

Innovative Products Processed from Coconut and Nuts Sari Nadhi Business Learning Group in Carangsari Village Badung

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ABSTRACT

Regional Featured Product Development Program activities in Carangsari Village, Petang, Badung, and Bali were carried out at the Sari Nadhi Business Study Group. Coconuts into coconut oil have been produced and marketed by partners, but this has not been implemented. intensive, and partners want to have new superior products by processing local agricultural products, especially coconuts and nuts, to support the Carangsari Tourism Village. Partners do not know the field of business management, so they experience problems managing production and marketing. The solutions taken to overcome the problems faced by partners are: providing appropriate technology in the processing of coconut and nut-based products; storage and packaging; marketing; and business management; and assisting with processing equipment and business capital. The output target that has been achieved is Appropriate Technology for Processing Coconuts and Nuts

INTRODUCTION

Coconut is an agricultural product that has high economic value if further processing is carried out because almost all parts of the plant can be processed further, especially the fruit. Various processed products can be made from coconuts besides coconut oil, including dried grated coconut, copra, coconut sugar, coconut milk, nata de coco, coconut water syrup, coconut soy sauce, chips, coconut jam, preserved coconut milk, and many processed products with coconut as an ingredient. mainly (Palungkun, 2017). Coconut, which has the Latin name *Cocos nucifera* L., the *Cocos* genus from the *Arecaceae* tribe, is a plant that is often found in tropical climates, one of which is Indonesia. The contents of coconut include coconut fiber with a composition of 33%, coconut shell 12%, fruit flesh 28%, and water 25%. Almost all parts of coconut can be useful for human needs. Coconut fruit contains 30–50% oil. Fresh coconut fruit, when dried, has an oil content of 63–65%. The older the coconut, the higher the oil content it contains (Roza Ruspita, 2023).

Coconut is a plant that has great potential to be cultivated because many products can be made from it. Coconut fruit is known as a fruit that has high economic value (Fauziah et al., 2020). Coconut is a superior product commodity that has an important role in development (Kusuma & Putri, 2020). Several research results show aspects of VCO as an herbal or vegetable medicine, including preventing pressure sores in stroke patients (Sumah, 2020), being antimicrobial (Silalahi et al., 2014), and preventing premature aging (Ahmad et al., 2023). Apart from that, VCO also makes the brain healthy, reduces the risk of heart disease (Aini et al., 2021), burns calories, and makes skin, hair, and teeth healthy (Putri & Ali, 2021). Starting from this condition, it was felt necessary to innovate the processing of coconut products into products with higher selling value, one of which was pure coconut oil (VCO). However, the Malikian Village community's knowledge about VCO is still very low; they tend not to even know, so it needs to be initiated by academics through training activities (Ekyastuti et al., 2023). The technology for making VCO can be done traditionally, which is very simple and can be done by anyone (Hasibuan et al., 2018).

Innovation in the use of coconut in products with high selling value needs to be carried out to increase the economic income of Canangsari Village, Badung. By diversifying processed coconut oil products in the form of VCO, it is hoped that the sales value will increase by 5–12 times. If people's horizons are opened, it is hoped that in the future, people's income will increase, as will their welfare (Ekyastuti et al., 2023). Nuts are also a potential agricultural product in Carangsari and its surroundings. This type of agricultural product is also widely sold at the village market, which is located on the side of the main road in Carangsari village, and is planted by the community as a crop

rotation. However, this type of agricultural product is only consumed fresh and has not been processed into other products, so it is necessary to think about making it into processed products that can add to the innovative products supporting the Carangsari Tourism Village. In Indonesia, there are more than 12,000 types of nuts, including peanuts, green beans, red beans, black beans, cowpeas, pigeon peas, Bogor beans, Soybeans contain the highest-quality complete protein compared to other plants. There are vitamins B1, B2, B3, B5, B6, and K. The iron content in soybeans is almost equivalent to the iron content in 4 ounces of grilled chicken breast (Sri Juliani, 2021). Several studies of soy protein with isoflavones have shown significant results in reducing cholesterol levels in menopausal women (Qi et al., 2021).

