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Strategies for Handling Stunting in Bandung City

Wiedy Yang Essa¹, Erti Nurfindarti ²✉, Nugrahana Fitria Ruhyana³

¹Agency for Planning, Research and Development, Bandung City, Jl. Aceh No. 36, Bandung, West Java Province, Indonesia, ²Development Planning Agency at Sub-National Level, Serang City, Jl. Jenderal Sudirman Komplek Kota Serang Baru, Serang City, Banten Province 42123, ³Regional Agency for Planning, Research, and Development, Sumedang District, Jl. Prabu Gajah Agung No. 9 Sumedang District, West Java Province

✉ erti.nurfindarti@gmail.com

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Abstract: Despite being one of the metropolitan cities in Indonesia, the prevalence of stunting in Bandung City is more than the World Health Organization (WHO) standard. Stunting is a threat to the quality of human development, also lowering economic productivity. A strategy to reduce and handle stunting is needed so that social and environmental aspects are essential to facilitate the policymaker. This study analyzes the stunting situation in Bandung City and then arranges villages based on the stunting risk index to get an operative recommendation. The quantitative method analysis uses climate change adaptation which includes hazard and vulnerability indicators. At the same time, Focus Group Discussion (FGD) forms the qualitative method with key persons to identify problems and formulate impressive strategies. The results showed that 14 villages have the highest risk of stunting in Bandung City, to be intervention priority. These villages have relatively high poverty, poor access to sanitation, and low adaptive capacity. Recommendations from this study are focused on regional development planning, increasing community participation, and multi-stakeholder cooperation through strengthening innovation, collaboration, and innovation.

Keywords: stunting; Bandung city; public policy

1. Introduction

The phenomenon of stunting in Indonesia is still a health problem that needs special attention. Stunting occurs in children affected by their mother's womb, either because of nutritional quality or environmental conditions. The threat of stunting in children means a threat to the quality of human resources in the future because it can hinder the rate of development.

Stunting is defined as a chronic undernutrition status during the period of growth and development since early life. Children are classified as stunting if their height is below minus two standard deviations of the length or height of the child their age (UNICEF et al., 2018, p. 2).

Stunting can lead to decreased cognitive and motor skills, as well as the risk of suffering from neurological development and non-communicable infectious diseases in adulthood (Stewart et al., 2013, p. 29). Besides, stunting based on various studies can also reduce school achievement and economic productivity (Daniels & Adair, 2004, p. 1439; Dewey & Begum, 2011, p. 5; Horton & Steckel, 2014, p. 247; Kar et al., 2008, p. 1; Mendez & Adair, 1999, p. 1555) and increasing the cost of health services (Victora et al., 2010, p. e473). According to Hoddinott et al. (2013, p. 69) states that stunted children are more likely to live in poor households as adults. Based on this, handling stunting is an important thing to do.

Stunting is still a health problem in Indonesia because the prevalence value is still above the World Health Organization (WHO) standard, which is 20%. According to Figure 1, the national prevalence of stunting has decreased but is still above the average, which places Indonesia as the third country with the highest stunting cases in Asia. The prevalence of stunting in Bandung is 32.2% (2013) and has increased from 21.8% (2018) to 28.12% (2019). Of the total 2.4 million inhabitants of Bandung City, there are 131,896 children under five, and 8,121 of them are stunting (Badan Penelitian dan Pengembangan Kesehatan, 2019).

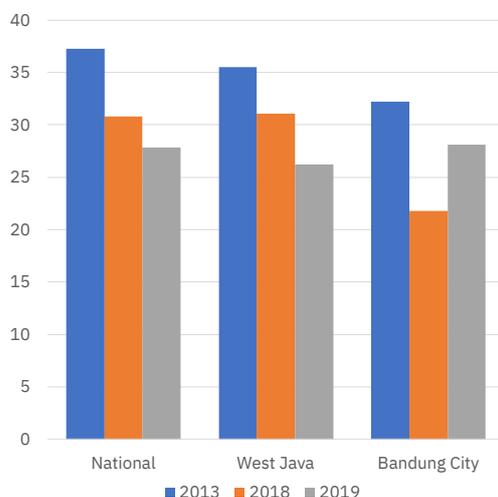


Figure 1. Stunting Prevalence Based on Survey Results

Source: Badan Penelitian dan Pengembangan Kesehatan (2019)

