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Strengthening Mothers' Roles in the Family Economy through Entrepreneurship Training for Frozen Nila (Tilapia) MSMEs to Support Early Childhood Development

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Abstract: Mothers in rural areas often serve dual roles as primary caregivers and educators of young children and as potential contributors to household economies. However, their entrepreneurial potential often receives limited systematic support. This community service program aims to strengthen mothers' entrepreneurial skills and economic roles through training in frozen tilapia processing under the brand name "Nila Frost" in Kampung Rancakandong, Sukamelang Village, Subang Regency, Indonesia. The program also seeks to indirectly support early childhood development by strengthening household economic capacity. The implementation involved 12 participants who received entrepreneurship and business management training, hands-on fish-processing instruction covering sorting, freezing, and vacuum packaging based on the 3C principles of cleanliness, cold storage, and speed, as well as branding, cost calculation, pricing, and digital marketing training using Instagram, Facebook, and WhatsApp Business. Program implementation was evaluated using observation sheets, and the data were analyzed descriptively. The results indicate that participants developed their knowledge and practical skills in value-added, food-safe, and market-oriented tilapia processing. These skills have the potential to create additional household income opportunities and improve children's access to high-quality animal protein. The program highlights the contribution of women's economic empowerment to the Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-Being) through the promotion of safe and nutritious food, SDG 12 (Responsible Consumption and Production) through the potential reduction of post-harvest losses and more efficient packaging, and SDG 17 (Partnerships for the Goals) through collaboration among universities, businesses, and local communities. By strengthening mothers' entrepreneurial capacities and household economic resilience, this initiative may also indirectly contribute to improved parenting practices and early childhood development.

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Introduction

Micro, small, and medium enterprises (MSMEs) occupy a strategic position in the structure of Indonesia's rural economy, including in the freshwater fisheries sector. In Rancakandong Village, Sukamelang Subdistrict, Subang Regency, West Java, tilapia cultivation is a key source of livelihood for residents. However, synchronized harvest patterns cause pond yields to be abundant at the same time, while fresh fish cannot be stored for long, so fish farmers are often forced to sell at low prices to middlemen. This condition prompted the Community Service Team of the Early Childhood Education Teacher Education Study

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Program (PGPAUD), Faculty of Education, Universitas Pendidikan Indonesia (FIP UPI), with the support of the UPI Directorate of Research and Community Service (DPPM), to hold an entrepreneurship training on processing frozen tilapia packaged under the brand "Nila Frost" on Saturday, August 1, 2026, in cooperation with the local businesses Nila Frost and Nila Tech Farm.

Although the team's academic background is early childhood education, the choice of fish-processing training follows from the program's concern for the conditions in which young children grow. Child development depends not only on stimulation in early childhood education settings but also on family income, nutrition, and the quality of caregiving, all of which are shaped largely by mothers. Because tilapia aquaculture is already a source of livelihood in the village, training mothers to turn the harvest into safe, higher-value frozen products was seen as a locally grounded way to strengthen family economic capacity and access to animal protein, and thereby to support children's development indirectly. The business partners helped ensure that the training content matched local conditions. The target partners consist of local fish farming groups and business operators, along with their members. Prior to the implementation of this program, tilapia farming groups in Subang Regency often found themselves forced to sell their fish at low prices to middlemen during harvest seasons, as they lacked the knowledge on how to store the fish to keep them fresh… "Nila Frost" is "Nila Frost" is a micro, small, and medium-sized enterprise (MSME) engaged in the processing and packaging of frozen tilapia. Field facts show that the majority of training participants were housewives and local MSME actors. This finding is in line with a number of studies showing that women, especially mothers, make important contributions as also facing particular challenges in the household business sector and the home-based creative industry, while at the same time serving as the primary caregivers of young children.

