

# Recycling for Biofuels

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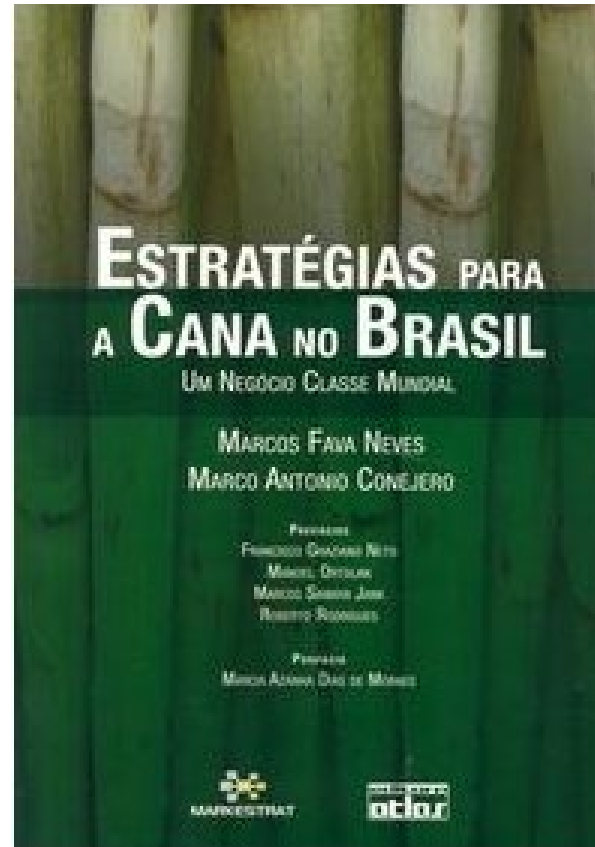
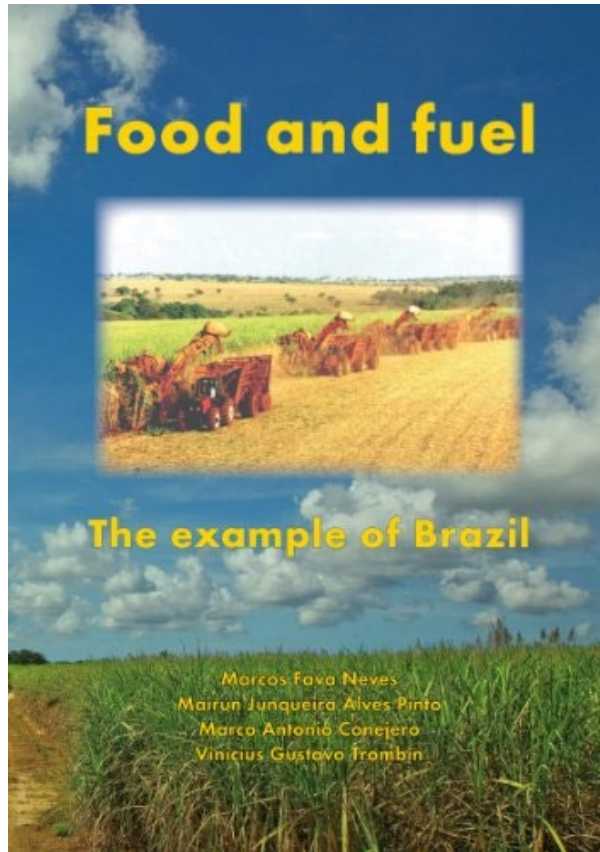
# Marco Conejero



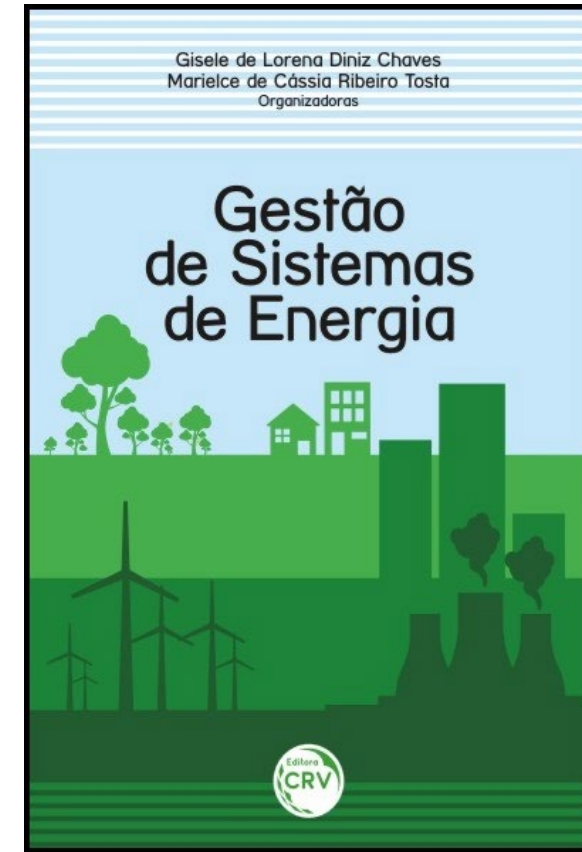
- Background:
  - Economist, DSc. and MSc. in business administration (strategy & marketing), graduated from the University of Sao Paulo.
  - Visiting scholar at Universidad de Buenos Aires/Argentina (2009) and Howard University/USA (2006).
- Professional experience: PwC (Pricewaterhouse Coopers), think tanks (PENSA, MARKESTRAT and STRACTA) and main business schools in Brazil.
- Professor of Strategy & Governance at the Fluminense Federal University (UFF), for undergraduation and post-graduation students.

