

Youth and Women Empowerment-Based Dairy Cattle Farming through Pacitan Milk Stop to Support the Local Economy in Tahunan Village, Pacitan

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ABSTRACT

Although cow's milk production in Tahunan Village is not as much as in other villages, the involvement of women (farmers' wives) in dairy cattle farming is relatively high. The Women Empowerment Livestock Index (WELI) in Tahunan Village scored at 0.722, the second after Tahunan Baru Village. To develop business opportunities along with developing the local economy in Tahunan Village, three dimensions of access to the market, access to non-dairy cattle farming opportunities, and access to training and organization must be investigated. The goal is to add more economic value to the commodity in Tahunan Village to empower the farmer's wife or increase rural communities during the COVID-19 pandemic.

Keywords: dairy cattle farmers, local economy, milk, women empowerment.

1 Introduction

Tahunan village is one of the villages in the Tegalombo District in Pacitan, East Java, located in the highland area. Most of the population works as dairy cattle farmers. Milk from dairy cattle has become the leading commodity in Pacitan. Figure 1 from [1] shows that the highest milk production in Indonesia comes from East Java, which is in Ponorogo and Pacitan Districts.

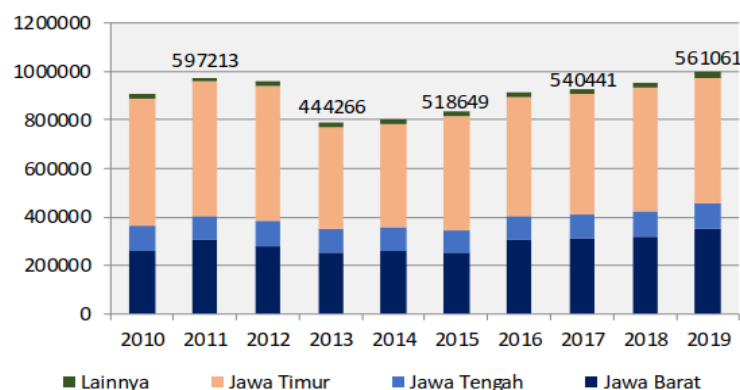


Figure 1: Highest Milk Production in Indonesia [1]

Until now, dairy cattle farming has been run and managed by household-based management. Sugiyanto et al. [2] explained in Table 1, that 892 heads of dairy cattle spread over five villages in Pacitan. Tahunan



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Village contributes 11.9% to the local economy through dairy cattle farming practices. Pertiwiningrum et al. [3] reported that the highest contributor to cow's milk production is Gemaharjo Village, with a total contribution of 39%, followed by Tahunan Baru Village, with a total contribution of 34.55%. Tahunan Village produces 556 liters of cow's milk/day or contributes 16.28% of total cow's milk production in Tegalombo District.

Table 1: *Cow's Milk Production in Pacitan [2]*

District	Number of Farmer	Cow's Milk Production
Gemaharjo	57	1332 Liters
Tahunan	42	556 Liters
Tahunan Baru	27	1180 Liters
Ploso	10	347 Liters
Tegalombo	136	3415 Liters

Although cow's milk production in Tahunan Village is not as much as in other villages, the involvement of women (farmers' wives) in dairy cattle farming practice is relatively high. Based on Sugiyanto et al. [2], the Women Empowerment Livestock Index (WELI) in Tahunan Village scored 0.722, the second after Tahunan Baru Village (Table 2). Still, in aspects of potential and business opportunities, Tahunan Village is better than Tahunan Baru Village, with a score of 0.135 (Table 3). It means that business opportunities become essential to increase the local economy in Tahunan Village. There are three dimensions of business opportunities aspect:

- 1) Access to market
- 2) Access to non-dairy cattle farming opportunities
- 3) Access to training and organization

Table 2: *WELI score in Tegalombo District in Pacitan [2]*

District	N	WELI score	Std Dev	Min	Maks
Gemaharjo	57	0,713	0,170	0,278	0,944
Tahunan	42	0,722	0,140	0,333	0,944
Tahunan Baru	27	0,764	0,095	0,556	0,944
Ploso	10	0,719	0,240	0,167	0,944
Tegalombo	136	0.723	0.158	0.167	0.944

