NAHP
NATIONAL AFFORDABLE HOUSING PROGRAM

WORLD BANK GROUP

PUPR
SIGAP MEMBANGUN NEGERI



Building Safe, Adequate & Affordable Housing in Indonesia

A partnership of the Government of Indonesia *& the* World Bank *through the* National Affordable Housing Program (NAHP)

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Opening Remarks

Iwan Suprijanto

Head of PMC NAHP, Director General of Housing
Ministry of Public Works and Housing

The provision of livable and affordable houses for all is a long-standing priority for the Government of Indonesia. However, as Indonesia's population keeps increasing, addressing the housing backlog and meeting the government's Program Sejuta Rumah (PSR) targets with limited fiscal space is increasingly challenging. Without sustainable solutions and significant breakthroughs, people will continue to struggle to obtain the right to a livable house.

I want to acknowledge that the NAHP project achieved its Project Development Objective to "Improve access to affordable housing for the low-income segment" and met the majority of its project indicators. The project disbursed over 30,000 BP2BT credit-linked assistance to first-time homeowners and over 233,000 BSPS grant to low-income households for resilient and liveable housing improvement. These milestones were achieved despite the frequent constraints and physical limitations imposed by the COVID-19.

NAHP successfully disbursed 60% of BP2BT assistance to the informal income segment, and developed a Quality Assurance and Quality Control (QAQC) system that enforces technical standards and applications for facilitators, contractors, and developers and ensures quality house construction. The piloted projects under NAHP also adopted the use of ferrocement technology in the BSPS program to build resilient housing and reduce seismic risk for the households.

Furthermore, NAHP provided much-needed technical assistance to strengthen the housing sector enabling environment while enhancing the sector capacity. This includes the development of Housing and Real Estate Information System (HREIS), affordable housing supply side study, strategies for PT SMF (Secondary Mortgage Facility company) to fuel growth in the mortgage market, developing case studies for affordable housing Public-Private Partnerships (PPP), and undertaking an in-depth and multi-dimensional Housing Policy Grand Design.

The NAHP has laid the foundation for future development of Indonesia's housing sector to reach the necessary scale and capacity in creating universal access to adequate and affordable housing. The success and accomplishments of NAHP could not have been achieved without solid collaboration, robust innovation, and strong commitment from various stakeholders leading to significant and long-lasting impacts.

Finally, I express my sincere gratitude and thanks for the tremendous support, teamwork, and partnership of the World Bank and all other parties involved in the successful implementation of NAHP.

Bolormaa Amgaabazar

Portfolio and Operations Manager in Indonesia and Timor-Leste, The World Bank Group

Rapid urbanization has driven the demand for housing across Indonesia, both in terms of the quantity of housing units and the quality of the housing stock. Ensuring access to affordable housing in the country has been a long-term policy for the Government of Indonesia (GoI).

In 2017, the World Bank committed $450 million to the National Affordable Housing Program (NAHP) to support the affordable housing sector in Indonesia, in collaboration with the Ministry of Public Works and Housing. The NAHP aimed to improve access to affordable housing for low income households and to support the GoI in meeting SDG goal 11 to "make cities and human settlements inclusive, safe, resilient and sustainable" and in fulfilling the GoI's Program Sejuta Rumah (PSR) targets.

The success of the NAHP represents a close partnership between the GoI and the World Bank to address the entrenched challenges and blockages of the Indonesian housing market. NAHP helped bolster the Government's key long-standing housing programs in increasing access to housing finance for first-time homeownership aspirants with a market friendly BP2BT mortgage subsidy product while addressing the needs of the underserved informal workers. The program also catered to the Bottom-of-Pyramid (BOP) segment households by providing technical and grant assistance for retrofitting sub-standard homes through the BSPS program. Such multi-faceted endeavours that brought about structural change to the complex housing value chain in Indonesia required a progressive approach using innovative tools and technology to serve the society at large.

I am heartened that the NAHP has contributed to the GoI's vision to build the "Indonesia Green and Affordable Housing Platform" to deliver low-carbon housing by 2050 while aiming to significantly increase private sector investment . For that, I congratulate our counterparts on these meaningful achievements under the NAHP and wish you success to scale up the efforts in delivering safe, adequate, and affordable housing for all in Indonesia.

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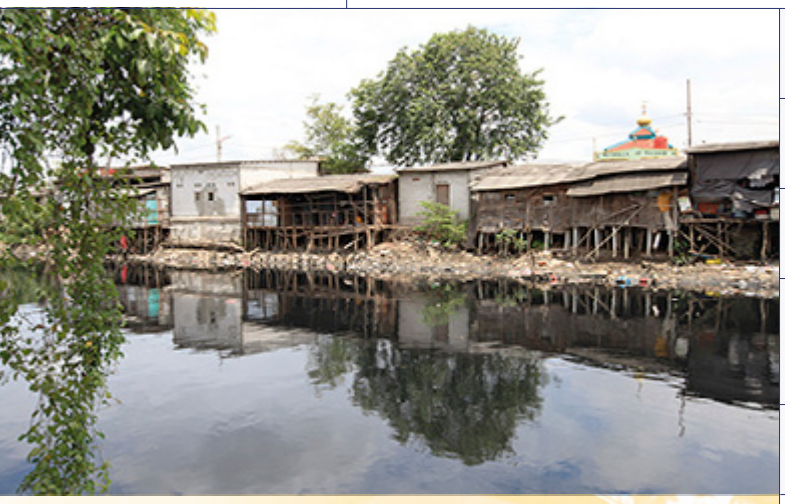

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The housing sector in Indonesia is challenged by both quantitative and qualitative deficits. Those in need of homes face a lack of affordable housing, while the quality of the existing housing stock is often inadequate. Increasing access to affordable housing is critical for socioeconomic development.

12.7 million households do not own a house

29.6 million households live in substandard housing

Affordability remains a key constraint

Indonesia housing issues addressed:

1. Building resilient homes to save lives and to meet SDG goals.
2. Expanding the impact of the government housing subsidy programs to serve more housing needs.
3. Delivering the housing needs of the under-served at scale.
4. Serving the acute affordable housing needs in urban centers.
5. Developing effective Indonesian housing policies and programs.
6. Advancing climate resilience as a part of the housing solution.

"The government's unwavering commitment will need to persist in order to increase the quantity and quality of affordable housing in Indonesia."

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2. NAHP: The Program

Increasing Access to Affordable Housing in Indonesia

NAHP was co-developed by the Ministry of Public Works and Housing (MPWH) and the World Bank (WB) through a loan of USD 450 million.

30,422 households were assisted through BP2BT

233,098 households were assisted through BSPS



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3. Impact & Learnings

Key Issues Addressed Under Partnership Between the GoI and World Bank

" The NAHP Program aimed to improve access to affordable housing through demand and supply-side interventions, targeting lower-income households through three components. Over 5 years, NAHP achieved significant milestones, going beyond its initial targets. "

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Improving disaster resilience within the housing sector to save lives and meet SDG goals



Construction quality of BSPS improved 7 fold while BP2BT improved 3 fold

BP2BT leverages the participating bank's own capital by 3 times the cost of BP2BT assistance.

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Expanding the impact of the government housing subsidy programs by serving more housing needs.

" There is a huge void in the informal market segment and in terms of self-construction needs. "

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Delivering the housing needs of the underserved at scale.

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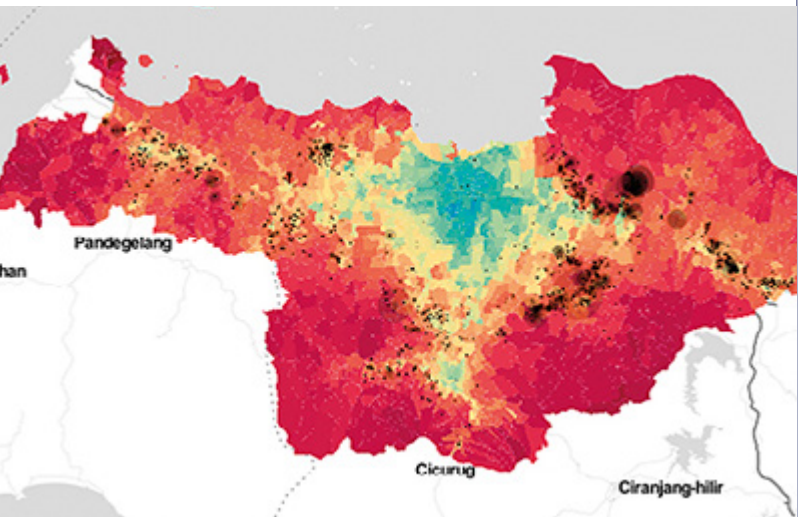

" Indonesia is facing rapid urbanization. More housing in the city center is needed. Vertical housing needs to be delivered through various models. "

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Developing effective housing policies and programs in Indonesia.

> *"Capacity building and cross-collaboration among housing-related stakeholders in Indonesia must be improved to collectively support the goals of providing affordable and adequate housing for all."*
>
> *CHAPTER 3.5 - Pg. 51*

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Advancing climate resilience as a part of the housing solutions.



A clear roadmap towards a more sustainable and climate-resilient housing sector is urgently required in order to address issues caused by climate change.

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4. Epilogue: The Way Forward

Towards a Sustainable and Resilient Indonesian Housing Ecosystem

The way forward calls for unlocking opportunities for growth while developing a more sustainable and climate-resilient housing ecosystem.



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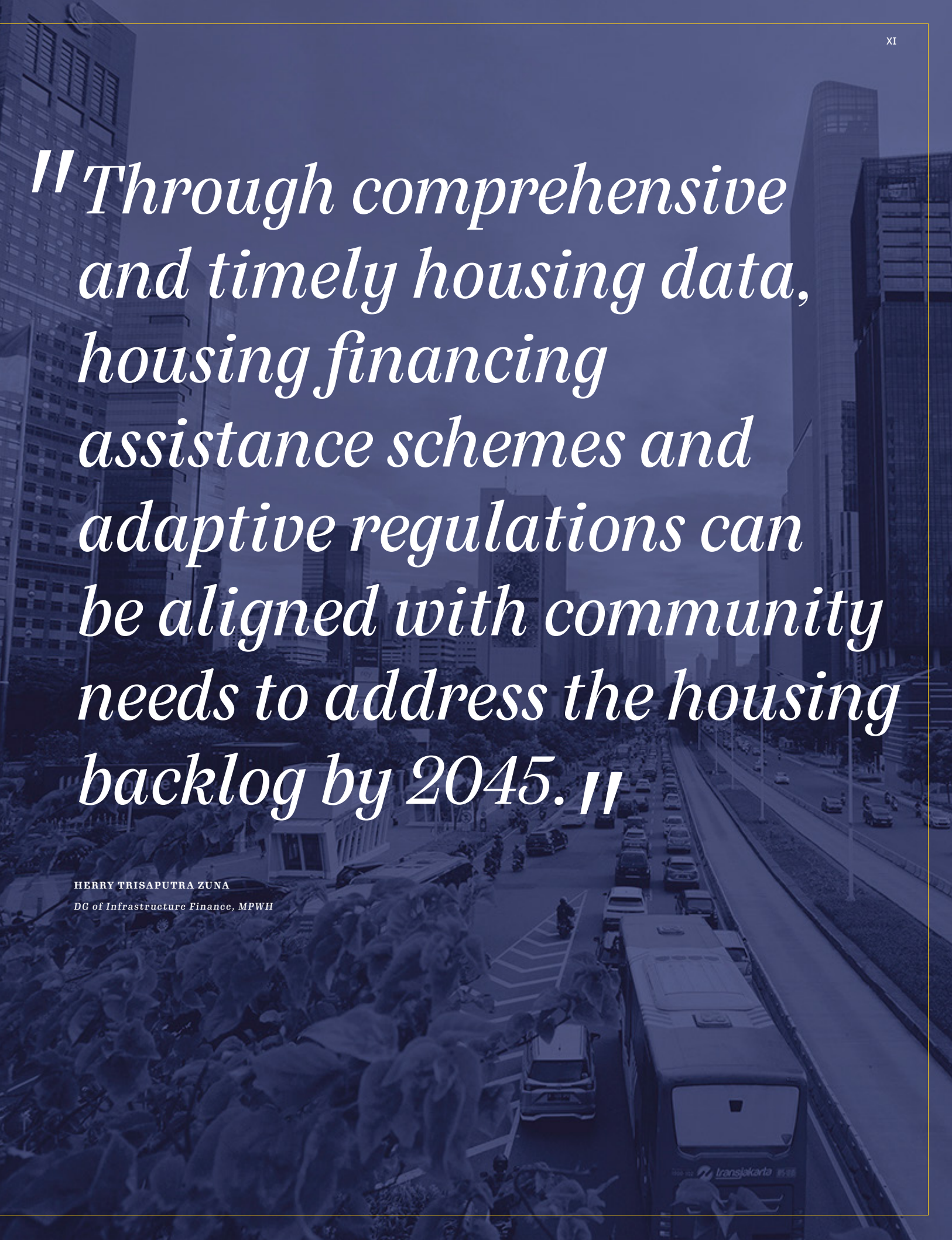


"Through comprehensive and timely housing data, housing financing assistance schemes and adaptive regulations can be aligned with community needs to address the housing backlog by 2045."

HERRY TRISAPUTRA ZUNA

DG of Infrastructure Finance, MPWH

1.

Prologue:

Addressing Indonesia's Affordable Housing Crisis

Access to Affordable Housing (Quantitative Deficit)

Access to Adequate Housing (Qualitative Deficit)

Pre-NAHP Government Initiatives

The lack of adequate and affordable housing has been a prolonged and difficult challenge in Indonesia. For the many Indonesian citizens who lack access to adequate and affordable housing, this condition appears intractable.



Indonesia's housing needs are critical both in terms of the lack of housing available for those in need of homes, and in terms of the inadequate quality of the existing housing stock. The Indonesian housing sector, therefore, faces both quantitative and qualitative deficits.

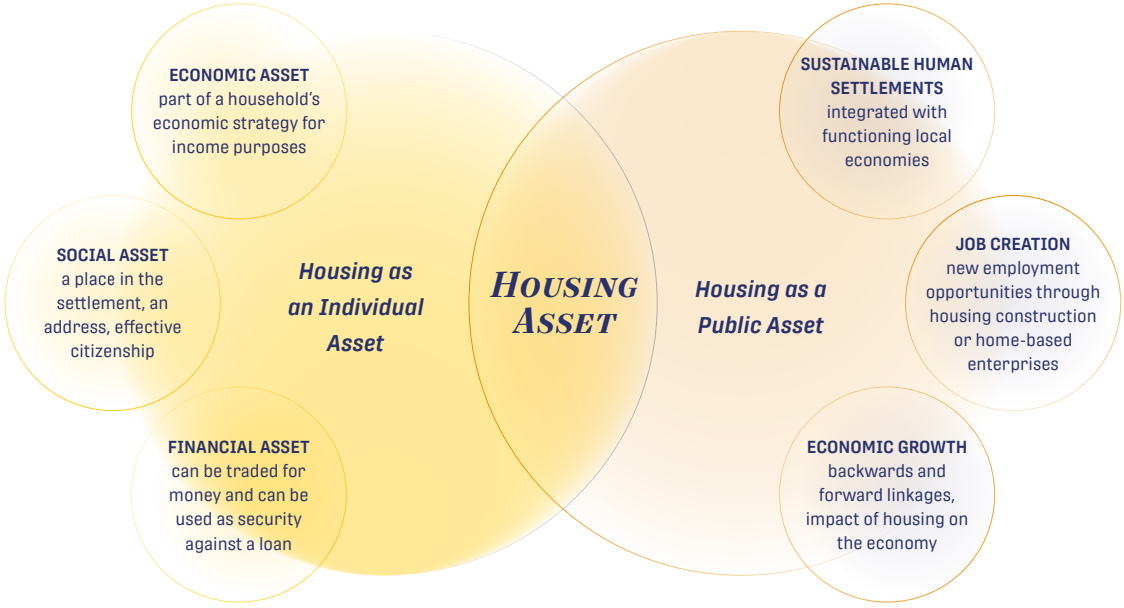
Increasing access to affordable housing is critical in promoting the nation's socioeconomic development. With better access to high-quality affordable quality housing, Indonesia can bolster **social inclusivity while propelling economic growth** within the construction sector, thus reducing the intergenerational cycle of communities living in poor housing conditions.

BOX 1.1. DEFINITION

The term 'housing deficit' comprises two interconnected types of insufficiency. The quantitative deficit represents a numerical shortfall in housing units for homeownership, while the qualitative deficit is measured in terms of substandard housing — housing that lacks adequacy in terms of one of the following criteria: structural integrity, space adequacy, access to basic services such as clean water and sanitation.

