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Slum Management In Bekasi: Current Trends And Ways To Improve

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ABSTRACT

This study investigates current trends in Bekasi, Indonesia, slum management policy, and recommends solutions to improve living standards among slum dwellers. Slums are a major issue in metropolitan city as Bekasi that has several obstacles in meeting slum folk's needs while supporting sustainable urban growth. This research evaluates existing policies and their consequences using interview data, detects developing patterns using GIS-based approach, and offers innovative measures to improve slum management in Bekasi. To address the multifaceted issues, we applied management strategy by Wheleen Hunger that consists of strategic analysis, formulation, and implementation and combined with sustainability framework incorporates social, economic, and environment point of view of slum management. The findings emphasize the significance of a holistic and inclusive approach that integrates social, economic, and environmental components.

Keywords: Slum, Bekasi, GIS

INTRODUCTION

Slums are an organic rapidly growing population in many cities worldwide. It grows organically as many factors such as urbanization (Elgizawy et al., 2016), lack of adaptability to the growing population around (Ooi & Phua, 2007), "cheapskates" behaviour (Patel et al., 2012), and many more. Slums bring negative impacts to their surroundings as in social, economic, and environmental practice, such as lack of health standards, low security, poorly serviced, and overpopulated (Harris, 2009). Incorporating good policy to tackle down the problems in slums is crucial as in rapid growing population such as Indonesia especially those live in Bekasi as megapolitan and one of the ten densely populated city in Indonesia (BPS, 2021).

A study conducted by Bloomberg in 2014 showed that economic stagnancy among rapidly growing population nations is the main factors that grows slum areas. As depicted on Figure 1,

the rapid incline of population grows combined with stagnancy or declined GDP per capita are in line with the increase of slum population percentage. Positive population growth nations such as China and Indonesia have lower slum population percentage growth than stagnant or negative population growth over nations over decades such as Philippines, Bangladesh, and Pakistan, while it seems that combination of rocketing population growth without GDP per capita growth following will synergistically increase the slum population percentage growth as shown in Nigeria (Florida, 2014).

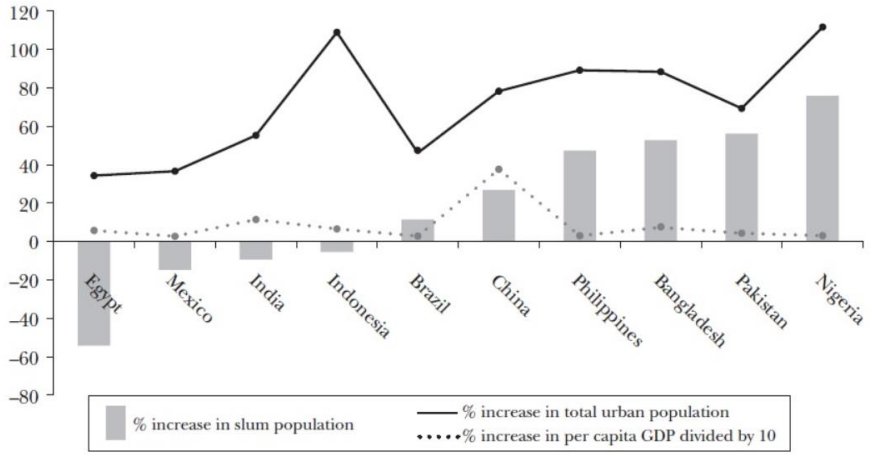

Figure 1. Patterns in Urban Slum Growth 1990-2007

Bekasi as a neighbouring district from Jakarta, the densest city in Indonesia, are one of many populations hotspot of people whose make their way to work in Jakarta and back to live in Bekasi because of price difference, attracting more people to live indirectly from Jakarta. Bekasi as a top ten overcrowded city has approximately 443 Ha of slums area, which nearly quarter of it been handled, which told us of the slowing progress of slum transformation by the local government (Bagaskara et al., 2021). Many programs been implemented, such as BERSEKA (i.e., Clean, Healthy, and Blessed Bekasi) and KOTAKU program (City without slum) to support "Gerakan 100-0-100" which is 100 percent of drinkable water access, 0 percent of slums, and 100 percent of appropriate sanitation (Admin, 2018, 2019; Diskominfosantik, 2020). However, the implementation of those programs seems unlikely will achieve its very top goal of zero percent of slum in this decade. Many problems need to be solved not only in implementation term, but also post implementation maintenance of investment been made to support the slum community (Belasari et al., 2022).

