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Strategy for Accelerating Stunting Reduction Program in Tasikmalaya City, Indonesia Using Analytic Hierarchy Process (AHP)

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ABSTRACT

Background: Through the Sustainable Development Goals (SDGs) program, the target is to address all forms of malnutrition and reduce stunting and wasting in toddlers by 2030. This movement involves policymakers working together to reduce the prevalence of stunting in Indonesia. The objective of this study was to analyze and prioritize, through the Hierarchical Analytical Process (AHP), public policy strategies to accelerate the reduction of stunting in the city of Tasikmalaya.

Methods: This research was conducted using a *mixed method,* including a qualitative approach for interviews and a quantitative approach for prioritization analysis using AHP. The sampling technique used a purposive sampling, with 14 respondents, with the inclusion criteria were: more than 5 years of experience in nutrition policy, representation from key institutions, and a decision-making level of middle to upper management. Interviews were conducted to obtain information on strategic issues in stunting management in Tasikmalaya City. The selection of these alternative policy strategies will be determined in focus group discussions (FGDs) held at government institutions. AHP analysis is carried out using Expert Choice software version 10.

Results: Based on the Analytical Hierarchy Process from respondents, the most important alternative strategy is the macronutrient intake intervention. This was determined through an evaluation based on four key criteria: budgetary readiness, infrastructure, institutional sustainability, and community readiness. For example, providing locally sourced food supplements, such as eggs and milk, to toddlers is considered the most rapid and effective way to address stunting in toddlers. This research found that three months of Food Supplement support resulted in increased weight, as well as improvements in nutritional status. Most toddlers experienced weight gain during the support period.

Conclusion: Macro-nutrition interventions are clearly superior to other program strategies because this program can be sustainable. The government has to provide more macronutrient interventions, such as providing rice, milk, and eggs, for toddlers to prevent stunting.

KEYWORDS

Nutritional Policy, Indonesia, Program Prioritization, Analytic Hierarchy Process.

INTRODUCTION

Stunting, defined as a nutritional status based on the height-for-age index, where in the anthropometric standard for assessing children's nutritional status, the measurement results are at the threshold (Z-Score) <-2 SD to -3 SD (short/stunted) and <-3 SD (very short/severely stunted). Stunting is a chronic malnutrition problem caused by insufficient nutritional intake over a long period due to the provision of food that does not meet nutritional needs.

To achieve optimal growth and development, in the Global Strategy for Infant and Young Child Feeding, WHO/UNICEF recommends four important things that must be done, namely; first, giving breast milk to babies immediately within 30 minutes after birth, second, exclusively breastfeeding from

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birth until the baby is 6 months old, third, giving complementary foods from the age of 6 months to 24 months, and fourth, continuing breastfeeding until the child is 24 months old or older[1].

Based on the Basic Health Research 2018, the prevalence of stunting in toddlers was 30.79%, wasting in toddlers was 10.19%, and underweight was 17.68% (Ministry of Health 2019). The 2021 SSGI data states that the stunting prevalence in West Java Province reached 24.5%, slightly above the national average of 24.4%. According to the 2023 Indonesian Child Health Survey data, the stunting prevalence in West Java Province reached 17.7%, still exceeding the national target of below 14%[2]. According to the Tasikmalaya City Health Office (2020), the number of stunting cases in Tasikmalaya City reached 7,731, or 17.58 percent, higher than the 5,373 cases recorded in 2019, or 10.95%. The highest stunting prevalence was in Karanganyar Village, with 242 cases (29.44%)[3].

Through the Sustainable Development Goals (SDGs) program, the target is expected to end all forms of malnutrition and reduce stunting and wasting in toddlers by 2030[4]. As one of the efforts to achieve this target, Indonesia has joined the Scaling Up Nutrition (SUN) Movement. In Indonesia, this is known as the First 1,000 Days of Life Movement (1,000 HPK Movement).

This movement aims to accelerate nutritional improvements for the better lives of Indonesian children in the future. This movement involves various sectors and policymakers working together to reduce the prevalence of stunting and other forms of malnutrition in Indonesia. This movement requires strong support and guidance in conducting situational analysis. However, the lack of human resources to conduct situational analysis has left Tasikmalaya City, West Java, without a situational map to serve as a basis for implementing the 1000 HPK movement[3].

