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Building Local Products "Bubbor Paddas" Instant Packaging Typical of Sambas into a Globally Competitive Product

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Abstract

This community service activity aims to develop Bubbor Paddas, a Sambas culinary specialty, into an instant competitive product in national and international markets. The development process employed the Project-Based Learning (PBL) method, involving students and industry partners in all stages of production, including vegetable drying, seasoning preparation, packaging, and marketing. Food technology innovations, particularly in drying and packaging techniques, were applied to maintain the original flavor and texture of Bubbor Paddas. The results indicated a 30% increase in production efficiency and enhanced product packaging quality, making it more durable and visually appealing. Additionally, digital marketing strategies were implemented, leading to a 40% increase in product orders within three months of launch. This initiative not only improved the quality and competitiveness of local products but also positively impacted community empowerment and the preservation of Sambas culinary heritage. The findings highlight the importance of integrating modern technology and marketing strategies in developing innovative and sustainable traditional culinary products.

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INTRODUCTION

Indonesia has a very complex diversity of culinary cultures, where each region has a specialty food that illustrates its identity and local wisdom. One of the lesser-known traditional cuisines with great potential to be developed is *Bubbor Paddas* from Sambas, West Kalimantan. *Bubbor Paddas* is a typical vegetable porridge rich in spices and has a unique flavor that differs from porridge in general. However, the popularity of this food is still limited to the Sambas region and has not been widely recognized by the wider community, both at the national and international levels. This condition reflects a gap in utilizing local culinary potential as a product with higher economic value.

The potential of traditional cuisines such as Bubbor Paddas can be a great opportunity in the food industry, especially in this era of globalization, where the demand for authentic and healthy food products continues to rise. However, local products often face challenges in terms of competitiveness, especially when compared to established instant food products in the market. One of the main challenges is how to transform traditional foods into

convenient and instant products without losing their original flavor and quality. Another challenge is overcoming the public's perception that conventional foods are less practical and incompatible with modern, fast-paced lifestyles.

Food product innovation, especially in the form of instant products, can be a solution to improving the competitiveness of local products. A study conducted by Hidayat et al. (2021) shows that traditional food products repackaged in instant form have significant domestic and export market potential. There is a research gap in adapting traditional food production technology into instant products that retain nutritional value and original flavors (Kurniawan & Widodo, 2020). In addition, few studies focus on marketing and branding strategies for local culinary-based instant products in the global market (Rahmawati et al., 2019).

The uniqueness of Bubbor Paddas, rich in local vegetables and spices, can be an attraction if packaged in instant form. The transformation of Bubbor Paddas into an instant product has the potential to increase the competitiveness of local products not only in the national market but also in



the international market, especially in the market segment that seeks healthy and natural products. In addition, the successful development of this instant product can also support the preservation of traditional culinary that is increasingly eroded by modernization and lifestyle changes.

This activity aims to develop Sambas' *Bubbor Paddas* into a high-quality and competitive instant product. This activity will fill the existing gaps by integrating modern food technology into production and identifying effective marketing strategies for the instant *Bubbor Paddas* product. In addition, this activity will explore the sustainability aspect by ensuring that the developed product remains environmentally friendly and supports the empowerment of local communities by utilizing raw materials from local farmers.

The results of internal research on the development of *Bubbor Paddas* into instant products have been carried out, especially in vegetable drying techniques, seasoning making, and product shelf life tests. This service activity implies the continuity of research applied to the business program of vocational innovation products (pupiv) of Sambas State Polytechnic in partnership with CV. Smart Instant Foods in Sambas city. CV. Smart Instant Foods is engaged in the culinary specialty of Malay Sambas. The output of this activity is a new product, Bubbor Paddas, in instant packaging that can be used as a typical Sambas Malay souvenir.

MATERIALS AND METHODS

The materials used in this service activity are the main raw materials and additional raw materials used to make *Bubbor Paddas* in instant packaging. The packaging materials are for both primary and secondary packaging. The method used in this activity is the Project Based Learning method.

Materials

The main ingredients in this service activity include rice, grated coconut, fern leaves, katuk leaves, singkil leaves, sweet corn, cabbage, sweet potatoes, various spices, and cooking oil. The packaging materials used include primary packaging in the form of *nylon vacuum* plastic and secondary packaging in paper bowls, paper stickers for packaging labels, and plastic wrapping for packaging seals. The equipment used is a *tray oven, rotary oven*, Rinnai brand gas stove, mitochiba brand chopper, cosmos brand blender, and vacuum sealer machine.

