

## Optimalization of Catfish Cultivation in Gunung Sarik, Kuranji, Padang

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### Abstract

Catfish is one of the freshwater fish commodities that has high economic value and is very potential to be developed in Indonesia, especially in Padang, West Sumatra. Choosing the right location for catfish enlargement cultivation is one of the key factors for catfish enlargement. Gunung Sarik in Padang is one location that has the potential to develop a catfish cultivation business. The purpose of this community service activity is to optimize existing resources by utilizing the strengths and opportunities owned by the Gung Sarik catfish cultivation group. The method of implementation service activities consists of lectures, demonstrations, practice and mentoring. The results of this community service activity are (1) the Gunung Sarik catfish cultivation group can empower the potential of land in catfish cultivation better; (2) the Gunung Sarik catfish cultivation group can produce natural feed independently and has slowly been free from dependence on factory feed; (3) the Gunung Sarik catfish cultivation group can prepare good business financial reports in accordance with generally applicable Financial Accounting Standards. Furthermore, another advantage of this community service activity can increase community income by creating new jobs.

**Keywords:** Catfish Cultivation; Cultivation Optimization

### Abstract

Ikan lele merupakan salah satu komoditas ikan air tawar yang memiliki nilai ekonomi tinggi dan sangat potensial untuk dikembangkan di Indonesia khususnya Kota Padang Provinsi Sumatera Barat. Pemilihan lokasi yang tepat untuk budidaya ikan lele merupakan salah satu faktor kunci keberhasilan dalam pengembangan usaha budidaya ikan lele. Gunung Sarik Kota Padang merupakan salah satu lokasi yang berpotensi dalam mengembangkan usaha budidaya ikan lele. Tujuan dilaksanakan kegiatan pengabdian ini adalah untuk mengoptimalkan sumber daya yang ada dengan cara memanfaatkan kekuatan dan peluang yang dimiliki oleh kelompok budidaya ikan lele Gunung Sarik. Metode pelaksanaan dalam kegiatan pengabdian terdiri dari ceramah demontrasi, praktek dan pendampingan. Hasil dari kegiatan pengabdian ini adalah (1) kelompok budidaya ikan lele gunung sarik dapat memberdayakan potensi lahan dalam budidaya ikan lele dengan lebih baik; (2) kelompok budidaya ikan lele Gunung Sarik dapat memproduksi pakan alami secara mandiri dan secara perlahan telah terlepas dari ketergantungan pakan pabrik; (3) kelompok budidaya ikan lele Gunung Sarik dapat menyusun laporan keuangan usaha yang baik sesuai dengan Standar Akuntansi Keuangan yang berlaku secara umum. Selanjutnya, keuntungan lain dari kegiatan pengabdian ini dapat meningkatkan pendapatan masyarakat dengan terciptanya lapangan pekerjaan baru.

**Kata kunci:** Budidaya Ikan Lele; Optimalisasi Budidaya

## INTRODUCTION

Aquaculture is one of the important sectors in meeting the needs of society and has the potential to drive national economic growth. One of the freshwater fish commodities that is highly promising for development and has high economic value is catfish. (Utomo and Himawanto 2021) stated that catfish farming required relatively low capital and easy marketing. Furthermore, (Purwanti and Susilo 2019) noted that catfish is a freshwater fish farming commodity with a delicious taste, relatively low price, high nutritional content, rapid growth, ease of reproduction, resistance to diseases, and can be raised in almost any type of container. Therefore, if catfish farming can be developed optimally, it will have a positive impact on economic development.

The community service program was conducted at the Gunung Sarik Catfish Farming Group. Geographically, the northern part of Gunung Sarik borders the Lubuk Minturun Subdistrict, the southern part borders the Korong Gadang Subdistrict, the eastern part borders the Kuranji Subdistrict, and the western part borders the Sungai Sapih Subdistrict. In managing their business, the farming group utilized knowledge and skills passed down through generations within their families. Due to low educational levels and limited skills, the income earned by the Gunung Sarik Farming Group was only sufficient to meet household needs, and they even resorted to borrowing from banks or moneylenders.

