



Modelling Development Goals

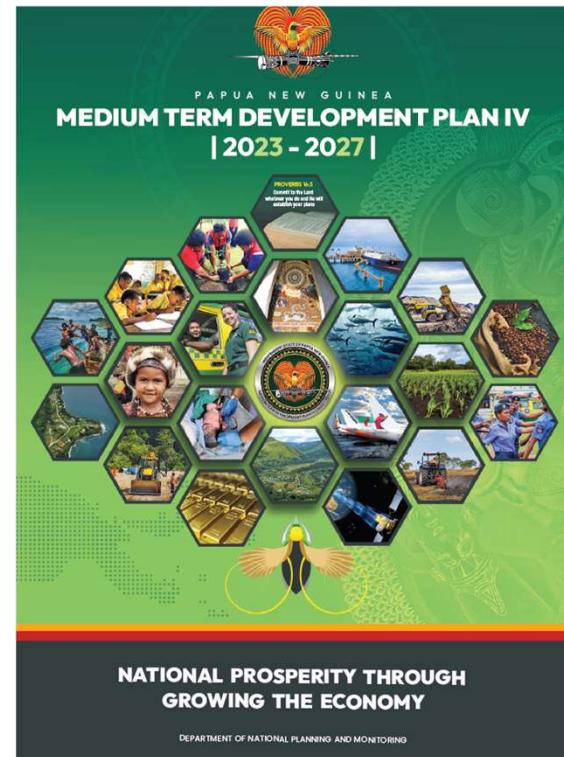
Analysis of the Medium-Term Development Plan IV
Using an Economywide Model

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Medium Term Development Plan IV, 2023-2027

- Captures the PNG development agenda to double revenues, add jobs (1m), grow the economy to K200bn by 2030
- Includes major reforms and 'growth triggers' in enabling areas such as legislation and laws, and investments in key sectors including infrastructure, energy, communications, agriculture



Evaluating the Medium-Term Development Plan

Measure impacts on the economy and population

Three investment scenarios:

1. MTDP

- Additional investments in 2023-2027 (about PGK 3 billion per year)

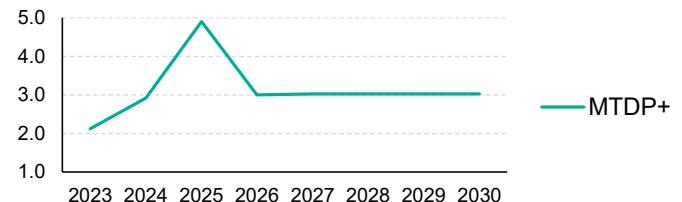
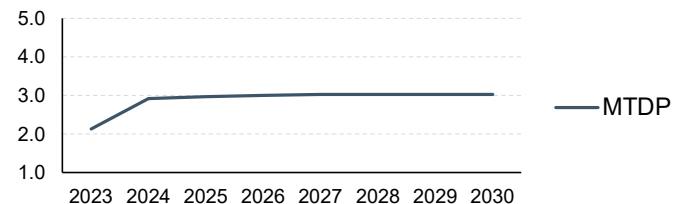
2. MTDP+

- Even higher investment in 2025 (+PGK 2 billion in focus sectors)
- Return to MTDP spending from 2026 onwards

3. MTDP++

- Higher investment continues until 2027
- Return to MTDP spending from 2028 onwards