According to Dzumirotin Nisa et al., (2022), mothers are placed in a dual role as primary caregivers who are accountable for their children's growth and development and as potential economic agents who can bolster the financial stability of the family. Women's economic empowerment is essentially a process of increasing capacity, knowledge, skills, and access to productive resources so that women can play an active role in economic activities and household decision-making. Various community service studies show that entrepreneurship training based on local potential, ranging from processed food products to household crafts, is effective in increasing women's knowledge and confidence to start or develop a business (Dien et al., 2022). Ariani & Nastiti (2016) emphasize that the involvement of women workers in small and medium enterprises makes a real contribution to increasing household income, especially in families where the head of the household has limited income. In this context, empowering mothers through MSMEs is not only economic in purpose, but also a means of strengthening women's bargaining position in the family and community. In their study of female entrepreneurs in Batam , found that enhancing women's entrepreneurship significantly boosts family income, with financial literacy, family support, and access to capital as key determinants of business success (Purba et al., 2025).

Theoretically, women's economic empowerment in rural contexts can be studied through the Gender and Development (GAD) framework. The GAD framework, which emerged in the 1980s as a critique of the Women in Development (WID) approach, shifts the focus from merely "adding" women into existing development structures toward examining the gender power relations that shape those structures (Tamatur et al., 2026). Unlike WID, which often sees women as a single group whose involvement is mainly to boost efficiency,

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GAD views gender as something shaped by society and relationships, rooted in cultural norms, institutions, and daily life.

In rural Indonesia, women's entrepreneurial activity takes place within a socio-cultural system that defines gender expectations, restricts mobility, and allocates economic resources unequally. Customary norms assign the majority of domestic work and caregiving responsibilities to women, which restricts their available time, decision-making power, and opportunities for business development. Additionally, limited asset ownership further constrains women's access to credit, markets, and institutional support. This is in line with findings that women's transition from salaried work to entrepreneurship in rural Indonesia is a highly contextual process of identity construction, in which family and community dynamics often play a more central role than the business aspects themselves (Ginting-Szczesny et al., 2026). In addition, research in Pakistan shows that women who invest their microloans in microenterprises experience increased income, lower poverty scores, and better income diversification; however, higher income does not automatically increase spending on health and education, so complementary interventions are needed to support comprehensive well-being (Malki et al., 2024).

On the other hand, the mother's role as primary caregiver is closely related to the growth and development of young children. Early childhood is known as the golden age, marked by very rapid development of the brain and of cognitive, motor, language, and socioemotional functions, which becomes the foundation for subsequent stages of life (Mukarramah et al., 2021; Rukmi et al., 2021). The three main pillars that support the optimization of growth and development in this period are stimulation, nutritional fulfillment, and the quality of caregiving attachment. Consistent maternal stimulation has been shown to be significantly related to developmental achievement in children aged 0 – 3 years (Rukmi et al., 2021), while nutritional fulfillment, particularly animal protein, plays an important role in preventing growth disorders such as stunting (Nadimin, 2022; Sholikhah & Dewi, 2022). This nutritional pillar is what makes processed frozen tilapia products directly relevant to the families of the training participants.

The attachment pillar is explained through Attachment Theory, developed by John Bowlby (1969) and expanded by Mary Ainsworth (1978). Kassamali & Rattani (2014) state that attachment is the emotional bond formed between a child and their primary caregiver, which becomes the foundation for the child's later socio-emotional development. Studies on working mothers show that a mother's employment status in itself neither directly strengthens nor damages attachment with the child; rather, it is the combination of surrounding factors, such as maternal separation anxiety, interaction style, and family support, that has an impact. Lutz & Hock (1989), through the Maternal Separation Anxiety Scale (MSAS), found that maternal separation anxiety is a significant psychological construct for understanding the transition of mothers returning to work and the quality of their interactions with their children. Wen-Jui et al., (2001) found that maternal employment during the child's first year of life, particularly part-time work accompanied by good-quality caregiving, has a more favorable effect on children's cognitive development than full-time work. Milkie et al., (2015) emphasize that the quality of time, not the quantity of time spent together, is a stronger predictor of children's well-being, with parenting stress and role conflict having a more negative influence than the amount of time spent with the child. Consistent with this, the quality of attachment and caregiving is not determined solely by whether or not a mother works, but by the intensity and quality of the interaction the mother is able to build with her child (Putra Hayat, 2022).

