

The Potential of the Land Value Capture Scheme in the Perspective of Disaster Risk Funding

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Abstract

Disaster risk refers to the possibility of a loss of life, assets, health, and livelihoods to the community in the future, so it must be reduced, one of which is by implementing disaster risk management. The disaster risk management financing scheme is crucial considering the number of funds needed. This research serves as an initial exploration into alternative funding options by investigating the potential benefits of implementing the Land Value Capture (LVC) scheme. The driving question of this study focuses on the advantages of employing the land value capture concept for disaster risk funding. To address this question, a descriptive qualitative research methodology is employed, encompassing an analysis of LVC in general, a funding analysis for disaster risk management, and the implementation of LVC for disaster risk reduction specifically in Indonesia. The findings of this study reveal that the Land Value Capture (LVC) scheme can serve as an additional strategy for funding disaster risk management in Indonesia. Through the proposed framework, the integration of LVC with disaster risk financing and insurance is facilitated.

Keywords: land value capture; disaster risk management; increase in land value; alternative funding, the land value

Introduction

Disaster risk refers to the likelihood of a loss of life, assets, health and livelihoods to a community in the future, determined probabilistically by hazard, exposure, vulnerability, and capacity (Anelli et al., 2022; Egawa et al., 2021; Kumpulainen, 2006; UNISDR, 2009). In Indonesia, the level of disaster risk in 514 districts/cities is in the medium and high-risk classes, with the respective percentages being 57% and 43% (BNPB, 2022). Therefore, disaster risk management needs to be carried out by implementing policies, processes and actions to prevent new risks, reduce existing disaster risks, assist recovery from disasters, and manage residual risks (Aitsi-Selmi et al., 2016; Gevaert et al., 2021; Rana et al., 2021). This will help strengthen disaster resilience (DRR) in Indonesia.

In disaster risk management, funding is needed for every pre-disaster, during and post-disaster process (Havko et al., 2017; Rana et al., 2021; Thi et al., 2022). Currently, funding is focused on post-disaster recovery and reconstruction processes (ADB, 2020). Funding that focuses on pre-disaster processes by creating risk reduction strategy programs can have a much more significant impact (ADB, 2020). Funding in disaster risk management (DRM) makes previously disaster-prone locations safer and more attractive to live in, increasing the willingness of households and businesses to invest (Avner et al., 2021, 2022). This should translate into increased land values, higher productivity, higher economic output, higher incomes and a better life (Avner et al., 2022).

Taking into account the large amount of funds needed to fund disaster risk management, there is an opportunity for cooperation schemes between the public and the private sector, one of which is through a land value capture scheme (Havko et al., 2017; Li & Love, 2022). This scheme is a series of mechanisms used to monetize the increase in land value that arises as a result of infrastructure development in an area, which can be through taxes, fees,



improvement contributions, levies, and other financial tools (ADB, 2021; Canelas & Noring, 2022; Friendly, 2017; McAllister et al., 2018a; Sun et al., 2017a). The principle of this scheme is that the value of land is determined not only by intrinsic value and private investment but also by other external factors, including changes in land use regulations, public investment in local infrastructure and services, as well as general population and economic growth (Suzuki et al., 2015).

In Indonesia, APBN's ability to allocate funds for disaster risk management is only IDR 3-10 trillion annually (Kemenkeu, 2018). So that another scheme is needed to support disaster risk management funding sources so that funding can be sufficient. This research aims to examine the potential for developing a land value capture scheme in the perspective of disaster risk management financing. The research to be carried out considers several aspects, including economic aspects, geospatial information aspects, as well as aspects of land use and utilization, tenure and development.

Methods

The research driving question is to explore the potential benefits of implementing the land value capture concept for disaster risk funding. The study employs a descriptive qualitative research methodology. The choice of a descriptive qualitative approach is based on conducting literature studies using various sources of reading material. These reading sources are gathered and utilized as qualitative data to analyze the challenges and barriers in implementing land value capture for disaster risk funding. The analysis method combines the descriptive approach with SWOT analysis for a comprehensive examination of strengths and opportunities, along with the 5W1H (Who, What, When, Where, Why, and How) framework. The research covers multiple aspects, including social, economic, land, and geospatial elements, which are thoroughly discussed and examined.