Table 3: *Dimension of WELI score in Tahunan and Tahunan Baru Villages [2]*

Dimension	Tahunan	Tahunan Baru
Production decision	0,107	0,120
Consumption, nutrition, and safety decision	0,083	0,123
Controlling resources	0,128	0,152
Controlling incomes	0,149	0,158
Controlling business opportunities	0,135	0,105
Controlling working time	0,114	0,114
WELI Score	0,717	0,773

Geographically, Tahunan Village is far from the downtown of Pacitan, around 56.6 km or approximately two hours from Pacitan City. This condition becomes an obstacle to selling dairy products (fresh milk, yogurt, and kefir) with a short lifetime (1-3 days only). To develop business opportunities, three dimensions of access to the market, access to non-dairy cattle farming opportunities, and access to training and organization need to be investigated so that it will provide the solution to local economic development in Tahunan Village. The goal is to make the commodity from Tahunan Village have more economic value added for the farmer's wife or increasing rural communities during the COVID-19 pandemic. Technological intervention and knowledge related to dairy farming and cow's milk processing business have been carried out by UGM since 2018 in Pacitan by the development of dairy products or *empon-empon* in 2018 through the BNI Pacitan's Branch CSR's Program, the study of women's empowerment in *zero-waste* or *circular economy* in 2020-2021 through PDUPT's grant and Educational for Sustainable Development's grants for 2020-2021 for the development of business insight.

In previous years, activities to improve the quality of human resources in milk management and business insight have been given. In 2022, it will be focused on strengthening human resources and the execution of business units. In 2022, the UGM team with the farmer's wife dairy cows agreed to develop a cow's milk processing business unit (called Milk Stop or *Halte Susu*). The team looks that the farmers' wives potentially become the driving force of business units, marked by the value of superior business opportunity dimension score. However, to increase the empowerment and the capacity of the farmer's wife in the development of business units need to be fostered so they can become a model village with local economic development. Village development fostered through business units for the wives of processed-based cow's milk is also in line with the RTRW of Pacitan Regency for 2009-2028 related to the development of the Metropolitan Area.

2 Research Methodology

There are three stages to initiating women's empowerment in Tahunan Village.

2.1 Milk School

Milk School or *Sekolah Susu* is an instrument to educate women and the youth in Tahunan Village to manage healthy dairy cattle farming practices and utilize cow's milk as an economic value product, business, and marketing (capacity building center). Figure 2 below shows the scheme of Sekolah Susu.

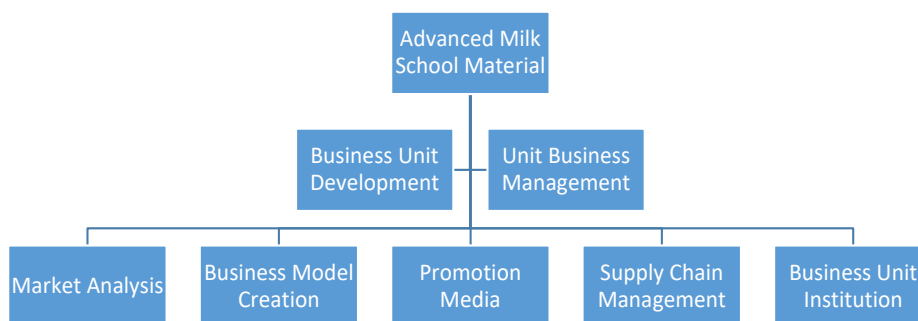


Figure 2 : Scheme of Sekolah Susu

2.2 Focus Group Discussion

A Focus Group Discussion was conducted to find out the strategies for empowering the dairy cow's milk business in the Tahunan Village. From this discussion, an agenda for empowering women's groups

were formulated to support the cow's milk business through mapping the potential for diversification of dairy products, continued by production training, marketing research, and strengthening institutional collaboration.

2.3 Launching of Pacitan Milk Stop

Pacitan Milk Stop or Halte Susu Pacitan is not defined physically but as a community forum to develop a cow's milk business unit for women and the youth in Tahunan Village. This activity is a business empowerment involving a dairy farmer's wife as a milk processor and a group of youth (Karang Taruna) as a marketing team. These three activities involved women's groups as the main object of empowerment. Advanced business empowerment in the dairy unit in the Tahunan Village is carried out based on the potential for local advantages, particularly milk products. The area in the highlands can become a center for producing cow's milk and involving women's groups as business managers. The data was collected using the Participatory Action Research (PAR) method. Walter (1993) explained that the basic concepts of the PAR method are action (practice or actions) and participation (involving researchers, society leaders, and the community).

