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Youth and Brackish Water Cage Culture Industry: A Recipe for Success

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ABSTRACT

The aquaculture industry plays an important role in strengthening the socio-economic aspects of the community in providing job- and income-generating opportunities. The Brackish Water Cage Culture has been identified as one of the potential enterprises within the aquaculture industry that can aid in this. The involvement of youth in this industry is important to ensure the industry's success. This industry may also effectively help to solve the problem of unemployment, especially among youth. The main objective of this paper is to discover the potential benefits and problems faced by youth in the brackish water cage culture industry. Literature and document analyses provide the data in this qualitative study. Findings from this study revealed a number of potential benefits from this industry, which includes business and employment opportunities. This paper also highlights several potential problems and discusses issues related to capital and competitiveness in the industry. This paper goes on to suggest a number of recommendations that the authorities can consider to further develop this industry.

Keywords: aquaculture industry, Brackish Water Cage Culture Industry, youth, youth development, Fisheries Industry Development

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INTRODUCTION

Agriculture is acknowledged as an important sector in Malaysia. The Ninth Malaysia Plan, for example, slotted this sector as the third income generator for the country. The Tenth Malaysia Plan allocated a sizable sum of funds for the agriculture sector mainly for

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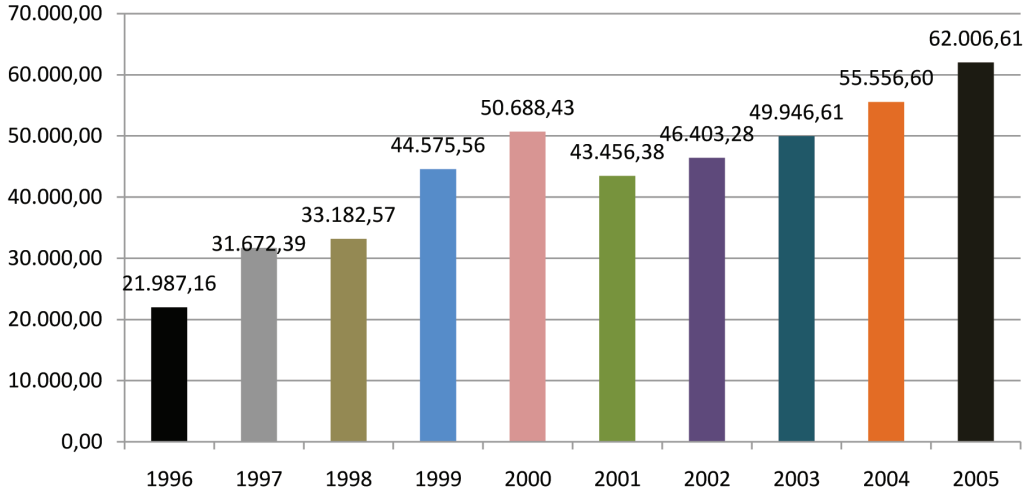
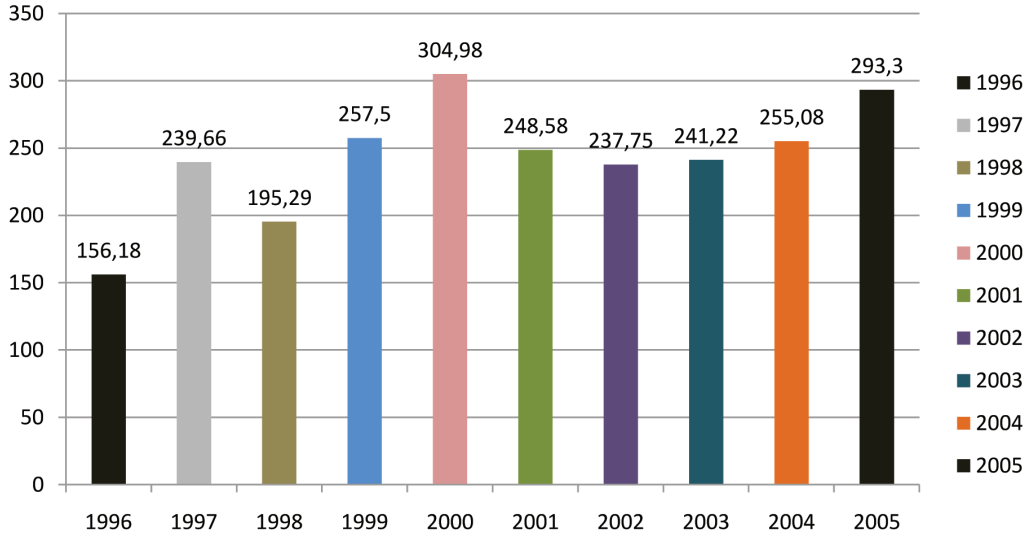
its development and for the uplifting of the socio-economic status of the agricultural community. The Plan also identified the fisheries industry as one of the essential branches of the agriculture sector. This industry has successfully created more than 125,000 employment opportunities for the community and generated more than RM100,000,000 in income. Currently, sea-fishing remains the main contributor towards marine sources of protein. However, the aquaculture industry is expected to become more prominent in fulfilling protein demand in the future. Within a period of 10 years (1996-2005), Malaysian aquaculture managed to produce a total of 439,475.59 metric tonnes of cultured fish. As depicted in Fig.1, aquaculture had its highest productivity in 2005 (62,006.61 metric tonnes). In terms of income generation, aquaculture in Malaysia has experienced a roller-coaster trend for the past 10 years (1996 to 2005); market price instability was a possible cause of this (Fig.2).