METHOD

This study employs qualitative research to explore the current trend of slum management in Bekasi which used guided-interview sheet as the main instrument to collect primary data from responsible authorities and about 25 people from Bekasi which 10 of them were representatives from slum area, while the rest picked randomly with domicile was only the criteria. Alongside

with that, the study combined with literature review and GIS-based study to collect secondary data as a basis for data cross checking.

The interviews took place on online platform such as WhatsApp and Telegram. We asked about the current slum conditions in Bekasi, how government manage the slums, and their opinion about BERSEKA and KOTAKU program implementation. Secondary data collected through Lansat-2 satellite imaginary analysis of land use by ESRI (accessed through https://livingatlas.arcgis.com/landcover/). Other platforms used to explore the popularity of BERSEKA and KOTAKU implementation on social media through hashtag analysis is Brand 24 (accessed through https://app.brand24.com/).

Content analysis method implemented on the interview record, while spatial and hashtag analysis perform as basis cross checking and supporting materials for deductive narration in this study. Further, strategic analysis, formulation, and implementation done accordingly as explained by (Wheelen & Hunger, 2012). The strategic analysis involving SWOT, which analyzes physical opportunities and threats and structural, cultural, and resources strength and weakness. Next, formulation process includes four stages such as mission, objectives, strategies, and policies. Lastly, Strategy implementation is where we put the strategy in action with additional step as the fourth step that is evaluation. However, in this qualitative research we aim to limit the methodology to strategy formulation step.

RESULTS AND DISCUSSION

Result

1. Interview

On behalf of the responsible authorities, we interview The Head of the Housing, Settlement and Land Areas (PERKIMTAN) office of Bekasi and two community leaders in Bekasi, we found that the BERSEKA and KOTAKU begin at least on year 2019, which funded by central government and local government. On the other hands, 6 of 10 community representatives we interviewed (picked randomly from 22 slum area in Bekasi (Baskoro, 2022)) revealed that the programs did succeed as planned by the government. Many facilities were restored such as road maintenance, canal cleaning, access to better quality tap water, built proper toilet, transformed underutilized area to productive business spot such as Bamboo Forest, and many more. Not only built physical improvement, educating slum dwellers was one of the targets of the program. One of educational program is PHBS (i.e., Clean and Healthy Lifestyle). Novianti et al. (2021) explained that the PHBS program was success as many people already educated and know the matters. Clean and healthy lifestyle is important for slum area, in which the knowledge or value of clean and healthy is a crucial factors of slum area growth. Much research stated that clean and healthy behaviour plays crucial role to solve basic issues related to economics, environment, social, education, and so on (Azevedo et al., 2019; Goussous & Tayoun, 2022).

In contrast, the rest of samples stated differently as the post program realization were not well-sustained. About 4 of the 10 representatives said that many revitalized spots were left without proper maintenance such as inadequate funding, lack of periodical maintenance and support, and the absence of community interest. PHBS educational program that were succeed were left in merely ceremonial activities without much follow up. Study revealed that PHBS

succeeded on elementary level students and the higher the education the less their care to the program, with additional gender related successfulness (Mansoorah et al., 2020).

Other samples (15 out of 25 excluding 10 representatives) commented that they do not know about "BERSEKA" and "KOTAKU" program. However, they were confident to said that the government did an improvement to many slums area through revitalization, reconstruction, and transformation. Some programs targeting slum were massively focused to empower and educate the slum dwellers. In addition, program continuity needs more attention. Evaluation of the programs should be undertaken periodically to control the achievement in place, so the case of PHBS as mentioned above can be avoided. It is worth to know that not all those interviewed samples were familiar with specific program names such as BERSEKA and KOTAKU. It is an early indication that lack of participation or promotion of the program and failed to gain attention from the people to recognize the government's efforts to revitalize and improve slum regions through rehabilitation and empowerment measures. However, there is a need for increased emphasis on program continuity and frequent evaluation to ensure long-term improvement and avoid cases when excellent projects like PHBS are abandoned with little follow-up.