From the perspective of regional potential, the target partner had a geographic advantage that supported the development of their business. The partner's location was close to the Lubuk Tampuruang Bathing Destination, which featured a waterfall approximately 15 meters high, with a fairly substantial water flow from a river that was not too swift, as well as the Lubuk Minturun and DPR Waterfalls. This proximity ensured a reliable water supply for fish farming and business expansion. However, in running their farming business, the target partner had not yet optimized the development of their business or seized existing opportunities to maximize profits, which could have contributed to improving the welfare of the catfish farming group.

The implementation of community service for the Gunung Sarik catfish farming group is a continuation of the community service carried out in the previous year. Based on the results obtained from the first phase of the community service, it was found that the catfish farming group had successfully developed a business management plan with tanks, applied catfish farming techniques, and produced catfish feed. According to informal interviews conducted with the catfish farming group, it was revealed that the training and assistance provided to the target partners had been effective. However, after the assistance was completed, the performance of the catfish farming group declined, and as a result, the Gunung Sarik catfish farming business has not yet developed optimally.

(AA.Ngurah Bagus Surya Negara 2017) and (Utomo and Himawanto 2021) emphasized the importance of optimization in business development. Furthermore, (Ardiyanti and Mora 2019) stated that business development is necessary to create new entrepreneurs. Some characteristics of an entrepreneur include resilience, hard work, determination, and perseverance. This aligns with the statement made by (Andriani, Yessy 2020) who argued that successful entrepreneurs are able to increase entrepreneurial interest among potential new entrepreneurs, expand job opportunities, and reduce inequality.

Based on the situational analysis conducted, the service team has again carried out community service activities for the catfish farming group in Gunung Sarik. The objective of this follow-up community service activity at the partner location is to optimize the catfish farming techniques, the production of catfish feed, and the preparation of financial management for the catfish farming business in Gunung Sarik, Padang City. (Riska, Fiya Fajriya 2015), (Hari Sudarmadji, Amir

Hamzah 2011) It is stated that proper and effective catfish farming will yield significant profits. The additionally (BPTPB and Budidaya 2019), (Amin et al. 2020) to put forward producing catfish feed independently will reduce the cost of raw materials in the farming process. Furthermore, (Ichfan, Mutmainah, and Mila 2019) and (Nugroho and Wulandhari 2023) it is emphasized that financial management will help control cash flow within a business.

Based on the above, the implementation of community service for the catfish farming group through the optimization of catfish farming techniques, feed production, and the preparation of business financial reports, this community service activity will provide benefits in the development of the business and is expected to create resilient and determined young entrepreneurs. The title proposed for this activity is "Optimalization of Catfish Cultivation in Gunung Sarik, Kuranji, Padang".

## GENERAL DESCRIPTION OF THE COMMUNITY, PROBLEMS AND TARGET SOLUTIONS

### General description

The catfish farming in Gunung Sarik, Padang City, West Sumatra, is one of the businesses widely pursued by the local community. This farming activity is carried out with knowledge and skills that have been passed down through generations within families. Furthermore, the income from the catfish farming is only sufficient to meet the household needs for survival. In 2020, during the Covid-19 pandemic, many catfish farmers had to close their businesses and turn to other occupations, such as daily laborers and motorcycle taxi drivers. Geographically, the catfish farming group in Gunung Sarik is bordered to the north by Lubuk Minturun Village, to the south by Korong Gadang Village, to the east by Kuranji Village, and to the west by Sungai Sapih Village.

Based on the potential of the area, the target partner has a location that supports the development of their business, such as the proximity to the Lubuk Tampuruang Waterfall, which has a height of about 15 meters and a relatively large water flow from the river that is not too fast. Additionally, the area is close to Lubuk Minturun and the DPR Waterfall, ensuring a reliable water supply for fish farming and business development. This can be further demonstrated the figure 1 in below:



Figure 1 : Situation Analysis

### Problem

Based on the situational analysis conducted in the initial survey, the proposing team identified two priority issues that hinder the development of catfish farming.

