

Fishpreneur: a new paradigm of small-scale aquaculture

¹Tita Elfitasari, ¹Lachmuddin Sya'rani, ²Albert

¹ Faculty of Fisheries and Marine Science, Universitas Diponegoro, Semarang, Central Java, Indonesia; ² Faculty of Economics, Universitas Semarang, Semarang, Central Java, Indonesia. Corresponding author: T. Elfitasari, titaelfitasari@lecturer.undip.ac.id

Abstract. Research on the secret of entrepreneurs has been carried out for many years, but, it rarely focuses on fisheries communities like fish farmers. This research is a preliminary study on fish farmers in Indonesia as entrepreneurs and purported to explore entrepreneurial characteristics of small-scale fish-farmers to develop basic information for the core research. This study employed a qualitative method approach through in-interview and observation as a data collection tool. Data obtained were then analyzed using NVivo qualitative data analysis software. Respondent was a fish-farmer in Semarang city who was recommended and acknowledged by the local government as one of the most active fish-farmers. Findings revealed that although he has limited education and financial capital, he developed himself with these five strategies: develop self-advertisement, possess financial commitment, willingness to learn new skills, taking innovative actions, and creating a visionary mindset. Small scale fish farmers who possess' entrepreneurial characteristics, are called "fishpreneurs" and may potentially become the new paradigm that can enhance the aquaculture industry in the future.

Key Words: aquapreneur, entrepreneurial characteristics, qualitative, small-scale fish farmer.

Introduction. Global fisheries demand is steadily increasing and shows no signs of slowing down. FAO (2020) reported that in three decades since 1990, the total fish consumption has raised 122%. With the sharp decline in fish catch, the fulfillment of fish demand is now counting on aquaculture. This rising fish demand has impacted aquaculture production which showed a significant increase up to 527% in 1990 to 2018 (FAO 2020). Aquaculture is also predicted to be the only source for fish protein supply in 2030 (Kobayashi et al 2015).

The fisheries production in Indonesia is also showing a similar trend with aquaculture contributing more than 70% of total production (BPS 2020b). This proves the great potential of the aquaculture industry to grow in Indonesia. This fact is also supported by the number of aquaculture households in Indonesia which had grown and reached more than 1.5 million families in 2016 (BPS 2020a). However, the aquaculture industry in Indonesia is similar to other developing countries where it is still dominated by small-scale fish farmers (Hermawan et al 2017). Fish farming businesses support well their household income (Mulokozi et al 2020). Most of the small-scale fish farmers in Indonesia are facing challenges both internally and externally, such as limited capital and fish farming skills, and issues in obtaining good quality of fish seed and feed (Elfitasari & Albert 2016). Nevertheless, despite having to encounter these problems, there are small scale fish farmers which appear to be more successful than others. This has raised a question; what characteristics do these successful small-scale fish farmers have that differ from other ordinary fish farmers? Do they have entrepreneurial characteristics?

The previous reference differentiates "small business owner" with "entrepreneurs", where it is asserted that entrepreneurs are characterized by possessing innovative behavior and implement strategic managerial practices (Carland et al 1984; Wagener et al 2010). Based on the previous references, therefore can small-scale fish farmers also be differentiated from "fishpreneur"?

Entrepreneur research in Indonesia emphasized on industries such as information and technology (Suhartanto & Leo 2018), and small businesses (Umar et al 2018) but rarely focus on small-scale farmers. On the other hand, aquaculture research is mostly emphasizing non socio-economics or technological aspects (Oglend 2020) such as creating new feed formula to enhance growth (Herawati et al 2018), disease management (Prayitno et al 2020), or color stimulation in ornamental fish (Sawant et al 2020). Many also focus on the creation of the latest equipment like the innovation of automatic feeder or the inventions of pond management techniques like polyculture, integrated multi-trophic aquaculture (Widowati et al 2019), low external input for sustainable aquaculture (Aryati et al 2019) and so on. Thus, the actual actors to implement all inventions in the field are fish-farmers. Many technologies may be created, however, if that does not answer to the main challenges of small-scale fish farmers, these inventions may not be implemented by the field players since it does not solve the problems as perceived by the fish farmers. Previous research points out that challenges encountered by fish farmers are weather (Rejeki et al 2019), fish feed price, fish seed quality, limited capital, marketing (Elfitasari 2010; Elfitasari et al 2019b; Albert & Elfitasari 2020), and lack of extension services (Albert & Elfitasari 2020). To overcome challenges, fish farmers carry out strategies through innovations. These innovations include breeding their fish seed, producing their fish feed, expanding their product range to sell, expanding the species cultivated, adding value to the product and utilizing fish waste (Elfitasari 2010; Elfitasari & Albert 2016).

