climate Solutions

Just Transition

Deforestation Free

Value Chain Sustainability

Nature Positive

Regeneration

Diet Shift

GFANZ - **\$135Tn** AUM Net Zero

FSDA - **\$8.9tn** defor-free asset mgt

IFACC - innovating investment in sustainable beef and soy

CEBDS - seeking to identify NbS investment in Brazil

FUND FORMATION: ~ ~\$10bn

C.A.M, Just Climate, Axa Invest. Mgt, Temasek, CDPQ, Federated Hermes, Lombard Odier....and nature focused carbon funds.

CAPITAL
for CLIMATE

Brazil is already ahead in key Climate Solutions at scale



~85%

of power matrix is already renewable (~600 TWh), vs. ~26% world (it's where most G20 nations wish to be in 2030-40)



~17 Mn

Hectares of ILPF¹ already exist in Brazil as of 2020 (almost ~2x the size of Portugal)



~36 Mn

Hectares of No-till farming already exist in BR as of 2020 (equivalent to the size of Germany)



Up to ~1.0%

lower GHG footprint in BR Cement (vs. world avg.), annually avoiding >2 Mn tons CO₂e (equivalent to >500,000 cars)



Up to ~30%

lower GHG footprint in BR Steel (vs. world avg.), annually avoiding >30 Mn tons CO₂e (equivalent to >7,000,000 cars)



~75%

of car fleet in BR adherent to biofuels in 2020 (for full-cycle, ethanol emits ~45g vs. ~150g CO₂e/km for pure gasoline)

1. Refers to Crop-Livestock-Forest Integration System

Source: Energy Atlas; OntarioTech University; US Environmental Protection Agency; IEA Agency; CNI; IPEA; ILPF; EMBRAPA; press release; expert interview; BCG analysis

There are three groups of opportunities in agriculture

Decarbonization levers (Core)



Sustainable Agriculture

- 1 No-tillage farming**
Keep soil covered and avoid tilling to capture carbon
- 2 Irrigated systems**
Artificially providing water to boost growth and yield
- 3 Biological nitrogen fixation**
Reduce need for fertilizer with plants that absorb N_2
- 4 Degraded pastureland recovery**
Restore soil health to improve efficiency and carbon storage
- 5 Integrated systems**
Optimize farmland by integrating crops, pastures and forestry

Carbon credits & NBS

- 6 Avoided deforestation**
- 7 Afforestation and Reforestation projects**

New opportunities (Adjacencies)



