

Impacts of introducing financial mechanisms complementary to climate policies to attract low-carbon investments and long-term economic effects in Brazil

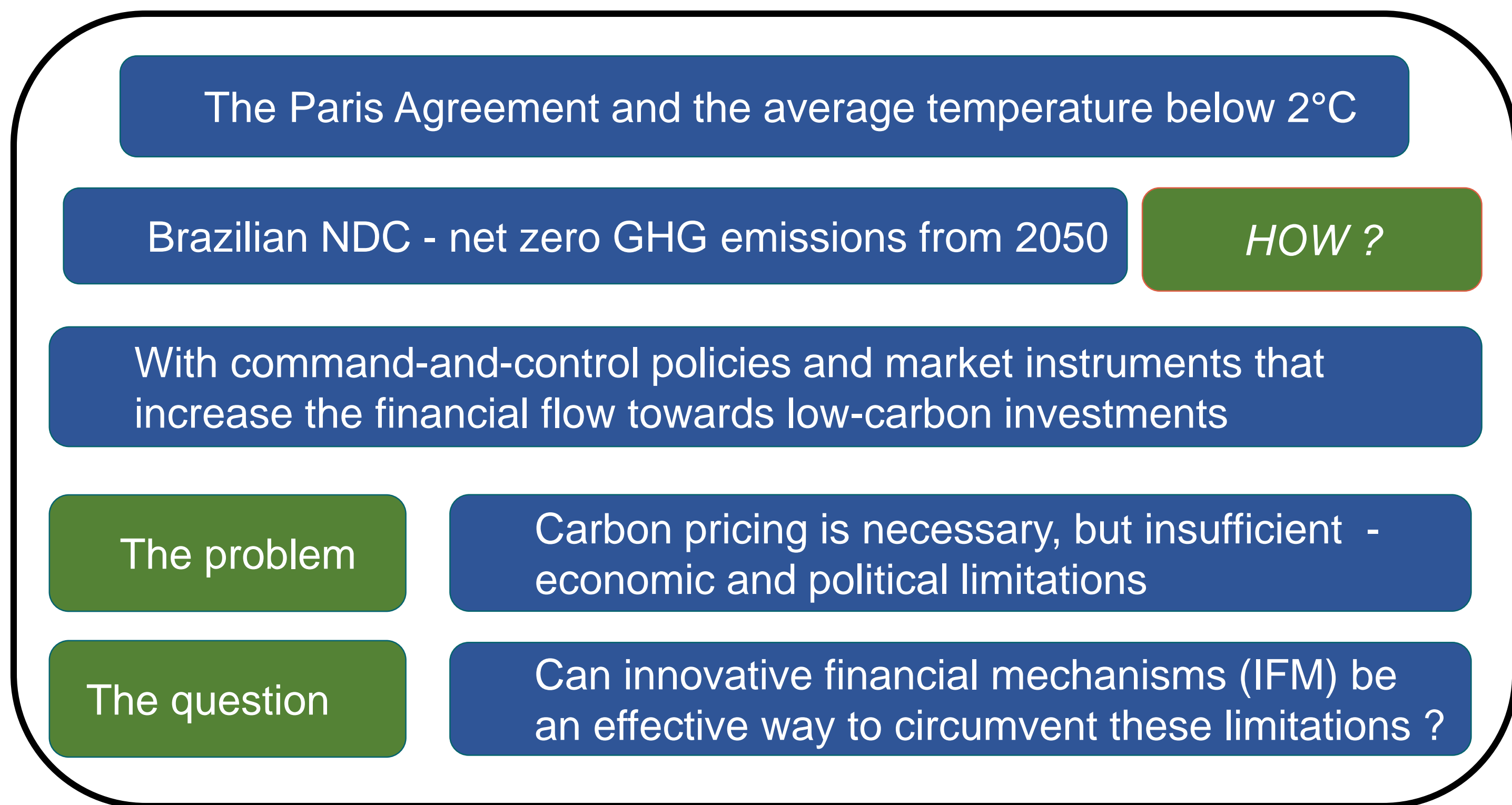


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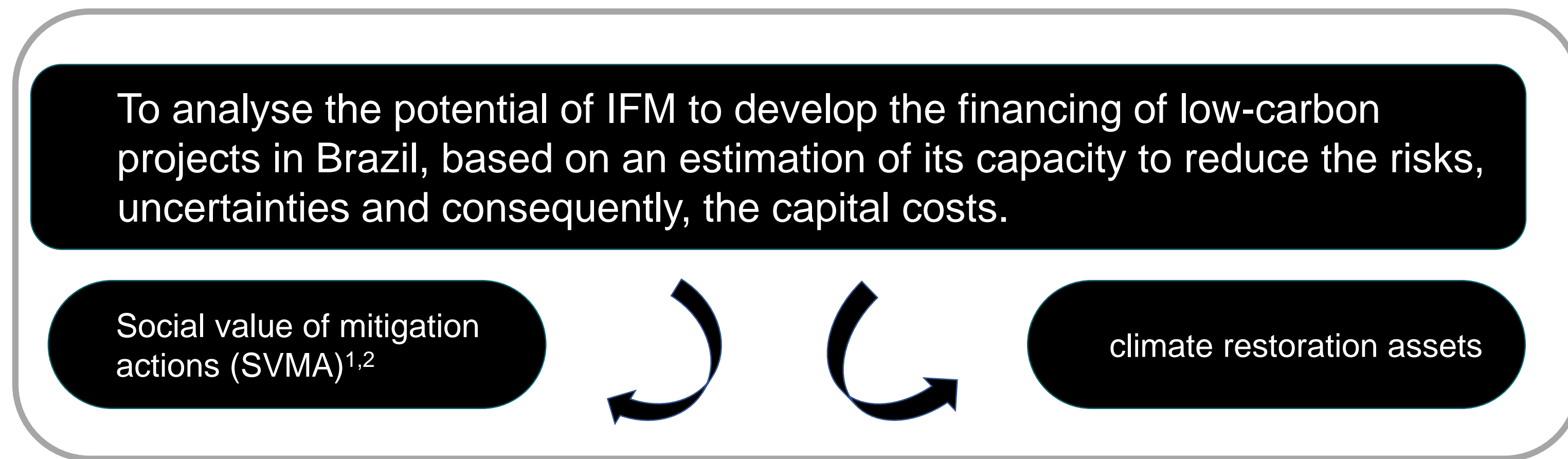
