Policy Strategy to Improve The Food Consumption Patterns of The Denpasar City Community that are Diverse, Nutritious, Balanced and Safe

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Abstract Food is anything that comes from biological sources, whether processed or not, intended as food and drink for human consumption. The size of a region's food supply is one measure that can reflect the adequacy of food supply in the area concerned, which can influence community consumption patterns as measured by the Expected Food Pattern (PPH) score. In 2024, the PPH score in Denpasar City reached 90.92, indicating that it was in the golden triangle (88-100) but had not yet reached the optimal number (100). The high consumption of rice as the main source of carbohydrates and the lack of diversity in community consumption, resulted in a high dependence on supplies from outside the region or imports. This paper aims to develop policies that can be implemented by the government and relevant stakeholders to increase the use of local non-rice foods for public consumption, especially the people of Denpasar City.

***Index Terms*— food, consumption, imports.**

I. Introduction

Referring to Denpasar Mayor Regulation Number 45 of 2023 concerning the Position of the Organizational Structure of Duties and Work Procedures of the Service, the Main Task of the Fisheries and Food Security Service is to assist the Mayor in carrying out Government affairs in the Fisheries and Food Security Sector which are the authority of the region and the assistance tasks given to the City. Food is anything that comes from biological sources, whether processed or not, which is intended as food or drink for human consumption. This food can come from agricultural, plantation, forestry, fishery, livestock, aquatic and water products. Food can also include food additives and other materials used in the process of preparing, processing, and/or making food or drink. Food is a basic need of the community, so that the realization of food security is the responsibility of all parties, both the government and the community, as stated in Law Number 18 of 2012 concerning Food. The size of a region's food supply is one measure of food that can reflect the adequacy of food supply in the area concerned which can affect community consumption patterns as measured by the Expected Food Pattern (PPH) score, both PPH consumption and PPH availability. One of the Issues from the Department of Fisheries and Food Security is the Unbalanced Consumption Pattern which is one of the causes of individual and household food conditions in Denpasar City not reaching the optimal point. Consumption of rice as a source of carbohydrates in Denpasar City is still high and tends to be low in consumption of fruits, vegetables, tubers and nuts. The use of food other than rice as a source of carbohydrates has not been widely sought after by the majority of Indonesian people, especially in Denpasar City. Most people still think that rice is a staple food as a source of carbohydrates that cannot be replaced by carbohydrate sources from other foods. In 2024, the Expected Consumption Pattern (PPH) score for Denpasar City residents was 90.92. This achievement is already within the golden triangle (score 88-100), but not yet optimal. The optimal score is 100, which indicates a region is food secure.

Meeting food needs should not only emphasize quantity but also quality, including food diversity and nutritional balance. Dietary diversity refers to the variety or number of different food groups consumed by individuals or groups within a given period. Diversity is not only about the

amount of food consumed, but also about the variation in the food groups to fulfill the adequacy of macronutrients (carbohydrates, proteins and fats), where carbohydrates are the main source of energy, proteins are substances that build and repair body tissues, produce enzymes and hormones, fats as a source of reserve energy, protect body organs and help absorb vitamins, as well as micronutrients (Vitamins, minerals and water) in the body, where vitamins play a role in regulating body functions and play a role in body metabolism, minerals play a role in building bones and teeth, regulating nerve and muscle function, while water functions to dissolve nutrients, regulate body temperature and remove body waste. All of these elements can be obtained from 45 types of nutrients that can be obtained from various types of food and drinks, both animal and plant, as a source of carbohydrates, proteins, vitamins and minerals. Until now, there is no one type of food that can fulfill all the nutritional needs, therefore the food consumed must be diverse because each food has a different nutritional content so that nutritional needs can be met. Food diversity can be measured quantitatively (the number of different food groups) or qualitatively (diet quality based on the variety of foods consumed). In other words, dietary diversity is key to achieving a healthy and nutritious diet and plays a crucial role in preventing nutritional problems such as stunting. Diversity and balance of food consumption at the family level will determine the quality of consumption at the regional, district/city, provincial, and national levels. The quality of food consumption at the regional (macro) level is reflected in the Expected Food Pattern (PPH) score. Meanwhile, at the family and individual levels, food intake is in accordance with the principles of Diverse, Nutritious, Balanced, and Safe (B2SA) food consumption. Nutritional needs can be determined by assessing food consumption using a portion-counting approach.