Results and Discussion

Land Value Capture (LVC) in General

The rationale for Land Value Capture is the efforts of the government and the public to capture increases in land values (Suzuki et al., 2015). The purpose of capturing the increase in land value is to provide benefits for landowners who receive the increase in land value due to many factors and for the public sector to also receive benefits from the increase in land value after public sector investment, for example in a rapid transit system (Garza & Lizieri, 2016; Higgins & Kanaroglou, 2016).

Land value capture can also serve as a means for public agencies and governments to enhance their revenue (Alterman, 2012; Germán & Bernstein, 2018). This increase in income can later be used to help fund better development and to help fund social issues, for example providing post-disaster assistance to surrounding communities in the event of an unexpected disaster (Havko et al., 2017; Muñoz Gielen & Lenferink, 2018).

Some researchers say that LVC adopts thinking based on economic theory, value capture, and land value taxation efficiency (Crook & Whitehead, 2019; Rebelo, 2017). Land value addition tax will not bring changes to the land market as long as the land tax imposed is lower than the added value due to an increase in land value (Crook & Whitehead, 2019). LVC streamlines land use, preventing excessive consumption of infrastructure and land, and land speculation (Farris, 2016; Sharma & Newman, 2018). Directing land use by imposing different tax rates or fees is also one of the goals or benefits of implementing LVC (Smolka et al., 2000).

The following describes the concept of Land Value Capture which contains, among other things, the definition of Land Value Capture, the causes of increases in land prices/land values, the instruments used, and the purpose of using the results from Land Value Capture.

Definition of Land Value Capture

Land Value Capture (LVC) is a way to capture the increase in land value caused by causative factors. An increase in the value of existing land is obtained if there is value creation of the land. The researchers revealed that many factors influenced the increase in land value both from increasing transportation accessibility, public sector policies, and government policies on land use (ADB, 2021; George Hazel Consultancy, 2013; McAllister et al., 2018a; Wang et al., 2020).

There is Land Value Capture can be a fundamental source of income to suppress planning objectives, urging their use for climate change mitigation and adaptation (Dunning & Lord, 2020). In practice, LVC involves the public sector's 'recovery of some or all of the increase in land value or the "windfall" landlords receive from public investments in infrastructure or administrative changes in land use norms and regulations, through taxes, fees, repair contributions, levies, and other financial tools (Friendly, 2017).

Causes of increase in land prices/land values

There are several factors that contribute to the increase in land prices or land values. These factors can vary depending on the specific location and market conditions, but some common causes include Demand and Scarcity, Location and Accessibility, Economic Growth and Development, Land Use Regulations and Zoning, Infrastructure and Public Investments, Speculation and Investment, Natural and Environmental Factors, Market Forces and Sentiment. These factors often interact with each other and can vary in their influence depending on the specific location and context.

Research on Land Value Capture (LVC), shows that an increase in land value occurs as a result of actions other than landowners, especially encouragement from the public sector (Vejchodská et al., 2022). Provision of public infrastructure, generally as a cause of increase in land value that appears in many studies, which often emphasizes that the government is the provider of public infrastructure (Nguyen et al., 2017). Several researchers have focused their research on transportation-related infrastructure associated with land value capture (Enoch et al., 2005; Ju et al., 2011; Medda, 2012; Mittal & Kashyap, 2015). One mode of transportation that has been widely studied is the railroad (Chang & Phang, 2017; Sun et al., 2017b; Suzuki et al., 2015).

What influences land value is not only the provision of public infrastructure, but decisions on development control by planning authorities (Vejchodská et al., 2022). Especially in matters relating to land use regulations and regulation of land use patterns (Garza & Lizieri, 2016; Hu et al., 2019; Rebelo, 2017; Wu et al., 2019). Several researchers revealed that changes in building rights or land use rights in connection with planning greatly affect land value (Havel, 2017; McAllister et al., 2018b; van der Krabben & Needham, 2008).