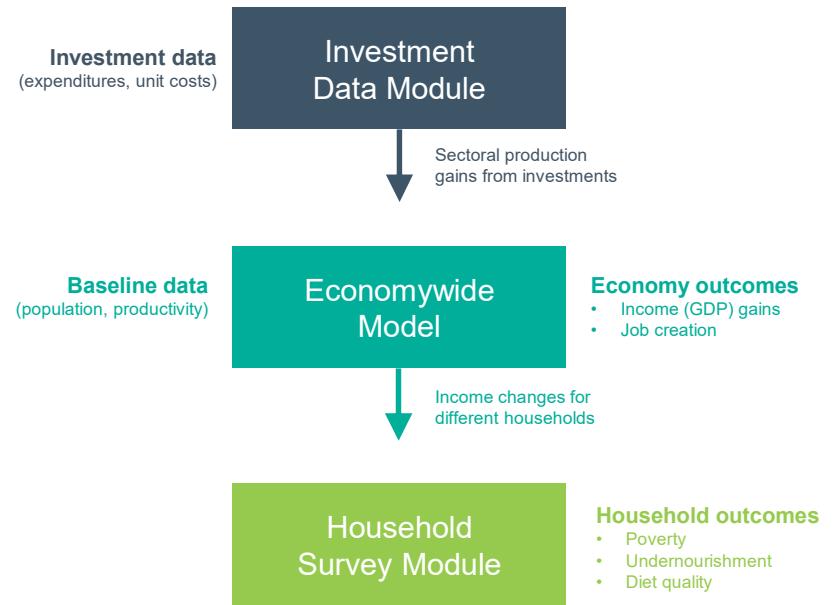
MTDP public spending levels in each scenario (PGK billions)



Modeling System

MTDP's impacts estimated using the PNG model:

- **Investment data module** calculates how investment government spending affects sectoral production
- **Economywide model** estimates how sectoral impacts affect the broader economy and households' incomes
- **Household survey module** tracks how changes in household incomes affect poverty and malnutrition



PNG Economywide Model

Computable General Equilibrium (CGE) model

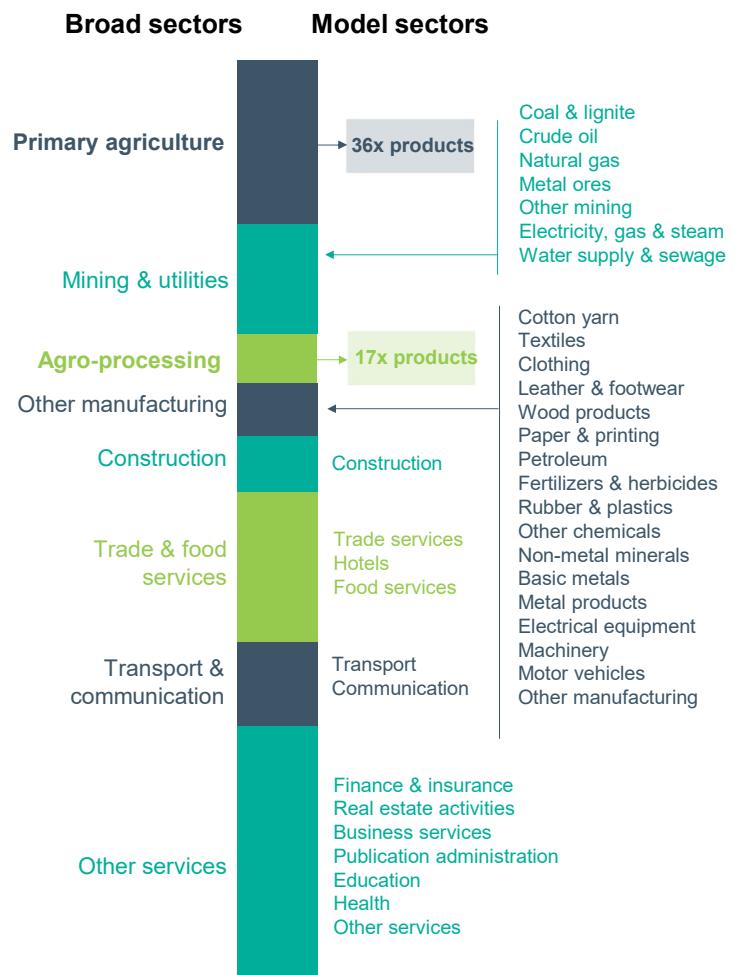
- Captures all sectors, workers and households in the economy

Database = 2019 social accounting matrix (SAM)

- Reconciles data sources (national accounts, public finances, household incomes and expenditures)
- Separates economy into 86 sectors

