

Green and Affordable Housing for Low-Income People: Case Study BP2BT Housing in Palembang

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Abstract: Access to housing finance is currently inadequate to reach low-income communities, especially the informal sector. Through an evaluative descriptive method, it will be described how the Ministry of Public Works and Public Housing with the Regional Government provide adequate, safe, affordable, and sustainable housing for low-income communities, especially the informal sector in Palembang City. The purpose is to find out the strategies and constraints during the implementation of development projects. The results reveal that Government support such as subsidies and the provision of infrastructure and facilities can increase the affordability of low-income people to own a house. The green building concept applied to the project also has the potency to improve the bankability of low-income communities so that they can be more prosperous. However, development projects do not necessarily run smoothly due to banking policies and technical regulations that hinder project development. Given that housing provision is dedicated to low-income people in the informal sector, it will be interesting to discover how the stakeholders can finally support and agree on a financing scheme for them.

Keywords: Green Building; Affordable housing; Low-Income People; Informal Sector

1. Introduction

The existence of uninhabitable housing in big cities is a phenomenon that many developing countries face. It is due to uncontrolled urbanization.¹ Many of them work in the informal sector and then live around river banks, along railroad tracks, unused land, under bridges, etc.²

The majority of people who live in uninhabitable houses in slum areas are low-income people (LIC). They are not bankable as the number of assets and a steady income to pay monthly installments. Therefore, government intervention is needed to increase the capacity of the LICs' the informal sector in owning a house through taxes, subsidies, and regulations.³

The regulation of Law no. 1 of 2011 on Housing and Settlement Areas has mandated that the Government is responsible for the development and the obligation to meet the housing needs for LIC. The Government's

¹ Simorangkir, Y. V., Octavia, S., & Raubaba, H. S. (2019, October). Slums as a result of urbanization. In IOP Conference Series: Earth and Environmental Science (Vol. 343, No. 1, p. 012230). IOP Publishing.

² Putra, B. D., & Pontoh, N. K. (2019). Perbaikan Kawasan Perumahan Kumuh dengan Mempergunakan Dana Komersial (Studi Kasus: Kawasan Tamansari, Bandung). PLANNERS INSIGHT: URBAN AND REGIONAL PLANNING JOURNAL, 1(1), 008-015.

³ Malpezzi, S. (2014). Global Perspectives on Housing Markets And Policy. Working Paper #3, 22.

responsibilities can be realized through the provision of financial assistance or facilities in obtaining housing, and housing construction, among others, can be in the form of subsidies, tax incentives, land provision, infrastructures and facilities, and others. The Government must also carry out housing management which includes: planning, building, utilizing, and controlling housing. The housing referred to includes houses or completed along with infrastructure, facilities, and public utilities.

In addition, Presidential Regulation Number 18 of 2020 on the National Medium-Term Development Plan (RPJMN) of 2020-2024 has also mandated that one of the development agendas strengthen basic service infrastructure includes access to adequate, safe, and affordable housing. Also, in line with the fulfillment of the targets of the 17 Sustainable Development Goals (SDGs). One of the achievements is to gradually increase people's access to affordable and safe housing and settlements to create an inclusive and livable city.

Development in the housing sector has a very high multiplier effect on other sectors such as the materials industry, logistics, services, finance, and banking.⁴ It can be seen from the large percentage of the real estate sector (housing) to the Gross Domestic Product (GDP) of 2.82% in the second quarter of 2021.⁵ Therefore the government's development should be focusing on adequate, safe, and affordable housing for low-income people can have a massive impact not only on the welfare of low-income people but also on the national economy.

The Indonesian government has made various strategic programs and policies in the housing sector, both through direct intervention (providing, improving quality, facilitating financing and housing financing subsidies, as well as providing housing infrastructure) and indirectly (through the role of the community and the private sector) in the context of fulfilling housing adequate, safe, and affordable. The subsidy is required to increase access for all LIC segments to have adequate and affordable houses. But in reality, it has not been able to reach the informal sector optimally.

The low level of the informal sector receiving housing subsidies is assumed to be due to the lack of financial access to those providing subsidies, in this case, banking institutions. In addition, the lack of use of the latest construction technologies, and environmentally friendly building materials are believed to hinder the financing and provision of housing for the LIC informal sector. Therefore, in this study, a green and affordable housing pilot project in the city of Palembang supported by a savings-based housing finance subsidy facility (BP2BT) was taken as a case study to describe the implementation of policies and constraints in the field.