2. Hashtag Analysis

The hashtag analysis conducted by platform Brand24, an AI-based websites that allows us to look for the desired hashtag on a post. In this study, we use four keywords, such as "#BekasiKOTAKU"; "#BekasiKumuh"; "#BekasiBERSEKA"; "#Gerakan100-0-100Bekasi". We merge the word of "Bekasi" with programs to solve slum problems as it will resulting in misinterpretation by the AI because word "KOTAKU" from the government program also means "my city" and "BERSEKA" has in line meaning with "menyekah" or "give up" in Bahasa.

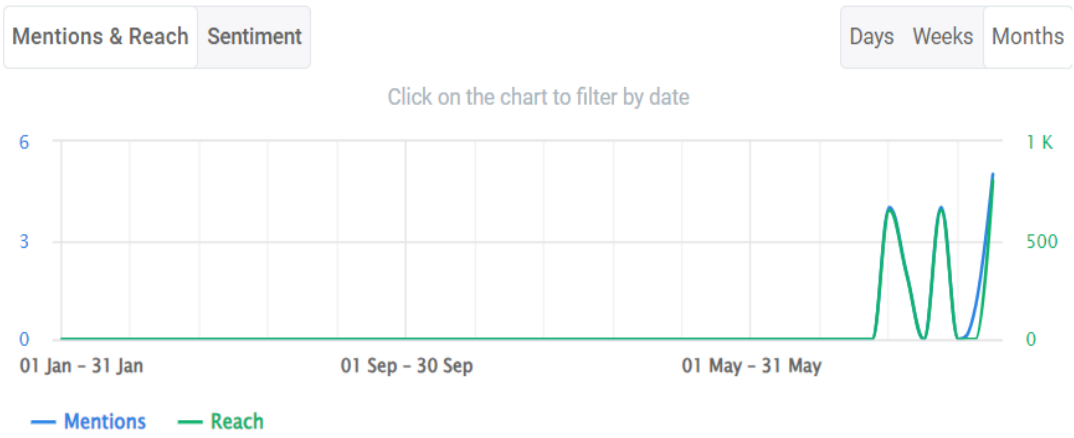

Figure 2. Hashtag trends on year 2019-2023

All hashtags were not that popular as indicated that among those four hashtags we searched for, they only appeared in recent 2022 to 2023. The hashtag reaches nearly to 1000 accounts which is a very small proportion of people reach in social media than real

life. However, we were unconfident with "BekasiKOTAKU" hashtag since the complete hashtag can be interpreted as "this is my city".

Figure 3. Hashtag posted across social media platforms

As a cross check of our unconfident result of "BekasiKOTAKU" hashtag, we explore the social media platform that be used to wrote that hashtag. We found that overall result of hashtag analysis was written on TikTok platform, which is a video based social media and the post was about their pride as a people of Bekasi, not related to the "KOTAKU" program. Then, we analyse the videon on TikTok platforms and found that all 15 videos were not promoting the "KOTAKU" program. Involving influencer to promote the program is necessary to gain more attention that reflected through post reach on social media platforms. A case such as Pandawara group (Instagram @pandawaragroup) that able to gathered more than 3000 people of Lampung on 9th July 2023 (can be accessed through https://www.instagram.com/p/Cub5pdSyvgO/) to clean up the second dirtiest shore in Indonesia is a good example of involving influencers to gain more attraction and support of a program.