In addition to public infrastructure and land use, general economic developments and trends in society as a whole have also led to increases in land values (Rebelo, 2017, 2022). One example of a community trend that causes an increase in land value is the trend of fulfilling people's needs for beautiful scenery so that many developers, especially in the tourism sector, create new tourist spots thereby increasing land value in the area and the surrounding area. Later in the development of research around the economy, revealed that the value of land in urban areas rose as a result of community efforts or market forces which made a good link with how the value of land is perceived in the economic literature (Smolka et al., 2000).

Instruments used in LVC

The variety of instruments used to capture land values is wide. Alterman (2012) makes a distinction between instruments that limit private ownership and manage land in public hands, and those that leave land in private hands but capture some or all of the increased land value through direct or indirect instruments. The instruments are sorted into the following groups: (i) recurring and other taxes, (ii) non-recurring obligations related to land

development; (iii) levies related to added value of land through planning; (iv) government ownership of land or development rights, and (v) other instruments. Not all instruments systematized here must be agreed upon as Land Value Capture instruments.

Recurring taxes include single rate property taxes, pure land value taxes, split rate property taxes (a tax on land value in its broadest sense), financing increase taxes, and transaction taxes. These taxes are annual or recurring levies for the same piece of land when ownership changes (Vejchodská et al., 2022). A single rate property tax applies the same tax rate to land and its improvements, i.e. buildings (Chapman, 2015; Gihring, 2001); a pure land value tax imposes a tax rate on land only (Wenner, 2018); Split-rate property taxes charge a higher rate for land and a lower rate for repairs (Gihring, 2001; Rybeck, 2004). In some countries, such as the United States, United Kingdom, and Japan, local governments rely heavily on property taxes to fund public expenditures—16–25 percent of local revenues come from these taxes (Suzuki et al., 2015). Tax increase financing by capturing the expected future increase in property tax values. This results from local area investments, which the purpose of taxation is to finance infrastructure, services and debt (Chapman, 2015). Moreover, transaction tax is a tax on income generated from the sale of real estate (Crook & Whitehead, 2019; Muñoz Gielen & Lenferink, 2018), capital gains tax and tax on transfer of title or stamp duty.

Obligations related to land development, come from the cost of providing the required infrastructure and other investments, such as (1) providing affordable housing or usually called the developer's contribution (McAllister et al., 2018b), (2) developer obligations (Alterman, 2012; Muñoz Gielen & Lenferink, 2018), (3) planning obligations (Crook & Whitehead, 2019), or specifically in (4) developer costs and impact costs (Murray, 2018; Smolka et al., 2000). Developer liability can be in cash or in kind and is negotiable or non-negotiable.

Payments derived from the added value of land are called improvement taxes, which in the Swiss context, are taxes levied on the added value of land created by zoning (Cervero & Duncan, 2002). This repair tax or levy has also been used in the UK (Suzuki et al., 2015). By using surcharges, the government seeks to require property owners who directly benefit from public investment to pay for their costs (Suzuki et al., 2015). The main challenge in implementing an improvement tax is estimating the increase in land value with precision (Suzuki et al., 2015). For example, estimates of the value of land created by the extension of the London Underground's Jubilee Line range from £300 million (\$484 million) to £2.7 billion (\$4.4 billion), according to the commission's report. Colombia has long had a repair levy, *contribucion de valorizacion* (valorized contribution), for infrastructure investment (Suzuki et al., 2015).

Government ownership of land or rights to development may result in the use of instruments that capture all increases in land value through planning, with the aim of covering the cost of infrastructure and services that have been built (Muñoz Gielen & Lenferink, 2018; van der Krabben & Needham, 2008). These instruments include the sale of development rights (Mathur, 2015), selling land that can be developed or renting land (Hu et al., 2019) by public authorities. In addition, the government can acquire land for development through voluntary transactions (Chapman, 2015; Crook & Whitehead, 2019) or by using obligatory purchases, for example land expropriation (Suzuki et al., 2015), or even nationalized entire lands (Alterman, 2012).

