THE APPLICATION OF THE INTER-REGIONAL INPUT OUTPUT (IRIO) ANALYSIS IN POLICY MAKING

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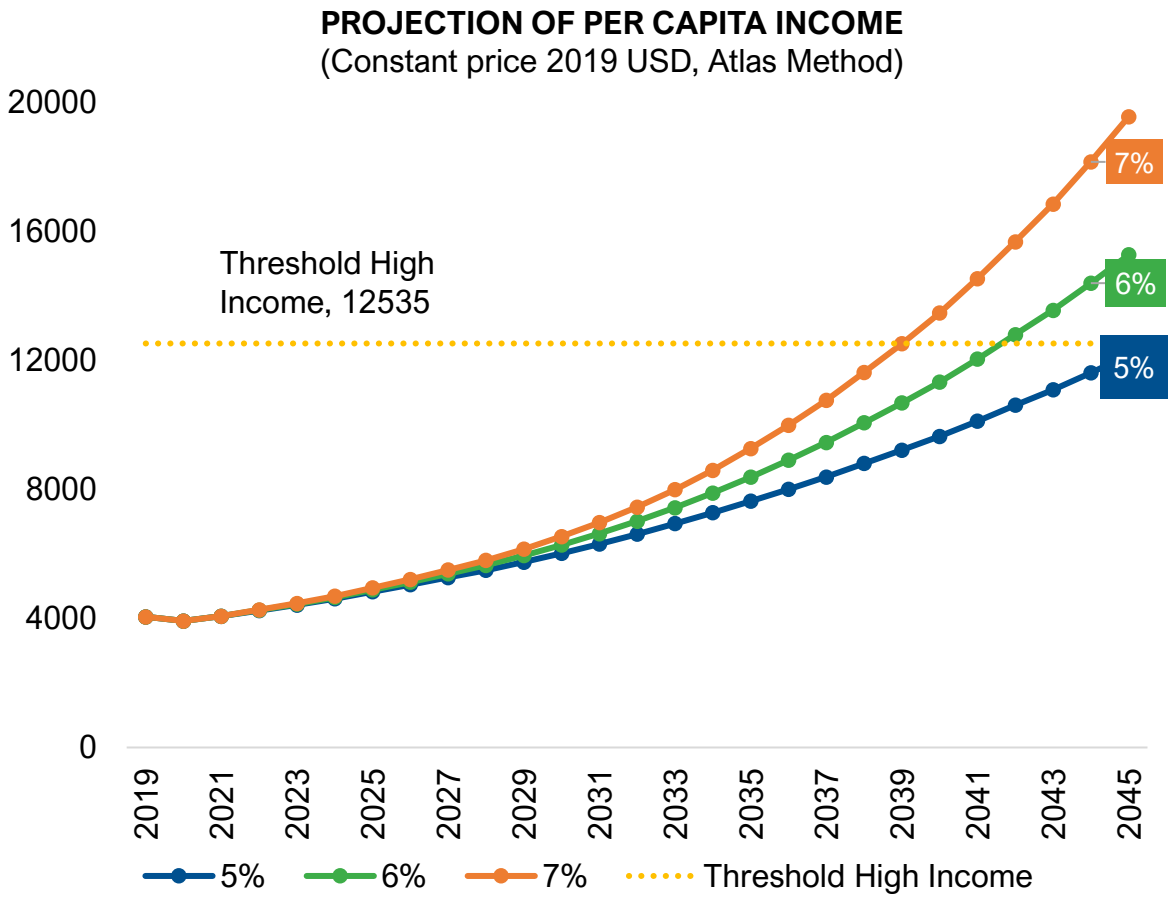
DIREKTORAT TATA RUANG DAN PENANGANAN BENCANA

01

Country context: Indonesia

The 2045 Vision:

To become an advanced and prosperous country



- 5% annual growth will not be enough

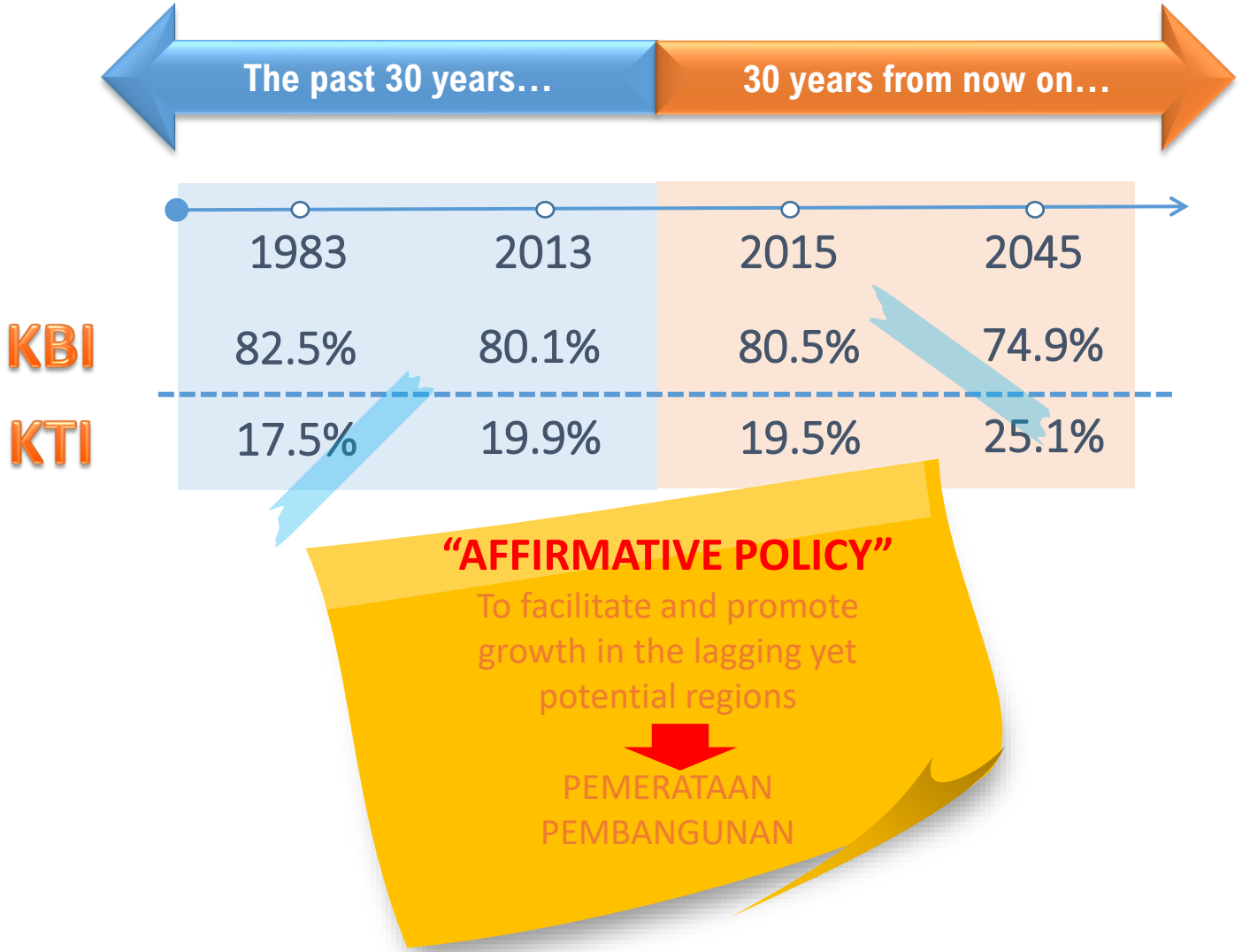
  Indonesia needs to transform into an economy with high productivity and sustainable growth

- Needs to identify potential growth engine

  Government focus on the promotion of 4.0 industries and high-quality tourism

The challenge:

High concentration in economic activity



- National GDP is highly concentrated in the western region

  The shifting in the spatial proportion between eastern and western regions grows slowly

- New direction to accelerate the economy of the eastern part while maintaining the performance of the western region

  High variation in the growth potential within eastern region, with most of provinces rely on primary industries