BOX 1.1. THE SOCIO-ECONOMIC DIMENSION OF HOUSING

*Intersection Between **Private** & **Public** Investment*



Housing can be seen as both an individual asset and a public asset. As an individual asset, it plays a role in the social, financial, and economic dimensions of a household. As a public asset, housing plays a role in supporting economic growth, creating jobs, and becoming a part of the urban fabric and local economies. From an economic perspective, housing is one of the keys to economic growth and job creation. Indonesia has a robust private sector-led construction sector characterized by high output and employment multipliers. The housing sector spills over to 174 industries within Indonesia with a total value of ~USD 3.4 billion.[1]

From a social perspective, housing is an integral part of poverty alleviation. Extreme poverty in Indonesia accounts for 4% of the population, or almost 11 million people (BPS, 2021). Since 2021, the Government has prioritized the BSPS home improvement program to reduce non-monetary poverty of the extreme poverty segments through the Extreme Poverty Alleviation program (Penanganan Kemiskinan Ekstrem, PKE)

Source: CAHF, with World Bank task team modifications.

Access to Affordable Housing (Quantitative Deficit):

7 million households cannot afford to rent or buy a home. These families are living rent-free as they have limited capacity to self-provision, known as the 'occupancy backlog.' Furthermore, 17% of Indonesian citizens do not own homes *(HREIS, MPWH, 2021)*, which translates to a housing ownership backlog of 12.7 million households or those who are not homeowners. 1.13 million new households need housing annually in Indonesia.

Affordability remains a key constraint when it comes to significantly improving housing outcomes for most Indonesians. Only the wealthiest 40 percent of households in urban areas can comfortably afford to invest in housing in the formal commercial market, based on an estimated IDR 250 million (US$ 16,400) cost for a basic 36 sqm unit[2]. Conversely, 40 percent of households between the 3rd and 6th deciles can only afford an equivalent formal housing unit with subsidy enhancements, while the bottom 20 percent of Indonesians can only afford a basic unit through substantial government subsidies.

1 *Source: OECD: Input/ Output data by sector, including construction industry (ISIC 41-43). ILO: Employment by Sector, including for Construction Industry (ISIC 41-43), *PT BTN, 2020.*

2 IDR 250 million is the lowest home price available within the commercial marketplace.

Access to Adequate Housing (Qualitative Deficit):

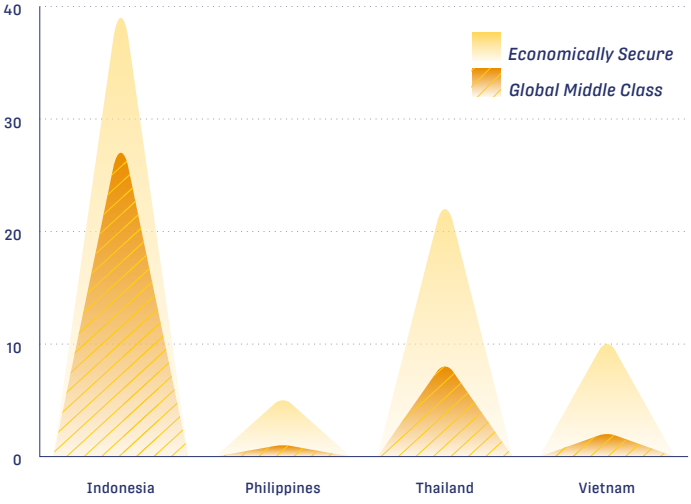
The lack of housing options for lower-income households has led to overcrowding and the growth of slums filled with substandard housing. 29.6 million households in Indonesia are currently living in substandard housing. *(HREIS, MPWH, 2021)* The aspiring middle-income sector (115 million people) in Indonesia has been shown to have poorer housing conditions than its regional and global middle-income counterparts.

87% of Indonesian homeowners aspire to live in better homes.[3] There is a high need and demand for housing retrofit programs.



3
Source: Consumer research from National Housing Board Study. Respondents: 25,546. Conducted as part of NAHP Component 3 Technical Assistance Activity.

CHART 1.1. THE ASPIRING MIDDLE CLASS IN INDONESIA FACES NON-MONETARY POVERTY AT A HIGHER RATE THAN IN OTHER COUNTRIES



Those in Indonesia who are economically secure are far more likely than those in the Philippines, Thailand, and Vietnam to live in substandard housing conditions.

Notes: Economically secure are those consuming between PPP US$5.50-US$15 per person per day, while the Global Middle Class consume more than PPP US$15 a day. *Source: Wai-Poi et al. (2016)*

Source: Aspiring Indonesia — Expanding the Middle Class

The right to adequate housing is enshrined in the Indonesian constitution and the Government of Indonesia has long been committed to addressing the housing backlog from policy, programs, and funding perspectives.

The government's housing policies and initiatives at the start of the NAHP project include the following:

1.

National Medium-Term Development Plan (Rencana Pembangunan Jangka Panjang Nasional or RPJMN) 2015-2019 housing policies and targets

2.

APBN expenditure to fund several key housing programs

a. *Mortgage Liquidity Facility (Fasilitas Likuiditas Pembiayaan Perumahan or FLPP)*

b. *Home improvement grants (Bantuan Stimulan Perumahan Swadaya or BSPS)*

3.

Deployment of the One Million Houses Program (Program Sejuta Rumah or PSR) in 2015 with the support of key state-owned enterprise (SOE) housing stakeholders[4].

RPJMN 2015-2019:

(i.) targeted a housing ownership backlog reduction from 13.5 million to 6.8 million

(ii.) targeted the reduction in substandard housing from 3.4 million to 1.9 million

RPJMN 2020-2024 represented a shift in policy objectives from increasing ownership to increasing the percentage of households living in decent and affordable housing. Under this medium-term policy, the definition of sub-standard housing was changed from that of the previous RPJMN 2015-2019 and is now more comprehensive as it includes SDG indicators. The change of definition caused a huge increase in the number of substandard housing units. The target aimed to increase the number of households living in adequate housing from 55% to 70% (a reduction of 10.7 million in substandard housing).

4 SOE in the housing sectors include (i) BTN, the largest mortgage lender in Indonesia); (ii) PT SMF (Sarana Multigriya Finansial), supporting the refinancing and securitization of the mortgage market; and (iii) Perumnas, the national affordable housing developer.

The Government's Key Housing Programs



Credit-linked Subsidy: **FLPP, SSB & BP2PT**

Quantitative backlog: Home Ownership
Years: 2018-2022

215,000
units per year

FLPP, a *mortgage liquidity facility for homeownership*, has been in place since 2010. This is a credit-linked subsidy with a 5% fixed rate designed to support homeownership by addressing the quantitative housing backlog through affordable mortgage finance.

Another credit-linked subsidy, an *interest rate subsidy* (Subsidi Selisih Bunga, SSB), was introduced in 2015 as part of Program Sejuta Rumah (PSR). SSB subsidized the interest rate paid by consumers on eligible mortgages, enabling households to pay a fixed 5% interest rate for 20 years.

Grant: **BSPS**

Quantitative backlog: Home Upgrading
Years: 2018-2022

200,000
units per year

The **BSPS** home-improvement grant program has been in operation since 2006 and is addressing the qualitative backlog with 200,000 units improved per year on average.



Source: MPWH – DG of Infrastructure Finance and DG of Housing Provision

See Annex for more explanation of the Government's housing programs and the housing targets in RPJMN.

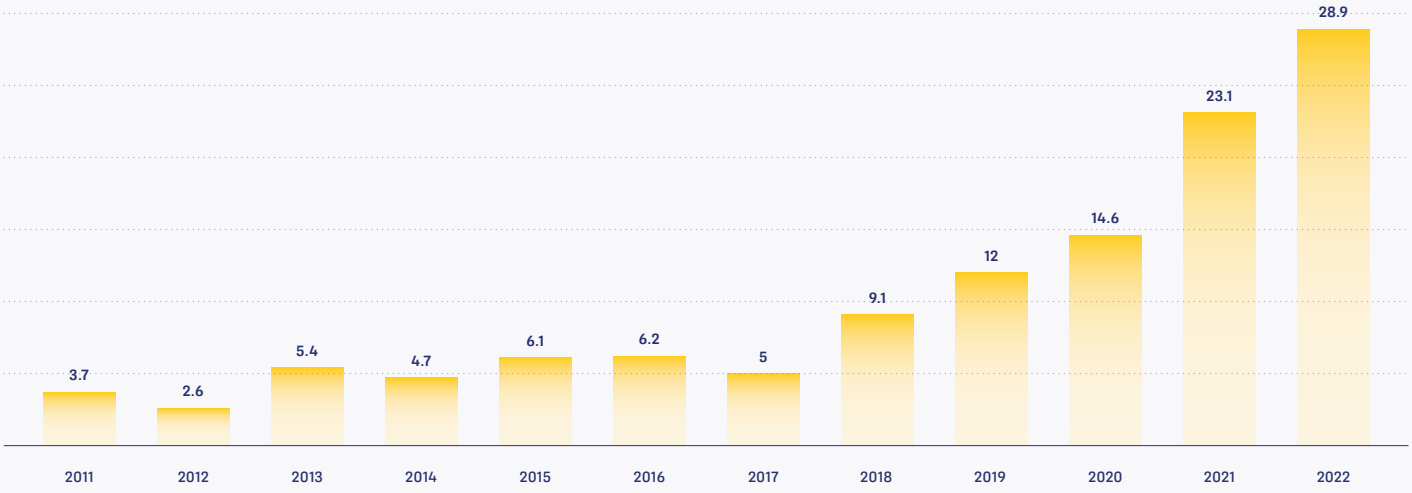
Despite the increased housing subsidy expenditure through the years, the above interventions still meet inevitable challenges as they attempt to broaden their impact on the housing backlog in Indonesia.

5 The maximum home price for FLPP that applied nationwide in 2012, based on Minister of Public Housing Regulation Number 4 Year 2012 on FLPP.

6 Average maximum home price for landed house for all subsidized housing units that applied in 2022 (exact max home price varies for each city). Based on Minister of Public Works and Housing Decree reff. 242/KPTS/M/2022 on KPR Subsidi and 18/KTPS/M/2022 on BP2BT.

CHART 1.2. MORTGAGE SUBSIDY HAS INCREASED MORE THAN 7 TIMES OVER THE LAST 12 YEARS

Government subsidy trends in IDR trillion



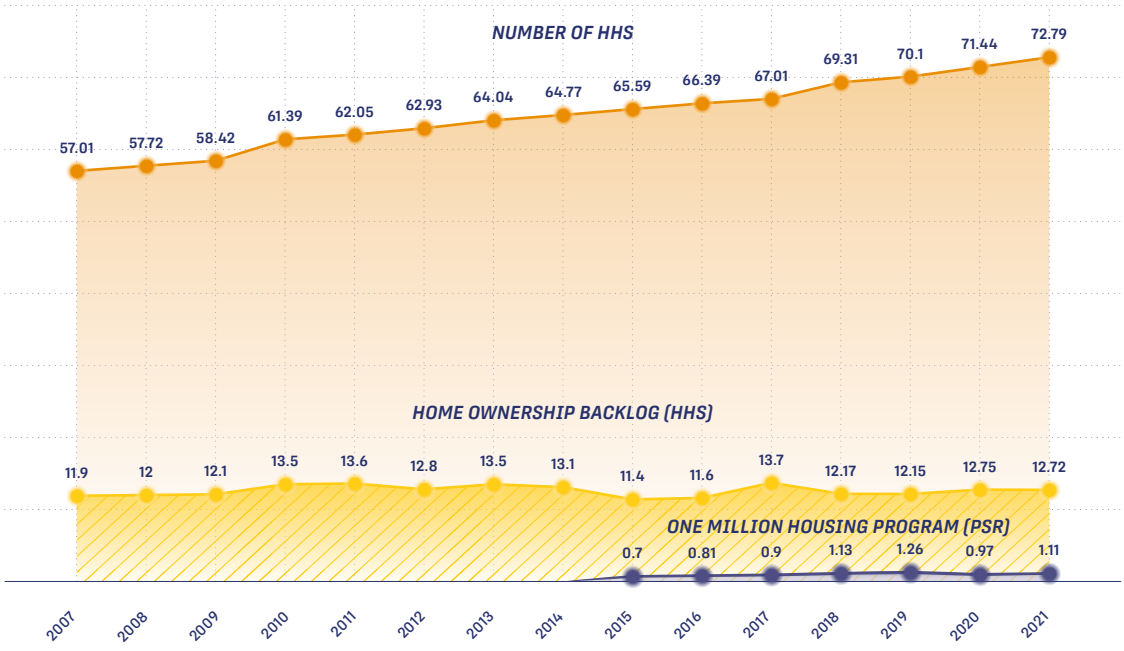
Source: HREIS, MPWH, 2021; using BPS Susenas data.

Government spending for housing subsidies, including for FLPP, SSB, BP2BT, and SBUM, has increased significantly since 2011. It increased by more than a factor of seven, from 3.7 IDR trillion in 2011 to 28,9 IDR trillion in 2022. As a share of government expenditure, housing subsidies have increased almost four times from 0.28% to 1.07%. The housing price has also increased by more than a factor of two, from IDR 70,000,000[5] to ~168,000,000[6] in 10 years. The increase in government expenditure shows that the Government is committed to reduce housing backlog to address the rise in home prices and growing needs for affordable homes. However, this also means that the burden on the fiscal budget is becoming heavier.



CHART 1.3. GOVERNMENT INTERVENTIONS HAVE NOT REDUCED THE HOUSING BACKLOG

in million units



Source: MPWH, DG of Infrastructure Finance

Approximately 1.13 million new households are formed annually and need new housing units, on top of the existing homeownership backlog. While the Government and the private sector consistently deliver PSR for more than 1 million housing units (a combination of new constructions and home upgrades), more is needed to meet the growing demand.

Rising home prices, particularly in urban centers, continue to make housing affordability challenging for Indonesians. As a result, the homeownership rate remains low at 61.53% in the major cities in Indonesia, below the national homeownership rate of 83.18%[7].

7 The major cities include Jakarta, Bogor, Depok, Tangerang, Bekasi, Bandung, Semarang, Yogyakarta, Surabaya, Medan, Pekanbaru, Bandarlampung, Denpasar, Banjarmasin, Makassar, Palembang, Manado. *Source: HREIS, BPS Susenas, 2021.*

8 *Source: HREIS, MPWH, Based on BPS Susenas data for 2018.*

The government's unwavering commitment will need to persist in order to increase the quantity and quality of affordable housing in Indonesia.

Indonesia sits on the active seismic belt of the Pacific region known as the 'Ring of Fire,' which experiences frequent earthquakes. Yet among all substandard homes in Indonesia, 43% have structural integrity issues[8]. As a result, houses are at higher risk of harming lives when disaster hits. Thus, it is critical to further prioritize construction quality in relation to government housing programs.

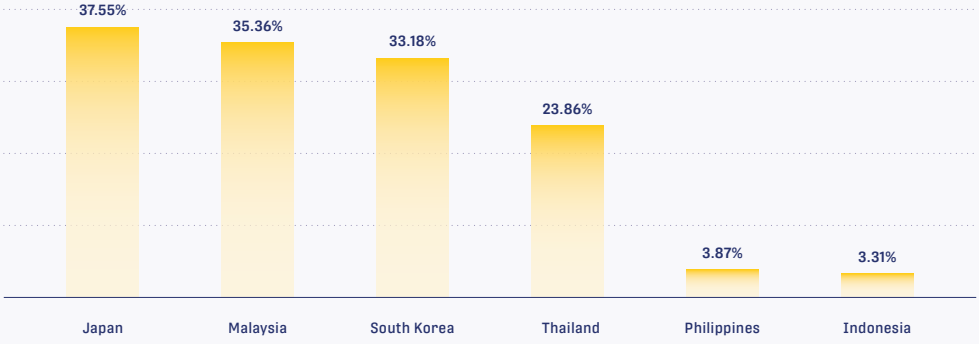
Improving disaster preparedness through seismic-resilient housing retrofits on top of the current focus on post-disaster reconstruction needs to be considered. Home improvement is a tool to better prepare for seismic disasters, as well as to reduce casualties and the devastation of local communities and businesses.