⁴ Perwitasari, D., Fahreza, A., & Ririh, K. R. (2021). Analisis Percepatan Waktu Proyek Perumahan Menggunakan Metode PERT dan Fast Track. *RekaRacana: Jurnal Teknil Sipil*, 7(1), 226.

⁵ Badan Pusat Statistik. (2021). *Konstruksi Dalam Angka 2020*. <https://doi.org/6301005>.

2. Method

The method used in this article is descriptive evaluative. Descriptive research is a systematic, actual and factual description of a phenomenon that is observed.⁶ Then an evaluative approach is used to observe whether it can be maintained, improved, or even discontinued from the field information.⁷ Meanwhile, the phenomenon observed in this article was the BP2BT housing project in Palembang City.

3. Housing Finance Subsidy Policy

Subsidized Housing Financing Sector the MPWPH has currently issued four housing finance subsidy policies, namely the Housing Financing Liquidity Facility (FLPP), Interest Difference Subsidy (SSB), Down Payment Assistance Subsidy (SBUM), and Savings-Based Housing Financing Assistance (BP2BT). The housing finance subsidy policy is committed to LIP. To obtain such subsidy, LIPs who meet the requirements can apply following the provisions of the legislation. The subsidies are required to increase access for all LIP segments to have adequate and affordable houses Policy.

3.1. Housing Subsidies

Based on MPWPH Ministerial Regulation Number 20 of 2019 on Ease and Assistance for Home Ownership for Low-Income Communities, FLPP is a housing financing liquidity support facility provided to LIP to be able to provide long-term low-cost funds to support homeownership loans for LIP to obtain landed housing and flats through house ownership credit (KPR Sejahtera). Meanwhile, SSB is an interest rate reduction subsidy that aims to increase LIP's affordability to finance the ownership of landed houses and flats through SSB house ownership credit. SBUM itself is a government assistance program given to LIP to fulfill part or all of the down payment for housing acquisition.

As shown in Figure 1, the realization of housing finance subsidies in 2021, that FLPP subsidies are more attractive to LIP than BP2BT subsidies. It is due to the segmentation of the BP2BT was focused on the informal sector. Meanwhile, the informal sector always experiences problems in getting access to housing finance subsidies because of the bankability factor.

⁶ Suprayogo, I., & Tobroni. (2001). *Metodologi Penelitian Sosial-Agama*. Remaja Rosdakarya.

⁷ Arikunto, S. (2010). *Prosedur penelitian: suatu pendekatan praktik*. Ed. Rev. Jakarta: PT Rineka Cipta.



Figure 1. Realization of Housing Finance Subsidies 2021 (Source: Primary data, Sept 2021)

Then, in this study will focus on discussing BP2BT. Based on the Minister of MPWPH Regulation Number 13 of 2019, BP2BT is a government subsidy program given to LIP that already has savings to fulfill part of the down payment for the acquisition of a house, part of the down payment for the acquisition of a house and part of the funds for self-help housing development through credit or financing from the implementing bank. The requirements for LIP who will receive BP2BT include that they have never received a housing subsidy from the Government, have never owned a house and own land with legal rights, and are not in dispute. The regulations governing regional zones, the amount of income for the target group, limits on the lowest balance of applicant savings, limits on the price of landed houses and condominium units or the cost of building self-help houses, limits on land area and floor area of houses, limits on BP2BT funds and the implementation index for BP2BT are regulated through a Decree of the Minister of MPWPH Number 857 of 2017.

The BP2BT subsidy has not been able to reach the LIP in the informal sector optimally. When referring to data from the Central Statistics Agency (2021), of the total 131.06 million people working in Indonesia, the majority (59.62%) are informal sector workers (78.14 million people).⁸ This percentage shows that there is an increase in the number of people working in the informal sector when compared to conditions in February 2020 (56.64%), but decreased when compared to the period August 2020 (60.47%) as shown in figure 2, the informal sector has enormous potential for multiplier effects than the formal sector.

⁸ Badan Pusat Statistik, Loc. Cit.