The importance to explore the entrepreneurial actions of small-scale fish farmers is crucial to obtain an illustration of the characteristics of the successful small-scale fish farmer. Therefore, this preliminary research addresses the above issue and aims to explore the characteristics of a successful small-scale fish farmer. This will form a platform to determine strategies to assist small scale fish farmers not only in technical difficulties but also according to their socio-economic and managerial needs.

Material and Method

Methodology. To obtain a deep understanding of the experiences, opinions, deep thoughts, and perspectives of the respondent, this research employed a qualitative research method approach by utilizing in-depth interviews and observation as a data collection tool. A recording device was used for the interview and photos were taken using a mobile phone camera for documentation analysis purposes. Notes were also made during the period of the interview to capture gestures that cannot be recorded on devices. Observation is important to support the validity of the research findings.

This is a preliminary research to obtain adequate information to develop a scale for further quantitative research that will cover a larger number of respondents. The respondent for this preliminary research was one respondent purposively chosen based on the recommendation from the officials of the Semarang City Fisheries office. The respondent was acknowledged as the most active and innovative fish farmer in Semarang city. He was often asked by the government to represent fish farmers in Semarang city when there are competitions, training, and other aquaculture related events. The initial communication approach was carried out through the WhatsApp application which was followed by visiting the location not long after. An in-depth interview was carried out at the respondent's house and observation of the fish farms and other necessary sites. The location of the business was at the respondent's house where he also utilizes it as the headquarter for his fish farm group and his catfish seedling business. During the interview, a careful observation was made and noted. The interview questions are explorative open-ended questions, where the focus was digging out information on how the fishpreneur overcome challenges and was based on previous research carried out by Elfitasari (2010) and Elfitasari & Albert (2016). The questions were then expanded following the direction of the respondent's answers.

Analysis. The interview recording that was obtained was then transcribed to ease codings and analysis. Collected data was then analyzed using NVivo qualitative data

analysis software. Codes were developed along while reading through verbatim. Data analysis also utilized the triangulation of data. Triangulation is important as part of the research analysis as a means of utilizing other sources to validate the obtained data (Carter et al 2014). In this research, triangulation was carried out using documents such as photos, screenshots of the respondent's page in social media, and notes of observation made during the interview.

Results. The findings of this research will be used to develop a fundamental concept for further research in this field. The findings of this research are grouped into three: (1) background on the development of entrepreneurial motivation, (2) implemented entrepreneurial strategies, and (3) connections between entrepreneurial motivation and strategies. The first part of the findings was that the entrepreneurial motivation of the respondent emerged because of an initial event (Figure 1).

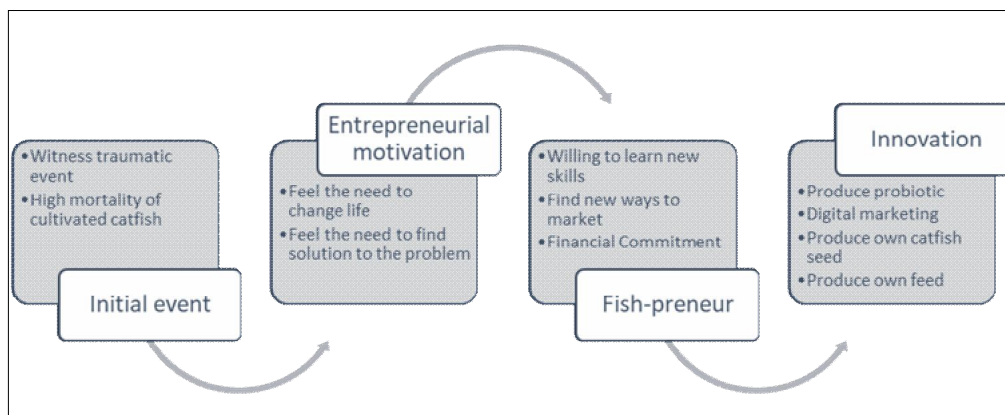


Figure 1. Entrepreneurial motivation development of a fishpreneur (Source: research results).

