DEVELOPMENT ISSUES AND SUGGESTIONS OF MARKETING STRATEGIES FOR THE MALAYSIAN TILAPIA INDUSTRY

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ABSTRACT*: Socio-economic issues are common phenomena faced by less developed and developing countries. As an initiative to alleviate the issues, entrepreneurial activities are mostly chosen by many countries. This paper highlights issues and challenges faced by the tilapia entrepreneurs; and strategies to resolve those issues as part of a study on initiatives designed for poverty eradication among small tilapia entrepreneurs in East coast of Peninsula Malaysia. By means of focus group discussion, data was collected from six government agencies that involved direct and indirectly in aqua-culture industry. Data was analyzed using NVivo; and findings indicate issues related to marketing and logistics were dominating the whole limitation of entrepreneurs' performance. The paper proposes several specific measures to resolve the issues.*

Keywords: tilapia farming, micro entrepreneurs, Malaysia

1. INTRODUCTION

Aquaculture has been identified as one of the critical activities to create economic opportunity and to ensure food security since the Seventh Malaysia Plan (1996-2000). Further impetus was given to enhancing aquaculture development as the third engine of growth in the Eighth Malaysia Plan (2001-2005). The government formulated the first National Agriculture Policy (NAP) in the early 1980's and in the third NAP (1998-2010), to promotion a sustainable aquaculture development where the aim was to increase aquaculture production to 600 000 tons in 2010.

However, there are some issues that limit the initiative towards aquaculture development entrepreneurs. As a first move on a long research journey in developing a mechanism for poverty eradication, this paper highlighting issues and challenges faced by the entrepreneurs; followed by strategies to resolve those issues proposed by several government agencies involved in the study. Malaysian Aquaculture Industry.

2. RESEARCH PHENOMENON

Strategically located in the middle of Southeast Asia, Malaysia becomes an important producer, market and trading nation for fish and fishery products in the region. A good climatic condition and free from natural disaster, the country is very conducive to aquaculture and fishing industry. Malaysia is blessed with abundant fisheries resources that can provide ample supply of raw materials to a wide range of aquaculture business. Due to the fact that aquaculture has become a very lucrative enterprise, there has in the last decades been an increase in the participation researchers in this area. However, there was no data to support this claim.

3. PROBLEM STATEMENT

Aquaculture business in the country has involved many fish farmers and commercial companies, involving several types of production systems. However, it seems that currently available knowledge and experience in aquaculture systems management are not being fully exploited to achieve sustained yield and optimum fish performance. Hatchery operators and fish farmers have used the available tilapia strains without information on their history, background, performance and pedigree information. Improper brood stock management associated with high level of inbreeding has also resulted in a decline in productivity of cultured populations under various commercial settings. Periodically, tilapia brood stocks have also been imported into Malaysia by private hatcheries. Crossbreeding and hybridization are mostly practiced to improve the strains performance. Traits such as growth, survival rate, body conformation and colour are of primary concern in producing new hybrids. Another factor that intense the problem among freshwater entrepreneurs is price control. There was no price control scheme at farm and ex-farm whereby prices depend a lot on supply and demand. Therefore, a properly designed investigation need to be undertaken to detail out what are the main issues and challenges faced by aqua-entrepreneurs and what prevent them from escalating their business growth.

4. MATERIAL AND METHOD

4.1 EVIDENCE FROM PAST RESEARCH

Global aquaculture production (excluding plants) increased from 32.4 million tons in 2000 to 63.6 million tons in 2011, while the contribution of aquaculture to global food fish consumption rose from 33.8 percent to 48.6 percent in the same period. The value of aquaculture production to human nutrition and income is much greater than gross national production. The bulk of production is generated by small-scale activities, with exceedingly high levels of participation not only in catching and farming, but also in processing and marketing. Inland fisheries are often critical to local food security [1]. Aquaculture is one of the fastest growing food production sectors related to other agricultural food production sector in the world [1]. Amongst commercially cultured freshwater species, Nile tilapia (*Oreochromis niloticus*) [2], accounts for 44.7 percent of the total freshwater aquaculture production. In terms of value of production, tilapia contributes 49.37 percent, followed by catfish (37 percent) and carps (10 percent) with red tilapia yield the highest revenue of USD 27 million. The black nile tilapia, which was introduced in the 1950's, did not augur well, due to its colour compared with the red hybrid tilapia.