As shown in Fig.3, the main contributor towards aquaculture productivity is cockle culture, which contributes 35% of the overall production. The state of Perak was the top producer of cockles with more than 47,000 tonnes while Johor and Selangor were, respectively, the second and third highest cockle producers in the country; both states produced more than 17,000 tonnes (Department of Fisheries Malaysia, 2005). Apart from cockle culture activities, brackish water cage culture (BWCC) is among the main aquaculture activities in Malaysia. Brackish water pond culture contributes 20% of overall aquaculture productivity while BWCC contributes 6% of the overall productivity. Apart from its contribution towards national productivity, the aquaculture industry will be able to address unemployment among youth.



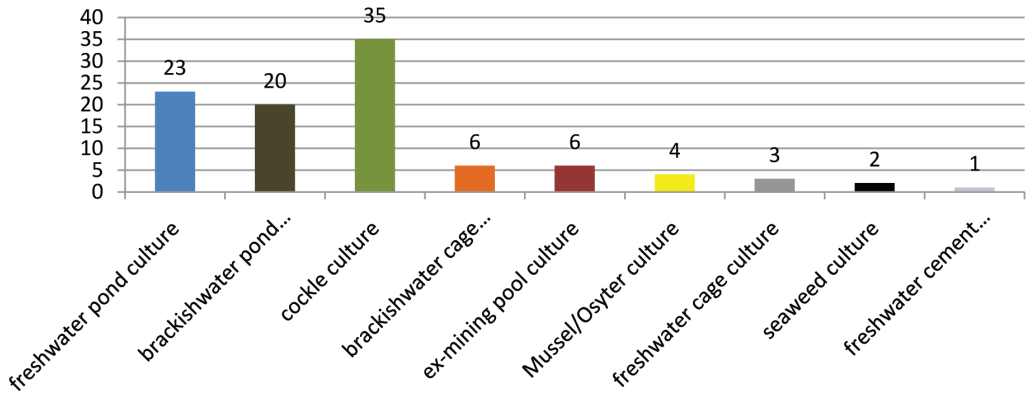
Sources: Department of Fisheries Malaysia (1996-2005)

Fig.1: Productivity of All Aquaculture Systems in Malaysia (in metric tonne)



Source: Department of Fisheries Malaysia (1996-2005)

Fig.2: Income Generated from All Aquaculture Systems in Malaysia (in Ringgit Malaysia)



Department of Fisheries Malaysia (2005)

Fig.3: Distribution of Aquaculture Systems Activities (in percentage)

Based on the official website of the Malaysia Institute for Youth Development Research Centre, in 2008, youth constituted almost half of Malaysian citizens, and this has contributed vastly to the massive unemployment rate among youth. The latest statistics show that the current rate of unemployment among youth in Malaysia is 4%. As such, agriculture is a possible viable option in overcoming unemployment among youth in Malaysia. Previous studies revealed that the agriculture industries have a lot to offer to the community and, hence, should be sustained. Moreover, the ageing farming population in Malaysia may not be adequately replaced in the future as the

younger generation seems disinterested in agriculture (Norsida, 2007). Hassan *et al*. (2009) and Shaffril *et al*. (2010) revealed that the average age of farmers in Malaysia exceeded 40 years old. Hence, efforts to persuade youth to take part in the agriculture industry are crucial.