The deep interview has uncovered that the initial event (witnessing a traumatic incident and encountered a high mortality rate of catfish) had triggered entrepreneurial motivation. Before becoming a full-time fish farmer, he was a building worker with duties that require him to climb tall buildings without adequate safety equipment. The traumatizing event of witnessing a colleague falling to death had sparked an entrepreneurial motivation where he then determined to make fish farming more seriously a full-time job. This motivation had creatively made him implement entrepreneurial strategies to achieve business success. This finding was in line with Mukherjee (2016), who stated that the development of entrepreneurial actions is stimulated by entrepreneurial motivation. He constantly developed new strategies and each achievement had made him further motivated to create more ways to make his fish farming group more successful. This motivation, determination, and innovative solution is also the reason why the fish farmer group choose him as the group leader. He went through each challenge by finding and implementing entrepreneurial strategies such as producing his fish supplement, utilize waste to produce silkworm as natural feed, produce catfish seed to ensure quality and quantity, and enforce financial commitment.

The second part of the research findings of this preliminary research was the five strategies implemented by the respondent to overcome challenges:

- take innovative actions;
- create a visionary mindset;
- enforce a financial commitment;
- develop self-advertising;
- willing to learn new skills.

These five strategies indicate characteristics of entrepreneurs and therefore, this respondent can be called a fishpreneur (Figure 2). An entrepreneur is characterized by its ability to utilize and combine available resources creatively (Schumpeter 2000), and this fits with the character of the respondent as a fishpreneur. A fishpreneur according to this

study can be defined as a small-scale fish farmer with entrepreneurial behavior and who implements innovative actions as well as managerial strategies. This definition is in line with the definition of entrepreneur asserted by previous researchers (Carland et al 1984; Wagener et al 2010; Elfitasari & Albert 2016) who emphasize entrepreneur is closely related to innovation and strategic actions.

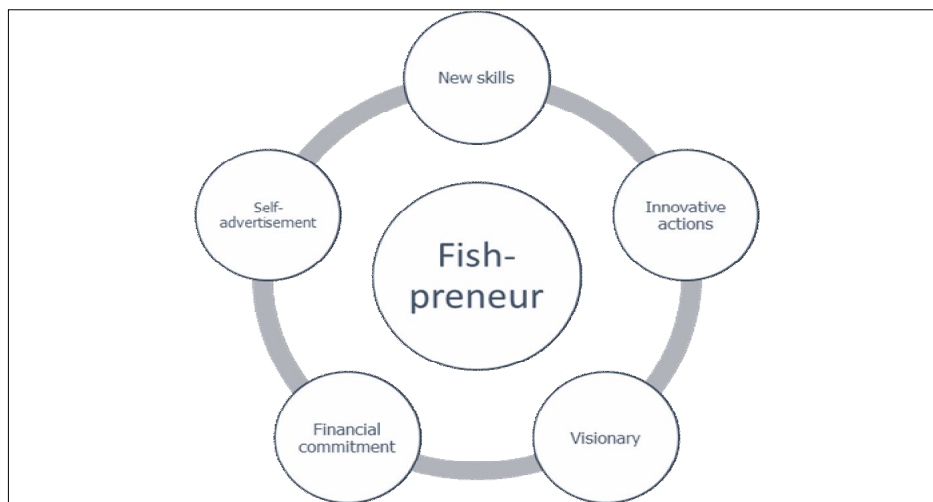


Figure 2. Five characteristics of a fishpreneur (Source: research result).

As explained above the characteristics of fishpreneur in this research were found to have implemented the following five strategies:

Self-advertisement. Respondent is aware that one way to show himself was through social media. He utilized social media such as Instagram and WhatsApp to advertise himself and his product (Figure 3). Social media are now utilized by entrepreneurs to drive their business and have proven to increase business performance (Olanrewaju et al 2020). Fishpreneur proudly exposed himself on his social media showing his business and his activities to introduce and show them to the public.