Beyond disaster resilience, the housing sector needs sustainable solutions that

CHART 1.4. THE MORTGAGE MARKET IN INDONESIA IS STAGNANT, DESPITE HIGH GOVERNMENT SUBSIDIES

Mortgage Market in Indonesia is Small Relative to Neighboring Countries

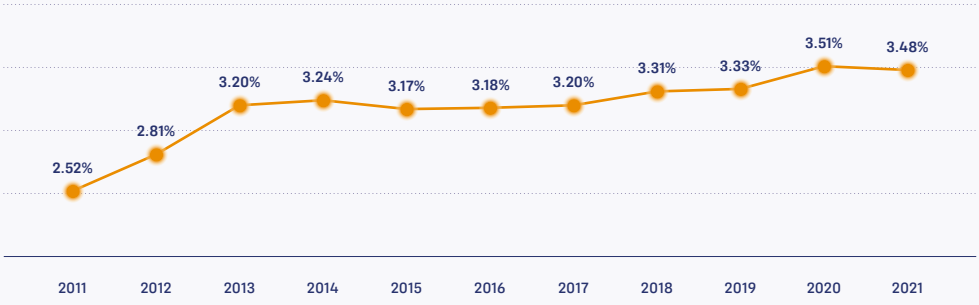
Mortgage OS/ GDP vs. Other countries



The mortgage market in Indonesia is stagnant, despite high government subsidies. While government subsidies have increased by more than 7 times over a decade, the mortgage market grew by less than 1.5 times during the same period. In 2021, the mortgage outstanding to GDP ratio was still below the target of 4%. Compared to its peers in East Asia, the Indonesian mortgage market is far smaller. The Philippines, as an example, has a with a 3.87% mortgage outstanding to GDP ratio.

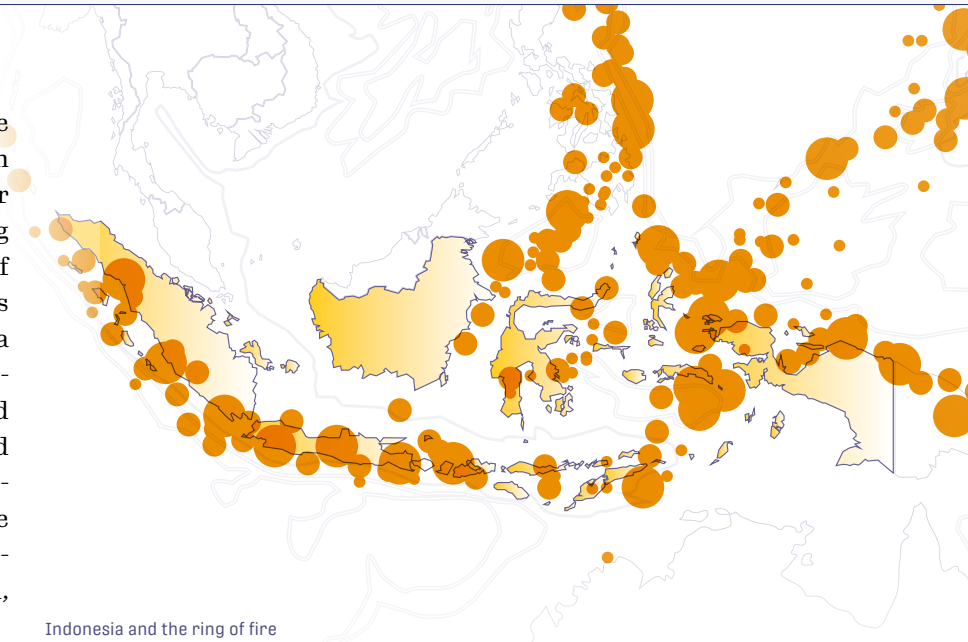
Source: Other countries: Hofinet, 2018, Indonesia: BPS - OJK, 2018

Mortgage outstanding to GDP



The mortgage market in Indonesia remains small, with a mortgage-to-GDP ratio of 3.48% (2021), having increased by less than 1% in 10 years, and is far lower than in other countries in the region. The RPJMN 2020-2024 target is a mortgage-to-GDP ratio of 4%.

address climate resilience. Despite the government's commitment to climate action strategies, green housing units account for only a small percentage of annual housing delivery, resulting in high consumption of resources and increased carbon emissions from homes. In addition, urban sprawl is a concerning phenomenon. The absence of urban planning strategies, frameworks, and coordination has resulted in less dense and more inefficient land use patterns. The resulting sprawl encourages carbon-intensive urban growth patterns that cause higher urban infrastructure costs, worsen congestion, and increase pollution.



Indonesia and the ring of fire

The Launch of NAHP

Over the five years of NAHP collaboration (2018-2023), the Government and the World Bank worked alongside stakeholders[9] in the public and private sectors to address these six key issues:

1. **Building resilient homes to save lives and to meet SDG goals.**

   Can homes be made safe and adequate and mitigate the high disaster risk in Indonesia?

2. **Expanding the impact of the government housing subsidy programs to serve more housing needs.**

   Can government housing subsidies be made to better aligned with market mechanisms? Can the mortgage market grow?

3. **Delivering the housing needs of the underserved at scale.**

   Can access to housing finance subsidies be prioritized to serve marginalized groups? How can the housing retrofit program support the alleviation of extreme poverty?

4. **Serving the acute affordable housing needs in urban centers.**

   How to address the lack of affordable and well-located land in urban centers?

5. **Developing effective Indonesian housing policies and programs.**

   Can housing policies and programs be created based on evidence-based data, to ensure better targeting and to improve housing subsidy efficiency?

6. **Advancing climate resilience as a part of the housing solution.**

9
Public sector stakeholders: MPWH, Bappenas, MoHA, MoF, Local Governments, BP Tapera.
Private sector stakeholders: Perumnas, SMF, banks, developers.

Conclusion

The housing situation in Indonesia presents substantial quantitative and qualitative deficits, including the lack of access to adequate and affordable housing. Despite government efforts, such as the RPJMN, FLPP, BSPS, and PSR, the housing backlog has remained relatively stagnant. The rise in housing prices makes it even more difficult for people to afford renting or buying a home, especially in urban centers. Given the scale and complexity of the problem, new, innovative approaches through collaborative efforts between the government, private sector, and civil society are needed to find sustainable solutions to tackle the housing crisis and improve the lives of millions of Indonesians. These solutions should transform the housing sector in Indonesia and help meet the UN Sustainable Development Goals. In addition to the current policies and efforts by the Government of Indonesia, **the National Affordable Housing Program (NAHP) aimed to develop a rigorous roadmap towards a more adequate, inclusive, safe, and resilient housing sector, in order to address the persistent challenges being experienced by those struggling to find affordable housing.**

CHART 1.5. SDGs AND HOUSING







"Access to adequate and affordable housing is not only a basic human right, but it is also crucial for the development and well-being of individuals, families, and communities. Without sustainable solutions to the housing crisis, millions of Indonesians will continue to struggle, and the country's development goals will remain out of reach."

IWAN SUPRIJANTO

DG of Housing Provision, MPWH

2.

NAHP: The Program

Increasing Access to Affordable Housing in Indonesia



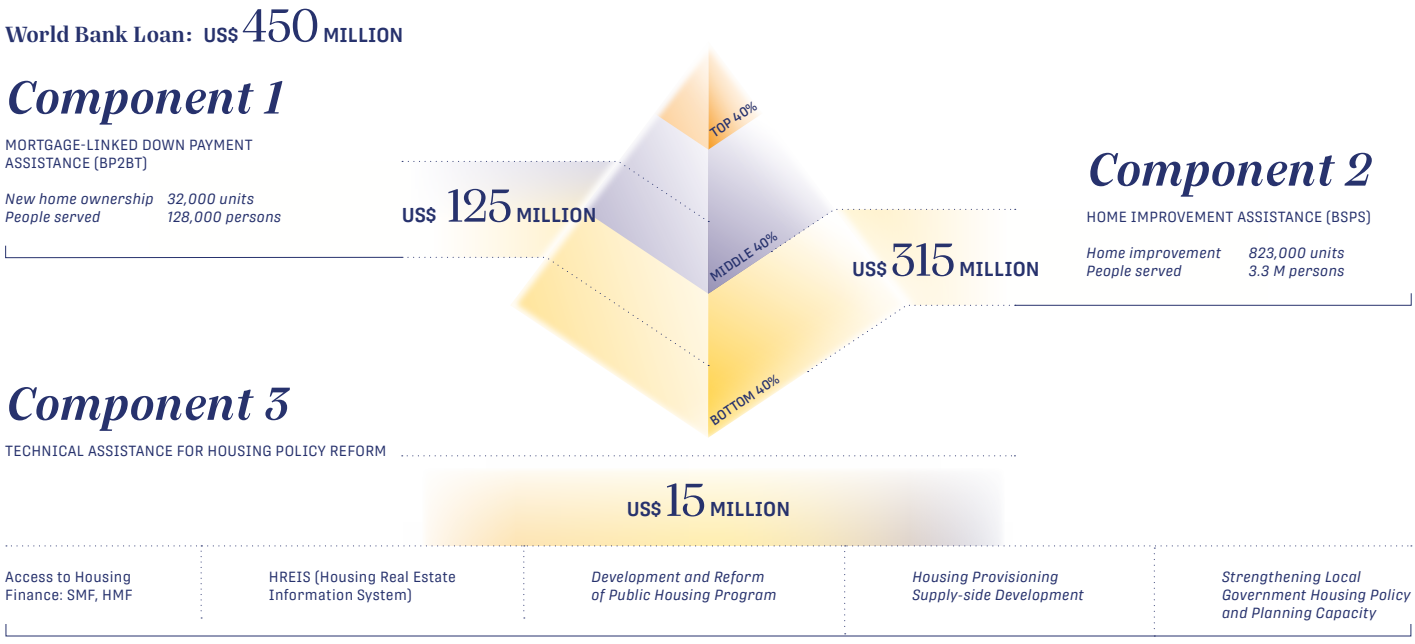
The Three NAHP Components

The Results: 2018– 2023

Milestones

The National Affordable Housing Program (NAHP) was co-developed by the Ministry of Public Works and Housing (MPWH) and the World Bank (WB) through a loan of USD 450 million. The NAHP Program aimed to improve access to affordable housing through demand and supply-side interventions, targeting lower-income households through three components.

CHART 2.1. NAHP COMPONENTS PYRAMID



The Three NAHP Components

Component 1 targeted lower middle-income households unable to access commercial mortgage financing for first-time homeowners without public assistance. Component 2 targeted the bottom 40 percent of Indonesian households living in substandard homes that require support for home improvement. Given the complex nature of the housing sector eco-system, the program supported five capacity-building activities through Component 3.

The Results: 2018 - 2023

Component 1: BP2BT

BP2BT leverages **three times more private sector capital** than other subsidy products. Designed to 'crowd-in' private sector investment, it encourages private investors to contribute funds to affordable housing projects through a subsidy reform that requires more private capital investment rather than a government fiscal budget on day one and applies the market rate instead of a subsidized fixed rate.

1. In contrast to the fixed interest rate of the FLPP (5%), **the BP2BT aligns with market mechanisms.**

2. **30,422 households were assisted through bank capital** with approx. USD 225 million of mortgage finance.

3. **BP2BT has focused to address needs of the underserved informal income segments.** Between 2018 and 2022, a cumulative **60%** of beneficiaries were informal workers.

4. **BP2BT is gender inclusive: 38%** of borrowers are female-headed households

5. **Construction quality was improved** by a factor of 3.

6. BP2BT **accommodated self-construction needs** through the funding of 43 units.

7. **A Housing Microfinance pilot product was initiated** during COVID-19 to address underserved home improvement needs.

*Component 2: **BSPS***

The strengthening of the BSPS home improvement program resulted in **increased construction quality** while maintaining the effectiveness and good targeting of the program: delivering grants to the lowest-income households in need of home improvement assistance.

1. **233,098 households were assisted** through the BSPS.

2. NAHP contributed to **23% of the total BSPS volume of households** supported between 2018-2022.

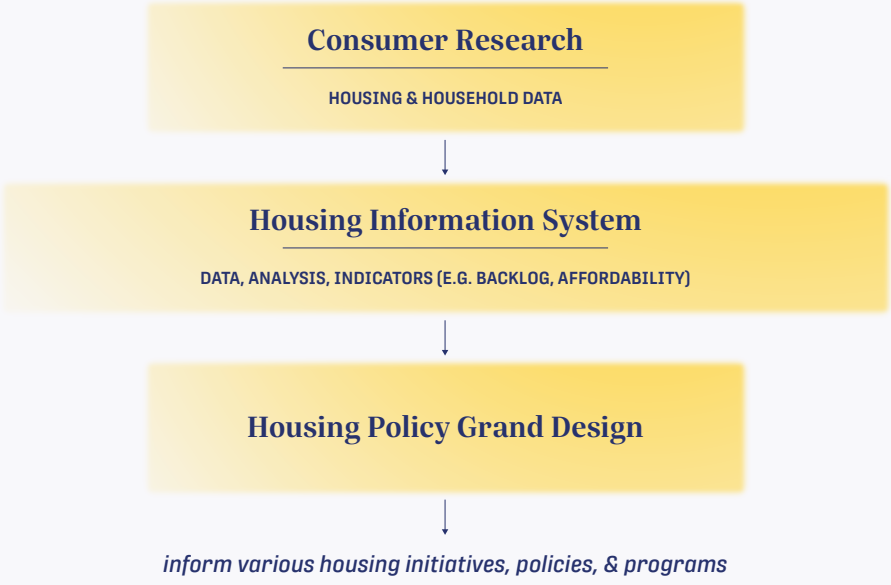
3. **67% of beneficiaries in 2022 were households in the extreme poverty segment.** Recent government policy focused on integrated intervention for extreme poverty reduction and prioritized those in acute need.

4. **BSPS is also gender inclusive**, reaching approx. **29%** female-headed households and supported gender training.

5. **Construction quality improved by a factor of seven** by implementing construction quality systems, technologies, and innovation, including ferrocement (wire mesh) technology that mitigates seismic risk; the government constructed more than 700 BSPS houses using ferrocement methodology. A mobile app, e-BSPS, was also introduced to monitor progress and construction quality.

Component 3: Technical Assistance

CHART 2.2. NAHP TECHNICAL ASSISTANCE IN COMPONENT 3 SUPPORTS THE POLICY REFORM



NAHP aimed to support policy reform, improve governance and enhance capacity within the housing sector, both in terms of the supply side and the demand side. The following activities were developed:

(i.) **Housing Real Estate Information System (HREIS):** Integrated housing database with robust analytics and critical indicators to inform the affordability gap and evidence-based policy and program development.

(ii.) **Secondary Mortgage Financing Development.** A study to assess regulatory and policy reform necessary to expand PT SMF's capacity to provide competitive refinancing for the mortgage market and support the development of the affordable housing sector.

(iii.) **Housing Policy Grand Design 2020-2045.** Developed long-term vision and strategy for GoI housing policy and implementation for 2020-2045.

(iv.) **Affordable Supply-Side Housing Provisioning Study:** Large-scale quantitative research on consumer housing needs and preferences with more than 25,000 respondents across Indonesia, and a supply-side institutional and legal frameworks study.

(v.) **Public-Private Partnership Support:** Two Public-Private Partnership (PPP) housing business cases tackled opportunities and blockages in relation to large-scale PPP affordable housing developments.

CHART 2.3. TIMELINES

NAHP Timeline

2018 2019 2020 2021 2022 2023

NUMBER OF HOUSEHOLDS RECEIVING BP2BT HOUSING SUSBISDY



NUMBER OF HOUSEHOLDS RECEIVING BSPS GRANTS



Milestones

Throughout its five years of implementation, NAHP has achieved important significant milestones, even beyond its initial targets. These accomplishments were achieved despite the challenges faced in the marketplace.

(i.) **Component 1: BP2BT**

- BP2BT was launched in 2018 to support the PSR volume target achievement. When the termination of SSB was announced in 2019, BP2BT volume started to grow. However, in 2020, with COVID-19, the reintroduction of SSB as part of the PEN (the government's COVID economic recovery program) stalled BP2BT again.

- In 2021, the government segmented BP2BT to focus on informal income. This change was crucial in achieving consistent progress on disbursement in 2021-2022, suggesting that there is a viable market for BP2BT. In addition, the segmentation of subsidy products has been effective in ensuring the smooth disbursement of the product.