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02

IRIO for identification of key sectors at sub-national level

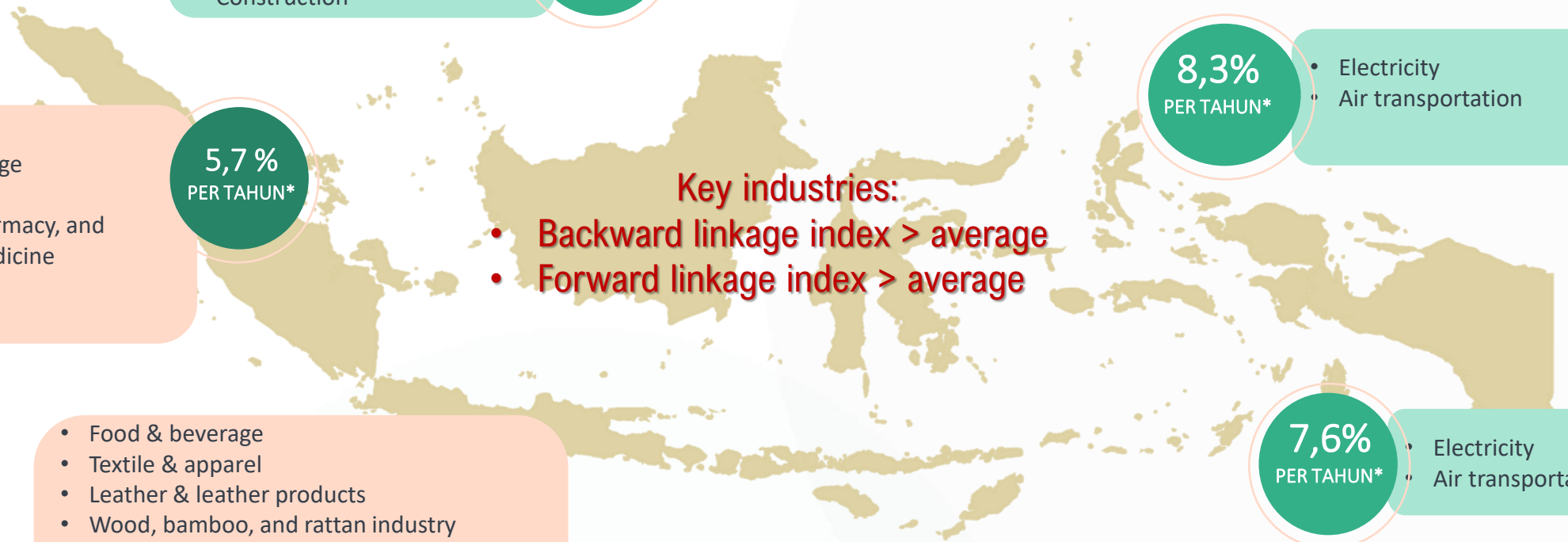
IRIO Analysis

Identification of the key sectors in each region



IRIO Analysis

Desired growth and the key industries in each region



- Food & beverage
- Chemical, pharmacy, and traditional medicine
- Electricity
- Construction

6,2% PER TAHUN*

6,7% PER TAHUN*

- Food & beverage
- Non-metal mining
- Electricity

8,3% PER TAHUN*

- Electricity
- Air transportation

- Coal
- Food & beverage
- Paper & pulp
- Chemical, pharmacy, and traditional medicine
- Electricity
- Construction

5,7 % PER TAHUN*

Key industries:

- **Backward linkage index > average**
- **Forward linkage index > average**

7,6% PER TAHUN*

- Electricity
- Air transportation

- Food & beverage
- Textile & apparel
- Leather & leather products
- Wood, bamboo, and rattan industry
- Chemical, pharmacy, and traditional medicine
- Rubber and plactic product
- Basic metal
- Computer & electronics
- Machinary

