

**Strategic Dialogue**

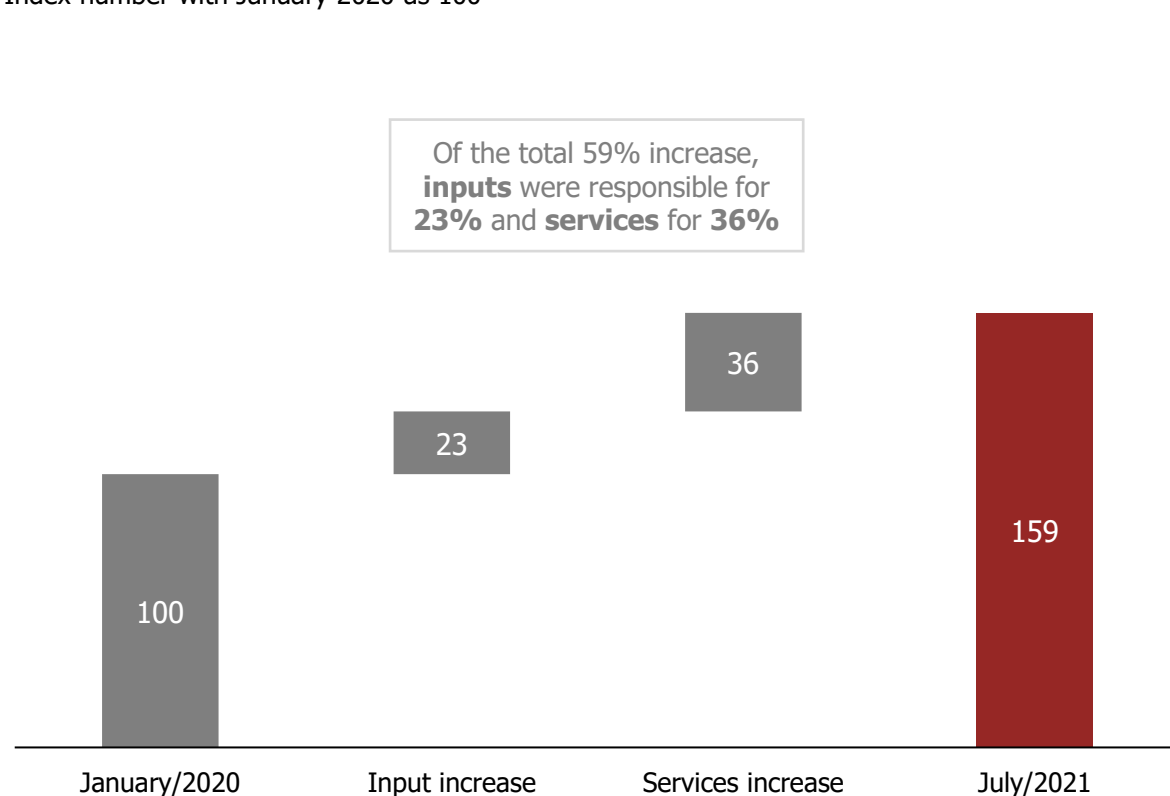
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# **COVID-19 pandemic impact on forestry planting costs**

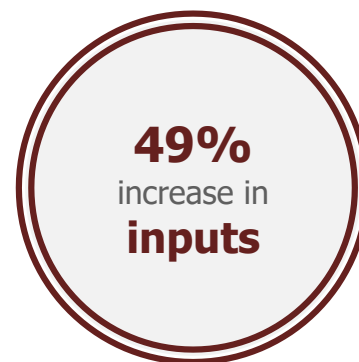
# During the COVID-19 pandemic – from January 2020 until July 2021, the forestry planting cost increased by 59%; increase in services cost were higher than input costs