Instruments for capturing land values that are rarely discussed include co-development mechanisms, i.e. partnerships between a public agency and a private entity to develop an area (Chapman, 2015; Nguyen et al., 2017). Some authors also consider land readjustment as a value capture tool (Alterman, 2012; van Soest, 2021). With land price adjustments, some land parcels can be turned over to a public body, as in the German scheme which captured a portion of the increase in value (van Soest, 2021). In addition, several authors (van Soest, 2021) also considers user payments as a mechanism to capture land value, whereby users must pay directly to providers of technical infrastructure services such as power, water supply and sewerage, gas, and telecommunications.

Intended use of the results from LVC

The researchers identified discussing the intended use of the money raised as an important element of the LVC approach. One of the goals often mentioned by researchers is the financing of public infrastructure (Suzuki et al., 2015). As an example, (Li & Love, 2022) has studied the procurement of urban rail transportation infrastructure in Delhi and Hong Kong as a form of utilizing the money collected through LVC.

Another frequently emphasized purpose of using the money collected is to cover certain social needs, such as recovering the cost of providing social and affordable housing, and providing disaster response city costs (Havko et al., 2017; McAllister, 2017; Muñoz Gielen & Lenferink, 2018; Rebelo, 2017, 2022). However, there is also a goal that is less frequently discussed, namely covering costs for the needs of the local community in general (Gozalvo Zamorano & Muñoz Gielen, 2017).

From the experience of implementing LVC in several countries, particularly in developed countries like Japan and the United States, challenges in LVC implementation stem from the nature of LVC investments, which are predominantly long-term investments and highly sensitive to policy changes and regulatory complexities. Meanwhile, the implementation of Land Value Capture (LVC) in Indonesia, like any policy or concept, depends on various factors and challenges. Evaluating its realism in the short- and long-term requires considering the current context and potential barriers.

The short-term implementation of LVC in Indonesia would require strong political will and commitment from the government to prioritize urban development and address issues related to land value capture. Developing the necessary regulations to enable LVC may take time, but it is not impossible in the short term. Implementing pilot projects or demonstrations of LVC in specific areas can help showcase the benefits and feasibility of the concept. By focusing on smaller-scale initiatives, it becomes more realistic to assess and refine the implementation approach before scaling up.

Until now, Indonesia's private sector has taken the initiative to independently implement LVC (Land Value Capture) as part of their strategy to maximise profit and achieve a favourable return on investment. Notably, they have undertaken various projects focused on developing new cities, including the impressive Bumi Serpong Damai development led by the Sinarmas Land. This accomplishment is a strong case for considering the implementation of LVC in government projects, particularly those that provide essential infrastructure to mitigate the risks associated with natural disasters. By adopting LVC principles, the government can effectively generate funds for disaster risk reduction efforts while simultaneously fostering economic growth and sustainable urban development.

Long term implementation of land value capture in Indonesia will need a capacity building to build the administrative capacity and expertise to effectively implement this concept in the future. Engaging and gaining support from various stakeholders, including property owners, developers, and local communities, is essential for successful long-term implementation. The implementation will be more feasible if it is approached gradually, starting from learning, adapting, and considering the challenges and the need for coordinated efforts. It is realistic to expect that the full-scale implementation of LVC in Indonesia may take time, particularly in the context of other pressing priorities such as disaster risk finance and insurance.

Disaster Risk Management Funding Analysis

Disaster risk management funding must be made available to recover from the effects of disasters and must always be available. Therefore, alternative funding is needed that can assist in providing it. Adequate funding will have a positive impact, including reducing losses, reducing damage, and reducing socio-economic and fiscal impacts, for example from natural hazards and climate change (Linnerooth-Bayer & Hochrainer-Stigler, 2015; NDRMF, 2021).

