

RECENT EXISTING CONDITION ON SHRIMP CULTURE AT JEPARA COAST, CENTRAL JAVA

Kondisi Budidaya Udang Saat ini di Pantai Jepara, Jawa Tengah

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ABSTRACT

The shrimp culture is collapsing at Jepara coast. Several internal and external reasons have caused this and are needed to be handled seriously. An alternative solution should be conducted and applied without delay. Recent Existing condition of the shrimp culture at Jepara Coast is experiencing a tremendous decline in the last five years. There are four category of internal factors determinant which shows this decline: the development of shrimp culture production, the development of shrimp culture available cultivation area, shrimp culture number of units, and the development of the farmers' internal revenue. The degradation of the shrimp culture at Jepara coast is mainly caused by environmental and managerial reasons. The environment is no longer supporting the shrimp culture at Jepara coast and to overcome this, a relocation or re-zonation should be applied. As alternative solution, to regain the Jepara region's aquaculture potencies, a new species can be introduced and applied. In order to develop new species and to sustain its productivity, the new species should have some characteristics as follows: easy to culture, invulnerable to disease, high market demand, high market price, short cultivation period, low production cost, and able to adapt with unfortunate water quality.

Key words : Shrimp culture condition, Jepara coast

ABSTRAK

Budidaya udang di pantai Jepara mengalami kegagalan. Ada beberapa alasan internal dan eksternal yang menyebabkan hal ini terjadi dan membutuhkan penanganan secara serius. Pemecahan alternatif harus dilakukan dan diaplikasikan tanpa ditunda-tunda lagi. Kondisi budidaya di pantai Jepara yang ada sekarang menunjukkan penurunan secara terus menerus selama lima tahun terakhir. Ada empat kategori dari faktor determinan internal yang menunjukkan penurunan ini yaitu peningkatan produksi budidaya udang, peningkatan penyediaan area untuk budidaya udang, jumlah unit udang yang dibudidayakan, dan perkembangan pendapatan petani tambak. Penurunan budidaya udang di Jepara penyebab utamanya adalah masalah lingkungan dan manajerial. Lingkungan tidak mampu mendukung proses budidaya udang di Pantai Jepara dan untuk menanggulangi ini, perlu diaplikasikan relokasi atau rezonasi. Sebagai alternatif pemecahan, untuk menghidupkan kembali potensi budidaya di Jepara, perlu dikenalkan dan diterapkan budidaya dengan spesies baru. Dalam upaya mengembangkan spesies baru dan mempertahankan produktivitas yang berkelanjutan, spesies baru tersebut sebaiknya memiliki beberapa karakteristik antara lain; mudah dibudidayakan, tidak mudah diserang penyakit, mempunyai permintaan pasar yang tinggi, harga pasar yang tinggi, waktu pembudidayaan yang singkat, biaya produksi yang rendah dan mudah beradaptasi dengan kualitas air rendah.

Kata kunci : kondisi budidaya udang, pantai Jepara.

Shrimp Culture (T Elfitasari)

INTRODUCTION

Aquaculture activities in Central Java are mainly found with variation on species cultured. However, along the coastal area, a vast region of brackish water ponds can be found at Jepara Region. According to Subiyanto (1997), farmers use several different kinds of management systems and techniques depending on their socio-economics background. Species found cultured in the ponds are usually *Chanos chanos*, *Penaeus monodon*, and *Penaeus semisulcatus*.

The shrimp culture started to develop increasingly during the 1970s (Subiyanto, 1997). This happened due to the world's high demand of shrimp. Many investors were encouraged to invest shrimp culture and the business was booming rapidly at most Coastal areas of Central Java, including Jepara region.

Expansion on shrimp culture has made some mangrove forest being removed to be converted into shrimp ponds. In addition, many small traditional milkfish farmers, with lack of knowledge and technology, also tried to improve their income by converting into shrimp farmers. This was also explained by Hutabarat (1997) that the high value of shrimp as export commodity, central java province has been prioritizing shrimp culture development throughout the region. This was also supported by the availability of 23.800 ha of brackish water pond provided for shrimp culture.

Unfortunately, the increasing production was not accompanied with a controlled environmental sustainability system. This has further caused some

constraint explained by Hutabarat (1997) as the lack of husbandry management control. This refers to environmental and managerial components, such as food and feeding practices, environmental rearing condition, water quality control, stocking density, parasites and diseases control, and over-use of the ecosystem.