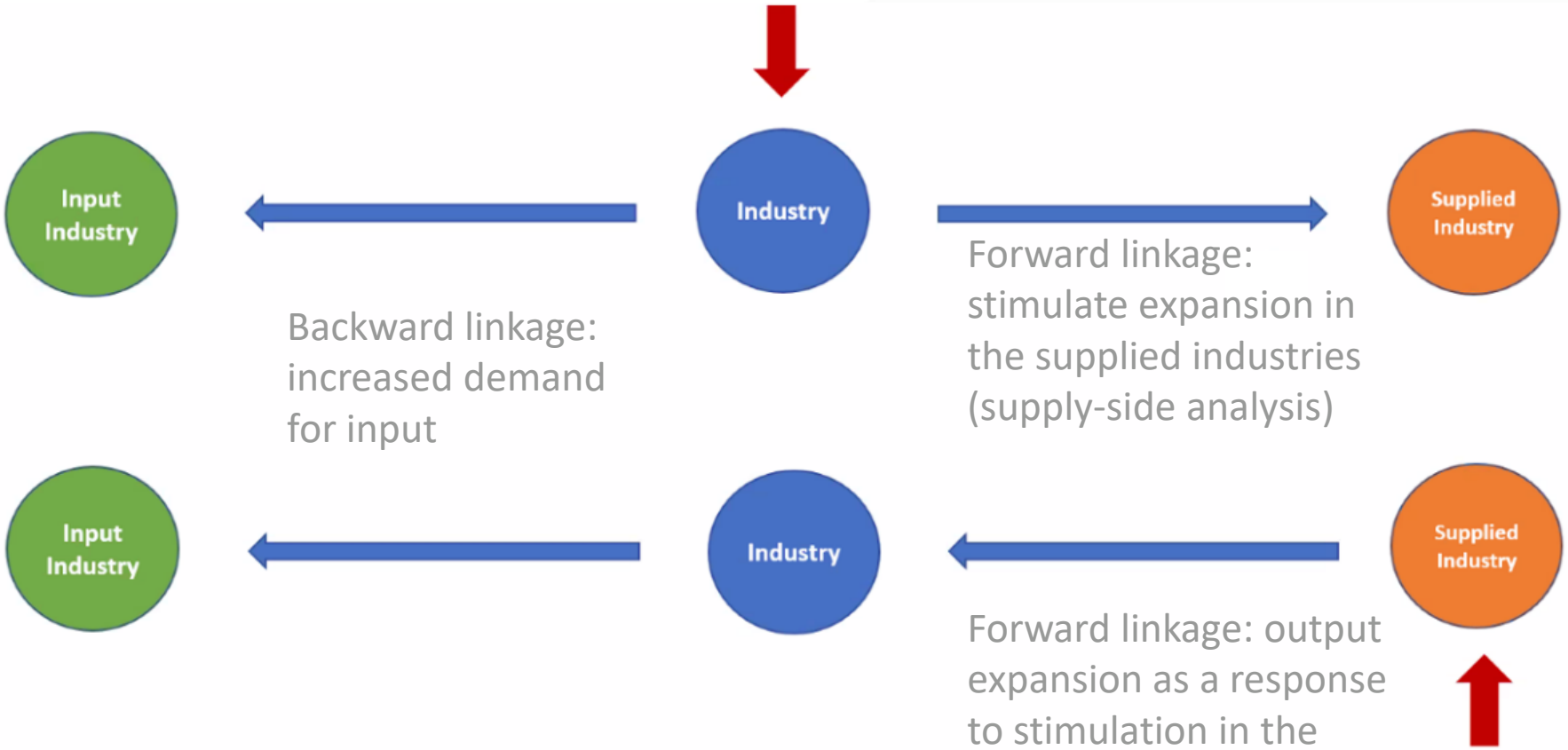
5,3% PER TAHUN*

6,5% PER TAHUN*

- Electricity
- Land transportation
- Firm services

Source: Bappenas Analysis (2022)

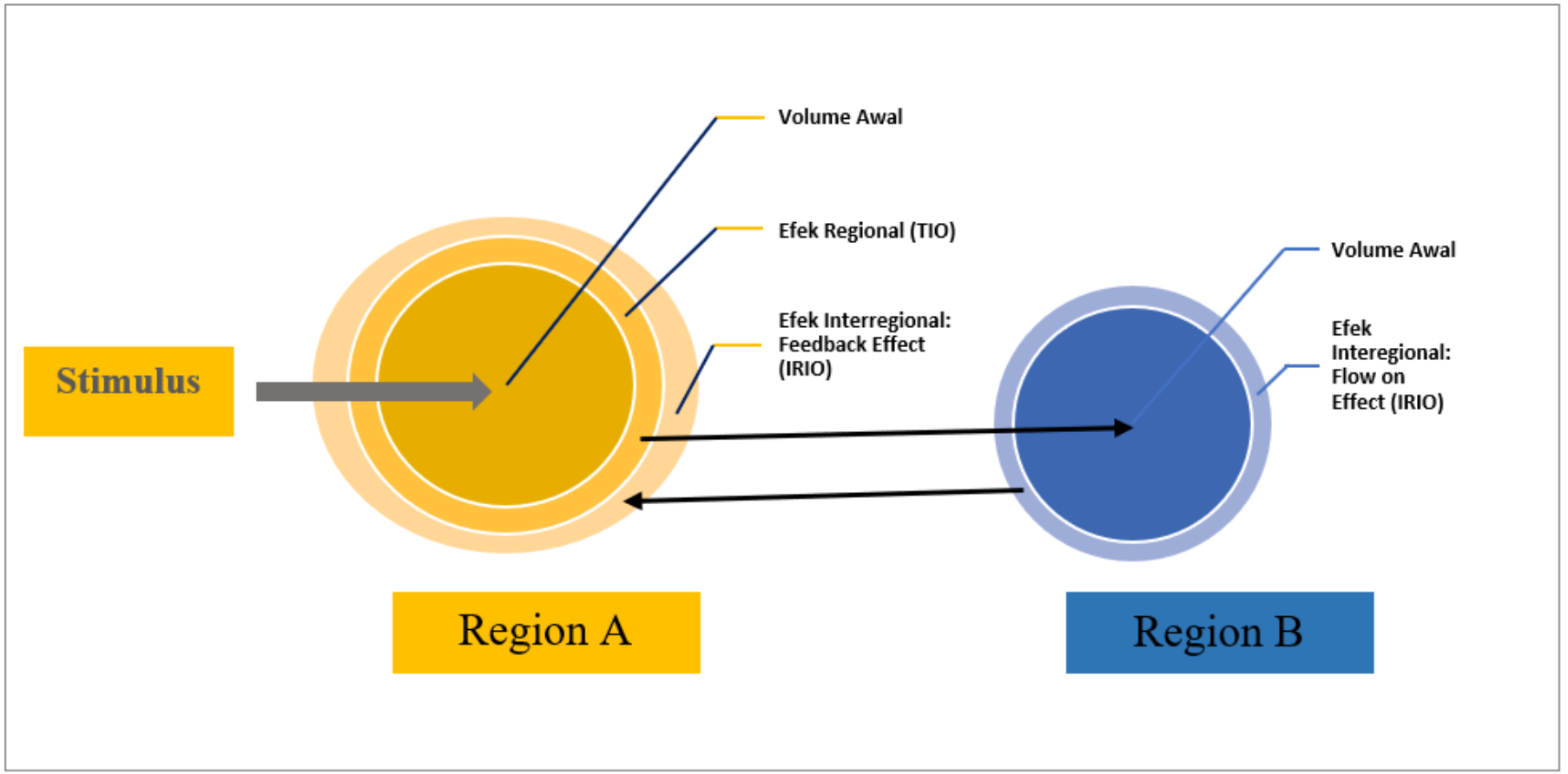
IRIO Analysis



Source: Bappenas Analysis (2021)