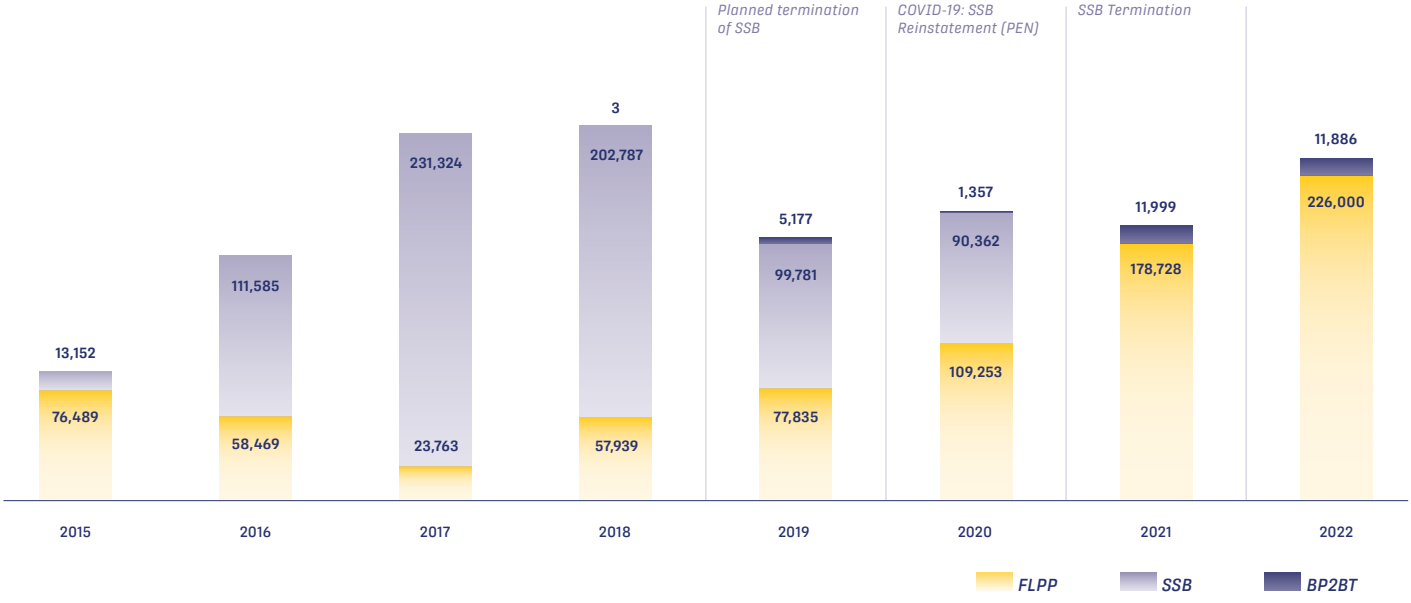
(ii.) **Component 2: BSPS**

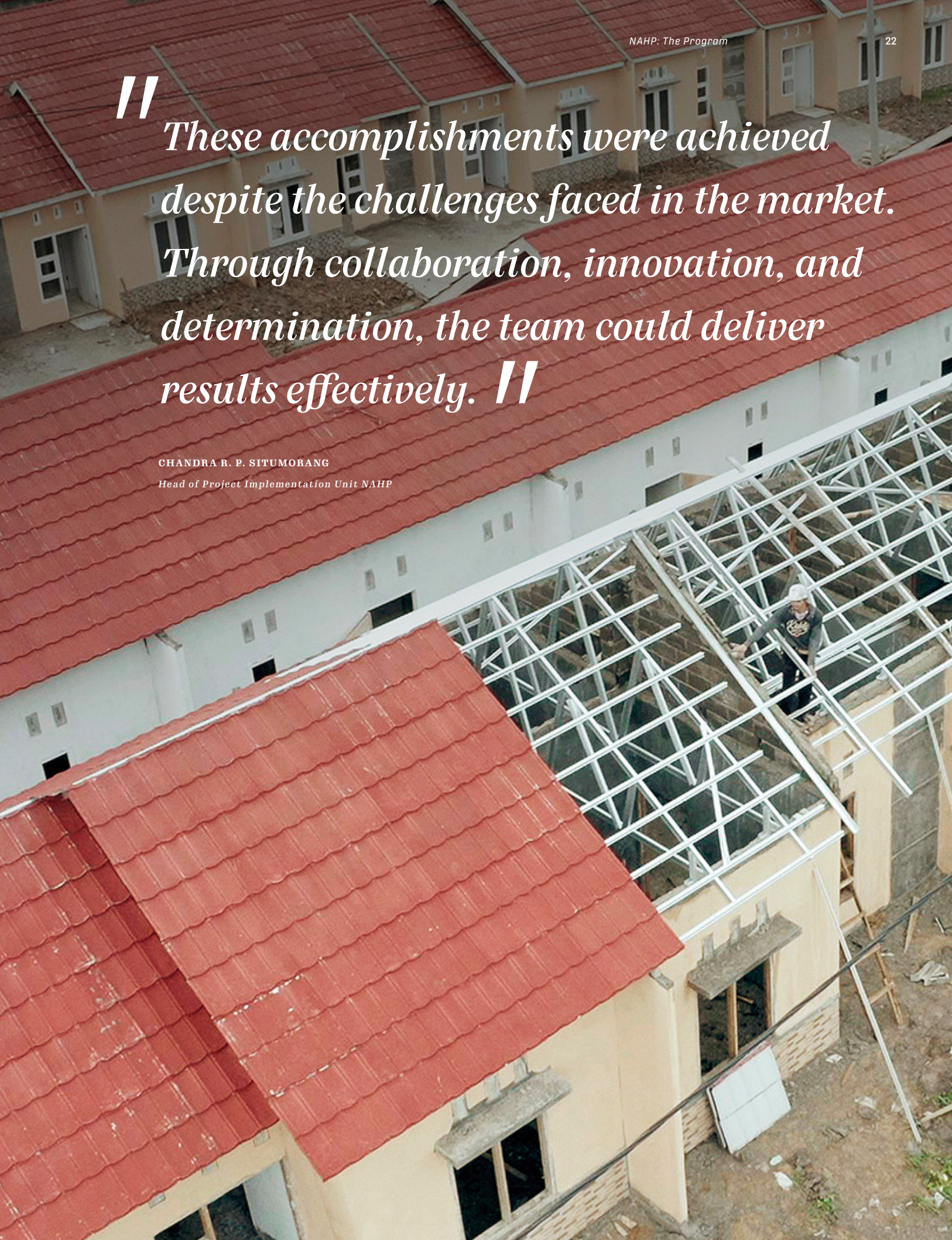
In early 2021, the government shifted its policy to focus on the BSPS program in order to support extreme poverty alleviation (PKE). The process required significant time to establish a targeting assessment, which became an obstacle for disbursement in 2021. Once the PKE beneficiaries' assessment process was in place, disbursement was possible in 2022. QAQC framework was institutionalized in BSPS program and ensure the housing construction quality for all beneficiaries.

(iii.) **COVID-19 pandemic**

The COVID-19 pandemic hindered the implementation of BSPS and weakened the buying power of potential home buyers, slowing down disbursements of BP2BT in 2020.

CHART 2.4. SUBSIDIZED MORTGAGE DISBURSEMENTS





"These accomplishments were achieved despite the challenges faced in the market. Through collaboration, innovation, and determination, the team could deliver results effectively."

CHANDRA R. P. SITUMORANG

Head of Project Implementation Unit NAHP

"The NAHP Program aims to improve access to affordable housing through a mix of demand and supply-side interventions, targeting both lower-middle-income and lower-income households through three components."

IWAN SUPRIJANTO

Head of PMC NAHP, DG of Housing Provision, MPWH



CHART 2.5. NAHP ORGANIZATION

NAHP Organizational Structure

POSITION	NAME	ROLE AT NAHP
Director General of Housing Provision	Iwan Suprijanto, ST., MT.	Head of PMC NAHP
Director General of Infrastructure Finance	Dr. Ir. Herry Trisaputra Zuna SE., MT.	Vice Head of PMC NAHP
Director of Systems and Strategy for Infrastructure Finance	Agus Sulaeman, ST., MT.	PMC NAHP Member
Director of Housing Finance Implementation	R. Haryo Bekti Martoyoedo, ST., M.Sc.	PMC NAHP Member
Director of Housing Provision Systems and Strategy	Ir. Edward Abdurrahman, M.Sc.	PMC NAHP Member
Director of Self-Help Housing	Ir. K.M. Arsyad ,MSc.	PMC NAHP Member
KHead of Planning Bureau Budget and International Relations	Ir. Edy Juharsyah, M. Tech.	PMC NAHP Member
Head of NAHP PIU	Chandra R. P. Situmorang, ST., MT.	PMC NAHP Member

PIU Organizational Structure

NAME	MEMBER
Chandra R. P. Situmorang, ST., MT.	Head of PIU NAHP
Ir. Samson Sibarani, MT.	Deputy Head for BP2BT
Ir. Fitrah Nur, M.Si.	Deputy Head for BSPS
Andreas Pratama Yanuar Trikusumo Endismoyo, ST.	Assistant for Planning
Rezky Gauthama, S.Kom., M.Si.	Assistance for Finance and General Affairs
Arief Sulistyawan, S.Sos.	Monitoring and Evalution Assistant for BP2BT
Musrifah, ST., MT.	Monitoring and Evaluation Assistant for BSPS

World Bank Task Team

NAME	ROLE
Ming Zhang	Practice Manager
Dao Harrison	Senior Housing Specialist and Task Team Leader
Andre Bald	Lead Urban Specialist and Co-Task Team Leader
Griya Rufianne	Urban Specialist
Novira K. Asra	Senior Financial Management Specialist
Budi Permana	Senior Procurement Specialist
Indira Dharmapatni	Senior Safeguard Specialist
Andy C. Firdana	Procurement Specialist
Suryaputrianita Satyanugraha	Environmental Specialist
Chatarina Ayu Widiarti	Program Analyst
Nola Safitri	Program Assistant
Marleyne Danuwidjojo	Program Assistant

NAME	ROLE
Harish Khare	Consultant
Alfana Ayu Zahrafa	Consultant
Mendy Laoda	Consultant
Atika Almira	Consultant
Yulia Puspa Sari	Consultant
Eduardi Prahara	Consultant
Rendytio Pradipta	Consultant
Mohammad Saleh Siregar	Consultant
Fandi Nasution	Consultant
Alfian Adi Eka Wibawa	Consultant
Helena Clare See	Consultant
Hoferdy Zawani	Consultant
Ninin K. Dewi	Consultant
Virza Sasmitawidjaja	Consultant
Aswin Hidayat	Consultant



3.

Impact & Learnings

Key Issues Addressed Under Partnership Between the GoI and World Bank

Improving disaster resilience within the housing sector to save lives and meet SDG goals.

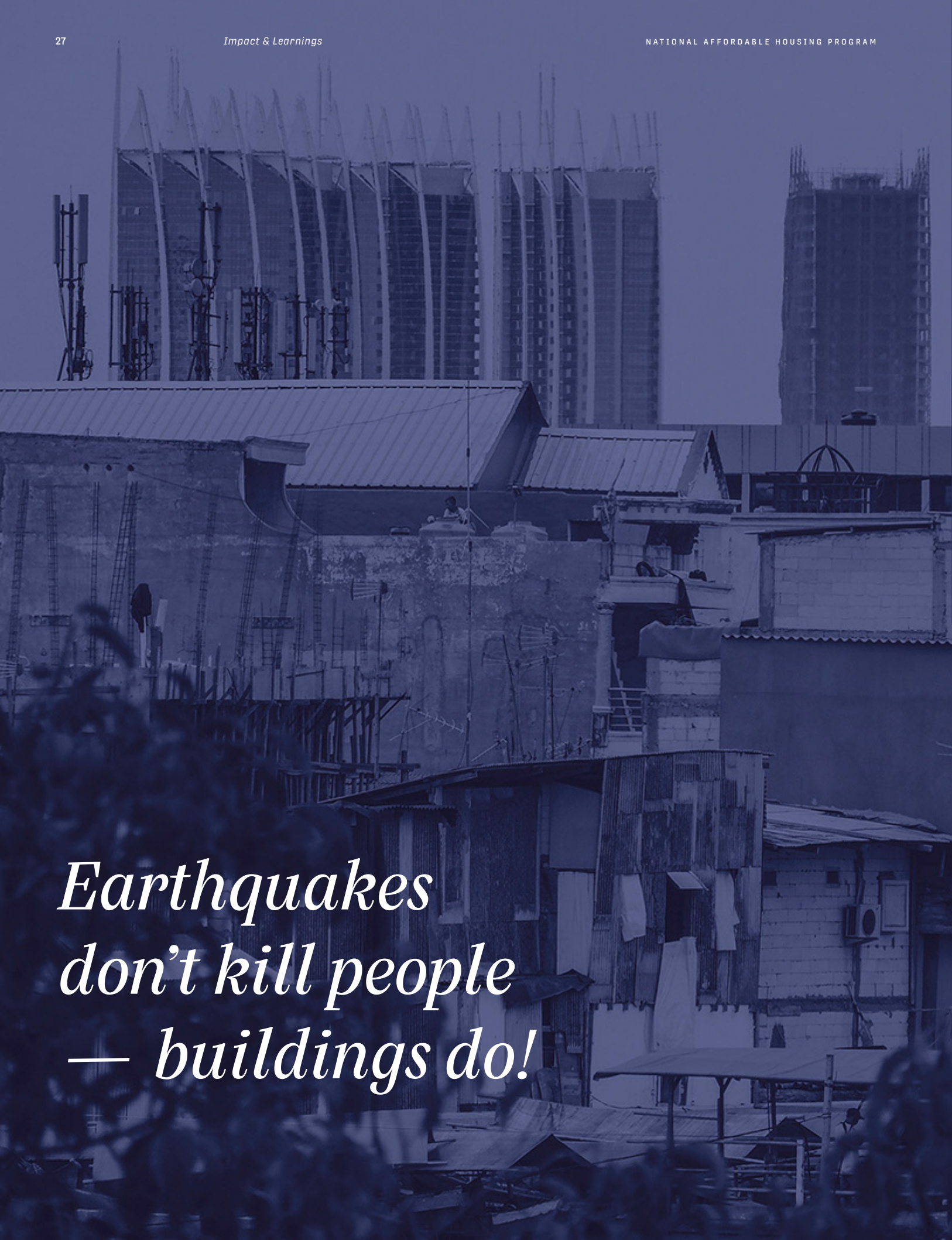
Expanding the impact of the government housing subsidy programs by serving more housing needs.

Delivering the housing needs of the underserved at scale.

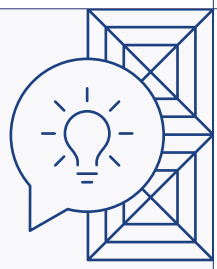
Serving the acute affordable housing needs in urban centers.

Developing effective housing policies and programs in Indonesia.

Advancing climate resilience as a part of the housing solution.



Earthquakes don't kill people — buildings do!



Improving disaster resilience within the housing sector to save lives and meet SDG goals.

The challenges

Construction quality was not a priority for the GoI housing programs, at the onset of the NAHP project.

Based on the World Bank baseline assessment, only 11% of BSPS retrofitted homes met construction standards in 2018, while for BP2BT developer-built homes, only 16% did in 2019. From a system perspective, BSPS facilitators need to be better trained and organized. For BP2BT, existing processes in the construction eco-system are not effective for assessing construction quality in two ways:

(i.) the use of Sertifikat Layak Fungsi (SLF) – occupancy certification to determine construction quality can only be implemented by 10% of Local Governments (LGs);

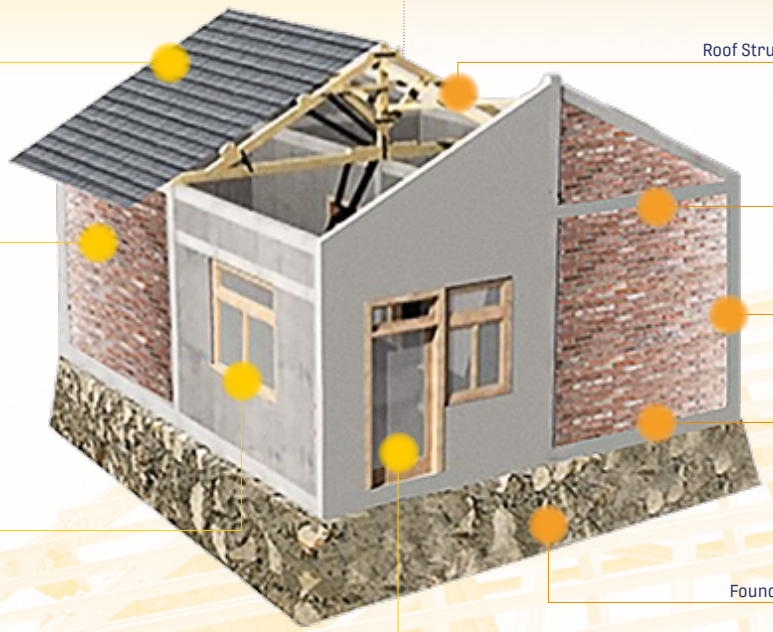
(ii.) the use of Manajemen Konstruksi (construction supervisors) for construction quality assessments was proven to not accurately reflect the actual quality of construction.

BOX 3.1.1. QAQC SYSTEM INDICATORS

Safe

Non-structural Adequacy

Structural Integrity



Healthy

Lighting ***Access to clean water*** ***Electricity*** ***Ventilation*** ***Toilet (Septic Tank)***

Others

Drainage ***Location Safety*** ***Total Area***

What was done

1. BSPS:

- The QAQC system was designed and implemented with clear indicators for the monitoring and scoring of construction standards and livability assessments.
    - » Capacity building for facilitators was conducted to enhance expertise in the building of safe and healthy homes.
    - » The QAQC virtual monitoring that started during the pandemic was effectively used to validate construction processes and guide the facilitators in critical areas of structural assessment.



