



## Community Empowerment in the Utilization of Beronok to Improve Nutritional Quality and Lifestyle in Meranti Regency

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### ABSTRACT

The Meranti Regency is endowed with a rich biodiversity, including the sea cucumber, locally known as beronok, which the local community has recognized for its high nutritional value. This article explores community empowerment efforts aimed at utilizing beronok to enhance nutritional quality and overall well-being. With its rich content of protein, minerals, and other health benefits, beronok holds the potential to be developed into a valuable functional food source. Through educational programs and training, the community is encouraged to process and utilize beronok effectively to support food security and promote healthier lifestyles. This initiative not only aims to improve the nutritional intake of the local population but also to enhance their socio-economic status by creating new opportunities for livelihood through sustainable use of natural resources. By increasing community awareness and skills in processing beronok, the program seeks to foster a self-sufficient and health-conscious community. The study highlights the importance of integrating local resources into community development strategies to address nutritional challenges and improve living standards, thereby contributing to the overall resilience and sustainability of the region.

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## 1. Introduction

The Meranti Regency, located on the eastern coast of Sumatra, is renowned for its rich natural resources, one of which is the sea cucumber, locally known as *beronok* (Holothuroidea). Although *beronok* is widely recognized by the local community for its high nutritional value, its utilization has remained limited to traditional consumption, and it has yet to be optimally processed to enhance the well-being of the local population. Containing high levels of protein, sodium, potassium, calcium, and phosphorus, *beronok* holds significant potential for improving the quality of life of the local community, particularly in terms of health

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and food security (Suriani, 2018). Empowering the community to process and utilize *beronok* effectively can have a significant positive impact on the dietary patterns and overall well-being of the people in Meranti.

The utilization of *beronok* as a functional food source has the potential to elevate the nutritional standards of the local population. Research by Azizah and Iswanto (2019) indicates that sea cucumber consumption offers various health benefits, including boosting the immune system and supporting bone health. Given its nutritional properties, community empowerment in the processing and utilization of *beronok* is crucial for enhancing dietary patterns and improving the nutritional quality of the Meranti community. Educational programs and training initiatives are essential for equipping the community with the skills needed to transform *beronok* into value-added products, such as sea cucumber chips, extract capsules, and other health supplements (Arifin & Putra, 2020).

These community empowerment efforts are not only aimed at improving nutritional intake but also at creating sustainable economic opportunities. Developing value-added *beronok* products can increase household income and reduce dependence on traditional fishing practices. Fatimah (2021) argues that diversifying marine-based products can significantly contribute to the economic welfare of coastal communities. Therefore, it is imperative for local governments and other stakeholders to support these initiatives through policies that facilitate market access and provide skill development training for the community. Moreover, integrating the use of *beronok* into food security strategies can help address nutritional challenges in Meranti. According to the Indonesian Ministry of Health (2019), malnutrition rates in coastal areas remain high, and leveraging local resources such as sea cucumber can provide a viable solution to this issue. With its high protein and mineral content, *beronok* offers an affordable and accessible protein source for the local population.

Overall, empowering the community in the processing and utilization of *beronok* in Meranti Regency can lead to significant positive outcomes. In addition to enhancing nutritional quality and public health, this initiative has the potential to open sustainable economic opportunities, strengthen food security, and reduce malnutrition in the region. Collaboration among the government, academia, and the community is necessary to optimize this potential and establish *beronok* as a regional flagship product that contributes to the well-being of the community (Susanto, 2020).

## 2. Method

The community service program implemented in this study utilized a participatory approach, actively involving local community members through educational and training initiatives. According to Chambers (1994), participatory methods empower communities by including them in the process of decision-making and implementation, thereby ensuring that the interventions are relevant and sustainable. The initial phase of this program began with a socialization process aimed at increasing community awareness about the nutritional benefits of *beronok* (sea cucumber). Participants were educated on the rich nutritional content of *beronok*, which includes high levels of protein, minerals, and other essential nutrients, as highlighted by Suriani (2018). This foundational knowledge was crucial in changing the community's perception of *beronok* from being merely a traditional food item to a valuable resource with significant health benefits.

Following the awareness-raising sessions, a series of training workshops were conducted to equip the participants with skills to process *beronok* into economically valuable products such as nuggets, meatballs, and *empek-empek*. These products were chosen based on their popularity and market potential, aligning with the findings of Arifin and Putra (2020), who suggest that the development of value-added products can significantly enhance the economic well-being of coastal communities. The training was designed to be hands-on, allowing participants to actively engage in each step of the production process, from the preparation of raw materials to the final packaging of the products. This practical approach ensured that participants could immediately apply the skills they learned, thereby increasing the likelihood of sustainable impact.