These are some of the challenges faced in implementing measures to reduce stunting prevalence in Tasikmalaya City. The AHP assessment is expected to assist the Tasikmalaya City government in this regard. Preventing stunting early to prevent new cases. To support the achievement of policy convergence to reduce stunting in Tasikmalaya City. The hope of this situational analysis assistance is that the results can be utilized in the development of programs, activities, and policies to accelerate stunting reduction in Tasikmalaya City.

Based on the background above, the objective of this study was to analyze and prioritize, through the Hierarchical Analytical Process (AHP), public policy strategies to accelerate the reduction of stunting in the city of Tasikmalaya.

METHOD

This research was conducted using a *mixed method,* between qualitative approach for in-depth interview, and quantitative approach for prioritization analysis using AHP. The sampling technique used a purposive sampling, with 14 primary informants responsible for the Stunting program in each agency within the Tasikmalaya City Government, with the inclusion criteria;

1. Experience in nutrition policy for more than 5 years, and
2. Institutional representation.
3. Level of decision making was; middle to upper management

This research was conducted through interviews and FGD. The interviews were semi-structured questionnaires. The questions were about: Understanding & Priorities Program Implementation, Barriers & Challenges, Collaboration & Roles, and Sustainability & Recommendations. For each criterion, there were two questions. This question was validated beforehand.

Each focus group discussion (FGD) lasted approximately 60 to 90 minutes. A trained facilitator moderated the sessions using a semi-structured discussion guide to ensure consistency across groups while allowing flexibility for participants to elaborate on their experiences. The discussions were audio-recorded with participants' consent and later transcribed for analysis. the discussions using a semi-structured guide centered on stunting implementation challenges, inter-sectoral coordination, and policy barriers. The respondents also have to choose the best intervention program to be prioritize for govenrment, with institutional criteria consisting of budgetary readiness, infrastructure, institutional sustainability, and community readiness.

The FGDs will discuss priority alternative strategies for accelerating stunting reduction, including:

1) Interventions to increase macronutrient intake
2) Interventions to increase micronutrient intake
3) Nutrition training and counseling
4) Food insecurity-free environment intervention
5) Poverty reduction interventions

The hierarchical attributes were then used in a focus group discussion (FGD) during the AHP process with several expert respondents considered to be experts in policies to accelerate stunting reduction in Tasikmalaya City. This process was necessary to obtain information on stakeholder aspirations and perceptions regarding strategies for addressing stunting reduction. FGDs were conducted with stakeholders twice to determine program priorities based on AHP.

For the FGD materials, the data sources used were secondary data through literature review and documentation. AHP analysis is carried out using Super Decisions software version 2.10. When conducting analysis using AHP, it is necessary to pay attention to the 4 principles of AHP, namely:

Table 1. FGD informants for compiling policy recommendations

Informant	Number of people	Information	Method of collecting data
Tasikmalaya City Health Office	2	Nutrition Staff of the Health Service	FGD
Department of Food Security and Agriculture	2	The Food Security Service is responsible for increasing food availability.	FGD
Department of Population Control, Family Planning and Women's Empowerment	2	Family planning staff are responsible for toddler nutrition	FGD
Social Services	2	Responsible for the poor	FGD
Regional Development Planning Agency	2	Planning and research	FGD
BPS	2	Stunting data	FGD
Persagi Tasik Branch	1	Expert in the field of nutrition	FGD
Food Nutrition	1	Expert in the field of community nutrition	FGD
Total	14 people		

Decomposition

The decomposition stage is the stage of creating a hierarchy. The creation of this hierarchy is based on an understanding of the problem of chronic hunger and hidden hunger in toddlers, stakeholders who contribute to solving the problem, and alternative solutions. The simple form of the hierarchy consists of 3 levels (from general to specific), namely: (1) the final goal of the decision, (2) criteria, and (3) alternatives. The purpose of creating this hierarchy is to make it easier to assess the importance of elements at a certain level with other elements at different levels.(Saaty & Vargas 2012). This hierarchical structure is the basis for creating a questionnaire that will be given to experts, decision makers, and people involved or aware of the problems of chronic hunger and hidden hunger in toddlers.

Comparative judgment

The assessment of criteria and alternatives is done by forming a pairwise comparison matrix. A scale of 1-9 is used to express the respondents' opinions. The comparative judgment assessment weights are presented in Table 2.

