



Empowerment of the Sekar Sari Processing Group in Processed Strawberry Products to Support Pancasari Village Ecotourism

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The processing of innovative processed strawberry products made from local materials is developing currently, producing a variety of processed products that are increasingly diverse and widely circulating in the market. One of the villages that has the potential for this is Pancasari village which is a tourist destination village located in Sukasada District, Buleleng Regency. Pancasari village, Sukasada district has a variety of natural potentials, one of which is strawberries. Members of the Sekar Sari processing group asked to be given training and assistance regarding various processed strawberry products and marketing strategies to support ecotourism and increase family income. Strawberry-processed products are products that are in great demand by people throughout Bali. The raw materials are easy to get and the price is affordable. The activity will be carried out at the Sekar Sari Processing Group, Pancasari village, Sukasada district, Buleleng Regency, Bali province. Processed strawberry products have been produced and marketed by partners but not yet intensively, the packaging is not good and the marketing strategy is not optimal. Partners want to improve the appearance of their products so that they have a long shelf life so that they can be economically independent. Solutions made to solve the problems faced by partners are: providing appropriate technology for processing processed strawberry products into jam and dodol, a broader marketing strategy, ecotourism based on strawberry plantations, and providing equipment assistance. The method used is active community participation and exploratory. Community service activities have been running smoothly. International services regarding strawberry processing can have a significant positive impact on society, especially in terms of economic empowerment, food diversification, and cultural preservation. It is important to involve the community actively in this service process and respect their local knowledge and traditions to achieve results that are sustainable and beneficial to the community

Keywords: strawberry; women empowerment; pancasari; innovative products; processing.

1. INTRODUCTION

1.1 Research Background

“Innovative food products are products that are growing rapidly resulting in an increasingly diverse variety of processed products. Effective and efficient processing of innovative food products is synonymous with food processing with the concept of clean production to support ecotourism. Food processing in an effort to empower village communities is an effort to develop community independence and welfare. Prioritizing community needs in increasing knowledge, skills, and awareness in utilizing resources through programs, activities, and assistance is essential in accordance with the laws of the Republic of Indonesia No 2014” [1,2]. “Village Development is an effort to improve the quality of life and life of the Village community”. [3]

Pancasari village is a village located in Sukasada District, Buleleng Regency. Astronomically it is located at 8° 14' 51.290" South Latitude and 115° 9' 4.853" East Longitude which has an altitude of 1,282 mdpl. Most of the people's livelihoods are farmers and it is a potential strawberry-producing area to be developed. The

total population is 941 families consisting of 5096 people, 2530 men and 2566 women [1]. The area of Pancasari Village is located at the southernmost tip of the city of Singaraja which borders Tabanan, namely Candikuning Village with an area of 1280 Ha with details according to its use as follows: dry land 365.73 Ha, graves 20 acres, and housing 19.27 Ha. Pancasari Village is geographically bordered to the north by Wanagiri Village, South of Candi Kuning Village, east and west is bordered by forest. The distance from the village government to the sub-district is 22 km, to the district 24 km, and to the provincial capital 84 km.

Pancasari Village, which is known as an ecotourism destination, has a variety of potential commodities that need to be developed, one of which is strawberries. The tourism potential in Pancasari Village opens up opportunities for the presence of various community activities that support tourism activities. One of them is strawberry cultivation which can support the availability of food ingredients that can then be processed and offered to visitors, for example, strawberry jam and dodol. The community chooses strawberry cultivation activities based on the high demand for fruit, favored by domestic tourists and can be a special attraction for foreign

tourists. All the potentials that exist in Pancasari Village need to be developed with assistance involving several active groups to increase their knowledge, skills, and independence, such as a group of women food processors.

As a tertiary institution, especially Warmadewa University in collaboration with Central Bicol State University of Agriculture (CBSUA) (Philippines) this condition is an opportunity as well as a challenge to establish more intensive and sustainable cooperation in the long term. So far, most tertiary institutions are more orientated from the theoretical aspect of science and technology development, but the development aspect towards practice is still limited so that the contribution of science through research activities has not been able to provide real benefits for the wider community. With community service activities funded by Warmadewa University, it is hoped that partners in Pancasari Village will have the skills, entrepreneurial spirit, and insight in managing local natural resources. Thus, it is expected to be able to open business opportunities, provide added value and increase the independence and welfare of the community.