Data collection in this program involved a combination of interviews and direct observation. Before the program commenced, baseline data on the participants' knowledge and utilization of *beronok* were collected through structured interviews. Observations were also made to assess community attitudes and behaviors related to *beronok* consumption and processing. These initial findings were crucial in tailoring the training sessions to meet the specific needs and knowledge gaps of the community. Throughout the six-month training period, continuous monitoring was conducted to track changes in participants' knowledge,

attitudes, and skills regarding *beronok* processing. By the end of the program, follow-up interviews were conducted to evaluate the overall effectiveness of the training in terms of knowledge retention and practical application (Miles, Huberman, & Saldana, 2014).

The results of the program were promising, with significant improvements observed in both the knowledge and skills of the participants. Many reported increased confidence in processing *beronok* into high-value products and expressed a willingness to start small-scale businesses utilizing their new skills. This outcome aligns with the findings of Fatimah (2021), who highlights the importance of capacity building in fostering entrepreneurship and economic resilience in coastal communities. Additionally, participants noted an increased appreciation for *beronok* as a nutritious food source, which is expected to contribute to better dietary practices within their households.

The participatory approach used in this community service program proved to be effective in engaging and empowering the local community. By involving participants in both the learning and production processes, the program not only transferred valuable skills but also instilled a sense of ownership and responsibility towards the sustainable utilization of *beronok* as a local resource. Future programs could benefit from incorporating a market linkage component, as suggested by Moser (1998), to help participants connect with potential buyers and further enhance the economic impact of their new ventures. Overall, this initiative demonstrates that participatory methods, combined with targeted educational and practical training, can lead to meaningful and sustainable community development outcomes.

### 3. Result and Discussion

The analysis results indicate that community members who participated in the empowerment program showed a significant increase in their understanding of the nutritional benefits and processing techniques of *beronok* (sea cucumber). This enhanced knowledge led to the successful production of various value-added *beronok* products, such as nuggets, meatballs, and *empek-empek*. According to Arifin and Putra (2020), the development of such products can create substantial economic opportunities for coastal communities, especially given the high market demand for unique and nutritious seafood products. The participants not only gained practical skills in food processing but also learned about the market potential of these products, which encouraged them to explore small-scale entrepreneurial ventures.

The market potential for processed *beronok* products is promising, as indicated by the growing consumer interest in healthy and functional foods. Research by Azizah and Iswanto (2019) suggests that sea cucumbers are becoming increasingly popular due to their high protein content and various health benefits, such as boosting immunity and supporting joint health. This rising demand presents a valuable opportunity for local communities to capitalize on their natural resources. By developing a diverse range of *beronok*-based products, participants in the empowerment program were able to tap into this expanding market, thereby enhancing their household income and contributing to the local economy. This aligns with the findings of Fatimah (2021), who argues that diversifying marine product offerings can significantly improve the economic welfare of coastal communities by creating new streams of income.

Furthermore, the improved dietary diversity observed among the participants is an important outcome of this program. Prior to the intervention, many families in the Meranti Regency relied heavily on a limited range of food sources, often lacking in essential nutrients. The introduction of *beronok* as an alternative protein source has contributed to a more balanced diet, rich in essential nutrients such as protein, calcium, and magnesium (Suriani, 2018). The shift towards incorporating *beronok* into daily meals has not only improved the nutritional intake of the families involved but also reduced their reliance on more expensive imported food products. This is significant given the fluctuating prices and availability of imported goods, which can pose a challenge to food security in remote areas.

The use of locally sourced *beronok* as an alternative food ingredient also contributes to greater food sovereignty for the community. By utilizing a readily available resource, the community reduces its dependence on external food supplies, which are often less affordable and less accessible. This approach to food security is supported by the concept of local food systems, which emphasize the use of indigenous resources to meet nutritional needs and promote sustainable food practices (Moser, 1998). The empowerment program thus not only provided immediate nutritional benefits but also laid the groundwork for long-term food security and self-sufficiency in the region.

Overall, the program demonstrated that community-based interventions focusing on local resource utilization could have far-reaching impacts on both economic and nutritional outcomes. The success of this initiative suggests that similar programs could be replicated in other coastal communities with abundant but underutilized natural resources. Future research should explore the long-term effects of such interventions on community resilience and the potential for scaling up these efforts to benefit larger populations. Additionally, further studies could investigate the impact of integrating market access and distribution strategies to maximize the economic benefits of local food production (Chambers, 1994).