Stunting is a multi-dimensional problem that comes from both direct and indirect causes. The cause of stunting does not only focus on the health sector but the non-health sector. It is also known as sensitive nutrition, such as providing clean water, food security, health insurance, etc. also contribute more to overcoming nutritional problems, namely 70% (Rosha et al., 2016, p. 128). Specific health or nutrition sectors are short-term, and results can be recorded in a relatively short period. This is emphasized through other research that the social environment related to parenting

practices, maternal education, and community empowerment, urban and rural poor areas, is also an important aspect of stunting reduction (Beal et al., 2018, p. 3).

Environmental factors that contribute to children's nutritional status are poor sanitation and improper drinking water (Beal et al., 2018, p. 3; Torlesse et al., 2016, p. 1). One of the sanitation problems in Bandung is that open defecation free (ODF) has not been achieved, which is a condition when every individual in the community does not defecate openly. Disposal of feces that do not meet the requirements significantly affects the spread of environmental-based diseases to break the chain of transmission, and engineering must be done for this access. The habit of open defecation also contributes to the development of children (Hafid et al., 2017, p. 85). A dirty environment and a lot of pollution cause children to get sick easily to interfere with their growth and development (Candra, 2013, p. 11). The relatively slow decline in stunting of children under five is also caused by several factors such as community habits/culture that are difficult to change towards a clean and healthy lifestyle, geographical conditions, and food insecurity problems (Kurniawan et al., 2020, p. 23).

Climate change that occurs globally will undoubtedly impact the nutritional status of the community (Phalkey et al., 2015, p. E4527), even being the most significant contributor to child mortality in low and middle-income countries (Sorgho et al., 2016, p. 3). There are impacts of climate change that affect children's nutritional intake, one of which is an increase in temperature, affecting water supply, food, disease vector reproduction, lifestyle changes, and community resistance to disease (Cooper et al., 2019, p. 17219; Hagos et al., 2014, p. 1; Phalkey et al., 2015, p. E4526; Rodriguez-Llanes et al., 2016, p. 1). In contrast, areas that experience cold weather affect the incidence of stunting in children (Ogasawara & Yumitori, 2019, p. 9). Extreme weather, which is one of the changes due to changes that affect stunting. Thus, climate change adaptation efforts can be used to reduce the risk of stunting.

Accelerating stunting reduction is a national commitment contained in the National Medium-Term Development Plan of the Republic of Indonesia 2020-2024, focusing on accelerating the improvement of community nutrition and reducing maternal mortality. Stunting reduction is one of the six goals in the Global Nutrition Targets for 2025 (WHO, 2014, p. 2) and a key indicator towards Zero-Hunger in the Sustainable Development Goals. Based on the Letter and Decree of the Minister of National Development Planning/Head of the National Development Planning Agency, Bandung City focuses on stunting intervention in Indonesia in 2020. With this, the City of Bandung will participate in implementing eight stunting convergence actions in 2020.

Information is needed, followed up by the right strategy to accelerate the reduction of stunting in Bandung City, making it easier to make policy. Therefore, this study aims to map the priority locations for handling stunting at the village level based on the climate change adaptation approach. In addition, there is a need for strategies and recommendations for the Bandung City Government in handling stunting that is right on target.

2. Methods

The research location was carried out in the city of Bandung, with a research period of ten months, from March 2020 to December 2020. The strategy used was explanatory sequential mix methods, namely collecting and analyzing quantitative data followed by qualitative data collection, with weight or priority is given to the data. quantitative (Creswell, 2014, p. 316). The advantages of this method are comprehensive, valid, reliable, and objective (Sugiyono, 2011, p. 300).

