Analysis Of Urban Food Poverty And Policy Strategies For Food Control In The City Of Medan

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Abstract – This research analyzes food poverty in the city of Medan and formulates food control policy strategies. The analysis of the proportion of food consumption expenditures indicates high poverty rates in several districts, particularly in Medan Belawan and Medan Marelan. The SWOT approach identifies policy alternatives in quadrant 1, leveraging opportunities and strengths to address the food security and vulnerability of impoverished households. Five priority strategies were obtained, involving the optimization of food price control, increasing the availability and reserves of food, business collaboration strategies, supply control from hinterland areas, and improving economic access. The research conclusion emphasizes the need for simultaneous policy implementation covering aspects of food availability, distribution, and quality. Recommendations involve cross-sector collaboration to ensure policy sustainability and a focus on priority strategies. It is hoped that the implementation of these policies can reduce food poverty levels and improve the well-being of impoverished households in the city of Medan.

Keywords – Food Poverty, Food Policy, SWOT Analysis, Priority Strategies, Medan City.

I. Introduction

Achieving food security involves the universal fulfillment of two critical aspects. Firstly, there must be an equitable and ample supply of food to meet the needs of the entire population. Secondly, each individual should possess both the physical and economic means to access nutritionally sufficient food, facilitating a healthy and productive life. The quantity and quality of food supply play a pivotal role in work productivity, brain development, intelligence, and ultimately contribute to the overall well-being of the community. The World Health Organization (2020) outlines three essential components of food security: food availability, access to food, and the utilization of food. Food availability denotes the ability to possess an adequate amount of food for basic needs.

Despite being a critical issue, food vulnerability and poverty persist as significant challenges in Medan City. There is a clear positive correlation between food vulnerability and poverty, particularly with the city's increasing population each year. As the population grows, so does the demand for food, leading to a simultaneous rise in consumption. Recognizing the importance of addressing these challenges, the government of Medan City has implemented various assistance programs, including Social Assistance (BANSOS), Direct Cash Assistance (BLT), and Non-Cash Food Assistance (BPNT). These initiatives aim to alleviate food vulnerability among low-income households.

The research problem in this study centers on assessing the level of food security, identifying supportive and inhibiting factors in addressing impoverished households, and proposing alternative policies and strategies to enhance food security among low-income households in Medan City. The study aspires to make meaningful contributions by informing the formulation of effective food policies in Medan City, advancing knowledge in the field, and serving as a foundational platform for further in-depth research.

II. LITERATURE

Food security, as defined by the Law No. 18 of 2012, embodies the fulfillment of food needs from the national level to individuals. This involves ensuring an ample, safe, diverse, nutritious, and affordable supply of food that respects the religious, belief, and cultural values of the population. Quantitatively, food availability signifies that both plant-based and animal-based foods are sufficiently accessible to the community. Quality assurance in food (health) pertains to meeting high standards for human consumption, addressing nutritional needs for carbohydrates, proteins, fats, vitamins, and minerals. Safety (health) ensures that the consumed food adheres to physical health standards and does not contain harmful substances. Distribution (equity) emphasizes even distribution to every region for easy accessibility, and affordability (access) ensures that the community can easily obtain food at reasonable prices (Rujiah, 2020).

Food security comprises three primary subsystems: availability (Food Availability), access (Food Access), and utilization (Food Utilization), with nutritional status (Nutrition Status) representing the outcome of food security. All three subsystems—availability, access, and utilization—must be fully met. If any one subsystem is lacking, a country cannot be deemed to have robust food security, even if there is sufficient national and regional food availability. If individual access to meet their nutritional needs is uneven, food security is still considered fragile (Baladina et al., 2014).

Food vulnerability signifies a condition where the availability and safety of food are insufficient to meet the physiological needs standard for the growth and health of the majority of the population in a given area. It reflects the level of food security in a region. Achieving food security across all regions is a national development goal, and reducing the level of food vulnerability in each area is crucial (Nugroho, 2009). Factors such as droughts, floods, or imbalances between production and demand can contribute to the impact of food vulnerability.

