

The Situation Analysis of Food Safety to Formulate Policy of Food Safety Operational for Food Street Vendors in Malang, Indonesia

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ABSTRACT

Food safety in recent decades has become a national and international issues, as the higher of knowledge and ability of the local economy, the tendency of most demanding food safe to eat is higher. The objective of current study was to prepare an academic text which could be used as a reference in the field of food safety policies and programmes, especially in the city of Malang food street. This study was using mixed approach method, namely both quantitative and qualitative descriptively, laboratory tests and to determine policy priorities used analytic hierarchy process. The results showed that the condition of food safety in Malang City still weak, the indicators through TPC (Total Plate Count) test of bacteria in food samples of the most favorite students in the Malang City showed that the total number of bacterial contamination exceeds the standard limit pollution. Whereas MPN (Most Probable Number) test also contain of coliform fecal (biological contaminants). Similarly, the borax analysis showed in several samples were positive to contain Borax, and also rhodamine-B was found in samples of tomato sauce (chemical contaminants). This condition was caused by various factors that support each other, including the behavior of the manufacturers/ vendors that were still weak. Therefore, the concept of food safety management has not yet applied to food industry peddler, and also with the support of its conscious consumers to consume less healthy products due to the limited of purchasing power. The result of analytic hierarchy process showed that the main priority of food safety policy development was to increase in food safety agency system by implementing management systems for food, control of hazardous factors through the working environment and environmental process, therefore free from contamination.

Key words: Development strategy, policy, food safety.

INTRODUCTION

The improving of food safety is a shared responsibility between good government, industry, food producers, and consumers. The confirmation of this commitment is based on food safety conditions in Indonesia still lower than other developed country. However, needs to conducted research which is expected to support the interests of all side, especially those who are competent to improve food safety.

Several previous research showed that the condition of food safety in Indonesia was still worst based on Indonesian Food and Drug Regulatory Agency [1], the most frequent cases of poisoning caused by food service and food household products, such as catering and food street by 43%. Processed products are widely consumed in

factory, the circumference of the campus and school quantitatively [2]. Food can be toxic as it has been contaminated by pathogenic bacteria which can then grow and multiply during storage, distribution, or at the time of sale, therefore, producing a toxin that can harm human life [3]

Several cases of poisoning which caused by food street, gives a signal that the knowledge and awareness among food street vendors on the circumference of the school was relatively low to a prototype of a healthy diet for children, since occurred as the behavior of vendors/ producers. This was due to ignorance of vendors in the use of food additives, and also arbitrarily processing, storing, and selling food without hygiene and food sanitation. FAO and several authors stipulated that street-vended food raise concerns with respect to their potential for serious poisoning outbreak [4],

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due to improper use of additives, the presence of pathogen bacteria, environmental contaminants and improper food handling practices based on disrespect of good manufacturing practices and good hygiene practices [5].

In order to foster a positive perception of the vendors/ producers to prototype of healthy food need an effort coaching from various stakeholders as in general they were coming from a background of low socio-economic. Sanlier and Turkmen [6] suggested that employee perceptions regarding the food street vendors in Turkey, that there are significant effects between the perception of employees in terms of their behaviour in dealing with food hygiene sanitation industry. Muinde and Kuria [7] also note that vendors are often poor level education, unlicensed, untrained in food hygiene, technology and work under crude unsanitary conditions.

Every country needs effective food safety supervision in order to protect public health, as well as a set of rules that is able to provide legal certainty to the community of consumers and producers. However, each region has its character, culture, and a number of different needs. For this purpose, need to determine a hierarchy of needs which is more important than other needs (priorities). The tasks of policy makers and implementers is formulating and implementing programs in accordance with actual needs. Policy formulation and implementation should be based on academic manuscript through the entire academic research and reliable.

METHODOLOGY

This study was using mixed approach method, namely both quantitative and qualitative descriptively, and also laboratory tests to identify microbiological, chemical, and physical

contaminants in samples of the most popular food streets by elementary school students in Malang city. To perform the analysis of priority setting, food safety policy used was Analytic Hierarchy Process, which was the approach based on policy analysis, and aims to resolve the conflict, therefore get the right location and optimal for the use of sustainable resources

RESULTS AND DISCUSSION

Food streets sold in Malang school environment consists of two categories, namely the school canteen and food street vendors at outside of school. Food safety conditions in the school canteen was relatively better than food safety in food street conditions as always in control and intervention from school. In the other hand, food street vendors were the first choice of students in Elementary School which the condition of food safety still weak. The charge indicators cilok (meatball made from starch flour) and tempura (a seafood are dipped in flour dough and then fried) were the kind of food street which the most popular sold at the school about 94% and 75%, respectively. The borax analysis showed in several samples was positive to contain borax (chemical contaminants) (Table 1). Similarly, TPC (Total Plate Count) test of bacteria in food samples of the most favorite students in the Malang City showed that the total number of bacterial contamination exceeds the standard limit pollution (Table 2). Whereas MPN (Most Probable Number) test also contain of coliform fecal (biological contaminants) (Table 3), and also rhodamine-B was found in samples of tomato sauce (textile dyes which can lead to poisoning) (Table 4).