“Pancasari Village has a Sekar Sari processing group. The group's location was far from the crowds and was still somewhat behind in terms of skills. The activities carried out by the group range from training in making processed food products, ceremonial materials and others. This group still really needs support so that community empowerment can foster an entrepreneurial spirit and requires assistance so that members have supporting activities that can help increase family income so that the welfare of the community increases” [3,4].

This ability will later be put into practice to meet family needs as well as a desire to develop their business independently. This desire is supported by the proximity of a market located in Sukasada District which is known for its ecotourism objects, including: selfie tours and views of Lake Buyan and Tamblingan. They asked to be taught how to make processed strawberry products that they had produced but were not yet optimal, as well as marketing strategies to improve product marketing and assistance in using processed strawberry products to support ecotourism. “Besides being rich in cultural arts, the island of Bali is also rich in various processed foods. In fact, many of the typical Balinese snacks or snacks are favored by foreign and domestic tourists. These processed foods have

their own charm in their unique shape and taste” [5].

“Maintaining strawberry-based processed products is the duty and responsibility of all parties in reducing or suppressing poverty. Processing of processed strawberry products has better prospects and development opportunities. In food processing, the type and quality of raw materials and auxiliary materials vary greatly. Conventional food product technology is characterized by a picture where the product is processed with a poor level of sanitation and hygiene, uses raw materials with a low level of quality or freshness, food safety is not guaranteed, technology is passed down from generation to generation, and the business is managed by a family with an inadequate level of management ability” [6]. “Therefore, it is necessary to develop food processing with several improvement efforts by applying basic feasibility to processing” [7]. “Quality aspects need to be studied as well as product marketing development” [8]. “With the problem of various strawberry processing processes, it is necessary to apply basic feasibility in order to produce quality strawberry processed food with broad marketing” [9,10].

Processed strawberry products that have been packaged/produced are usually marketed to markets around the village. With Community Service activities (International community service) funded by the Warmadewa University Community Service Institute, the Sekar Sari Pancasari processing group hopes to have skills and insights in managing natural resources that support ecotourism and maintain local wisdom and have an entrepreneurial spirit, so as to increase independence to open wider business and marketing opportunities. It is hoped that the training activities for processing strawberry-based products will be able to produce and market processed strawberry products so that quality can be maintained, shelf life is longer and marketing is broader. Partners are also given knowledge about ecotourism development. It is hoped that the group will be able to produce and market their processed products more widely with better marketing, thereby being able to independently increase income and family welfare [11,12].

1.2 Literature Review

The empowerment of the Sekar Sari processing group in Pancasari village is marked by their

remarkable product diversification, particularly in the creation of strawberry-based items such as jam and dodol. This diversification strategy not only showcases their culinary ingenuity but also addresses the varied tastes of both local consumers and tourists. These efforts transcend mere economic empowerment and underscore the role of local creativity in shaping the village's identity and economic prospects.

The production of strawberry jam and dodol is a testament to the group's culinary ingenuity and adaptability. Strawberry jam, with its universally beloved sweet-tart flavor, has found a place in countless kitchens worldwide. By crafting high-quality strawberry jam, the Sekar Sari Processing Group not only contributes to their economic empowerment but also taps into a broader consumer base, potentially increasing sales and revenue and thereby improving the financial well-being of the community.

In addition to their culinary achievements, it's essential to highlight the nutritional value of strawberries within these processed products. Strawberries are not only delicious but also highly nutritious. They are rich in vitamin C, supporting immune health, and loaded with dietary fiber, aiding digestion [13,14,15]. Moreover, strawberries contain potent antioxidants, such as anthocyanins, which combat oxidative stress and inflammation. When integrated into products like jam and dodol, strawberries offer a delightful way to enjoy these health benefits, adding another layer of appeal to the Sekar Sari Processing Group's offerings.

The nutritional benefits of strawberries also have a vital relationship with ecotourism in Pancasari village. Tourists today seek not only natural beauty but also authentic, health-conscious experiences. By offering strawberry-based products, the village positions itself as a culinary destination with a focus on sustainable, locally sourced ingredients. This not only aligns with the global trend of conscious consumption but also contributes to the overall appeal of Pancasari village as an ecotourism hotspot.

In conclusion, the Sekar Sari processing group's journey toward empowerment and their diversified product line, featuring strawberry jam and dodol, showcases the power of local entrepreneurship and creativity in community development. The nutritional value of strawberries enhances the appeal of their

products, further supporting economic growth. Moreover, the incorporation of strawberries in ecotourism initiatives aligns with modern tourists' preferences for authentic, health-conscious experiences, benefiting both the group and the village's broader ecotourism goals.