Dynamic forward-looking model

- Allows us to compare alternative future growth paths and policy options



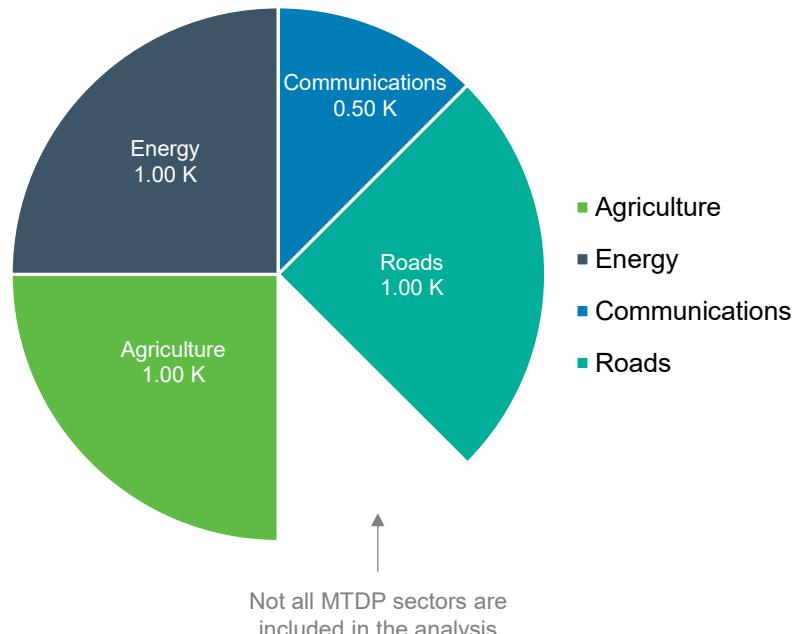
MTDP | Sectoral Investment Analysis

- **Track MTDP spending in four focus sectors**
 - Planned public spending compiled at detailed sector level
 - Converted to sectoral production and trade targets

Planned investment	Targeted impacts
1. Oil Palm Development Program	increase in fresh fruit bunch palm oil production ('000 tonnes) export volume ('000 tonnes) to increase from 657(2021) to 1300 (2027) palm oil contribution to ag sector increase from 64 (2021) to 66(2027) (%) land used for oil palm production as proportion of total suitable areas for oil palm [% of 6.2m ha] proportion of hhs involved in palm oil sector to increase from 11% (2021) to 18% (2027)
2. Oil palm downstream processing and industrial hub development	By 2027, PNG will have processes at least 30% of its crude oil onshore into finished products for domestic consumption and exports.
3. Customary land mobilised to develop additional large- scale oil palm plantations	Total hectares of customary land mobilised for large scale commercial oil palm plantation development will increase from 50 ha (2023) to 200 ha (2027)
4. Smallholder Oil Palm	Total length of smallholder roads rehabilitated (Km) to increase from 70 km(2023) to 200 km (2027)
5. Oil Palm Research and Development Program	Number of commercial nurseries established with climate and insect resiliency varieties to increase
6. Coffee Rehabilitation Program	coffee sub sector will create 200,000 new direct formal employment by 2027 Increase in total coffee production ('000 tonnes)
7. Price stabilisation	Total volume of coffee processed domestically will increase from 7.8 thousand tonnes (2020) to

- **MTDP+/++ assumes same within-sector allocations, but at higher spending levels**

Simulated investments for 2025-2027 (billions of PGK)



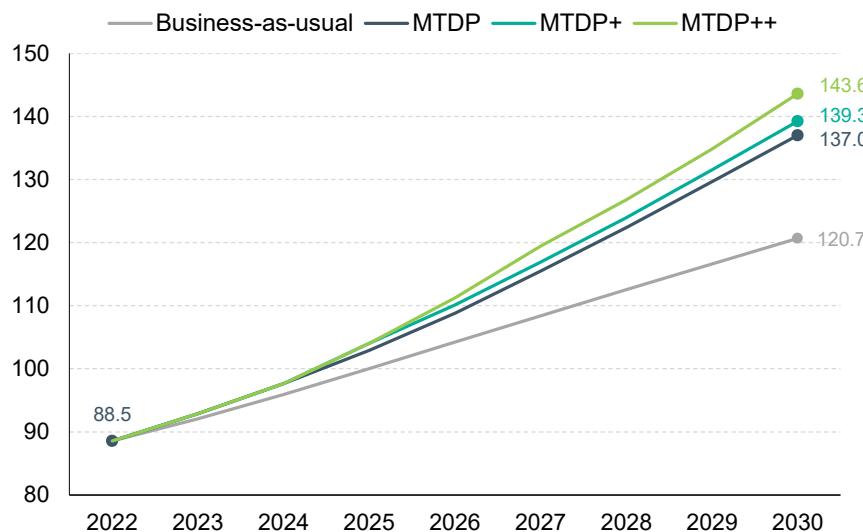
MTDP Impacts | Gross Domestic Product (GDP)

