

Assistance for Women Farmers' Groups in Processing Innovative Orange-Based Products in Belantih Kintamani Village, Bangli

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ABSTRACT

The empowerment of women farmer groups in Belantih Village aims to improve welfare through post-harvest orange processing. This group consists of 20 members who face the constraint of limited knowledge about citrus processing technology. Most oranges are sold in the form of fresh fruit at low prices, while small fruits are often wasted. The main purpose of this activity is to provide training and assistance to process oranges into innovative products, such as wine drinks, which have a high selling value. In addition, marketing training through social media is also carried out to introduce products to consumers. After mentoring, the group members succeeded in processing small oranges into wines with economic value. Recommendations for these activities include continuous training, increased production, and expanding market access to support business sustainability.

INTRODUCTION

Kintamani District is one of the areas in Bali Province that is known as the main center of citrus production. This region has the largest contribution to the production of citrus commodities in Bangli Regency, where almost all of its residents depend on the plantation sector for their livelihood. Based on data, around 99.99% of the people of Kintamani work as farmers who are engaged in plantation activities on a daily basis, especially citrus cultivation. One of the orange-producing villages that has considerable potential in this region is Belantih Village, which has a population of 2,864 people with 816 heads of families (KK) spread across eight hamlets, namely Hamlet or Banjar Kayupadi, Belantih, Tangguan, Pangkung, Mabi, Sabang, Luahan, and East Selulung. The area of Belantih Village reaches 965 hectares, with most of the land used for plantation activities, which is around 530 hectares. Geographical characteristics and a cool climate make this region very suitable for the development of citrus plants which are the region's leading commodities.

The villages around Belantih also have a similar livelihood, which relies on the plantation sector. Therefore, farmers, including a group of women farmers in Belantih Village, not only carry out activities in their own village area, but also often cooperate and interact with farmers from neighboring villages. This social and economic interaction strengthens the orange production network in the Kintamani area as a whole. However, despite the huge natural and human resource potential in this region, there are still various challenges faced by the community, especially in terms of managing the abundant citrus crop.

In developing the agricultural sector, the role of farmers has a significant impact on increasing productivity as well as the welfare of the local community. However, the obstacles faced by farmer women groups are often obstacles in increasing their capacity and competitiveness. One of the main problems arises when the harvest season arrives. In that period, citrus production is usually very abundant, but the selling price in the market actually decreases drastically due to excess supply. Small citrus fruits often do not sell well because they are considered less economically valuable, so many are wasted. In fact, with the use of the right processing technology, the citrus fruits have the potential to be processed into various derivative products such as drinks or processed foods that have a higher selling value.

So far, the Women Farmers Group (KWT) in Belantih Village still sells their produce in the form of fresh fruit that has been sorted. However, citrus fruits that are small in size or do not meet market standards often do not sell. This condition then aroused the attention of the Community Service team (PKM) as educators to contribute to encouraging innovation in the processing of agricultural products. Through service activities, the team seeks to provide solutions in the form of mentoring and training for women farmer groups to be able to utilize the harvest of oranges into products of high economic value, such as fermented drinks (wine) made from local oranges.

Through this PKM activity, the team wants to make a real contribution in overcoming the problems faced by the Farmer Women Group in Belantih Village. The main focus of this activity is to increase knowledge and skills related to citrus processing technology, as well as product marketing strategies so that the production results can be better known by consumers. With this assistance, it is hoped that KWT members will be able to increase their role and capacity in managing agricultural products, so that it will not only have an impact on increasing personal income, but also contribute to the welfare of families and village communities as a whole.

With this background, the empowerment of the Women Farmers Group in Belantih Village is an important step to overcome various existing challenges, especially in managing abundant citrus yields but often not absorbed by the market. Through training in processing oranges into value-added products such as wine drinks, women farmers are expected to be able to create innovations that support the sustainability of their agricultural businesses. In addition, this activity is also an effort to strengthen the position of women farmer groups as the main actors in the development of the agricultural sector in Kintamani District, especially in Belantih Village.



Figure 1. Orange Plantation Land

Apart from being a center for citrus production, Kintamani District also has unique socio-economic values. The structure of the community is still thick with the spirit of mutual cooperation and collective work which is an important social capital in rural development. In this context, women's empowerment has become very relevant. Women in rural areas, especially those who are members of the Women Farmers Group, now play not only a role in domestic activities, but also actively engage in productive economic activities. They participate in planting, harvesting, and even marketing agricultural products. However, this role change has not been fully followed by adequate capacity and skills development.

In today's modern era, the role of women in the agricultural sector is increasingly important and strategic. A woman who used to be known only as a housewife has now participated directly in family economic activities. Many farmer women's groups have been formed in various villages as a form of women's active participation in building household and village economic resilience. However, most of them still face limitations in knowledge, innovation, and technology in processing agricultural products. In Belantih Village, for example, most of the KWT members do not understand how to process oranges into value-added processed products, so small oranges that do not sell well in the market are often wasted.