4.2 METHODOLOGICAL ASPECTS OF THE STUDY

By means of focus group discussion (FGD) data was collected from six government agencies that involved direct and indirectly in aqua-culture industry. The agencies involved

were: Department of Fisheries Malaysia, Fisheries Development Authority of Malaysia (LKIM), Customs and Excise Department and, Kelantan Fisheries Association. Each agency was represented by two representatives except for Kelantan Fisheries Association that was represented by only one representative. The discussion was conducted on 23 September 2016 at a prominent hotel in Kelantan. Data collected was then transcribed and analysed using content analysis. Content analysis involves coding and classifying data, also referred to as categorizing and indexing and the aim of context analysis is to make sense of the data collected and to highlight the important messages, features or findings.

5. RESEARCH FINDINGS

5.1 ISSUE IN AQUACULTURE

Aquaculture expansion requires land. Although more than 400 000 ha of land and inland water bodies have been identified as suitable for aquaculture, competition with other economic activities makes land acquisition very difficult. Since 2004, agriculture, including aquaculture development, has been given top priority by the government to ensure food security and to reduce the food import bill. In order to overcome the land issue, an Aquaculture Industrial Zone (AIZ) was set up as part of the permanent food production zones by the state governments as a measure to ensure that sufficient land is allocated for aquaculture development. In addition, rising production costs, lack of skilled labor, threat of diseases, and food safety and quality of aquaculture produce have become issues which are making aquaculture development difficult.

5.2 MARKETING ISSUES

Based on the FGD, local tilapia products were more expensive compared with price of neighbouring countries especially from Thailand. Referring to informant 1 (PK5):

> "*I want to add, the price of tilapia, normally charged at RTC is expensive. At the RTC usually the fish are ferrying together with other fresh marine products from Thailand, but frozen products are cheaper, around RM4-5 per kilo if purchased in pukal/wholesale but retail price is really higher…" (Saya nak tambah sikitlah, harga ikan talapia ni tadi, yang biasa yang terdapat kat RTC ni memang mahallah kan. Kat RTC situ biasanya dia sampai sekali dengan ikan hidup tu daripada Thailand, itu ikan mati tu, tak tau berapa lama dah matilah, yang beku, tu yang murah sikit, antara harga RM4-5 sekilo, harga boronglah, harga runcit tu memang mahallah sikit.Kalau kita nak tengok, memang hari-harilah masuk. Tapi yang siap packing pun ada. Tak tau macam mana cara dia sebelah sana macam mana dia packing").*

Another informant (PK8) supported the first claim, "I want to touch a bit about price. If we compare price of previous and now, previously it was around RM5-6 perkilo, but now in it reaches RM14 perkilo, indicates shortage of supply. Information collected at the main entrance, we found that the supply of tilapia is not much, I think it might be ferrying-in through illegal back-doors".

> *"Saya nak sentuh berkenaan dengan hargalah. Harga kalau kita compare dengan dulu dan sekarang, dulu dalam RM5-6 sekilo, tapi sekarang ni di pasar pun sampai RM14, itu menunjukkan bahawa kita kekurangan bekalanlah"*

The price is very much depending on quantity of demand that closely tied-up with season and the availability of supply. For example, the price climbs higher when shortage of local supply and it's become more critical during festive seasons when potential customers doubled-up their demand for tilapia. As quoted from informant 3 (PK 4):

> *"I see this (phenomenon) in two situations. First, when less production, the price goes up higher. A situation where this can happen is aqua disease that may claim lives of aqua-culture, sometimes up to 20 percent. Compare with other aqua-lives like patin tilapia is more sensitive and easily affected by contaminated water…)*
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> *(Saya tengok, dia dua keadaanlah. Pertama sekali macam apabila pengeluaran tu rendah memang harga tinggilah, sebagai contoh ikan talapia dia ada satu penyakit yang mungkin Jabatan Perikanan tahu, dia ada penyakit, sekiranya air tu, dia mati, dia mati secara mengejut kadang-kadang sampai 20% berbanding dengan ikan patin, patin dia susah sikit nak mati berbanding dengan ikan talapia, ikan talapia ni walau air dia bermasalah, walaupun air sungai, daripada sisa-sisa kilang memang cepat datang penyakit. Musim tu adalah apabila harga pengeluaran tinggi, harga berbeza daripada harga biasa RM2-3, sebagai contoh la apabila gred purata harga RM13 sekilo menjadi pada RM15 -17. Mungkin saya rasa berdasarkan kepada pengeluaran sendiri bila ikan tak ada harga mungkin akan tinggilah).*

New product and process technologies are required to develop new products which can be sold to consumers at affordable prices. Innovative methods of promotion and distribution may also be needed. Companies could develop localized sales and distribution networks for their products in areas which lack an established marketing infrastructure. In this case product produced by entrepreneurs involved in aquaculture as a part of diversifying goods sold, are limited due to high cost in purchasing raw material. In fact, as compared with other aqua products, tilapia is obviously superior in terms of price.