MTDP investments increase total GDP

- MTDP = PGK 16.9 billion gain by 2030 | MTDP++ = PGK 22.5 billion gain
- Agriculture and communications dominate GDP gains

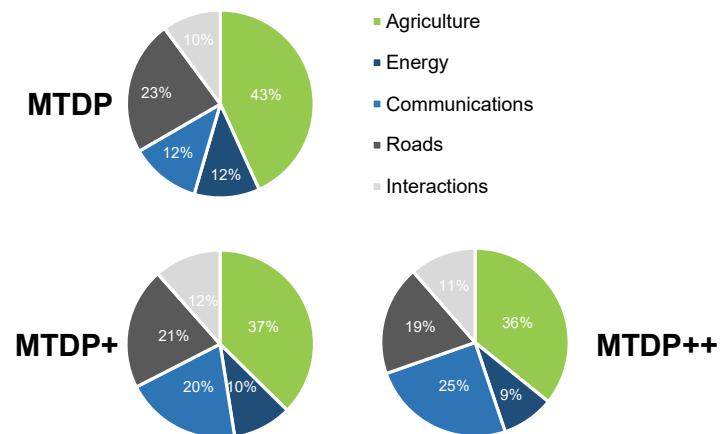
Total GDP

(PGK billions in 2019 prices)



Contribution of investments to increase in GDP

(2022-2027)



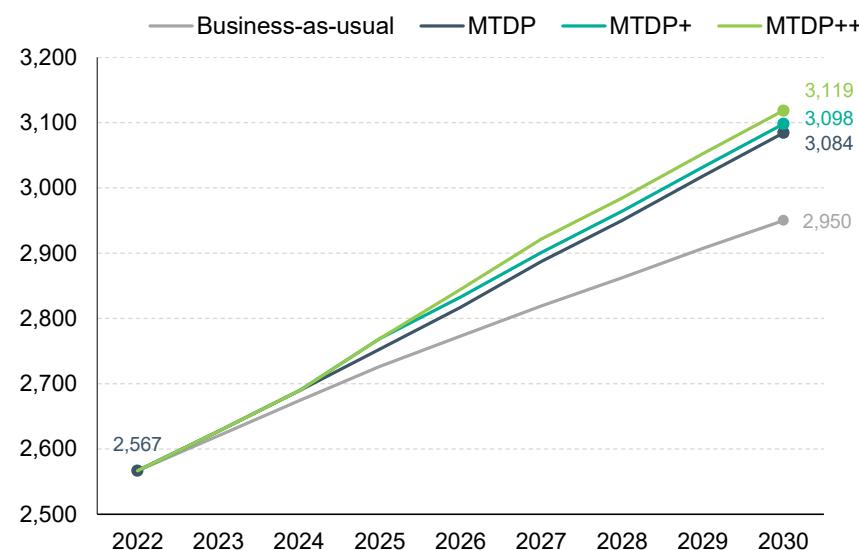
MTDP Impacts | Employment

MTDP's expanding economy creates new jobs

- 551,000 new jobs are created from 2022 onwards

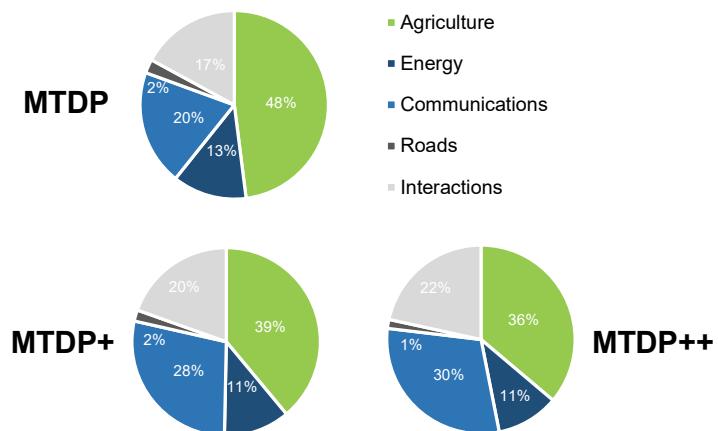
Total employment

(1000s workers)