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Empirical evidence on the type of maternal employment further strengthens this argument. Brauner-Otto et al., (2019), using a sample of 860 children in Nepal, found that maternal work as a wage laborer had a significant negative effect on height-for-age z-scores (HAZ) and weight-for-height z-scores (WHZ). In contrast, owning one's own business showed no significant negative effect, and even showed a positive effect (coefficient 0.109) on HAZ during the first 1,000 days of life. This research, which suggests that flexible self-employment may be better for children's nutritional status than inflexible wage jobs, is extremely pertinent to the Nila Frost training.

The novelty of this community service program is in its effort to explicitly link two fields of study that have tended to be discussed separately: on one side, women's/mothers' economic empowerment through MSME entrepreneurship, and on the other, theories of supporting early childhood growth and development (stimulation, nutritional fulfillment, and caregiving attachment). This community service program positions the frozen tilapia processing entrepreneurship training not merely as an economic intervention, but also as part of an ecosystem that supports early childhood growth and development, given its potential role in increasing family income, expanding access to nutritious fish-protein-based food, and opening space for early childhood education (PAUD) institutions to become partners in family entrepreneurship education.

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Method

The implementation method of this community service program involved entrepreneurship training in frozen tilapia processing, held in Kampung Rancakandong on Saturday, August 1, 2026, for a duration of 5 hours. The participants were 12 residents and MSME operators from Kampung Rancakandong, most of whom were homemakers who also served as primary caregivers for young children in their families. These participants' characteristics form the basis for linking the training outcomes to the dimensions of child care and child growth and development. The training applied an experiential learning, where participants first received interactive lectures and then practiced each production and marketing step directly.

The program consisted of two main sessions, a lecture session and a practical session, with an allocated time of 2 hours for the lecture and 3 hours for the practical session. The lecture session, delivered by the PGPAUD FIP UPI faculty team, covered four topics: (1)

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fostering an entrepreneurial spirit, (2) management of farming and fish-farming businesses, (3) mass communication in entrepreneurship, and (4) branding a frozen tilapia business.sessions covered four groups of activities: (1) entrepreneurship and business management, including encouraging an entrepreneurial spirit and managing farming or fish-farming operations; (2) a comprehensive hands-on process for processing frozen tilapia, from sorting and trimming, washing, and arranging, to freezing at -18°C and packaging in vacuum sealed plastic, with an emphasis on sanitation principles and the 3C cold chain (clean, cold, quick); (3) business branding through a consistent "Nila Frost" logo, packaging, and label, along with training on calculating the cost of goods sold and determining a fair selling price; and (4) digital marketing via Instagram, Facebook, and WhatsApp Business, covering techniques for photographing frozen products to make them look fresh, writing compelling product descriptions, and creating a simple posting schedule.

The evaluation was conducted through direct observation of participants' engagement and enthusiasm during both the theoretical and practical sessions, including active participation in question-and-answer sessions, involvement in processing and packaging exercises, and responses to the material on branding and digital marketing. This observational approach is consistent with the evaluation methods commonly used in community service activities focused on skills training for MSMEs (Dien et al., 2022; Suharyani et al., 2021)**.** The evaluation instrument was an observatio sheet of participant consisting of 16 indicaotrs in five aspects: food safety and processing technique, business management, branding, digital marketing and entrepreneurial attitude. Each indicator was scored on a fourlevel rubric (1 = not yet able; 2 = able with substantial assistance; 3 = able with minimal assistance; 4 = able independently and consistently), giving a maximum total score of 64. The same indicators were scored for each of the 12 participants before the training and immediately after the practical session, administered by the PGPAUD FIP UPI facilitation team on August 1, 2026.