## Forestry planting cost variation between January 2020 and July 2021 with input and services breakdown

Index number with January 2020 as 100



## Forestry planting input and services-related cost increase between January 2020 and July 2021

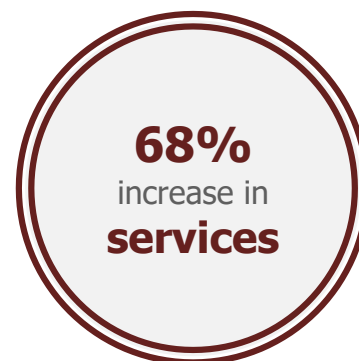


### Highest increase

Fertilizer prices increased almost 100% on the period

### What we have heard

*"Brazilian Real devaluation has a direct impact on imported fertilizer components, besides the price increase in dollars."*



### Highest increase

Most significant price increases are related to machine-related activities (e.g., broadcast pre-emergent herbicide spraying)

### What we have heard

*"We have a higher demand for services and higher maintenance costs due to, for example, machine-part scarcity and an increase in steel prices"*

Note: fuel prices are contained within the services category as we have only considered third-party activities.

Source: ESG Tech database for average values. Technical prescription values and operational efficiency are considered *ceteris paribus*.

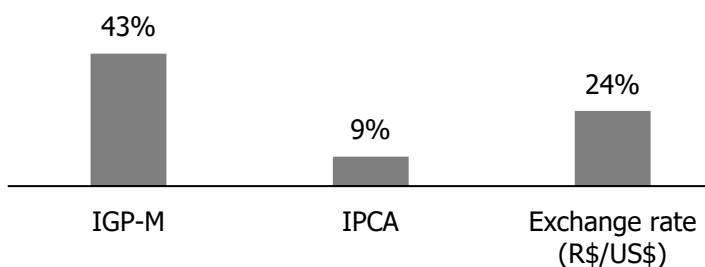
# Planting costs (forestry formation and land leasing) increased in real terms since the beginning of the pandemic, although lower than other agricultural prices

## Cumulative variation of selected indicators between January 2020 and July 2021

Percentual variation

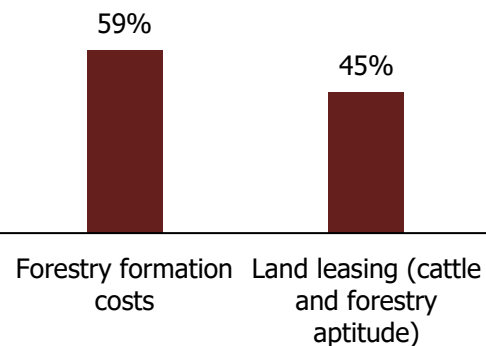
### Macroeconomic

The observed increase was closely related to IPG-M index variation



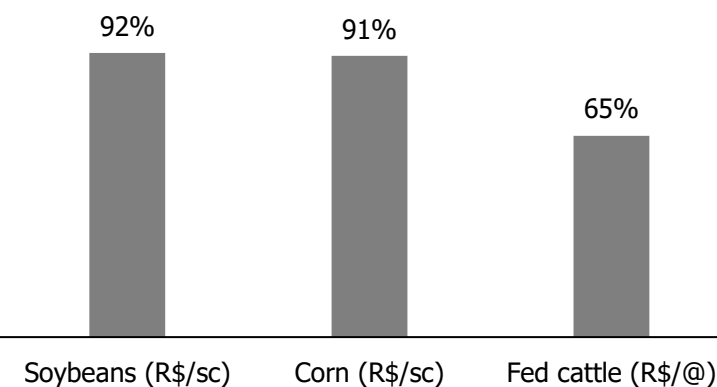
### Forestry formation costs

Formation and land leasing costs increased in real terms (above inflation indexes)



### Agribusiness

All agricultural prices increased in a higher proportion than forestry formation and land leasing