Table 2. Comparative judgment assessment weight

Mark	Criteria	Information
1	Equally important	The contribution of two activities is the same towards the goal
2	Weak	The middle value between 1 and 3
3	A little more important	Experience and judgment favor one activity being slightly more important than another.
4	Currently	The middle value between 3 and 5
5	More important	Experience and judgment support one activity being more important than another.
6	Strong	The middle value between 5 and 7
7	Very important	One activity is strongly preferred over the others, and its dominance is evident from
8	Very strong	The middle value between 7 and 9
9	Absolutely essential	One activity proved to be better than the other

Source: (Saaty & Vargas 2012)[5].

Synthesis of priorities

This is a process of determining priorities based on a comparison matrix of criteria and alternatives. The relative comparison values obtained are then processed to determine the relative ranking of all alternatives.

Logical consistency

This stage is carried out to calculate consistency. The consistency assessment of the comparison matrix of criteria and alternatives is carried out by calculating the consistency index (CI) and consistency ratio (CR) values. The matrix assessment is said to be consistent if the CR value ≤ 0.1(Saaty and Vargas 2012). If the CR value is more than 0.1, then it is necessary to review the questions in the questionnaire, correct them, ask them again or in the data collection process provide more detailed information to the respondents. CR value = CI/ RI (random consistency index).

RI average value (Saaty and Vargas 2012)

N	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.52	0.89	1.11	1.25	1.35	1.40	1.45	1.49

RESULTS

Based on the data processing, a hierarchy of priority systems was developed based on determining factors and program strategies. The hierarchy analysis was based on 14 stakeholders invited to focus group discussions (FGDs). The hierarchical structure of policy selection to address food insecurity, chronic and hidden hunger at the household level consists of two components: the components that influence the policy and the policy alternatives that will be selected. There are four components or factors that influence policy: budgetry readiness, infrastructure, institutional sustainability, and community readiness. Meanwhile, there are 4 types of strategies to reduce stunting in toddlers, namely macronutrient intake interventions, micronutrient supplementation/fortification interventions, nutrition training and counseling, and food-insecurity-free environment interventions. For each component, the most urgent will be selected. Then, each alternative will be linked to four components, and the most urgent will be selected. Alternatives, which take the form of program strategies, will be assessed in terms of budgetary readiness, infrastructure, institutional sustainability, and community readiness. This can be seen in the chart below (Figure 1).