# Books

## Strategy of Sugarcane in Brazil

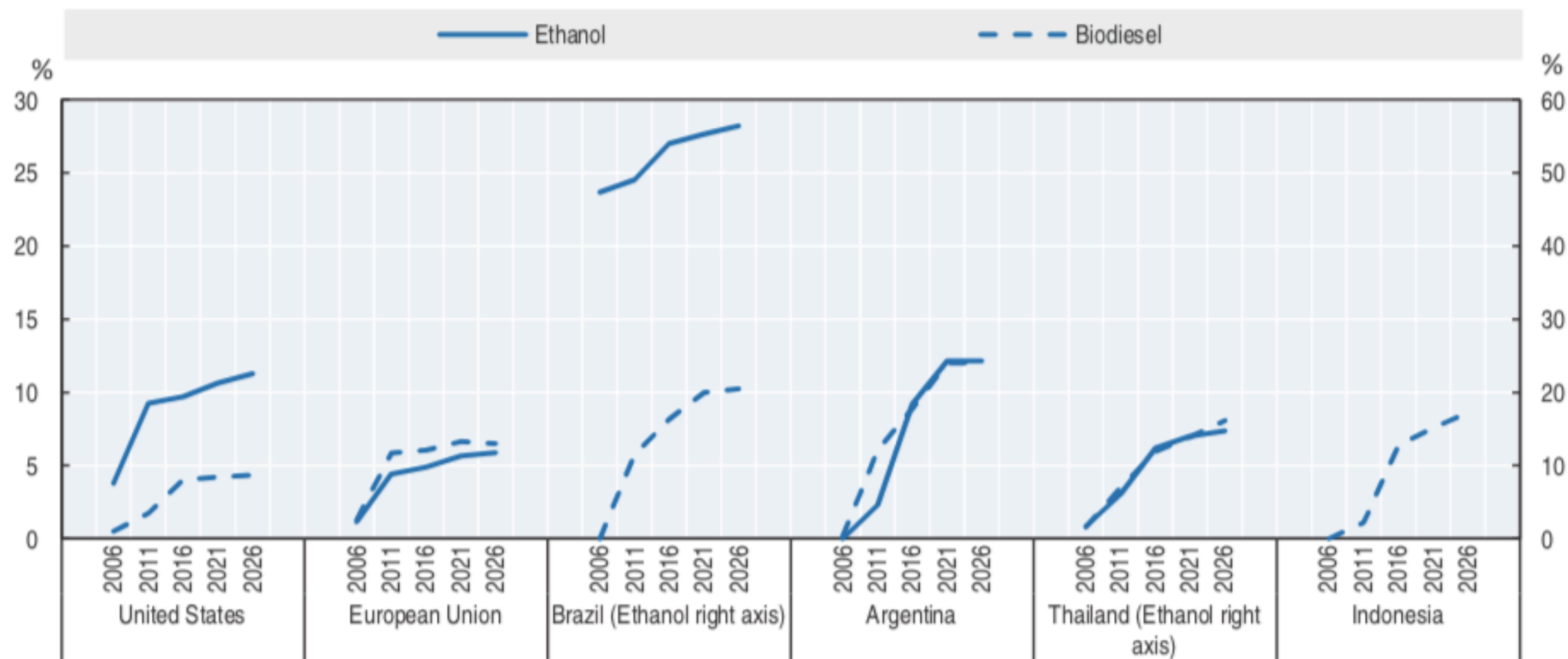


## Management of Energy Systems



Articles: [https://www.researchgate.net/profile/Marco\\_Antonio\\_Conejero](https://www.researchgate.net/profile/Marco_Antonio_Conejero)

Figure 3.7. **Evolution of ethanol blending in gasoline fuels and of biodiesel blending in diesel fuels**



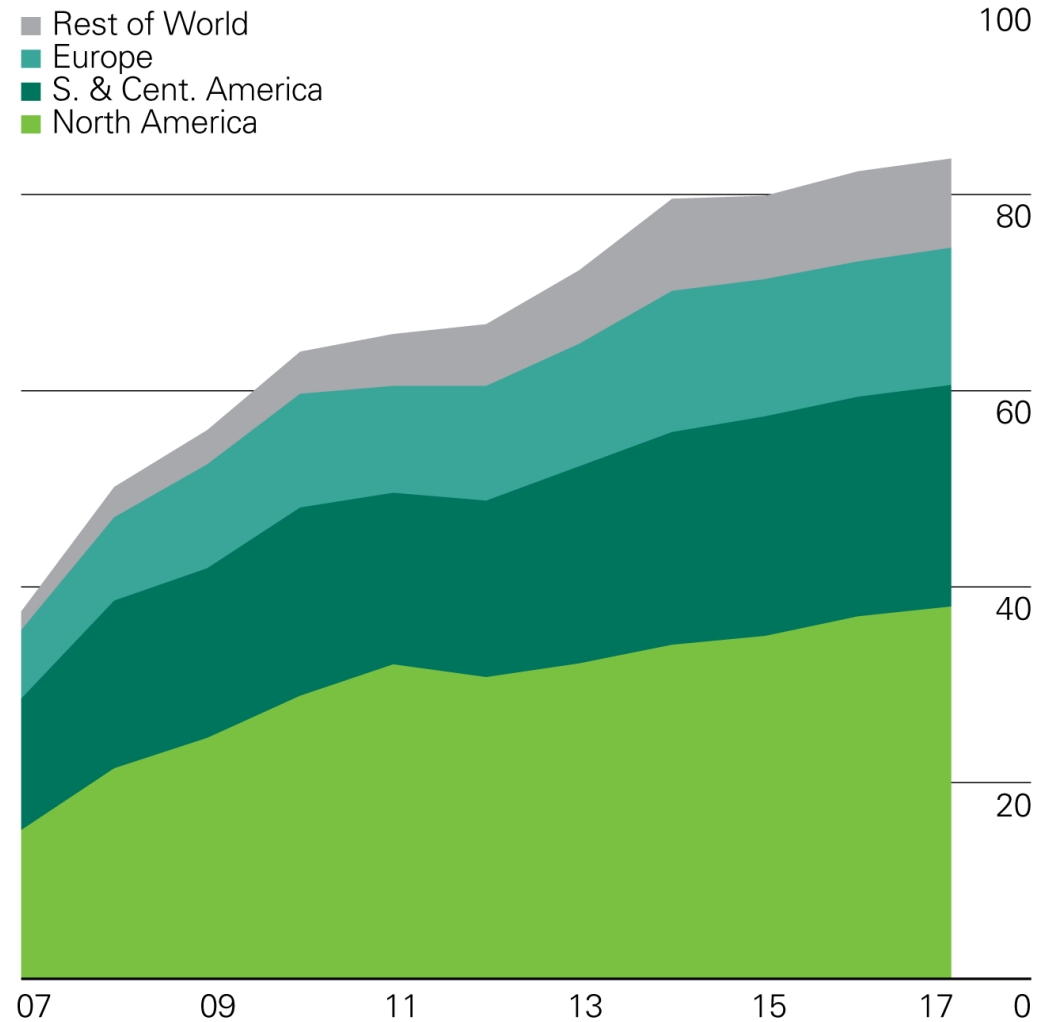
Note: Shares are expressed in volume.

Source: OECD/FAO (2017), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-data-en>.