#### 1. Fishery Sector

From the initial survey conducted, various issues related to the production sector were identified, such as: (a) the fish farming technique for catfish (*Clarias spp.*) being suboptimal, which affects the quality and quantity of catfish harvested; (b) fish farmers still utilize snails and chicken manure to reduce feed costs; (c) the low interest among catfish farmers in

creating natural feed, with a tendency to rely on commercial feed products, resulting in relatively high feed costs in catfish farming.

## 2. Economic Sector

Based on the preliminary survey conducted, various issues related to the economic sector have been identified: (a) there is a tendency among cultivators to combine business income with household income, which leads to losses for the partners as the capital is used for fulfilling basic family needs; (b) there is a low interest among the cultivation groups in preparing business financial reports.

Tabel 1: Problem and Solution

| No | Problem            | Solution                                     | Indicators of goal                        |
|----|--------------------|----------------------------------------------|-------------------------------------------|
| 1  | Knowledge level    | Knowledge transfer<br>Mentoring, empowerment | Increase skor knowledge; skill; behaviour |
| 2  | Decrease of income | Monitoring and Evaluation                    | Increase in business profits              |

Based on the problems and situation analysis that have been explained above. The science and technology innovations provided to the Gunung Sarik catfish farming group, Padang can be seen in the image below:

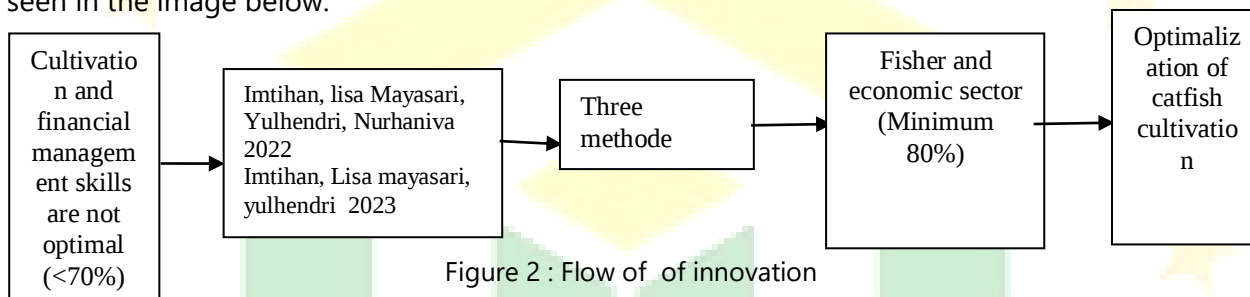


Figure 2 : Flow of of innovation

## Target solution

Based on point 2, the solution to achieve the objectives is to provide socialization and assistance regarding techniques for catfish farming, the production of catfish feed, and the preparation of financial reports in the catfish farming group of Gunung Sarik.

## METHOD

This community service program is carried out through several stages. The stages consist of the preparation phase, implementation phase, and monitoring and evaluation phase. First, the preparation phase includes a site visit to the Lele fish farming group in Gunung Sarik and identifying the group's needs with Mr. Roni Pasla, the head of the fish farming group in Gunung Sarik. Based on the meeting, it was concluded that fish farming in Gunung Sarik is one of the livelihoods largely supported by the local community to meet their daily needs. Second, the implementation phase involves training using methods such as lectures, demonstrations, hands-on exercises, and mentoring. The goal of the training phase, using the lecture method, is to convey the theoretical and basic concepts of fish farming, fish feed production, and basic transaction record-keeping, including the preparation of financial reports such as profit and loss statements and balance sheets. (Irawati 2018) found that training and mentoring have a positive impact on the development of small businesses. This aligns with the statement of (Septyanto and Hendrani 2017) which suggests that training and mentoring significantly influence income growth and community business development.