METHODOLOGY

The methodology used for this paper is the qualitative approach via document and literature analyses. Among the literature used were journals by local and foreign researchers that focus on the socio-economic benefits of involvement in aquaculture. In addition, recent statistics on aquaculture provided by the Department of Fisheries (DOF) were also referred to. However, the writer's experience in running the brackish water fish cage culture system for more than a decade is the main source of reference for this paper.

FINDINGS

Potential of Brackish Cage Culture (BWCC) Industry to Youth

Business opportunities

The BWCC could provide business opportunities for interested youth (Schwantes, *et al.*, 2009 and De and Saha, 2007). Apart from being an income-generating venture, it is anticipated that youth involvement in this industry can further equip youth with knowledge and expertise in fish rearing along with entrepreneurial skills and expertise that are critical for youth development. Consequently, other business opportunities could emerge from BWCC such as tourism, food business and other downstream activities that use fish products. BWCC can promote the concept of agro-tourism whereby local or international tourists can visit the cage culture, hence providing learning opportunities and experiences to the community (Luck, 2009).

The emergence of rural industry

Youth's involvement in BWCC contributes a huge potential in strengthening and developing the rural industry. In tandem with rural industry development, BWCC could offer bigger opportunities for business and employment (De and Saha, 2007). Perhaps seeing their friends' success in this industry could motivate, persuade and encourage them to join the industry. Furthermore, as a rural industry, BWCC is expected to attract investment and support from the private and government sectors and, consequently, it could provide more consistent income for youth (Newfoundland and Labrador Canada, 2011). The produce from aquaculture can spin off commercial products such as snacks and frozen foods. In addition, it will be able to generate upstream and downstream industries.

More sustainable and friendly use of the environment

A bigger portion of the world's fisheries are at unhealthy or unsustainable levels. The Food and Agriculture Organization of the United Nations (FAO) revealed that in April 2005, nearly a quarter of the oceans' wild fish

stocks were lightly or moderately exploited and still offered some scope for further fisheries expansion; slightly more than half were fully exploited, 16% were over-exploited, 7% were depleted and 1% were recovering from depletion and had no room for further expansion. Youth involvement in BWCC is a possible mechanism for a more sustainable and consistent supply of fish. This can be realised based on the fact that youth involvement in brackish water fish cage culture industry offers opportunities for a growing aquaculture sector which has a huge possibility to relieve the pressure on wild fish stocks, provided that market demand for farmed fish is as great as the demand for wild fish (Moffitt, 2004).

Juliet (2005) in her study revealed that fish cultured in cage have less harmful impact on the ecosystem than some particularly deleterious fishing techniques such as ocean trawling that damages the ocean substrata. Involvement in this industry could make youth more creative in using idle land and unused environment sources. Unused land, for example, could be developed as a place for rearing fingerlings. Ahmad Faiz *et al*. (2010) in their study found that some BWCC entrepreneurs have initiated their own remedy from the available natural sources to treat most of the infected cultures. The aquaculture industries, especially those conducted in rivers, encourage entrepreneurs to preserve the environment. Nonchemical substances or toxins released into the river help to preserve the river; otherwise, their cultures could be affected by pollution.

Development of positive value among the entrepreneurs and the community

Involvement in this industry would develop a more positive perception on agriculture and aquaculture industry among youth (Ngazi, 2004). It motivates them towards a positive physical and mindset transformation towards this industry. The study done by Ahmad Faiz *et al*. (2010) found that BWCC was able to attract more youth and, interestingly, all of them expressed interest in and commitment to BWCC activities, which was not evident before their involvement in BWCC. In addition, Ahmad Faiz *et al*. (2010) also found that BWCC was able to create more positive values among the entrepreneurs. Through their participation in this industry, it was noted that the entrepreneurs possessed a high level of self-confidence and independence and that had developed a sense of belonging to the group as a result of their involvement in cage culture activity. Moreover, the culture of knowledge and experience sharing was instilled and cultivated among the entrepreneurs.