IRIO Analysis

Spill-over effects: flow-on and feedback



Source: Bappenas Analysis (2021)

Application of IRIO Analysis



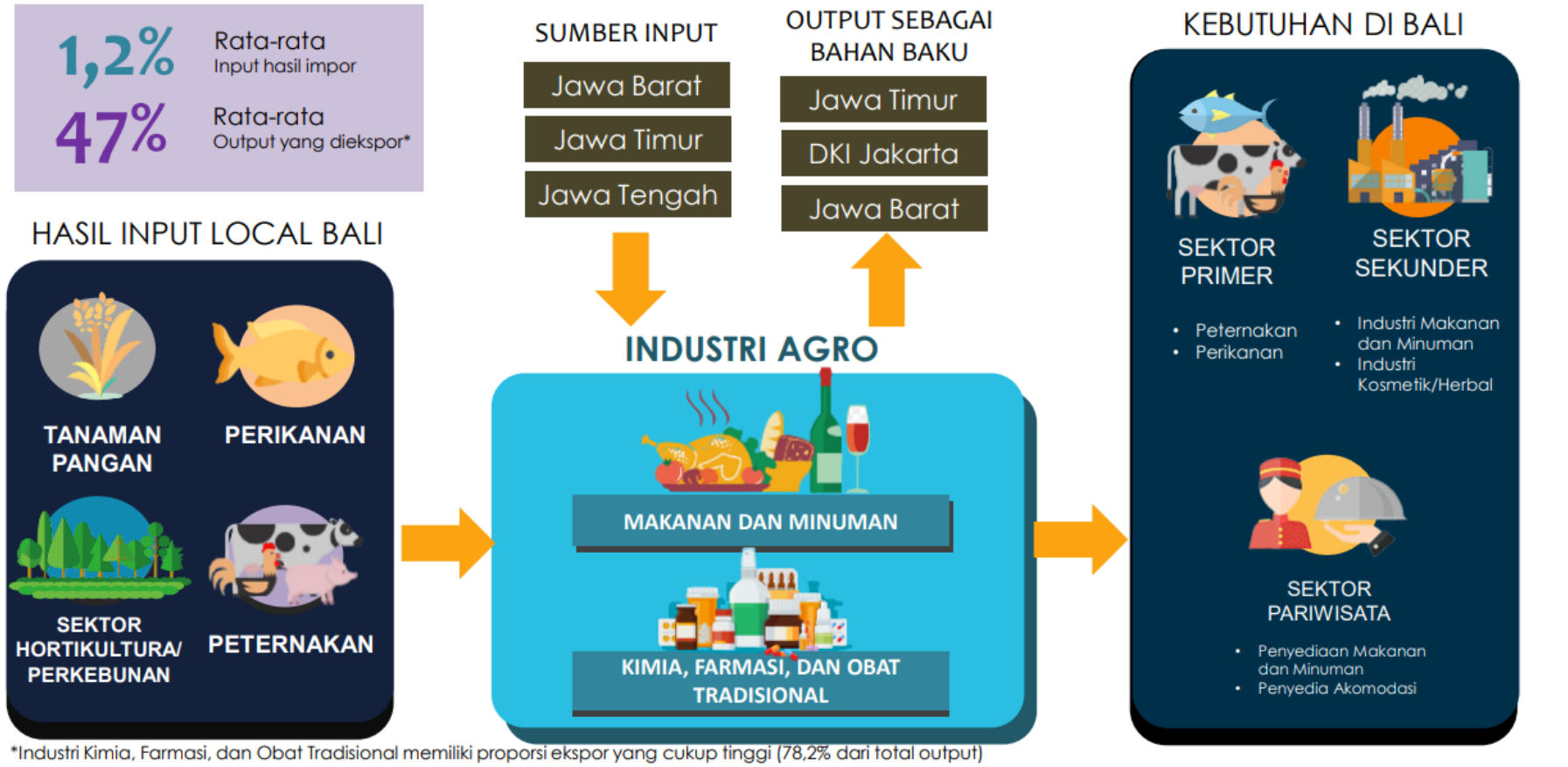




- Bappenas facilitates Local Government Planning Board to develop Road Map or Master Plan with the purpose to unlock region' potentials
- Lesson-learned from COVID-19 Pandemic: Bali needs to develop an alternative source of growth to buffer the local economy from tourism demand shock

Application of IRIO Analysis:

Value chains of strategic industries in Bali



Source: Bappenas Analysis (2021)

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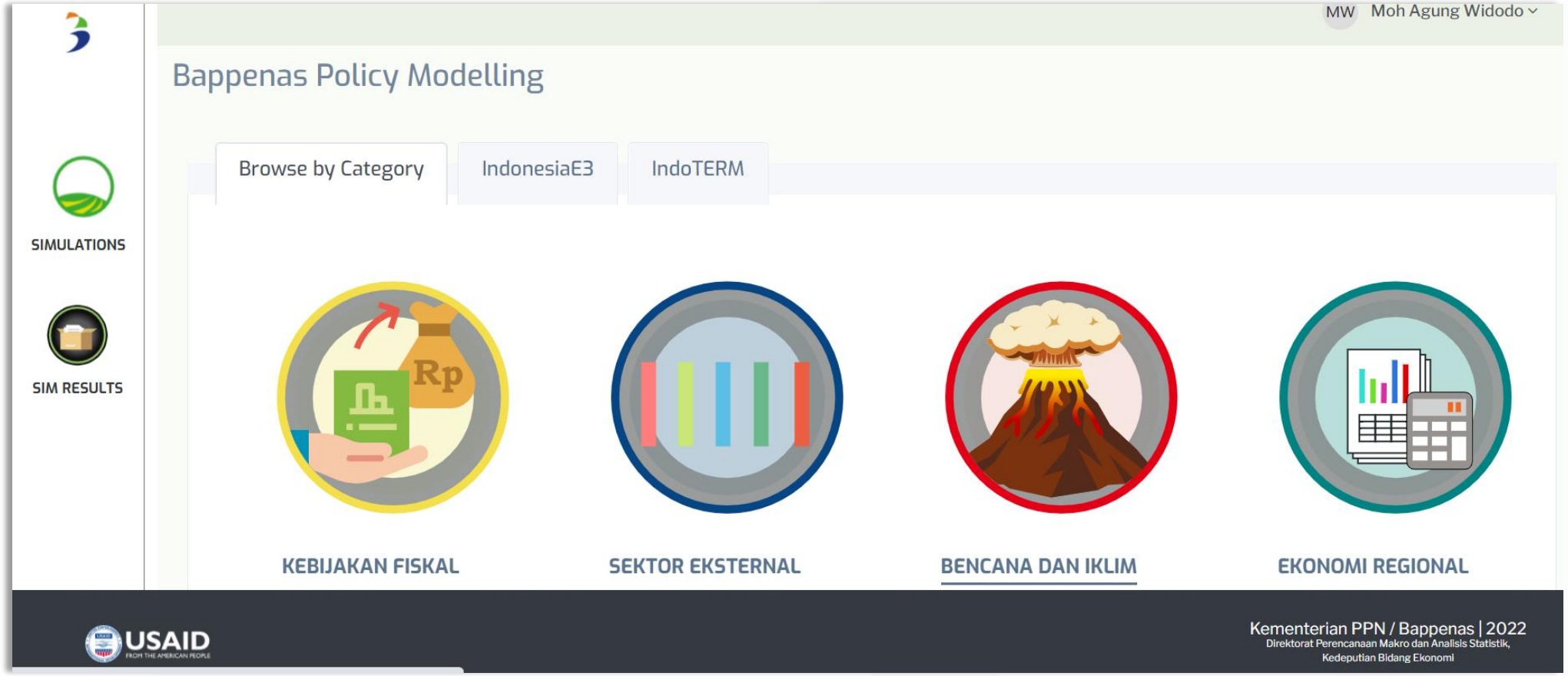
03

IRIO for policy impact assessment

Policy Impact Analysis

Bappenas develops a user-friendly policy modelling:

- IRIO as a main data source
- Computable general equilibrium
- Bottom-up approach: optimization at region level