Contribution of investments to increase in jobs

(2022-2027)

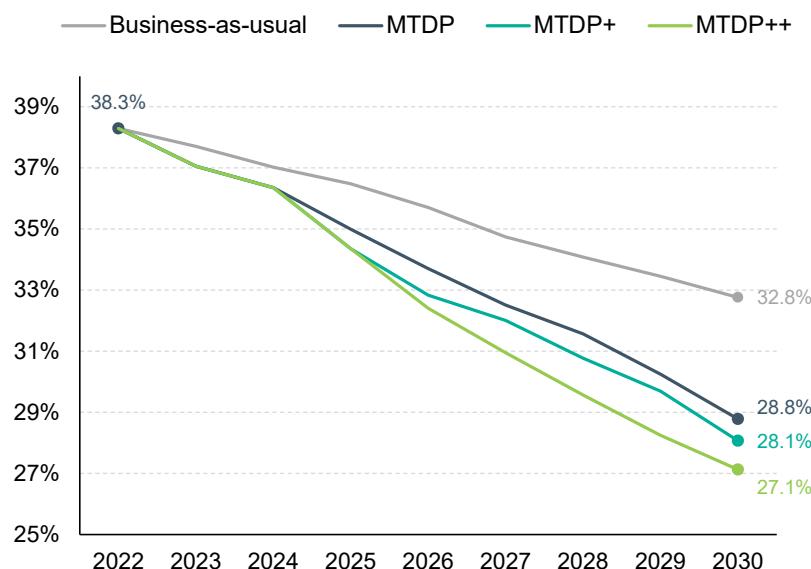


MTDP Impacts | Poverty

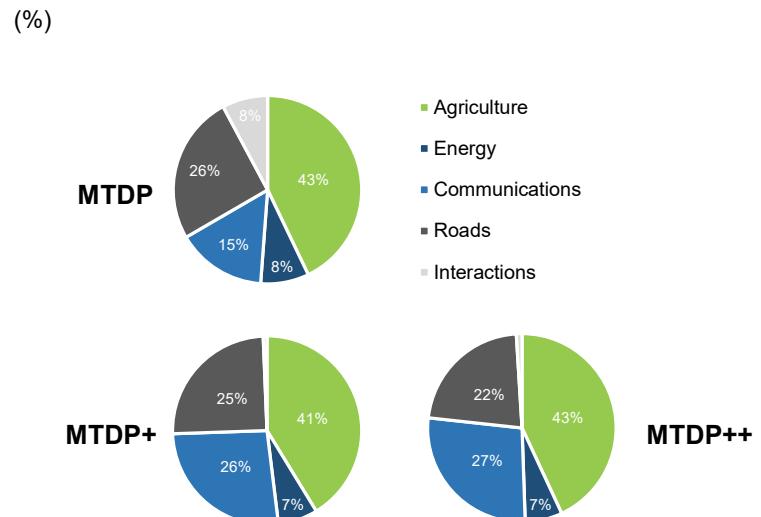
Poverty falls even faster with additional MTDP spending

- Up to 122,000 fewer poor people by 2030
- Agriculture accounts for large share of poverty reduction

Poverty rate (pop. share below poverty line)



Contribution to decline in poverty by 2027



Summary

Current 2023-2027 MTDP should significantly accelerate economic growth and reduce poverty

- PGK 16.9 billion higher GDP in 2030
- 518,000 new jobs from 2022 onwards
- 234,000 people lifted out of poverty

Additional spending in 2025 (MTDP+) leads to additional gains

- PGK 18.9 billion GDP gain
- 531,000 new jobs
- 276,000 people lifted out of poverty

Sustaining additional spending until 2027 (MTDP++) generates largest economic benefits

- PGK 22.5 billion GDP gain
- 552,000 new jobs
- 381,000 people lifted out of poverty

PNG model is a useful tool for evaluating investment impacts and priorities