Indonesia's culinary diversity reflects its rich cultural heritage, with each region offering unique traditional foods. *Bubbor Paddas*, a traditional Sambas dish, has the potential for broader market acceptance but faces challenges such as limited recognition outside Sambas due to unattractive

packaging and lack of branding (Rahmawati et al., 2019). Research indicates that improving packaging and branding can significantly boost the marketability of traditional products (Hidayat et al., 2021). This activity addresses these challenges by developing an instant version of *Bubbor Paddas* using innovative drying and packaging techniques. This initiative aims to enhance product competitiveness and market reach by integrating modern technology and marketing strategies.

Methods

In this community service activity, the Project Based Learning (PBL) method aims to develop partners' practical skills through real projects relevant to instant Bubbor Paddas's production needs. This method provides space for students and industry partners to be directly involved in the entire production process, up to marketing. This activity begins with identifying problems and needs and project planning involving modern food technology to produce high-quality and competitive products in the market. In this context, PBL only teaches technical skills and integrates aspects of entrepreneurship and sustainability. Thus, applying PBL in this activity can improve participants' competencies while positively impacting the local community (Kariuki & Humphrey, 2019).

This community service activity was carried out by lecturers and students of Sambas State Polytechnic in collaboration with CV. Smart Instant Foods. The Project-Based Learning (PBL) method was employed to engage participants in real-world projects. This method involved students and partners directly in every production stage, from identifying issues to implementing solutions. The stages included problem identification, project planning, application of modern food technology, and marketing strategy development.

In order to develop *Bubbor Paddas* as an instant product, modern food technology was the main focus. These technologies include innovative vegetable drying techniques, seasoning manufacturing with methods that preserve the original flavor, and product shelf life testing to ensure long-lasting product quality. This process involves using proven tools and processing methods to implement PBL. Integrating these technologies improves production efficiency and ensures that products conform to high-quality standards, making them competitive in the market (Torrente *et al.*, 2020).

After the production process, marketing strategy becomes an important aspect that must be managed well. In the PBL approach, students and industry partners work together to identify potential markets, design attractive packaging, and develop effective distribution strategies. Applying PBL in developing this marketing strategy encourages

partners to learn first-hand the techniques to face challenges in the real business world, from market analysis to marketing strategy implementation. In addition, the plan also includes using digital media to expand the product's reach, allowing *Bubbor Paddas* Instant to reach a wider range of consumers, both locally and internationally (García-Martínez et al., 2021).

RESULTS AND DISCUSSION

The sensory evaluation of Bubbor Paddas Instant was conducted to assess consumer satisfaction with the taste and texture of the product (Fig. 1). From the test results involving 100 respondents, 92% stated that they were satisfied with the product's taste. It indicates that the distinctive flavor of Instant Bubbor Paddas, rich in local spices and natural ingredients, successfully preserved the authentic characteristics of the traditional Sambas Malay dish. Furthermore, 87% of respondents were satisfied with the product's texture, signifying that the vegetable drying techniques and seasoning preparation effectively maintained the dish's original texture. The processing, which utilized modern technologies such as controlled drying temperatures and vacuum packaging, significantly enhanced the product's sensory quality. These findings suggest that Bubbor Paddas Instant has great potential to be well-received by its target market, both locally and internationally.

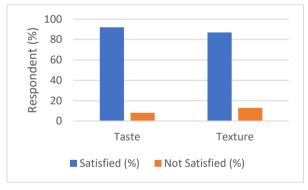


Fig. 1. Sensory evaluation

However, 8% of respondents expressed dissatisfaction with the taste, potentially due to individual preferences regarding the intensity of spices or the balance of sweet and savory flavors in the porridge. Meanwhile, 13% of respondents were dissatisfied with the texture, which may be attributed to changes in consistency caused by the drying process. It highlights the need for further optimization of processing parameters, such as drying temperature and duration, to replicate the fresh texture of the dish better. These findings also provide an opportunity to diversify the product to meet the preferences of various market segments, including regional and

international consumers. Additionally, repeated sensory evaluations with a larger consumer sample could offer more representative data for product development. Overall, the sensory evaluation results demonstrate that Instant *Bubbor Paddas* has promising prospects as a globally competitive product, particularly when marketed with its cultural and health benefits.

Challenges in Maintaining the Original Flavor and Quality

One of the main challenges in developing an Bubbor Paddas Instant product is maintaining its original flavor and quality throughout the production and storage process. The use of drying technology for vegetable ingredients, as well as packaging techniques for the material components of the Bubbor Paddas Instant product aimed at providing production efficiency solutions, has, in some cases, led to changes in sensory quality, including texture, flavor, and distinctive aroma.