- The project introduced new innovations, technologies, and processes to further support construction quality:
    - » The e-BSPS system, a mobile application, was developed in 2021 to (i) track and enforce housing construction compliance, and (ii) support the documentation and verification of BSPS processes.
    - » Ferrocement technology using wire mesh is affordable, easy to implement, and accessible for all households to strengthen the construction quality of homes while mitigating seismic risk. It was developed by Ir. Teddy Boen, M. Eng., Ph.D. and his team from Universitas Andalas (West Sumatra) and was first introduced under the NAHP in 2019.
- Gender training was conducted to raise the capacity and engagement of female beneficiaries in the housing construction process. The risk of death during a disaster is 14 times greater for women and children than men in Indonesia *(BNPB, 2019)*. Gender training was an essential component to counter this risk with the fact that 29% of BSPS beneficiaries on an annual basis being female-headed households *(MPWH, 2019)*.



TOP: Pilot gender training was conducted in three locations, including this one inside a beneficiary's home in Bandung. A total of 63 participants were trained. This practice is intended to enhance the understanding of how to integrate the gender lens into the BSPS program.

Impact:

1

98% of beneficiaries were satisfied or highly satisfied with BSPS.

2

75% of units fulfilled construction quality standards in 2022 (See Chart 3.4.1. below), an almost sevenfold improvement over the first baseline assessment in 2018 when just 11% of units met the required standards.

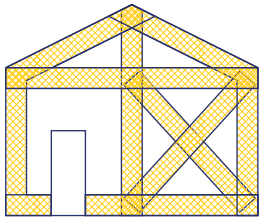
3

6,000 facilitators have been trained annually through the QAQC system to guide masons and beneficiaries in construction quality awareness.

4

A gender-training program was delivered for mothers and female heads-of-households in three pilot locations.





DETAIL INSTALLATION OF WIRE MESH

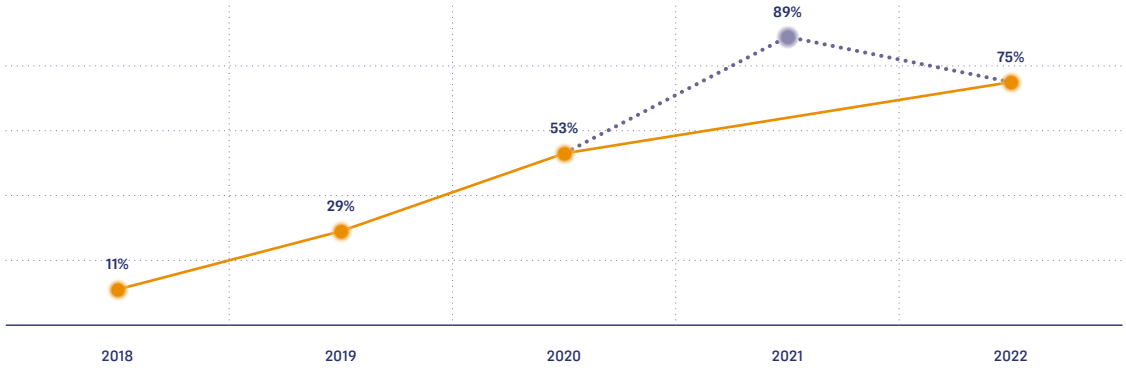
TOP: Wire mesh must be installed in walls like a sandwich panel (front and back) particularly for the most commonly used room to keep people safe when earthquakes strike.

5

Ferrocement methodology using wire mesh was piloted and implemented to mitigate seismic risk and keep households safe. More than 700 units have been constructed using ferrocement in BSPS homes.

CHART 3.1.1. BSPS CONSTRUCTION QUALITY HAS IMPROVED BY A FACTOR OF 7.

Efforts to prioritize construction quality have resulted in a seven-fold improvement in quality during the NAHP project implementation for Component 2: BSPS. The construction QA/QC system developed under NAHP is the key driver in the improvement of BSPS program construction quality from 11 percent of housing units meeting minimum construction standards in 2018 (baseline) to 75% in 2022. Note: 2021 disbursement is too low (1,230 units) to be comparable with others.



2. BP2BT:

The construction quality assessment form was strengthened to ensure that construction supervisors (MK, Manajemen Konstruksi) provide detailed assessments that accurately reflect the structural integrity of BP2BT houses. In addition, a sample audit process was established to verify the accuracy of MK assessment results and involved the Satuan Kerja/working unit of BP2BT, independent auditors, and the World Bank technical team.

Impact:

Construction quality of BP2BT has improved by by a factor of 3

BP2BT showed a slower improvement in construction quality compared to BSPS. While BSPS showed a sevenfold increase, BP2BT construction quality had a threefold improvement. The difference lies in the top-down nature of BSPS, allowing the mobilization of facilitators to drive changes. In BP2BT, the approach is more bottom-up, with a huge reliance on developers' willingness to improve. A stronger enforcement system for construction quality monitoring and evaluation needs to be implemented across all government credit-linked subsidy programs.



"Alhamdulillah. I'm thankful. I didn't have a home but now I do. It feels good to sleep (there). It feels good to do anything. Thank you to the Government for this."

IBU KATNAH

BSPS beneficiary in Karawang, 2022

Opportunities for growth

(i.) **Use and optimize the use of technology to monitor construction quality.** For BSPS, the data from e-BSPS should be used to provide construction quality performance analytics and pinpoint fixes and areas for improvement. For all existing and future mortgage housing finance subsidy programs, there needs to be a QAQC Construction Application and System through which the government can monitor the construction quality.

(ii.) **Scale the implementation of ferrocement methodology across housing programs.** This includes promoting the technology to homeowners and knowledge dissemination and capacity building for construction workers and the ecosystem.

(iii.) **Provide incentives for well-performing housing contractors and developers that deliver well-built housing that meet minimum construction standards.** Disincentives should also be introduced for poor performers.

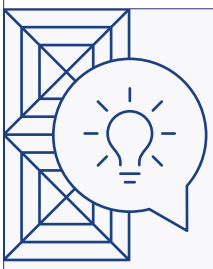




"The success is a combination of 'boots on the ground' and the introduction of new technologies to strengthen the QAQC system."

K.M. ARSYAD

Director of Self-Help Housing, DG of Housing Provision, MPWH



Expanding the impact of the government housing subsidy programs by serving more housing needs.

The challenges

(i.) **High cost of mortgage subsidy programs**
The One Million Homes program (PSR) has delivered volume. However, the FLPP main mortgage subsidy scheme is expensive, requiring a 75% government fiscal contribution on day one. The total subsidy is valued at ~45% of the total loan at today's value over the life of the loan. The SSB subsidy design drives volume through a small annual fiscal budget but with high future liabilities for 20 years (IDR 36 trillion at the end of 2021).

(ii.) **Large gap in market mechanisms**
Indonesia's housing needs cannot be met by public funding alone. Indeed, addressing only quantitative housing needs would require an estimated IDR 1,005 trillion (USD 71 billion),[10] or nearly a third of total public spending. The private sector cannot compete against housing subsidy products that employ a 5% interest rate and the FLPP low cost-of-fund of 0.5%.

(iii.) **Limited access to housing finance: the mortgage market remains small**
The mortgage market in Indonesia remains at 3% of GDP, and households who need resources for self-construction, retrofits, and for informal workers remain underserved.

10 *"Indonesia Public Expenditure Review: Spending for Better Results", June 2020, page 135).*



(iv.) **Product design with limited reach beyond landed houses**

The eligibility criteria of the subsidy schemes favour the landed housing typology. The per-unit subsidy economic cost at today's value for a landed house is around IDR 60 million, half the cost of a per-unit subsidy for multi-story units with higher property values would be more than double that. This subsidy design limits the government's capacity to support housing in urban centers where housing costs are far greater.



What was done

BP2BT: The BP2BT product is a market-friendly product with a comparatively lower per-unit subsidy cost[11] in comparison with FLPP and SSB.

11 Cost benefit analysis: Fiscal cost/Day-one funding, lifetime cost to the government of the subsidy at today's value, market impact of subsidy.

12 Informal income: a segment characterized by irregular and volatile income and a lack of income and employment documentation; while non-fixed income includes informal income and self-employed workers with income and bank documentation.

TABLE 3.2.1. FLPP AND BP2BT COMPARISON

FLPP	*BP2BT*
High cost: FLPP capital costs 75% on day 1 with a high lifetime economic cost of ~ 45% of home value.	**More efficient:** Delivers more volume with the same capital. One-time assistance payment reduces long-term operational costs.
Large gap to private sector product: ~7% lower than commercial rate, discourages prepayments of mortgage loans. **Limited risk to banks:** disincentivizes banks to facilitate market efficiency.	Uses market mechanisms and interest rates. **Increases the role of the private sector:** leverages participating bank's own capital by three times the cost of BP2BT assistance.
Regressive subsidy: assistance amount tied to the loan amount (property price). **Targeting reform:** individual basic income shifted to household income eligibility criteria.	**Progressive subsidy:** assistance amount tied to income amount (lower income receives higher subsidies). **Better targeting:** household income eligibility criteria.
Limited support for the informal income segment (10% of total FLPP volume in 2017-2021 is for non-fixed income).	**Serving an underserved segment:** Provides assistance for self-construction and home improvement (in addition to new home purchases). Focuses on serving the informal income segment[12] with 60% of cumulative BP2BT disbursement.



"(This program) helps a lot as it's very difficult to get subsidized homes, especially for those without fixed income. The process is very challenging (for us). Now my daily salary will be deducted for the installment, so it's not a burden for me. I hope that the program can continue to help low-income households with non-fixed income."

DARU BAYU ASMORO
GOJEK Driver
BP2BT informal income beneficiary

Impact:

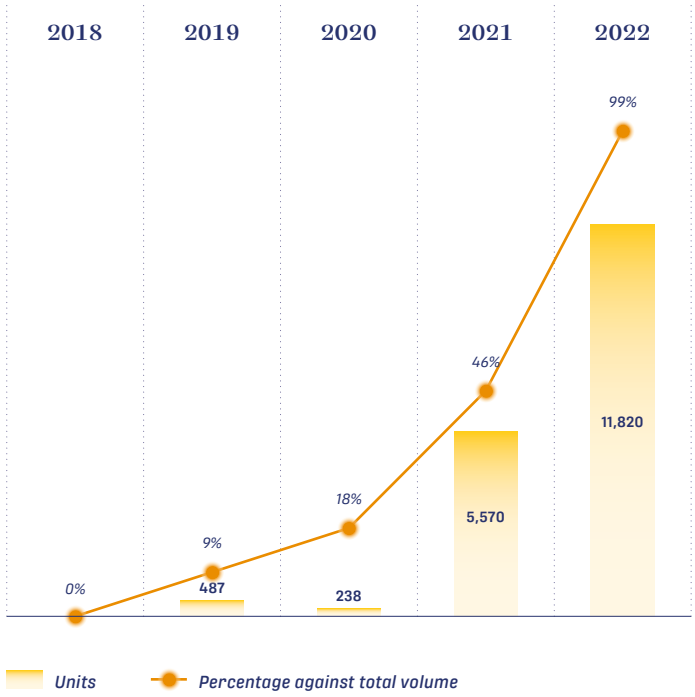
1 **30,422 BP2BT mortgages disbursed**

2 **93% of households in the bottom 60% of income distribution**

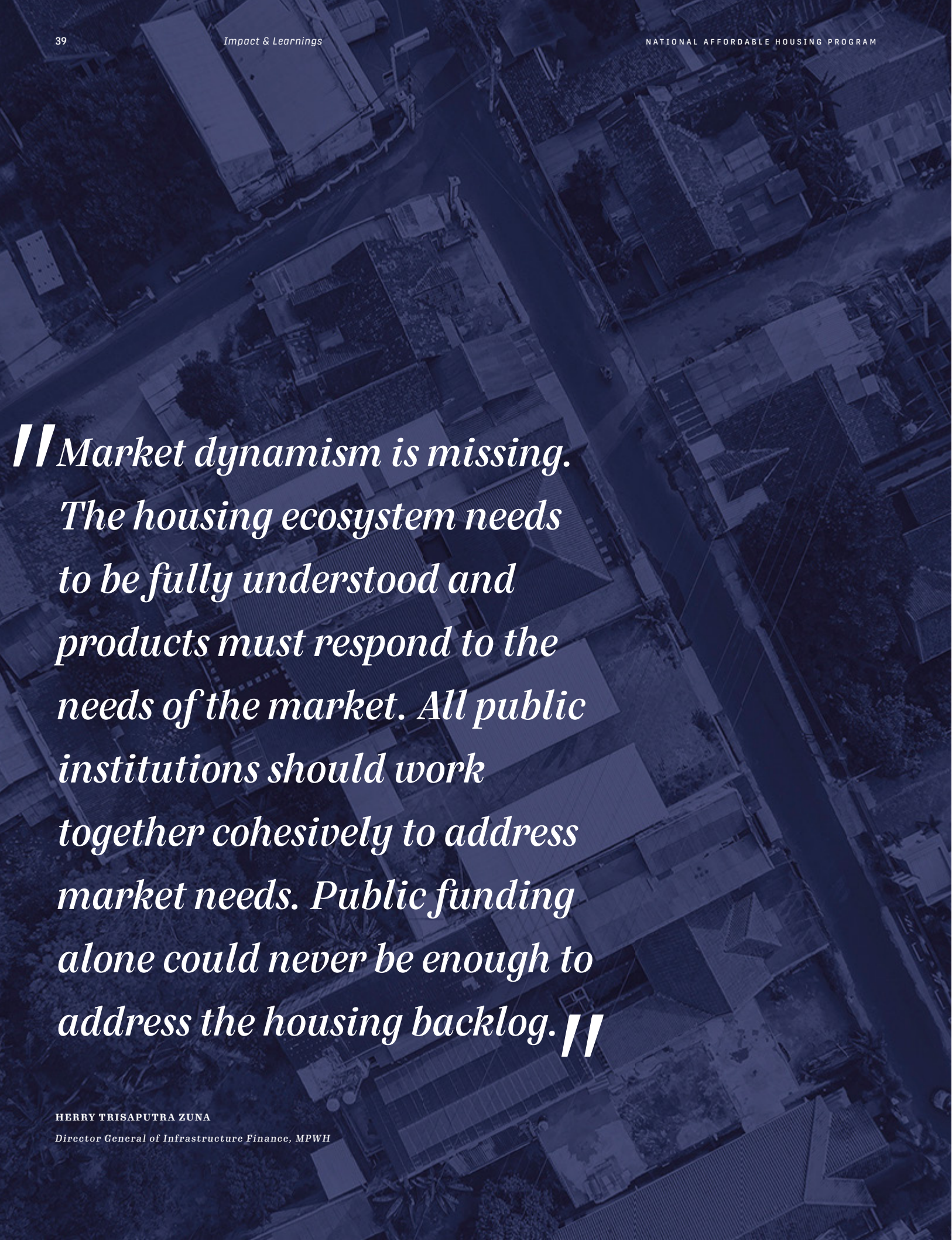
3 **60% of beneficiaries in the non-fixed income segment**

4 **$225m of private sector capital leveraged**

CHART 3.2.2. DISBURSEMENT OF BP2BT TO THE NON-FIXED INCOME SEGMENT HAS INCREASED SIGNIFICANTLY



BP2BT **over-achieved its target for serving the informal segment** by disbursing **60%** of its total volume (cumulative) to non-fixed income beneficiaries versus its original target of 10%.



"Market dynamism is missing. The housing ecosystem needs to be fully understood and products must respond to the needs of the market. All public institutions should work together cohesively to address market needs. Public funding alone could never be enough to address the housing backlog."

HERRY TRISAPUTRA ZUNA

Director General of Infrastructure Finance, MPWH

Opportunities for growth

(i.) Implement the government reform plan for mortgage-subsidy products to close the gap between subsidized and commercial products: reduce subsidy tenure, and step up the fixed 5% rate to the market rate in line with households' capacity to pay.

(ii.) Prioritize underserved segments' housing needs.

(iii.) Induce competition with market-friendly products and use of technologies to grow mortgage market.



"I feel happy with my new home as it gives me freedom. And with the monthly instalment, I can have my own asset. It can also support my online retail business."