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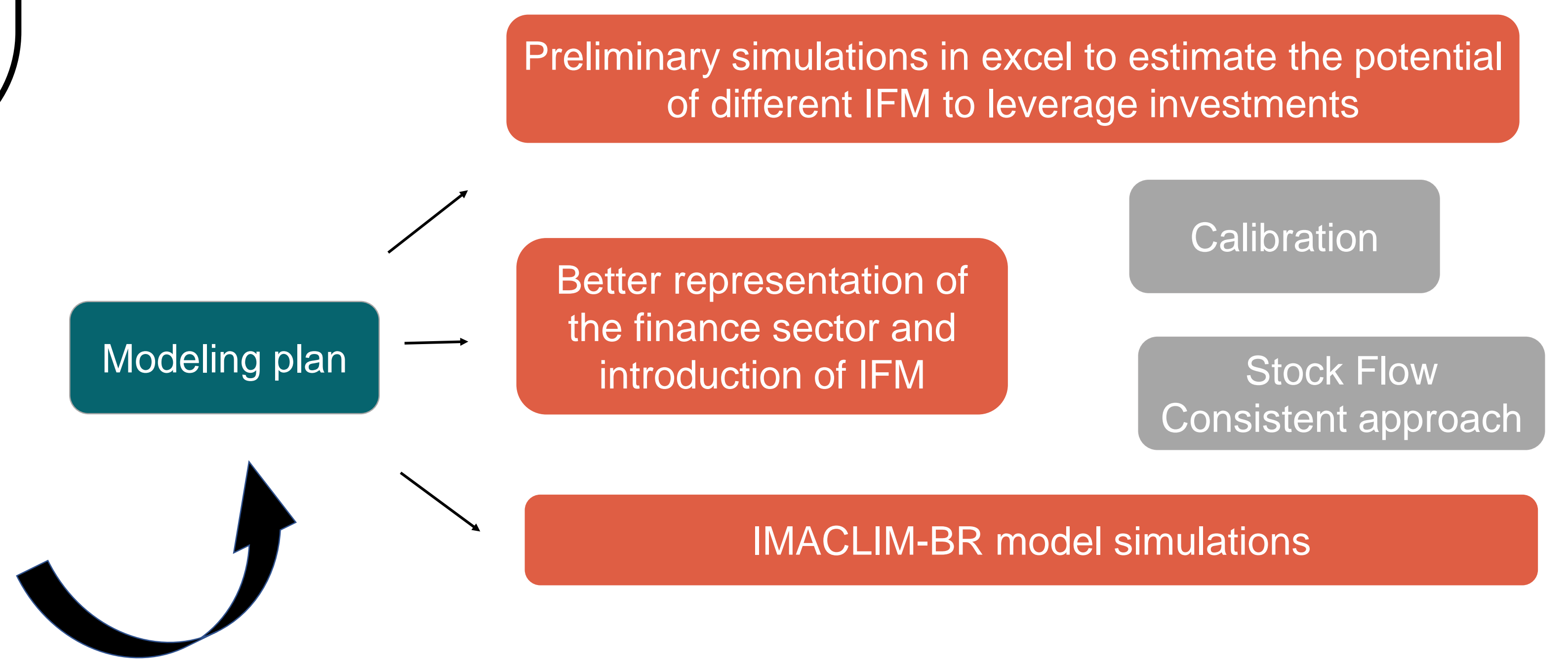
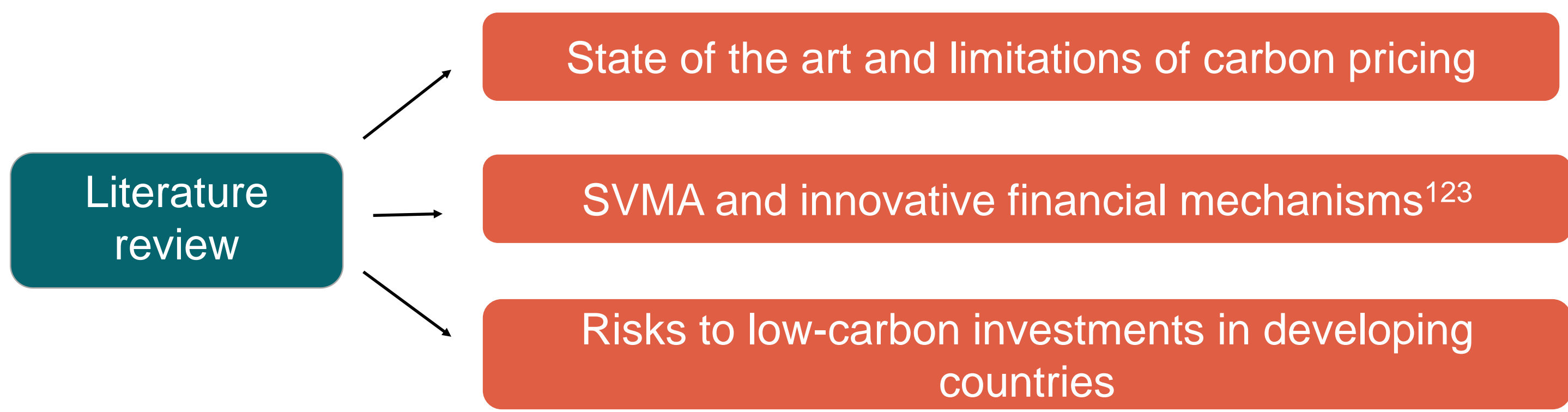
I. Introduction