> "*"As informant 1 (PK 5) emphasized:*
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> *"Producing fish-crackers, based on my experience is very difficult, because the price of tilapia fish is extremely higher than other aqua products.," "(Pembuatan keropok) Mengikut pengalaman saya di situlah, untuk keropok ni saya rasa setakat ni memang susahlah, sebab harga dia tinggi dari ikan-ikan lain. Setakat ni tak ada lagi keropok dari*

ikan talapia tu. Tapi dulu-dulu FAMA ada buat kajian untuk buat keropok, tapi kos tinggi sangatlah. Tak memadai.)"

6. STRATEGIES TO RESOLVE ISSUES IN AQUACULTURE PHENOMENON

The roles of government agencies related to aquaculture are very clear. FAMA (Federation of Agriculture Marketing Authority) for example provides venues to market aqua or even other agro products. There are platforms specially provided such as RTC (Rural Transformasi Center), MAHA and LKIM (Malaysia Fisheries Development Authority) itself not only to market agro and aqua products but also to be involved in exhibition and competition organized by those agencies. Promotion incentives are among strategies initiated by government agencies under LKIM (Agro-based Industry Division) whereby all entrepreneurs are encouraged to consult and seek advice from the agency especially in up-grading and marketing their products. There is a program introduced under Ministry of Agro-based Industry known as Young Agronal Program to cater issues and problem faced by the young entrepreneurs. Among services provided are related to supply of agro input, machineries for processing, packaging, labelling, not limited to tilapia fish products but entended to other marine and/or aqua products.

LKIM has started the newest smart marketing strategy by introducing Smart-Central Strategy (Strategi Pintar Berpusat). The role of marketing aqua product was previously catered by FAMA, and then has taken over by LKIM. The strategy involves the establishment of both collecting centre (CC) and distributing centre (DC). The main centres are located in Kuantan, Pahang and Bangi, Selangor. The centres are also established in Besut, Trengganu and Tok Bali in Kelantan. The plan also will be extended to all fishery ports throughout the Peninsula Malaysia. The main purpose of the initiative is to provide avenues to gather marine as well as freshwater lives. Besides, several fishery markets are provided to market marine lives together with freshwater lives. Recently, some RM200, 000.00 has been allocated to establish a fishery market in Tok Bali.

According to finding of FGD, among services provided by government agency (FAMA) is transportation services. FAMA representatives will go and collect agro and/or aqua products at a farm and for tilapia fish with a price of average RM7.50 per kilogram. Most of the times FAMA will only charge as low as RM0.20 or RM0.50 perkilo to transport the products. The Ministry of Agriculture (MoA) provides grants for entrepreneurs to help provide floating fish-cage to be given to entrepreneurs. There are about 100 cages provided and the entrepreneurs may also rent those fish-cages from the MoA. Apart from that the MoA also lay their hands through providing fish breeds, fish foods, consultancy services up to marketing the products to customers. The establishment of government agencies like LKIM, FAMA and MARDI that deals direct with farmers and entrepreneurs is mainly to provide support in terms of inputs, financial aid and advice to them. The services are also extended to the process of marketing including packaging, labeling and strategies how to market the products.

7. STRATEGIES TO ENHANCE MARKETING OF AQUA PRODUCT

In Kelantan demand for tilapia fish is defeated by other freshwater fish such as catfish that relatively high in demand and low in cost plus easy to be reared. In Pahang what preserves the quality of tilapia fish is the way the fish is reared. The usage of floating net-cage culture in free flow water made fish produced at superior quality. The issue of prohibited antibiotic residues in aquaculture products, particularly shrimp, has caused huge losses when consignments for export found to be contaminated are rejected and destroyed. Recently, environmental and social aspects have also been used as additional criteria, in addition to food safety as a mark for sustainable aquaculture produce. For the export market, products must be processed and packaged in HACCP certified processing plants administered by the Ministry of Health Malaysia, which is the agency responsible for food safety. In addition, products exported to the EU must first obtain an EU number issued by the Ministry of Health. The number must be labelled on every package of the consignment.

8. CONCLUSION

Aquaculture industry has rapidly developed and gradually becoming important economic activities as a means of increasing local production for food security and generating export revenues. The sector has become a central focus in the government's policy programme for 1998-2010. In order to obtain high value of freshwater lives especially tiliapia fish, the right rearing method needs to be acquired. It includes the fish food and nutrition content and what it takes to help produce a good, fresh and high quality product. The challenges within the industry should be well monitored by the entrepreneurs. In order to achieve the larger and much globalized scale in this industry, the government should have a very supportive intervention. Unless all issues and challenges are carefully studied and addressed, the tilapia industry is on the right track to maintain its growth and sustainability.

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