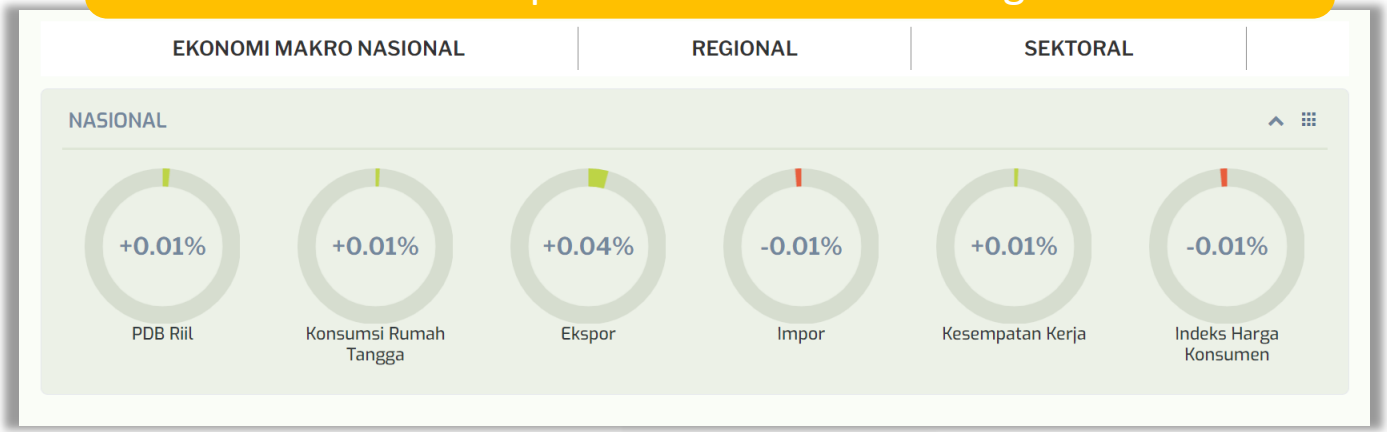


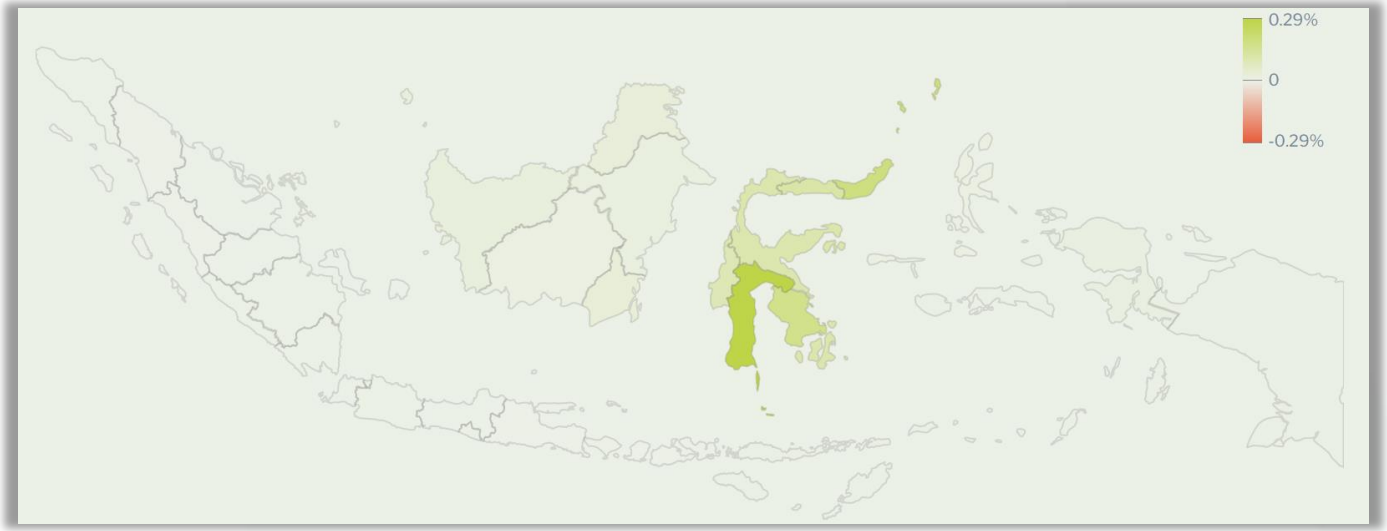
Source: Bappenas Analysis (2022)

Policy Impact Analysis

IRIO is used for ex-ante evaluation & project selection using Bappens Policy Model

Simulation #1: Increased efficiency in land transportation by 10% in all provinces in Sulawesi Region





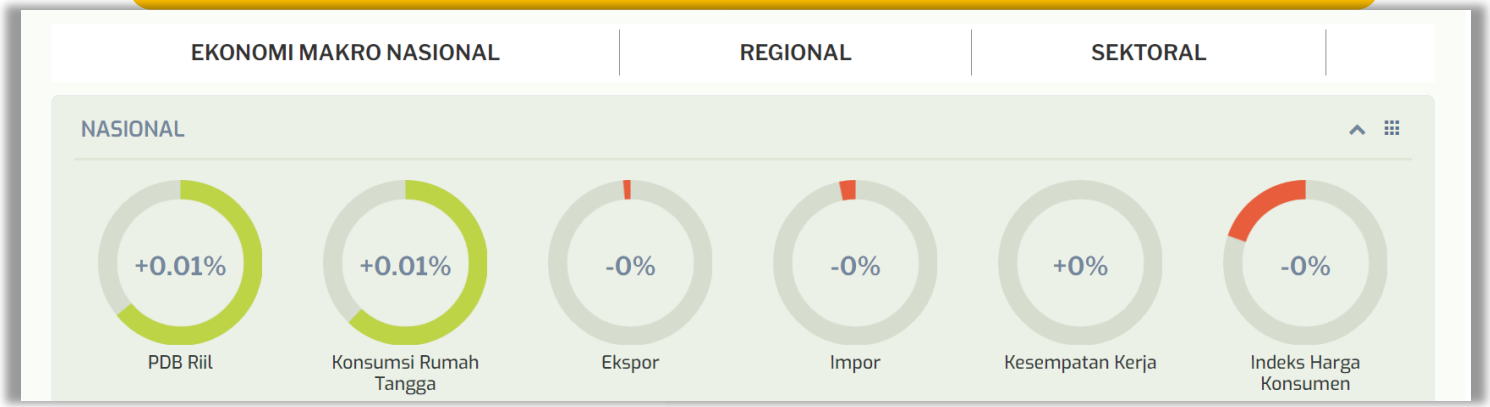
- Policy to improve efficiency in land transportation in Sulawesi Island will benefit not only all provinces in Sulawesi, but also provinces in other islands
- GDP % change from baseline: South Sulawesi (0.29), North Sulawesi (0.18), West Papua (0.03), South Kalimantan (0.03), North Kalimantan (0.03), East Kalimantan (0.01)