1.3 Research Objective

The objectives of this community service activity include to: 1) Help provide knowledge about the potential for ecotourism development in Pancasari. 2) Help provide knowledge about processed strawberry products to increase production, quality and implementation of basic feasibility. 3) Help provide equipment assistance so that the types of processed food become more and more diverse. 4) Help provide knowledge about the manufacture of quality strawberry jam and lunthead products and have a long shelf life. 5) Help provide knowledge about good marketing strategies so that the market is wider and income increases.

2. MATERIALS AND METHODS

2.1 Training Materials

To realize the goals described above, the partners were given a set of knowledge regarding the insights into processing processed products, especially strawberry jam and dodol, marketing, and understanding ecotourism. With the knowledge package provided, it is expected to be able to provide knowledge and skills that can enrich the competence of the target audience as processors of various processed strawberries.

To support the training process for processing various processed strawberry products, the following infrastructure was needed: 1) A leaflet that contains instructions on how to process processed strawberry jam and dodol products, marketing, and ecotourism. 2) Schedule of activities and time required. 3) Processing tools for the practice of making various processed strawberry products. 4) Consumables, namely materials used to make strawberry jam and strawberry lunthead.

2.2 Implementation Methods

The implementation method is the pattern or system of actions to be carried out or the sequence and stages necessary in carrying out community service activities. The implementation

method that was carried out included coaching, training, mentoring, and structured consultation on various matters that become obstacles in an effort to provide added value to partners. The achievement of implementation objectives is determined by the implementation process. One way to achieve that goal is to use the right method. The method is one of the tools to achieve the goal. Methods in relation to achieving implementation objectives so that they can be entered in long-term memory. The method is an aspect that can expedite the path of implementation toward what has been formulated. Various methods that can be applied in the implementation of community service include: lectures, questions and answers, discussions, demonstrations, modeling, inquiry, simulations, games, role-playing, and others. These methods can be implemented separately or implemented in combination according to the abilities and characteristics of the material being studied.

This community service activity program is carried out through training using lecture and discussion methods, demonstrations and training, as well as questions and answers. a) The lecture and discussion method begins with giving lectures and counseling to members of the Sekar Sari Pancasari group. These mothers were gathered in one room with the implementation team to be given a lecture on the activity material. The material provided is related to processing strawberries into strawberry jam and dodol. This activity aims to provide theoretical knowledge to group members. The activity then continued with a discussion to deepen respondents' understanding of processed strawberry products and learning media. During the implementation of this activity, more pictures and explanations were displayed regarding processed products from strawberries to strawberry jam and dodol in the hope that respondents could understand them more quickly. 2) Demonstration and Training Method: Demonstration and training activities are follow-up activities, demonstrating the process of processing strawberry fruit into strawberry jam and dodol.

2.3 Stages of Implementation

This community service activity includes the stages of preparation, implementation, and post-program handling.

- a. The preparatory phase includes the following activities: 1) Socialization of the

training program, carried out in the community through the Paruman meeting program by inviting the community and housewives who are members of the Pancasari group. 2) Recruitment of training participants which is planned to be attended by as many as 15 people, taken by representatives from the sub-village. 3) Preparation of training facilities and infrastructure or processing practices including the schedule of training activities.

- b. Implementation phase: The training will be held for 2 days planned on June 26 2023 which will take place in Agro Puduk Lestari, Pancasari Village. Implementation of activities carried out based on a schedule that has been prepared. At the end of the activity, an evaluation is carried out, namely an evaluation of mastery of knowledge and skills.

The stages of implementing community service activities in Pancasari village are as follows:

1. Literature study: the literature needed is knowledge about the process of making strawberry jam and dodol as well as knowledge about the material for the production of processed strawberries so that the resulting product is safe for public consumption.
2. Analysis of the community situation: this is a very important start because community service starts with the intention to help the community. This stage is carried out with two sub-stages, namely the first determines the target audience, the wider community, certain communities, certain audiences or organizations, or certain people in society. The second is to determine the problem areas to be analyzed in a comprehensive manner, which means trying to find, see and study all the problems faced by the target audience. This requires a multidisciplinary approach. It can also be limited, meaning that it is only limited to one problem area. The situation analysis that will be carried out is observing the production process of strawberry jam and dodol carried out by partners, observing the quality of the processed strawberries produced, observing the production equipment used, and observing the marketing carried out.
3. Identification of the problem: The results of the analysis work which includes the targets and areas of the problem can be found and then the problems faced by the

selected target group can be formulated. In this stage, the target will be handled through community service activities later.