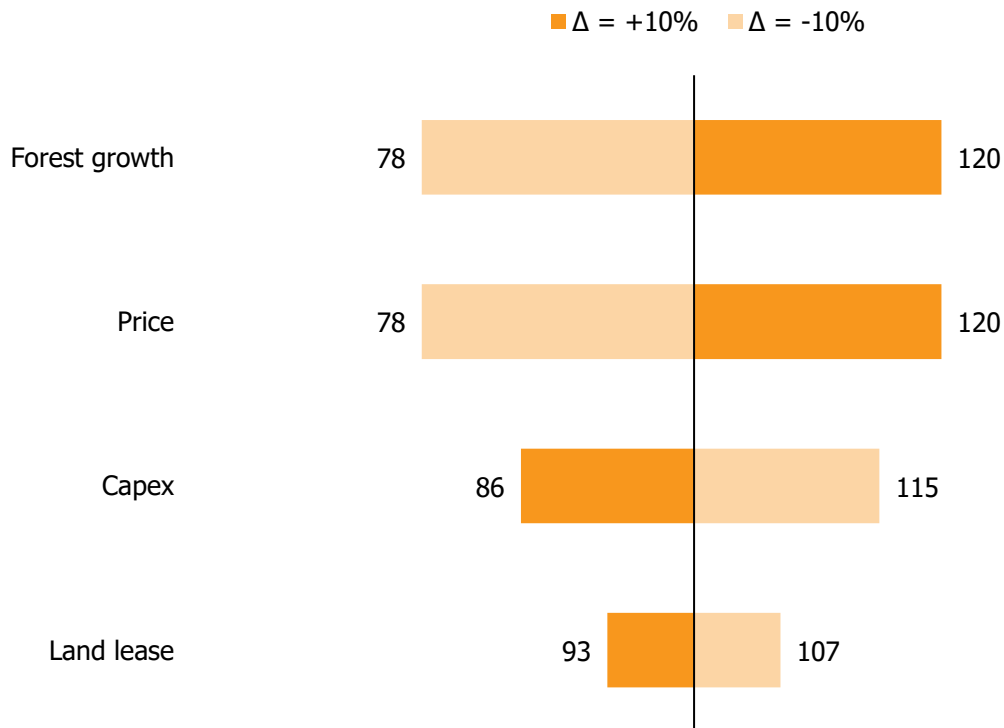
Note: IGP-M and IPCA are inflation indexes; 1 sc = 60 kg or 2,2 bu; 1 @ = 33 lb.

Source: ESG Tech database for land leasing and forestry formation costs; other indicators from BACEN, IPEA, and CEPEA

# Forest growth and price are the items that most affect forestry profitability. In order to recover pre-pandemic profitability levels, the farmer's revenue needs to increase 55%

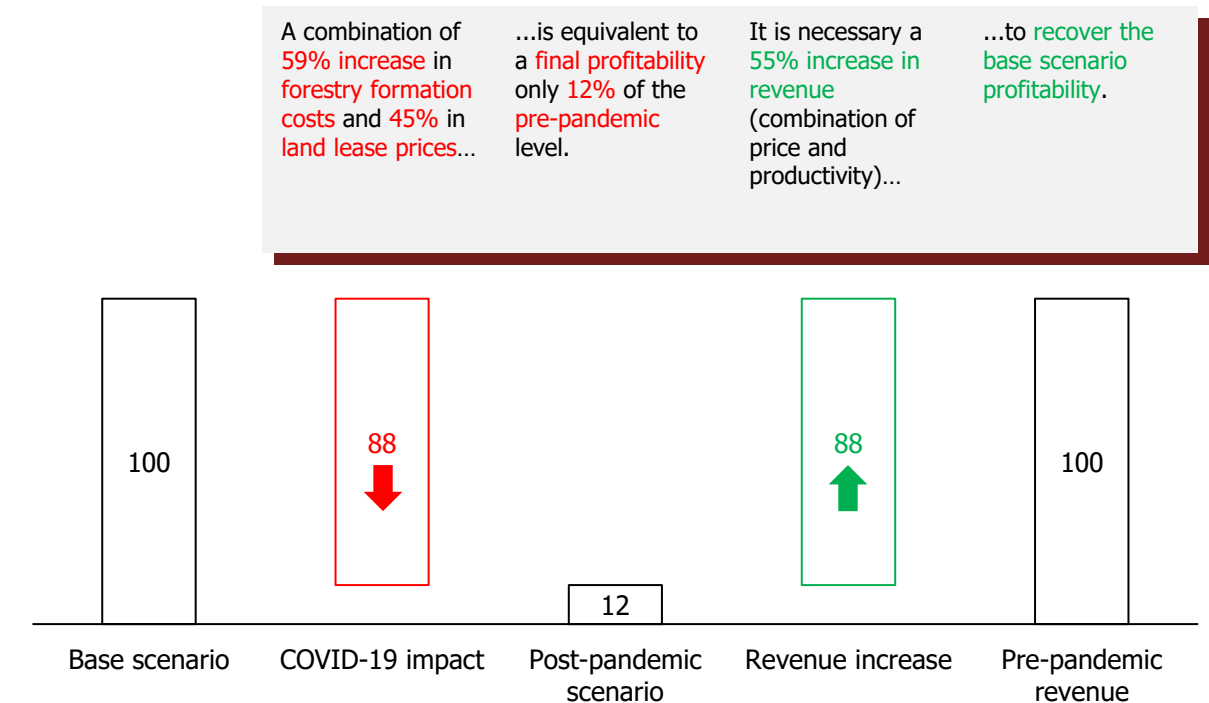
## Forestry profitability sensitivity analysis of standing forests – premises variation of 10%