Data analysis was descriptive. The frequency, percentages, and mean scores were used to summarize quantitative data, including observation scores prior to and during the training, the practical success rate, and the quantity of goods, accounts, and price labels generated. Each participant's total score was converted to an achievement percentage (total score ÷ 64 × 100) and categorized as very good (>80), good (>60–80), fair (>40–60), or poor (≤40); percentage improvement was calculated as (post-training mean − pre-training mean) ÷ pre-training mean × 100, and individual normalized gain (N-Gain) as (post − pre) ÷ (64 − pre). A participant was classed as practically successful when the mean score of indicators 1.1–1.5 was ≥ 3.00 and indicators 1.3, 1.4, and 1.5 each scored ≥ 3. Observation records were categorized by theme (participation, enthusiasm, and skill performance) and described narratively to complement the quantitative results.

Result and Discussion

Training Participation and Outcomes

The training was attended by 12 participants from Kampung Rancakandong. Table 1 summarizes the outcomes recorded during the training.

Table 1. Training Outcomes in Kampung Rancakandong

Indicator	Measure	Result
Participants' understanding of the training material	Observation scores, before and after the training.	Pre: 29.75 (46.5%); post: 50.33 (78.6%); improvement +69.2%. All 12 participants improved.

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Indicator	Measure	Result
Practical success rate	Participants who completed sorting, freezing at -18°C, and vacuum packaging according to the 3C principle (criterion: mean of indicators 1.1–1.5 ≥ 3.00 and indicators 1.3–1.5 each ≥ 3)	12 of 12 participants (100%) after the training; 0 of 12 (0%) before the training.
"Nila Frost" product units packaged	Units packaged during the practical session	12
Business accounts created	Instagram, Facebook, or WhatsApp Business accounts set up by participants by the end of the session	5
Price label drafts produced	Drafts of cos of goods sold calculations and selling-price labels	12

Qualitatively, observations showed that participants took an active part in the question-and-answer sessions, were involved in the processing and packaging exercises, and responded enthusiastically to the branding and digital-marketing material. The observation scores point in the same direction: interest and confidence and independent business decision-making both rose from 2.00 to 3.00 on the four-point scale, and the mean aspect scores increased from 2.37 to 3.57 for food safety and processing, from 2.64 to 3.83 for business management, from 1.00 to 2.00 for branding, from 1.00 to 2.75 for digital marketing, and from 2.00 to 3.00 for entrepreneurial attitude. Brand identity consistency, packaging and labelling, and the posting schedule remained the lowest-scoring indicators after the training (each 2.00, i.e., still needing considerable assistance). The most common difficulty encountered was the act of creating and managing digital sales accounts and learning how to market products online. Addressing this particular challenge will require specialized future training for the participants.

Frozen Tilapia Processing Skills: Food Safety and Value Added

The training on processing frozen tilapia equipped participating women with the skills to prepare safe, nutritious food for both their families and sale. The literature identifies the key technical aspects of frozen fish processing as sorting raw materials, freezing at a consistently low temperature, implementing a cold chain system, and vacuum packaging to maintain product quality, as stipulated in certification standards for fishery product processing (Qurrohman et al., 2022). The training followed these aspects: applying the 3C principles (clean, cold, quick) and freezing at -18°C ensures the resulting products meet basic food safety standards. The 3C principle served as a practical guideline that made it easier for these micro-business actors to ensure food safety absent requiring complex technological investments.

A classic problem faced by tilapia farmers in Subang Regency is an abundance of harvests occurring simultaneously while fresh fish has a short shelf life, often resulting in post-harvest losses and sales to intermediaries at low prices. A popular strategy to increase the value of freshwater and saltwater fish commodities, increase shelf life, and expand market reach is to process fisheries products into packaged frozen items (Intan et al., 2024). The freezing and vacuum packaging training provided to the participating women is therefore a concrete example of more responsible production practices: it extends the product's shelf life, reduces the risk of spoilage, and optimizes the efficient utilization of the harvest. Such practices are consistent with studies on frozen fishery product processing, which confirm that

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simple freezing technologies can serve as an effective strategy for reducing food loss while simultaneously increasing product value (Intan et al., 2024).