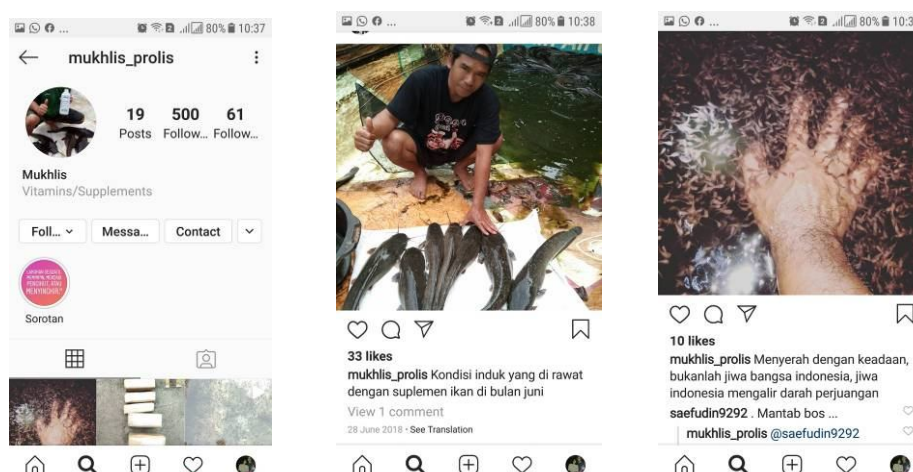


Figure 3. Self-advertisement on Instagram (with consent from respondent).

Self-advertising or also known as self-marketing or self-branding is a method utilized by entrepreneurs to promote their business and to be known in the marketplace (Resnick et al 2016). The fishpreneur is aware that it is important to get known by the people, especially in his catfish farming supply chain. This may include not only potential customers, but also suppliers, government, academicians, and private sectors. In the interview, he emphasized that he used Facebook, Instagram, and WhatsApp to advertise himself. In his social media, not only he is marketing his product, but he also shows how

he carries out his activities, such as performing live sessions on Facebook to show his healthy catfish fingerlings.

This self-advertisement can be included as an extraordinary action as not many small-scale fish farmers implement this, and having "extraordinary business skills" is one of the entrepreneurial characters (Mukherjee 2016). Being active in utilizing social media was proven effective and increases the knowledge and income of small-scale fish farmers (Elfitasari et al 2018; Apresia et al 2020).

Financial commitment. Financial is one the most crucial aspects of business and the ability to manage finances well will determine the success of the business. Commitment is one of the entrepreneurial characters (Hosseini 2019), and having a great commitment to the financial aspect is crucial. Respondent confessed that he and his fish farming group member often borrow money from their fish farming group savings for family purposes. However, he always determined to make whoever borrows from the group saving must return it as soon as possible. During the interview, the respondent went back and forth to show he kept a good financial record. This is also an extraordinary business skill as not many small-scale fish farmers keep production and financial record. This financial commitment is also one indication of a fishpreneur and it is one of the tools that will determine the success of small-scale businesses (Gathungu & Sabana 2018).

Innovative actions. Several innovative actions have been implemented by the respondent. Innovation is one of the indicators for the entrepreneur (Carland et al 1984; Hosseini 2019) and can be executed in many ways. Previous research from Elfitasari & Albert (2016) revealed that there are six innovative actions carried out by small scale fish farmers: extending the market, expanding the product range, adding other species for culture, producing own fish feed, producing own fish feed, and utilizing unwanted waste. In this research, the respondent has extended the market, produced silkworm as natural feed, expanding the product to sell and produce his catfish fingerlings.

One innovative action that has been implemented was expanding the product range. Not only does he sell fresh fish, but the respondent also produced his probiotic fish supplement (Figure 3). The idea to produce the brand "Prolis" emerged a few years ago when he encountered a high mortality rate in the catfish grow-out. The problem did not discourage him but on the contrary, have made him more determined to find a solution.



Figure 3. Probiotic supplement product.

Based on his knowledge, he researched how to make fish supplement, and have finally succeeded to develop his own brand of probiotic supplement. His determination to help other small-scale fish farmers has also eased him to market this product not only regionally but also nationally. He claimed that he already has resellers in other parts of Indonesia and has been contacted by buyers from overseas. Marketing is known to be one of the core entrepreneurial characteristics and a crucial element for a successful business (Oraedua et al 2018). Therefore, the fishpreneur's ability to expand its market

without having to depend on middlemen or moneylenders is essential. This fact leads to another innovative action that the respondent has exactly implemented. He utilized the power of social media to obtain a new market and use customer testimonials to obtain a new market (Figure 4).



Figure 4. Customer testimonials in social media groups.

Figure 4 shows screenshots of customer testimonial in his WhatsApp group which is utilized to attract new potential customers. A testimonial is a powerful tool to attract the attention of new customers. Especially when the product is known to become the answer and can solve the problem that the customer is encountering. A testimonial is a real customer experience using the product (Lyly-Yrjänäinen et al 2019) and will give proof of satisfaction about the product, to ensure a potential customer to purchase the product. Besides active marketing on Instagram and WhatsApp, the respondent also utilizes Facebook as an online source platform (Figure 5).