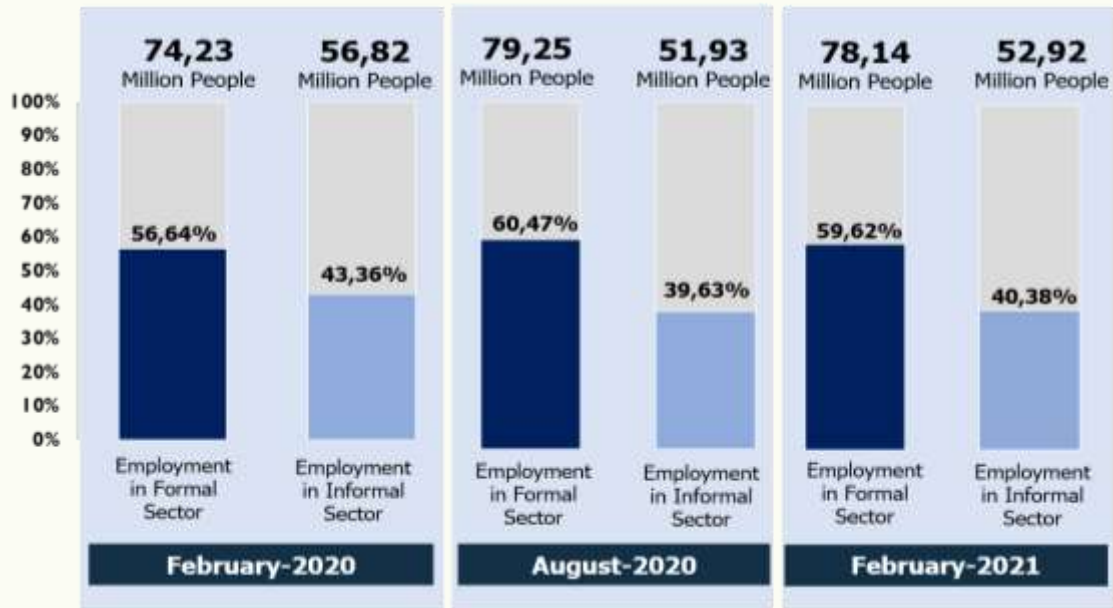


Figure 2. Percentage of Employment in Formal and Informal Sector (Source: Primary data, Sept 2021)

The low level of the informal sector such as the profession of civil servants, army, police, self-employed, freelancer, and others who receive housing subsidies as shown in Figure 3, is thought to have occurred due to the lack of financial access in the sector to those providing subsidies, the bank institution. This is because the informal sector is considered to have a low level of eligibility for housing loans (low bankability) compared to the formal sector. Therefore, Indonesia, which has 59.62% of informal sector workers, needs to get access to affordable housing finance.



Figure 3. Realization of Housing Financing Subsidies by Profession (Source: Primary data, Sept 2021)

3.2. Banking Policy

In obtaining a credit facility, LIP needs to submit a credit application until the credit is received. However, granting credit to LIP can cause losses or risks for banks as creditors if basic things are ignored. To gain confidence and protect the interests of the bank, the bank must conduct a careful assessment known as the 5C principle.⁹

The 5C principle, which includes: character, capacity, capital, collateral, and condition of the economy is an aspect that is expected to exist in LIP so that it is eligible to be given credit. Character includes LIP's honesty in providing information and LIP's seriousness in arranging installments until they are paid off. Meanwhile, the capacity is shown by LIP in paying installments in accordance with the credit agreement, being on time in payment, and still being able to meet other needs other than the need to pay the credit. The capital aspect can be seen whether the customer has deposited in banks, including deposits in other banks, whether they have a fixed income to pay installments, and have other businesses as a source of income for customers.

Customer collateral can be seen from the guarantee provided in accordance with the amount of credit to be given, the guarantee is supported by complete documents and is not in a legal process. While the condition aspects that must be considered include that the credit received is for business development, whether to pay off obligations, and because of financial problems. These aspects are very decisive for the Implementing Bank in deciding whether the credit is appropriate or not appropriate to be given to customers in the hope that the credit provided is correct and on target.

Following Indonesia Central Bank Regulation No. 9/14/PBI/2007 on Debtor Information System, the local bank is responsible for reporting to Central Bank related activities the provision or distribution of credit facilities to debtors (LIP). Based on the report, Central Bank will supervise and monitor every activity such as lending. It is fundamental because the Debtor Information System contains customer data and information.

The implementation of the precautionary principle is required in entering into credit agreements between debtors and creditors. Therefore, it is necessary to record information in the Debtor Information System that includes a history of smooth or non-performing credit payments (collectability) of the debtor, commonly referred to as BI Checking. In its implementation, data on prospective debtors are checked through BI checking and submitted by banks that provide credit financing to Bank Indonesia in a complete, accurate, current, complete, and timely manner. BI checking contains the principal data of the debtor, the owner column, the credit facilities that have been given, the credit or financing column, the collateral, and the guarantor.