Recent Existing Condition of Shrimp Culture

The result of data statistics taken from Fisheries Bureau in Jepara Region, the determinant factors are divided into four categories i.e. development of shrimp culture production, development of shrimp culture available cultivation area, shrimp culture number of units, and development of shrimp farmers internal revenue. These determinant factors are internal factors taken by the Fisheries Bureau from the shrimp farmers in Jepara Region. All datas are taken from year 2000 until 2004 (Table 1). Datas converted into graphics (Figure 1.) shows a more apparent description of the decline in all determinant factors.

The four determining factors: shrimp production, available cultivation area, number of units and farmer's revenue shows a decline in the last five years.

The shrimp production is declining assuming to be the result from some internal and external factors as describe by Hutabarat (1997). One of the key problem in shrimp culture units was described by Hutabarat (1997) as the limited water exchange rate (only 10-20% per day), which resulted in the accumulation and decomposition of waste product on bottom of shrimp ponds.

Hutabarat (1997) further discussed that this caused problems in the water quality such as the increasing level of ammonia-N and nitrite-N in the system. This condition is very vulnerable in adopting bacterial and viral diseases. The decreasing soil and water quality has major effect on the production outcome which then followed by decreasing number of units and available cultivation area. Furthermore, this has finally affect the revenue of the shrimp farmers.

Shrimp culture management such as food and feeding practice, and stocking densities plays an important role in the survival and growth performance (Hutabarat, 1997). The effect of internal and external factors are described by Hutabarat (1997) through the diagram in Figure 2.

Diagram in Figure 1 shows that both internal and external factors contribute to the degradation of the shrimp pond ecosystem. The environmental condition was not well controlled. In fact control of water quality was not applied. Besides the limited water exchange (only 10-20%) as previously described, the water temperature and salinity was not controlled and only follow the incoming sea water. Therefore, resulted in the fluctuation of water temperature and salinity of the shrimp ponds according to the condition of incoming seawater. This contributed to the degree of success of the shrimp culture industry.

Alternative Solution

In order to regain the region's aquaculture potencies, an alternative solution to replace the shrimp culture, should immediately be applied.

Especially due to the condition that the environment of the shrimp culture ecosystem is already over-used. Some solution was stated by expert in aquaculture such as law enforcement of the shrimp culture regulation, maintenance in water quality, standardization of rearing technique etc. However, there should also be a solution to overcome the problem which arises in the shrimp farmers community which has not been thoroughly discussed. The degradation of the soil and water quality, have farmers no longer be able to utilize their facilities to culture shrimp. This was stated by Hutabarat (1997) that as a solution to the decreasing of carrying capacity of the ecosystem, relocation (zonation) of shrimp culture operation should be applied from dense area to others. However, relocation the shrimp units will only solve problem for the shrimp culture activities itself but does not solve problem for the farmers community (low internal revenue, low production etc.). Therefore, to overcome this problem, another alternative solution should be considered. Other possible alternative solution to regain the regional aquaculture potencies and improve farmers revenue, is to replace shrimp culture with other species which is more effective, efficient, and supported by adequate environmental condition. An empowerment activities for the shrimp farmers to enhance their revenue and to regain the region aquaculture potencies should be applied by the local government. This activities will include introduction of new species, and also enforce farmers with husbandry management to support their aquaculture entrepreneurial activities. To implement

Shrimp Culture (T Elfitasari)

this empowerment activities and empowerment plan is designed to be conducted at the designated region. The empowerment plan is designed to be able to support and direct the pathway of the

entire activity. This plan is also expected to create powerful farmer community in Jepara Region through aquaculture activities.