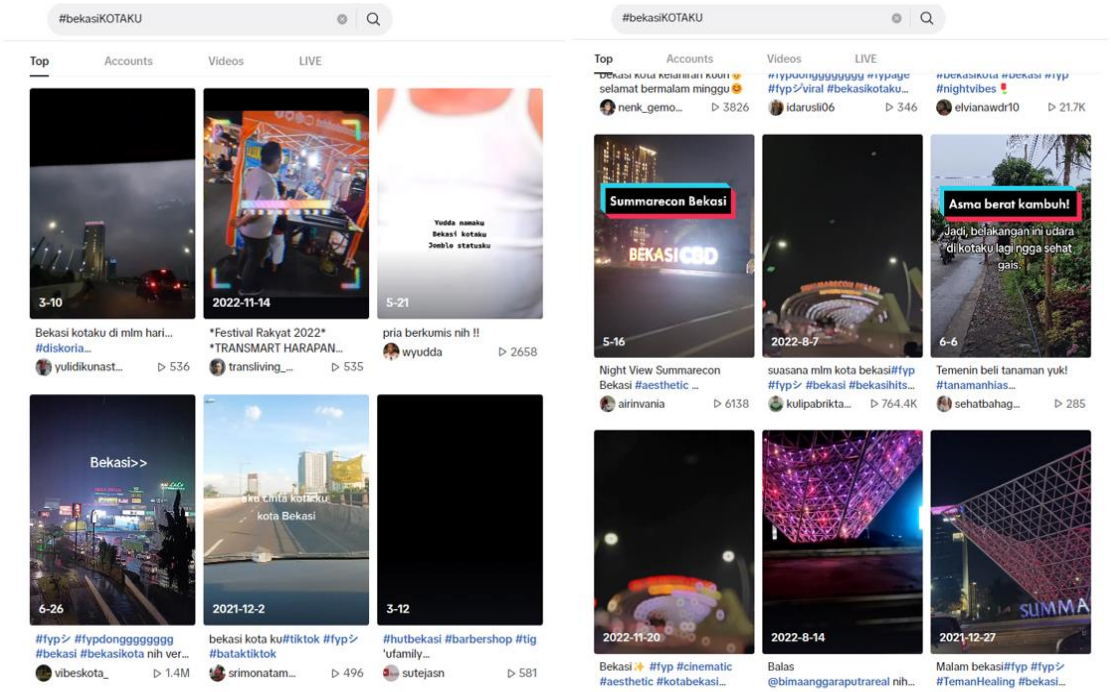

Figure 4. TikTok videos hashtagged #BekasiKOTAKU

3. GIS-based Approach

The relationship between slum area growth and changes in land use is a complicated and dynamic process driven by a variety of factors. As slums grow in size, it frequently encroaches on formerly undeveloped or agricultural area, causing significant land use shifts. The construction of makeshift buildings, which are typically crowded and chaotic structures that replace open spaces or agricultural regions, is one notable change. This change in land use for residential purposes may result in greater population density as well as a pressure on infrastructure and resources (Surya et al., 2020). Slums are frequently distinguished by a different pattern of building constructions that represent the specific circumstances and problems that its inhabitants experience (Harris, 2009). Slum houses are often improvised and made from easily accessible resources such as corrugated metal sheets, timber planks, plastic sheets, and salvaged items. Because these constructions are frequently densely packed together, the environment is crowded and congested. Figure 5 depicting land use shift of Bekasi. As shown, the red colored area widens overtime, shifting the orange-coloured area. A vein-like red area are buildings that stand nearby river or canal banks. By looking at year 2017 to 2022, the veil-like red-colored area become widens, which indicates more people live on that area overtime.

As the population of slum areas grows, so does the demand for food supplies. Residents of slums are frequently forced to engage in subsistence farming as a means of securing their food

supply due to a lack of access to formal employment and income-generating options. Due to limited space, slum inhabitants may cut trees and other vegetation to create tiny plots of land for crop cultivation as depicted on Figure 5 that the green area become narrower while some of that converted to orange-coloured area that shown many trees got cut to open more crop lands.