Base scenario with index profitability = 100



## Cost impact on forestry planting and land lease on stumpage forest profitability

Base scenario with index profitability = 100



Note: the profitability was measured with Internal Rate of Return of a cash flow with a cycle with 2 rotations

# How can we help?

**Increase in forestry planting costs and land lease prices have a short-term impact in the entire wood supply-chain. It may even influence long-term wood supply due to changes in price incentives**

## Long-term supply and planning strategies

- Do changes in cost alter different regions' investment prospects?
- What is the impact in future wood supply?
- What are the main impacts in supply-chain strategies (partnerships, wood acquisition, planting, supply contracts)?

## Benchmarking and operational improvement plans

- Which are the best market practices (forestry, harvest, and transport)?
- What is the comparison of costs, productivity, and efficiency with market averages?

## Cost and tariff analysis, and supply management

- Do these changes impact the choice between first-party and third-party activities?
- Are hiring and sourcing activities efficient and contribute to a better productivity?
- Are there any cost-cutting innovations to be adopted?

## ESG Tech portfolio

- **New technologies and processes evaluation:** innovation strategies, process improvement, primarization studies, and technology selection
- **Market analysis:** market size, wood supply and demand, and price tendencies
- **Supply planning:** wood sourcing and supply costs

ESG Tech is a strategy and business development consultancy company focused on forestry and agribusiness.

Our consultancy team has operations, market analysis, and financial specialists that can help our clients in all decision-making and execution steps.



# Team ESG Tech Consulting

Since 2012, with a history of carrying out hundreds of consulting projects in several countries, ESG Tech Consulting is dedicated to understand the demands and trends of agribusiness to guide projects aimed at growth and capturing market opportunities. Our team has qualified and diverse professionals, both in knowledge, profile, soft and hard skills, having as a differential experience in management and business, in addition to technical expertise.

## Main contacts



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- Leadership in strategy projects, investment analysis, market research and asset valuation for various agribusiness segments
- Experience with operational excellence projects, process mapping and management systems
- Previously consulting analyst at Pöyry Management Consulting Latin America
- FMVA certification (CFI), MBA in agribusiness (ESALQ-USP), MBA in Strategic and Economic Business Management (FGV), Master in Forestry Economics and Policy (UFPR), Postgraduate in Finance (FAE Curitiba), Forestry Engineer (UnB)



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- Leadership in market analysis projects, strategic industrial supply planning, feasibility studies, asset valuations
- Experience with operational excellence projects, M&A and site location
- Previously head of the agroforestry market intelligence department for Latin America at Pöyry Tecnologia
- MBA in Business Planning and Management (FAE), Postgraduate in Forest Management (UFPR) and Forest Engineer (UFPR)



