

Toward Green Housing for Indonesian Cities

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INDONESIA

Indonesia Demographics:



Population: 275.4 million (2022) Quantitative Backlog: 12.7 million units (2021) Qualitative Backlog: 23.7 million units (2021) GDP per capita: IDR 71 million (USD 4,700) (2022) Largest archipelagic country comprising

17,500 islands



Indonesia is located in the **Ring of Fire**. Experiencing earthquakes that are larger than 6.0 magnitude nearly every year

Indonesia was in the **top 10** carbon producing countries in 2017. Indonesia NDC **target** in 2021 to reduce GHG emission of

41%

(conditional target by 2030)

Indonesia must *scale up the climate action* on the housing ecosystem

THE GOI 'ONE MILLION HOUSING PROGRAM' IS SUPPORTED BY 3 KEY PROGRAMS



Gol fiscal expenditures for housing in 2022: USD 1.9 billion¹

(1) Increase 7 times from 2011

Impacts Of Greening: Vary Across Typologies KGID CAIRO



Priorities of green building program and incentives should shift toward the more impactful housing typologies: Low-income landed, commercial landed, and retrofit

Subsidized housing were mainly built in rural peripheries



More than 90 % of the subsidized housing are located in rural areas, (70% at the rural peripheries and and 20% at non-metro rural area) while the acute needs are in the urban area.

In Jabodetabek, poorly-located subsidized housing have increased over time between 2015 and 2019.



KPR Subsidy Location, 2019 (%)



Credit-linked Subsidy Projects in Jabodetabek

Source: KPR Subsidy Data Set (2019)

KGID One Million Homes Program, predominantly landed, induces sprawl and GHG emissions due to land provisioning for housing

Landed new housing construction accounts for 59% of OMH program, requires land provisioning

Typology Distribution of



If we continue building at the same rate, we will generate sprawls almost twice the size of Jakarta by 2030

CAIRO



Data source: NAHP Task Team analysis with OMH data sets

Sprawling is related to longer commutes and increased gas emission

KGID CAIRO

26% of households in the outskirts travel 40 km or more for employment versus 1% of urban households



in outskirts

More than 80% of commuting-related emissions are generated in the outskirts



Indonesia Green Affordable Housing Program (IGAHP) TA **KGID** CAIRO



IGAHP Targets		
2024	2030	2050
100.000 Green Housing	1 Million Green- Net Zero Ready Housing	100% NET-ZERO Housing

WB Technical Assistance

Greening by improving Design Quality, Location, Density & Inclusion

- Green & resilient designs: for new housing construction, retrofits & urban densification
- Sustainable & inclusive financial products development & piloting: leverage private sector participation while catering the underserved
- Housing location suitability assessment to address urban sprawl
- Scaling up green certification for affordable housing
- Unlocking Carbon Credit potential through baseline study

On-Going Works: Toward Green Housing in Indonesia



Indonesia Green & Affordable Housing Program **Technical Assistance (IGAHP TA)** Gol led project with World Bank TA support

Enabling inclusive, affordable, and disaster & climate resilient homes in urban centers Affordable Housing and Public Building as Renewable Energy Power Grid Study (RSPV Study)



World Bank led Technical Assistance

- De-bottlenecking and scaling up solar PV uptake on public buildings & housing
- Developing a viable business model for RSPV in Indonesia



INDONESIA

IGAHP TA: Product Development and Piloting





AFFORDABLE RENTAL: INSTITUTIONAL ARRANGEMENT



Role of Rental Aggregator:

- **Financing**: Provide low-interest construction loan to banks to on-lend to prospective landlords
- Construction Quality of Rental Units: Provide guidelines for rental unit construction and QAQC
- **Rental Affordable Inventories**: Oversee supply of rental inventories, ensure quality etc.
- Manage rental contracts for eligible MBR's using e-commerce platform
- Collect rent and repay construction loans back to banks
- After **5 Years**, Affordable Rental Units are being returned to Landlord, released from further obligations

ABIP RSPV study: Affordable Housing and Public Buildings as Renewable Energy Power Grid



Solar roof-top (RSPV) on subsidized housing:

Address renewable energy target and reduce utility cost

Interdisciplinary and inter-sectoral collaboration

to address challenge & limitations

Potential investment cost to be financed by carbon credit

Green Livability Indicators Study



Independent Variables

BSPS home improvement

Programs

60 houses

Data collection in total

2 Climatic Region

Java & Sumatra

Before & After

Green Retrofit Data Collection



Dependent Variables



KOREA GREEN INNOVATION DAYS

KGID CAIRO