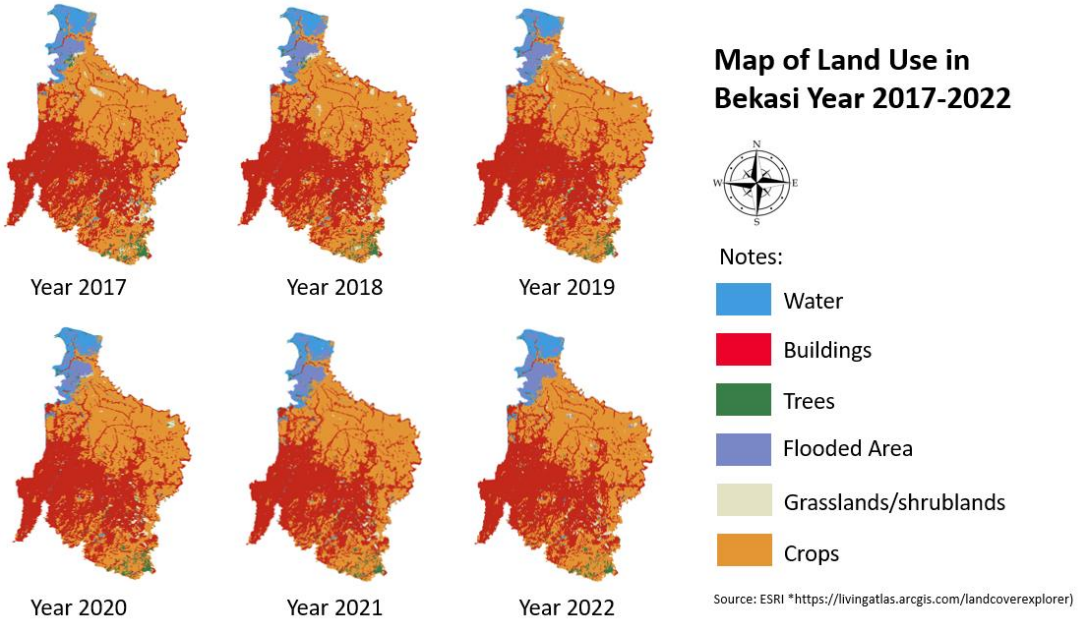

Figure 5. land use shift of Bekasi assessed annually (Landsat 2 Imaginary)

As the population grows, more food needed to be supplied. As cities become more crowded, housing demand exceeds available supply, driving up prices and making it difficult for low-income people to access acceptable housing options. As a result, those with minimal financial resources are driven into inferior living conditions, frequently leading in the establishment and spread of slums. The expansion of slum regions is a direct result of the urban infrastructure and housing market's inability to keep up with population growth and rising urbanization rates. Crowded people in a tight area also faced waste problems as the more they consume, the more waste they produce (Azevedo et al., 2019). Appropriate slum waste management plays crucial role to avoid worsening economic condition that entangled with their health status (Villa et al., 2020).

Slum areas tend to concentrate populations with limited economic opportunities, perpetuating the cycle of poverty. Slum zones can have a substantial impact on the health and vitality of vegetation in and around metropolitan areas. Not only land use change, but pollution also produced by slums affected the surrounding environment and inducing more stress to plants and animals (Amegah, 2021). As people live in a tight row, less area being use as green spot. These factors can have an impact on the health of vegetation, including trees, plants, and green areas, both directly and indirectly (Molnár et al., 2020). We employed NDVI imaging which tells us about vegetation index of an area. The darker the green indicates the better the vegetation.

One of the most pressing issues is the spread of slums into previously undeveloped or green areas. As slums grow, they frequently replace natural vegetation with improvised constructions, resulting in a loss of green space and biodiversity. Clearing vegetation for slum settlement construction can damage ecosystems, restrict wildlife habitat availability, and impair the aesthetic and recreational value of natural environments (Saputra et al., 2023). Slums frequently lack effective waste management systems, resulting in an accumulation of garbage and waste materials. Improper waste disposal, including the dumping of organic and non-biodegradable wastes, can contribute to pollution and the destruction of neighbouring plants (Vane et al., 2022). The emission of toxic chemicals, the spread of illnesses, and the obstruction of natural streams can all have a negative impact on vegetation health and growth (Choi et al., 2022). Furthermore, slum neighbourhoods frequently have poor access to water and sanitary amenities. This can put further strain on water resources, with slum inhabitants turning to unsustainable practices like over-extraction of groundwater or irrigation with tainted water. Inadequate water availability and poor water quality can have a negative impact on the health and growth of vegetation (Corburn et al., 2022).