Value chain analysis helps identify where value can be added at every stage of producing and delivering products or services to consumers. For frozen tilapia, value can be created through sorting and cleaning, diversification into processed products such as fish nuggets, freezing and vacuum packaging, cold chain distribution, and branding and digital marketing, as summarized in Figure 1. Research on the value added of frozen fish products also highlights the importance of transforming byproducts from the frozen fish processing industry into profitable goods, reducing waste and supporting potential food applications. This is consistent with SDG 12 on responsible consumption and production, which highlights resource efficiency and the reduction of post-harvest losses through simple processing technologies such as freezing and vacuum packaging.

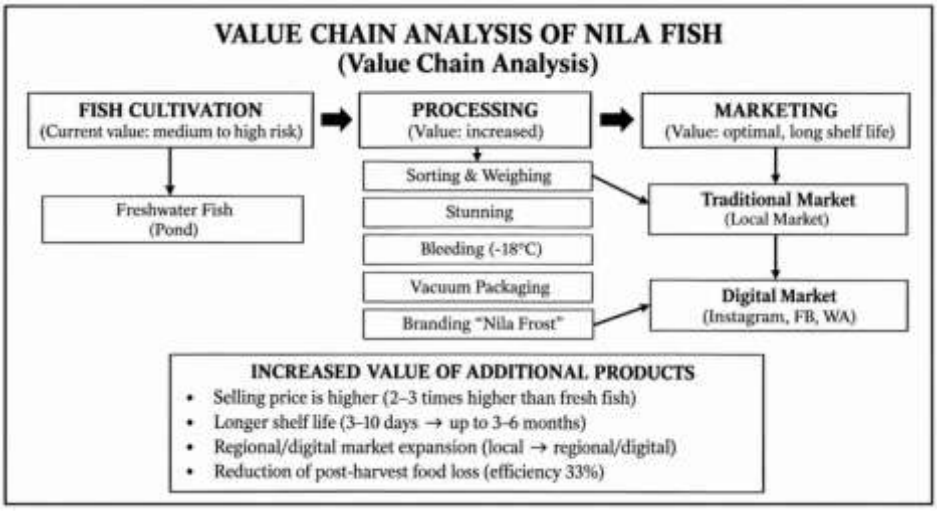


Figure 1. Value-Added Supply Chain for Frozen Tilapia Products



Figure 2. Documentation of the training: (a) hands-on practice in hygienic food handling and vacuum packaging; (b) assistance with product branding and digital marketing

Business Management, Branding, and Women's Economic Empowerment

In addition to production aspects, the success of frozen fish processing businesses depends on the entrepreneurs' ability to accurately calculate the cost of goods sold and to build a brand identity and digital marketing strategy through social media platforms such as Instagram and WhatsApp Business, which have been proven effective in expanding the market access of MSMEs in various community service studies (Dimas et al., 2023). Training in calculating the cost of goods sold encouraged participating women to run their businesses in a more measured and efficient way rather than depending solely on estimates, therewith supporting more responsible production and consumption patterns at the household level. The

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high level of enthusiasm shown by the participating women throughout the activity indicates a growing awareness that tilapia from their own ponds can be processed into packaged products with higher market value and the potential to be sold beyond the Subang region, no longer limited to selling fresh fish in traditional markets. This finding aligns with studies showing that women's involvement in home-based businesses increases household income while also strengthening women's self-confidence and economic independence (Ariani & Nastiti, 2016; Dien et al., 2022). Training in branding, cost-of-goods-sold calculation, and digital marketing further strengthens mothers' position not only as product processors but also as business managers who can make independent business decisions.

These results are consistent with the wider literature, which links women's economic empowerment to several SDGs: improved financial literacy, financial inclusion, and access to resources enhance the performance and sustainability of women-owned businesses in Indonesia (Ningrum & Rayhan, 2025), and women's entrepreneurship programs have been linked explicitly to SDG 3, 4, 5, 8, and 9 (Hazenberg & Pratama, 2025). In this light, the costof-goods-sold and branding components of the training function as practical forms of financial and business literacy that can sustain the participants' businesses beyond the training itself.