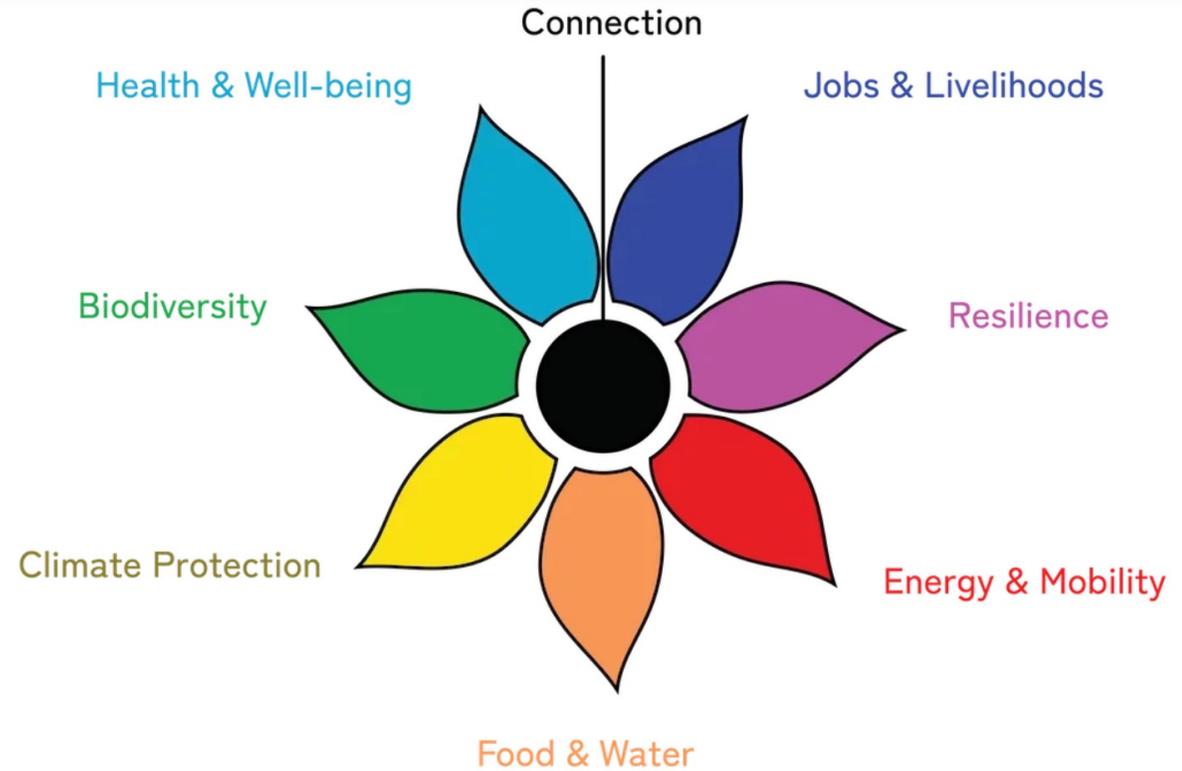
Bioenergy

- 8 Bioethanol/Biodiesel**
Blended with regular gasoline to lower carbon emissions
Blended with regular diesel to lower carbon emissions
- 9 Renewable Diesel and Sustainable Aviation Fuel**
Most promising alternatives to decarbonize diesel and aviation
- 10 Biogas and biomethane**
Alternative to natural gas produced by agricultural waste
- 11 Residual biomass**
Alternative to coal produced by agricultural waste

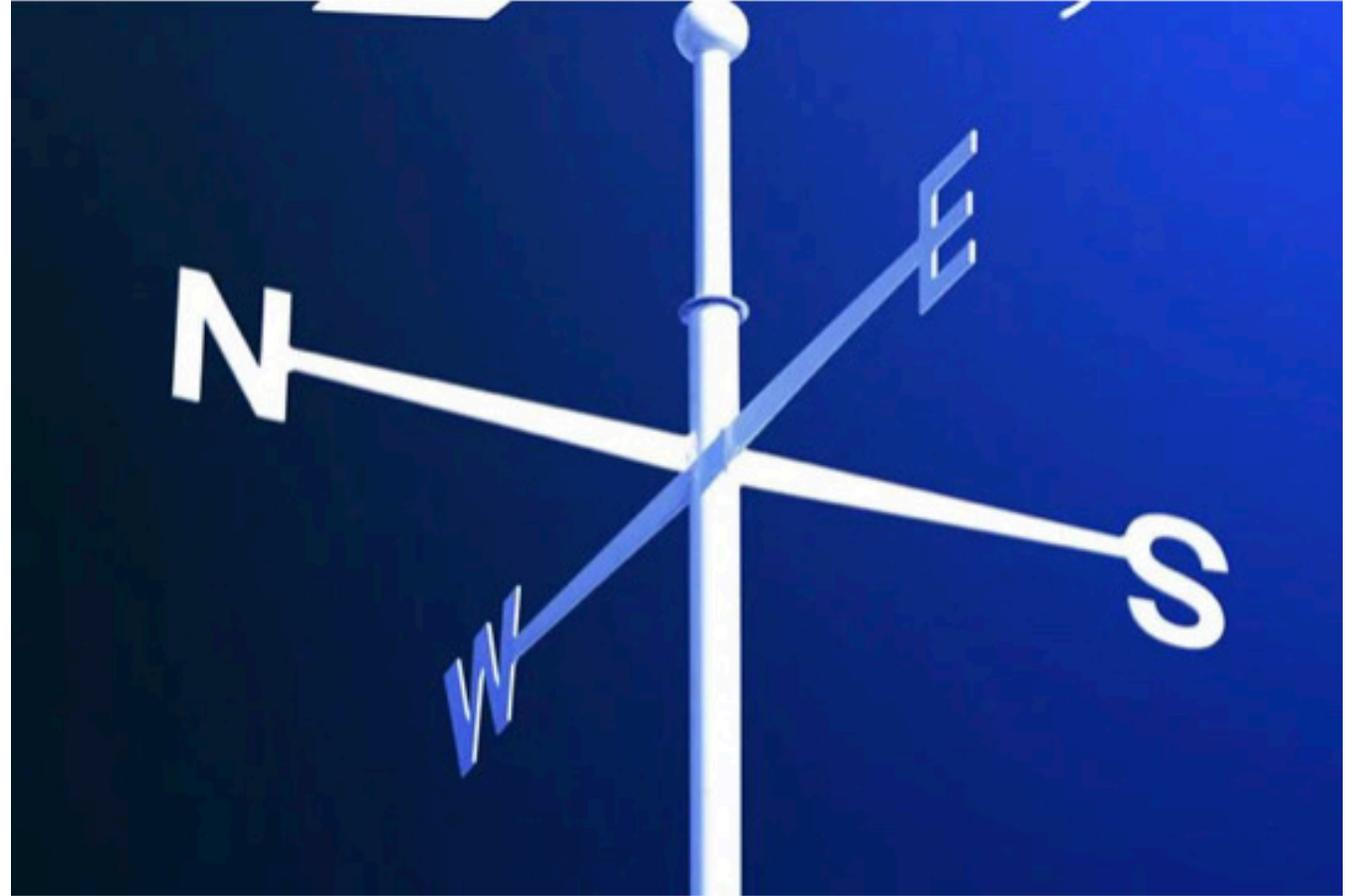
Note: Bioenergy does not include Biogas generation of electricity as lever due to low growth expected for the market within next years.