Denpasar City Food Security 2021-2026, as one of the Key Performance Indicators (IKU) of Regional Apparatus. The importance of achieving the PPH score is also mandated by Law Number 18 of 2012 concerning Food, Presidential Regulation Number 81 of 2024 concerning the Acceleration of Food Diversification Based on Local Resource Potential and Government Regulation Number 17 of 2015 concerning Food Security and Nutrition. Article 60 of Law Number 18 of 2012 states that the Government and Regional Governments are obliged to realize the diversification of food consumption to meet the nutritional needs of the community. Diversification of food consumption is aimed at increasing public awareness and cultivating a diverse, nutritious, balanced and safe food consumption pattern that is in accordance with local potential and wisdom. The achievement of this diversification of food consumption is measured through the achievement of value, composition, food patterns and balanced nutrition, with the current indicator being the Expected Food Pattern (PPH). In this regard, achieving the Expected Food Pattern (PPH) Score is a key indicator that needs to be measured and analyzed periodically, both at the central and regional levels, in accordance with the mandate of Law Number 18 of 2012.

Denpasar City is the capital of Bali Province, with a population of 755,600 in 2024 (BPS Denpasar City 2014). It boasts a diverse population, with many migrants arriving from various regencies within Bali and beyond. The lifestyle patterns and lifestyles of urban residents in Denpasar are currently undergoing changes, such as increased social activity, resulting in frequent consumption of instant and ready-to-eat foods. Denpasar City's consumption has consistently been dominated by grains, with rice still considered the single most complete source of energy. Data from 2023 (KLHS RPJMD 2025-2029) indicates that rice consumption in Denpasar City was 104.73 kg per capita per year. Furthermore, there is a lack of fruit and vegetable consumption in the community. Based on 2023 data, fruit and vegetable consumption in Denpasar City was 54.18 kg/capita/year and 32.23 kg/capita/year, respectively. People tend to prepare (cook) food once a day for their daily needs, resulting in the same food consumed from morning to night. In other words, the food consumed daily is not varied. This is due to busy families with work, which means they do not have enough time to prepare a variety of food ingredients every day. In 2024, the Expected Food Pattern (PPH) for Denpasar City residents' food consumption, based on the PPH score, did not meet the criteria for Diverse, Nutritious, Balanced, and Safe (B2SA). The 2024 PPH score for Denpasar City was 90.92, still short of the maximum score of 100. This means that many people in Denpasar City still have not adopted a Diverse, Nutritious, Balanced, and Safe food consumption pattern.

According to the Strategic Environmental Assessment (KLHS) of the Denpasar City RPJMD 2025-2029, food is a basic human need that must be met for sustainable survival. As the world's population continues to grow, greater efforts and innovation will be needed to sustainably increase agricultural production, improve global supply chains, reduce food loss and waste, and ensure that all people suffering from hunger and malnutrition have access to food and nutritious food.

Increased food production must be carried out sustainably to offset the increase in consumption due to population growth, ensuring that the community achieves food security. In Indonesia, improving food security has been one of the main national programs over the past decade. This is related to Indonesia's commitment as a signatory to the SDGs agreement, which states that by 2015 every country is expected to reduce poverty and hunger by half compared to 1990 levels. Regional food security is a pillar of national food security, which must be achieved by regions with food production potential.

The Sustainable Development Goal, titled "End hunger, achieve food security and improved nutrition and promote sustainable agriculture" (Goal 2), recognizes the linkages between supporting sustainable agriculture, empowering smallholder farmers, promoting gender equality, ending rural poverty, ensuring healthy lifestyles, and addressing climate change, among other issues addressed in the 17 Sustainable Development Goals.

In addition to adequate calorie intake, proper nutrition also has other dimensions that require attention, including

micronutrient availability and healthy eating patterns. Inadequate micronutrient intake in mothers and infants can have long-term developmental impacts. Unhealthy diets and lifestyles are closely linked to the increasing incidence of non-communicable diseases in both developed and developing countries.

Extreme poverty and hunger predominantly occur in rural areas, where smallholder farmers and their families constitute the largest segment of the poor and hungry. Therefore, eradicating poverty and hunger is closely linked to increasing food production, agricultural productivity, and rural incomes.

Based on the above, the problem statement is the high consumption of food sourced from rice due to a lack of public understanding of the benefits of consuming local foods that are Diverse, Nutritious, Balanced, and Safe (B2SA) and an inadequate information system for local food suppliers, resulting in a lack of diversity in food consumption patterns in Denpasar City, which contributes to the low PPH score for food consumption in Denpasar City.