The repeated cycle of PAR starts from analyzing regional issues or problems to initiating program plans. Observation of the implementation of the action is required to produce reflections according to the agreed plan. Then, re-planning is needed to optimize program objectives. This cycle of activities is carried out continuously until regional problems are resolved based on the approval of all participants. Referring to the steps of the PAR repeated cycle, the activities carried out in this program are summarized in three activities. First, analyze the problem, issue, or the need for change identified by the research interest community (to Know and to Understand). Tahunan Village has the second largest cow's milk production in Tegalombo District [2]. It is supported by the highest contribution from women's roles, so it becomes the opportunity to be a sustainable cattle milk supplier. The role of women is a central part of the empowerment of a cow's milk business because they participate in upstream to downstream processes, including taking care of the cows, milking, processing dairy products, selling products, and market research.

Second, the initial collaboration occurs between the research interest community and researchers, planning how to solve the problem and starting the program implementation action (to Plan and Act). The collaboration to develop a cow's milk processing center involves UGM as a research team and a business unit companion for the women's group in Tahunan Village. This 2022 is a follow-up year for UGM assistance in the Tahunan Village on expanding cow's milk production. During the unstable conditions of the war in Ukraine and Russia, food security threats, the impact of the COVID-19 pandemic, and the prevalence of cow diseases pose challenges to improving the welfare of the women's milk processing group. Therefore, identifying potential solutions, such as developing dairy products to business plans that women's groups can adopt, is required to control the problems in the cow's milk production chain.

Third, the actions and results are then re-observed by the research interest community and researchers (to Reflect). Reflection is accomplished for each program and followed up by adjustment of activities. The evaluation is achieved by fulfilling program success indicators reported periodically by women's groups in the Tahunan Village. The demand for business development was analyzed through questionnaires answered by women's groups to produce comprehensive information. The combination of open and closed questionnaires is one of the instruments in setting the agenda and targeting activities in mentoring in 2022.

3 Results and Discussion

3.1 Existing Condition

The existing condition in Tahunan Village was mapped by collecting information from women (dairy farmers' wives and the youth) through questionnaires and interviews. Based on the surveys of ten dairy farmers' wives, during the COVID-19 pandemic, there was a decline in income from cow's milk production, both fresh milk and UHT milk like kefir and herbal milk (SUMU – *susu jamu*). The decreasing number in fresh milk sales was caused by the quality of fresh milk that did not meet the standards of the business partner, namely PT. DAS. The PMK Pandemic and the high feed price influenced how farmers make feed formulations to reduce operational costs from dairy cattle farming practices.

During the COVID pandemic, the diversification product of cow's milk sales decreased quite drastically from an income of Rp 260.000/month to an average of Rp 70.000/month as shown in Figure 3. The decline occurred because many schools (the main customer target) did long-distance learning or school from home.

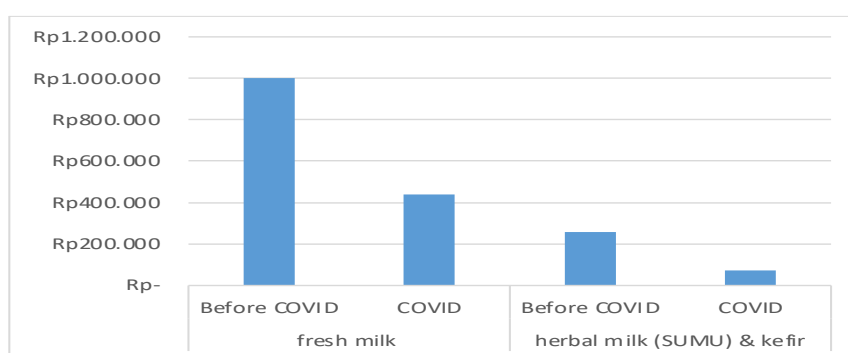


Figure 3: The Cow's Milk Sales in Tahunan Village during the COVID-19 Pandemic.

Cow's milk sales outside Tahunan Village are impossible because the herbal milk and kefir have a short lifetime, approximately 2-3 days in the refrigerator. Another reason that is also an obstacle for cow's milk sales outside Tahunan Village is that the distance to Pacitan City is far, and there is no prospect economically.

