

The Challenge of Developing Innovative Mangrove Plants as Food by The People of Tanjung Rejo Village, Percut Sei Tuan District, Deli Serdang Regency

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Abstract

This paper is based on the results of mini research in lectures that discuss the challenges of developing innovative mangrove plants as food by the people of Tanjung Rejo village, Percut Sei Tuan District, Deli Serdang Regency. In general, this study seeks to reveal the problems faced by the people of Tanjung Rejo Village in developing culinary innovations made from mangrove plants. It should be noted that at first the local knowledge of the people of Tanjung Rejo Village on the uses and benefits of mangrove plants was only as firewood. Basically, the innovation of culinary offerings made from mangrove plants has good opportunities in the culinary industry, but it still has a number of challenges that hinder its development. The inhibiting factors for the development of innovation faced by society from the perspective of Sociology and Anthropology became the focus of the study in this mini research.

Keywords: Food Material Innovation, Challenges, Mangroves

1. Introduction

Humans as living beings need food to survive in the world. Earth with its various natural resources provides food for mankind. The evolution experienced by humans produces a variety of knowledge related to foodstuffs. Knowledge of food brought humans to an advanced civilization.

The human population which reaches seven billion in the world causes various problems, one of which is the problem of food. Nature is not able to accommodate human needs which are always increasing. If left unchecked, the world will experience a food crisis and potentially lead to famine. Human life will be noisy if the food stock is not sufficient. Availability of sufficient food for humans is a sign of a prosperous life (Handawi & Ariani, 2002)

Efforts to meet food needs must remain sustainable. Food, as a very strategic role, has control over the development of the quality of human resources, economy and national resilience so that its availability must be in large enough quantities, nutritious, balanced, equitable and affordable by people's purchasing power. Sufficient food supplies affect the stability of food security (Ariyanto, Puspitasari,

Ericawati, 2017). Innovation in the food sector is needed as a solution to prevent food crises in the community.

Food innovation is a way to produce a cutting-edge food product or reproduce a food ingredient to increase selling value. Internal aspects such as quality and nutritional value as well as external aspects such as tastes or socio-cultural aspects of food are considered in carrying out food innovation (Yuliatmoko, 2011). To achieve this, of course, requires management that uses certain techniques that can develop the local food into something that can be accepted by the community. Mangroves are one of the food products that can be used as food innovations.

Mangroves have multiple benefits in human life. Apart from preventing sea abrasion, mangroves can also be used to make food products. Indonesia accounts for 23% of the world's mangrove areas, making Indonesia a country that has the largest mangrove area in the world (ppid.menlhk.go.id, 2017). Thus, mangroves can be used as an instrument that supports food security. In the province of North Sumatra, one of the mangrove forest areas is located in Tanjung Rejo Village, Percut Sei Tuan District, Deli Serdang Regency.

Tanjung Rejo Village, which is located adjacent to the Malacca Strait, has an area of 19 km², with a population of 10,342 people (Samosir & Restu, 2017). The location of the village includes a coastal area overgrown by Mangroves (mangroves). This village is the one that processes mangroves into food products with the help of a private non-government organization, namely the Sumatran Elephant Foundation (YAGASU). Although these parties have assisted, the development of innovations has not been carried out optimally. This is evidenced by the general public who are still not familiar with the presence of this food innovation product from mangroves. This study aims to determine the obstacles faced in developing innovative mangrove plant products in Tanjung Rejo Village, Percut Sei Tuan District, Deli Serdang Regency.

2. Literature Review

The demand and supply associated with food will always have an impact, both desired and unwanted. Innovation becomes important in response to the resulting impact. As research conducted by Olde et al, innovation needs to consider sustainable challenges (de Olde et al, 2020). The increasing demand for eggs by consumers in western Europe is in line with the increased waste generated, even increasing the risk of avian influenza outbreaks. Multi-perspective understanding is required for the development and application of innovations. Research conducted by Olde shows that stakeholders related to egg production in the Netherlands are concerned about environmental, economic, and social issues as obstacles to the sustainability of the egg industry. Stakeholders also proposed various innovations which were dominated by the themes of animal health and welfare, housing systems, economy, environment and organization. However, this innovation is hampered by regulations in force in the European Union and the finances of egg

farmers who do not allow for innovation. Meanwhile, the majority of farmers said that finance was the main obstacle in implementing innovation.