The study used secondary data from Village Potential data (Podes) released by the Central Bureau of Statistics (BPS) in 2019, data on the number of short and very short toddlers from the Bandung City Health Office as other data from several regional apparatuses in Bandung City. Primary data was obtained through Focus Group Discussion (FGD) activities focused on exploring problems that exist in stunting activities and programs in Bandung, which were then analyzed using the SWOT

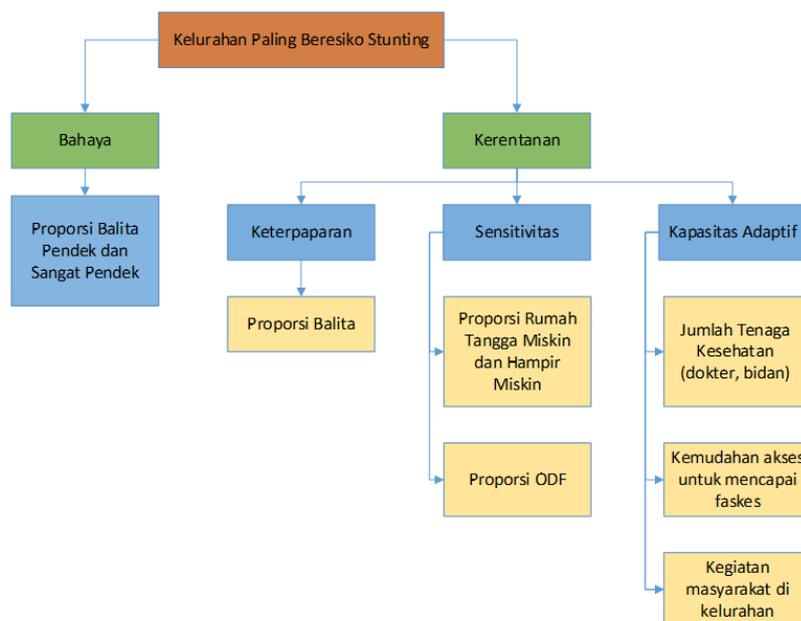


Figure 2. Concept framework of environmental factors that have the potential to cause stunting

Source: Ruhyana (2019, p. 33)

method (Strength, Weakness, Opportunities, and Threats). It was concluded that all the data had been reduced and detected by the applicable procedure, then a conclusion is drawn.

Data processing was carried out by scoring in each village to approach the concept of climate change adaptation from the Intergovernmental Panel on Climate Change (IPCC, 2014, p. 17), it is assumed that the risk of stunting is influenced Furthermore by several factors, which can be grouped according to Figure 2.

Then, the scale of each hazard and vulnerability component was carried out, including the exposure, sensitivity, and adaptive capacity of each village. The standardized score is calculated from each variable with different unit values, using a t-score that is then converted into a scale of 1 (very vulnerable/dangerous) to 5 (very vulnerable/dangerous) on the hazard index vulnerability. The steps taken include hazard analysis and vulnerability analysis.

In this study, the hazard analysis was determined by the number of short and very short toddlers in the village. The hazard matrix contains 5 (five) scale categories, from 1 (very low) to 5 (very high). Meanwhile, vulnerability analysis is used to understand how people are exposed to long-term dangers or disturbances. An understanding of vulnerability will be able to identify efforts to build recovery capacity (resilience) from harm/disturbance. In this analysis, vulnerability components are identified and formulated consisting of exposure, sensitivity, and adaptation capacity of an area or community to stunting. Vulnerability is a function of the level of exposure, sensitivity, and adaptability of a system.

The higher the level of exposure or the level of sensitivity, the greater the vulnerability meanwhile, the higher the adaptability, the smaller the vulnerability or mathematically formulated in the following function:

$$\frac{(Sensitivity \times Exposure)}{Adaptive Capacity} = Vulnerability$$

The scale values generated from the vulnerability analysis consist of a scale of 1 (not vulnerable) to a scale of 5 (very vulnerable). The results of the hazard analysis are

combined with vulnerability analysis which results in a Risk Analysis which is a measure of the likelihood of damage to life, property, and the environment, which could occur if threats become a reality, including the anticipated severity of consequences for humans (WHO, 2014b). Risk (R) is the result of a combination of hazard (H) and vulnerability (V) (Proag, 2014), or formulated in the following functions:

$$R(\text{risk}) = H(\text{hazard}) \times V(\text{vulnerability})$$

3. Results and Discussion

3.1. Stunting Risk Analysis in Bandung City

3.1.1. Hazard Analysis

The first step in this study was to map the incidence of stunting in 151 villages, dividing the number of short and very short children by the total number of children under five. Palasari Village had the highest number of short children under five in Bandung, namely 195, while Cipadung Village had the highest number of very short children in Bandung, 124.