Recognizing the significant challenges of changing community food consumption patterns is a long-term effort that must be carried out consistently and sustainably, with the prerequisite of multi-stakeholder support from various interests and entities. Efforts to encourage changes in consumption patterns at the household level can be implemented through a family-based approach, specifically targeting mothers, children, and families/communities. Interventions to address this have been initiated by the Denpasar City government, through the Fisheries and Food Security Agency, by implementing the Community Food Diversification and Security Enhancement program through ongoing community outreach activities, including B2SA (Diverse, Nutritious, Balanced, and Safe).

However, the challenges faced are not only technical but also encompass economic, social, and policy aspects. Therefore, a policy strategy is needed to encourage an increase in the Diversified, Nutritious, Balanced, and Safe (B2SA) food consumption patterns of the Denpasar City community. This paper aims to develop comprehensive policy recommendations to support the Community Food Diversification and Security Enhancement program. By making various efforts, it is hoped that an increase in the expected food pattern (PPH) score for food consumption in Denpasar City can be achieved.

II. Method

The data collection method in this paper is secondary data, namely the collection of relevant data and reference materials. These reference materials include various laws and regulations, such as Laws (UU), Government Regulations (PP), Presidential Regulations (Perpres), and National Food Agency Regulations. This initial step also includes formulating a conceptual framework that will serve as the basis for the analysis. The data processing process begins with tabulating and integrating the collected data, ensuring that it is complete and well-structured according to the analysis's requirements. Next, policy alternatives are formulated using a theoretical approach and evaluated based on criteria. Prioritizing each policy alternative will be determined using a scoring assessment by key personnel based on considerations of effectiveness, efficiency, and long-term impact.

Finally, a logic model approach is used to evaluate programs and activity targets that support the policies mentioned above, thus assisting in program planning, implementation, and evaluation.

III. Discussion

Denpasar City is the center of government, commerce, and education in Bali Province, with a population of 755,600 (BPS Denpasar City 2024). As a center of commerce, this supports the smooth distribution of food, which is crucial for the availability of diverse food sources in Denpasar City. Food diversification is a priority for the Denpasar City government, ensuring a diverse, nutritionally balanced diet based on local resource potential.

The heterogeneous population of Denpasar City, with its complex lifestyles and patterns, presents a challenge for the government in improving the quantity and quality of food consumption. This includes: a) setting targets for achieving annual per capita food consumption in accordance with the Nutritional Adequacy Intake (RDA), which is the average daily nutrient requirement for optimal health, taking into account factors such as age, gender, physical activity, and body condition. The RDA helps plan balanced meals and ensures individual nutritional needs are met. By understanding the RDA, individuals can make better decisions about the food they consume and ensure they receive the nutrients they need for a healthy and active life. b). Provision of diverse, nutritionally balanced, and safe food that does not conflict with the community's religion, beliefs, and culture; and c). Development of community knowledge and skills in diverse, nutritionally balanced, high-quality, and safe food consumption patterns.

Food diversification is an effort to increase the availability and consumption of diverse, nutritionally balanced foods based on the potential of local resources. Diversification of food consumption can be achieved in several ways: a). Promoting diversified food consumption; b). Increasing public knowledge and awareness of consuming a variety of foods based on the principles of balanced nutrition; c). Improving skills in developing local food processing; and d). Developing and disseminating appropriate technology for local food processing. Promotion of food diversification is carried out using various methods through various media, including print, electronic, social, and outdoor media. In addition, direct communication can be carried out through movements, campaigns, exhibitions, pilot projects, or demonstration facilities, among others. To improve community food security, it is necessary to optimize the use of yards in each household as a source of local food, especially fruits and vegetables through activities to increase family food security in supporting healthy food consumption patterns

through Diverse, Nutritious, Balanced and Safe (B2SA) consumption patterns. The term B2SA is used to describe healthy and nutritious eating patterns. Many benefits are obtained in utilizing yard land for food crops, including: it can provide beauty and coolness to the home environment, if plants are planted directly in the ground it can function as a water reservoir for the earth, the results in the form of vegetables or fruit can be enjoyed to increase the nutrition of family members and if managed optimally and professionally can be an additional family income.

This includes micronutrient availability and healthy diets. Inadequate micronutrient intake in mothers and infants can have long-term developmental impacts. Unhealthy diets and lifestyles are closely linked to the increasing incidence of non-communicable diseases in both developed and developing countries.

Extreme poverty and hunger predominantly occur in rural areas, where smallholder farmers and their families constitute the largest segment of the poor and hungry. Therefore, eradicating poverty and hunger is closely linked to increasing food production, agricultural productivity, and rural incomes.

