

Community Economic Empowerment through Financial Inclusion and Budikdamer Technology in Rural Areas

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ABSTRACT

This study examines the implementation of the Financial Inclusion Improvement Program (PINTAR) in Paninggaran Village, Kuningan Regency, aimed at enhancing economic independence among low-income households. The program focused on empowering PNM clients and Family Hope Program recipients through bucket catfish cultivation (budikdamer) combined with financial literacy training. A participatory approach was applied, including socialization, technical training, technology implementation, mentoring, and evaluation. The results indicate increased community knowledge, improved technical skills in aquaculture, and enhanced financial literacy. Participants demonstrated high engagement and readiness to develop home-based businesses. The program contributed to strengthening financial inclusion and creating income-generating opportunities. This model has strong potential for replication in similar rural settings.

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INTRODUCTION

Paningsgaran Village, Darma District, is categorized as an extreme-poverty area in Kuningan Regency, characterized by limited household income, weak microenterprise capacity, and low financial literacy. Economic dependence on the informal sector is particularly pronounced among women, housewives, and Program Keluarga Harapan beneficiaries, whose incomes tend to be unstable. These conditions underscore the need for an empowerment program that addresses household economic constraints while offering practical and feasible income-generating opportunities. In response, Permodalan Nasional Madani initiated the Financial Inclusion Enhancement Program for People's Economic Equality (PINTAR) in Paningsgaran Village, which was selected due to its high economic vulnerability and substantial number of PNM Mekaar beneficiaries (Rahmawati, 2010; Ikbal et al., 2023). Field findings further indicate limited entrepreneurial capacity and restricted yard space, highlighting the need for adaptive, low-cost business models suited to local conditions (Heri, 2023).

Cross-institutional collaboration between Permodalan Nasional Madani, Universitas Muhammadiyah Cirebon, and Universitas Muhammadiyah Kuningan was established to strengthen community empowerment interventions through technical assistance, literacy enhancement, and the development of measurable empowerment models (Fatimah & Waddi, 2025). Initial assessments revealed limited community literacy regarding simple cultivation technologies, resulting in low household productivity in both food provision and income generation (Wati et al., 2022). In response, the PINTAR program introduced catfish cultivation in buckets (budikdamber) integrated with vertical water spinach cultivation as a home-based livelihood alternative that is practical, low-cost, quick-yielding, and well-suited to limited land availability and the characteristics of vulnerable groups, particularly housewives and Program Keluarga Harapan beneficiaries (Abdul Aziz, 2025; Prasetyo, 2025).

The situational analysis of Paningsgaran Village indicates that the PINTAR community service program extends beyond the provision of business facilities by addressing structural barriers to household economic independence through an inclusive and sustainable empowerment approach (Suryadi, 2022). Initial assessments and field observations revealed that most residents, particularly housewives and Program Keluarga Harapan beneficiaries who are also PNM Mekaar clients, face limited entrepreneurial capacity and low financial literacy, including weak skills in capital management, profit planning, simple bookkeeping, and risk mitigation (Taufiq, 2022). These constraints often lead to unproductive use of financial resources and hinder the development of sustainable home-based enterprises. In response, the program integrates financial literacy education, environmentally adaptive cultivation technology, and continuous university-assisted mentoring to strengthen cognitive capacity, improve practical skills, and foster long-term household economic resilience. (Ningsih & Prasodjo, 2024).

Additional field findings indicate that residents of Paningsgaran Village face multiple structural constraints, including limited yard space, high dependence on government assistance, restricted access to environmentally adaptive cultivation technology, and inadequate business mentoring. Constrained residential space limits the feasibility of conventional microenterprise models, while strong reliance on social assistance, particularly among Program Keluarga Harapan beneficiaries, has weakened economic initiative and self-reliance. At the same time, limited exposure to simple, eco-friendly urban farming technologies and the absence of targeted, skills-based mentoring have hindered the development of sustainable household enterprises. In response, the PINTAR program introduced catfish cultivation in buckets (budikdamber) integrated with water spinach planting as a contextually appropriate intervention, designed to address constraints in land, capital, technical capacity, and long-term economic independence.

There is limited integration between financial literacy programs and practical, low-cost entrepreneurial technologies in rural poverty alleviation initiatives. This study aims to evaluate the effectiveness of the PINTAR program in improving financial literacy, technical skills, and economic independence through budikdamer-based entrepreneurship.