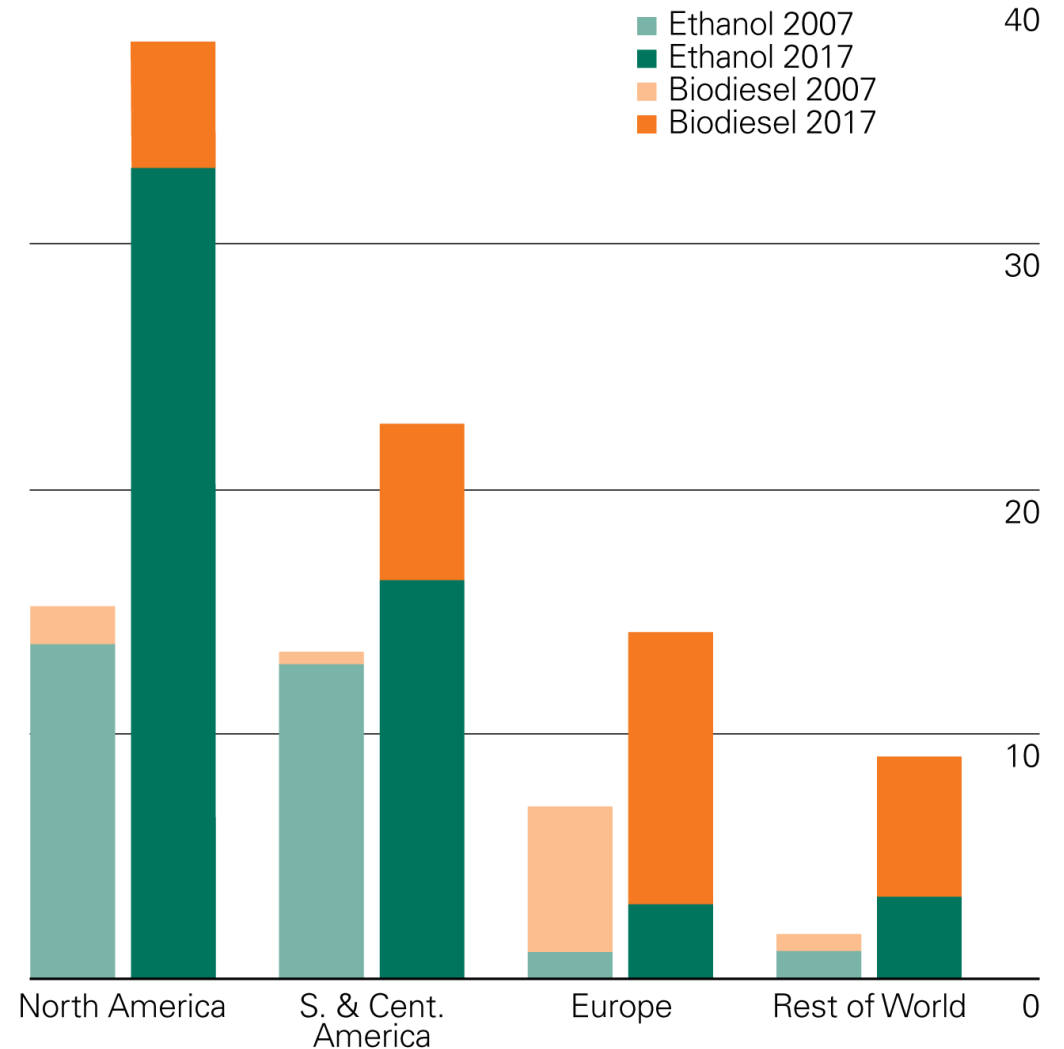
# Biofuels production by region

## Million tonnes oil equivalent

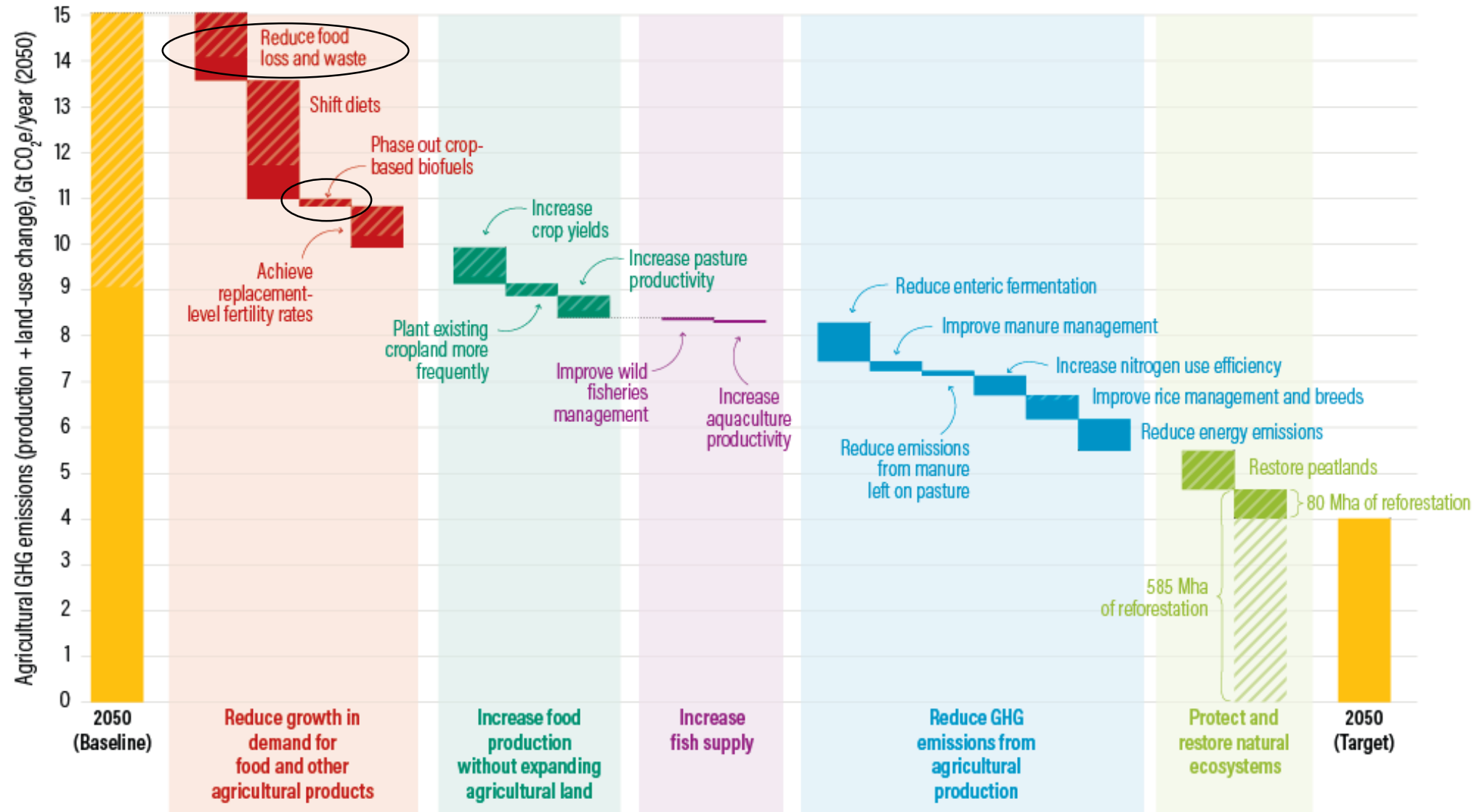
World biofuels production



Source: BP Statistical Review of World Energy 2018

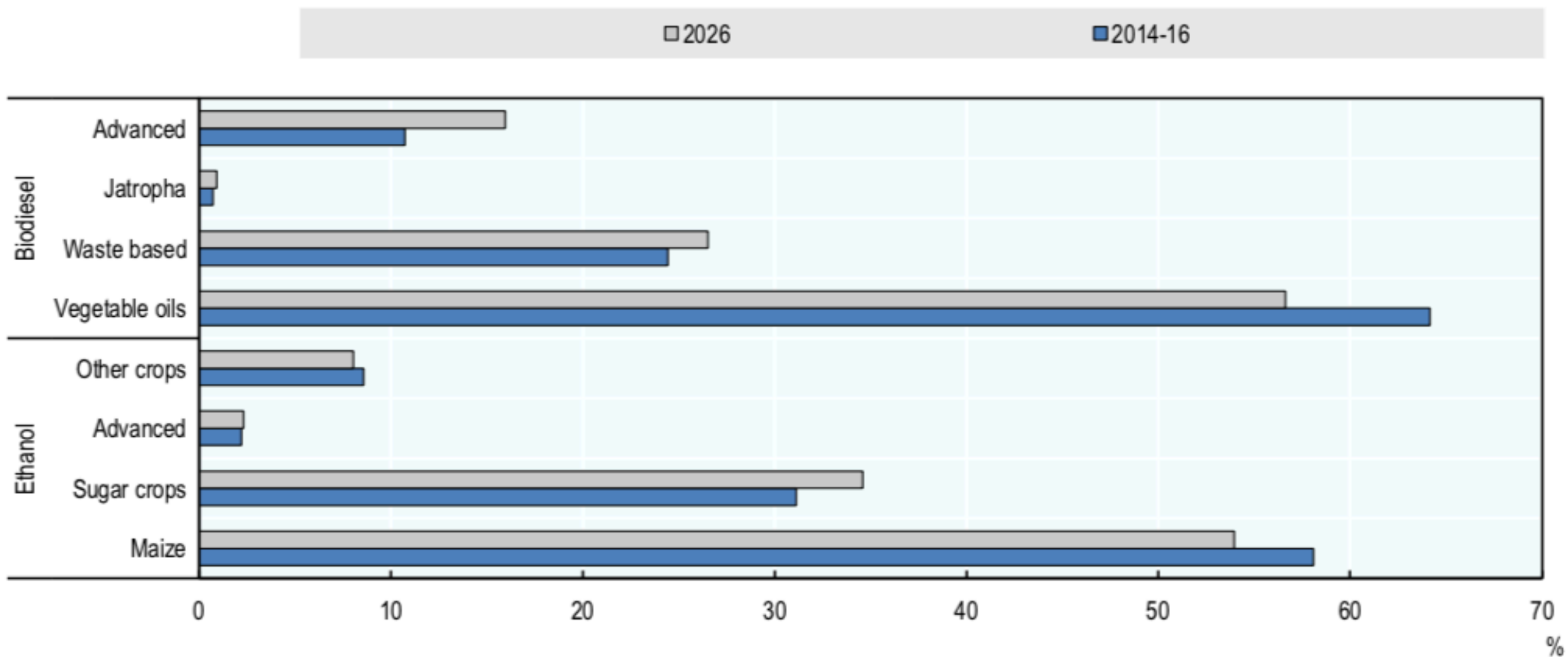