In disaster risk funding, it is necessary to increase the selection of appropriate alternatives and instruments in order to generate adequate finances and budgets to cover funds in disaster risk management (Clarke et al., 2017). Today, many governments enter into large financial transactions with the aim of increasing their financial protection against disasters (Clarke et al., 2017). However, these transactions are often carried out without a systematic analysis of the suitability and efficiency of the program and financial strategy used, considering the risks involved (Clarke et al., 2017). This shows that the total financing available depends on the instrument used.

After analyzing the disaster risk financing policies and schemes used by the government so far, as well as assessing disaster risk and fiscal risk due to disasters, it can be concluded that there is a financing gap in disaster management. This gap is caused by the government's inadequate ability to retain disaster financing from APBN/APBD sources, as well as the low level of financing for risk transfer by the government, the private sector, and the community. In addition, high economic losses due to disasters, especially due to the quality of buildings or infrastructure that are not yet disaster-resistant, also contribute to the widening of the financing gap (Kemenkeu, 2018).

This financing gap needs to be narrowed through increasing the government's ability to provide disaster financing, increasing financing for risk transfer, and reducing economic and physical losses through increasing the quality and quantity of preparedness and mitigation activities, including building quality and disaster-resistant infrastructure. Efforts to narrow this financing gap need to be carried out in a structured manner with reference to the Disaster Risk Financing and Insurance Strategy (PARB) (Kemenkeu, 2018).

There are six government priorities in disaster risk financing as follows (Kemenkeu, 2018);

1. Protect BMN and BMD;
2. Protect households and communities exposed to disasters, particularly low-income households;
3. Restore the social life of the people affected by the disaster;
4. Encouraging the role of local governments, communities and the private sector in disaster risk financing;
5. Developing the domestic insurance market; And
6. Protect state finances.

In order to overcome the disaster financing gap and prioritize the government's agenda, the PARB strategy needs to be formulated in a comprehensive manner and integrated with disaster risk management policies. The preparation of the PARB strategy includes identification of existing disaster risk financing policies and instruments, assessment of disaster risk and fiscal risk due to disasters, as well as evaluation of priorities, challenges, and opportunities in disaster risk financing in Indonesia (Kemenkeu, 2018).

The PARB strategy focuses on four main strategies, namely: (i) provision of adequate and sustainable funds for disaster risk financing; (ii) government priority financing in PARB, (iii) improvement of disaster fiscal management and an optimal and transparent distribution channel of funds; and (iv) encouraging participation from local government, private sector and the public in a wider financing scheme (Kemenkeu, 2018). The strategy for providing funds for disaster risk financing which includes diversifying funding sources, establishing reserve funds, and using disaster insurance. In this case, cooperation between the government, the private sector and the community is needed in reducing disaster risk and increasing community resilience (Kemenkeu, 2018).

It can be explained that for frequent disasters or disasters that result in small losses such as earthquakes with a low scale, disaster risk financing will be optimal if it comes from the APBN and/or APBD. Funds that can be used for disaster risk financing at this layer can come from the Disaster Reserve Fund, expenditure allocation and

reallocation, and the Regional Budget. Funds allocated from APBN/APBD are considered sufficient to meet disaster financing in this layer.

Whereas for large-scale disaster financing with large economic, physical and mental impacts, you can use financing or contingency credit from standby funds provided by multilateral development banks such as the World Bank Group (WBG), Bank Asian Development Bank (ADB), and partner countries (Kemenkeu, 2018). This standby loan is used to assist the State Budget in financing the impact of disasters on a massive scale (Kemenkeu, 2018). Standby loans can be disbursed quickly after the government activates this scheme as a result of fulfilling the agreed loan disbursement indicators (triggers) (Kemenkeu, 2018). With this scheme, the government is guaranteed the availability of funds quickly after a disaster occurs (Kemenkeu, 2018).