Based on the above, the problem statement is the high consumption of food sourced from rice due to a lack of public understanding of the benefits of consuming local foods that are Diverse, Nutritious, Balanced, and Safe (B2SA) and an inadequate information system for local food suppliers. This has led to a lack of diversity in the food consumption patterns of the Denpasar City community, which contributes to the low PPH score for food consumption in Denpasar City.

Recognizing the significant challenges in changing people's food consumption patterns, this is a long-term effort that must be carried out consistently and sustainably, with the prerequisite of support from various stakeholders and entities. Efforts to encourage changes in consumption patterns at the household level can be implemented through a family-based approach, specifically targeting mothers, children, and families/communities. The Denpasar City Government, through the Department of Fisheries and Food Security, has launched an intervention to address this issue by implementing the Community Food Diversification and Security Enhancement program, which includes ongoing community outreach activities on the concept of Diverse, Nutritious, Balanced, and Safe (B2SA).

However, the challenges faced are not only technical but also encompass economic, social, and policy aspects. Therefore, a policy strategy is needed to encourage an increase in the Diversified, Nutritious, Balanced, and Safe (B2SA) food consumption patterns of the Denpasar City community. This paper aims to develop comprehensive policy recommendations to support the Community Food Diversification and Security Enhancement program. Through these efforts, it is hoped that an increase in the Expected Food Pattern (PPH) score for food consumption in Denpasar City will be achieved.

The achievement of food consumption diversification (B2SA) is measured by achieving a balanced dietary and nutritional pattern composition using the Expected Food Pattern (PPH) indicator. FAO-RAPA (1989) defines PPH as "the composition of the main food groups that, when consumed, can meet the needs for energy and other nutrients." PPH is a diverse food composition based on the proportion of energy balance from various food groups to meet energy and other nutrient needs, both in quantity and quality, taking into account aspects of acceptability, food availability, economics, culture, and religion. PPH is a simple instrument to assess the population's food consumption situation, both in quantity and composition according to food types, expressed in a PPH score. The higher the PPH score, the more diverse and nutritionally balanced food consumption (maximum 100). The PPH score is an indicator of nutritional quality and diversity of food consumption and can therefore be used to plan food consumption needs in the coming years. PPH can be used as a guideline in evaluating and planning the provision, production, and consumption of food for the population, both in terms of quantity, quality, and diversity, taking into account social, economic, cultural, religious, and taste aspects. The objective of the Expected Food Pattern (PPH) is to produce a standard food composition to meet the nutritional needs of the population, taking into account nutritional balance based on: taste (palatability), digestibility, acceptability, quantity, and affordability. The uses of the Expected Food Pattern (PPH) are as follows: a) to assess the situation of food consumption or availability, both in terms of quantity and composition/diversity; and b) for planning food consumption or availability. The PPH is a food composition that truly meets the expectations, both at the consumption and availability levels, and can be used as a guideline for planning and evaluating food availability and consumption for the population.

In an effort to improve the Denpasar City PPH score, the government, through the Fisheries and Food Security Agency, remains committed to promoting the implementation of a healthy, diverse, nutritious, balanced, and safe (B2SA) diet by implementing programs and activities including:

1) The B2SA Goes to School Program introduces and educates elementary school students about the importance of healthy eating habits based on local foods. This program provides B2SA packages.
2) B2SA outreach to Integrated Service Posts (Posyandu) in collaboration with the Denpasar City Family Welfare Movement Team targets toddlers, pregnant and breastfeeding mothers, and children with signs of malnutrition and stunting. These packages include vegetables, tubers, processed fish, and fruit.
3) Outreach and distribution of vegetable and tuber seedlings to the community through village/sub-district levels to promote the use of home gardens for family food security.
4) Training on local food processing diversification for PKK mothers and food processing businesses aims to introduce

the importance of utilizing local foods to increase the variety of foods consumed, rather than relying solely on one staple food like rice. This activity aims to improve food security, nutrition, and community well-being, making them more resilient to price fluctuations and availability.

Based on the implementation of programs and activities to support improved community consumption patterns, Denpasar City's consumption PPH score over the past four years is as follows: 88.8 in 2021, 83.1 in 2022, 87.7 in 2023, and 90.92 in 2024.

The Expected Food Pattern (PPH) score reflects the nutritional quality of food consumption and the level of food diversity. There are criteria based on the PPH score: a PPH score <78 is referred to as the Bronze Triangle, a PPH score of 78-88 is referred to as the Silver Triangle, and a PPH score >88 is referred to as the Golden Triangle. If the PPH score reaches 100, the area is considered food secure. Here's an illustration of the PPH calculation in Denpasar City in 2024.