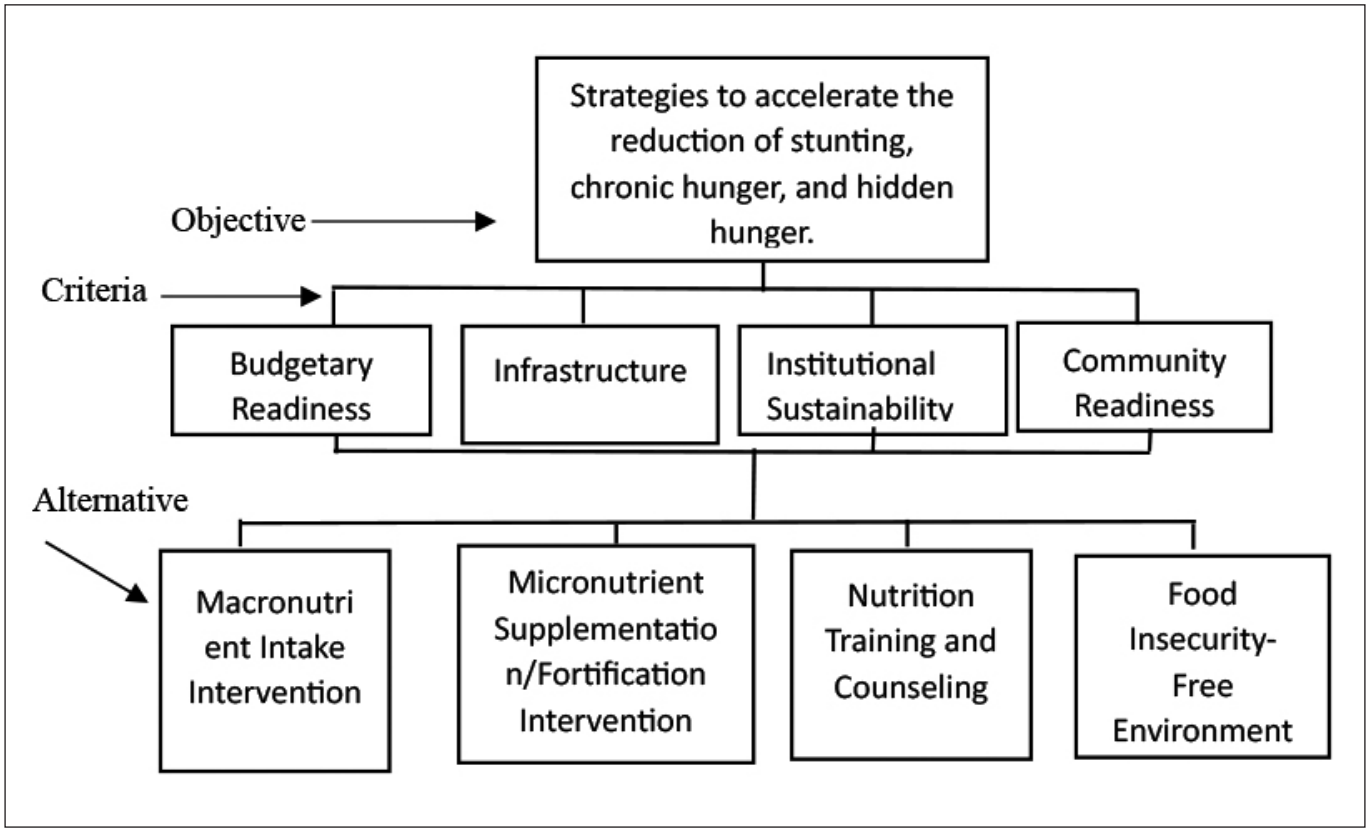

Figure 1. An Analytic Hierarchy Process diagram related to the program for handling stunting, chronic hunger, and hidden hunger in toddlers in Tasikmalaya

1) Determining Factors (Criteria)

1. Budgetary Readiness: Funds that can be used to achieve predetermined goals/targets (either from government or non-government sources)
2. Infrastructure: Facilities are equipment that can be used to support the achievement of predetermined goals/targets. Infrastructure is support (non-moving facilities) that can be used to support the achievement of predetermined goals/targets.
3. Institutional Sustainability: Organization (government and/or non-government) that will plan, implement, and evaluate policies or programs, or activities to achieve goals/targets
4. Community Readiness: The level of community acceptance to implement a policy or program, or activity.

Based on expert assessments, the most important criteria are Budgetary readiness, followed by Community Readiness, Institutional Readiness, and finally, Infrastructure. This is evident in the highest weighting of the Budget criterion, at 32.35%. The Consistency Ratio for this criterion is 0.1420286, or 14.20%. This value is still considered inconsistent because it is greater than 10%.

According to (Saaty, 2008) determining the weight for various issues, a scale of 1 to 9 is the best scale in expressing opinions, Score 1: equally important (equal importance), Score 3: slightly more important (moderate importance), Score 5: more important (strong importance), Score 7: very more important (very strong importance), Score 9: absolutely more important (extreme importance), Score 2,4,6,8: middle score of upper and lower values[4]. The priority of hierarchical determining factors in the strategy for accelerating the reduction of stunting, chronic hunger and hidden hunger and chronic hunger and hidden hunger in toddlers in Tasikmalaya are presented in Table 3.

Experts believe that the most important determining factor is the availability of a budget to implement programs to accelerate stunting reduction, compared to infrastructure, institutions, and community preparedness. Budget plays a key role in addressing chronic, hidden hunger, and stunting.

Table 3. Priority of determining factors of hierarchy in the acceleration reduction strategy *Stunting* in toddlers in Tasikmalaya.

Determining factors	Weight	Ranking
Budget	0.3235696	1
Facilities and infrastructure	0.1960649	4
Institutional	0.1984078	3
Community readiness	0.2819577	2

2) Strategic Priorities (Alternatives)

Strategic priorities are formulated based on an interview and observed analysis with stakeholders. In general, there are four types of strategies to reduce chronic and hidden hunger in stunted toddlers:

1) Interventions on macronutrient intake, for example, providing PMT made from local foods, providing milk and eggs for stunted toddlers.
2) Micronutrient supplementation/fortification interventions, for example, adding iron to wheat flour, adding iodine to salt, etc.
3) Nutrition training and counseling, including nutrition-aware family programs, balanced nutrition awareness programs for teenagers.
4) Food insecurity-free environmental interventions, for example, fish farming in buckets, growing vegetables in pots.