Research conducted by Salsabila Kharisma (2018) in the study titled "Analysis of Food Consumption Patterns and Household Food Security in Belawan I Sub-district, Medan Belawan, Medan City, North Sumatra" aimed to understand the consumption patterns and food security of poor households. The findings revealed that the food consumption pattern in Belawan I Sub-district had a score of 75.28 for the Expected Food Pattern (PPH), which is below the officially endorsed score set by the Food Security Agency.

In summary, this literature review provides a comprehensive understanding of the research framework involving food vulnerability, poverty, and poverty alleviation programs.

III. RESEARCH METHOD

This research is conducted in the city of Medan, employing a purposive approach due to the city's status as an administrative region relying on food supplies from its surrounding areas rather than being a primary food production center. The primary objective is to formulate policies addressing food security and vulnerability among low-income households in Medan.

Data collection utilizes a mixed-methods approach, incorporating primary data from direct interviews through surveys with households in Medan concerning their consumption patterns. Additionally, secondary data is sourced from relevant literature such as books, journals, and articles focusing on food security and vulnerability policies. Government data from entities like the Central Statistics Agency (BPS) of Medan, the Department of Agriculture, and the Department of Food Security, Agriculture, and Fisheries of Medan serve as crucial secondary sources.

The study's population encompasses 187,400 individuals in low-income households in Medan, with a sample size of 100 households selected through proportional random sampling across key districts, including Medan Deli, Medan Labuhan, Medan Marelan, and Medan Belawan.

Data analysis employs a quantitative descriptive analysis, measuring food security through the expenditure proportion indicator. Food expenditure is gauged as a proportion of total expenditures, considered low if ≤60%. Furthermore, a SWOT analysis is employed to identify internal (strengths and weaknesses) and external (opportunities and threats) factors within food security policies. The QSPM analysis determines priorities and formulates policy strategies based on the SWOT analysis results.

IV. RESULT

4.1. General Overview of the Research Location

As an autonomous city in the Province of North Sumatra, Medan holds a significant and strategic position regionally. Serving as the capital of North Sumatra, Medan often acts as a benchmark in regional development and local government administration. Geographically, Medan's strategic location, bordering the Strait of Malacca to the North, positions it in proximity to more developed cities/countries like Penang in Malaysia and Singapore. With a large estimated population of 2,494,512 individuals in 2022, covering 707,205 households, and an area of 265.10 km², Medan is economically poised for potential growth as a regional/national trade and financial center.

4.2. Demographic Profile of Medan

Medan's population is characterized by religious, ethnic, cultural, and customary diversity, fostering an open-minded community. Demographically, Medan is currently undergoing a demographic transition, signifying a shift where birth and death rates are decreasing. Factors influencing the declining birth rate include changing societal attitudes and socioeconomic shifts. Simultaneously, improvements in nutrition and adequate healthcare contribute to reduced mortality rates.

4.3. Population Growth Rates

According to BPS Kota Medan data, the population growth rate in Medan was 1.45% in 2020, reaching 2,435,252 individuals. The population continued to increase, with a growth rate of 0.79% in 2021, totaling 2,460,858 individuals. In 2022, there was a further increase of 1.38%, reaching a population of 2,494,512.

4.4. Population Density Ratio

Population density in Medan saw an increase, reaching 9,186 individuals/km² in 2020, 9,283 individuals/km² in 2021, and 9,410 individuals/km² in 2022. The high population density poses a demographic challenge for the future, potentially leading to an imbalance between environmental capacity and population growth.

4.5. Characteristics of Respondents

The study's sample consists of impoverished households in four districts of Medan: Medan Deli, Medan Labuhan, Medan Marelan, and Medan Belawan.

4.6. Share of Food Expenditure

The food consumption pattern indicates a diverse range of household food preferences in the research area, covering the districts of Deli, Medan Labuhan, Marelan, and Medan Belawan, as detailed in Table 1.

Table 1 Lowest and Highest Food and Non-Food Expenditures

Expenditure Type	Food Expenditure (Rp/Month)	Non-Food Expenditure (Rp/Month)
Lowest	490.000	95.000
Highest	4.400.625	2.240.000
Average	**1.066.638**	**443.860**

Source: Data processed, 2023

Table 1 illustrates that the lowest household expenditure includes Rp 490,000/month on food and Rp 95,000/month on non-food items. Conversely, the highest household expenditure comprises Rp 4,400,625/month on food and Rp 2,240,000/month on non-food items.