2. Define specific work goals. At this stage, it can be determined which new conditions you want to produce through community service activities later. In other words what changes would be desired that would make the work goals clear.
3. Problem-Solving Plan. Problems that have been identified need to be solved and at the same time achieve the goals that have been set by finding alternative solutions to problems and choosing the best alternative.
4. Social approach. The principle is that the target community is the subject and not the object of this community service activity. For this reason, efforts are made to involve the community as much as possible, by trying to make an approach and make them aware that the problems that have been formulated above must be solved. Furthermore, if they are unable, then this is where the executors and universities take a role so that they can improve the lives of the target audience.
5. Implementation of Activities. Prior to the implementation of the activity, a work plan is prepared which includes determining how the activity will be carried out, determining the implementation time, determining the implementation places, and determining the people who will be involved in the activity.
6. Evaluation of activities and results. Each stage needs to be evaluated to be able to move on to the next stage, which needs improvements during the activity process. Equally important is the evaluation of the results or impact of all community service activities, so that you not only know what the results of the activities so far are but also learn how to identify and measure the changes that have occurred. This evaluation will produce a form of accountability for everything that has been done before. The results of this evaluation are not only important as administrative completeness but are also very important to be known by everyone involved, including the target community.

2.4 Post-Program Handling

Evaluation is carried out by giving questionnaires to participants to determine the level of success of this activity. The implementation of this

community service activity ran smoothly, and the participants enthusiastically and actively participated in the training from start to finish. This motivates members of the Sekar Sari Pancasari processing group to be more creative, able to process strawberries into dodol and jam products.

2.5 Obstacles / Obstacles

In the implementation of International community service, the inhibiting factor is the difficulty of finding a schedule for the implementation of activities amid the busyness of the community because of the many customary activities in the village so that the implementation schedule is difficult to agree.

3. RESULTS AND DISCUSSION

3.1 Results

International Community Service Activities at the Sekar Sari processing group's Pancasari Village have been running smoothly. The activity which was carried out on Friday, June 26 2023 was in the form of counseling on Empowerment of the Sekar Sari Processing Group on Processed Strawberry Products to Support Pancasari Village Ecotourism which was attended by 20 people from the Sekar Sari processing group's and 15 people from Village Officials. The activity was continued with presentation of material by speakers from Central Bicol State University of Agriculture. Partners actively participate in seminar activities and provide questions related to the material presented. The product of food souvenir product based on strawberry can see in Fig. 1.

3.2 Discussion

The implementation of this international community service was carried out well. This activity has an impact on increasing the knowledge and skills of group members in processing and marketing processed strawberry products. Training material on strawberry processing techniques that are better understood by training participants. This can increase the productivity and quality of the strawberry harvest thereby increasing farmer income. Innovatively processed strawberries produce a variety of food products, thus opening up new market opportunities. Food diversification also reduces dependence on certain types of food and reduces the risk of food vulnerability. This

community service has succeeded in increasing farmers' income and creating new jobs and has an impact on the welfare of society as a whole. Increased income increases access to education, health services and better infrastructure services. This community service also increases people's knowledge and skills in processing strawberries. This training and education can develop their capacity for entrepreneurship. The international community's dedication to strawberry processing also promotes and strengthens local wisdom regarding the culture and traditions of strawberry

processing. This strengthens cultural identity and provides greater recognition of local skills and heritage. International community services regarding strawberry processing can have a significant positive impact on society, especially in terms of economic empowerment, food diversification, and cultural preservation. It is important to involve the community actively in this service process and respect their local knowledge and traditions to achieve results that are sustainable and beneficial to the community.



Fig. 1. Food souvenir product based on strawberry



Fig. 2. Training participants with the head of the Pancasari village, team, and all speakers of International Community Service from Indonesia, and Philippines



Fig. 3. Transfer of knowledge by the speakers

3.3 Solutions and Follow-Up

The obstacles faced in the implementation of international community service can be overcome by communication with group leaders and village officials. Counseling and practice activities can take place smoothly.

4. CONCLUSION

Community service activities have been running smoothly. International community services regarding strawberry processing can have a significant positive impact on society, especially in terms of economic empowerment, food diversification, and cultural preservation. It is important to involve the community actively in this service process and respect their local knowledge and traditions to achieve results

that are sustainable and beneficial to the community.

5. FUTURE PLANS

Furthermore, the international community service team will continue to assist in strawberry product development activities and product marketing. The next plan is that the implementation team plans to accompany the group for the development of strawberry product innovations.