Nutrition, Food Security, and SDG 3

From a family nutrition perspective, mothers' direct access to tilapia from their own ponds, processed into high-quality frozen products, offers a dual benefit: on the one hand, it serves as a source of income; on the other, it provides a source of animal protein that families can consume directly without having to purchase it from others. It has the potential to increase household consumption of animal protein, which, according to several nutritional studies, is important in preventing growth disorders such as stunting in infants and toddlers (Nadimin, 2022; Sholikhah & Dewi, 2022). Tilapia is one of the most widely consumed freshwater fish in Indonesia and a key contributor to meeting early childhood protein needs (studies on fish consumption among toddlers show that tilapia is the most frequently consumed species among households). Strengthening homemakers' capacity to produce and process tilapia therefore has the potential to expand families' access to this nutritious food more affordably and sustainably than if families relied entirely on market purchases.

SDG 3 emphasizes access to nutritious and safe food as the foundation of health, which in this context links to improving families' access to high-quality fish protein (Sholikhah & Dewi, 2022). This relationship is supported by data on women's empowerment and food security: one Indonesian study discovered that women's participation improved weekly income by up to Rp141,156, increased output volume by 10.56 kg, and increased the likelihood of food security by 24.9% (Firdauzi, 2025). This evidence indicate that women's economic empowerment directly affects household food security, a key component of SDG 3, and research on women farmers in Indonesia likewise shows that women's empowerment helps reduce food insecurity in rural households. Thus, strengthening mothers' food processing skills not only has economic effects but also directly contributes to food security and family health, as mandated by SDG 3.

Multistakeholder Partnership and SDG 17

This initiative is the result of a multistakeholder collaboration in which each party had a distinct role. The Indonesia University of Education (UPI), through its Directorate of Research and Community Service (DPPM), acted as funder and organizer. Faculty members and students of the Early Childhood Education Program (PGPAUD), Faculty of Education (FIP) UPI, designed and delivered the training. Nila Frost and Nila Tech Farm, as local

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business partners, ensured that the training materials were relevant to the needs and conditions on the ground. Furthermore, they contributed expertise in areas such as food safety and processing techniques (sorting, sanitation, the 3C principles, freezing at -18°C, and vacuum packaging), business management (calculating the cost of goods sold, setting selling prices, and cost recording), branding, digital marketing, and the development of an entrepreneurial mindset. The women and residents of Kampung Rancakandong were active participants and an integral part of the partnership network rather than merely beneficiaries. This model of partnership between higher education institutions, businesses, and the community is consistent with the principles of SDG 17, which emphasizes cross-sectoral collaboration, specifically between universities, local businesses, and communities, as a prerequisite for achieving sustainable development goals more effectively and sustainably (Unted Nations, 2015). It is also a concrete manifestation of the Tri Dharma of Higher Education, particularly the principle of community service.

To ensure that the women's group business remains sustainable and does not finish with a single day of training, the following follow-up plan is proposed by the PGPAUD UPI team: (1) continued mentoring by the business partners on production scheduling, quality control, and product diversification; (2) routine recording of production costs and the cost of goods sold for every batch; (3) marketing support through the Nila Frost brand and the participants' Instagram, Facebook, and WhatsApp Business accounts; and (4) simple monitoring and periodic evaluation of the participants' businesses by the PGPAUD team.

Work Flexibility, Caregiving, and the Role of Early Childhood Education Institutions

One advantage of a household-scale frozen tilapia processing business is greater flexibility in working hours than in formal jobs outside the home. A study on the parenting patterns of working mothers shows that the main challenge is not employment status itself, but limited time and reduced quality time with children due to rigid work schedules (Dzumirotin Nisa et al., 2022). Home-based food processing businesses, where most processes, from sorting to packaging, can be carried out around the home or within community-based cooperative groups, conceptually provide mothers with the flexibility to manage their work schedules in a way that better adapts to their childcare needs, without having to be away from home for extended periods, as is often the case with formal employment. However, more empirical research is needed to fully explore this potential because the majority of current studies concentrate on working mothers in the formal sector (Caterina et al., 2021; Putra Hayat, 2022), and there hasn't been much quantitative research done on the precise effects of community-based home-based businesses on parenting styles.