Table 2 Proportion of Food and Non-Food Expenditure in Each Respondent District

No	District	Average Proportion of Food Expenditure	Average Proportion of Non-Food Expenditure
1.	Medan Deli	69,8 %	30,2 %
2.	Medan Labuhan	69,6 %	30,4 %
3.	Medan Marelan	71 %	29%
4.	Medan Belawan	76 %	24%

Source: Data processed, 2023

Based on Table 2, the average proportion of food expenditure in the research area indicates that all four districts have a proportion of food expenditure exceeding 60% of the total expenditure, signifying households in these districts are still categorized as impoverished and food-vulnerable. The highest average proportion of food expenditure is in Medan Belawan at 76%, followed by Medan Marelan at 71%.

4.7 SWOT Analysis

Policy decisions to address food security and vulnerability in low-income households in Medan are based on several policy alternatives derived from internal and external factors, namely strengths, weaknesses, opportunities, and threats (SWOT). The identification of these factors is presented in Table 3.

Table 3 Identification of Internal and External Factors

Internal Factor	External Factor
(*Strengths*)	(*Opportunities*)
1. Availability and reserves of food in Medan are sufficient for food needs.	1. Strategic geographic location to receive food supplies from surrounding districts to meet the city's food needs.
2. Accurate and integrated data on the impoverished population is available.	2. Strong private sector support for collaboration in addressing food insecurity among the impoverished in Medan.
3. Activities conducted by regional organizations regularly reduce food expenditure for the impoverished.	3. Broad legal foundations for poverty alleviation in Medan, gaining support from all stakeholders.
4. Activities conducted by regional organizations enhance the capabilities and income of the impoverished.	4. Educational and research institutions in the food and nutrition field are sufficiently available.
5. Social assistance programs and integrated social guarantees aim to fulfill basic rights, reduce living burdens, and improve the quality of life for the impoverished.	5. Human resources, especially women and homemakers, still have potential for development in terms of food quality.
6. Empowerment programs for communities and strengthening of micro and small businesses aim to strengthen the capacity of impoverished community groups.	
7. Other programs directly or indirectly	

enhance economic activities and well-being for the impoverished. 8. Price control policies on food by the Regional Government through inflation control. 9. Health insurance for the impoverished through health cards. 10. Assistance in providing seeds for backyard gardens to meet family needs independently 11. Urban farming policies for vegetable cultivation using Vertical Culture methods. 12. Nutrition improvement assistance for schoolchildren. 13. Assistance in the form of Natural for impoverished families. 14. Market operations to control food price increases. 15. Stunting handling activities for toddlers. 16. Control of food supply from hinterland areas. 17. Socialization of diverse, nutritious, harmonious, and safe food consumption.	
(Weaknesses)	**(Threats)**
1. Low-educated workforce to meet family food needs. 2. Working in places that still receive low wages. 3. Household food reserves below 10 Kg per week. 4. Low-quality food consumption. 5. Food program and budget allocation proportions are not optimal. 6. Human resources in the planning and management of food vulnerability are not yet optimal. 7. Human resources in the planning and management of food vulnerability are not yet optimal. 8. Medan is not a food production center.	1. Dependence on food supplies from outside Medan is highly risky, especially if disasters in supplying districts/cities hinder the flow of food to Medan. 2. Unstable fluctuations in food prices in production centers significantly impact food prices in Medan. 3. Limited accessibility of food for the impoverished in the city, especially for those with low income. 4. Unoptimized food community institutions. 5. Human resources in the planning and management of food vulnerability are not yet optimal. 6. Medan is not a food production center. 7. Numerous unproductive backyard lands. 8. Uncontrollable climate change always

	leads to production shortages in districts/cities supplying food to the hinterland area.
	9. Low community interest in vertical farming
	10. Limited agricultural land for conventional farming.