6. STRATEGIC STEPS FOR FURTHER REALIZATION

Further realization strategic steps to realize the next plan are, assisting the group in managing legal and assisting in completing its administration.

NOTE

Members of Pancasari Strawberry Processing Group are very enthusiastic, active and enthusiastic to know the development of strawberry products until the whole activity ends. The location prepared for the implementation of international community service activities is very supportive and representative.

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CONSENT

As per international standard or university standard, participants' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. I Made Astu Mahayana IGAAD, Susanthi, Ni Kd Sioaji Yamawati, I Wayan Budiarta, Nyoman Mardika I, pemasaran produk berbasis online bagi pengusaha ritel mandiri di desa pancasari, buleleng, Linguist. Community Serv. J. 2021;2(2): 62–68.
DOI:10.55637/licosjournal.2.2.3779.62-68
2. Suriati L, Datrini LK, Rudianta IN. Development of taro-based products in the dewi catur women's farmer's group, Catur Village Kintamani Bali. Asian J. Adv. Agric. Res. 2022;18(3): 1–8.
DOI: 10.9734/ajaar/2022/v18i330221
3. Suriati L, Selamat IK, Sukmadewi DK. Development of innovative Taro-Based product management with zero-waste concept to increase the independence of PKK Wanagiri. AJARCDE (Asian Journal of Applied Research for Community Development and Empowerment). 2023; 7(1):79-83.
4. Suriati L. Studies the Resistance to oxidation and the changes phases against the characteristics of physicochemical aloe vera gel. Journal of Biological and Chemical Research (JBCR). 2018;35(2): 670-679.
5. Marantika AK, Martini NND, Assistance in Formulating the Development Strategy of Pancasari Village as a Tourism Village. proceeding. 2020;431–40.
Available:https://lppm.undiksha.ac.id/sena-dimas2020/assets/ProsidingSenadimas2020/file/56.pdf
6. Wahyu Tjiptaningsih. Empowering women in efforts to increase the family economy (Case study in women's business groups in Sindangkempeng Village, Greged District, Cirebon Regency). Reform J Ilm Adm. 2017;1(2):28–35
7. Mangku IGP, Suriati L, Sudita DN, Situmeang P, Udayana IGB. Guidance and assistance in the development of VCO in the "Pangsang Ayu" Group, Pangsang Village, Petang District, Badung Regency. Widya Laksana. 2022;11(2): 199–208.
8. Suriati, L. Studies the resistance to oxidation and the changes phases against the characteristics of physicochemical aloe vera gel. J. Biol. Chem. Research. 2018;35(2):670-679.
9. Suriati LIP, Chandra GH, Wiguna. The influence of flour amount and storage time on the characteristics of sweet fragrant mango dodol. WICAKSANA, Journal of Environment & Development. 2018;2(2): 48-59
10. Arisudana IG, Semariyani AAM, Chandra IP, Suriati L. Comparison of sticky rice flour and siamese pumpkin (*Sechium edule*) on the characteristics of dodol. Agri Echo. 2018;23(1):33 - 43
11. Sanaky HA, Nashori F. Improvement and development of processed coffee products in Brunosari Village. AJIE- Asian J Innov Entrep. 2018;03(03):2477–3824.
12. Brunerová A, Haryanto A, Hasanudin U, Iryani DA, Telaumbanua M, Herák D. Sustainable management of coffee fruit waste biomass in ecological farming systems at West Lampung, Indonesia. IOP Conf Ser Earth Environ Sci. 2019; 345(1).
13. Suriati L, Aida Firdaus Muhamad Nurul Azmi, Raseetha Vani Siva Manikam, Ni Made Ayu Suardani S, I Gede Pasek Mangku, AAM Semariyani. The development of taro processed product in women farmers group in baru village,

- Tabanan Bali Indonesia. AJARCDE | Asian J Appl Res Community Dev Empower. 2022;6(1):28–34.
14. Suriati L, IMS Utama, BA Harsojuwono, IBW Gunam. Effect of additives on surface tension, viscosity, transparency and morphology structure of *Aloe vera* gel-based coating. *Frontiers in Sustainable Food Systems*. 2022; 6(831671)
 15. Semariyani AAM, IW Sudiarta, IN Rudianta, IP Candra. Pengemasan dan strategi pemasaran produk pangan di Desa Sulangai. *Community Service Journal (CSJ)*. 2019;2(1):23-28.

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