Another interesting mechanism is Pooling funds. Pooling funds is a special scheme for disaster fund management by a fund management agency that acts as a complement to the state budget. (Kemenkeu, 2018). This scheme is useful for assisting in the financing of large-scale disasters (Kemenkeu, 2018). Meanwhile, major disasters that rarely occur, such as earthquakes and tsunamis, will generally have a large economic impact and require greater financing (Kemenkeu, 2018). Therefore, some of the disaster risk financing at this layer needs to be transferred to other parties such as insurance (Kemenkeu, 2018).

The Indonesian government, through the National Disaster Management Agency (BNPB), has established a disaster insurance program called Asuransi Penanggulangan Bencana Indonesia (APBI). This program provides coverage for both public and private assets against natural disasters, including earthquakes, floods, volcanic eruptions, and tsunamis. Indonesia has also explored the use of catastrophe bonds as a financial tool to manage disaster risk. These bonds are typically issued by the government or insurance companies and transfer the risk of a specified catastrophic event. If the event occurs, the bondholders' principal may be used to provide funds for recovery and reconstruction.

When talking about insurance, we will talk about the value of the subject to be insured. This value is an important part of land value capture. Within the concept of Land Value Capture, there is a land value creation scheme. Insurance will assess how big and important the subject to be insured is. Therefore, efforts are needed to create value for a subject to be insured. Creating value for a subject in land value creation can be done through several ways, including improving the quality or condition of the subject. By improving the quality or condition of the subject to be insured, the value of the subject will increase. For example, by renovating a property or upgrading its facilities, the property's value can increase.

Increasing the demand for the subject, will also make its value increase. This can be done by promoting the subject to potential customers or by making it more attractive to them. Enhancing the uniqueness of the subject can be done by adding unique features or designs to the subject. However, the tricky parts is to reducing the risk associated with the subject. By reducing the risk associated with the subject, or implementing safety measures, the risk of damage or loss can be reduced, which can increase the subject's value. By implementing one or more of these strategies, it is possible to create value for a subject in land value creation, which can ultimately lead to a higher value for the subject when it is being insured. This is the idea of Land Value Capture mechanism for disaster risk reduction.

Implementing Land Value Capture (LVC) for Disaster Risk Reduction in Indonesia

Land value capture can contribute significantly to disaster resilience, mitigation, and recovery efforts by aligning with existing disaster management strategies and policies. Land value capture can contribute on funding for resilience and mitigation measures, incentivizing risk reduction measures, and guiding land use planning and development by incorporating zoning regulations, building codes, and incentives tied to disaster resilience. Land

value capture mechanisms can shape development patterns in a way that reduces risk exposure and enhances community resilience.

Implementing Land Value Capture (LVC) in Indonesia requires careful planning and a supportive framework. While LVC and disaster risk financing/insurance are distinct concepts, they can be integrated to some extent within the broader framework of urban development and disaster risk management. Presented below is a suggested framework for the implementation of Land Value Capture (LVC) in Indonesia and its potential integration with disaster risk financing and insurance as can be seen at figure 1.



Figure 1. framework for the implementation of Land Value Capture (LVC) in Indonesia

Policy and Legal Framework:

Develop legislation and regulations specifically addressing LVC, outlining the objectives, mechanisms, and processes for capturing land value is so essential to establish a fair, transparent, and effective framework. It ensures that the benefits generated from public investments are shared equitably, promotes inclusive urban development, and provides stability and predictability for all stakeholders involved. It can be seen that integrating provisions related to LVC within the framework of disaster risk financing and insurance is the alternative solution. This integration recognizes the potential of LVC to generate additional resources for disaster response, recovery, and risk reduction efforts. By considering the synergies between LVC and disaster management, the framework can harness the captured land value as a means to enhance the financial capacity and effectiveness of disaster-related initiatives.

Land Valuation and Assessment:

Establishing robust methodologies and systems for land valuation is essential, particularly when evaluating the incremental value generated by public investments, infrastructure projects, and disaster risk reduction initiatives. To ensure accuracy and comprehensive assessments, it is crucial to incorporate disaster risk factors into these

land valuation methodologies. By accounting for the potential impact of hazards, a more holistic understanding of the value and risks associated with the land can be achieved.