# Our approach considers every consultancy project in its unique context. We focus on methodological consistency, demonstrable results, and long-term relationships with our clients



## Strategy & Innovation

Strategic planning  
Expansion planning  
Site location  
New investments



## Governance & Personnel

Strategic personnel management  
Governance model  
Succession planning  
Change Management



## ESG

ESG Strategy  
Social and environmental compliance  
Licensing  
Certifications



## M&A

Asset and company valuation  
Asset acquisition  
Growth strategies



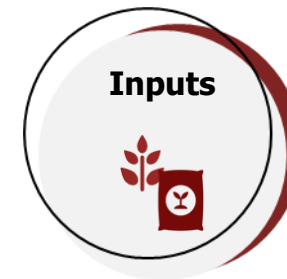
## Market studies

Market analysis and tendencies  
New market entrance  
New products



## Operational Excellence

Time and movement study  
Cost reduction  
Process mapping



### Inputs

- Agrochemicals
- Fertilizers
- Genetic material
- Animal healthcare



### Agriculture

- Forestry
- Cattle farming
- Grain farming
- Native forestry
- Fruit crops
- Integrated models



### Industries

- Paper and pulp
- Wood panels
- Solid wood
- Food
- Energy
- Grain processing

# ESG Tech publishes the STRATEGIC DIALOGUES bimonthly, with relevant information for decision making on current issues in the Brazilian agribusiness chain



**Os gastos com energia elétrica e com manejo de rejeitos estão entre os principais custos da suinocultura. Uso do biogás para geração de energia pode aumentar as margens do produtor**

**Custo de produção do suinocultor (integrado)\***  
[%]

Custo com Rejeitos **15%**

Energia elétrica **19%**

Mão-de-obra **63%**

**Geração de energia através do biogás**  
[conceitual]

Granja de suínos → Biogestor → Queimador → Gerador

↓ Adubo

↓ Pastagem ou agricultura

Necessária avaliação da viabilidade ambiental

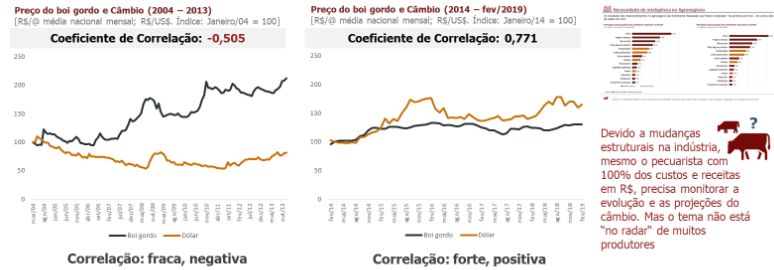
**Pontos de atenção**

- Exemplos de aplicação: aquecimento de animais, uso industrial (aquecimento de água e higienização), secadores de grãos e caldeiras de fábrica de rações
- Viabilidade depende do tamanho do plantel e do custo da energia local
- Por ser de produção contínua e controlada, pode ser usada para o abastecimento direto da propriedade (sem passar pela rede)

Fonte: Innovatech (2019)  
\*Incluindo apenas os custos operacionais de um produtor em modelo de integração (o integrador fornece nutrição e sanidade)

## Indicadores antecedentes

Mapear quais informações são relevantes para o negócio não é uma tarefa trivial. Muitas vezes as relações entre variáveis importantes não são óbvias - e elas mudam ao longo do tempo



The **Strategic Dialogue** is a communication channel that combines priorities, concerns and insights from producers and markets with objective analysis from our team of consultants and experts

## Latest editions:

- Cargo Transportation in Agribusiness
- Competitive Intelligence in Agribusiness
- Initiatives with Sustainable Profits in Agribusiness
- Optimization of Forest Processes

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<https://esgtech.com.br/publicacoes/>





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