⁹ Wahyuni, N. (2017). Penerapan prinsip 5c dalam pemberian kredit sebagai perlindungan bank. *Lex Journal: Kajian Hukum & Keadilan*, 1(1).

In short, BI checking is a report issued by the Indonesia Central Bank that contains the credit history of prospective debtors to banks or non-bank financial institutions recorded in the Debtor Information System. From it, the bank will have loan collectability for prospective debtors who want to apply for credit. It will be taken into consideration in the decision-making or the determining factor of whether the financing application for the prospective debtor is approved or not.

The main obstacle that can cause the credit application process by the debtor is not approved because of the BI Checking record of the prospective debtor. If the debtor's performance is included in the non-current credit category, there is a possibility that the credit application will be rejected for further submissions. The possibility is that the prospective debtor still has other credit dependents, such as motorcycle loans or credit for other consumer goods.

4. BP2BT Green and Affordable Housing Pilot Project

The green and affordable housing pilot project in Palembang City is the first subsidized housing pilot project in Indonesia that applies the green building concept. This project is a collaborative project between MPWPH and the Government of South Sumatera to provide housing for LIP, especially the informal sector. The aim is to strengthen commitment in realizing the mandate of Law Number 16 of 2016 on Ratification of the Paris Agreement to the United Nations Framework Convention on Climate Change and to support the implementation of The One Million Houses Program launched by MPWPH as a form of fulfillment of the 17 targets of the Sustainable Development Goals (SDGs). The success of this project is expected to be implemented throughout Indonesia so that the dream of every LCP to own a house with the green and affordable concept can be realized.

4.1. Green Building and Housing Development Regulation

The MPWPH always supports programs that aim to achieve the Sustainable Development Goals (SDGs). Through the existence of 2 regulations that support the implementation of green building are Ministerial Regulation Number 9 of 2021 on Guidelines for the Implementation of Sustainable Construction and Ministerial Regulation Number 21 of 2021 on Performance Assessment of Green Buildings. The regulation states that a house said green building if it conceives to meet current and future economic, social and environmental goals and meet technical standards and performance that is achieved significantly in saving energy, air, and other resources.

All houses in this pilot project can be said green building because they have met the technical standards and specifications in the Decree of the Minister of Settlement and Regional Infrastructure No. 403/KPTS/M/2002 on Technical

Guidelines for the Construction of Simple Healthy Homes and others. In addition, every provision in the MPWPH's green regulation has been fulfilled very well. Even if the design of the house is measured and analyzed using green assessment software (EDGE Software), the results have met the assessment criteria according to saving energy, air, and other resources.

Software Excellence in Design for Greater Efficiencies (EDGE) is an official product issued by the International Finance Corporation (IFC) as part of the World Bank group. EDGE is required to make it easier to design and certify resource-efficient buildings and zero carbon. As for this pilot project, design testing simulations have been performed to meet the criteria by the EDGE standard with a target of 35% energy savings, 21% water savings, and 49% materials using environmentally friendly materials and less energy.

To achieve the target of building quality, sustainable and affordable BP2BT houses for low-income families, implementing the BP2BT construction houses in South Sumatra Province will use the latest types of materials and home construction technology. One of them is using Prefab Panel Board Precast (PPBP). PPBP is lightweight concrete in the form of a mixture of cement-Styrofoam and certain chemicals which are mixed in such a way as to produce a good mixture, then coated with fiber cement on the two outer sides, so that it can be used as a wall or floor of a building, as a substitute for walls and not conventional..

The use of PPBP in the construction of simple houses has conceivable to have high adaptability to facilitate the implementation of house construction.¹⁰ In addition, it can optimize time and costs during construction.¹¹ Even PPBP can save the use of resources and energy, reduce construction waste and improve the function and performance of house buildings.¹²

It is concluded that the use of PPBP in the construction of simple houses has many advantages which include aspects of cost, quality, time, and sustainability. Referring to the Decree of the Minister of Settlement and Regional Infrastructure No. 403/KPTS/M/2002, there are only types of wall materials such as blocks, red bricks, and wood/boards that can be used in the

¹⁰ Rahim, A. A., Hamid, Z. A., Zen, I. H., Ismail, Z., & Kamar, K. A. M. (2012). Adaptable housing of precast panel system in Malaysia. *Procedia-Social and Behavioral Sciences*, 50, 369-382.

¹¹ Ma, T., & Liu, Y. (2021, June). Prefabricated House Precast Part Project Scheduling Optimization Problem Based on Network Planning. In *IOP Conference Series: Earth and Environmental Science* (Vol. 791, No. 1, p. 012076). IOP Publishing.