Soy protein is the only type of bean that has the most complete composition of essential amino acids (Wahyuni, 2016). The quality of protein in soybeans is not inferior to cow's milk (Syafriani, Afiah, 2023). This makes the content of soybeans important for the health of the human body (Puspita, L., & Komarudin, 2020). Soybeans also contain carbohydrates, vitamin B, vitamin D, and calcium, which are useful for the growth of bones and teeth, and lecithin, which helps the development of brain cells. Apart from that, soy milk also contains fat, phosphorus, iron, provitamin A, vitamin B complex (except B12), and water (Syafriani, Afiah, 2023). Soybeans contain antioxidants and isoflavones; therefore, consuming soybeans will help improve immunity or the body's immune system (Eni Wiliyanti, 2023). Apart from containing nutrients that are really needed by the body, raw soybeans also contain anti-nutritional substances that are detrimental to health, such as antitrypsin, antichymotrypsin, tannins, saponins, phytic acid, and hemagglutinin. With the fermentation process of soybeans into tempeh, these anti-nutritional components become inactive, so they are no longer harmful to the body (Redi Aryata, 2020).

Carangsari Village, which is known as a tourist area, has 10 (ten) traditional hamlets or banjars, namely Samuan Kangin Hamlet, Samuan Kawan Hamlet, Mekar Sari Hamlet, Bedauh Hamlet, Pemijian Hamlet, Senapan Hamlet, Anggungan Hamlet, Sangut Hamlet, Beng Hamlet, and Telugtug Hamlet (Sudiarta et al., 2023). Carangsari Village, located in Petang District, Badung Regency, is a village that has an area of around 885 ha with an altitude of 400–500 m above sea level. Geographically, Carangsari Village has enormous potential in the agricultural sector, with a fairly large expanse of rice fields, with almost 70% of the population still making a living as rice and plantation farmers. The plantation crops developed are cocoa, durian, rice, coconut, and secondary crops, dominated by nuts, most of which are used to meet daily needs and some are sold around the village area (Sudiarta et al., 2023). As one of the potential plants found in Carangsari village, currently the price of coconuts is very cheap; even during the main harvest, the price of coconuts is only Rp. 2000–Rp. 4000 per fruit,

while the climbing costs are quite expensive, namely Rp. 20,000 per tree. With the cheap price of the coconuts they produce, it is necessary to think about alternatives for processing them into other products so that the economic value of coconuts can be further increased and can increase people's income.

The aim of this activity for partners is to increase partners' knowledge and skills in processing local coconuts and nuts produced in partner areas so that they can improve community welfare. This touch of efficient technological innovation in processing innovative Balinese products is expected to provide high-added value for the foster partners and be able to market their products to support culinary tourism needs.

IMPLEMENTATION AND METHODS

The method for implementing training activities on processing coconuts and nuts is a) direct face-to-face method and providing counseling so that partners gain knowledge about processing coconuts and nuts using manufacturing methods that can be done with simple tools, and understanding sanitation, and hygiene of processing, packaging, and labeling of products as well as entrepreneurship and business management; b) discussion method to find out the actual problems experienced by partners; c) direct practice in the form of training, guided by instructors from among lecturers, alumni and students who have taken the Plantation Product Processing Technology and Nut Processing Technology courses, so that partners can directly make the products provided.

The stages carried out in implementing Community Service activities include: a) location assessment, approach in coordination with the Department's Complaints, administrators and members of the Sari Nadhi Business Study Group, selection of meeting and training places; b) interviews, discussions and questions and answers regarding problems faced by partners, as well as planning activities that show solution steps to problems faced by partners; c) partners will first be given material that has been prepared by the team in the form of a module containing how to process coconuts and nuts into several commercially valuable products, given counseling and modules regarding supporting materials, namely about sanitation and hygiene, processing, packaging and labeling, marketing, entrepreneurship and business management; d) handover of donated equipment to partners so that training can be carried out to support the manufacture of the products to be implemented; e) implementation of training/practice in making coconut and nut-based products, packaging and labeling the products produced; f) final evaluation will be carried out on the service material provided to partners from the product manufacturing process, packaging, labeling, to marketing distribution so that it can increase community income.

RESULTS AND DISCUSSION

Economic and Social Impacts

Each head of family in Carangsari Village, especially those who have moorland and land that is not planted with rice, on average has coconut plants to meet their own needs in addition to other moorland plants such as bamboo and fruit plants. Meanwhile, after the rice planting period, generally, to fertilize the soil, the land is planted with legumes. However, considering that there are so many coconut plants, sometimes overproduction occurs and they are not utilized properly, so coconuts that have been harvested or have fallen by themselves are left on the land. As one of the potential crops in Carangsari village, the price of coconuts is currently very cheap. With the cheap price of the coconuts they produce, the service team has provided an alternative solution to increase the economic value of local coconuts in Carangsari Village.