TABLE I
CALCULATION OF THE EXPECTED FOOD PATTERN (PPH) SCORE AT THE FISHERIES AND FOOD SECURITY SERVICE IN 2024

No	Foot Category	Weight/Day	PPH							
			Energy	Potention	% AKE*)	Score	Actual Score	Score AKE	Score Maks	Score PPH
1	Rice	341,48	1,295,93	29,48	61,71	0.5	29,47	30,86	25.0	25.0
2	Tubers	34,19	36,12	0,43	1,72	0.5	0.82	0.86	2.5	0.86
3	Animal Foods	145,55	350,22	27,92	16,68	2.0	31,85	33,35	24.0	24.0
4	Oils and Fats	26,04	234,46	0,01	11,16	0.5	5,33	5.58	5.0	5.0
5	Oily Fruits/Seeds	0,80	4,58	0.08	0.22	0.5	0.1	0.11	1.0	0.11
6	Nuts	24,86	64,76	6,25	3,08	2.0	5,89	6,17	10.0	6,17
7	Sugar	8,95	33,84	0,04	1,61	0.5	0,77	0.81	2.5	0.81
8	Fruits and Vegetables	261,71	212,71	3,74	5,80	5.0	27,67	28,98	30.0	28,98
9	Others	123,78	57,44	1,39	2,74	-	-	-	-	-
	Total									**90,92**

Data source: Calculation of PPH Score of the Fisheries and Food Security Service in 2024

From the table above, we can see that of the nine food groups, five have not yet achieved the maximum expected score. The food groups that have achieved the maximum score are: grains, animal foods, and oils and fats. Other food groups have no score, so they do not affect the maximum score, which affects the PPH score. The scores for tubers, fatty fruits/seeds, nuts, sugar, and vegetables and fruit have not yet reached the maximum score, indicating that Denpasar City residents' consumption of these food groups needs to be increased.

In addition, a local food supplier information system can support the achievement of B2SA food consumption patterns. A local food supplier information system is a system designed to collect, process, and present information about local food suppliers. This system aims to facilitate access to information about local food, increase the efficiency and effectiveness of food supply, and support local food development. The following components can be included in a local food supplier information system: 1). Food Supplier Database: contains information about local food suppliers, such as names, addresses, types of food provided, and prices; 2). Search Module: allows users to search for local food providers based on specific criteria, such as location, food type, and price; 3). Order Module: allows users to order food directly from local food providers; 4). Payment Module: allows users to make payments online or offline; 5). Reporting Module: allows users to view reports on food transactions, such as the amount of food sold, revenue, and so on; and 6). Management Module: allows administrators to manage food provider data, set user access rights, and perform system maintenance.

The benefits of this local food provider information system are: 1). Improved Information Access: makes it easier for users to search for and order local food; 2). Increased Efficiency: makes it easier for food providers to manage transactions and view reports; and 3). Supporting Local Food Development: makes it easier for users to find and support local food. Therefore, to provide fast, accurate, comprehensive, and comprehensive information for providers, farmers, suppliers, investors, and other parties who need the data and information, it is necessary to develop a web-based information system application that can be easily accessed via the internet.

Based on the Avoid, Shift, and Improve approach to

improving community food consumption patterns, alternative policies were formulated, taking into account effectiveness, technical feasibility, and other factors (Bardach, 2012).

The first alternative is improving the facilities and infrastructure of the B2SA food house. The B2SA food house is a program aimed at improving the quality of food consumption in the community, particularly vulnerable groups such as stunted children, pregnant and breastfeeding women, and prospective brides and grooms, through the principles of Diverse, Nutritious, Balanced, and Safe (B2SA) food. This program aims to: (1) improve the quality of food consumption by encouraging the community to consume foods that meet B2SA standards, not just to satisfy but also to provide healthy and nutritious food, and how to apply this in everyday life; (2) address stunting, specifically, this program aims to address the problem of stunting in children by providing education and nutritious food; (3) increase nutritional awareness, increasing public understanding of the importance of balanced nutrition and how to apply it in daily life; (4) utilize local resources, in this case optimizing the use of local food potential for food diversification and food security. This program involves various activities such as: (1) a B2SA processing kitchen where PKK cadres prepare B2SA menus and process them into ready-to-eat meals based on local foods; (2) a B2SA garden utilizing yard space to produce food ingredients as an educational tool for the community. The B2SA Food House is designed to provide access to quality food intake that leads to B2SA for beneficiaries, especially families with children at risk of stunted growth, malnutrition, and malnutrition, pregnant women, breastfeeding mothers, and prospective brides. This program aims to reduce the prevalence of stunting by focusing on providing B2SA food menus. The facilities and infrastructure of the B2SA food house are expected to improve the quality of food consumption that is diverse, nutritious, balanced, and safe. The benefits of the B2SA food house are: a). improving the quality of community food consumption that is B2SA; b). utilizing local food potential; c). improving community skills in processing B2SA menus; d). creating a strong local food ecosystem; and d). maintaining public health by reducing the risk of malnutrition and reducing stunting rates.