# A 5-Course Menu of Solutions Can Reduce Agricultural Emissions by More than 70%



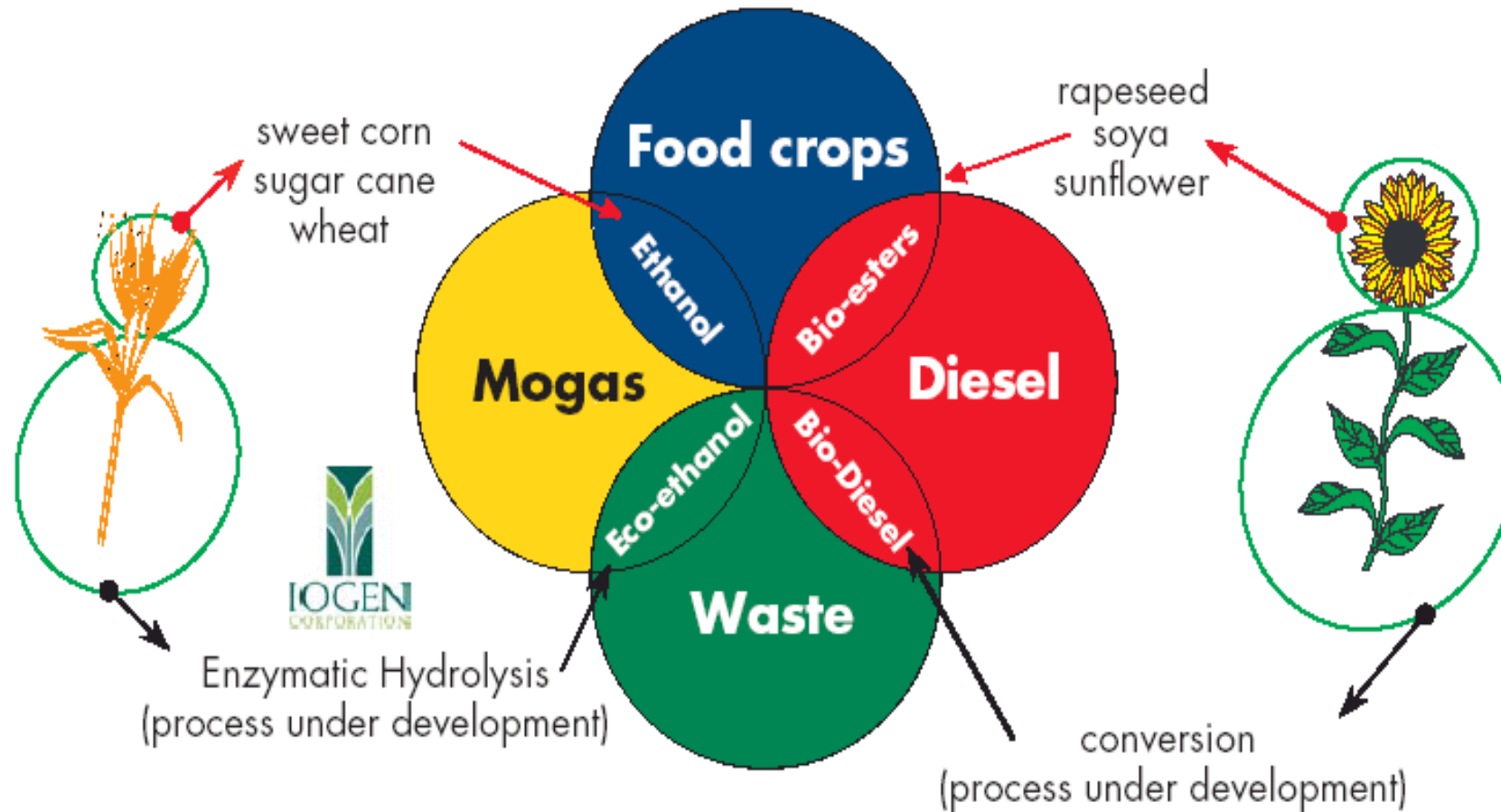
Note: Solid areas represent agricultural production emissions. Hatched areas represent emissions from land-use change.  
 Source: GlobAgri-WRR model.