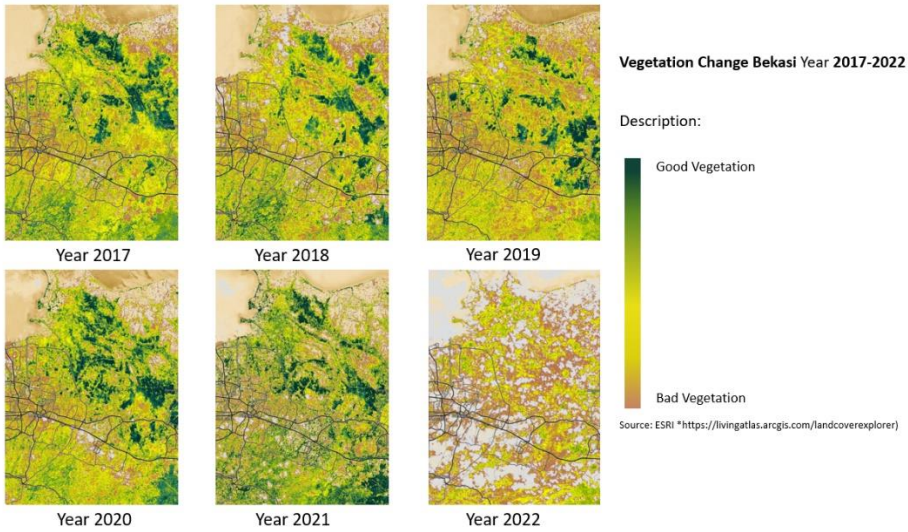

Figure 6. Vegetation index overtime (NDVI imaging)

As depicted Figure 6 above, slight decline of green area happened on the period of 2017 to 2019 and inclined in 2020 to 2021 as many green areas added and the darker the area on the bottom right of year 2021. However, the data of year 2022 tells the rapid decline of vigorous vegetation in Bekasi District. Proper urban management need to be implemented in order to add more green area as an obligation for every districts in Indonesia to fulfil 30% green area in proportion to the districts' area as written on amendment Number 26 Year 2007 about Spatial Planning and Policy Phenomena of Provision of RTH (open green space) in the Regions of Indonesia.

Discussion

1. Problems

As identified above, there are several problems related to slum management of Bekasi government. Problems such as post implementation of the program including maintenance and periodic checking, program's target, promotion, pollutions, and green area deficit.

a. SWOT Analysis

1) Strength

Government Support: Both the central and municipal governments fund the BERSEKA and KOTAKU programs, suggesting a strong commitment to upgrading slum regions.

Infrastructure Restoration: The programs have effectively restored many utilities, including as road maintenance, canal cleaning, and access to better quality tap water, thereby improving slum inhabitants' living conditions.

Community Empowerment: The initiatives attempt to empower the community through transforming unused places into productive commercial hubs, such as the Bamboo Forest, and by giving educational opportunities, such as PHBS.

Preventive Approach: As slum grows, some problems need to be addressed such as cleanliness and health, green spacing, and crime/violence. Preventive approach such as promoting more research funds to solve the on going problems and strengthening community policing.

2) Weakness

Maintenance Issues: Some members identified insufficient money and a lack of regular maintenance as key issues that could jeopardize the long-term durability of the changes made.

Declining Engagement: As participants' education levels rise, the success of educational programs like PHBS reduces, showing a need for personalized approaches and maintained engagement.

3) Opportunity

Continued Revitalization: Most respondents agreed that government initiatives to revitalize slum areas had a favourable influence. This opens the possibility of expanding and continuing similar programs in other sectors.

Program Continuity: The data emphasizes the significance of periodic evaluation and continual monitoring to maintain sustained growth and prevent effective programs like PHBS from declining.

4) Threat

Lack of Awareness: A significant proportion of those polled were unfamiliar with specific program titles, indicating a potential communication gap between the government and slum dwellers. This may have an impact on their understanding of the programs and hamper their participation.

Sustainability Issues: The lack of community involvement in preserving renovated areas, as well as the ceremonial nature of some educational programs, pose dangers to the efforts' long-term effectiveness.