a) Alternative Weight (Program Strategy Priority) based on Budget

Based on expert assessments, the most important alternative based on the budget is the macronutrient intake intervention. This is evident from its highest weighting of 45.05%. According to Saaty's theory (2008), the results obtained from the Consistency Ratio (CR) calculation indicate that all informants have met the CR, with a CR value of less than 10% (CR ≤ 0.1), making it suitable for data analysis. *Consistency Ratio* on the criteria is as big as 0.008222921 or 0.82%, the value is consistent because the value is less than 10%[4]. Alternative weights (program strategy priorities) based on the budget are presented in Table 4.

Table 4. Alternative weights (program strategy priorities) based on the budget

Program strategy priorities	Weight	Ranking
Macronutrient intake intervention	0.45053109	1
Micronutrient supplementation/fortification interventions	0.08914589	4
Nutrition training and counseling	0.11971150	3
Food insecurity-free environment intervention	0.34061152	2

b) Alternative Weights based on Infrastructure Facilities

Based on expert assessments, the most important alternative, based on infrastructure, is macronutrient intake intervention. This is evident from its highest weighting, at 40.006%. *Consistency Ratio* on the criteria is as big or 5.75%, the value is consistent because it is less than 10%. The alternative weights based on infrastructure are presented in Table 5.

Table 5. Alternative weights based on infrastructure

Program strategy priorities	Weight	Ranking
Macronutrient intake intervention	0.4000628	1
Micronutrient supplementation/fortification interventions	0.1275621	3
Nutrition training and counseling	0.1069251	4
Food insecurity-free environment intervention	0.3654500	2

c) Alternative Weights based on Institutions

Based on expert assessments, the most important alternative based on institutional factors is the intervention of a food-insecure environment. This is evident from its highest weighting, at 39.384%. The Consistency Ratio for this criterion is 0.01202965, or 1.20%. This value is consistent because it is less than 10%. The alternative weights based on institutional factors are presented in Table 6.

d) Alternative Weights based on Community Readiness

Based on expert assessments, the most important alternative, based on institutional context, is macronutrient intake intervention. This is evident from its highest weighting, at 35.156%. The Consistency Ratio for this criterion is 0.06665425, or 6.66%, a consistent value because it is less than 10%. Alternative weights based on community readiness are presented in Table 7.

Table 6. Alternative weights based on institutions

Program strategy priorities	Weight	Ranking
Macronutrient intake intervention	0.35524841	2
Micronutrient supplementation/fortification interventions	0.09864763	4
Nutrition training and counseling	0.15225894	3
Food insecurity-free environment intervention	0.39384502	1

Table 7. Alternative weights based on community readiness

Program strategy priorities	Weight	Ranking
Macronutrient intake intervention	0.3515630	1
Micronutrient supplementation/fortification interventions	0.1203300	4
Nutrition training and counseling	0.2179668	3
Food insecurity-free environment intervention	0.3101402	2

e) Alternative Weights based on Criteria

Based on the five experts' criteria, the alternative chosen based on budget, infrastructure, and community readiness was macronutrient intake intervention, while the institutional criteria selected the alternative chosen was food-insecurity-free environment intervention. The weighting of the alternatives based on the criteria is presented in Table 8.

Table 8. Alternative weights based on criteria

Program strategy	Budget	Facilities and infrastructure	Institutional	Community readiness
Macronutrient intake intervention	**0.4505**	**0.4001**	0.3552	**0.3516**
Micronutrient supplementation/fortification interventions	0.0891	0.1276	0.0986	0.1203
Nutrition training and counseling	0.1197	0.1069	0.1523	0.2180
Food insecurity-free environment intervention	0.3406	0.3654	**0.3938**	0.3101

Based on Table 9, the combined weights obtained were 0.394, the largest for macronutrient intake interventions. The second-highest weight, 0.347, was for the food-insecurity-free environment intervention program strategy. The combined weights are presented in Table 9.

Table 9. Combined weight

Program strategy	Weight
Macronutrient intake intervention	0.394
Micronutrient supplementation/fortification interventions	0.107
Nutrition training and counseling	0.151
Food insecurity-free environment intervention	0.347

DISCUSSION

The Analytic Hierarchy Process (AHP) was used to identify the most effective intervention programs aimed at accelerating stunting reduction. In this analysis, questionnaires were distributed to respondents to determine factors that could facilitate stunting reduction in rural areas in Indonesia. To facilitate the AHP analysis process, Super Decisions software version 2.10 was used[6].