Innovation sometimes arises from people who want to escape from a bad condition. People who cannot live alone need help from other parties in overcoming problems. For example, research conducted by (Futemma, et al, 2020) describes the condition of small-scale farmers in Brazil who want to escape poverty in a collaborative way... this is the impact of the government's rural development program in the Amazon from the government. In the last decade, agrarian policies and programs have created new challenges. Social actors are here to work collaboratively with the aim of solving farmers' problems. Social innovation by collaborating between Japanese immigrant farmers and local farmers helps to face the various challenges that exist.

Food innovation that has a goal in a certain aspect will always have challenges. As research conducted by Trisbiantoro et al, that innovation needs to consider sustainable innovation (Trisbiantoro, et al, 2019). The BMC group in Banyuurip Village as an institution that empowers the community to utilize mangrove fruit as processed food faces various challenges. Some of the challenges are the abundance of untapped Mangrove Fruit, the formulation of making drinks and food made from mangrove fruit is not optimal, and the lack of participation of women in participating in supporting the family economy. To overcome these challenges, it is necessary to provide counseling on the importance of mangrove conservation and its use, provide education on the importance of local ingredients as the main ingredients in the manufacture of drinks and foods made from mangrove fruit, and provide innovation training in the manufacture of syrup and fresh drinks made from mangrove fruit.

Resources that are around humans of course interact with one another, be it natural resources or human resources. Humans can learn from the interaction process that has been experienced. According to Malinowski, learning is the basis for humans to be able to satisfy instinctual needs (Koentjaraningrat, 2010). The results of what is obtained from learning will determine the function that will be played by humans themselves. Technology that also comes from humans affects cultural development (Nurti, 2017).

3. Method

This study uses a qualitative method with a descriptive approach, which aims to describe how communities that process mangroves into food products face the existing challenges. The location of the research that will be carried out in this research is located in Tanjung Rejo Village, Kec. Percut Sei Tuan Kab. Deli Serdang. The informant in this research is the manager of the Workshop, named the one who processes mangrove plants as Food Innovations that can be produced. The manager is named Mrs. Hamidah who is 40 years old who is a community from Tanjung Rejo Village. Data collection techniques are by means of interviews and

documentation. The data that has been obtained is then reduced, presented, and conclusions are drawn.

4. Results and Discussions

a. Results

The Origin of Innovation. There are several mangrove plants that grow in Tanjung Rejo Village that can be processed into food, including Api-api Mangroves (*Avicennia* spp.), barembang (*Sonneratia caseolaris*), and jeruju (*Acanthus ilicifolius*). Initially, the community knew that mangroves could only be used as firewood. Based on the information we got from our informant named Mrs. Hamidah, the people in Tanjung Rejo village got knowledge of processing mangroves into food from a non-governmental organization, namely the Sumatran Elephant Foundation (YAGASU). The Foundation formed a workshop to be a place for public education about the use of mangroves as well as mangrove conservation efforts, namely the YAGASU Batik Workshop. Although providing training and materials for using mangroves as food, this workshop initially only taught batik with ink made from parts of the mangrove plant.

The Sumatran Elephant Foundation (YAGASU) is a non-governmental organization that focuses on conservation and restoration of ecosystems and human development in the vicinity from economic, educational, environmental and social aspects. YAGASU as an NGO has goals for species and forest conservation, ecosystem restoration and protection, climate change mitigation and adaptation, and facilitating activities that improve the community's economy with sustainable environmentally friendly businesses. This organization has 19 years of practical experience. YAGASU Batik Training Workshop is a form of environmental and community development

Currently, this workshop is managed by our informant, namely Mrs. Hamidah and 12 other members from the surrounding community. However, the general public sometimes come to this place and are allowed to learn recipes and how to make food from processed mangroves