The third phase, which is the final stage, involves monitoring and evaluation. In this phase, the community service team conducts mentoring and post-implementation evaluation activities. The purpose of this phase is to assess the progress made by the community service members in

relation to the training and mentoring activities that have been carried out. This aligns with the statement made by (Imtihan, Lisa Mayasari, Yulhendri, Nur Haniva 2022) that evaluation and monitoring can positively influence the progress of an effort. Furthermore, for the success of this community service program, the participation of the target partner as a collaborator in the implementation of the program plays a crucial role and carries responsibilities, including: (a) participating in every phase of the community service activities; (b) providing the venue for the training; and (c) supplying the necessary tools and materials during the training, with costs covered by the partnership program budget.

## RESULTS AND DISCUSSION

The community service program in the Lele Fish Farming Group of Gunung Sarik aims to optimize the cultivation of lele fish through farming techniques and financial management. The outcomes and the impact of changes experienced by the group at each stage after the implementation of this program are as follows:

### 1. Preparation Stage

The preparation stage of the activity includes a site visit to the fish farming group of Gunung Sarik and the identification of the group's needs in collaboration with Mr. Roni Pasla, the leader of the fish farming group in Gunung Sarik. Based on the meeting, it was found that fish farming in Gunung Sarik is one of the livelihoods that is widely supported by the local community to meet daily needs. Building on this, at this stage, the implementation team conducts a socialization process to increase the interest and motivation of the fish farming group in optimizing fish farming techniques as well as financial management by separating the business income from personal daily expenses. This is in line with the findings of (Ardiyanti and Mora 2019), who stated that interest and motivation influence the success of a business.

The socialization activities attended by the group of catfish farming in Gunung Sarik as part of this community service activity can be seen in the image below.



Figure 3: Socialization of Activities to Target Partner Groups

(Nonong Hanugrah 2017) stated that socialization provides aquaculture practitioners with knowledge of the principles of Good Fish Farming Practices (CBIB). This aligns with (Retno 2022) and (Fauziah et al. n.d.) who mentioned that socialization aims to present the planning and implementation of activities that will be carried out over a certain period. (Imtihan, Lisa Mayasari 2023), (Lifchatullaillah, Endang 2023) found that providing socialization at the beginning of community service activities can enhance participant motivation, as during the socialization, participants gain foundational knowledge related to science and technology (IPTEKS) that will be transferred to the group.

## 2. Training and Mentoring Stage

The purpose of this training and mentoring stage is to provide direct modeling to the group regarding business management and technical aspects of catfish farming. This aligns with the statement by (Irawati 2018) who asserts that training and mentoring can have a positive impact on the development of small businesses. The training and mentoring activities in this stage are conducted using methods such as lectures, demonstrations, practice exercises, and ongoing mentoring. (Septyanto and Hendrani 2017) and (Dinas Perikanan dan Peternakan 2022) found that training and mentoring positively influence the development of small businesses. This is in line with the findings of (Jamil, Mutmainnah, and Azizah 2022) which state that training and mentoring significantly affect income improvement and business development in the community. Furthermore, based on the results found by (Imtihan, Lisa Mayasari, Yulhendri, Nur Haniva 2022), training and mentoring have an impact on the development outcomes of catfish farming businesses in Koto Tengah Subdistrict, Padang City.

The training and mentoring activities conducted for the Gunung Sarik catfish farming group are illustrated in the following image:



Figure 4: Training and Mentoring

Based on the image above, it can be seen that during the training and mentoring phase, the catfish farming group participated with high enthusiasm and motivation. This high motivation has a positive impact on the knowledge and skills acquired by the training participants. The positive outcomes of this activity include the ability of the catfish farming group to implement proper and effective catfish farming techniques, as well as the ability to prepare business financial reports in accordance with generally accepted standards.

(Dini Retnowati, Moch. Anshori, Ahmad Fatih Fudhla, Gusti Adriansyah, Ika Widya Ardhyani 2020) assert that training in catfish farming offers additional benefits, such as increased income and the creation of new employment opportunities for the community. High-quality catfish have a higher market value, enabling fish farming groups to generate greater profits from their aquaculture ventures. Furthermore, training and assistance in fish feed production can reduce the dependency of fish farming groups on factory-produced feed, ultimately influencing their overall income.