The drving methods in Bubbor Paddas Instant include oven drying for leaf vegetables such as fern, katuk, and singkil leaves and non-leaf veaetable types such as carrots, cabbage, sweet corn, and sweet potatoes (Fig. 2). The drying temperature for leaf vegetables is 65° C for two hours, while the drying temperature for corn, carrots, and sweet potatoes is 70° C for four hours. The critical point of the vegetable drying process lies in 1) control of drying temperature and time. Sari & Putri (2021) stated that proper temperature and time settings are essential to maintain the nutrients and color of leaf vegetables during the drying process; 2) air quality and ventilation, Rahmawati (2022) stated that good air circulation could accelerate the drying process while reducing the risk of microbial contamination; 3) pretreatment on vegetables, Hassan & Noor (2019) revealed that pre-treatment such blanching/blanching can increase drying efficiency and extend product shelf life.

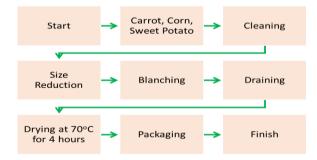


Fig. 2. Non-leaf vegetable drying process

The production of dried spices consists of roasting rice and grating coconut, which are then pulverized. At the same time, seasoning paste is

made using a cooking process in a pan with cooking oil, various spices, and a mixture of turmeric and kesum leaves. The vegetable drying process is presented in Fig. 3. The process of making paste/wet seasoning and dry seasoning is presented in Fig. 4 and Fig. 5.

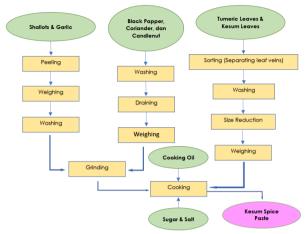


Fig. 3. Process of making pasta seasoning/wet seasoning

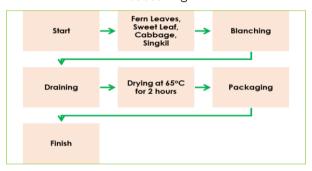


Fig. 4. Leaf vegetable drying process

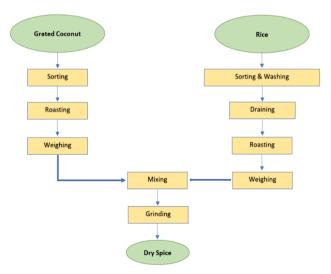


Fig. 5. Process of making dry seasoning

Turmeric and kesum leaves are key ingredients in *Bubbor Paddas*. Turmeric and kesum leaves are processed into a seasoning paste with spices such as pepper and coriander. In addition to kesum leaves and turmeric leaves, rice and grated coconut are also characteristic of *Bubbor Paddas*, and both of these ingredients are processed into dried spices.

The intervention provided in this activity was related to maintaining the original taste and quality of the instant packaged *Bubbor Paddas* adapted from Sambas Malay specialties. The changes resulting from this activity are presented in Table 1.

Bubbor Paddas Instant Packaging Design and Distribution Strategy

Packaging design plays an important role in Bubbor Paddas Instant's marketing strategy. Attractive and functional packaging protects the product and is an effective promotional tool in the market. Good packaging should consider factors such as moisture resistance, the ability to protect against microbial contamination, and visual appeal attracting capable of consumer attention (Reznichenko & Pavelieva, 2023). The initial packaging of Bubbor Paddas instant can be seen in Fig. 6.



Fig. 6. Initial packaging of *bubbor paddas* instant with burdas poltesa brand

Changes in packaging materials aim to increase the shelf life of product material components. The use of PP plastic as a primary packaging material is very prone to leakage, especially for pasta seasoning components that contain oil; often, the plastic leaks because PP plastic cannot be strong after being sealed. The use of nylon vacuum plastic is a solution for packaging pasta seasonings. Li et al. (2023) stated that nylon vacuum plastic is highly recommended for packaging food products sensitive to oxidation, such as pasta seasonings containing oil. Nylon has good resistance to oil and fat penetration, can maintain the freshness and flavor of the product for a long time, and can suppress the growth of microorganisms by reducing the oxygen content in the package.