Source: Expert Interviews, BCG Analysis

Desafios complexos da produção de alimentos, fibras, proteínas



Como?

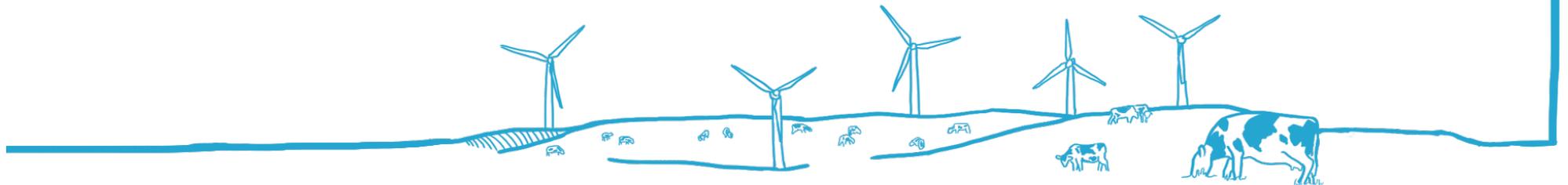


DINAMICA DE SISTEMAS COMPLEXOS – MIT – anos 60....

Complexidades – Transições – Conexões – Efeitos e impactos diretos e indiretos – Intencionais e não intencionais

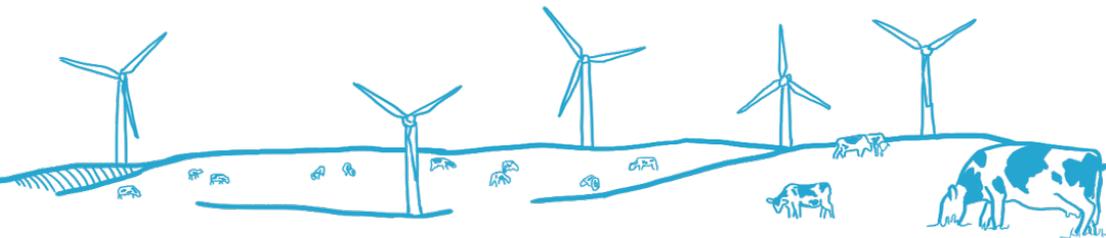
Multisolving – one action, multiple solutions

DINAMICA DE SISTEMAS COMPLEXOS – MIT – anos 60....