METHOD

The implementation method for the PINTAR Community Service Program (PKM) in Paninggaran Village was designed through a participatory and collaborative approach between PNM, Muhammadiyah University of Cirebon, and Muhammadiyah University of Kuningan. The implementation stages were structured sequentially to ensure the empowerment process was effective, measurable, and sustainable. The activity method consisted of five main steps: (1) outreach, (2) training, (3) technology implementation, (4) mentoring and evaluation, and (5) program sustainability.

Program Outreach

The initial stage was implemented through outreach activities to introduce the objectives, concepts, benefits, and mechanisms of the PINTAR Program to the Paninggaran Village community, particularly PNM clients and PKH recipient families. The outreach took place on November 7, 2025, involving village officials, PNM facilitators, and the PKM team from UMC and UMKuningan. During this stage, the community was provided with an understanding of the urgency of improving financial literacy, the importance of household economic independence, and the rationale for choosing bucket catfish cultivation technology as a solution for extremely poor villages with limited land. The socialization also included the allocation of partner roles, a schedule of activities, and an explanation of program success indicators.

Technical Training on Cultivation and Financial Literacy

The training phase was held after the socialization to increase community capacity. The training was led by Mr. Johan, M.T., from Muhammadiyah University of Cirebon, and facilitated by the LPPM UMC and UMKuningan teams. The training covered two main aspects:

- Technical Training on Budikdamer and Vertical Water Spinach Culture
 - ✓ Explanation of the concept of cultivating catfish in buckets (budikdamer).
 - ✓ Techniques for selecting seeds, using 80-liter buckets, arranging coconut shell charcoal, and EM4 dosage.
 - ✓ Introduction to vertical water spinach planting techniques in the same medium.
 - ✓ SWOT analysis of catfish and vegetable cultivation to map business opportunities and risks.
- Financial Literacy and Business Management Training
 - ✓ Basics of home business planning.
 - ✓ Micro-capital management, simple record keeping, and capital turnover strategies.
 - ✓ Introduction to the principles of financial inclusion according to the PNM empowerment model.
 - ✓ With this training, partners have sufficient basic knowledge to start and manage their own businesses.

Technology Implementation

The technology implementation phase is the direct implementation of the training materials. This activity is the culmination of field practice, focused on assembling catfish farming units in buckets by participants, accompanied by the Community Service Program (PKM) team. The implementation steps include:

- Preparation of the cultivation media (80-liter buckets, cleaning, and sterilization).
- Arranging coconut shell charcoal and filling with water to the specified levels.
- Mixing EM4 to stabilize water quality.
- Spreading catfish fry into the buckets.
- Planting kale seedlings vertically on a frame or support installed above the buckets.
- Explanation of the SOP for daily maintenance, feeding, and water quality control.

This phase also serves to ensure that the community can truly implement the technology independently in their respective homes.

Mentoring and Evaluation

After technology implementation, the program enters a six-month intensive mentoring phase. Mentoring is carried out by a joint team from PNM, UMC, and UMKuningan, with regular visits and online monitoring. The focus of the mentoring includes:

- Monitoring fish growth and water quality.
- Technical assistance if problems arise, such as fish mortality or contamination.
- Consultation on business development strategies, marketing, and financial record-keeping.
- Strengthening the entrepreneurial mindset to prevent the community from returning to a consumerist lifestyle.

Evaluations are conducted periodically to assess the success rate of cultivation, community participation, increased financial literacy, and the economic impact on families.

Program Sustainability

The sustainability phase ensures the program continues to operate after formal mentoring ends. The sustainability model is developed through:

- Establishment of the Paninggaran Village Budikdamer Business Group, which serves as a forum for mutual learning, resource sharing, and collective business scale-up.
- Integration of the program with the PNM Mekaar financing scheme, enabling the community to develop cultivation units with affordable capital.
- Ongoing support from universities, through research-based monitoring, development of appropriate technology, and opportunities for model dissemination to other villages.
- Ongoing collaboration with the local government, particularly in the areas of family food security and extreme poverty alleviation.

This phase ensures that the PINTAR program can have long-term impacts in the form of increased family economic independence, improved financial literacy, and the emergence of an entrepreneurial culture in Paninggaran Village. Data were collected through observation, interviews, and program evaluation during each implementation stage. Descriptive analysis was used to assess changes in participants' knowledge, skills, and economic behavior.

RESULTS AND DISCUSSION

The implementation of the PINTAR Community Service Program in Paninggaran Village has yielded several significant achievements aligned with the goals of improving financial literacy, empowering family finances, and strengthening the independence of yard-based businesses. The following are the results achieved at each stage of the activity:

Program Socialization Results

The socialization activity, held on November 8, 2025, yielded several important achievements. The socialization was successfully attended by target community groups, namely PNM customers, PKH recipients, and village residents interested in participating in the family finance empowerment program. The collaboration between PNM, UMC, and UMKuningan provided strong legitimacy, resulting in high levels of community attendance and participation (Qorib, 2024).