Revenue Collection and Management:

Effective mechanisms for collecting the captured land value can take the form of taxes, fees, or other financial instruments. A crucial step is to allocate a portion of the revenue generated from Land Value Capture (LVC) to a dedicated fund or mechanism specifically designed for disaster risk financing and insurance. By earmarking these funds, there is an opportunity to enhance the financial capacity and resilience of communities in the face of disasters. This allocation ensures that the captured land value contributes directly to mitigating risks, supporting disaster response, and providing insurance coverage.

Stakeholder Engagement and Collaboration:

To ensure effective implementation of LVC and its integration with disaster risk financing and insurance, it is vital to engage with pertinent stakeholders. This includes government agencies, local communities, property owners, developers, and insurance companies. By actively involving these stakeholders, a foundation of understanding, support, and collaboration can be fostered. Encouraging cooperation between the entities responsible for LVC implementation and those involved in disaster risk financing and insurance is crucial. This cooperation facilitates the identification of synergies and the exploration of potential joint initiatives. By working together, these entities can leverage their respective expertise and resources to maximize the effectiveness of LVC and enhance disaster resilience.

Monitoring and Evaluation:

Regular reviews of the LVC framework based on the findings from monitoring and evaluation are essential. This process allows for the identification of strengths, weaknesses, challenges, and gaps in the existing framework. By adapting the framework accordingly, policymakers can optimize outcomes, address any shortcomings, and ensure continuous improvement in capturing land value for disaster risk financing and insurance.

Capacity Building and Knowledge Sharing:

To enhance stakeholders' understanding of Land Value Capture (LVC), disaster risk financing, and insurance concepts, it is crucial to conduct capacity-building programs and provide targeted technical assistance. These programs should aim to empower relevant stakeholders with the knowledge and skills necessary to effectively implement LVC and leverage disaster risk financing and insurance mechanisms. This can be achieved by establishing platforms for collaboration and dialogue with other countries and international organizations. By learning from the experiences and lessons learned by others in implementing similar frameworks, policymakers can gain valuable insights and identify innovative approaches.

To integrate the principles of LVC within the broader framework, it is important to identify the stakeholders involved in land value capture. These stakeholders encompass various entities, including government agencies, local authorities, property owners and developers, communities and local residents, financial institutions, non-governmental organizations, civil society, academia, and research institutions. By integrating the principles of LVC within the broader framework of disaster risk financing and insurance, it becomes possible to explore innovative financing mechanisms and generate additional resources for disaster risk management efforts. This integration can help enhance financial resilience, support disaster response and recovery, and promote sustainable urban development in Indonesia.

Conclusions

The land value capture scheme has the potential to be an effective mechanism for disaster risk funding. In implementing a Land Value Capture (LVC) scheme, it is important to understand the basic concept of the scheme. Some things that need to be considered are a basic understanding of land value, the factors that influence land value increases, terms related to the scheme, the rationale for LVC, the instruments used, the purpose for using the proceeds, as well as government conditions and policies and other parties in the area that this scheme will apply to.

Various countries have implemented LVC and provided an overview of strategies and ways for the scheme to work according to the desired results. If applied from the perspective of disaster risk management funding, the LVC scheme must take into account the existing disaster risk conditions in an area and other schemes that have been implemented previously. One of the key advantages of the land value capture scheme is that it provides a stable source of funding that is not reliant on external sources or donations. This stability allows governments to plan and implement long-term disaster risk reduction strategies, rather than reacting to disasters after they occur. Furthermore, the land value capture scheme can incentivise property owners to invest in disaster risk reduction measures. For example, if a property owner knows that their property's value will increase due to investments in disaster risk reduction, they may be more likely to invest in these measures.

In Indonesia, various schemes have been implemented for disaster risk management funding, such as through the APBN/APBD, pooling funds, contingency loans, household insurance, state property insurance, catastrophic insurance, and residual risk. The LVC scheme can be an additional strategy in funding disaster risk management in Indonesia, taking into account the existing conditions and policies in the areas where this scheme will be implemented.

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