Table 1. Development of shrimp culture determinant factors (2000-2004)

Determinant Factors	2000	2001	2002	2003	2004
Production (tons)	2.569	2.268	2.136	1.841	1.853
Cultivation Area (ha)	1.222	1.222	1.222	1.077	1.077
Unit Number (units)	28	31	15	9	2
Revenue (Rp)	9.343.600	8.325.115	6.845.045	5.965.525	4.790.700

Source: Fisheries Bureau Jepara Region 2000-2004

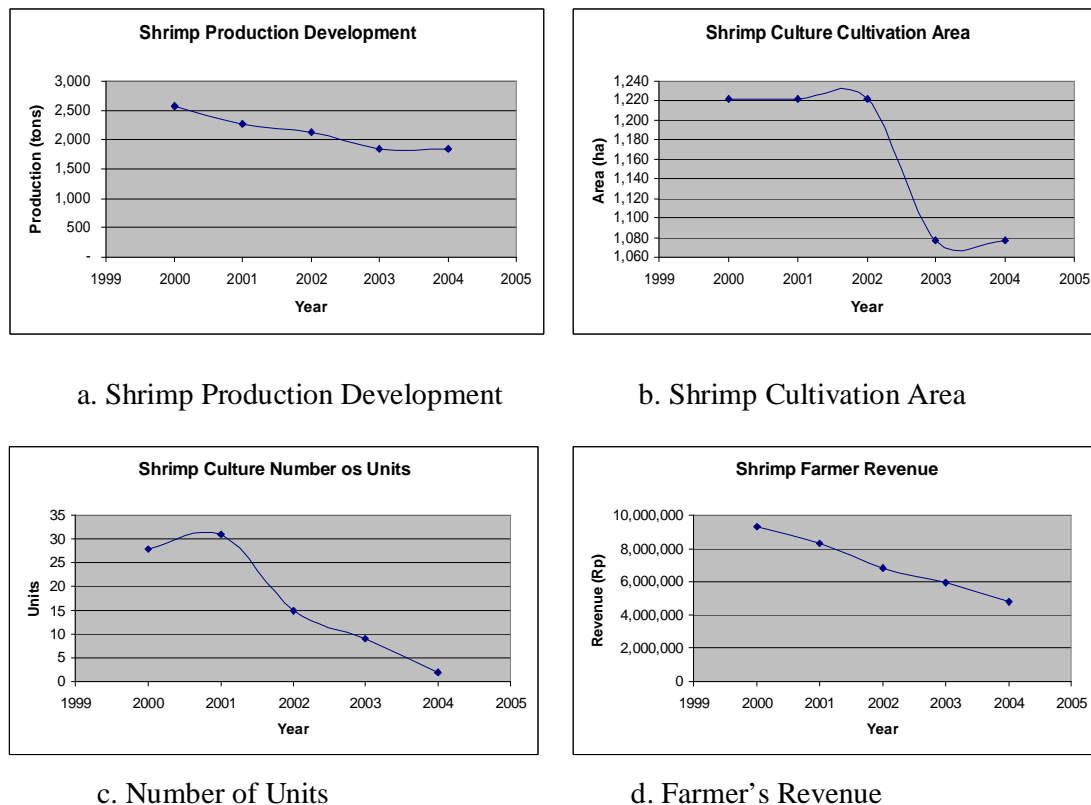


Figure 1. Development from 2000-2004 in these following factors (Source: Jepara Region Fisheries Bureau 2000-2004)