4.8 SWOT Quadrant

The researcher employed a strategic approach to assess opportunities and threats in comparison to strengths and weaknesses, as demonstrated by using the SWOT diagram, which identifies positions in four quadrants. The results of the comparison between internal and external analyses in formulating policies on food security and vulnerability for impoverished households in Medan are as follows:

x = Total Strengths (S) Score - Total Weaknesses (W) Score
y = Total Opportunities (O) Score - Total Threats (T) Score

Where :   x = 2,31 – 0,51   y = 1,51 – 1,16

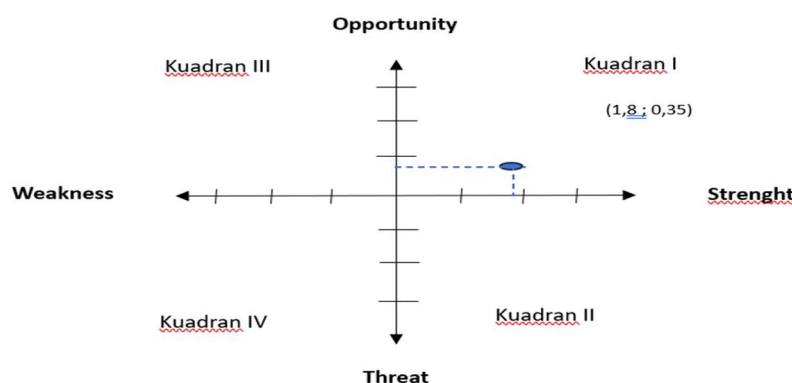   x = 1,8   y = 0,35

Figure 1 SWOT Quadrant

The obtained difference values from these quadrants form a coordinate point, namely (1.81, 0.35). Therefore, the position of the institution is in quadrant 1 (Progressive), which is a highly advantageous situation as it possesses opportunities and strengths. This allows the institution to leverage the existing opportunities in formulating policies on food security and vulnerability for impoverished households. Consequently, the appropriate strategy to be implemented by the institution in this condition is to support an aggressive growth-oriented strategy. This approach enables continuous expansion, substantial growth, and the achievement of maximum progress.

4.9 SWOT Matrix

a. Strength-Opportunities (SO) Strategies:

- Enhance government food availability and reserves.

- Optimize control over food prices.

- Utilize accurate data on impoverished populations and expenditure activities.

- Maximize social security programs, empower SMEs, and government policies.

- Leverage urban farming policies and government assistance.

- Improve control over food supply from hinterland areas.

- Enhance stunting intervention through nutritious food consumption awareness.

b. Strength-Threats (ST) Strategies:

- Strengthen business collaboration to ensure food supply.

- Improve economic access to maintain food affordability.

- Develop urban agriculture.

- Enhance the well-being of impoverished households and key food producers.

c. Weaknesses-Opportunities (WO) Strategies:

- Improve the quality of less-educated human resources.

- Enhance the quality of food consumption and nutrition through awareness.

- Reduce less competent bureaucratic human resources.

d. Weaknesses-Threats (WT) Strategies:

- Strengthen business collaboration to enhance the availability and quality of food supply.

- Improve economic access to increase purchasing power for food.

- Strengthen both government and community food institutions.

By implementing these strategies, it is expected that the institution can effectively execute food security policies to improve the well-being of impoverished households in Medan.

4.10 QSPM (Quantitative Strategic Planning Matrix)

The QSPM is an analytical tool used to select the appropriate alternative strategies based on the previously identified internal and external factors using the SWOT matrix.

Table 4 below represents the prioritization of strategies for food security and vulnerability policies for impoverished households in Medan.

No.	Strategy Alternative	TAS Score	Ranking
1.	Enhance government food availability and reserves for the food needs of the people of Medan for the next three months	7,49	II
2.	Optimize control over food prices by providing sufficient food reserves for both government and household needs	7,93	I
3.	Utilize accurate data on impoverished populations and activities to reduce expenditure burdens	5,44	XI