3. Strategic Formulation

To encourage people participation of slum management, incentive-based promotion is the most probable way to do. Strategic formulation aims to create a clean, healthy, and vibrant environment for slum dwellers while fostering their active participation and ensuring long-term program sustainability to achieve zero percent of slum area. Some measures to do as missions are:

1. Improve Infrastructure: To improve living circumstances and ensure the well-being of slum people, vital infrastructure like as roads, canals, and access to adequate water and sanitation facilities must be continuously restored and maintained.
2. Empower Communities: Promote entrepreneurship and economic prospects in slum communities by facilitating the transition of unused areas into productive business locations. Individuals should be empowered via education and skill development so that they can escape the cycle of poverty and contribute to their own and their community's development. One effort to foster green area growth while preserving current narrow space to live and ensuring food security is to do vertical farming or urban farming. Vertical farming known as plantation method that use minimum horizontal space.
3. Promote Clean and Healthy Lifestyles: Use educational programs such as PHBS to promote awareness and educate slum dwellers about the necessity of living in a clean and healthy environment. Encourage long-term practices that benefit economic, environmental, and social well-being. Involving university student’s community service on slum area can be a cheap alternative. As a scholar, students need to be used to community involvement to apply their knowledge.

To achieve the zero percent of slum or to maximize slum management, some strategies need to be done according to missions we proposed above. Those strategies are:

1. Partnerships and Collaborations: pushing strategic partnerships with local stakeholders, NGOs, community leaders, and influential figures to maximize program awareness and participation. Engage more influencers from various social media to promote programs and generate public interest and support.
2. Effective Communication and Attractive Promotion: Develop comprehensive communication strategies to raise awareness about slum management programs such as BERSEKA and KOTAKU among slum communities in Bekasi. It will be better to utilize various media platforms, including social media, to disseminate program information, success stories, and achievements to foster awareness or in other words implementing electronic word of mouth (EWOM).
3. ABCGM Model: Involving academia, business, community, government, and media in appropriate matter of slum management programs is a more complex cooperation hierarchy (Wijayanto et al., 2023). Academia such as students and lecturer to do research and community services, business as fundraisers through corporate social responsibility (CSR), community as the main stakeholder also to keep their sense of belonging to the already implemented programs, government to propose and formulate policies to support law

enforcement on the programs, and finally media to foster awareness, reach, or to influence more people.

4. Resource Allocation and Management: Prioritize funding and resources to ensure regular maintenance and support for revitalized areas and ongoing programs. Implement efficient resource management practices and sustainable programs for instance like transforming the slum to tourist spot, urban farming, or anything that will generate income is cricual to optimize the impact and longevity of the programs.

As the continuation of strategies, proposing policies is crucial as a formal scheme to meet the administration criteria and to protect the programs from any potential deviation. Several policies we proposed based on the strategies to be implemented are:

1. Program Evaluation and Monitoring: Establish a periodic evaluation system to assess the effectiveness and progress of programs. Regularly review and analyse the outcomes, identify areas for improvement, and adjust strategies accordingly.
2. Community Engagement: Encourage active community involvement in the planning, implementation, and monitoring of programs. Foster a sense of ownership and responsibility among slum dwellers by engaging them in decision-making processes and empowering local leaders.
3. Sustainability: Develop policies that prioritize the long-term sustainability of program outcomes. Ensure program continuity by securing funding commitments, establishing maintenance protocols, and implementing mechanisms for ongoing community engagement and support.
4. Continuous Learning and Adaptation: Foster a culture of learning and adaptability within the organization. Stay updated with current research, best practices, and innovative approaches in slum management to enhance program effectiveness and address emerging challenges.

CONCLUSION

Proper pre to post implementation to slum management programs is crucial. There are several ways to foster the slum management programs implementation, such as involving academia, business, community, government, and media. More awareness is needed not only by the slum dwellers, but communities outside the slum. In overall, slum management in Bekasi is already implemented as proposed, but gis-based information tells that the slum area growth seems unstoppable. Promoting better economic power is crucial to induce other aspects' growth such as better social structure and better environmental quality.

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