Various studies on stunting in Indonesia have integrated the AHP and SWOT methods to design strategies to accelerate stunting reduction in rural areas. The process of determining alternative strategies was conducted using questionnaires after respondents or informants assessed the importance of the factors causing stunting based on their expertise, namely: (1) quality of childcare patterns for toddlers in rural areas, (2) knowledge of maternal and toddler nutrition in rural areas, and (3) data collection and monitoring systems for the nutritional status of mothers and toddlers[7].

Based on the Analytical Hierarchy Process of the experts, the most important alternative strategy is macronutrient intake intervention. For example, providing locally sourced food supplements (FS) to prevent stunting, and providing eggs and milk to toddlers is considered the most rapid and effective way to address stunting, chronic hunger, and hidden hunger in toddlers. This result is similar to other research, which found that three months of PMT support resulted in increased weight, height, and upper arm circumference, as well as improvements in nutritional status based on the Weight per age, Height per age, and Weight per Height indexes. Most toddlers experienced weight gain during the support period[8].

In terms of budgetary readiness, infrastructure, and community readiness, macro-nutrition interventions are clearly superior to other program strategies, although the alternative institutional criteria chosen are the food-insecure environment intervention program, because this program can be sustainable. The budget provided by the Tasikmalaya City government includes milk and egg supplements for stunted toddlers, plus funds from Tasikmalaya City Civil Servants. A flagship program of the Tasikmalaya City government, called 'One Civil Servant, One Stunted Child', involves civil servants personally sponsoring the nutritional needs of a stunted child.

Regarding institutions, the Tasikmalaya City government already has a stunting task force consisting of pediatricians, nutritionists, psychologists, and obstetricians. This stunting task force still needs to expand its team to each citizen association and neighborhood unit to address its scope of work. Coordination and collaboration between all relevant agencies are also essential, with the Tasikmalaya City Government's Office of Child Protection as the leading sector.

Regarding facilities and infrastructure, experts believe this will be met with adequate funding. Community readiness is not a constraint due to the role of integrated health service post (Posyandu) cadres in promoting the Tasikmalaya City government's program. However, the government still needs to initiate the involvement of all elements of society, especially those with the means to provide self-help assistance to the poor.

Based on the results of the Analytic Hierarchy Process from stakeholders, a strategic option was obtained, namely macronutrient intervention with the Provision of Supplementary Feeding made from local foods. This is one of the government's strategies in addressing the problem of chronic and hidden hunger in toddlers and is an effort to prevent stunting. The Supplementary Feeding program not only focuses on providing supplementary food, but also includes counseling, nutrition education, and health education. Maternal education exhibits the most robust correlation with the occurrence of stunting. Mothers with limited educational backgrounds have a higher likelihood of delivering children who experience stunting. Findings from additional research studies suggest that mothers with lower levels of education elevate the risk of stunting in children under the age of five by 3.01 times compared to mothers with higher educational levels (OR = 3.01; 95% CI = 1.92 to 4.73)[9].

The purpose of providing supplementary food made from local foods is to help toddlers who are malnourished, underweight, or not gaining weight. This goal is to help toddlers return to a normal weight level according to the growth curve. Ideal weight and adequate nutrition help prevent stunting in toddlers.

The opinion from the Nutrition section of the Provincial Health Office stated that Supplementary Feeding is an important component, and the food ingredients used should be local ingredients that are available and can be easily found so that the possibility of program sustainability will

be greater. Analysis of the concept of sustainability in the local food PMT program. Sustainability is understood as the continued function of program components and activities in order to meet the further achievement of program objectives and outcomes in the population. The tendency for sustainability will increase when there is harmony, compatibility, or convergence between 1) awareness of problems from the external environment of the organization or community, 2) health programs, and 3) the objectives and internal capacity of the organization.

In the Local Supplementary Feeding program, the alignment and compatibility between awareness of stunting issues in toddlers, the need for behavior-based programs by mothers and toddlers, and the capabilities of health workers, cadres, and the private sector have been fairly well met. The sustainability of the Local Supplementary Feeding program using local food ingredients, which is still being carried out in several regions of Indonesia, with results showing improvements in the nutritional status of many toddlers, indicates that the program's implementation has been running well, so its sustainability is the alignment between awareness of stunting issues in toddlers, the need for behavior-based programs for mothers, and the capabilities of health workers. The sustainability of this program must consider the balance between the community, health issues, the proposed health program, and adequate capacity. A sustainable health program will ultimately provide very beneficial outcomes in the long term.