¹² Li, L. X., & Li, P. S. (2015). New development of building energy efficiency---Precast concrete structure (PCS).

construction of simple houses. So that the use of PPBP in the pilot project of green and affordable housing in Palembang was decided not to be used by the Implementing Bank because it did not comply with the provisions of the Ministerial Decree of Kimpraswil No. 403/KPTS/M/2002 unless there is a permit from the MPWPH c.q. The Directorate General of Human Settlements in the form of a PPBP technology clearing certificate as material for the construction of BP2BT subsidized houses in South Sumatra Province.

PPBP technology has great potential to obtain a certificate of passing technology clearing. However, a long process is required to test the technology that can delay the construction of green and affordable housing pilot projects in Palembang. While the success of this project, it is hoped that later it will be replicated in many areas to accelerate the target of building BP2BT houses.

Therefore, the target of mass housing development such as the BP2BT housing program can be achieved successfully if it replaces the conventional methods of planning and implementation of house construction by adopting alternative construction technologies such as PPBP that are used on a large scale but is effective and economical. It is time for the public and private sector's concern in providing housing for low-income communities to jointly encourage the use of sustainable construction technology based on the socio-economic feasibility and environmental impact of house construction. Also, the Ministry of Public Works and Public Housing as the person in charge of housing construction and financing to immediately complete and update the standardization in housing development so that it can be a reference in making a rule or regulation, especially regarding the standard of an LIP simple house.

4.2. Affordability for Low-Income People Segmentation

The Regional Government said that until 2021, there are 363,829 homeownership backlogs in South Sumatra Province and the highest concentration of homeownership backlogs in Palembang City with 99,730 units. So, to meet the affordability criteria, this pilot project considers the purchasing power of the community, especially the LIP that they can buy decent and affordable houses. A house is categorized as affordable or not based on the household income limit in the metropolitan area. The decile data and segmentation based on income in detail can be seen in Table 1.

Table 1. Decile Income Percentage Range Concept.

Household Income Range (IDR Mil.)	Desile Metro	Household Cumulative	%
1,6 - 2,6	D1	180.733	10
2,6 - 3,4	D2	361.473	20
3,4 - 4,1	D2-D3	542.210	30
4,1 - 4,9	D3-D4	722.946	40
4,9 - 5,7	D4-D5	903.683	50
5,7 - 6,6	D5	1.084.419	60
6,6 - 7,7	D6	1.265.156	70
7,7 - 9,5	D6-D7	1.445.892	80
9,5 -13,9	D7-D9	1.626.629	90
>13,9	>D9	1.807.365	100

Source: Primary Data (Updated Sept, 2021).

In the green and affordable housing pilot project as many as 2500 housing units in Palembang City, consumer segmentation is targeted at LIP, mainly 2 (two) segments, namely the bankable formal sector with an average income of IDR 3 million - IDR 6 million per month (D2-D5) and the informal sector with an average income of IDR 2 million - IDR 6 million per month (D2-D5). The house price is determined at Rp.100 million with the help of BP2BT Rp.40 million so that the ceiling for bank mortgages that become MBR's responsibility is Rp.60 million for type 36/72 m2 to type 36/150 m2 with monthly installments of Rp.500 thousand to Rp.600 thousand. The house prices and the House ownership credit scheme are required to increase the ability of MBR to own a house.

4.3. Housing Financing Partnership Scheme

Building a green building does require a slightly higher construction cost. However, this green building will be very beneficial for LIP because by saving energy, water, and other resources, the costs incurred by LIP will be lower. Research conducted by the World Bank and the South Pole shows that investing 3-7% in green building construction can help save up to a third of MBR's income per month each year.

In addition to the economic benefits, this green building is also very beneficial for the health of its residents. Because green buildings have designs that can maximize good air circulation, optimize natural lighting, use non-toxic and environmentally friendly materials, and others. For this reason, in this pilot project, a financing scheme will be designed that can finance the construction of

green but affordable houses for the informal sector LIP who have constraints in terms of bankability, see Figure 4.