Figure 3.7.4. Share of feedstock used for biofuel production





# Shell Strategic Planning

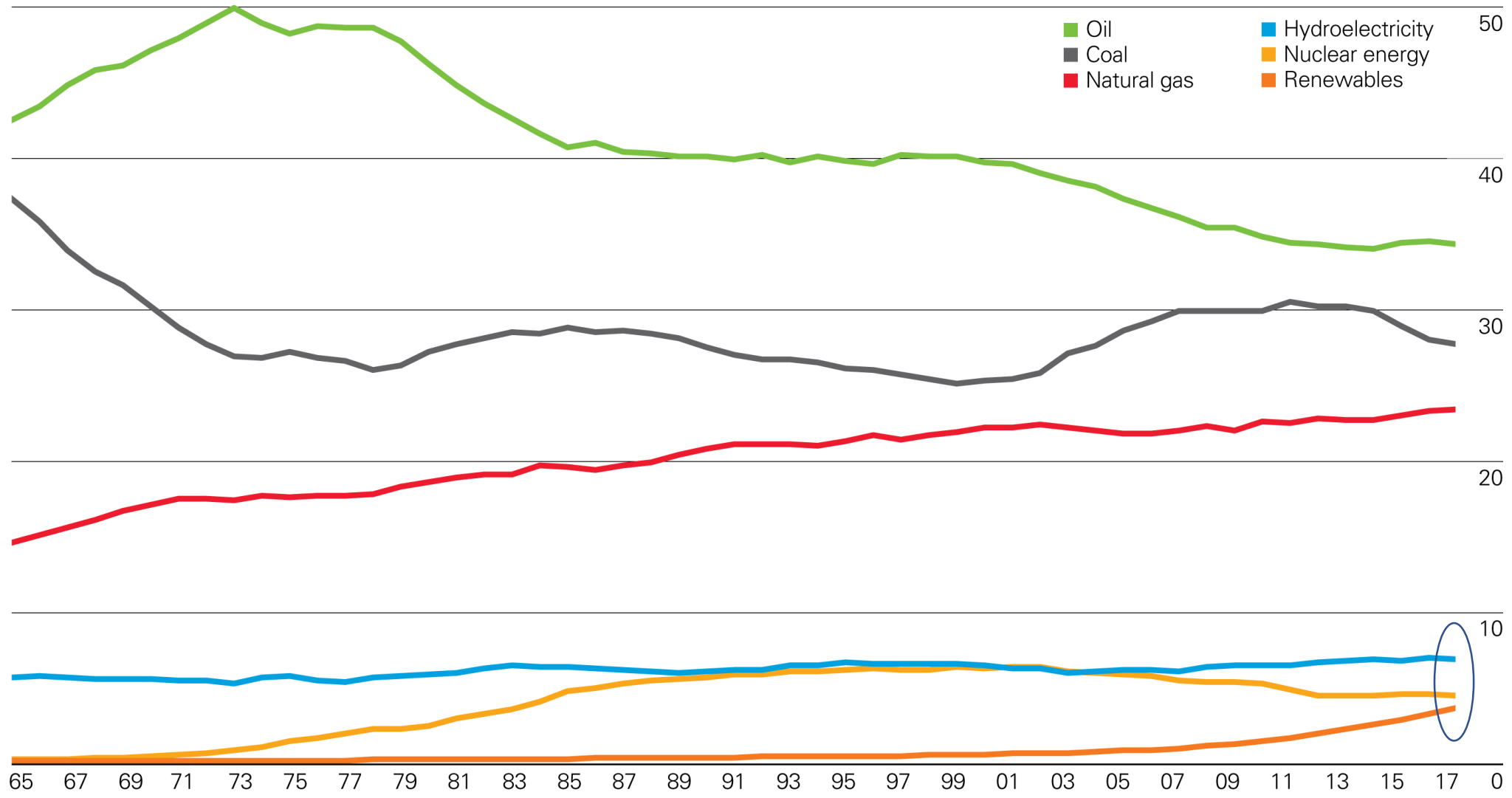


Addressing the sustainability challenge for bio-fuels:

- Economics - Ultimately must be competitive with hydrocarbons
  - Social - Cannot use food crops as a feedstock
  - Environmental – Lowest impact

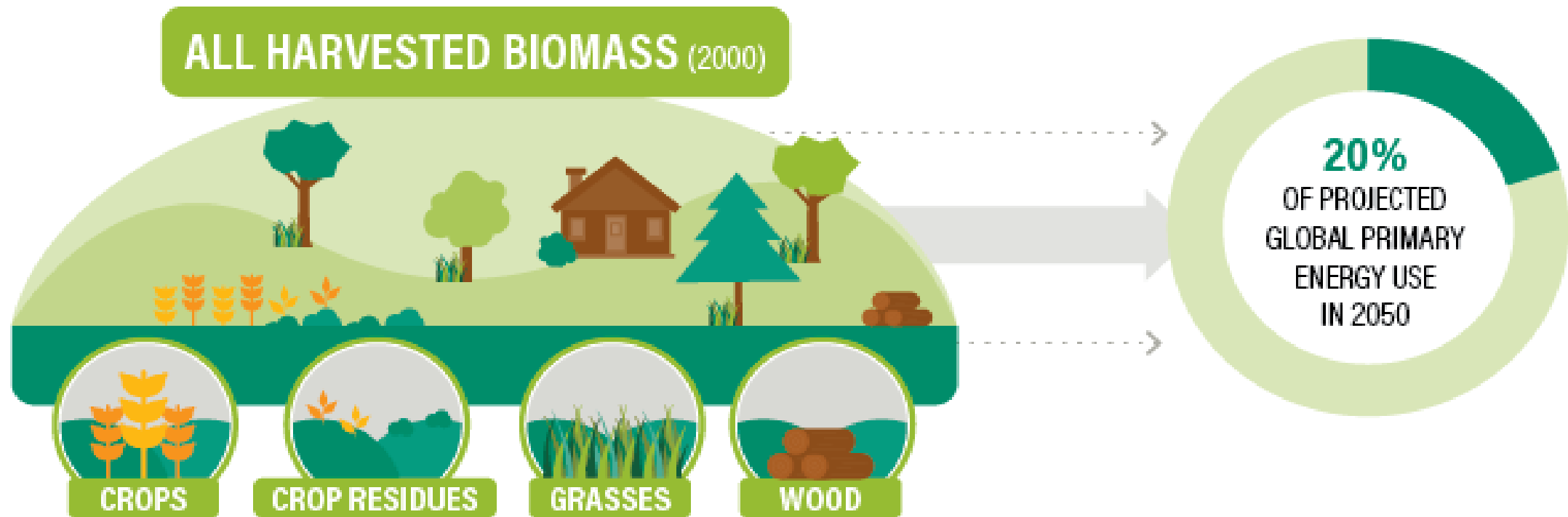
# Shares of global primary energy consumption

Percentage



Source: BP Statistical Review of World Energy 2018

# All of world's harvested biomass would supply only 20% of global energy needs in 2050



*Note:* Assumes primary to final energy conversion for biomass is 24% lower than for fossil energy.