The average proportion of short and very short toddlers in Bandung City in 2019 was 6.58%. The number of urban villages whose proportions are above the average of the City of Bandung is 59 urban villages or 39% of the 151 urban villages. There are two urban villages with the highest proportion, namely Cikawao Village, Lengkong District, and Sukawarna Village, Sukajadi District. Based on the data on the proportion of short and very short children under five, the t-score is calculated from each village. An interval is made to classify the categories of potential danger or threat of stunting from each village. Based on the calculation, there are five hazard categories for urban villages in Bandung, namely very low, low, medium, high, and very high.

Table 1 shows ten villages in Bandung City with a high stunting hazard and four villages with a very high stunting hazard. These fourteen villages should receive priority in the handling of stunting in Bandung City because they represent the highest stunting under five in Bandung.

Table 1. Village with a high and very high stunting hazard score

VILLAGES	SHORT AND VERY SHORT PROPORTION FOR CHILDREN	HAZARD INDEX	HAZARD CATEGORY
Cibadak	16,67	67,40	High
Malabar	19,07	71,55	High
Babakan penghulu	19,08	71,57	High
Cipadung	19,63	72,51	High
Palasari	19,72	72,68	High
Burangrang	19,83	72,86	High
Margasuka	20,11	73,34	High
Kebon gedang	20,33	73,73	High
Karasak	20,39	73,82	High
Babakan ciamis	20,90	74,71	High
Jamika	21,51	75,76	Very high
Cirangrang	21,51	75,77	Very high
Sukawarna	25,39	82,46	Very high
Cikawao	26,17	83,80	Very high

Source: Data for the Month of Weighing Children Under Five in Bandung City 2019 (processed)

3.1.2. Vulnerability Analysis

The following analysis is to determine the vulnerability index, a function of exposure, sensitivity, and adaptive capacity. Children under five are exposed to the danger or threat of stunting, so villages with a high proportion of children under five will have high exposure. The average proportion of children under five in Bandung in 2019 was 5.24%. There are 78% of urban villages with an above-average proportion of children under five, and the highest is Babakan Penghulu Village with 7.84%, followed by Pasirjati Village (7.78%).

The data in Table 2 above shows that a high proportion of children under five will have a high exposure score. Meanwhile, 5 Kelurahan with low exposure scores had a low proportion of children under five.

Table 2. Five Villages with the Highest and the Lowest Exposure

No	Village	Exposure Score	Proportion of Children Under Five
1	Babakan penghulu	71,17	7,84
2	Pasirjati	70,68	7,78
3	Cimincrang	70,65	7,78
4	Rancabolang	69,64	7,65
5	Cipadung wetan	68,99	7,57
147	Turangga	30,04	2,78
148	Pasirkaliki	28,39	2,58
149	Ancol	27,88	2,52
150	Cihapit	18,91	1,41
151	Citarum	17,85	1,28

Source: Central Bureau of Statistics, 2019 and Department of Health, Bandung City 2019 (Processed)

The sensitivity of the village area can be seen through the proportion of poor and near-poor households that fall into decile one and decile two, as well as the ratio of ODF (Open Defecation Free), which is a condition when every individual in the community does not defecate openly. ODF is included in one of the five pillars of STBM or Community-Based Total Sanitation, an approach to changing hygiene and sanitation behavior through community empowerment using the triggering method. The pillars in the STBM program are not defecating openly, washing hands with soap, managing household drinking water, managing household waste, and managing household wastewater (Winarti & Andriani, 2019). The ODF rate in Bandung City is still low, which indicates that domestic waste is still being disposed of in the environment, where only 7 of the 151 villages have ODF, namely Citarum Village, Manjahlega, Paledang, Cihapit, Ciateul, Rancanumpang, and Antapani Tengah.

Spears (2013) in Liem (2019, p. 169) states a positive relationship between open defecation and stunting, where districts with a higher prevalence of defecation report a higher prevalence of stunting. The sensitivity of the village area will be higher when facing the danger of stunting. Two sub-districts are at very high sensitivity, namely the village of Margasuka and Lebak Siliwangi.