II Objective

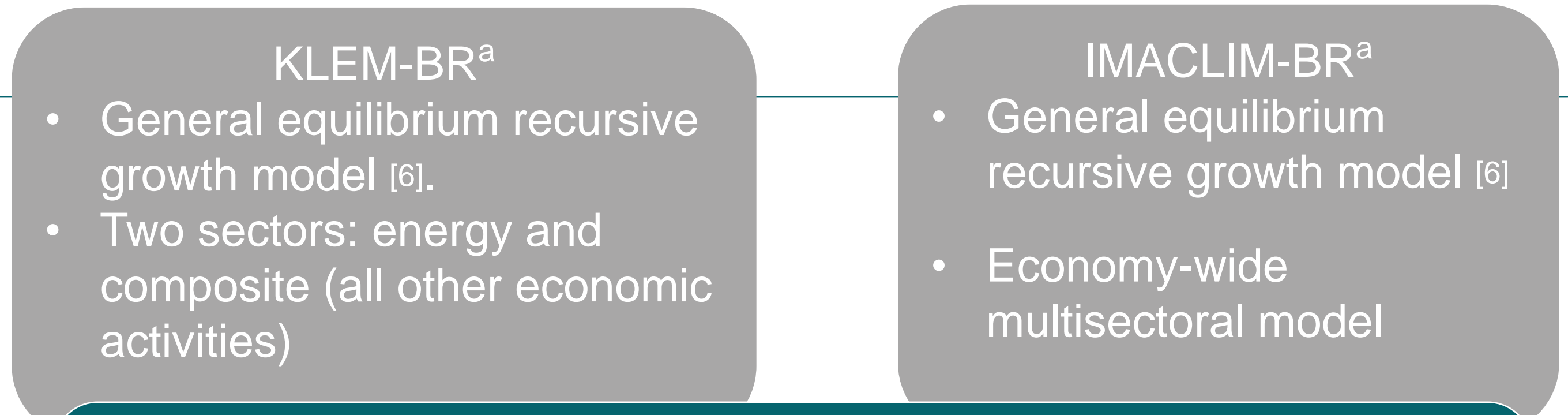


III Method



III.1 The models

KLEM-BR and IMACLIM-BR are a hybrid computable general equilibrium model



The calibration of KLEM BR and IMACLIM BR relies on input-output tables (IOTs) representing the annual economic flows of an economy and ensuring a balance between the uses and resources of that economy.

III.2 Better representing the financial flow

IMACLIM-BR and KLEM-BR ignore capital markets, implicitly proposing a perfect market that allocates available capital, resulting from the accumulation of savings, in such a way as to equalise the profitability of investments in each production sector.

	Households	Productive sectors	Commercial Banks	Government	Central Bank	Rest of the World	Total
Deposits	+D		-D				0
Loans		-Li	+L				0
Advances			-A		+A		0
Government bonds	+Bh			-B	+Bcb	+Bw	0
Equities	+E	-Ei					0
Capital		+Ki					+K
Net worth	+Vh	+Vi	+Vb	-B	+Vcb	+Vw	+K

Table 1: Balance sheet matrix⁴

The Stock Flow Consistent methodology has been introduced as a way to avoid the incompleteness that characterizes most standard models in terms of financial flows and stocks.