Figure 1. YAGASU Batik Training Workshop in Tanjung Rejo Village
Source: Researcher, 2021

Processed Products. Of the various mangrove plants that grow and develop in Tanjung Rejo Village, there are 3 types of mangrove plants that can be processed into food, namely the Api-api Mangrove (*Avicennia* spp.) which can be processed into lunkhead, then the barembang Mangrove (*Sonneratia caseolaris*) which can be processed. into syrup and jam, and finally Jeruju Mangrove (*Acanthus ilicifolius*) which can be processed into onion cakes. The fruit of the three plants is the part that is used to be processed into the previously mentioned food ingredients.



Figure 2. Onion cake, a food product from the Jeruju mangrove (*Acanthus ilicifolius*).
Source: Researcher, 2021

Obstacles in the development of innovation. From our interview with Mrs. Hamidah, we found several points that became obstacles in developing innovations initiated by YAGASU with the surrounding community. First, the informant revealed that there are natural obstacles that come from the mangrove itself, namely the fruit of the Api-api Mangrove plant can only bear fruit twice a year. This hampers food production. One of the solutions used by the community is that after harvesting the Api-Api fruit, the community immediately stores it in the freezer.

The next obstacle is still related to the fruit of the Api-api Mangrove plant, namely the processing process which takes 3 days. This is because the fruit contains sap, and has a bitter and bitter taste. If it is not processed properly, the taste will not be lost from the fruit, even the bitter taste can still be felt. The informant admitted that not everyone knows the process of processing the Api-Fire fruit, only community members know about it.

The next challenge faced by this workshop is related to administration. Some people who want to order these food products ask for legality, laboratory permits, and the Halal logo. The informant admitted that this mangrove fruit is not a familiar food, which is consumed like other foods in general, so a series of laboratory tests and Halal certification are needed for the products they make. Nevertheless, they feel safe in eating the food. This causes them to tend to hesitate to do marketing. So far, they have marketed these products from Facebook's social media, as well as various exhibitions they have participated in.

The challenges related to administration in the previous paragraph actually wanted to be solved by Mrs. Hamidah and the group members of the workshop. However, financial factors hindered their intentions. According to the informant, they were asked for a fee of 3 million rupiah for laboratory testing and the provision of Halal Certification. Previously they were looking for a way that they could do this at no cost, but they found a dead end. There has been no follow up on this problem.

b. Discussions

The obstacles encountered by the researchers were divided into 2 types, namely natural constraints (unanticipated), as well as technical and administrative constraints, which should have been overcome. Like a natural obstacle, namely the fruit of the Fire-Fire which is only harvested twice a year, they understand this. They realized that there was nothing they could do about it. Human consciousness is determined by the material it has (Harris, 1979).

Legality and Certification are the next obstacles faced by the workshop in developing their products. In determining legality and certification, humans tend to use certain agreed methods. The agreed method is a form of values constructed by humans. Laboratory testing is an agreement between humans in assessing the safety of a product. Indonesia as a country with a majority Muslim population agrees that the Halal Logo on a product is an indicator that the food can be consumed. This asserts that values influence human choices and actions (Parsons & Shils, 1965)

Economic factors cannot be separated from human life. The obstacles encountered were also related to group finances. In conservation efforts as well as improving the standard of human life, this seems to be not working. This is the impact of marketing doubts made by the members of the workshop group. This makes business development stagnate. Marketing doubts have an effect on financially unable to accommodate the needs related to legalization and certification. Even though they do an entrepreneur, their actions are a psychocultural problem, which does not show the courage to take risks as a form of entrepreneurial mentality (Marzali, 2005).

5. Conclusion

From the research that we describe, it can be concluded that the innovation of Mangrove plants into food was initiated by the YAGASU Organization as a conservation measure as well as to improve people's living standards. In practice, a number of obstacles are encountered in the development of innovation, including natural obstacles, administrative and technical obstacles, as well as financial constraints. Obstacles that arise are responded to by humans based on material conditions, values agreed upon by humans and the mentality that comes from humans themselves

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