Table 3 clearly shows the comparison between villages that have high and low sensitivity. Village with high sensitivity is characterized by a high proportion of poor and near-poor households. Poverty in previous studies (Ramli et al., 2009, p. 2) and socio-economic status influence the incidence of stunting. The Study shows several important factors causing stunting in Indonesia: non-exclusive breastfeeding in the first six months, low household socioeconomics, premature birth, low birth length, low

Table 3. Five Villages with the Highest and Lowest Sensitivities

Village	Proportion of Poor and Nearly Poor Neighborhoods	Proportion of ODF	Sensitivity
Margasuka	13,24	14,36	87,40
Lebak siliwangi	13,18	30,28	85,60
Cipadung wetan	10,48	23,65	77,40
Rancanumpang	9,81	45,42	73,04
Cirangrang	8,09	16,68	70,27
Turangga	0,32	84	37,95
Merdeka	0,14	81	37,74
Antapani kidul	0,40	93	37,32
Cihapit	0,56	100	37,17
Citarum	0,31	100	36,34

Source: Central Bureau of Statistics, 2019 and Bandung City Government, 2019 (processed)

education, and low maternal height (Beal et al., 2018, p. 8). People with low income will increase the incidence of stunting due to a lack of obtaining nutritious food (Budiastutik & Rahfiludin, 2019, p. 122; Lloyd et al., 2019, p. 1; Nadiyah et al., 2014, p. 125).

High sensitivity is also formed by the low proportion of ODF, which impacts decreasing the quality of water used for community needs. This finding is in line with research by Mulmi et al. (2016, p. 2) that household sanitation is one factor that determines household resilience. Environmental health aspects, such as sanitation and waste management, can inhibit the absorption of nutrients in the body of children under five to be at risk of stunting (Umar & Haryanto, 2019, p. 46).

The following analysis is adaptive capacity, which shows the adaptability of a region to the threat of stunting. The higher the adaptive capacity, the better the response of the region in facing stunting. Some of the variables used to measure adaptive capacity in dealing with stunting are the number of Integrated Services Post, the number of health workers, easy access to health facilities, and community activities in the village. Based on data processing results, the ratio of Integrated Services Post and children under five is a determining factor for adaptive capacity. The lower the ratio indicates, the better the Integrated Services Post for children under five. Likewise, the number of health workers and access to health facilities. On average, villages with adequate health personnel have better adaptive capacity than those with few medical personnel.

The availability of midwives, midwife practices, and maternity hospitals can also help increase the adaptive capacity of the community in handling stunting (Umar & Haryanto, 2019, p. 46). Research (Woldehanna et al., 2018, p. 75) states a relationship between access to health services and the incidence of stunting. It indicates that easy access to health facilities with a more comprehensive range of services will differentiate the adaptive capacity of the village from stunting.

Another aspect that plays a role in increasing adaptive capacity is the village's development and community empowerment activities. In a study conducted on changes in people's behavior towards the environment, social capital related to social norms and cohesiveness is needed. The calculation of the social index that describes the social capital of the community is important because development is not only physical but also human resource development, which has a high level of difficulty and cost (Essa, 2018, p. 179). Strong community involvement is naturally able to reinforce behavior change. Rustiadi and Nasution (2017) in (Sujai 2020, p. 102) state that social capital investment through community empowerment in the health and poverty sector

Table 4. Vulnerability Score to Stunting in Bandung City

Village	Vulnerability Score			
	Exposure	Sensitivity	Adaptive capacity	Vulnerability
Cipadung Wetan	68.99	77.40	49.22	108.49
Babakan Asih	67.74	60.63	41.93	97.96
Cibaduyut Kidul	68.26	66.88	47.33	96.45
Margasuka	56.49	87.40	51.55	95.78
Cigondewah Kaler	68.85	64.76	46.98	94.92
Pasirkaliki	28.39	44.84	54.79	23.23
Cijagra	30.83	38.86	53.79	22.27
Turangga	30.04	37.95	53.60	21.27
Cihapit	18.91	37.17	48.60	14.46
Citarum	17.85	36.34	50.02	12.97

Source: Research Results, 2020 (processed)

will directly reduce the level of poverty in Indonesia in urban areas. Malang City had the highest Human Development Index (HDI) in East Java Province in 2015, and this city has succeeded in reducing poverty through the Family Hope Program (PKH). It can be assumed that a high HDI value can reduce poverty maximally (Haliim, 2016, p. 332). The source of poverty is the high population and low quality of life of the community so that poverty reduction is based on strategic steps such as reducing the rate of population growth and improving the quality of life of the community (Subarna, 2012, p. 248). Also, the research results (Dwijatenaya & Dewi, 2016, p. 175) show that community social capital has a positive and significant effect on the management of environmental hygiene and health.