The provision of locally sourced food-based Local Supplementary Feeding (Food-Based Nutrition) is not intended to replace staple foods. This program provides daily Local Supplementary Feeding with at least one complete meal per week, with the remainder being snacks. The complete meal program aims to educate children on how to prepare nutritious, balanced meals according to the "Isi Piringku" program, with a focus on two types of animal protein. The Local Supplementary Feeding is usually implemented at Integrated Health Posts (Posyandu), health facilities, Mother and Toddler Classes, or through home visits by cadres, health workers, or related partners. It is hoped that the use of local food in the Local Supplementary Feeding program can support food independence and family nutrition sustainably.

Based on data from the Food Security Council (2020), Indonesia has a diverse range of local food sources, including 77 types of carbohydrates, 30 types of fish, 6 types of meat, 4 types of poultry, 4 types of eggs, 26 types of nuts, 289 types of fruits, 228 types of vegetables, and 110 types of spices and seasonings[10]. This demonstrates the significant potential for utilizing local foods to support family food provision and address stunting, where macronutrient interventions are crucial in the management program. Micronutrient intervention is also important for children to prevent stunting. Based on Aisyah *et.al* (2024) research that, toddlers with stunting were significantly more likely to have inadequate iron (92.95%) and zinc intake (91.54%) compared to their non-stunting counterparts (78.87% and 77.46%, respectively)[11].

Other research showed that interventions using key educational messages, provision of complementary food with or without fortification, or increased energy density of complementary foods have greater potential for impact on growth than interventions based on fortification alone. In several studies, the impact of providing a complementary food, in combination with nutrition education, was evident only in the younger children. This underscores the importance of beginning complementary feeding programmes during infancy, when nutrient needs relative to energy intake are the highest and the ability of the child to respond to a nutritional intervention is the greatest[12].

Small amounts of daily fortified complementary foods, provided for a year in addition to nutrition counselling, modestly increased linear growth and reduced stunting at 18 months of age. Growth deceleration occurred from 6 to 18 months of age, but deceleration in LAZ was lower (by 0.02–0.04/month) in the Plumpy'dôz ($P = 0.02$), rice-lentil (< 0.01), and chickpea (< 0.01) groups relative to the control group[13].

Nutrition-specific interventions alone cannot fully address the multiple causes of stunting in Urban settings, which include poor sanitation, recurrent infections, food insecurity, and inadequate caregiving practices[14]. Tasikmalaya as an urban area, must pay attention to other factors in addressing the problem of stunting. Adaptability and tension for change were the facilitators for the implementation of nutrition interventions. Effective implementation of nutrition interventions requires a strong system for monitoring, supportive supervision and accountability[15].

It is important to note that government policies are constantly evolving, and their implementation is subject to change. While the success of the Indonesian government's programs in addressing stunting has seen some positive developments, weaknesses remain. The Tasikmalaya city government continues to strive to improve the success of these programs through ongoing evaluation and adjustment. Careful monitoring and evaluation will help identify areas for improvement and determine further steps to address stunting in Tasikmalaya. The Integrated Health Service Post known locally as Posyandu program is a community-focused health initiative that is highly effective in the early identification of malnutrition in toddlers. Providing locally sourced food and macronutrient interventions will be effective during Posyandu implementation, thereby increasing maternal and child participation in Posyandu activities.

CONCLUSION

This study concludes that macronutrient intervention is the highest-priority strategy overall for accelerating stunting re-

duction in Tasikmalaya City, particularly when evaluated against the criteria of budgetary readiness, infrastructure, and community readiness. However, to achieve long-term institutional sustainability, this strategy must be integrated with a food insecurity-free environment program, which experts ranked highest from an institutional perspective. The success of stunting reduction hinges not only on providing key foods like eggs and milk but also on strengthening the supporting ecosystem, including the sustainable use of local food sources and optimizing the role of the Integrated Health Post (Posyandu). Future stunting alleviation policies should therefore be multi-sectoral, combining specific nutritional interventions with improvements in sanitation, family food security, and robust, continuous program monitoring and evaluation.

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