Employment opportunities

Examples from around the world have proven that the aquaculture industry is able to provide opportunities. China recorded that 4 million people were working in the aquaculture industry on a full-time basis. Similarly in Vietnam, this industry is presently providing jobs for more than 700,000 people and, has been able to create an average annual household income of over USD1000 (FAO, 2003). Malaysia

can gain similar results. If the community, especially the youth, are willing to take up this business opportunity, it will create more job opportunities for them. Availability of more employment opportunities is essential for a better quality of life among youth (Yassin *et al*., 2011). More job opportunities in this industry are available to local youth whereby the opportunities abound not only to educated and experienced youth but also to the less educated and less experienced youth (Irz *et al*., 2007). Apart from this, BWCC is one of the potential mechanisms to overcome the unemployment problem among youth, especially new graduates (Boi, 2008; Muir, 2005; Bardach, 1997). Addressing unemployment issues among graduates has become a crucial agenda for the government, due to the fact that in 2010, there were 364,200 people who were still unemployed in Malaysia; BWCC can definitely be one of the answers to solving this problem.

Problems Expected to be Faced by Youth Who Are Interested in Brackish Cage Culture Industry

Lack of capital

Lack of capital is the main problem faced by all kinds of businesses, and the aquaculture industry is no exception. Without adequate capital, entrepreneurs face difficulties in their operations (The Ohio State University South Centres, 2010). Maintaining a rolling capital is important to ensure that they can run their business and, most importantly, sustain their business. In BWCC, entrepreneurs should consider a number of costs in their budget. The pressure on the increasing cost of pellets, cage culture materials, workers' salary, drugs and fingerlings are almost unavoidable. Ahmad Faiz *et al*. (2010) revealed that the pellet price is one of the main problems that impede aquaculture entrepreneurs' success, and the situation may become worse if they do not have enough financial support. Apart from this, entrepreneurs need quality materials such as lumber for constructing cages, quality cage nets and fingerlings; all these place financial demands on the operations. Nevertheless, entrepreneurs can solve such problems if they are able to control the input needed for this business. Financial support in the form of loans or grants can offset the problem related to the lack of capital (The Fish Site, 2011).

Lack of knowledge and information

Knowledge and information are the keys to success. Arguably, knowledge and information are the main key for youth to succeed in the aquaculture industry such as BWCC (Mazur and Curtis, 2008). Without these two elements, difficulties could arise especially in discovering opportunities and becoming aware of the potential of the industry. Sharing of knowledge and information with more experienced entrepreneurs could be one of the main solutions to this problem. The absence of knowledge and knowledge sharing may pose challenges and obstacles for youth as they may have to adopt a trial-and-error method, and this can potentially be very costly. Knowledge and information on

marketing are also essential for success, thus creating a need for business networking. For youth who wish to participate in BWCC, technical and marketing knowledge are critical at the planning and development stage of the enterprise.

Theory vs. practicality. Challenges could arise for youth who want to put into practice aquaculture knowledge and skills in the real world. This is one of the problems that new graduates, in particular may face. For example, graduates in aquaculture and biotechnology may not be ready to apply the knowledge and skills they learned in university to ensure the success of the aquaculture project (Ahmad Faiz *et al*., 2010).

Difficulties in getting loan to expand the business

Bank loans are available for those who are interested in running BWCC. Nonetheless, the process of getting the loan usually involves a lot of bureaucracy, and this could result in difficulties for interested youth; such a situation becomes more challenging if they do not have experience in dealing with such applications (Ahmad Faiz *et al*., 2010). A bank loan is important as it provides financial strength and assists entrepreneurs to shift from the status of sustenance to commercialisation. Due to difficulty in getting a bank loan, their business cannot be insured.