#### 4. Conclusion

The community empowerment initiative focused on the utilization of *beronok* (sea cucumber) in the Meranti Regency has yielded positive impacts on both the nutritional quality and economic well-being of the local community. The program not only enhanced the community's knowledge of the nutritional benefits of *beronok*, but also created new economic opportunities through the development of *beronok*-based products. Participants learned to process *beronok* into economically valuable products such as nuggets, meatballs, and *empek-empek*, which have shown strong market potential due to growing consumer interest in healthy, nutritious foods (Arifin & Putra, 2020). This initiative aligns with the findings of Azizah and Iswanto (2019), who note that the high protein and mineral content of sea cucumbers can serve as a significant source of nutrition for the community, thereby improving dietary patterns and reducing dependency on more expensive imported food products.

Moreover, the program has empowered local communities by equipping them with the skills needed to establish small-scale businesses, thus contributing to economic resilience. The production and sale of *beronok*-based products have opened new income-generating avenues, allowing families to diversify their livelihoods beyond traditional fishing, which is often seasonal and less predictable. According to Fatimah (2021), product diversification is a key strategy in improving the economic welfare of coastal communities, as it enables them to better utilize local resources and enhance economic stability. The empowerment program has, therefore, not only improved nutritional intake but also strengthened the economic foundation of the community by creating a sustainable business model based on local resources.

For the program to have a broader impact and benefit more of the Meranti community, ongoing support from the local government and other stakeholders is essential. Local authorities can play a pivotal role by facilitating market access for *beronok*-based products, perhaps through the establishment of cooperatives or by providing advanced training on marketing and business management. Chambers (1994) emphasizes that active participation from all stakeholders, including the government, is crucial to ensuring the sustainability and success of community empowerment programs. Additionally, the government can help by establishing regulations and quality standards for *beronok*-based products, thereby enabling these products to compete more effectively in broader regional and national markets.

Continued educational efforts are also necessary to ensure that the knowledge and skills gained are not lost over time. Ongoing education about the nutritional benefits and processing techniques for *beronok* can encourage more community members to participate in the program and adopt healthier dietary practices (Moser, 1998). This can include advanced training sessions on product innovation, quality control, and effective marketing strategies to expand the range of *beronok*-based products and their market reach. Such initiatives will not only enhance the sustainability of the program but also empower the community to take full advantage of their natural resources.

To further scale the program, collaboration with academic institutions, research organizations, and the private sector could be highly beneficial. Universities and research institutions can provide scientific and technological support for the development of *beronok*-based products, while the private sector can assist with distribution and marketing. This multi-stakeholder collaboration would create a supportive ecosystem for the sustainable development of the local economy based on natural resources. Moreover, such collaboration would ensure that the community empowerment program is not merely a temporary intervention but a long-term solution adaptable to the community's evolving needs (Moser, 1998).

Looking ahead, the expansion of this program has the potential not only to improve the welfare of the Meranti Regency community but also to serve as a model for other coastal areas with similar natural resources. By leveraging local potential, this type of empowerment can contribute to poverty alleviation,

improved food security, and inclusive, sustainable economic development in Indonesia's coastal regions (Arifin & Putra, 2020).

#### **Declaration of Conflicting Interest**

The authors state that there is no conflict of interest concerning the publication of this paper.

#### **References**

- Arifin, M., & Putra, D. (2020). Development of sea cucumber-based products to improve the economy of coastal communities. *Journal of Coastal Community Development*, (2), 115-123.
- Azizah, N., & Iswanto, H. (2019). Health benefits of sea cucumber as a functional food source. *Journal of Nutrition and Healthy Food*, 11(1), 23-32.
- Chambers, R. (1994). Participatory Rural Appraisal (PRA): Challenges, potentials and paradigm. *World Development*, 22(10), 1437-1454.
- Fatimah, S. (2021). Diversification of marine products as an effort to improve the economic welfare of coastal communities. *Journal of Maritime Economics*, 5(3), 150-159.
- Indonesian Ministry of Health. (2019). *Indonesia Health Profile*. Jakarta: Indonesian Ministry of Health.
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. SAGE Publications.
- Moser, C. (1998). The asset vulnerability framework: Reassessing urban poverty reduction strategies. *World Development*, 26(1), 1-19.
- Suriani, A. (2018). Nutritional content and health benefits of sea cucumbers. *Journal of Indonesian Marine Biology*, 6(1), 55-62.
- Susanto, A. (2020). Potential of community empowerment through marine product processing in Meranti Regency. *Journal of Public Policy and Community Service*, 4(4), 200-210.