The second alternative is optimizing the local food provider information system. Internet use is now found in almost every level of society. Most information media devices, such as computers and mobile phones, are connected to the internet, so various applications that are now emerging and developing are designed to be operated using internet media. The most well-known information access system is the World Wide Web (WWW), commonly known as the web. One area that requires the web to improve operational efficiency is food security, where food security is a key aspect in development to achieve public welfare. Efforts to achieve food security have become a concern at the national and international levels. Basically, food security has four (4) pillars: availability (food availability), stability of supplies (stability of supplies), access to supplies, and food utilization.

The existing local food supplier information system at the Denpasar City Fisheries and Food Security Office is SIPAPA Online (Food Supplier Information System). The existing system still has shortcomings, such as the lack of integration of data processed in each sub-district, which requires time for recapitulation within the office. The information system is also not widely accessible. Therefore, to provide fast, accurate, and broad-reaching information to suppliers, farmers, investors, and other parties (food suppliers or distributors from outside Denpasar City, especially for local non-rice foods such as vegetables, tubers, nuts, and fruits) who need data and information on food suppliers, a web-based application accessible via the internet is needed.

A third alternative is the use of local non-rice foods. Rice remains a staple food consumed by most Indonesians, particularly in Denpasar City. There's even a saying that you're not full if you haven't eaten rice. Food diversification is an option; people can feel full not only with rice, but also with a variety of local foods. The food diversification movement is an effort to increase local food consumption and reduce rice consumption. It is hoped that this food diversification movement will encourage people to consume local non-rice carbohydrate sources. There are six local food commodities that are potential non-rice carbohydrate sources as rice substitutes: cassava, taro, sago, corn, bananas, and potatoes. These six commodities can be consumed as rice substitutes. For comparison, a 100-gram portion of rice is equivalent to 1.5 pieces of cassava weighing 120 grams. Then, one large taro weighing 125 grams is equivalent to one portion of rice. As for corn, three medium-sized ears of corn are equivalent to one portion of rice. Next is potatoes; one portion of rice is equivalent to two potatoes (210 grams). Then, two bananas (117 grams) are equivalent to one portion of rice. Finally, one portion of rice is equivalent to 50 grams of sago. These various local non-rice carbohydrate sources are not only filling but also healthy, so those who want to diet are also very good to consume local foods. Of course, accompanied by regular exercise and a healthy lifestyle. To attract public interest in consuming local non-rice food, diversification of local non-rice food processing also needs to be intensively socialized. There are many advantages/benefits that we get by utilizing local food, including: local food is fresher because it is harvested/produced by local farmers/producers so it does not require long-term storage and shipping; local food is more environmentally friendly because local food does not have to travel long distances, thus helping to reduce greenhouse gas emissions and contributing to increasing the carbon footprint; driving the local economy, by consuming local food (non-rice) protects farmers to have decent economic conditions; preserving culture and genetic resources, Indonesia has a diversity of foods that can be grown and consumed so it needs to be continuously

preserved; local food is safer because the government can easily trace the origin, processing, packaging and product standards; nutritional value is more optimal, imported food is generally harvested before it is ripe so the nutritional value is not as optimal as local food that can be harvested when ripe and finally increases food independence and sovereignty. In addition, the use of local food can be more efficient because the travel distance is shorter. In the Free Nutritious Meal (MBG) government program, the use of local food is also required in fulfilling raw materials.