The scoring of exposure, sensitivity and adaptive capacity produces a vulnerability score for each village. It can be seen in Table 4 that villages with high vulnerability can be caused by exposure or high sensitivity while their adaptive capacity is low, and vice versa for villagers with low vulnerability.

3.1.3. Risk Analysis

The hazard and vulnerability analysis results were then overlaid to obtain the level of risk of stunting for each village in Bandung City. There are two villages with a very high risk of stunting, namely Margasuka and Citarum, and 12 villages categorized as high risk. Thus, the 14 villages must receive priority in handling stunting in Bandung City.

Villages that have a very high risk can be triggered due to the high proportion of children under five who are short and very short or because of a very high level of vulnerability due to high exposure and sensitivity and low adaptive capacity (Table 7). Several exposure variables that need attention for policymakers and stakeholders in Bandung City to reduce the risk of stunting are the high number of poor people and the high proportion of children under five in urban villages, and the low number of ODF. As for the sensitivity, it is determined by the ratio of Integrated Services Post/children under five, the number of health workers, easy access to health facilities, and community empowerment activities in urban villages related to clean water sanitation facilities and infrastructure, housing environmental management and education and cultural services.

Two villages in Babakan Ciparay Subdistrict, namely Citarum and Margasuka, have a very high-risk index. A community or community is said to have ODF if: 1) All

Table 5. Stunting Risk Index

Village	Ratio of Integrated Service Post/ Children Under Five	Proporsi Rumah Tangga Miskin	Percentage of ODF	Hazard Index	Vulnerability Index	Risk Index
Cirangrang	116	8,09	17	5	4	Very High
Margasuka	72	13,24	14	4	5	Very High
Cikawao	37	2,12	92	5	2	High
Sukawarna	58	1,96	41	5	2	High
Jamika	65	5,69	38	5	2	High
Karasak	52	2,40	2	4	3	High
Kebon gedang	54	3,13	81	4	3	High
Palasari	73	2,61	86	4	3	High
Cipadung	69	3,05	100	4	3	High
Babakan penghulu	63	3,33	71	4	3	High
Pasirjati	67	4,42	7	3	4	High
Babakan asih	122	4,74	3	2	5	High
Cipadung wetan	44	10,48	24	2	5	High
Cibaduyut kidul	98	7,94	46	2	5	High

communities have defecated only in the latrine and dispose of feces only in the toilet; 2) Not visible human feces in the environment; 3) There is no unpleasant odor due to disposal of human feces; 4) There is an improvement in the quality of the latrine; 5) There is a mechanism for monitoring the improvement of latrine quality; 6) There is the application of sanctions, regulations or other efforts by the community to prevent the incidence of defecating in any place. The results of research by Hafid et al. (2017, p. 79) reveal that the Stop Open Defecation Program (Stop BABS) prevents stunting of children under two years of age (Baduta) in Banggai and Sigi Regencies.

Table 5 above shows the ratio of Integrated Services Post/children under five in 14 priority districts for handling stunting in Bandung City. The scoring is reversed in value; the smaller the ratio value, the better the availability of Integrated Services Post. Village Cirangrang is considered inadequate, so it needs follow-up in increasing the number of Integrated Services Post to make it ideal. According to the Ministry of Health, the ideal number of Integrated Services Post is 1 Integrated Services Post for 100 toddlers (1: 100). Apart from Village Cirangrang, Babakan Asih also requires Integrated Services Post because it has a ratio of 122. The availability and quantity of visits to the Integrated Services Post are important factors in preventing stunting, according to research (Anwar et al., 2010, p. 208); (Destiadi et al., 2010) al., 2013, p. 71); (Lanoh et al., 2015, p. 1). The Integrated Services Post activity is very important in developing children under five, especially the nutritional status of children. Another aspect that plays a role in increasing adaptive capacity is the development and empowerment of village communities.