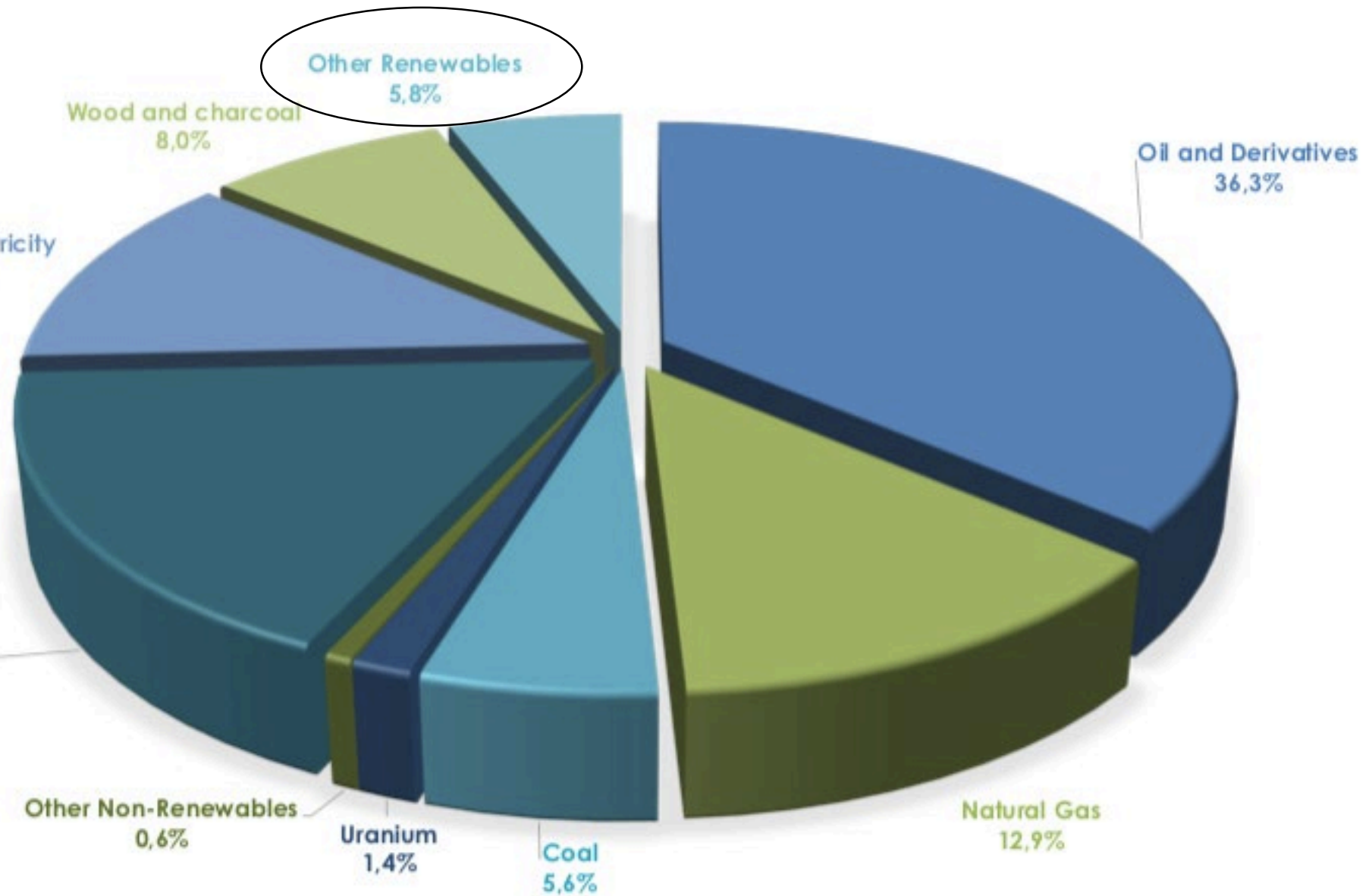
*Source:* Authors' calculations based on Haberl et al. (2007); IEA (2017); and JRC (2011).