The fourth alternative is a price subsidy for certain local non-rice foods. A non-rice local food subsidy is an effort to reduce the price of local non-rice foods by providing subsidies to farmers, traders, or consumers. The goal of this policy is to increase the accessibility of local non-rice foods for the community, increase consumption of local non-rice foods, reduce dependence on imported foods, and increase farmers' income. Examples of implementing local non-rice food price subsidies: a). A non-rice local food price subsidy program where the government provides price subsidies to local farmers to reduce the price of local non-rice foods. In this case, farmers who produce local food are given price subsidies by purchasing farmers' production at high prices and reselling them at market prices; b). Providing local non-rice food packages to the community. These packages can be provided during activities such as integrated health posts (Posyandu) to introduce and familiarize the community with consuming local non-rice foods as staple foods as an effort to reduce dependence on rice and empower farmers who produce non-rice foods; c). A direct cash assistance program where the government provides direct cash assistance to the community to purchase local non-rice foods.

A. Alternative Policy Options

In analyzing the priorities of policy alternatives, a scoring assessment of 1-5 was carried out by key persons within the Denpasar City Fisheries and Food Security Service, namely Echelon II, III, IV and Jafung officials based on the Avoid, Shift, and Improve approach by considering the criteria of effectiveness, efficiency, and long-term impact.

Based on the scoring analysis above, the Utilization of Non-Rice Local Food is the policy with the highest score. The utilization of non-rice local food focuses not only on physical improvements but also on quality, such as food types and processing processes, to maintain the quality of non-rice food. Furthermore, it is supported by the development of distribution facilities and increased promotion of non-rice food, ensuring smooth public access to non-rice food. This is crucial for reducing dependence on rice as a staple food. This food diversification is achieved by consuming a variety of local foods as sources of carbohydrates, protein, vitamins, and minerals.

The benefits of non-rice food diversification include: improving community nutritional quality, utilizing local potential, and supporting national food security. This policy supports the government's efforts to optimally develop local food potential based on regional advantages. Furthermore, this effort is expected to foster the growth of food micro, small, and medium enterprises (MSMEs) as local food providers. In the long term, the utilization of non-rice local food will encourage changes in public consumption behavior toward reducing rice consumption, in accordance with the government's "Food Diversification Movement" program.

As an effort to support the government's Free Nutritious Meal (MBG) program which requires the use of local food as its raw material, the policy of utilizing non-rice local food is in line with the government program by considering the advantages of local food as follows: There are many advantages/benefits that we get by utilizing local food, including: local food is fresher because it is harvested/produced by local farmers/producers so it does not require long-term storage and shipping; local food is more environmentally friendly because local food does not have to travel long distances so it helps reduce greenhouse gas emissions and contributes to increasing the carbon footprint; driving the local economy, by consuming local food (non-rice) protects farmers to have decent economic conditions; preserving culture and genetic resources, Indonesia has a diversity of foods that can be grown and consumed so it needs to be continuously preserved; local food is safer because the government can easily trace the origin, processing, packaging and product standards; nutritional value is more optimal, imported food is generally harvested before it is ripe so the nutritional value is not as optimal as local food that can be harvested when ripe and finally increases food independence and sovereignty. The government's Free Nutritious Meals (MBG) program also requires the use of local food as raw material.

Food diversification efforts can be implemented through: a) socializing food diversification; b) developing local non-rice food processing technology; c) developing the use of yards as a food source; d) fostering community creativity in creating B2SA menus; and e) providing market access through natural subsidies and social food assistance to poor households.

To support the policy of utilizing local non-rice food in Denpasar City, a logic model analysis was conducted (Knowlton, Lisa Wyatt; & Cynthia C. Philips (2013)) to design a causal relationship between policies, programs, and activities and their expected outcomes. This policy encompasses several key elements. First, government budget allocation, infrastructure development, activity implementation, human resources for operations and development, and collaboration with stakeholders. Planning is a crucial initial step in identifying needs and potential benefits. Then, activities are implemented in accordance with the planning results to support the smooth utilization of local non-rice food. Furthermore, training and outreach to the community will be carried out extensively to ensure information dissemination. Performance monitoring and

evaluation are conducted periodically to ensure program and activity outcomes align with objectives and to identify necessary improvements for the future. Outputs to support the policy on utilizing local non-rice foods include community empowerment activities to diversify food consumption based on local resources through outreach and the distribution of B2SA packages; activities to improve family food security through outreach and the distribution of seeds and seedlings for plants such as chilies, vegetables, eggplants, tomatoes, and sweet potatoes; and food safety monitoring activities through quality testing of fresh plant-based food (PSAT) to ensure the safety of local non-rice foods consumed by the community.