Table 1 Borax test from the kind of food street vendors using silver nitrate (AgNO_3) and barium chloride (BaCl_2) solution

Solution		Pure borax		Cilok		Tempura	
AgNO_3	Before heated	Formed white	sediment	Formed white	sediment	Formed white	sediment
	After heated	Constant sediment	Formed white	Constant sediment	Formed white	Constant sediment	Formed white
BaCl_2	Before added	Clear solution		Clear solution		Clear solution	
	After added	Formed sediment white		Formed sediment white		Formed sediment white	

Table 2 TPC (Total Plate Count) test from the kind of food street vendors

Food street	TPC (CFU/g)	Maxium standard (CFU/g)*	Food quality
Cilok	7.60×10^8	1×10^5	unreasonably consumed
Tempura	8.22×10^9	1×10^9	unreasonably consumed
Sauce	3.95×10^8	1×10^4	unreasonably consumed

* Food and Drug Regulatory Agency (2003)

Table 3 MPN (Most Probable Number) test from the kind of food street vendors

Food street	MPN (MPN/g)	Maxium standard (CFU/g)*	Food quality
Cilok	24	10	unreasonably consumed
Tempura	16.05	10	unreasonably consumed
Syrup	3.3	10	reasonably consumed

* Food and Drug Regulatory Agency [1]

Table 4 Rhodaminee B test test from tomato sauce

Sample	Eluent (Solvent)		Information
	Water	Methanol	
Rhodaminee B	Whatman paper still contained spot	Whatman paper still contained spot	-
Tomato sauce	Whatman paper still contained spot	Whatman paper still contained spot	Positive (+)
Sample	Added AgNO ₃ solution		Information
	Before	After	
Rhodaminee B	Red solution	Formed sediment purple	-
Tomato sauce	Red solution	Formed sediment purple	Positive (+)
Sample	Added Pb(NO ₃) ₂ solution		Information
	Sebelum	Sesudah	
Rhodaminee B	Red solution	Formed sediment pink	-
Tomato sauce	Red solution	Formed sediment pink	Positive (+)
Sample	Added Sb(NO ₃) ₃ solution		Information
	Sebelum	Sesudah	
Rhodaminee B	Red solution	Formed sediment brown	-
Tomato sauce	Red solution	Formed sediment brown	Positive (+)

It was found in Bostwana, based on studies of the Ohiokpehai [2], the existence of the microorganisms that can lead infections in consumers from the circulated food street in Bostwana. Barro et al. [5] also note that several variations of the food sold by street vendors in West Africa, however, processing and sales practices generally did not meet the standard of health.

The food safety conditions of food street are weak due to: 1) condition producers/ food street vendors in Malang city was still weak due to external and internal problems. External factors which include: lack of infrastructure, a lot of similar competitors, difficult to access additional financial capital, poor organization, lack of government attention and coaching, there were no local regulations governing food safety issues which were handled by the domestic industry, weak sanctions if the violation. Whereas internal factors which include: low education, low knowledge, low awareness and low economy associated with the consumption of healthy foods and safe. This is similar to the one reported by Muzaffar et al. [8], there were four areas of problems on food street vendors in Bangladesh, the first relating to business operations, business knowledge, and production. 2) Understanding and knowledge of students about food safety was already quite good, however, the knowledge always no linear with their behavior as data showed that the student to consume food and healthy lifestyle habits was still low. The main

consideration they eat from food streets as it tastes good without considering safety food. These conditions are not only happening in Indonesia, in Turkey also found that the consumer's attention to the hygiene of food sanitation were on sale at cafeteria is also low, and only a small percentage (28.7%) who had bought food precautions [9]. 3) No food safety management system was applied to the domestic industry. The HACCP concept and application of quality assurance system for each link in the food processing, such as Good Handling Practice (GHP), Good Manufacturing Practices (GMP), Good Distribution Practice (GDP) and Good Practice Cathering (GCP) has been newly applied to large industrial and operations were difficult to apply in the domestic industry. 4) The number of instruments issued by central government regulations that govern food safety issues, such as laws, government regulations, the decision/ instruction of the president, and local government regulations. This security policy was directed to ensure the public can avoid consuming ready to eat processed foods contaminated by biological, chemical and physical contamination. However, the objective cannot be achieved due to the fact that the institutional system was still weak 5) Consistency and responses between policy content and implementation of the policy pursued by the relevant agencies in Malang city was inconsistent and responsiveness / sensitivity was still low.