The "Sari Nadhi" Business Study Group, which is supported by a team of service providers, has had a social impact in the form of increasing the insight of the local community that, by optimally utilizing local agricultural potential, it will be able to increase employment opportunities and increase positive community activities to increase family income. KBU "Sari Nadhi" has become a pioneer and an example for other communities outside of group members regarding efforts to increase economic activity and provide positive social impacts so that people who do not have permanent jobs can participate in trying to earn additional income. Apart from that, KBU Sari Nadhi has proven that even though most of its members are elderly, the elderly in this KBU are not just doing nothing but are also trying to earn additional income by joining this KBU. Doing lots of activities is also indirectly an effort to keep them healthy because they communicate a lot with other residents.

The innovation in using coconuts by processing them into VCO oil and nuts, especially soybeans, which are processed into tempe products, has had the impact of increasing economic value in Carangsari Village, especially in Banjar Bedauh. People currently tend to use their coconuts to make virgin coconut oil (VCO), which is the superior product of KBU "Sari Nadhi" (developed by the Unwar service team in 2019). The remaining sorting is then processed into barren coconut oil. Processed products made from nuts are processed into tempeh and then innovated into various types of tempeh chips.

Partner Contribution to Executor

This Community Partnership Program activity has run smoothly thanks to good cooperation between the service team and the activity partner, namely KBU "Sari Nadhi," who enthusiastically participated in this activity, so the partners have contributed to the success of this activity. The contributions from partners to the implementation of activities are: a) partners who are training participants have complied with all agreements that have been made in accordance with the statement of willingness to collaborate in PPPUD activities this year II; b) partners with full discipline and responsibility, comply with all agreements and carry out all series of activities until all planned activities are completed; c) partners have contributed to this activity by providing a training location and preparing coconut raw materials that will be used in the training; d)

After the end of this activity, partners are expected to be able to pass on their skills to other community members to utilize the potential of coconuts and nuts in Carangsari Village; e) After the activity ends, partners are expected to be able to practice and continue the business well and the business they started can develop; f) The products produced can later be marketed to many regions so that partner turnover increases; g) To ensure smooth activities, partners also contribute to preparing consumption and practical materials in the form of coconuts and soybeans produced by local farmers. Documentation of activities can be seen in Table 1.



Figure.1 Partner Contribution to Executor

Solution and Follow-Up

Based on the inhibiting and supporting factors above, to ensure the smooth running of the community service activities that have been designed, solutions and follow-up actions can be formulated as follows: a) fostering good relationships that have existed so far by providing motivation and encouragement at every meeting between the community service and partner; b) coordinate and communicate with partners in preparing activity plans so that they do not conflict with traditional and religious activities that are being carried out, then the planned schedules that have been prepared are implemented together consistently; c) coordinate and communicate with partners in preparing activity plans so that they do not conflict with traditional and religious activities that are being carried out, then the planned schedules that have been prepared are implemented together consistently; d) prepare a module containing material for each activity so that it can be read, understood and used as a reference in participating in training activities at any time; e) providing intensive assistance, providing equipment and business capital to continue activities, with the hope that after completion of the activity partners can produce and turnover will increase.

Strategic Steps for Further Realization

Facilitate and provide information to group partners to get the opportunity to take part in product exhibitions (promotions) at various events organized by the government and the private sector. Next, coordinate with agencies related to processing product P-IRT permits to prepare the necessary administration. After that, carry out monitoring and evaluation of the products produced and KBU activities so that KBU can produce continuously. Establish continuous communication and promotions with consumers to look for further product marketing opportunities so that partner turnover can be increased. Lastly, prepare a marketing system for products produced online, in addition to conventional marketing, so that product marketing can continue to run.

CONCLUSIONS AND RECOMMENDATIONS

Based on the activities that have been carried out, the following conclusions and suggestions can be drawn: 1) The output targets for the second year of PPPUD activities have been given to partners; except for facilitating P-IRT, they are still waiting for the evaluation process of the products produced so that they meet the administrative requirements; 2) Training for making products in the form of processed coconut and nuts can be carried out smoothly, and training participants can make these products well; 3) The training participants have participated in the training with enthusiasm and discipline, which can be seen from their presence during the activity. It is necessary to carry out continuous coaching and mentoring so that the partners being coached can carry out business activities in a sustainable manner.

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