The use of risk analysis in accelerating stunting reduction in Bandung City is carried out to determine important factors prioritized in development planning. In dealing with stunting in Bandung, it can be focused on villages with a very high and high stunting risk index. Accelerating poverty reduction, access to basic sanitation and expansion of health services starting from young women, women of productive age, pregnant women, and children under five are necessary.

3.2. Analysis of Stunting Management Strategies of Bandung City

The Focus Group Discussion (FGD) activity was carried out to discuss strategies for handling stunting in Bandung, starting with identifying the obstacles, which were then followed by a SWOT analysis. SWOT analysis is often used in strategy formulation because it seeks to optimize strengths and opportunities from within and anticipate weaknesses and threats from outside (Nurfindarti, 2019, p.230). The grouping of strengths, weaknesses, opportunities, and threats is based on researchers' observations from the results of discussions in the FGD (Desmaryani, 2016, p. 308). Table 6 shows a SWOT analysis with the strengths and weaknesses of the Bandung City Government internal, while the opportunities and challenges from the external Bandung City Government.

Table 6. SWOT Analysis in Determining Stunting Management Strategies in Bandung City

Internal		External	
		Strength (S)	Weakness (W)
		1. Commitment from the Government	1. Inter-agency coordination
		2. Availability Budget	2. Program integration
		3. Availability of Health Facilities	3. Data management
		4. Provision of programs in related agencies	
Opportunity (O)	Strategy S-O	Strategy W-O	
1. Participation of the community and other stakeholders	S1-01 Community and stakeholder involvement in government programs	W1-01 Improved coordination and networking with all stakeholders	
2. Territorial budget	S2-02 Setting budget priorities for stunting prevention and reduction programs	W2-01 Integration of regional stunting management programs	
	S2-03 Encouraging public participation by optimizing regional budgets	W3-01 Development of stunting data management by involving stakeholders	
Challenge (C)	Strategy S-C	Strategy W-C	
1. Community understanding of the handling and prevention of stunting is still low	S1-C1 Education, socialization, and campaigns regarding the handling and prevention of stunting through an integrated program	W1-C1 Strengthening collaboration between institutions to increase public understanding through education, socialization, and effective campaigns	
2. Access to clean sanitation is not evenly distributed	S2.4-C2 Acceleration of basic sanitation infrastructure development	W3-C1.2.3 Improved data management system	
3. Low nutritional intake	S3.4-C3 Nutrition improvement program for adolescents, productive women, pregnant women, breastfeeding mothers, and children under five	W2-C1.2.3 Implementation of integrated nutrition and sanitation programs in the community	

Source: Research Results, 2020

Based on the results of the SWOT analysis in Table 6, the 12 Bandung City Stunting Management Strategies are grouped into three sectors:

- 1) *Regional Development Planning*
 - a. Setting budget priorities for stunting prevention and reduction programs (1.a)
 - b. Integrate regional stunting management programs (starting from neighborhood/hamlet, village, sub-district) (1.b)

- c. Carry out the education, outreach, and campaigns regarding the handling and prevention of stunting through an integrated program and utilizing digital media (1.c)
- d. Accelerating the development of basic sanitation infrastructure in priority locations for handling stunting (1.d)
- e. Implementing nutrition improvement programs for adolescents, productive women, pregnant women, breastfeeding mothers, and toddlers through innovative menu variations and nutritious food recipes (1.e)
- f. Improving data management systems, including by utilizing information technology (1.f)

2) *Community Participation*

- a. Expanding community and stakeholder involvement in government programs through the formation of new cadres specifically for handling stunting (2.a)
- b. Integrating nutrition and sanitation programs in the community, originating from the social movements of the community (2.b)
- c. Encouraging public participation by optimizing regional budgets (2.c)

3) *Multistakeholder Cooperation*

- a. Improved coordination and networking with all stakeholders, through regular meetings, or social media groups (3.a)
- b. Carry out the development of stunting data management by involving stakeholders (academics, vertical agencies, research institutions) (3.b)
- c. Strengthening collaboration between institutions to increase public understanding through education, socialization, and effective campaigns (3.c)

In further analysis, the researcher matches literature from various sources, including the Bandung City Management Triangle, consisting of decentralization, innovation, and collaboration (Bappenas, 2015). First, decentralization is meant by the distribution of authority from the Mayor to the sub-district head, neighborhood/hamlet, Youth Organization, Empowerment of Family Welfare, and other community empowerment institutions authority to the smallest level to follow up on problems. This can be seen in the strategic sector (1.b) through an integrated stunting management program from the neighborhood/hamlet, village, and sub-district levels. All program activities are carried out with the target community at the smallest level.