It is characterized by: (a) less sensitive to the practitioner in responding to problems even though has a lot of research results and conditions hazard of the food streets contaminants on human health, (b) there was a lack of care as a low sense of belonging and a sense of the state crisis to the circumstances and lack of appreciation of the duties and responsibilities of civil servants, (c) implementation of food safety policy in Malang city was still in favor for whole saler and medium saler, therefore small saler excluded from government service the city of Malang, (d) programme managers were less willing to support the implementation of the policy content of food safety in the relevant institutions in the city of Malang. (e) The relationship between local government, industry, public/ consumer in Malang city was still in the stage of tokenism or it has not reached the citizen power, and co-operation does not lead to a collaborative partnership, each of it has not run function compatible with the concept of food quality systems implementation.

Formulation of recommendations and policy development of food safety programs by using the method of Analytical Hierarchy Process (AHP) is used as a tool in the determination of strategy development and food safety policy based on stakeholder perception, which is the first priority is to improve food safety agencies relating to the competency of resources in each agency officers who handle food safety issues. The second priority is to increase consumer confidence, which means there needs to be a commitment between local government and communities. The third priority is to improve food security, which means that the industry/producers are required to implement food safety management system.

Analysis of the situation and condition of food safety in the region and the problems encountered is one of the important components needed in an attempt to formulate a model of policy development. As knowing the characteristics and problems faced by the informal sector, policy makers will be easier to formulate and plan the development of the sector in the region.

To adequate food available and in safe condition, needs to the establishment of a food system that is able to provide protection for people who consume the food, therefore food is distributed and / or traded does not harm human health. In other words, the food must meet food safety requirements.

The issue of food safety conditions, especially at food street vendors in the school environment in Malang city that can be identified through the assessment of the situation, and

analysis of food safety systems whose condition was still very weak and worries caused by various factors that support each other. Then the solution is not always an alternative technology solutions, some of these problems requires more non-technology solutions, either in form or shape policies that support public education efforts in order to understand the truth about certain aspects of the food.

The number of regulations issued by the government to regulate food safety in Indonesia does not guarantee the situation of food safety conditions for the better. As reported by Hobbs [10], policy implementation is an important one, more important than making policy. This policy will only be a good dream/ plan which stored in an archive if it is not implemented.

Successful implementation of the policy is determined by many factors. The results of this study showed that the most important variable in determining the successful implementation of food safety policy is the institutional system. To improve the system of food safety agencies can be done with synergize, integrate, and involve various agencies and officials concerned to carry out the preparation of guidelines, procedures, procedures for food, construction and inspection of production. Assessment and determination of the competent authority in carrying out of their duty requires the competent authority as the spearhead (in this case was Health Agencies). If the integrated security system is an orchestra, the conductor is spearheading (leading institution). However, the implementation of surveillance and prosecution of such violations are still being carried out by relevant agencies.

Therefore, can be presented that the main premise of quality assurance of food safety especially food street vendors, the main determinant is the harmonious cooperation between the various collaborative agencies, which can be raised "citizen power" and each performing its functions in accordance with concept of quality and food safety system implementation.

The concept of implementing a policy framework that used in this study was the implementation model developed by Chema and Rondinelli [11] as this model more specifically operationalized in the context of a growing area such as Malang city who have complex problems, difficult to control, and still has limitations in various it. While the weakness of this model is not include elements of purpose and did not examine in detail the implementation process, and the dimensions of the policy as expressed in grindle model. Therefore, based on research and findings

in this study to complement and refine the model of Cheema and Rodinelli [9], and is expected to be a reference in policy making and implementation of

food safety policy in Malang city, it can recommended the implementation of the model related to food safety policy as showed in Figure 1.