KLARITA NOVIANA

Housewife, online retail entrepreneur, and make-up artist

BP2BT Swadaya beneficiary in Boyolali

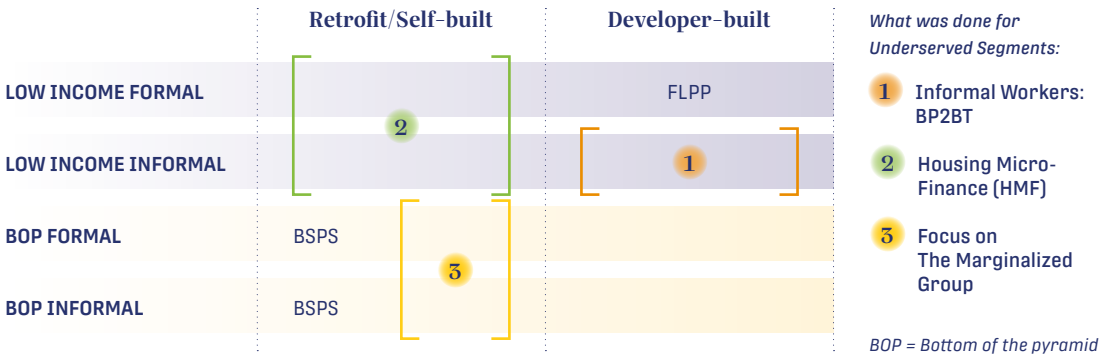
Delivering the housing needs of the underserved at scale.

The challenges

The government's key housing programs leave many segments and needs underserved: (i) informal workers, who account for 60% of the working population and (ii) financing options for self-construction and housing retrofits.

What was done

CHART 3.3.1. THE UNDERSERVED SEGMENTS

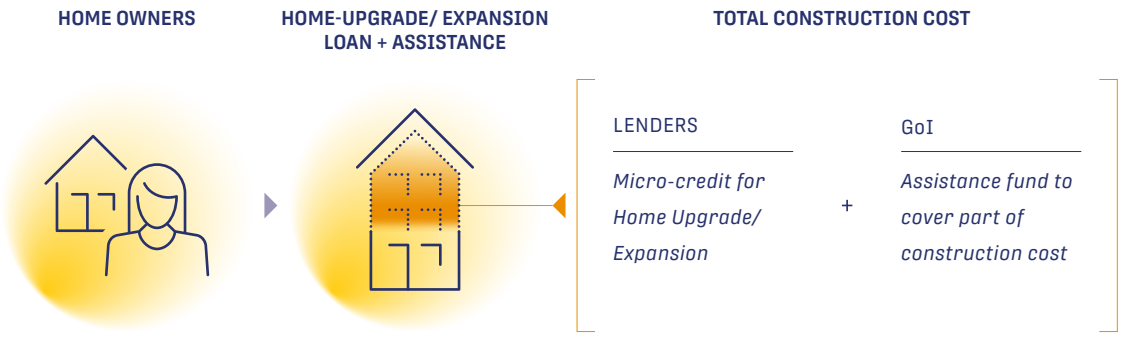


(i.) **Focus on the informal income segment in BP2BT**
BP2BT was prioritized for informal workers, a segment characterized by irregular income and a lack of income and employment documentation. To promote BP2BT uptake and further understanding of the segment, the government collaborated with IKAPPI (The Association of Traditional Market Traders), and Gojek to promote BP2BT.

(ii.) **HMF product development and demonstration pilot**
In May 2020, NAHP initiated the development of a BP2BT Housing Micro Finance (HMF) product during the early days of the COVID pandemic to support the RPJMN 2020-2024 target of reducing sub-standard housing by 10.2 million units. The product was a collaborative effort between MPWH, the World Bank, and BTPN Syariah Bank[13].

13
A shariah commercial bank that focuses its business on small-micro products: https://www.btpnsyariah.com/

CHART 3.3.2. HOUSING MICRO FINANCE PRODUCT CONCEPT



"By focusing BP2BT on informal workers, we see the potential of this market segment. Even within 2 years of disbursement, we can see strong growth."

MOCHAMAD YUT PENTA
Head of Subsidized Mortgage Lending Division, BTN





BP2BT HMF Implementation project in Jambi – improvement of walls and roof.

"BSPS addresses the extreme poverty segment to ensure that low-income Indonesians are able to improve and strengthen their homes – providing a better quality of life and enhancing economic opportunities, especially during the COVID-19 pandemic."

K.M. ARSYAD
Director of Self-Help Housing,
DG of Housing Provision, MPWH

(iii.) **Focus on other marginalized groups (persons living in extreme poverty, women, the disabled and the elderly).**

- **Serving the extreme poverty segment:** In 2022, BSPS disbursed 67% of its volume to serve the extreme poverty segment. The extreme poverty segment includes informal and temporary workers such as construction workers, farmers, and carpenters, who rely entirely on government grants for home improvement.

- **Helping women, the elderly, and the disabled** Both the BSPS and BP2BT programs strive for the inclusivity of marginalized groups:

  » 29% of the BSPS beneficiaries from 2018-2022 funded under the NAHP were female-headed households, while for BP2BT, 38% were female-headed households.

  » Three gender training sessions were conducted for BSPS female beneficiaries

  » On average, 27% of BSPS beneficiaries are elderly (2018-2022).

> *"There is a huge void for the informal market segment and self-construction needs."*

HARYO BEKTI MARTOYOEDO

Director of Housing Finance Implementation, DG of Infrastructure Finance

Opportunities for growth

(i.) **Informal workers**

- Building consumer demographics and loan performance databases and analytics that can inform housing finance product development and better understanding of the risk.
- Collaborating and drawing lessons from communities, trade unions, and associations of informal workers, e.g., Gojek, etc.

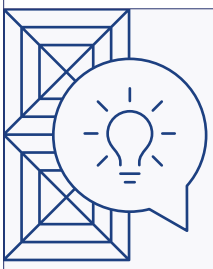
(ii.) **Housing microfinance (Swadaya[14] financing)**

- Developing a construction technical assistance toolkit to ensure housing quality.
- Developing an IT operational system to reduce management time for banks and other financing institutions for this field-intensive product.
- Developing processes to ease the cost and complexity of land tenure formalization for households.
- Linking the BSPS program with HMF to enable households to access private financing to accelerate the completion of housing retrofits.

(iii.) **Support for marginalized groups**

- Building database and analytics for the extreme poverty segment to ensure well-targeted and seamless integration with other government programs.
- Applying a gender lens across housing programs, including gender training as a part of capacity building for stakeholders.

14 Swadaya means self-help, where homeowners work with their communities to self provision.



Serving the acute affordable housing needs in urban centers.

The challenges

The lack of affordable housing in urban centers has led to sprawl and higher GHG emissions.

The high cost of land in urban centers limits housing choices for low-income households. Despite the acute need for housing in city centers, the Government's affordable housing programs primarily provide housing in rural areas or on the outskirts of cities. As such, affordable housing opportunities are lacking in high-opportunity urban areas, preventing lower-income households from accessing key amenities and economic opportunities.

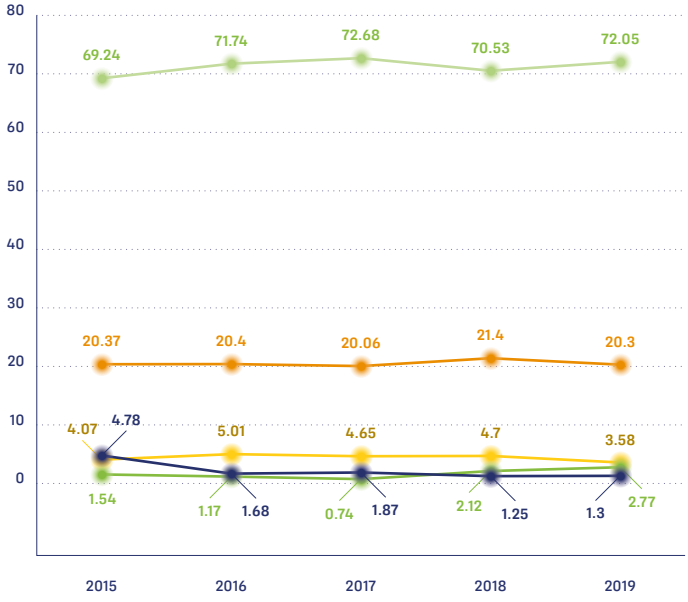
A housing development that contributes to urban sprawl also leads to GHG emissions. According to a 2020 World Bank Study, urban expansion in 10 metropolitan areas in Indonesia will consume 1,097 km2 by 2030, twice the area of DKI Jakarta. The study also predicts that urban expansion would contribute 85.8 tons in CO2 emissions. Therefore, providing housing in urban centers will improve households' overall accessibility as well as help reduce GHG emissions.

What was done

(i.) **Location suitability tool to assess location suitability for housing.** Nearly 300,000 mortgage-subsidized housing units built between 2015 and 2019 in six metro areas were assessed.

- It is important to guide affordable housing development to serve urban centers where the need is most acute.

CHART 3.4.1. SUBSIDIZED HOUSING IS MOSTLY LOCATED IN URBAN AND RURAL PERIPHERIES



Percentage of Housing Units per Zone in 6 Metro Areas

Source: Source: World Bank, Capsus, 2020

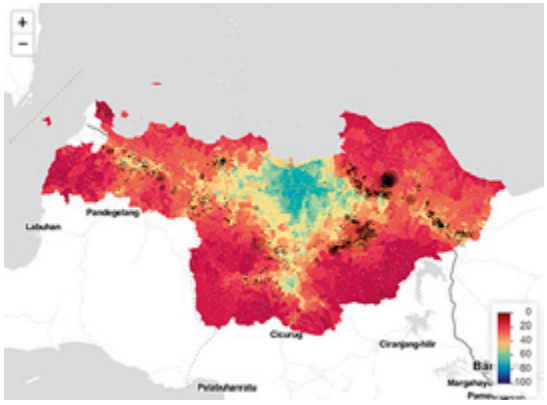
70% of the subsidized housing in six metro areas across Indonesia is located in the rural periphery. The resulting sprawl encourages speculative buying and carbon-intensive urban growth patterns that induce higher costs, worsen congestion, increase pollution, and reduce livability for households.

Metro Core *Nonmetro Urban Area* *Rural Periphery*
Urban Periphery *Nonmetro Rural Area*

- In some regions such as Jabodetabek[15], well-located affordable land is currently very scarce. In this context, choosing the right housing typology and transitioning from landed houses to multi-story homes is a key solution to providing more housing in the city.

- Climate-smart housing planning tools were introduced to guide optimal planning for housing development and relative performance was compared on environmental, economic, and social impact. Location Suitability and Urban Performance tools can be used for government planning and permitting processes and for developing location guidelines for mortgage-linked subsidy programs to limit urban sprawl.

CHART 3.4.2. HOUSING LOCATION SUITABILITY TOOL



Link to access Location Suitability tool: https://capitalsustentable.shinyapps.io/kpr_subsidy/.

The Suitability Tool (ST) is a web-based urban planning tool that identifies optimal locations for a specific activity within a city. Dark red areas represent the lowest suitability score and dark blue the highest. The black dots in the tool represent subsidized housing projects mainly located in dark orange to dark red areas.

15 Jabodetabek stands for Jakarta, Bogor, Depok, Tangerang, and Bekasi which are the cities of the Jakarta metropolitan area.

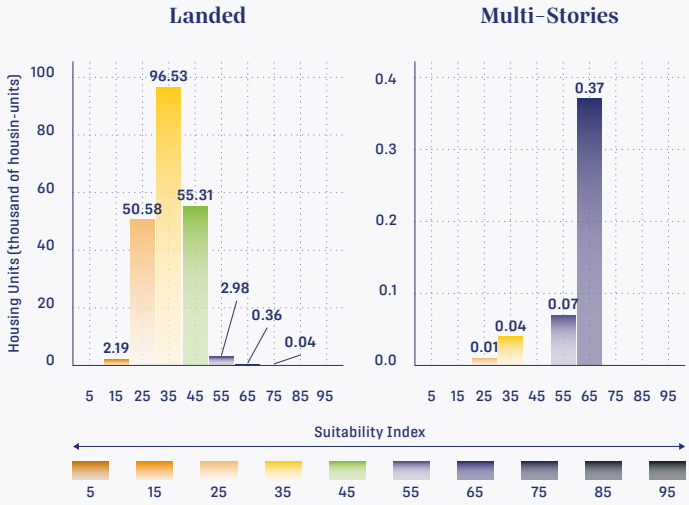
- Training was provided to eight local governments on the use of Location Suitability Tools for local housing development plans or RP3KP (Rencana Pembangunan dan Pengembangan Perumahan dan Kawasan Permukiman).

(ii.) **Green Retrofits and Housing Densification Models in City Centers**

The study conducted in Palembang demonstrates that green retrofits and housing densification in urban low-income neighborhoods can be critical interventions. These program types can address housing affordability by reducing substandard housing and backlogs where land costs are out of reach. Opportunities for additional rental housing stock and retail spaces can be considered in relation to home retrofits, reconstructions, and/or densifications to maximize land-value capture, optimize urban density, and support household economic development.

CHART 3.4.3. MULTISTORY HOUSING IS GENERALLY BETTER-LOCATED THAN LANDED HOUSING

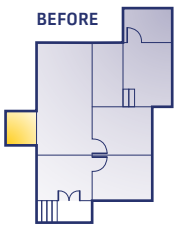
KPR housing units for selected years for each typology



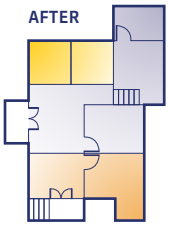
Building typologies are key to improving housing location suitability. As shown above, subsidized multi-story housing in Jabodetabek has an improved performance overall compared to subsidized landed housing. However, only 500 units of subsidized vertical housing were built in this area from 2015 to 2019 (0.2% of total mortgage subsidy disbursements).

Source: KPR subsidy data set (2015-2019), SUSENAS (2016-2018), BPS (2018), BPJS (2018) & InaGeoportal (2020)

FIGURE 3.4.1. EXAMPLES OF RETROFIT AND DENSIFICATION WITH ADDITIONAL HOUSING STOCKS IN LOW INCOME NEIGHBORHOODS



Living space is big
(80sqm for 2 people)



Smaller living space, more
room for retail + rental units



BEFORE



AFTER

TOP (images): Example of densification of one single house to multi-family housing with rental units.

LEFT(floor plans): Example of retrofit with additional economic spaces.

(iii.) **Public-Private Partnership (PPP) for Affordable Housing:**
Under the NAHP, technical assistance to support the development of affordable housing PPP financing models, systems, and tools. Two business cases for affordable housing using the PPP model were done in Daan Mogot, Jakarta, and Desar Besar, Medan.



TOP: Housing PPP model in Desa Besar, Medan.



TOP: Housing PPP model in Daan Mogot, DKI Jakarta.

"Indonesia is facing rapid urbanization. More housing in the city center is needed. Vertical housing needs to be delivered through various models."

TRI DEWI VIRGIYANTI

Director of Housing and Settlement, Bappenas

Opportunities for growth

(i.) Use of climate-smart housing planning tools to guide planning and construction permits.

(ii.) Deployment of different development models to retrofit and densify by adding affordable housing stocks.

- **Small-scale, in-situ, retrofits with space for rental and retail for better livability in low-income neighborhoods.**

- **Medium-scale housing development through densification and land re-adjustment where needed.** Individual or adjacent land plots with sub-standard homes can be re-developed into denser housing, such as low-rise verticals.

- **Large-scale urban renewal through public-private partnerships (PPP).** Large-scale vertical housing can be developed in city centers through land consolidation, or the use of underutilized assets owned by the government. The transit-oriented development (TOD) concept should also be applied to connect affordable housing with public transportation, where feasible.

  Where possible, mixed-use development for rentals and retail use is encouraged to enable more household income and to reduce the investment pay-back period.

(iii.) **Regulations to address blockages:**

- Incentivize developers using construction finance support, just-in-time permitting, infrastructure development support, or VAT tax exemptions for multi-story housing.

- Enforce FAR regulations and 1:2:3 balanced regulations.

- Reform Housing finance subsidy to better accommodate subsidized apartment units and the development of mixed-income, mixed-use housing projects.

(iv.) Increase attention and intervention in the **housing rental market** in the city, where homeownership is low and keeps decreasing.



CHART 3.4.4. ALTERNATIVE DEVELOPMENT MODELS FOR HOUSING IN THE URBAN CENTERS

Development alternatives for densification

1. Infill development





2. Land readjustment



3. Land consolidation/ green field development



Housing strategies and typologies (including mix-use)

A. Punctual infill



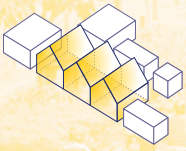


House in Nada, Japan

Source: Archdailiy | ©Toshiyuki Yano

Source: World Bank and Miyamoto

B. Row-houses





Laneway rowhouses in Toronto

Source: ©Smart Density

C. Incremental housing

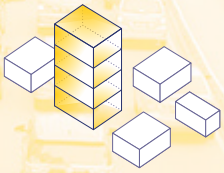




Quinta Monroy incremental housing

Source: Archdailiy | ©ELE-MENTAL

D. Mid-rise development

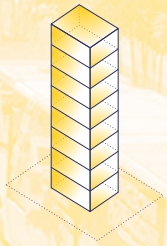




Slovenia apartment building

Source: Archdailiy | ©OFIS Architects

E. High-rise development





Timber construction in Milwaukee

Source: Architectural Record | ©Henriquez Partners

Developing effective housing policies and programs in Indonesia.