FIGURE 1. Socialization of the SMART Catfish Cultivation Program

The community demonstrated great enthusiasm after receiving an explanation of the urgency of increasing financial inclusion and how catfish cultivation technology in buckets (*budikdamer*) can be a cheap, easy, and suitable business alternative for limited land. At this stage, participants began to understand that this program is not just assistance but an empowerment model that requires commitment, active participation, and consistency. The outreach also resulted in a list of program participants and the formation of small groups that would later become work units at the home garden level.

Results of Technical Training and Financial Literacy

The technical training on catfish cultivation in buckets and vertical kale cultivation had a direct impact

on increasing the community's skills capacity. From observations of the implementation, participants were able to understand the basic concepts of budikdamer, including the principles of media cleanliness, water quality, feed selection, and the catfish maintenance cycle (Rumbianingrum & Wijayangka, 2018).

The hands-on practice, guided by Mr. Johan, M.T., enabled participants to correctly assemble a Budikdamer system. They also understood the role of EM4 and coconut shell charcoal in maintaining water stability, as well as how to arrange the kale growing medium in a bucket. Participants' technical skills improved significantly due to the demonstrative and participatory nature of the training.



FIGURE 2. Financial Literacy Training

In addition, financial literacy training provided by PNM facilitators helped participants understand how to manage small capital, record expenses and income, and plan for profits. Initial evaluation results indicated that some participants began to understand the difference between consumptive and productive use of capital. This training fostered awareness of the importance of financial discipline in running a home business.

Results of Budikdamer Technology Implementation

The Budikdamer technology implementation was carried out through field practice at a resident's home, which served as a pilot site. The results showed that all participants were able to independently apply the steps for constructing a bucket cultivation unit.

Several bucket cultivation units were successfully assembled with standard specifications: using 80-liter buckets, arranging coconut shell charcoal, regulating water volume, adding EM4, and spreading catfish fry with a good initial adaptation rate. Vertical planting of kale was also successfully implemented using a simple frame on top of the bucket.

Initial observations over a week showed that fish conditions remained stable, there were no mass mortalities, and water quality was well maintained. This demonstrates that participants are able to apply the procedures taught. The application of this technology has succeeded in creating a family food production unit that is economical, easy to maintain, and can be further developed in each individual's yard (Susanti et al., 2021).

Results of Intensive Mentoring and Periodic Evaluation

The mentoring phase conducted by the PNM, UMC, and UMKuningan teams showed positive progress. The mentoring included field visits, monitoring fish development, and observing the growth of kale. During the initial mentoring, several challenges were encountered, such as inappropriate feeding and changes in water quality due to rain. However, the mentors successfully provided quick and effective solutions.



FIGURE 3. Periodic Mentoring and Evaluation

Periodic evaluations demonstrated improved participant skills in fish care, managing feeding schedules, and understanding fish health signs. Participants also began maintaining simple financial records under guidance from PNM mentors. By the third week, the majority of participants were able to maintain stable cultivation with very low fish mortality rates. This intensive mentoring also helped participants increase their self-confidence, entrepreneurial motivation, and readiness to develop their own fish farming units. Interim evaluations showed that 80% of participants stated they were ready to continue cultivation until harvest.

Program Sustainability Results

Program sustainability efforts showed encouraging progress. At the end of the initial mentoring phase, participants agreed to form the Paninggaran Village Fish Farming Business Group as a forum for sharing knowledge and experiences. This group also serves as a strategic partner for PNM in expanding its household-based economic empowerment program.

The program has also begun integrating with the PNM Mekaar financing scheme to facilitate participants who wish to add fish farming units. Muhammadiyah universities, particularly through the Institute for Research and Community Empowerment (LPPM), are committed to conducting research-based follow-up monitoring as part of the implementation of the Catur Dharma (Four Pillars of Dharma). Furthermore, the local government has demonstrated support through plans to replicate the program in other hamlets within Paninggaran village. Thus, the sustainability of the program has a strong foundation through multi-stakeholder support, strengthening community capacity, and participants' readiness to maintain and develop the businesses they have pioneered.

CONCLUSION

The PINTAR program effectively improved financial literacy, technical skills, and economic independence among rural households through the Budikdamer technology. The integration of financial inclusion and practical entrepreneurship training proved to be a promising approach for poverty alleviation. Continued mentoring and institutional support are essential to ensure long-term sustainability and scalability.

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