Multisolving – one action, multiple solutions

**Burn
less
coal**



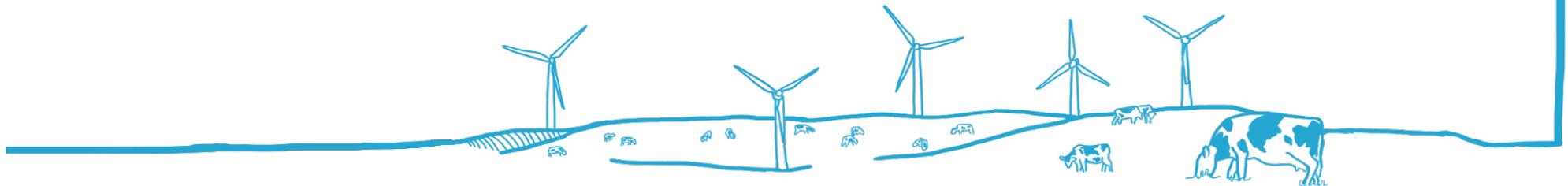
Multisolving – one action, multiple solutions

**Burn
less
coal**



Long-term

**Protect
climate**



Multisolving – one action, multiple solutions

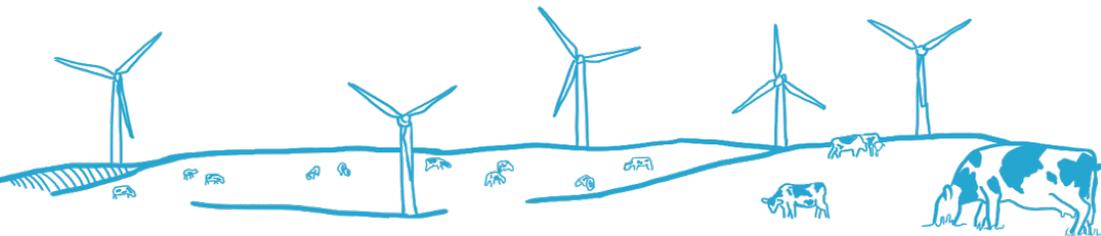
Short-term

**Improve
health**

**Burn
less
coal**

Long-term

**Protect
climate**



Multisolving – one action, multiple solutions

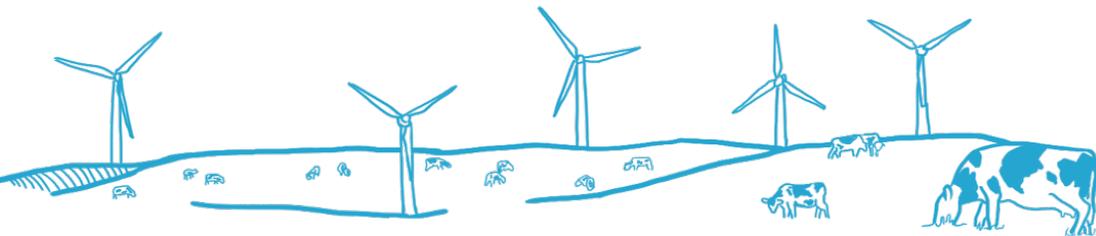
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Multisolving – one action, multiple solutions

Short-term

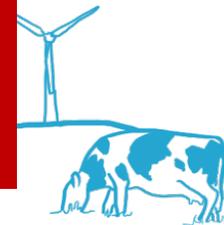
Improve
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**ASK: Whose health is
being improved?**



Disciplina –
jornada – visão
da cadeia e
integrada com
outros
sistemas

Contexto setor

Materiais genéticos e diversidade

Mudas e viveiros

Plantio

Manejo

Colheita



Contexto do setor florestal: trabalho em grupo

Perguntas-chave

Apresentação entre 5 a 7 minutos

Slides

- Comparação de florestas plantadas x soja
- Comparação de florestas plantadas x pecuária
- Comparação de florestas plantadas x cana de açúcar
- Principais produtos florestais – mercado interno
- Principais produtos florestais – mercado externo
- Quem é quem? Principais atores do setor – empresas – marcas – celulose, chapas, carvão, etc
- Mercado de trabalho – principais vagas – escopo – valores e benefícios, onde se localizam
- Principais produtos florestais do BR x mundo