No.	Strategy Alternative	TAS Score	Ranking
4.	Maximize social security programs, empower SMEs, and other programs for the well-being of impoverished communities	5,77	IX
5.	Optimize urban farming policies by leveraging the strategic geographic location to receive food supplies	4,66	XV
6.	Utilize government assistance and policies through collaboration between institutions, especially in the areas of food and nutrition	3,91	XVII
7.	Enhance control over food supply from hinterland areas to meet the food needs of the people of Medan	7,03	IV
8.	Improve stunting intervention through awareness of diverse, nutritious, harmonious, and safe food consumption	5,4	XII
9.	Enhance business-to-business collaboration to ensure food supply in the food trade sector	7,09	III
10.	Improve economic access to ensure the affordability of food needed by the impoverished population	6,32	V
11.	Develop urban agriculture to increase the availability and diversity of food, especially vegetables and fruits	4,5	XVI
12.	Enhance the well-being of impoverished households and key food producers to increase the interest of the impoverished community in the field of food	5,27	XIII
13.	Improve the quality of less-educated human resources to meet the food needs of families	4,83	XIV
14.	Improve the quality of food consumption and nutrition through awareness, including diverse, nutritious, harmonious, and safe food consumption	5,67	X
15.	Reduce less competent bureaucratic human resources and replace them with potential human resources	4,66	XV
16.	Enhance business-to-business collaboration to improve the availability and quality of food supply	6,23	VI
17.	Improve economic access to increase purchasing power for food	5,81	VIII

No.	Strategy Alternative	TAS Score	Ranking
18.	Strengthen both government and community food institutions to ensure food stability	5,98	VII

Source: Data Processed, 2023

Based on the total attractiveness score (TAS) calculations in Table 4, five alternative priority strategies for food security and vulnerability policies for impoverished households have been identified.

Prioritized Strategies:

1. Optimize Price Control of Food (TAS Score: 7.93):

    - Provide food as reserves for both the government and households.

    - Aim to maintain food accessibility, stabilize prices, and ensure food security.

2. Increase Availability and Reserves of Government Food (TAS Score: 7.49):

    - Protect impoverished households from food vulnerabilities.

    - Focus on ensuring the availability of food supplies and preventing shortages.

3. Enhance Business-to-Business Collaboration (TAS Score: 7.09):

    - Collaborate for affordable food prices and strengthen the food supply chain.

    - Prevent food crises and enhance global food security.

4. Control Food Supply from the Hinterland Area (TAS Score: 7.03):

    - Increase production and availability of food in the hinterland area.

    - Reduce supply uncertainty and maintain local price stability.

5. Improve Economic Access (TAS Score: 6.32):

    - Increase income for impoverished households to improve access to food.

    - Ensure sustainable access to healthy and nutritious food.

V. CONCLUSION

The high proportion of food consumption expenditure, particularly in Medan Belawan and Medan Marelan, indicates a significant level of poverty that needs immediate attention. Through SWOT analysis, policy alternatives in quadrant 1 were identified as highly advantageous, leveraging opportunities and strengths to address the food security and vulnerability of impoverished households. Priority policy strategies, including optimizing price control, increasing food availability, and improving economic access, are proposed as concrete steps. Recommendations include the need for comprehensive poverty alleviation policies, a focus on implementing priority strategies, and cross-sector collaboration to ensure the sustainability of these policies. Implementation of these recommendations is expected to enhance the effectiveness of food security and vulnerability policies, providing positive impacts for impoverished households in Medan.

REFERENCES

[1]. WHO. 2020. Constitution of the World Health Organization edisi ke-49. Jenewa:. hlm. 1. ISBN 978-92-4-000051-3.

[2]. Rujiah, 2022. Analisis Tingkat Ketahanan Pangan terhadap Kerawanan Pangan Di Kabupaten Indragiri Hilir. Universitas Islam Riau. PekanBaru.

[3]. Baladina N., Anindita, R., & Setiawan, B. (2014). Penguatan ketahanan pangan nasional melalui strategi perbaikan efisiensi pemasaran hasil pertanian. *SEPA: Jurnal Sosial Ekonomi Pertaniandan Agribisnis*, *11* (1), 55- 65.

[4]. Nugroho. 2019. Analisis Kerawanan Pangan Kabupaten Bojonegoro. [serial online] https://ejournal.unesa.ac.id

[5]. Kharisma, S. 2018. Analisis Pola Konsumsi Pangan dan Ketahanan Pangan Rumah Tangga Miskin di Kelurahan Belawan I, Kecamatan Medan Belawan, Kota Medan, Sumatera Utara. Universitas Sumatera Utara.

[6]. Badan Pusat Statistika (BPS). 2023. Medan Dalam Angka 2023. Badan Pusat Statistika Kota Medan. Medan.