The change of packaging label on *Bubbor Paddas* instant product aims to improve product performance and make it more attractive. Colors

Table 1. Changes resulting from community service activities

Initial Condition	Intervention	Change Condition
There is no production standard for Bubbor Paddas Instant for all material components.	Assistance in the preparation of standard operating procedures for the production of Bubbor Paddas Instant	Instant Paddas Production SOP for all material components.
Very simple, unattractive packaging label with the Burdas Poltesa brand.	Assistance in designing labels, and renaming product brands.	Produced attractive packaging label and product brand called "Bubbor Paddas Sambas".
Vegetables are packaged in separate plastics consisting of leaf vegetables (fern leaves, singkil leaves, and katuk leaves) in one package, and corn, cabbage, carrots, and sweet potatoes in one package,	Combine dried vegetables into one package.	Dried vegetables are packed in a single package to save on container usage.
The plastic used as primary packaging for the material components of the product is PP (polypropylene), which is easily damaged, especially for seasoning paste (easy to leak).	The primary packaging material was replaced with nylon vacuum plastic.	Primary packaging is made from nylon vaccum plastic so that the material components of the product are more durable and of good quality and the packaging is not easily damaged / leaked.
The secondary packaging of the product is not sealed, making it difficult to distribute, and the potential for contamination and damage is very high.	Provide a seal in the form of plastic wrapping	The product has a seal, which makes it safer and easier to distribute.

and images on packaging are inseparable in creating compelling designs (Fig. 7). These two things are a medium for conveying messages between producers and consumers. Febriant et al. (2023) found that combining appropriate colors and images can significantly increase the visual appeal of packaging and influence consumer buying decisions.



Fig. 7. Developed packaging label

Market Potential for Traditional Instant Products at National and International Levels

Traditional instant food products have great potential to be developed in national and international markets, especially due to increasing consumer demand for convenient yet authentic and healthy products. A literature review shows that

consumers are more likely to accept innovations in traditional food products if they retain their original characteristics and have clear health benefits (Abdullah & Putit, 2023). Moreover, with increasing globalization and international market access, products such as *Bubbor Paddas* packaged in instant form can reach global consumers looking for exotic food products with strong local flavours.

Bubbor Paddas, a traditional culinary rich in cultural values and local wisdom of the Sambas Malay community, is a Cultural Heritage and Local Identity. This product represents the cultural identity of the border region, which has cultural similarities with the Malaysian region. Studies on cross-border trade management between Indonesia and Malaysia show that products with high cultural value can have their own appeal in the international market, especially in border areas, which are often cultural meeting points (Apriani & Daniah, 2021).

Border areas such as Aruk and Kuching are areas with high trade flows. Bubbor Paddas Instant products can be attractive souvenirs for cross-border travelers as the consumption of practical instant food continues to increase. Research by Ariningsih et al. (2021) in the Kalimantan border region shows that food products have great export opportunities despite price and quality competition challenges.

The cultural closeness between people in West Kalimantan and Sarawak, Malaysia, allows *Bubbor*

Paddas instant products to be well received in Malaysia. Studies on the acceptance of Indonesian food in Malaysia show that Malaysian consumers tend to accept food from Indonesia due to similarities in taste and perceived good quality (Abdullah et al., 2023).

Effective marketing strategies, including the emphasis on the cultural and health aspects of this Bubbor Paddas instant, can penetrate a wider market. Elyta & Sahide (2021) state that attractive packaging and the right marketing strategy can increase product attractiveness in the international market. Collaboration between the government and business actors in Indonesia and Malaysia is urgent in strengthening the position of Bubbor Paddas Instant in the global market. Research on bilateral cooperation between Indonesia and Malaysia shows that government support is crucial in strengthening crossborder trade and developing local products (Anuar & Raharjo, 2022).

Bubbor Paddas Instant Market Analysis

Market research revealed a high potential for Bubbor Paddas instant in local and international markets. The segmentation includes local consumers familiar with the product, border communities with cultural similarities, and global consumers seeking exotic and healthy food options. Competitive analysis shows the product's unique flavor and cultural significance provide a competitive edge. Effective marketing strategies emphasizing health benefits and cultural heritage are crucial for market penetration (Abdullah et al., 2023). Collaboration with local farmers ensures a sustainable raw material supply, supporting regional economic development (Habibi et al., 2020).

- 1. National and International Market Potential Bubbor Paddas Instant, a product adapted from Samba's culinary specialties, has great potential to be developed in national and international markets, especially in the era of globalization. Consumer demand for authentic and healthy food products continues to increase. The unique flavor and natural ingredients in Bubbor Paddas instant are the main selling points for consumers looking for healthy food alternatives.
- Market Segmentation
 Market segmentation for Bubbor Paddas instant is categorized into several categories:
 - a. Local Consumers: Sambas consumers who were already familiar with Bubbor Paddas wanted a more practical package. In Indonesia, inside and outside West Kalimantan, consumers recognize Bubbor Paddas as a typical Sambas Malay culinary dish, and they want to give or bring Sambas gifts in the form of Bubbor Paddas in instant packaging to colleagues and relatives.