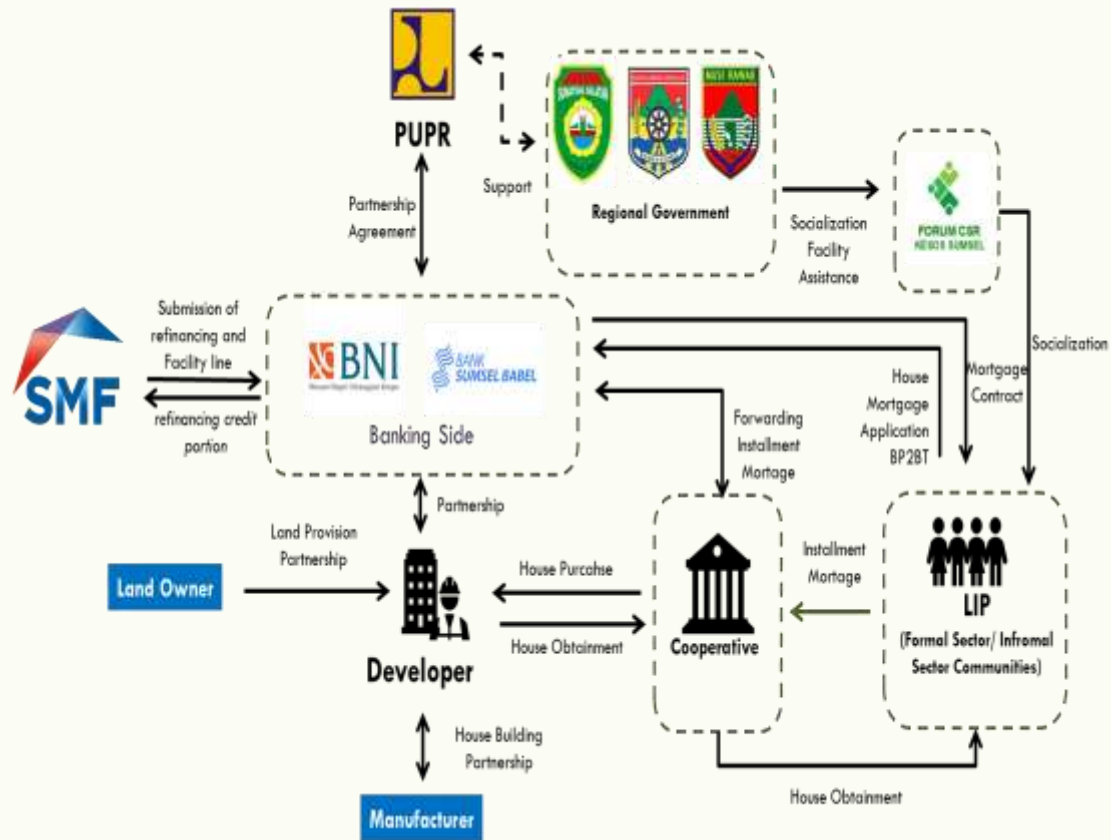


Figure 4. Housing Financing Partnership Scheme (Source: Primary data)

All parties to the scheme have a significant role in realizing green and affordable housing for the LIP informal sector. The role of the MPWPH, namely (a) document testing of the target group; (b) determination of beneficiaries; (c) distribution of BP2BT portion of funds to regional development banks; (d) formulation of regulations related to technical standards; (e) Formulation of regulations related to the BP2BT program; and (f) assist in green building certification. The role of the Regional Government, namely (a) with the MPWPH to support the provision of infrastructure facilities; (b) support for the BP2BT program for LIP by using regional development banks as the channeling institution and SMF as the provider of long-term funds.

The role of primary and secondary financing institutions, such as banks and PT. SMF, namely (a) verification of target group documents; and (b) credit analysis of the target group; (c) approval of credit agreement; and (d) provision of medium-long sources of funds based on the facility line. The goal is to avoid a maturity mismatch on long-term financing. The roles of cooperatives are (a) collecting and assisting the fulfillment of LIP credit documents; (b) issue a BP2BT house ownership credit recommendation letter; and (c) make daily/weekly deductions.

5. Conclusion

The green and affordable housing pilot project in Palembang is an effort by MPWH and the local government to create adequate, safe, and affordable housing for all low-income communities, especially the informal sector. Government support such as BP2BT subsidies, provision of infrastructure and facilities, also the implementation of the green building concept to the project has improved the affordability not only at the time of purchase but also during house maintenance. Collaboration between primary, secondary, and cooperative financing institutions is needed to minimize the 5C risk and the circumstance of a maturity mismatch in housing finance. Meanwhile, the acceleration of house construction for LIP is limited because the current regulation regarding the building of simple houses (Ministerial Decree of Kimpraswil No. 403/KPTS/M/2002) has not accommodated the latest construction methods and house materials.

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