IV. Results

Macroeconomic variables
Deep decarbonization scenario

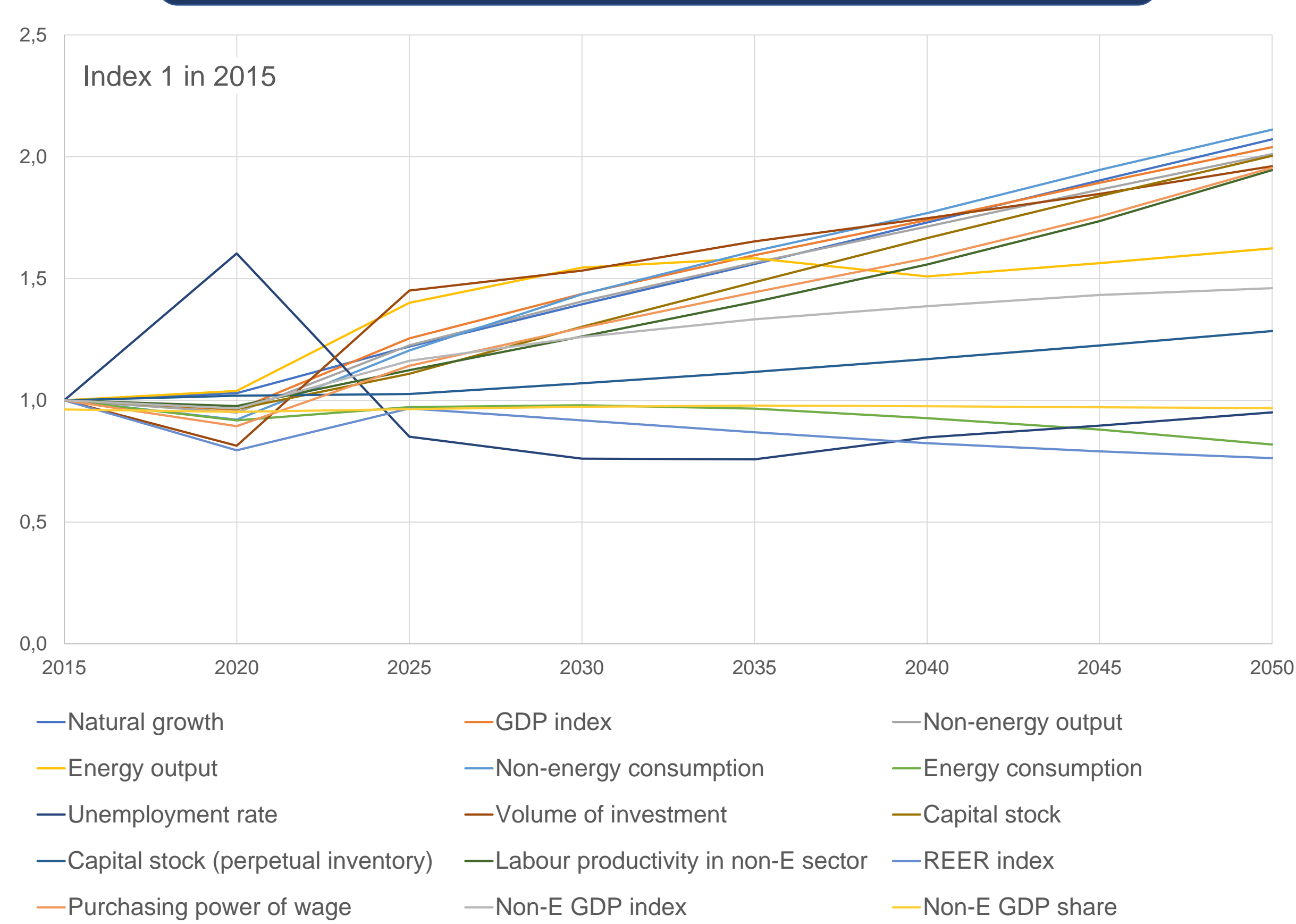


Figure 1: Macroeconomic Variables

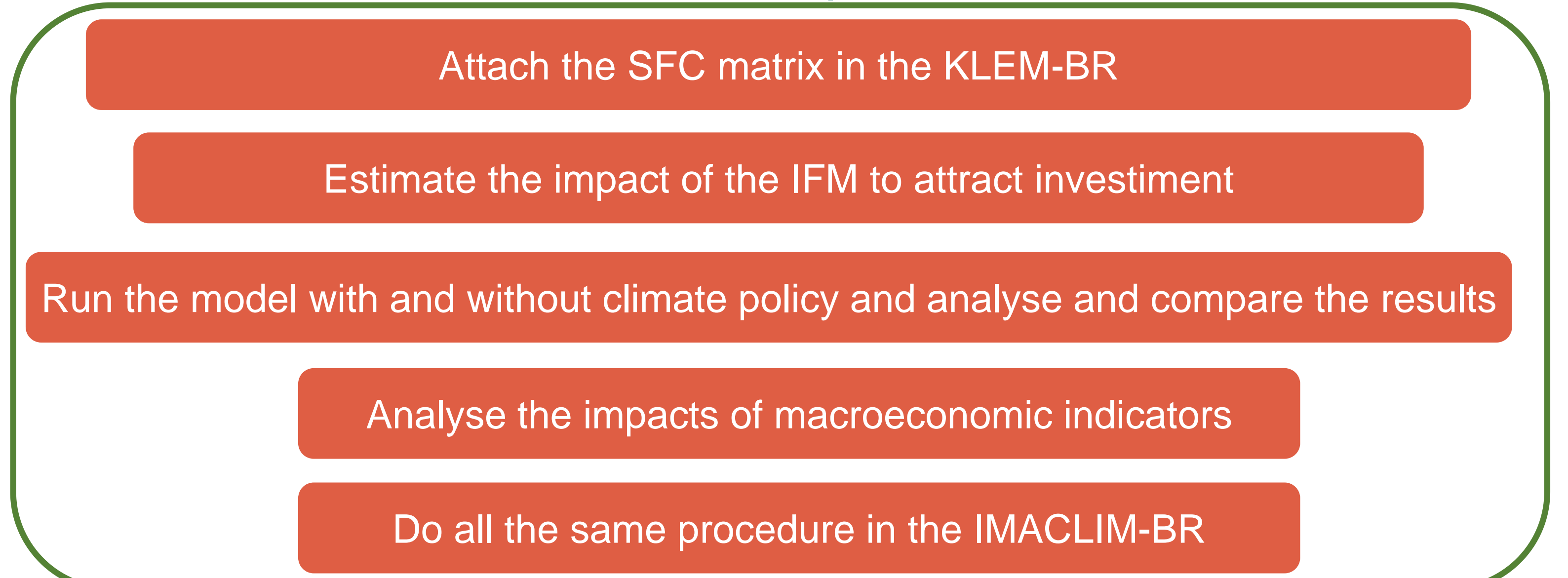
- GHG emissions trajectory compatible with zero net emissions in 2050
- Radical reduction of deforestation from 2025
- Carbon Pricing, on part of GHG emissions, starting in 2021

Elasticity sensibility in 2050

Macroeconomic Variables	Low σ_s	High σ_s	Low σ_{wU}	High σ_{wU}	Low σ_{KL}	High σ_{KL}	Low σ_{KLE}	High σ_{KLE}	Low σ_y	High σ_y	Low σ_x	High σ_x
Real GDP	2%	-1%	0%	0%	0%	0%	-6%	2%	0%	0%	1%	-1%
Unemployment rate (Pts)	-0,13	0,05	-0,04	0,02	-0,04	0,02	0,25	-0,09	0,00	0,00	-0,09	0,04

Table 2: Elasticity sensibility

V. Next steps

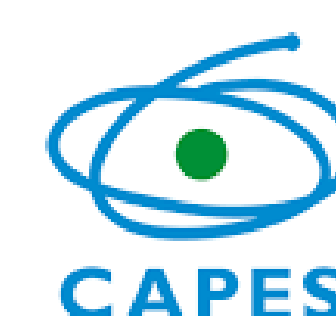


VI. Expected results

To understand the extent to which the IFM facilitate the promotion of a set of investments needed to place the Brazilian economy on a low-carbon trajectory in line with the objectives updated by the new Brazilian NDC.

Notes:
^a IMACLIM and KLEM are developed by the CIRED.

References:
[1] Stern, N., Stiglitz, J.E., 2017. Report of the High-Level Commission on Carbon Prices. Carbon Pricing Leadership Coalition
[2] Hourcade, J.C., Pottier, A., Espagne, E., 2018. Social value of mitigation activities and forms of carbon pricing. International Economics on ScienceDirect[®] International Economics 155 (2018) 8-18
[3] La Rovere, E., et al., 2018. Overcoming the financial barrier to a low emission development strategy in Brazil. E.L. International Economics 155 (2018) 61-68
[4] Couix, Q. (2022) Modeling the Financial Sector in Imacim



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