Networking and marketing

As mentioned earlier, youths can expect to encounter these two common problems. They can also expect to meet difficulties in building connections especially in creating cooperation with bigger and established businesses. Gaining confidence among consumers, retailers and wholesalers for their products is another networking challenge. Apart from this, interested youth should have the ability to deal with the middleman who may cut down their profits and, in turn, increase their production costs (Shang, *et al*. 1998).

Challenges from experienced entrepreneurs and big companies

It is difficult for a new player to compete with the seasoned players. One of the problems that youth need to tackle in the early stage of their business is competition from the big "players" and those who have vast experience in this industry (Emerson, 1999). As the products of the "seasoned" and "experienced" are well accepted among consumers, the new "player" should develop sound strategies for winning consumer acceptance and confidence in their products.

Difficulties in finding a suitable location

Finding a suitable location for productive aquaculture production is also an essential factor in this industry (Frankic and Hershner, 2003). An unsuitable location will pose problems related to the early deaths of fingerlings, and this will result in monetary, time and energy loss (Halide *et al*., 2009). An understanding of the water system and the environment is vital. These include a number of factors such as the climate, seasons, water flow, water quality, existing

industries, predators, competitors and thieves.

Other factors

It is important that aquaculture entrepreneurs feel concerned if factories exist in nearby areas. Effluents from factories (toxic waste and chemical contents) pose a threat to fingerlings and fish; disease and early death are among potential threats (Cao *et al*., 2007). Globalisation has its pros and cons. Globalisation creates a wider market for entrepreneurs in the aquaculture industry; it also gives rise to more competition for local entrepreneurs through the entry of foreign products (Gene Barrett *et al*., 2002). For example, operators can now source for fingerlings from other countries, but at the same time, they have to compete with foreign producers who offer competitive prices for the same products.

DISCUSSION

Youth involvement in BWCC offers some advantages for youth and the industry. Apart from this, it provides meaningful year-round employment and a reason for youth to remain in their rural communities. However, to gain such benefits, first, youth have to overcome problems and obstacles. Development agencies can play their role in helping youth overcome such problems. In seeking adequate capitals to start the business, youth may take advantage of the many financial channels prepared by both the government and private agencies. Agro Bank, for example, has programmes that provide loans for interested youth. Fisheries-related agencies such as the Department of Fisheries Malaysia and the Fisheries Development Authority of Malaysia are ever ready to provide financial and technical assistance to youth. The relevant agencies can conduct courses and seminars that can help youth increase their aquaculture knowledge and skills. Besides providing training courses and seminars for them, youth may find it beneficial to embark on joint ventures or cooperation with experienced entrepreneurs and private companies in this industry. A mentorship programme is an effective avenue for experienced entrepreneurs to educate and train interested youth (Ahmad Faiz et. al., 2010).

In Malaysia, marketing agencies such as the Federal Agriculture Marketing Authority (FAMA) have their strengths in seeking a wider and sustainable market, and can offer good assistance to interested youth. FAMA can assist to realise opportunities to enter a bigger market such as the Halal Hub (Halal Market in Malaysia) or hypermarkets such as Mydin, Giant, Tesco and Carrefour. Perhaps these retail channels with better marketing networks can help to realise and control the input price. This, hopefully, will reduce the cost of going through a middleman, which burdens entrepreneurs. Apart from marketing and networking, a positive attitude towards BWCC should exist among interested youth. To run BWCC, it is important to motivate interested youth; they should possess high self-esteem and be independent, dedicated and persistent in developing the aquaculture industry.

CONCLUSION

Data gained from the above analysis revealed that BWCC could offer relatively substantial benefits for youth. Nonetheless, to reap these benefits, a number of problems and obstacles must first be tackled. There are several incentives offered by this industry which directly and indirectly benefit youth and the environment. The main potentials offered by this industry to youth are business opportunities, employment opportunities, the emergence of a rural industry and a sustainable community. It is also environmentally friendly and develops positive values towards the aquaculture industry among youth. Among the possible problems interested youth may encounter are lack of knowledge and information, theory versus practicality, difficulty in securing a loan to expand their business, networking and marketing, challenges from big and experienced companies, difficulty in finding suitable locations and other factors such as control of input and globalisation.

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