In the short term, this policy will raise public awareness of the importance of utilizing local non-rice foods; increase consumption of local non-rice foods, thereby increasing local farmers' incomes; and develop infrastructure such as markets, warehouses, and distribution networks to support the utilization of local non-rice foods. In the medium term, there will be increased production of local non-rice foods, thereby increasing local food availability; development of the local non-rice food industry, thereby increasing the added value of local foods; and increased farmer income, thereby increasing farmer income. The long-term impacts will include increased food self-sufficiency, thereby reducing dependence on imports; local economic development, thereby increasing community income and welfare; and increased biodiversity, thereby conserving natural resources and the environment. With this approach, the use of local non-rice foods plays a strategic role in improving local food quality and creating a positive impact on the environment, society, and the food consumption patterns of the B2SA community in Denpasar City.

Within the five-year implementation framework, the first year's activity timeline will focus on planning and policy development. This includes assessing local food needs based on existing conditions and projecting future demand. Budgeting will then be carried out through intensive coordination between the central and regional governments, as well as stakeholders, to align policy plans. Policy dissemination will also be conducted to increase community participation.

Years 2-4 will focus on infrastructure development and activity implementation, including outreach, procurement of seedlings and seedlings, procurement of B2SA packages, and training on processing local non-rice foods. Year 5 will focus on monitoring, evaluation, and adjustments. Periodic monitoring will be conducted to ensure all activities are running according to standards and to evaluate the effectiveness of local non-rice food utilization. Based on the evaluation results, policies will be adjusted based on community feedback.

The division of responsibilities and authority in implementing the policy on the use of local non-rice food in Denpasar City involves several parties. The Regional Government, through the Denpasar City Fisheries and Food Security Office, plays a role in the implementation and operational oversight of activities, while relevant Regional Apparatus Organizations (OPDs) participate in budgeting, infrastructure development, information, and outreach at the village/sub-district level.

Monitoring and evaluation mechanisms include regular monitoring by a team that evaluates policy progress. Annual evaluations are conducted to assess the effectiveness of local non-rice food utilization activities to measure their impact on reducing rice-based food consumption, increasing public awareness of the benefits of consuming local non-rice food, establishing an adequate information system for local food suppliers, and improving the food consumption PPH score for Denpasar City residents. Based on these evaluation results, the policy can be adjusted to improve its effectiveness, such as by increasing the budget or changing operational strategies that are still suboptimal.

IV. Conclusion

To support the Non-Rice Local Food Utilization policy in Denpasar City, a regulatory framework is needed that governs the duties, authorities, and implementation of programs and activities, serving as a guideline for implementation procedures and coordination between relevant agencies.

This policy recommendation will be formulated in the form of a Denpasar Mayoral Regulation on Guidelines for the Utilization of Non-Rice Local Food. This regulation aims to regulate the mechanism for utilizing non-rice local food at the Denpasar City level. This regulation covers the implementation and oversight of the non-rice local food utilization program, ensuring that it is running effectively and on target. Furthermore, this regulation also serves as a guideline for coordination between Regional Apparatuses within the Denpasar City Government in supporting the improvement of diverse, nutritious, balanced, and safe (B2SA) food consumption patterns among the Denpasar City community. This regulation is expected to create strong synergy among Regional Apparatuses so that the non-rice local food utilization program can run smoothly and have a significant impact on reducing rice-based food consumption and improving the Expected Food Pattern (PPH) Consumption Score in Denpasar City.

Furthermore, this Mayoral Regulation will be issued in the form of a Decree of the Head of the Fisheries and Food Security Agency concerning the Establishment of a Team for the Implementation of Non-Rice Local Food Utilization in Denpasar City which aims to comprehensively regulate the implementation of non-rice local food utilization in Denpasar City. This Decree establishes the duties and responsibilities of the team in implementing programs and activities for the utilization of non-rice local food within the scope of the Denpasar City Government. Through this Decree, it is hoped that it will increase public interest in utilizing non-rice local food so that it will create a diverse, nutritious, balanced and safe (B2SA) food consumption pattern for the people of Denpasar City, resulting in an

increase in the Expected Food Pattern Score (PPH) Consumption which is increasing as stated in the Key Performance Indicators (IKU) of the Fisheries and Food Security Agency. By reducing rice consumption as the main source of carbohydrate fulfillment, it is hoped that it will reduce dependence on rice from outside the region or imports.

REFERENCES

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[3] Presidential Regulation (Perpres) Number 59 of 2017 concerning the Implementation of the Sustainable Development Goals;
[4] Presidential Regulation Number 8 of 2024 concerning the Acceleration of Food Diversification Based on Local Resource Potential;
[5] Government Regulation Number 17 of 2015 concerning Food Security and Nutrition;
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