# BRAZILIAN ENERGY MATRIX (2017)

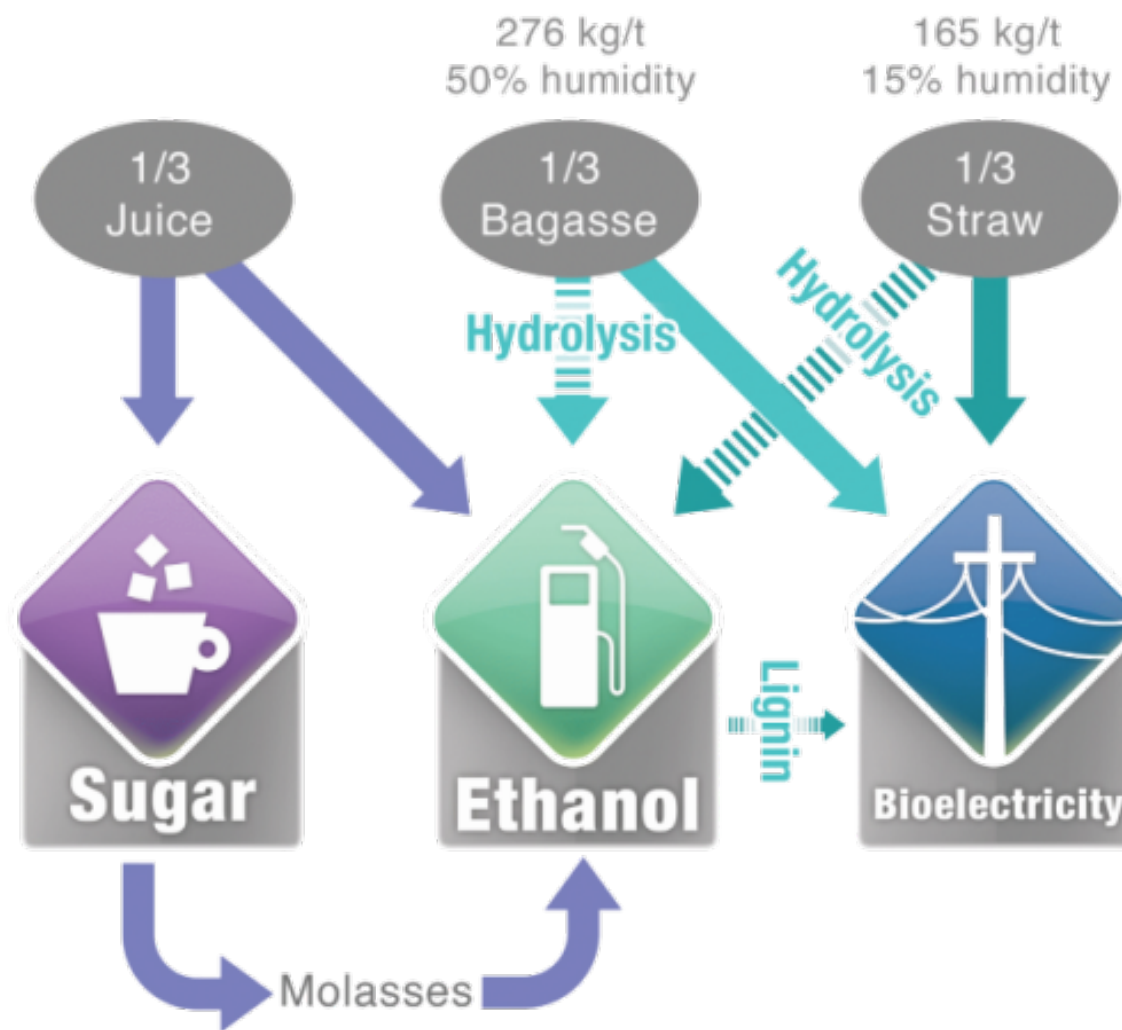


**Renewable sources: 43.2%**



**#1 source of renewable energy – 90% of GHG savings**

# Breakdown of Sugarcane's Energy



Energy equivalent of 1 tonne of sugarcane = 1.2 oil barrel

# Bioplastics and Bio Jet Fuel



**plantbottle™**  
up to 30% plant-based  
100% recyclable bottle  
redesigned plastic,  
recyclable as ever.



**I'm green**  
Plastic  
Renewable source  
Carbon reduction  
**Braskem**



**Azul+Verde**  
Renewable jet fuel



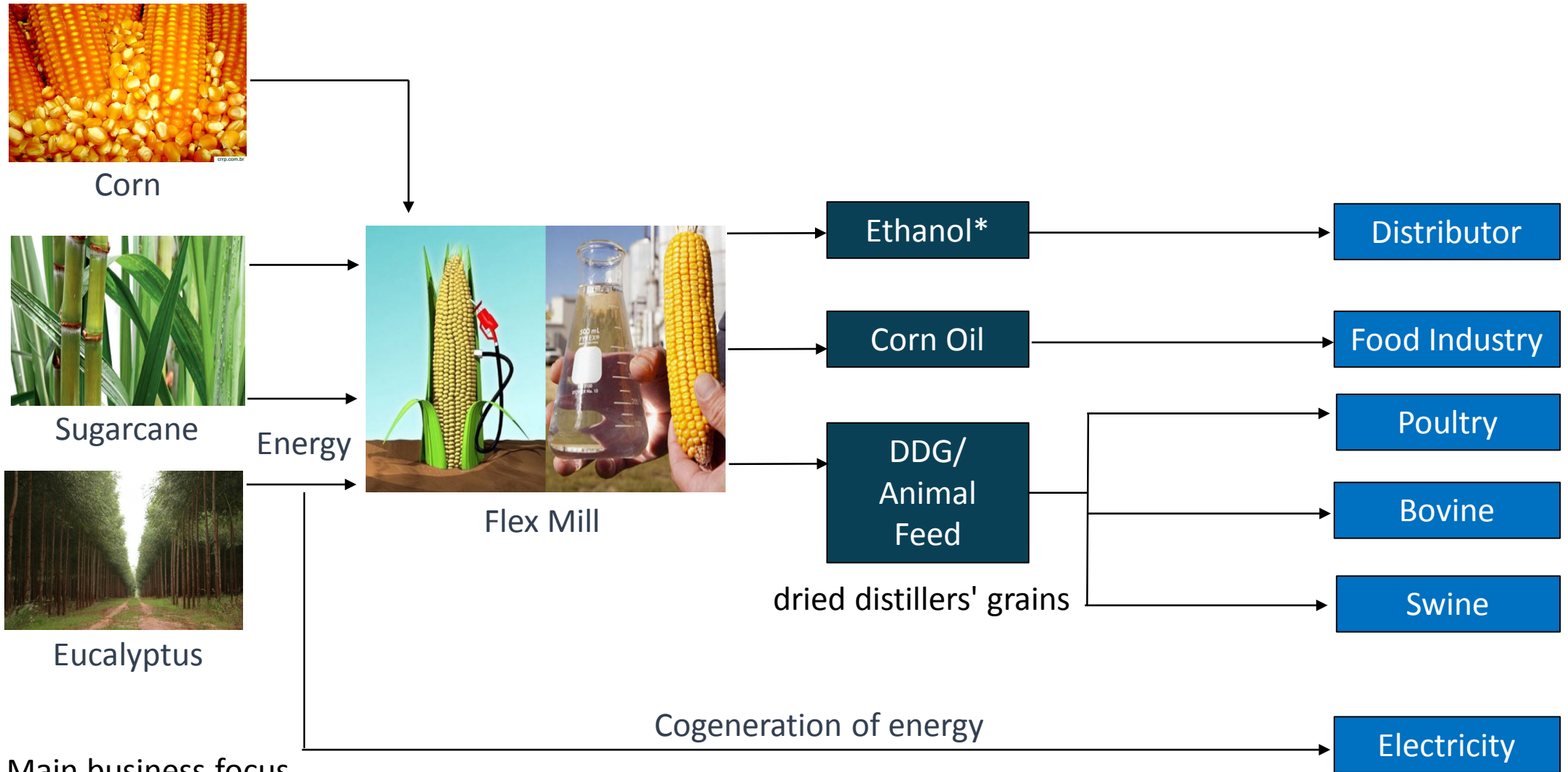
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Produtos com selo I'm green.™  
Um diferencial de produto que faz a diferença para a natureza.  
A Essense, a Embalagem, o Filtro Café e o Sabonete se uniram à Braskem para desenvolver um primeiro embalagem feita de plástico verde. Uma tecnologia que utiliza resíduos, gera 100% fonte renovável, a zero de carbono, e contribui para a redução dos gases de efeito estufa. Uma solução eficiente e que reduzirá a pegada ambiental de todos os produtos mais sustentáveis. Para mais informações, acesse [www.braskem.com.br/spartanoworld](http://www.braskem.com.br/spartanoworld)



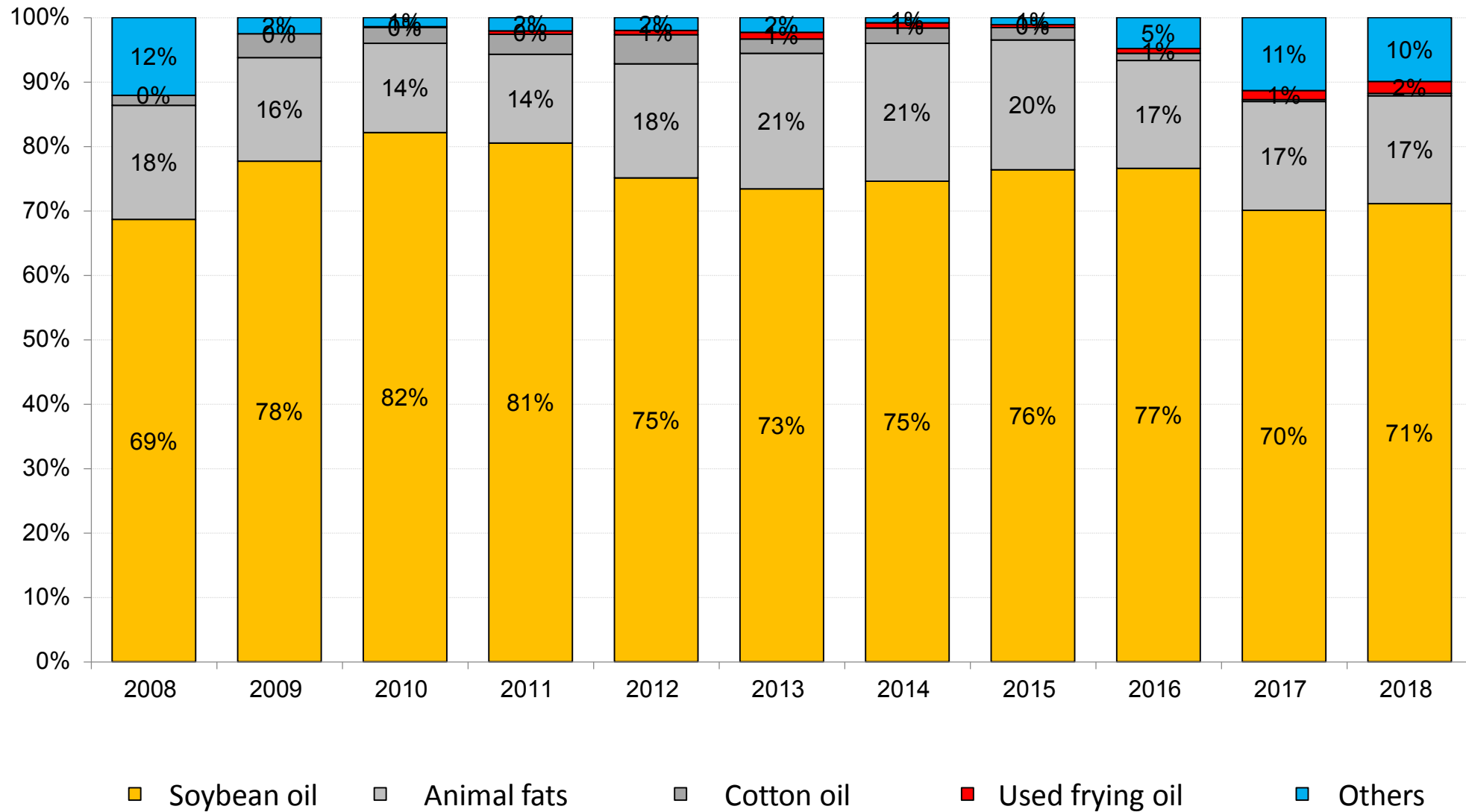
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# Flex Mill – Corn and Sugarcane