Furthermore, (Kadek et al. 2015) and (Oktavianawati and Sulistiyo 2016) found that the self-production of feed is highly needed by aquaculture groups in order to minimize production costs and increase the net income of farmers. (Marlina et al. 2022) and (Ardhi et al. 2022) stated that one of the ways to develop SMEs is by providing assistance in preparing financial reports. (Jamil et al. 2022) emphasized that financial management in the development of SMEs, in the form of assistance with financial report preparation and cash flow management, generally enhances income. This is in line with the views of (Satria et al. 2022) who highlighted the importance of financial management training for SMEs in business development.

### 3. Monitoring and Evaluation Stage

Evaluation is one of the most important stages of an activity, aimed at assessing the achievement of the expected objectives of a program, as well as improving the activity or plan in subsequent stages. A similar point is made by (Jamil et al. 2022), who stated that evaluation is conducted by comparing the conditions before and after the program implementation. Based on this, the evaluation stage revealed that there was an improvement in the knowledge and skills possessed by the catfish farmers in Gunung Sarik, Padang. Furthermore, the results of the evaluation after the program implementation in the Gunung Sarik catfish farming group can be seen in Table 1 below;

Table 2 : Evaluation and Monitoring of Activities

| Number | Knowledge                                                                  | Respondent Achievement Level (TCR) | Category  |
|--------|----------------------------------------------------------------------------|------------------------------------|-----------|
| 1      | Enhancing Partners' Skills in Catfish (Clarias sp.) Aquaculture Techniques | 88,75%                             | Very Good |
| 2      | Enhancing Partners' Skills in Catfish Feed Production                      | 91,25%                             | Very Good |
| 3      | Enhancing Partners' Skills in Business Financial Report Preparation        | 88,50%                             | Very Good |

Source: Primary data processing, 2024

Based on table 2 above, it can be seen that, after conducting surveys, outreach, training and mentoring, monitoring and evaluation results were obtained in the form of increasing partner skills in three indicators that were determined at the beginning of the service activity, namely (1) partner skills in catfish cultivation techniques achieved a TCR of 88.75 % in the very good category; (2) partner skills in making catfish feed achieved a TCR of 91.25 in the very good category; (3) partner skills in preparing business financial reports achieved a TCR of 88.50 in the very good category.

Furthermore, the enhancement of partners' skills in aquaculture techniques, fish feed production, and financial management within the Gunung Sarik Catfish Cultivation Group in Padang City is illustrated in the image below.



Figure 5: Monitoring and Evaluation Results

Based on Table 2 and figure 5 above, it is evident that the implementation of the community service program conducted for the catfish cultivation group at Gunung Sarik has led to an enhancement in the partners' skills in optimizing catfish farming. This improvement is reflected in the increased knowledge and expertise of the partners in catfish cultivation techniques, catfish feed production, as well as the financial management of the catfish farming business in Gunung Sarik, Padang City. Furthermore, with the advancement in knowledge regarding cash flow management and the preparation of financial reports, the cultivation business is better positioned to regulate its expenditures and avoid losses.

## CONCLUSIONS AND SUGGESTIONS

The community service program conducted with the Gunung Sarik catfish farming group in Padang City has been successfully carried out without any obstacles. Through collaboration between the implementation team and the catfish farming group, the program has proceeded as expected and has provided benefits to the farming group in optimizing their catfish farming operations through: (a) catfish farming techniques, (b) production of catfish feed, and (c) preparation of financial reports, which are useful in managing the business, particularly in increasing the income of the Gunung Sarik catfish farming business in Kuranji District, Padang City, West Sumatra Province. The provision of necessary tools for the partners in this activity included the construction of catfish breeding ponds, catfish feed production equipment, and the development of a practical guidebook for financial report management for SMEs. Based on the evaluation conducted, several recommendations are proposed as follows: (a) the need for periodic and continuous training activities to further develop the catfish farming business group, particularly in the technical aspects of farming and other advanced training in accounting; (b) the necessity of ongoing support from relevant institutions (such as the Department of Agriculture and Fisheries of Padang City) so that the business managed by the Gunung Sarik Catfish Farming Group can continue to prosper and improve the welfare of its members.

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