Second, innovation is an effort to change the lifestyle and behavior of the community to become more polite, courteous, orderly, and happy, which is driven by good leadership and city governance, in accordance with strategic sectors (1.c, 1.e, 1.f). Identifying the role of innovation in a problem is important to do so that public trust in the urgency of innovation can be achieved (Hutagalung & Hermawan, 2018, p. 241). Education, outreach, and campaigns are important things to do so that programs and policies at the central level can be implemented down to the grassroots (Saputri, 2019, p. 1). The government's policies should be able to make the level of community life better and more advanced (Wahyudianto, 2015, p. 340). The city of Bandung can take advantage of digital media that can spread education massively, quickly, effectively, and efficiently considering the infrastructure and lifestyle of urban people familiar with digital media. Nutrition improvement programs can be achieved through menu variations and nutritious food recipes that the community can easily practice (Lailatul & Ni'mah., 2015, p. 88). The data management system can be improved by utilizing information technology.

Third, collaboration collaborates with various parties, including academics, business, communities, and institutions. This is necessary given the limited funding from the regional budget to accommodate all needs. The principle of collaboration can be seen in strategic sectors 2 and 3. Communities and stakeholders can participate in

government programs, both in education, outreach, campaigns, improvement of nutrition and sanitation. Samarinda Seberang Subdistrict, Samarinda City, has the innovation "RUSLANI" (healthy, livable houses), which is an innovation that involves community participation through cooperation and social solidarity in the rehabilitation and renovation program for uninhabitable houses for the poor (Sartika, 2018, p. 94). Community participation and multistakeholder cooperation also require increased coordination and networking. The smallholder empowerment program in Indonesia has a low level of involvement and communication, so it requires a particular dialogue scheme routinely carried out between farmers and stakeholders (Aminah, 2016, p. 135). Research from (Sujai 2020, p.103) states, the success factor of stunting management policies in the City of Balikpapan is determined by regional leadership factors, coordination, and synergy between regional apparatus organizations, harmonization of regulations and procedures between the central and regional governments, and collaboration with other stakeholders. Such as public and private organizations. Another study from (Rosha et al., 2016, p. 135) also states that cross-sectoral coordination and involving various stakeholders are important strategies. One example of cross-sector collaboration in the government environment is the WPPA collaboration model (trainer, researchers, planners, and alumni of the Leadership Education and Training). It aims to ensure that each change project produced by the Education and Training Center can be sustainable and achieve medium and long-term goals (Soesanto, 2017, p. 342). Therefore, strategies related to increasing participation, coordination, and collaboration between stakeholders are absolutely necessary.

4. Conclusion

The stunting situation in the city of Bandung is illustrated by a risk index that is a combination of hazard components determined by the number of short and very short children under five and a vulnerability component consisting of exposure, sensitivity, and adaptability community to stunting. The results were two villages at very high risk of stunting, 12 high-risk villages, 18 medium-risk villages, 75 low-risk villages, and 44 very low-risk villages; There are 14 villages in Bandung City prioritized the program for handling and reducing stunting in 2020. In general, these villages have a relatively high number of poor people, poor environmental sanitation seen from the proportion of ODF (open defecation free), and an abundance of short children under five. And very short and weak adaptive capacity.

Recommendations in strategies for accelerating the handling and reduction of stunting in Bandung City are based on the results of the analysis, namely the need to increase public understanding and awareness of the handling and prevention of stunting through education, socialization, and campaigns on an ongoing basis; acceleration of sensitive and specific stunting intervention programs; development of an integrated stunting data management system in Bandung City; increasing participation, collaboration, and coordination between stakeholders both within the City Government of Bandung and outside the City Government of Bandung in handling and preventing stunting.

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