Figure 5. Facebook page for marketing (with consent from respondent).

On his Facebook page, he markets his product using simple convincing words. This is powerful in reaching small-scale fish farmers who are mostly low educated which requires easy understanding sentences to read facts about the product. Target audience is an important aspect to consider when developing advertising content to deliver the message to the right market (Shishkina & Shcherbakov 2018). Since the respondent only holds a junior high school background, it was also natural for him to create the advertisement with simple words and facts. Another interesting element is that besides utilizing customer testimonials, he also has creative ways to show the convincing result of his products (Figure 6).



Figure 6. Advertising by posting photos of (a) fish supplement and its effect on catfish growth; (b) proof of packages sent to customers (with consent from respondent).

One of the posted photos on his social media page showed the result of his product (prolis supplement) to catfish growth. This photo showed a comparison between the result of catfish growth that was given his prolis supplement and an adult foot. This footage will no doubt attract the attention of catfish growers who encounter problems in their catfish growth. Another is a photo of packages ready to be sent out to the customer. These photos are unconsciously sending the message that "my product works well" and that "I have already sent my product to customers outside my area". Simple as it looks, these photos have a great impact on promoting his product via social media. Three things attract consumer attention to purchase a product and one of them is a visual aid of the product (Xia et al 2020). The right photo which consists of visual information of the product will have the potential to increase sales. The fishpreneur claims that his Prolis supplement has been sold in many cities across Indonesia with many happy customers which gave him positive feedback (Figure 4).

As head of 'Mina Lancar' fish farmer group, the respondent has intelligently divided the focus of production with his group members. Respondent explained that his focus was on fish breeding and supplement production, while his group members emphasize the catfish grow-out. This way, his group members can ensure the availability of fish seed for production. The availability of good quality fish seed is an issue in many parts of Indonesia (Elfitasari et al 2019a), and this activity is one solution that addresses this problem. Furthermore, after fulfilling the needs of the group members, the remaining fish seed was being sold to other fish farmers. Producing his fingerling to ensure the availability and quality of catfish was known to be one of the innovations in the aquaculture business (Elfitasari 2010; Elfitasari & Albert 2016; Albert & Elfitasari 2020).

The next implemented innovative actions were utilizing the waterways which are full of wastewater from the outlet of catfish ponds to produce silkworms (Figure 7).

The waterways are filled with water waste from the pond outlet. Fishpreneur utilized this wastewater to produce silkworm for catfish broodstock. His ability to gather resources to create new beneficial product clearly shows the respondent possesses an entrepreneurial characteristic (Schumpeter 2000).



Waterways from the catfish grow-out pond outlet

Figure 7. Utilizing waterways from outlet to produce silkworm.

Visionary mindset. A fishpreneur also develops a visionary mindset. In this study, it was shown from how the respondent continuously thinks about the sustainability of the fish farmer group. His visions are advanced where he elucidated his wishes to add values to his catfish harvest. He wanted to keep expanding his business and he claimed that he will do and will learn anything to make his farmer group achieve a successful business. This enthusiasm about growing a bigger business along with creative ideas and plans defines an entrepreneur (Mukherjee 2016). Not only that he planned it, but he had successfully implemented it.

The last part of the analysis was to explore the connections between entrepreneurial motivation and strategies of a fishpreneur. The project map was designed as a cyclical connection between entrepreneurial motivation, strategies, and achievement (Figure 8).