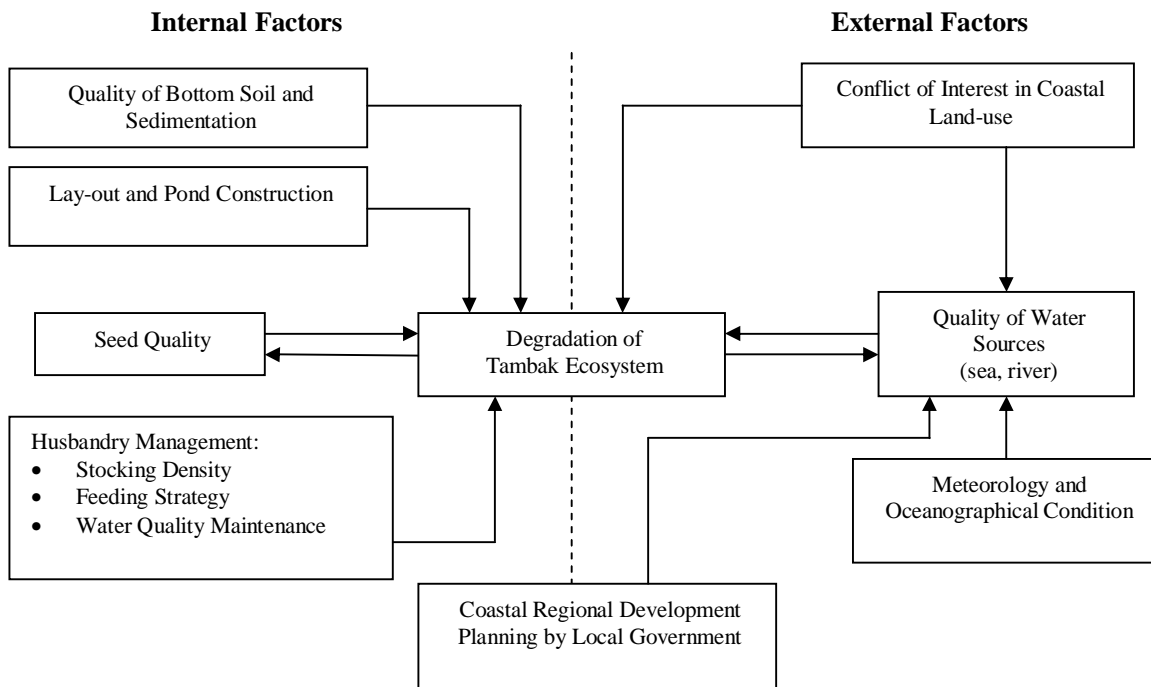


Figure 2. Effect of internal and external factors on degradation of Tambak Ecosystem (Source: Hutabarat, 1997)

The existing condition of shrimp farmers in Jepara region is currently categorized as powerless. This is determined by some factors (internal and external) which was previously described. Internal determining factors were taken from the Fisheries Bureau of Jepara Region (Table 1 and Figure 1). Conversely, external determining factors was taken from the diagram of the Tambak Degradation Diagram shown in Figure 1. In order to achieve powerful condition of shrimp farmer as output, an empowerment process through introduction and implementation of new species should be applied. To facilitate the farmers in the new species aquaculture implementation, the chosen species to be introduced should possess the following characteristics:

1) *Easy to Culture*

The species should be easy to culture, therefore, farmers with low education background should be able to apply and implement the new aquaculture production system. This refer to the entire production management system which includes breeding, growing, feeding, water quality control, pest and disease control etc.

2) *Invulnerable to Disease*

The chosen species should have high resistance towards disease and parasites. This elucidate to the condition that the species should be able to cope with possible pest and disease introduction in their environment. This is to anticipate difficult handling by farmers if they are faced with disease outbreak and threaten the cultivation final result.

Shrimp Culture (T Elfitasari)