The challenges

The absence of data and analytics prevents evidence-based policymaking and constrains well-informed public investment. Indonesia needs a housing information system that gathers and monitors crucial housing metrics in order to alert public and private players to trends, gaps, and possibilities within the housing sector. Housing indicators to track the impact of government expenditures in reducing the housing backlog and addressing housing affordability are also needed.

Capacity building and cross-collaboration among housing-related stakeholders in Indonesia must be improved to collectively support the goals of providing affordable and adequate housing for all. This can be attained by enhancing the institutional capacities of both central and local governments, as there is a need for greater capacity for policy development, planning, and supervision.



What was done

Component 3 of NAHP and other forms of technical assistance worked towards developing a knowledge-based housing sector through data-driven policymaking and capacity building.

Integrated Housing Database: HREIS

The Housing and Real Estate Information System (HREIS) was developed as an integrated housing management information system and a repository of reliable, up-to-date, publicly available housing and real estate-related data on supply and demand sides. The platform can be accessed through ***https://hreis.pu.go.id/portal_hreis/***

Impact: HREIS was launched in 2021 and successfully integrates key public housing-related data into one platform. The process has also deepened understanding of the housing backlog, honed targeting by income segment, and supported affordability index calculations.

CHART 3.5.1. HREIS PROVIDES DATA, INSIGHTS, AND ANALYSES TO SUPPORT HOUSING SECTOR DEVELOPMENT

Answer Critical Questions

Who (needs/demand)

What (typology/design)

Where (location)

How much (affordability)

- Public
- Private

Need

- *Quantitative/ Qualitative Deficit*
- *Backlog map*

Demand

- *Housing Preferences (Quantitative Research)*
- *Sales volume trend / market absorption*

Supply

- *Map of housing strategic location for low-income people (MBR)*

Price

- *Affordability Index*
- *Residential Price Index (BI data)*

Financing

- *Mortgage market trend*
- *Outstanding/Originations*

Analyses

- *Density of houses per 1000 inhabitants*
- *Spatial analysis + visualization*

QUANTITATIVE/QUALITATIVE DEFICIT MAP



SUBSIDIZED HOUSING MAP



HREIS displays housing needs, demand, supply, price, and finance data. Housing analysis and insights within the housing sector are also published through the platform, e.g., the affordability index analysis.

Expanding housing indicators to track market trends

New housing indicators were made available by leveraging HREIS data, including the following analyses:

(i.) **The affordability index analysis was created as an indicator of households' capacity to purchase houses at specific prices.** Affordability was defined as a home priced at a third or less of a household's income.

(ii.) **A backlog analysis, both for quantitative and qualitative deficits, was finetuned.** Data can be tracked by the urban/rural, household income decile, as well as many other indicators.

(iii.) **A quantitative research study for assessing consumers' housing needs.** The study evaluated the consumer preferences within the housing market (type of house, size, quality, location, etc.) based on needs and willingness to pay, price sensitivity, etc.

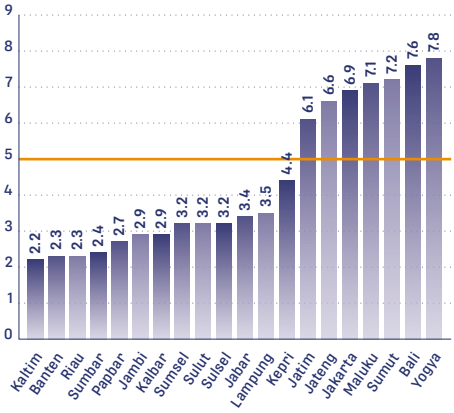
BOX 3.5.1. AFFORDABILITY INDEX ANALYSIS

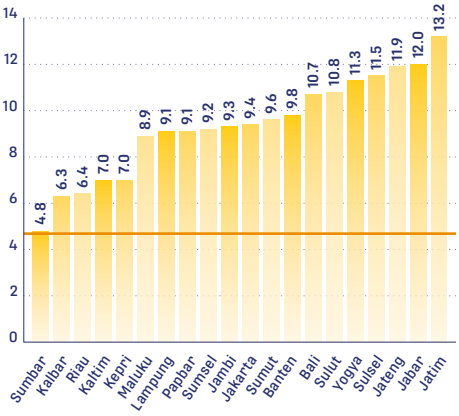
$$\text{AFFORDABILITY INDEX} = \frac{\text{MEDIAN HOUSING PRICE (Source: Mappi and data crawling)}}{\text{MEDIAN HOUSEHOLD INCOME (Source: Susenas expenditure data and savings)}}$$

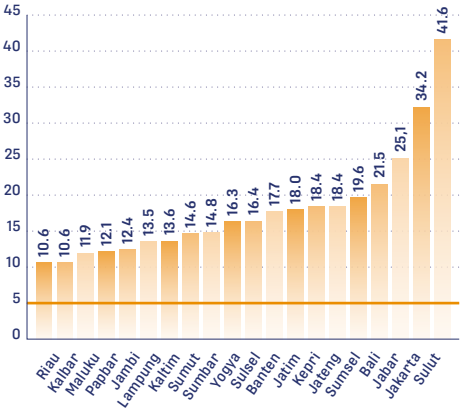
Affordability threshold

Value >5 is very unaffordable

Value <3 is affordable







Small houses (36 sqm and below)	*Medium houses (36 - 75 sqm)*	*Large houses (75 sqm and above)*
Unaffordable in **Java - Bali Provinces**	Very unaffordable in **all provinces, except for West Sumatra**	Very unaffordable in **all provinces**

AFFORDABILITY INDEX FOR SMALL HOUSES STILL ACCEPTABLE.

Areas that considered unaffordable mostly in urban area with a high land price, large population (high demand), and strong economic growth

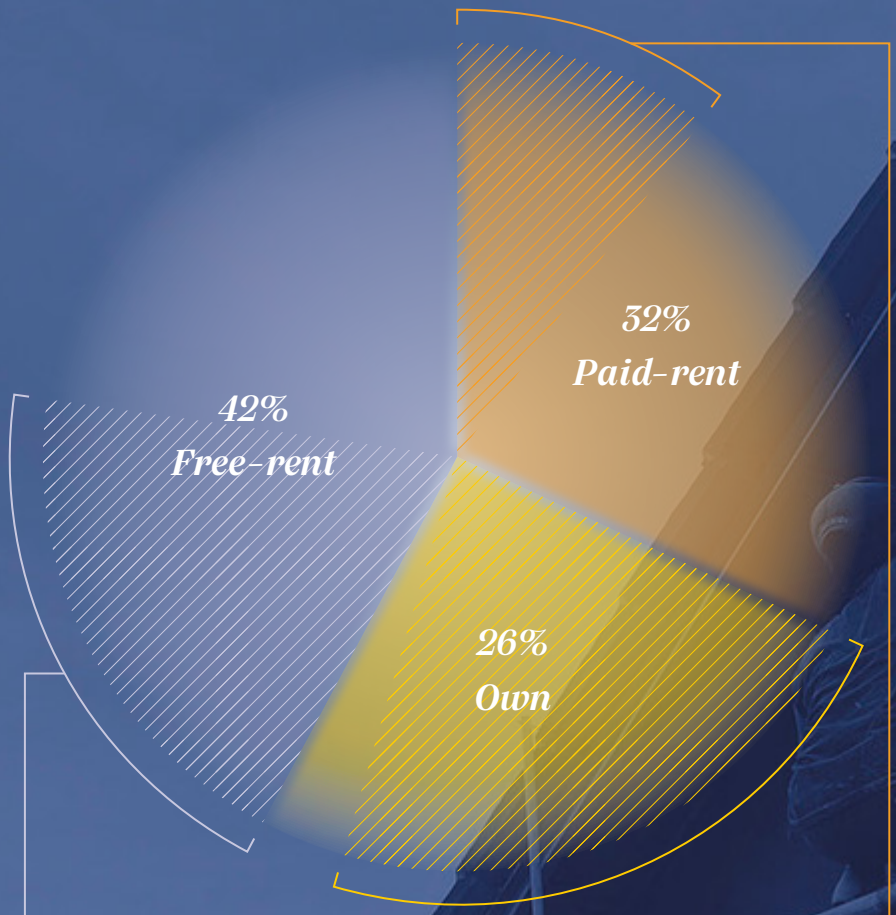
AFFORDABILITY INDEX FOR MEDIUM AND LARGE HOUSES ARE PROBLEMATIC.

Commercial housing market still needs to be managed through:

- **Match housing demand and supply, explore various typologies**
- **Different financing scheme** *allow more people access to mortgage facility.*
- **Regulation** *on speculation and vacant house*

CHART 3.5.2. HOUSING PREFERENCES FROM CONSUMER RESEARCH: HUGE NEEDS AND WANTS FOR SELF-CONSTRUCTION AND RENOVATION

Data in the pie chart describes the existing housing tenure of the respondents.



46%
*of free-renters want to **self-build** their home*

87%
*of homeowners want to **improve** their house*

32%
*of renters want to **self-build** their home*

MORE THAN HALF OF THE RESPONDENTS NEED HOME IMPROVEMENT OR SELF-CONSTRUCTION

Source: Consumer Research, 2020
Respondents: 25,546
National Housing Board Study
NAHP Component 3 Technical Assistance Activity

Research conducted with more than 25,000 respondents across Indonesia shows a huge demand for self-built housing and home upgrades, across all types of housing tenure. For instance, 87% of homeowners want to improve their houses, while 32% of renters and 46% of free renters wish to self-build their homes instead of renting/buying from developers. This shows a need to shift housing programs from developer-built to self-construction and to meet the sizable retrofit needs.

Evidence-based and data-driven policy-making

(i.) **With the use of the HREIS data and the housing indicators, the government developed a detailed housing ecosystem and built targeted housing programs.** The key outcome of the process allows for the development of housing programs that serve targeted segments through the combined efforts of both the private and public sectors.

(ii.) **To cohesively address the multiple challenges facing the Indonesian housing sector, a long-term national affordable housing policy and strategy was developed.** The Housing Grand Design technical assistance provides a policy framework for achieving Indonesia's Housing Vision by 2045, which is defined as housing for all: liveable and affordable housing in a healthy, safe, harmonious, and sustainable environment.

Capacity building for both central and local governments

(i.) NAHP facilitated capacity building of the housing sector through conferences and workshops, knowledge exchanges, and published reports.

(ii.) Conferences and workshops addressed topics related to development of housing provident funds, informal income lending, construction quality, housing PPP, green housing, and institutional arrangement.

(iii.) Technical Assistance through the DG Budget of the Ministry of Finance (MoF) in 2021 on the following topics: (i) international housing finance market comparisons; (ii) refining housing backlog and income segmentation; and (iii) roadmap to Indonesia housing subsidy programs.

(iv.) International knowledge exchange with Mongolia and Tamil Nadu (India) governments.

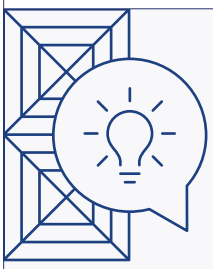
(v.) Two published reports: (i) Infrastructure Sector Assessment Program: Chapter on Subnational Financing and Urban Housing (September 2019). and (ii) Indonesia Public Expenditure Review: "Spending for Better Results" – Chapter 10: Housing (March 2020).

Opportunities for growth

(i.) **The Housing and Real Estate Information System needs to be continuously maintained.** Data, data analytics, and indicators need to be updated regularly. Socialization among local governments and other private entities is also needed to mainstream this platform's use.

(ii.) **Updating and expanding housing data and indicators to inform housing planning, budget allocation, and program development for targeted consumer segments through an evidence-based approach.**





Advancing climate resilience as a part of the housing solution.

The challenges

Urbanization in Indonesia has paralleled economic and social advancements over the last three decades. Unfortunately, GHG emissions in Indonesia rose by 167% within the same period. Indonesia's carbon emissions per person grew from 0.82 to 2.17 metric tons between 1990 and 2018.[16]

The housing sector is a major source of GHG emissions. Globally, 37% of the world's carbon emissions come from buildings.[17] In 2021, building operations accounted for 30% of the world's total energy consumption, while the residential sector contributed 16.6% of the energy consumed by buildings.[18] Creating green criteria for housing has the potential to generate GHG reductions to help tackle climate change issues and its impacts.

Just 1% of Indonesia's annual new homes comprise green housing units. The government has made some headway toward green construction by requiring green certification for multi-story commercial and residential buildings that meet particular criteria. Nevertheless, landed houses, which makes up 88% of the government's PSR program, are exempted from the mandate on green building requirements in accordance with the Green Building Certification program the Government launched in 2021. [19]

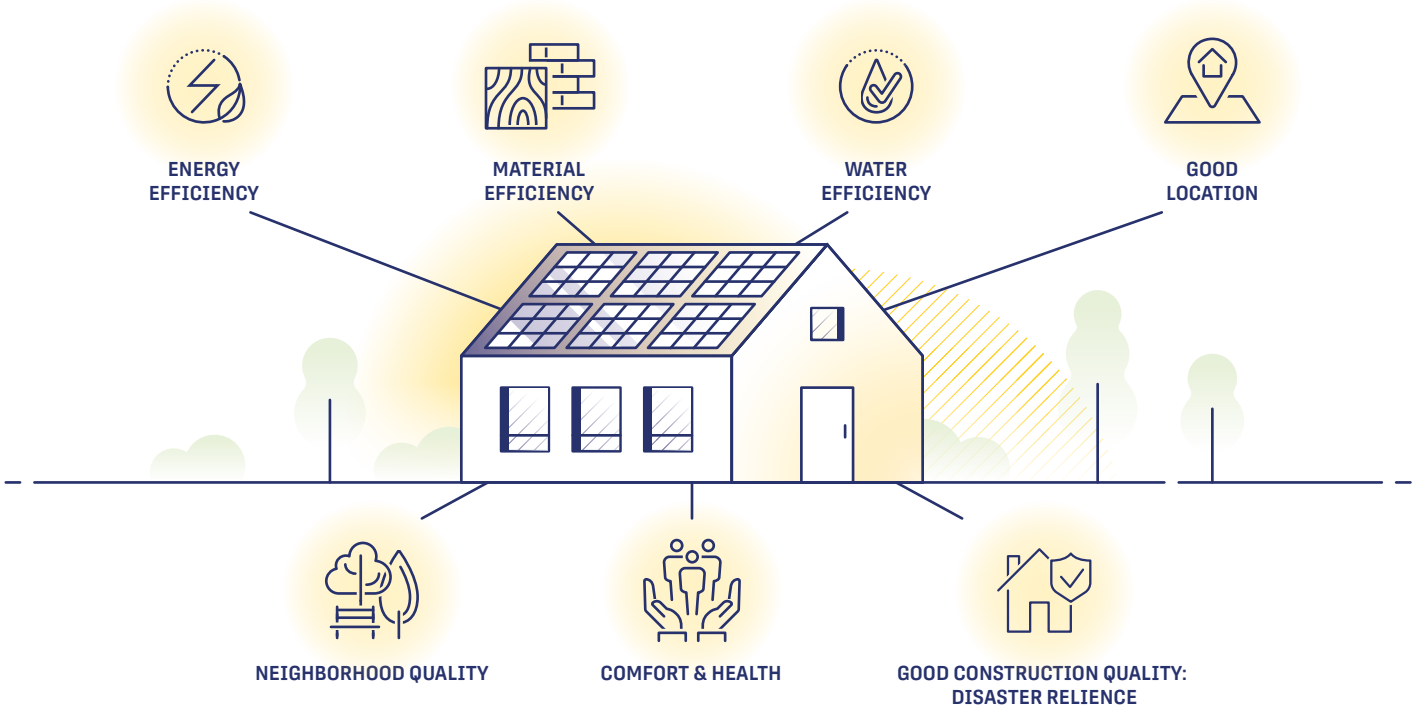
16 *Source: World Development Indicators, World Bank (2022).*

17 International Energy Agency. (2021). Energy technology perspectives 2020. International Energy Agency.

18 International Energy Agency. (2021). Buildings sectoral overview.

19 Sertifikasi Bangunan Gedung Hijau.

CHART 3.6.1. GREEN AND RESILIENT HOUSING INDICATORS



What was done

A clear roadmap towards a more sustainable and climate-resilient housing sector is urgently required in order to address issues caused by climate change. It is crucial to ensure that all housing developments fulfill green and resiliency-related criteria. (See chart 3.6.1) Given that urban expansion and associated land loss are prime contributors to GHG emissions, PSR could also benefit from climate-smart development location guidelines.