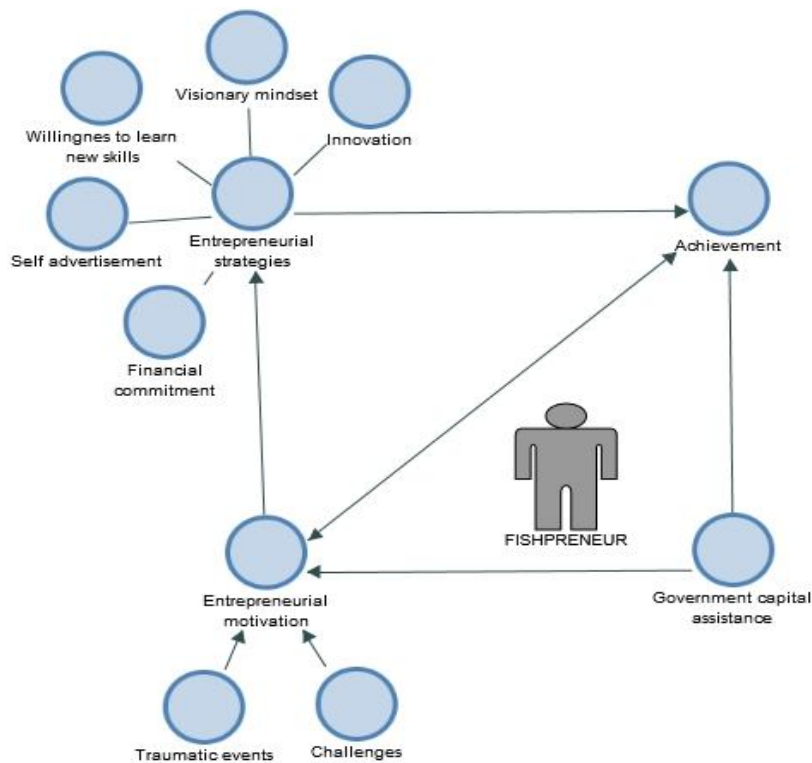


Figure 8. Fishpreneur and its cyclical connections.

The result of the in-depth interview had shown that entrepreneurial motivation, the implemented strategies, and achievement of the fishpreneur formed a cyclical

connection. Internal and external factors were found to have a great role in determining the development of entrepreneurship motivation (Mukherjee 2016). In this case, the respondent's entrepreneurial motivation emerged after the fishpreneur experienced a traumatic event witnessing death and encountered challenges in his business. The entrepreneurial motivation has made the fishpreneur develop and implement entrepreneurial strategies which drove him to achieve fish farming success. This achievement then became his internal factor that ignited entrepreneurial motivation once again and the cyclical process reoccurred.

The above analysis of this research suggests that fishpreneur may become the new paradigm of small-scale fish farmers with entrepreneurial behavior. Many new methods and fish farming techniques have been introduced to small scale fish farmers, however, it is not as successful as is expected. Results of the previous research on challenges of small-scale fish farmers have shown that one of the obstacles that hinder the success of fish farmers in adopting innovation are reluctance and lack of motivation of fish farmers to adopt an innovation (Elfitasari et al 2019b, c). This may be the answer to why many innovations are not successfully implemented. A fishpreneur, on the other hand, possesses the passion and enthusiasm to learn new skills to create a successful business. However, a much deeper and wider research to explore the characteristics of fishpreneurs is required. Other aspects such as culture, cultivated species, government support, and aquaculture location, may result in different characters of fishpreneurs. Nevertheless, a self-motivated fish farmer such as the respondent in this research can potentially enhance the quality of aquaculture businesses. If many fishpreneurs can be created, it may uplift the small-scale fish farming industry in Indonesia, including increasing profit, livelihood and general well-being of small-scale fish farmers. Previous references have also indicated that fish farmers with pull factors in becoming an entrepreneur, tend to implement more innovative strategies such as market extension, species extension, and adding value to a product, compared to fish farmers with push factors (Elfitasari 2010).

Conclusions. The entrepreneurial character shown by the small scale fish farmer in this research indicates the respondent as a fishpreneur. The ignition of the entrepreneurial motivation was sparked by internal and external factors that led him to create and implement entrepreneurial strategies. These five strategies (taking innovative actions, create a visionary mindset, enforce a financial commitment, develop self-advertising, and willingness to learn new skills) have supported fishpreneurs in achieving success.

A fishpreneur may become the new paradigm in supporting small scale fish farming business. The creation of aquaculture innovation must be supported by an uplift in the quality of the fish farmers itself and a fishpreneur may become the answer. The aquaculture industry may potentially be significantly enhanced if many fishpreneurs are created in the future.

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Authors:

Tita Elfitasari, Department of Aquaculture, Faculty of Fisheries and Marine Science, Universitas Diponegoro, Tembalang, Jl. Prof. Soedarto S.H., Semarang, Central Java, Indonesia, e-mail: titaelfitasari@lecturer.undip.ac.id

Lachmuddin Sya'rani, Doctorate Study Program in of Coastal Resource Management, Faculty of Fisheries and Marine Science, Universitas Diponegoro, Tembalang, Jl. Prof. Soedarto S.H., Semarang, Central Java, Indonesia, e-mail: syaranilachmuddin@gmail.com

Albert, Department of Management, Faculty of Economics, Universitas Semarang, Jl. Soekarno Hatta, Semarang, Central Java, Indonesia, e-mail: albert@usm.ac.id

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