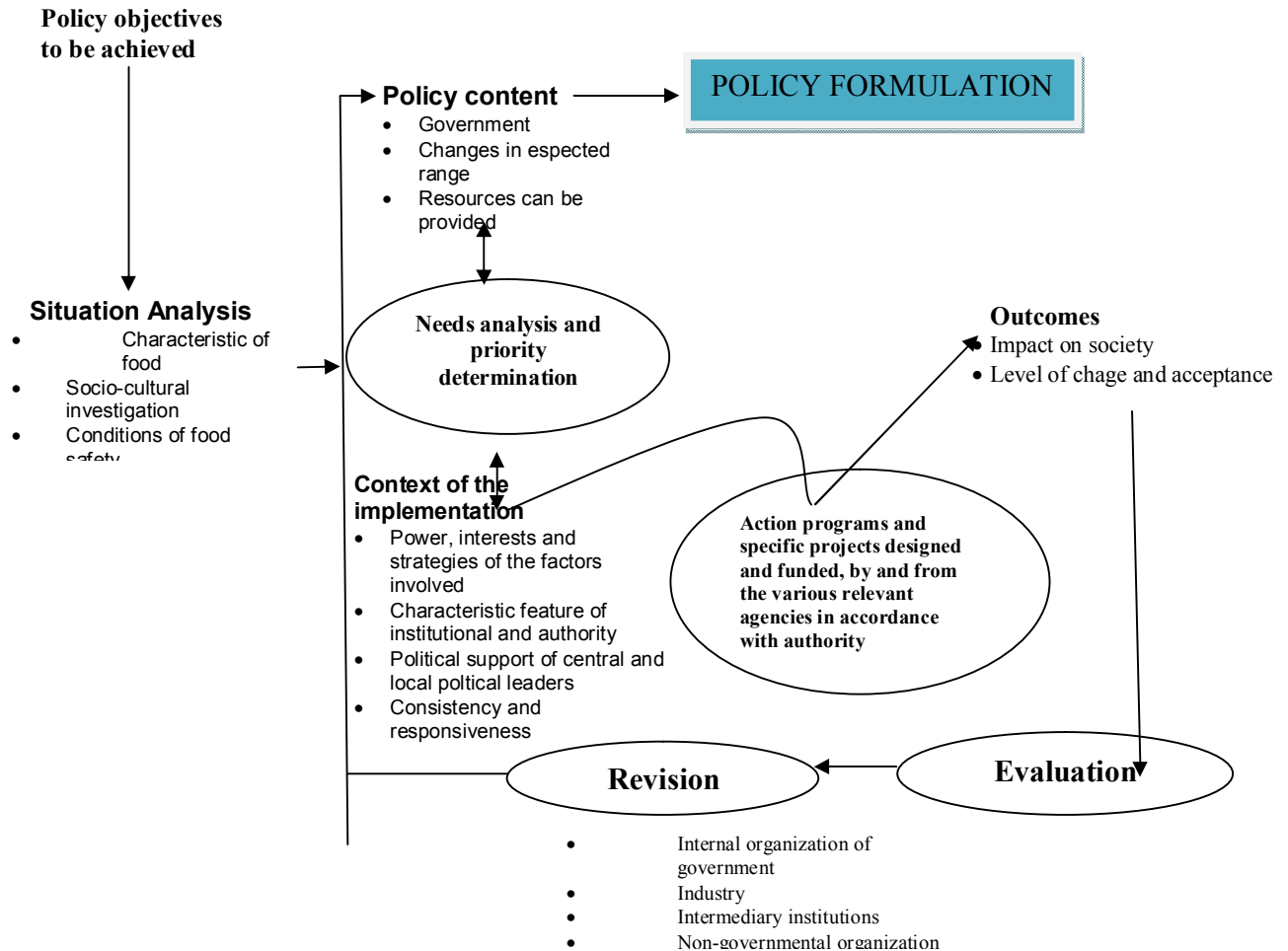


Figure 1. Food safety policy implementation model

The success of this policy is not only based on one of the requirements (content and context of the implementation of the policy), however, a combination of both values is equally good feasibility. Policy content and context of policy implementation is a key condition that can lead to success or failure of policies implemented, both of which should be mutually supportive. At least the content policy is acceptable or appropriate or meet the expectations of all elements in society according with the needs and situation analysis based on research. Similarly, the context of policy implementation must be eligible to qualify as a reliable strategy implementation.

If the quality assurance of food safety at food streets has been realized, then by itself will have an impact on consumer confidence? As hinted

at in Act Number 7 of 1996 has stated that consumers are entitled to eat, a safe, marked by the release of one of the types of foods that are harmful to human health and not in accordance with the faith community. With the full confidence of the people against the presence of Food Street, it will greatly affect the income of small vendors to improve their economies.

CONCLUSION

The conclusion of currents study showed that the situation and condition of food safety of food streets in Malang city was still weak. It is characterized in several external and internal factors such as condition producers/ food street vendors in Malang city, understanding and

knowledge of students about food safety, no food safety management system was applied to the domestic industry, law aspect and consistency and responses between policy content and implementation of the policy pursued by the relevant agencies in Malang city was inconsistent and responsiveness/ sensitivity was still low.

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