\* Main business focus

# Biodiesel production by source (feedstock)

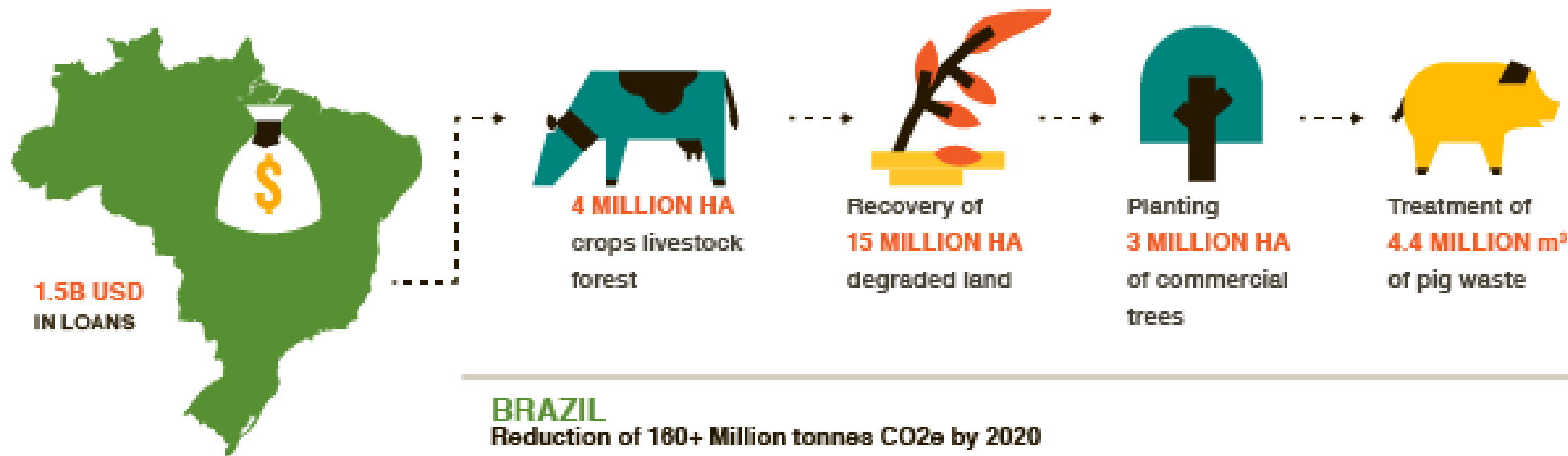


# Low Carbon Agriculture in Brazil

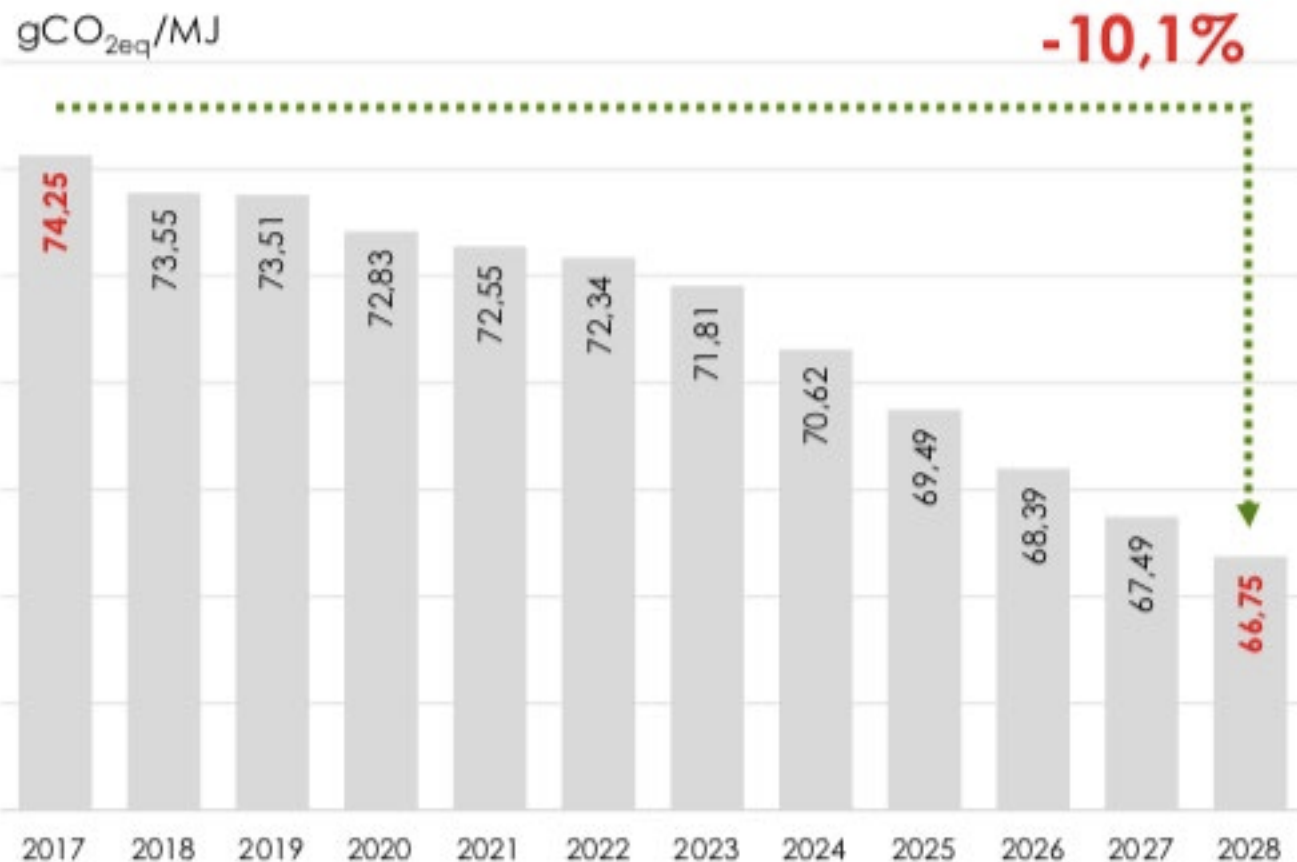


## POLICIES AND PROGRAMS

Farmers are tapping into innovative credit mechanisms to support sustainable practices.



# RENOVABIO TARGETS



- Emissions reduction targets for Fuel Distributors
- Increasing % biofuel/ fuel transport matrix

Thank you!  
Obrigado!

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