The World Bank initiated several activities to support the government in the development of a sustainable and climate-resilient housing ecosystem. These initiatives have resulted in better understanding of the cost-benefit of green housing through simulation using IFC EDGE tool, green retrofit and densification study, climate auction study, and EDGE certification of housing projects in Indonesia. The Bank has also secured funding to support study on solar panel for affordable housing and public buildings and the development of the Indonesia Green and Affordable Housing Platform.

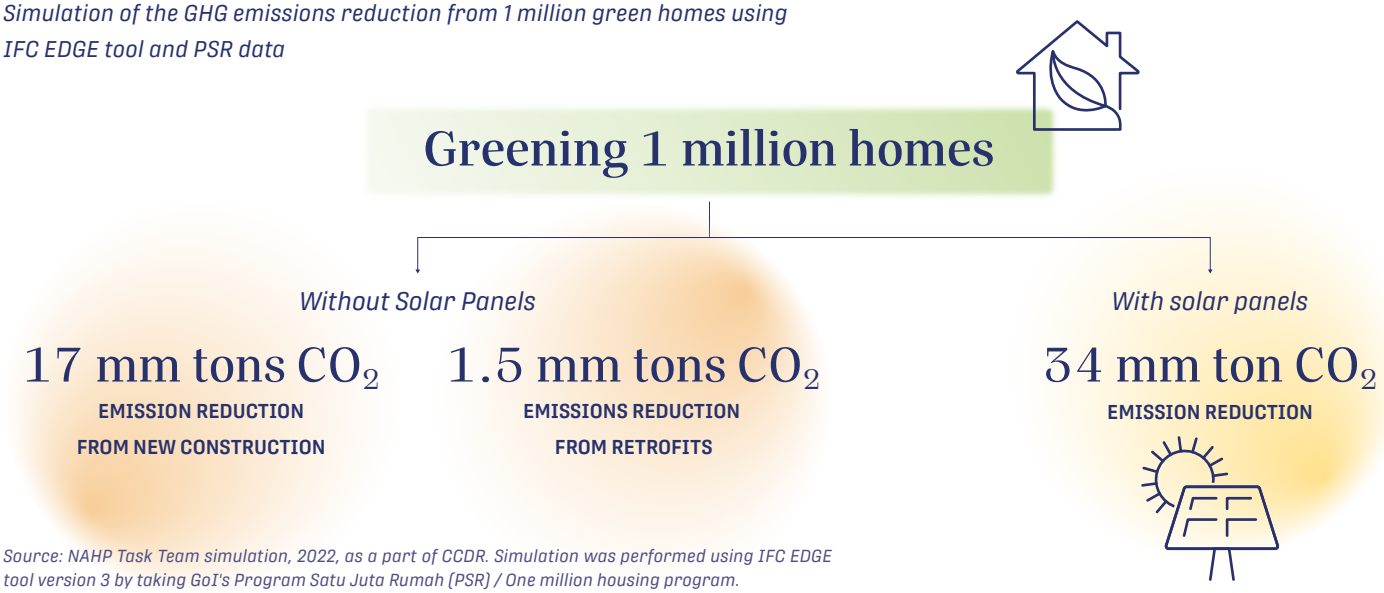
Impact:

Studies on the sustainable and climate-resilient housing ecosystem have shown huge opportunities and potential impacts. Green construction is not expensive, increasing building costs by 0.7%–2.2% for new construction, and 6%–10% for home retrofits or reconstructions. The green construction investment can yield utility cost savings for households of 13%–19% and can save up to 43% through investments in solar panels.[20] In addition, green housing design promotes healthier living conditions for homeowners. Moreover, well-located housing in urban centers will also help to reduce GHG emissions.

20 *Source: World Bank NAHP task team study.*

CHART 3.6.2. THE IMPACT OF GREENING ONE MILLION HOMES

Simulation of the GHG emissions reduction from 1 million green homes using IFC EDGE tool and PSR data



Source: NAHP Task Team simulation, 2022, as a part of CCDR. Simulation was performed using IFC EDGE tool version 3 by taking GoI's Program Satu Juta Rumah (PSR) / One million housing program.

Opportunities for growth

Moving towards a green, sustainable, and resilient housing ecosystem.



4.

Epilogue: Opportunities Ahead

Towards a Sustainable and Resilient Indonesian Housing Ecosystem



The forward agenda calls for unlocking opportunities for growth while advancing a sustainable, inclusive, and climate-resilient housing ecosystem.

The Forward Agenda

Based on the NAHP accomplishments and drawing on the key learnings laid out in Chapters 2 and 3 respectively, there are clear opportunities to accelerate growth within the housing sector in Indonesia and meet the SDG goals for safe, adequate, and affordable housing.

Key opportunities include:

1. improving construction quality and resilience **to mitigate environmental risk and keep people safe**
2. mobilizing private sector capital, technology, and capacity **to reduce fiscal burden and accelerate growth**
3. prioritizing underserved segments **to ensure inclusivity**
4. supporting the development of more affordable housing in cities and metro areas **to meet acute housing affordability constraints for urban population and reduce congestion and GHG emission.**
5. continuing to strengthen an evidence-based housing policy-making environment with data and analytics **to monitor results against backlog and to ensure effective and efficient public expenditures**

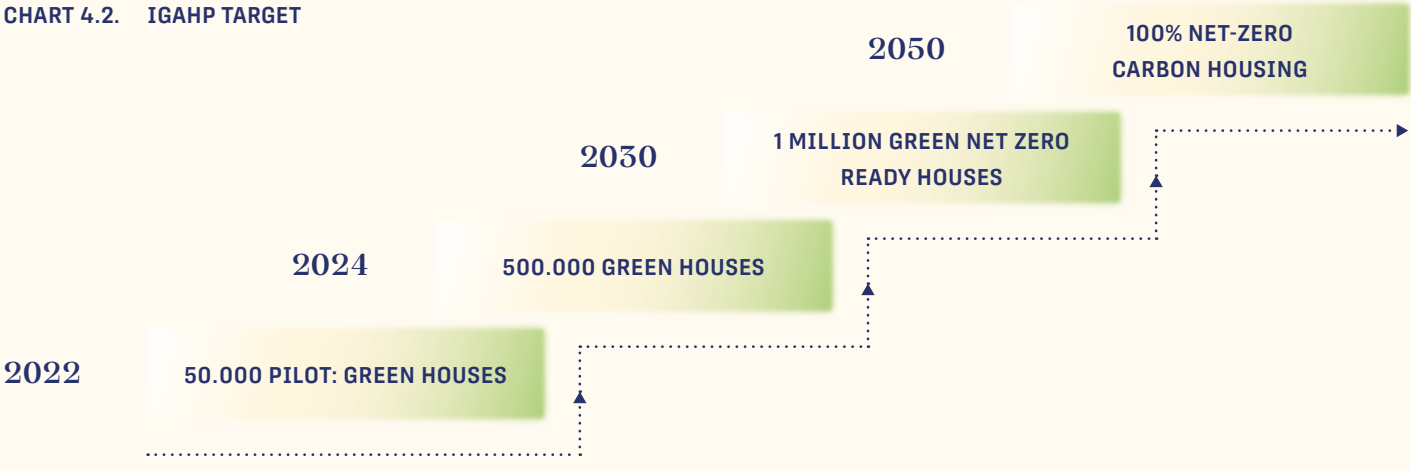
CHART 4.1. IGAHP

Introduction to IGAHP



With the development of the Indonesia Green and Affordable Housing Platform (IGAHP), the Government demonstrates its commitment to advance all the learnings and legacy of NAHP while combining with an ambitious climate-resilient goal. (*See Chart 4.1.)* IGAHP will include activities to support green housing adaptation and mitigation, green housing certification and green housing finance that would enable Indonesia to achieve 100% net-zero carbon for the housing sector by 2050. See Chart 4.2. All activities will be carried out on a robust foundation to serve the underserved segments, to mobilize the private sector and climate financing, and to continue to build on evidence-based housing policy and programs. All new and retrofitted housing will be built in a green and resilient manner, allowing for green mortgages and housing finance lending, access to green climate grants and to allow the housing sector to eventually tap the green and/or sustainable bond market. Moving forward, the government will harness the key opportunities in the housing sector and ensure all initiatives are sustainable and resilient under the umbrella of IGAHP.

CHART 4.2. IGAHP TARGET





"Through NAHP, and going forward with IGAHP, the government's vision has evolved into a clear strategy toward achieving sustainable development goals and developing a sustainable, resilient, and inclusive housing sector."

HERRY TRISAPUTRA ZUNA

DG of Infrastructure Finance, MPWH

Glossary

ACRONYM		DEFINITION
A		
APBN (Anggaran Penerimaan dan Belanja Negara)	State Budget	
APBD (Anggaran Pendapatan dan Belanja Daerah)	Regional Revenue and Expenditure Budget	
ASN/PNS (Aparatur Sipil Negara)	Civil servants	
Asabri	Social insurance service	
B		
BGH	Green building	
BPR	Rural Banks	
BPRS	Rural banks Sharia	
BPD	Regional Banks	
BAPPENAS (Badan Perencanaan Pembangunan Nasional)	National Development Planning Agency	
BP2BT (Bantuan Pembiayaan Perumahan Berbasis Tabungan)	Down-payment Housing Assistance	*Mortgage-linked down payment assistance with progressive assistance amount of a maximum of IDR 40 million. Unlike FLPP and SSB where the interest rate is fixed at 5 percent, participating banks in BP2BT have the flexibility to set the interest rate and must use 100 percent own capital to fund the mortgage.*
BPJS (Badan Penyelenggaraan Jaminan Sosial)	Social Security Administrative Bodies	
BPJS Healthcare (Badan Penyelenggaraan Jaminan Sosial)	Social Security Administrative Bodies for Health Insurance	
BPJS Ketenagakerjaan	Social Security Administrative Bodies for Workers	
BPJS Perumahan (Badan Penyelenggaraan Jaminan Sosial)	Social Security Administrative Bodies for Housing	
BPS (Badan Pusat Statistik)	National Statistics Agency	
BP Tapera	Housing Provident Funds	
BSPS (Bantuan Stimulan Perumahan Swadaya)	Home Improvement Assistance	*Grants for home improvement or self-construction for eligible low-income (MBR) households that started in 2006. Grants are in the amount of IDR 15 to 30 million per household. BSPS mostly operates in rural, rather than in urban areas, and operates a community driven development model using facilitators.*

ACRONYM		DEFINITION
BSI	Sharia Bank Indonesia	
BTN	National Savings Bank (state-controlled bank)	
BI	Indonesian Bank	
D		
DG	Directorate General	
DGH	Directorate General of Housing	
DGIF	Directorate General of Infrastructure Finance	
DIPA (Daftar Isian Pelaksanaan Anggaran)	Budget Implementation List	
E		
ESMF	Environmental and Social Management Framework	
F		
FLPP (Fasilitas Likuiditas Pembiayaan Perumahan)	Housing Loan Liquidity Facility	*Provides concessional funding to lenders who provide mortgages at fixed interest rates to consumers at 5 percent per annum for 20 years. Liquidity is 90 percent funded by the GoI (at 0.5 percent cost of fund) and 10 percent by participating banks. The 90 percent capital funding ratio was reduced to 75 percent in August 2018. The program started in 2011.*
FHH	Female Headed Household	
H		
HH	Household	
HREIS	Housing Real Estate Information System	
HPL	Land management rights	
I		
Ijarah	lease contract	
IPs	Indigenous People	
IMBT	Muntakiya Bit Tamlik	
K		
KBR	Home Development Loan	
KPR	Home Ownership Loan	
KRR	Home Renovation Loan	
KIK	Small investment credit	
KOTAKU	City without slum program	
L		
LG	Local Government	

ACRONYM		DEFINITION
M		
MBR (Masyarakat Berpenghasilan Rendah)	Low-income Households	
MoF	Ministry of Finance	
MPWH/PUPR	Ministry of Public Works and Housing	
MMQ (Musyarakah AKAD Mutanaqishah)	diminishing partnership	
Mudharabah AKAD Muqayyadah	Investment tied	
N		
NDC	Nationally determined contribution	
NGO	Non-government organization	
NAHP	National Affordable Housing Program	
O		
OJK	Financial Services Authority	
P		
PDO	Project Development Objectives	
PT (Perseroan Terbatas)	Limited Liability Company	
PT SMI (PT Sarana Multi Infrastruktur)	An infrastructure financing SOE	
PT SMF	Secondary mortgage finance (SOE)	
PKE (Penanganan Kemiskinan Ekstrim)	Extreme Poverty	
PKS	Cooperation agreement	
PMN	State Equity Participation	
PPJB	Pre-transaction agreement	
PSU	Basic infrastructure	
POJK	Financial Services Authorityregulation	
R		
RKP (Rencana Kerja Pemerintah)	Government Annual Work Plan	
RPJMN (Rencana Pembangunan Jangka Menengah Nasional)	Indonesia's Medium-Term Development Plan	
RPJPN (Rencana Pembangunan Jangka Panjang Nasional)	Indonesia's Long-Term Development Plan	
RTLH	Substandard house	
RT/RW		
Rusunawa (Rumah Susun Sewa)		

ACRONYM		DEFINITION
RP3KP (Rencana Pembangunan dan pengembangan Perumahan dan Kawasan Permukiman)	(Housing and Settlement Development Plan)	
S		
Satker (Satuan Kerja)	Working Unit	
SBUM (Subsidi Bantuan Uang Muka)	Subsidies for Down Payment Assistance	*Down payment assistance program (of IDR 4 million) used in conjunction with FLPP and SSB to lower the down payment*
SLF (Sertifikat Lain Fungsi)	Occupancy Certificates	*a certificate issued by the local government or central government to certify the feasibility of a building's function before it is put to use.*
SOE	State-Owned Enterprise	
SOP	Standard Operating Procedure	
SSB (Subsidi Selisih Bunga)	Interest Rate Subsidy	*Interest rate subsidy that buys down the mortgage market rate to 5 percent, which is fixed for the life of the loan. Unlike FLPP, capital funding for SSB is the responsibility of participating lenders.*
SMF	Sarana Multigriya Finansial	
T		
Taspen	State-owned company that handles pension funds	
Tapera (Tabungan Perumahan Rakyat)	Housing Provident Fund	
TA	Technical assistance	
U		
UMP	Provincial Minimum Wage	
UMK	City/Regency Minimum Wage	
W		
WB	World Bank	

Annex

The Government's Key Housing Programs

The Government of Indonesia has implemented several key programs in its efforts to tackle the housing challenges across the country.

FLPP, a mortgage liquidity facility for homeownership, has been in place since 2010. This is a credit-linked subsidy designed to support homeownership by addressing the quantitative housing backlog through affordable mortgage finance. FLPP provides concessional funds to lenders, who offer mortgages at fixed interest rates to end-users at a 5% fixed rate p.a. for 20 years. Liquidity is 75%-funded by the Government (at 0.5% for 20 years) and 25% by the participating banks and PT Sarana Multigriya Finansial (PT SMF). As a subsidy, FLPP has high per-unit fiscal and economic costs in today's value (or Net Present Value).

Another credit-linked subsidy, an interest rate subsidy (Subsidi Selisih Bunga, SSB), was introduced in 2015 as part of Program Sejuta Rumah (PSR). SSB subsidized the interest rate paid by consumers on eligible mortgages, enabling households to pay a fixed 5% rate for 20 years. The participating lenders provide capital for SSB, which is the primary difference between FLPP and SSB.

The BSPS home-improvement grant program has been in operation since 2006 and is addressing the qualitative backlog with 200,000 units improved per year on average. The government provides IDR 20 million (USD 1,300) assistance to support home improvement and the reconstruction of substandard homes for approximately the bottom 40th income percentile of the population. BSPS is an efficient and well-targeted government housing program.

On top of the two main programs, the government also provisions a small number of Rusunawa units for vertical public rental housing, delivering 8,000 units per year for beneficiaries who earn less than the provincial minimum wage (UMP) with rents set at 30% UMP or lower.

The indicators defining livable/ substandard housing in RPJMN

The Mid-Term National Development Plan (Rencana Pembangunan Jangka Menengah Nasional, RPJMN) for 2015-2019 defined housing as substandard when it met at least five out of the following seven criteria:

(i.) poor access to drinking water,

(ii.) poor access to sanitation,

(iii.) poor floor materials e.g. soil,

(iv.) poor roof materials e.g. palm fiber or leaves,

(v.) poor wall materials, e.g. bamboo,

(vi.) overcrowding, with building area per capita less than 7.2 square meters, and

(vii.) no access to electricity.

Assessed against more stringent SDG and housing disaster resilience criteria, the 2022-2024 RPJMN revises the previous definition and states four main features for a house to be considered substandard:

(i.) poor structural integrity,

(ii.) lack of access to sanitation,

(iii.) lack of access to clean water, and

(iv.) overcrowding or lack of space adequacy.

