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SURVIVAL STRATEGIES OF DUCK FARMER'S ON FEED CRISIS (Case of duck farmers in Central Java north coast area)

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ABSTRACT

Feed and nutrition content have been constantly highlighted as the most determinant factors of duck farming productivity. This particular issue was being major subject of this research, i.e. supply systems, quantities and prices fluctuations, and farmers' survival of strategies to manage the impacts of feed price hiking and the scarcity of the main feed component incidents. Analysis data covered panel system of duck feed and egg price in 2004-2005 and farmers' standard interviewed in January 2006. Feed was the major of inputs duck farming. It covered around 72, 7% of the total expenses. Duck feed composition in northern coast of Central Java consisted of *ikan rucah* (fishing by catch), *nasi aking* (dried rice), *bekatul* (rice mill by product), *ece* (small snail in river and wet land), and concentrate mill. Duck productivity mainly depended on *ikan rucah* since it was the main source of protein. The problem arised since *ikan rucah* was the most unstable from the supply and the price aspects. *Ikan rucah* supply depended on seasonal and fluctuate catch-fish production. In lean season, *ikan rucah* was scarcity and the price increased sharply. In contrast, the price of duck egg did not instantly follow the increasing of cost production. To be surviving, farmers changed the feed composition trhough the additional of capital needed borrowed to the trader. Farmers faced potential loss in both strategies. The declining egg production due to lower feed quality inherent with the first strategy, while the potential loss in the second strategy rooted on the high interest rate of the loan. The study implies the urge development of alternative source of feed and newly promising feed formula to improve duck farmers performance.

Key Words: Ducks Farming, Feed Crisis, Survival Strategies

INTRODUCTION

Central Java north coast area, mainly Brebes, Tegal, and Pemalang are duck farming centers of Central Java province. The basis of the farming is potentially feed resources, i.e., *ikan rucah* (fishing by catch), *nasi aking* (dried rice), *bekatul* (rice mill by product), *ece* (small snail in river and wet land). Tegal Ducks is the strain of the cultivated waterfowl in those areas. This strain is a generation of Indian Runner ducks (Sarengat, 1990). The ducks are closed family of Khaki Campeli ducks. Chavez and Lasmini (1978) reported that Tegal ducks have potential eggs production around 82%. Nevertheless, a production evaluation of Tegal ducks in 2003 showed that the current production in farmers level is under the potency, i.e., around 53.85 $\pm$ 7.01% (Sarjana, et. all. 2004). This

condition has been ever reported by Setioko *et al.* (1994) and Subiharta *et al.* (2001). They reported that the present production of major Tegal ducks was fewer than 65%.

Subiharta *et al.* (2001) assumed that the low production was caused by the genetic potency degradation. Hardjosworo *et al.*, 2001, Srigandono and Sunarti, 2001 suggest to improve the productivity performance by applying selection technology. On the way to the references, Subiharta *et al.* (2003) carried out an assessment of the selection technology application. This research successfully found out a group of elite breeds, which had a good productivity. The selected ducks productivity was 20% over the on going farmers achievement.

The different sides of hypothesis was the limited of feed and nutrition content encourage the low productivity. This scheme based on the assumption that the critical factor of intensive cultivation system was farmer's accessibility to feed resources. Both the hiking prices and supply scarcity of feed material influence the amount of feed, formulas, and as well as its nutrition content. Subiharta *et al.* (1999) reported that the nutrition content of ducks fed in intensive cultivation system was fluctuate. Consequently, those decisions encourage the ducks productivity.

The trend of feed material prices was not generally in line with the egg price trend. The increasing of feed material prices was not automatically followed by increasing of egg price. The price hiking and scarcity of feed material supply, as called feed crisis caused a number of farmers stopped their business. Nevertheless, there were some farmers survive and continue their business. This study concerned to find out the explanation of farmer's strategies to manage impacts of those feed crisis, why the a number of farmers finally stoped their business, as well as why the others succeed to eliminate the crisis impacts.