Because the PGPAUD Program launched this initiative, there is a strategic opportunity to integrate entrepreneurship training outcomes with parenting programs at local early childhood education centers, which have been shown to improve parents' knowledge and parenting skills, including understanding of child stimulation and nutrition (Suharyani et al., 2021). Such centers could share Nila Frost products with students' parents, for example through nutritious communal meals featuring tilapia, and strengthen the parenting capacities of mothers who are MSME entrepreneurs, with teachers acting as bridging agents between family entrepreneurship education and early childhood care education.

Conclusion

The "Nila Frost" entrepreneurship training program on processing frozen tilapia for women in Kampung Rancakandong strengthens women's economic roles by improving their knowledge and skills in safe food processing, calculating cost of goods sold, branding, and

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digital marketing. Conceptually, empowering mothers' economic roles can also indirectly support early childhood development through three main channels: increased household income, expanded access to nutritious fish-based protein foods, and flexible work schedules that can help maintain the quality of mother-child bonding. This initiative also clearly links to SDG 3 through food safety and nutritional adequacy, SDG 12 through production efficiency and reduced post-harvest losses, and SDG 17 through partnerships among universities, local businesses, and the community.

This community service program has limitations because the data came from activity reports and observations of participant engagement therefore, it has not yet been possible to quantitatively measure the training's direct impact on changes in parenting practices or children's nutritional status. Therefore, further research is strongly recommended to conduct quantitative impact studies, for example, by measuring changes in family income, the frequency of fish consumption among children, the quality of mother and child attachment, and children's nutritional status before and after their mothers' involvement in the Nila Frost MSME to strengthen the evidence base on the link between mothers' economic empowerment and early childhood development.

Recommendation

Based on the results and discussion, the following recommendations are directed at the parties involved in, or able to build on, the Nila Frost entrepreneurship training in Kampung Rancakandong. They follow the three SDGs addressed in this community service program (SDG 3, SDG 12, and SDG 17).

For local business partners (Nila Frost and Nila Tech Farm)

Provide continued mentoring on production scheduling, quality control, and product diversification (for example, fish nuggets); explore shared cold storage and vacuum-packaging facilities for participating mothers; and support joint branding under Nila Frost and the use of Instagram and WhatsApp Business for marketing.

For early childhood education institutions and the PGPAUD Program

Link entrepreneurship training with parenting programs through nutritious communal meals featuring tilapia for students and their parents and through sessions on child stimulation,nutrition, and balancing the roles of caregiver and business owner, with teachers acting as bridging agents supported by short guidance materials prepared by the PGPAUD Program.

For higher education institutions and funders (UPI and DPPM)

Design community service of this kind as a multi-stage program with follow-up mentoring, simple monitoring of participants' businesses, and periodic evaluation; keep community businesses and residents as active partners in line with SDG 17, and add financial literacy and access to resources as program components.

For village government and other stakeholders

Facilitate business legality, product certification in line with fishery product processing standards, access to capital, and, where possible, shared cold-chain infrastructure, so that the skills gained become stable businesses and post-harvest losses and low-price sales to intermediaries are reduced.

For future research

This community service report is descriptive, and the links between the training, mothers' caregiving, and children's development are conceptual rather than measured. Future studies should examine these links empirically using mixed methods and, where feasible, a

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comparison with non-participating households, measuring household income, the cost of goods sold and profit of participants' businesses, household fish consumption, mothers' working hours and quality of interaction with their children, and children's nutritional status. Research on community-based home businesses in rural areas would also fill a clear gap, and a gender-sensitive lens such as the Gender and Development framework could show how family and community norms shape mothers' ability to run these businesses.

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