Seeing these conditions, assistance to farmer women groups is very necessary so that their knowledge and skills increase. Through the innovation of processing orange-based products, KWT members are expected to develop sustainable household-based businesses. With this ability, they not only play the role of farmers, but also as productive, creative, and independent entrepreneurs. This kind of assistance is expected to open up new business opportunities for rural communities, especially in increasing the competitiveness of local products and strengthening the family economy.

Furthermore, this PKM activity also emphasizes the importance of utilizing digital technology in product marketing. Today, social media such as Facebook, Instagram, and TikTok have become effective means of promoting local products to a wider market. Therefore, training on digital marketing strategies was given to groups of women farmers so that they could market processed citrus products creatively and reach consumers outside the Kintamani area. This approach is expected to increase the competitiveness of processed citrus products and expand economic opportunities for rural communities.

Although the potential of Belantih Village is very large, the challenges faced by farmer women groups still need serious attention. Some of the main problems faced by partners in relation to innovation in processing citrus products are: first, the lack of role of agricultural extension workers in providing innovation and motivation to farmer women groups, so that citrus production has not been processed optimally. As a result, during the big harvest, farmers often suffer losses because oranges that do not sell well. In fact, these oranges can be processed into fermented drinks with high economic value. Second, the lack of knowledge about digital marketing through social media is a considerable obstacle and limits the group's ability to expand market reach.

To overcome these problems, the service team offers solutions in the form of counseling on citrus processing technology into high-value products such as wine, as well as direct training in the process of processing oranges that do not sell. In addition, digital marketing training is also provided as an effort to strengthen the capacity of women farmer groups in introducing their products to the wider community. Through this activity, it is hoped that the Women Farmers Group in Belantih Village can transform into an independent, creative, and competitive group, and be able to make a real contribution to improving the family economy and sustainable village development.

IMPLEMENTATION AND METHODS

The methods used in community service activities (PKM) include. Training and mentoring are carried out through a participatory approach, where members of the farmer women's group are actively involved in every stage of the activity. This participatory approach has been shown to be effective in increasing training engagement and success, as revealed in a study by (Wright & Annes, 2016) on empowerment in value-added agriculture. In this activity, the participants will be equipped with innovative product processing technology based on oranges and marketing strategies in the digital era through social media. Training will be provided in the form of live demonstrations, and group discussion sessions such as:

1. Aspects of the processing technology of innovative orange-based products.
This training aims to improve participants' skills on how to process oranges into wine drinks. The goal is to provide them with practical skills that can be applied in managing group businesses to be more productive.
2. The marketing aspect provides an understanding of how to use social media by creating accounts on Facebook, Tiktok, WhatsApp, Instagram to introduce their products.

Stages of Service Implementation

1. Location survey
This location survey aims to obtain information related to the potential possessed by the Women Farmers Group in Belantih Village. there are strengths, opportunities and weaknesses owned by the farmer women group. So that the community service team can prepare a PKM activity program that will be implemented to solve the problems faced by partners.
2. Socialization of PKM activity plans to the Women Farmers group
Based on the program that has been prepared, it will be socialized to partners, in this case the Women Farmers Group in Belantih Kintamani Bangli Village, so that the program can be carried out properly as planned.
3. Alternative solutions provided to the problems faced
From the problems faced by partners, the service team will provide alternative solutions so that existing problems can be solved properly and beneficial for the interests of the wider community
4. Providing theory, discussion, and practice
To improve participants' understanding and skills in processing oranges into innovative products, discuss with participants and carry out practices on how to process oranges into wine drinks.
5. Evaluation of activities and results.
At this stage, an evaluation process is carried out related to the results of the activities that have been carried out. If the results of observation and evaluation show that the participants do not understand and have not mastered the material that has been given, it will be explained again by conducting further discussion.

RESULTS AND DISCUSSION

The implementation of Community Service (PKM) activities in the Farmer Women Group in Belantih Village, Kintamani District, Bangli showed very positive results. The management and members of the group are very enthusiastic and fully support this activity. This activity aims to increase the knowledge and skills of group members in citrus processing technology into innovative products, such as wine drinks that have a high selling value, as well as improve their ability to market products to improve family welfare.

Innovative Orange-Based Product Processing Technology

Participants of PKM activities experienced a significant increase in their knowledge on how to process oranges into wine drinks. The training and assistance provided proved to be effective, so that the group members are now able to manage their groups better and process oranges that do not sell well into high-value products. This is in accordance with the findings of Widyaningrum (2024), who stated that technical training has a great impact on improving the skills of women farmers, by enabling them to apply better processing techniques. Rahmawati (2024) also emphasized that effective training programs can empower women farmers, improve their skills in processing agricultural products, and have a positive impact on their economic welfare. The knowledge received by the participants allowed them to utilize the previously wasted small-sized oranges into innovative products with high selling value, which ultimately increased their productivity and income.