- b. Consumers in Border Areas: Communities in the Indonesia-Malaysia border region, particularly in Aruk and Kuching, which share similar cultures and food tastes, could be a potential market. The Bubbor Paddas instant can be promoted as a typical souvenir or convenient instant food for cross-border trayelers.
- c. International Consumers: Global consumers interested in exotic and healthy food products, as well as traditional food enthusiasts from Southeast Asia.

3. Competition Analysis

In the national and international market, Bubbor Paddas Instant will compete with other established instant food products, both local and international culinary based. The main advantage of Bubbor Paddas instant is its uniqueness and authentic taste, which cannot be found in other products. However, the main challenge is maintaining the product's taste and quality after going through the drying and packaging process, which is a key factor in attracting consumers.

4. Marketing Strategy

A marketing strategy highlighting the cultural and health aspects of *Bubbor Paddas* instant is important. Digital media, including e-commerce and social media, can expand market reach and increase brand awareness. This approach is particularly important to appeal to millennial and Gen Z consumers, who tend to be more open to food innovations and tend to shop online.

5. Challenges and Opportunities

Challenges faced in entering the market include price competition with other more established instant products and consumer perception of traditional foods as less practical. However, with innovations in packaging technology and proper promotion, the product can succeed in the market. Empowerment of the local community and promotion of the product as part of the cultural heritage provide significant added value in the marketing strategy.

Effect of PBL on Participants' Competencies and Impact on Local Communities

The Project-Based Learning (PBL) method applied in the development of *Bubbor Paddas* instant improves the technical competence of students and partners and positively impacts the local community. PBL is proven to be able to involve participants directly in the production process, from planning to marketing, so that they gain practical skills that are relevant to industry needs. In addition, PBL also encourages innovation and collaboration between educational institutions and local industries, which can strengthen the local economy by

developing local wisdom-based products (Kariuki & Humphrey, 2019). This service activity involves students directly in the production process starting from the process of drying vegetables, making seasoning paste, dried spices, toppings, packaging, to marketing (Fig. 8).



Fig. 8. Student activities in PBL

Utilization of Digital Media to Expand Market

Digital media is a very effective strategy to expand the market for Bubbor Paddas Instant products. The marketing of Bubbor Paddas instant on social media has received a very good response, as evidenced by the increase in product orders since it was first launched after the development activities (Fig. 9). Social media and e-commerce platforms allow local products to be recognized by a wider public domestically and abroad. Research by Ikonic et al. (2021) shows that the right digital marketing strategy can increase brand awareness and expand market reach, especially when combined with campaigns that emphasize the uniqueness and cultural value of the product.

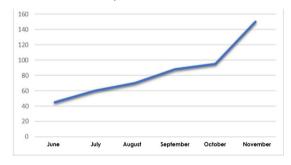


Fig. 9. Sales chart of bubbor paddas instant year 2022

Program sustainability is one of the main focuses of this service activity. Through a PBL approach, partners and students explored the production process of environmentally friendly Bubbor Paddas Instant. It includes the utilization of local raw materials produced by local farmers. This direct involvement in the project enabled the partners and students to understand the importance of sustaina-bility in every stage of production and distribution, which will

support local community empowerment and environmental preservation (Nugroho et al., 2022).

Partners work with farmers to ensure the raw materials meet quality standards. In the next stage, partners will train farmers on more efficient and environmentally friendly farming techniques to increase the productivity and quality of agricultural products. This empowerment is expected to provide long-term economic benefits to local communities and ensure the sustainability of raw material supply for the production of Bubbor Paddas Instant (Habibi et al., 2020).

CONCLUSION

Data collection and method implementation carried out in this community service activity used the Project-Based Learning (PBL) method, which involved students and partners directly in the entire production process and the marketing of Bubbor Paddas Instant products. The main contribution of this activity is the development of Bubbor Paddas products into quality instant products that not only increase the competitiveness of local products in national and international markets but also have an impact on empowering local communities and preserving Sambas culinary culture. However, there are limita-tions in maintaining the original taste and quality of the product during the production and storage process, which requires further adjustments. Recommendations for future service activities are improvements in packaging techniques and preser-vation technology to make the products more competitive in a wider market. In the future, the focus of activities should include developing a stronger digital marketing strategy and cross-country collaboration to expand the product's reach to the international market.

This community service activity successfully developed Bubbor Paddas into a competitive instant product by applying modern food technology and PBL methods. Key outcomes include improved production efficiency, enhanced product quality, and increased market reach. Future activities should focus on refining preservation techniques, obtaining international certifications, and streng-thening digital marketing strategies. Collaboration with government and industry stakeholders is essential for expanding the product's reach in global markets.

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