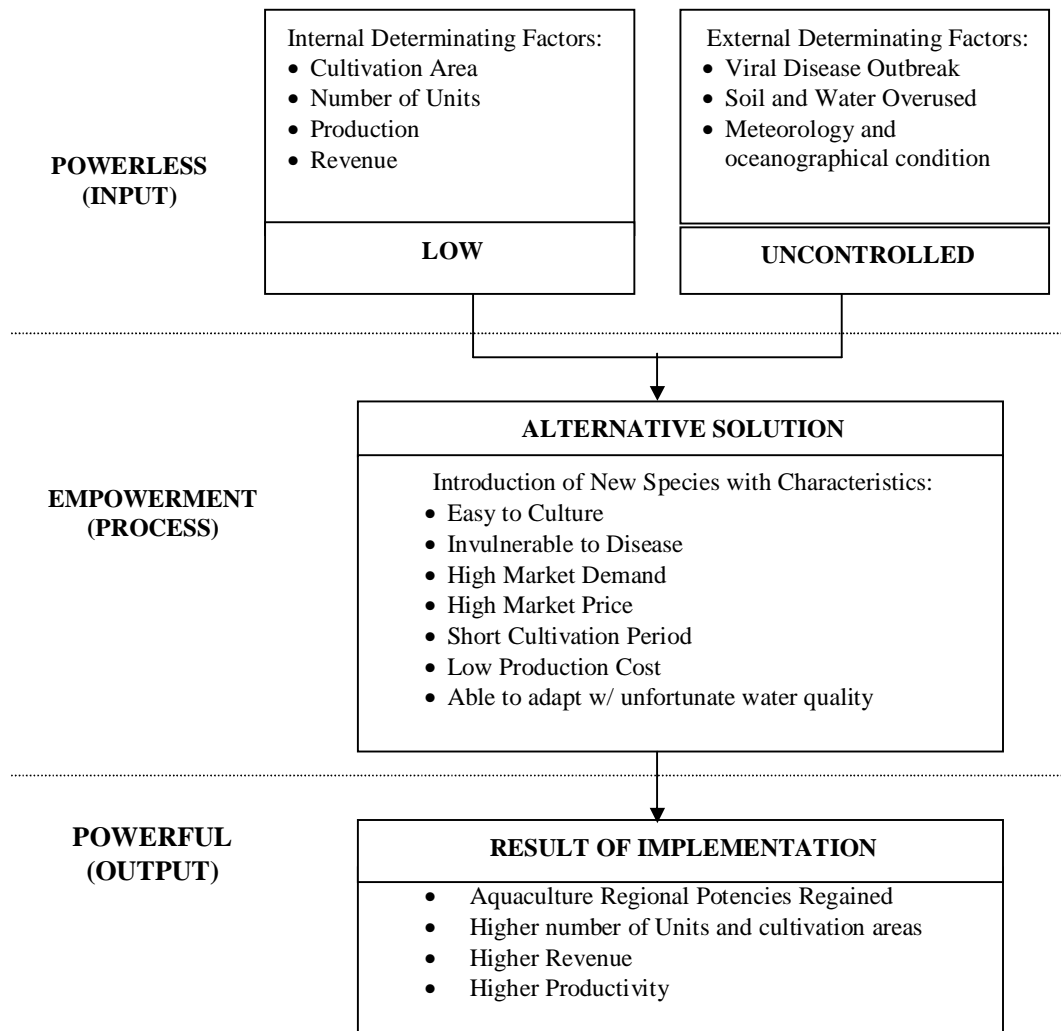


Figure 3. Empowerment diagram plan for shrimp farmers at Jepara Region (Elfitasari, 2005)

3) *High Market Demand*

Culturing species with high market demand will be highly profitable from the business point of view. Therefore, the new species should have high market demand to support farmers to market their product. Markets should not only limit locally, but also nationally and internationally as export commodity.

4) *High Market Price*

A species with high market price will become an equal replacement for the shrimp culture since shrimp has high market price and have been considered as main export commodity of central java. Thus, this will definitely improve the farmers revenue if it is succeededly applied.

5) *Short Cultivation Period*

Species with short cultivation period will help farmers to turn over their capital investment much faster and farmers are able to improve their revenue much faster.

6) *Low Production Cost*

The chosen species should have low production cost in order to reduce and minimize fixed cost and operational cost. This hopefully can minimize cost to gain higher profit.

7) *Able to Adapt with Unfortunate Water Condition*

This refers to the condition that the soil and water quality is no longer supporting shrimp culture. To utilize the current available tools such as ponds, blower, etc.; a strategy to choose the right species should be carefully conducted. For example if the sea water quality is no longer supporting, other option should be considered such as culturing freshwater species instead of seawater species. However, other above characteristics should still possess within the species.

The expectation of the empowerment plan is to achieve a powerful farmer community in Jepara Region through aquaculture activities. The determination target of this output will be in these following factors:

1) *Regained Regional Aquaculture Potencies*

The empowerment plan can be designated as successful implementation, once Jepara Region, through the aquaculture empowerment plan, is again be

recalled as producer of a certain aquaculture export commodity product and has also proven to improve the region farmers revenue.

2) *Higher number of Units and Cultivation Area*

Other determination of successful empowerment plan is through the increasingly higher number of units being developed in the area. Usually is a certain area have possessed a successful aquaculture production system, other nearby area will try and follow its success. This condition will automatically followed by a wider cultivation area within the region.

3) *Higher Productivity and Revenue*

The developing culture of the new species by addition of units and cultivation area will also followed by higher productivity and will therefore, result in higher revenue of the farmers.

The empowerment plan is only one of several solutions to improve the aquaculture condition in Jepara Region. In accordance, the empowerment plan, should therefore, be tested through implementation in order to observe the possible result and development of the determination target output. The related regional government should conduct this activity and follow up periodically to ensure the progress is conducted as appropriately planned.

In conclusion, the powerless existing condition of the shrimp culture in Jepara Region should be handled carefully and immediately. One of the possible solutions to regain the aquaculture potencies of the region would be

Shrimp Culture (T Elfitasari)

introduction and implementation of new species to replace shrimp culture. To conduct this activity and empowerment plan is designed to support and direct the process and output of the entire aquaculture empowerment activity.

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