Figure 2. Processing Process of Innovative Orange-Based Products

Unlocking Access in Marketing Strategy

In addition to improving skills in product processing, participants also gained important knowledge about the use of social media for marketing. They learn how to create accounts on various platforms such as TikTok, Instagram, WhatsApp, and Facebook, as well as utilize video content to engage consumers. This makes it easier for them to introduce products and expand the market. Along with strengthening technical capacity, this digital marketing strategy opens up new opportunities for farmer women groups to increase the visibility of their products in local and global markets.

Application of Technology and Innovation to Society

The assistance carried out succeeded in changing the way members of the Women Farmers Group managed and processed citrus products. Oranges that were previously not sold during the harvest can now be processed into wine drinks through the processing technology that has been taught. The processing process taught involves steps ranging from peeling oranges, taking the contents, to a fermentation process for 21 days to produce wine drinks. With this training, a bountiful harvest is no longer a problem because all citrus fruits can be utilized and processed into high-value products.



Figure 3. Discussion on the Application of Technology and Innovation to the Community

Impact of Usefulness and Productivity

After counseling and mentoring, some of the benefits felt by the Women Farmers Group in Belantih Village include:

1. Increasing knowledge and skills in processing small oranges that do not sell well into products with high selling value, so that productivity and group income increase, which has an impact on improving family welfare.
2. The increasing knowledge about the use of oranges that are not sold at the time of the harvest has become a wine drink product with a high selling value.

Contribution of Partners to Implementation

The implementation of PKM activities received a very positive response from the chairman and group members. They are very enthusiastic about participating in every activity and fully support this community service effort. From the results of the evaluation, the group chairman and members hope that cooperation activities with Warmadewa University can continue in the form of further service, research, and mentoring, considering that there are still several problems that need to be addressed. The results and benefits obtained from this PKM activity can be seen in Table 1 below.

Table 1. Results and Benefits of PKM Activities in Belantih Village, Kintamani, Bangli

Activities	Activity Results	Benefit	Hopes of Farmer Women Groups in Belantih Village
Location survey	The potential of the Women Farmers Group includes: the availability of large citrus plantations, and abundant citrus harvests (Location survey documentation attached)	Information was obtained regarding the potential possessed by the Women Farmers Group in Belantih Village. there are strengths, opportunities and weaknesses owned by the farmer women group.	PKM activities or community empowerment so that they can be carried out in a sustainable manner
Preparation for the implementation of PKM activities	In the provision of activity facilities (equipment and materials) and the consumption of activities are greatly assisted by the group and the village community.	The management and group members get productive activities through the provision of equipment so that they can provide additional benefits for the	The provision of ingredients, consumption and snacks can be provided by Community service committee.

		farmer women group.	
Implementa tion of PKM Activities	➤ A total of 20 people attended PKM activities from counseling to practice ➤ PKM activities consist of opening events, delivery of material by resource persons, practice, discussion and evaluation. ➤ The delivery of theoretical and practical materials by the implementation team was dynamic because there were questions and answers and discussions. The training materials provided consisted of: How to process oranges into wine drink products	➤ The management and group members gain additional knowledge and skills on how to process oranges into wine drinks through the fermentation process.	➤ The management of the Farmer Women Group asks that PKM activities can be carried out in a sustainable manner because there are several problems that have not been resolved such as: how to make product packaging from processed citrus fruits to look more attractive to consumers and how to market so that the product is better known and able to expand the market.



Figure 4. Orange Wine Products and Marketing through Social Media

CONCLUSIONS AND RECOMMENDATIONS

The empowerment program of the Women Farmers Group in Belantih Village, Kintamani District, Bangli, which aims to improve the skills and knowledge of group members in citrus processing technology into innovative products. The program includes training on how to process citrus fruits into wine drinks. The results of the implementation of the activity showed a significant increase in the knowledge and skills of members of the farmer women group in processing citrus fruit technology into products that have a higher selling value. This increase has a positive impact on productivity and product quality, as well as increasing the income and economic independence of group members. This success emphasizes the importance of continuous training and mentoring programs to support economic independence and capacity building of women farmer groups, so as to create sustainability in orange farming in Belantih village, Kintamani District, Bangli.

It is recommended to continue to provide continuous training and mentoring in advancing the efforts of the Women Farmers group, with an emphasis on innovative and environmentally friendly techniques to improve the productivity and quality of agricultural products. In addition to being farm workers, farmer women groups should be given additional training in diversifying processed citrus products in order to create more variety of value-added products, increasing competitiveness in the market. Utilization of digital marketing to expand market reach and increase sales. Building partnerships with related agencies, such as local governments, universities and other institutions. Conducting the necessary monitoring and adjustments so that the sustainable program can run optimally and achieve results according to the desired objectives.

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