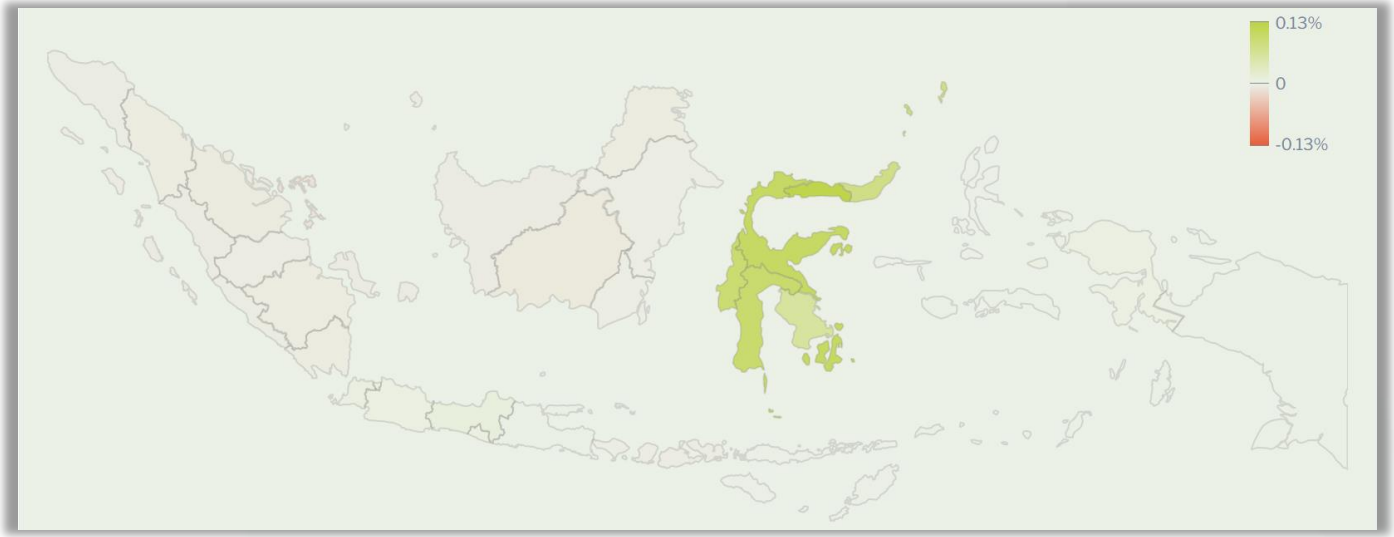
Source: Bappenas Analysis (2022)

Policy Impact Analysis

IRIO is used for ex-ante evaluation & project selection using Bappens Policy Model

Simulation #2: Increased efficiency in sea transportation by 10% from Sulawesi to Java Islands





- Policy to improve efficiency in sea transportation from Sulawesi to Java Island will benefit all provinces in both island, but also provinces in other islands
- GDP % change from baseline: Gorontalo (0.12), Central Sulawesi (0.10), South Sulawesi (0.10), West Sulawesi (0.10), North Sulawesi (0.08), Southeast Sulawesi (0.06), West Papua (0.003), Papua (0.001)

Source: Bappenas Analysis (2022)

Policy Impact Analysis

IRIO is used for assessing the economic impact of earthquake in West Nusa Tenggara in 2018 Province using Bappens Policy Model

1 GDP growth

Counterfactual: no earthquake	Regional GDP	1,11%*
	Reg. GDP w/o mining	6,66%*
Impact of earthquake	Regional GDP	-0,44%
	Reg. GDP w/o mining	4,82%

2 Inflation

Counterfactual: no earthquake	3,77%*
Impact of earthquake	7,25%

Source: Bappenas Analysis (2020)

Terima kasih

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