Based on Figure 4, the results from 10 respondents, 80% of respondents have a target to develop business scale, and 10% plan to improve business scale through product diversification. Respondents also hope can improve business units through: (1) Market expansion (37%); (2) New product development (23%); (3) Quality product training (24%); and (4) Training new product development (18%).

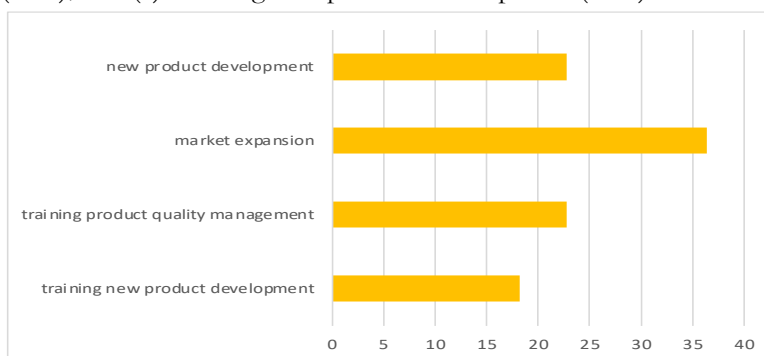


Figure 4: The Women and The Youth Target in the Development of Cow's Milk Business in Tahunan Village.

- Focus Group Discussion

Focus Group Discussion was carried out based on the existing condition mapping. Based on the existing data, women and the youth (Figure 5) in Tahunan Village agree to develop a cow's milk business, "Halte Susu Pacitan," and diversify milk derivative products that have a longer lifetime, like milk-based candy and crackers.



Figure 5: *The Women and The Youth (Karang Taruna) in Tahunan Village.*

Focus Group Discussions were also conducted involving the local government to engage opportunities for collaboration networks and government support in facilitating product permit applications.

- *Sekolah Susu*

In *Sekolah Susu*, women and youth were trained to develop a cow's milk unit business. As kefir and herbal milk (SUMU) have a short lifetime, women in Tahunan Village were trained to make milk-based candy and milk-based crackers that have longer lifetimes, approximately over six months. Milk-based candy and crackers are easy to handle and produce. The production capital is relatively cheap as they can use low-quality milk, solving the problem of fresh milk quality that does not meet the standard of PT. DAS at once. In addition, they do not require a complicated step to apply for product permit applications (PIRT).

4 Conclusions

Community Empowerment Activities based on Assisted Villages in Tahunan Village have the potential for sustainability of its activities, considering this activity has contributed to the development of the Pacitan Regency Agropolitan Area. It also includes strategic programs included in spatial plans (RTRW) and the regional mid-term development plan (RPJMD) of Pacitan Regency. This activity also has the potential to become a pilot program satellite Agropolitan Area in livestock and local economic development models. The development of the assisted villages is also a learning laboratory for students of Vocational High School (SMK) and students in the MBKM program to implement competencies and become a vehicle for project-based learning.

5 Declarations

5.1 Study Limitation

In general, the research did not have significant obstacles, but researchers experienced difficulties with the limited research time and the number of funds obtained.

5.2 Acknowledgments

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5.3 Funding Source

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5.4 Competing Interests

There is no conflict of interest between the authors in this activity.

5.5 Publisher's Note

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References

- [1] Central Bureau of Statistics, Keadaan Pekerja di Indonesia. 2020. <https://www.bps.go.id/publication/2020/11/30/351ae49ac1ea9d5f2e42c0da/keadaan-pekerja-di-indonesia-agustus-2020.html>
- [2] C. Sugiyanto, S. Indarjulianto, A. Pertiwiningrum, T.A. Prabowo, M.A. Wuri, M.S. Trisilia, A.S Fauzi, "Can Farmers' Wives Adopt New Technology? Case: Milk Processing during the Covid-19 Pandemic in the Tahunan Village, Pacitan Regency, Indonesia," MPRA Paper. 2020. <https://mpa.ub.uni-muenchen.de/104348/>
- [3] A. Pertiwiningrum, T.A Prabowo, C. Sugiyanto, S. Indarjulianto, M. A. Wuri, "Pemberdayaan Istri-Istri Peternak Melalui Pengolahan Susu pada Masa Pandemi Covid-19 Di Desa Tahunan, Kabupaten Pacitan", *Journal of Empowerment Community*, vol. 3, no. 1, pp 17-22. 2021. <https://e-journal.unper.ac.id/index.php/JEC/article/view/566>