MATERIALS AND METHODS

Data of weekly input-output prices collected in period of July 2004 to August 2006 by panel system. The panelists were koordinatored to the local ducks farmers groups in sub distric of Brebes, called Maju Jaya and Sumber Pangan. Input prices consisted of feed material prices, day old duck prices, and salaries, while output prices consisted of eggs and ducks prices. Details on feed material supply system, feed formulas and its dynamic, and strategies on managing the impacts of feed crisis were collected by standardized interview to duck farmers. The number of respondents was 32 farmers, randomly selected from the local farmer's group members. The data compiled were analyzed by tabular and graphical presentation for describe the farmers frame strategies to manage the impacts of feed crisis and sustain their business.

RESULTS AND DISCUSSION

Farmers characteristics and their business

Most of farmers (48.28%) have low formal education, i.e., under elementary school. Their skills on ducks cultivation were developed from generation to generation, and improved by a bunch of empirical experiences. Most of them (44.83%) have 5-10 years

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experience on cultivation of ducks. Their family income source was generally hanging on the ducks cultivation only.

Table 1. Formal education of ducks farmers in Sub District of Brebes

Education level	Precentage
Less than elementery school	48,28%
Elementary school	20,69%
Secondary school	17,24%
High school	10,34%
University	3,45%

N=29 farmers

Table 2. Ducks cultivation experiences of farmers

Experiences periods	Precentage
< 5 years	20,69%
5 - 10 years	44,83%
10 - 15 years	3,45%
15 - 20 years	6,90%
> 20 years	24,14%

N=29 farmers

Table 3. Type of farmer's occupation besides ducks cultivation

Type of acupations	Precentages
No other ocupation	58,62%
Croping	6,90%
Part timer worker	20,69%
Oficer	3,45%
Others	10,34%

N=29 farmers

Table 4. The scale of cultivation

Description	Number of adult ducks
Average	370
Maximum	720
Minimum	200
STDEV	158

N=29 farmers

Due to the sense of belonging and responsibility to support their family life then all family members generally awared to participate in this household business

The ducks cultivation scale was 370 (±158) of adult ducks in average. Most of them (93,3%) have cultivation scale of about 200 to 720 adult ducks for each. Some farmers have cultivation scale highly over the others (up to 1000 of adult ducks). Need of breeds, both for increase the cultivation scale and regenerate of ducks stocks generally complied with launching from breeding farms which setle in around of local district. Most of farmers

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(47%) prefer to buy young ducks (*bayah)*, while the others tend to buy day old ducks / DOD (30%) or combination of *bayah* and *DOD* (23%). Basically reason of the first group decision is the lack of time to grow the DOD. While the second and third group assumed that they can look for the best breeds by self selected of *DOD.*

Farmers generally apply intensive cultivation system along production phase, where the ducks are stabled along the day on specific area (stables area), i.e., bank areas or rice field sites. The size of stables are about 40 – 600 m^2, depend on the number of ducks for cultivation. In period of January to July, mainly young ducks owners, shepherd their ducks in harvested low land rice areas. Farmers can find those areas in local regency areas and outsides of local regency areas, for instance, Tegal, Pemalang, Pekalongan, Cirebon, Karawang, Indramayu, and Cikampek. For the farmers group, DOD to 40 days old ducks was reased by stabled system, and due to get cost reduction, they shepherd the 40 days old ducks in to pastures areas. Moreover, in the production phase (6 to 24 months old ducks), the ducks were cultivated by stabled system. The ducks generally will be regenerated at 2 to 2.5 years old, or after their production are less than 40%.

Feed and its management

The main feed material for ducks cultivation in Brebes are *ikan rucah* (fishing by catch), *nasi aking* (dried rice), *bekatul* (rice mill by product), *ece* (small snail in river and wet land), fillet by product, and concentrate mill. For get the ikan rucah and fillet by products, farmers mention to arrange collective purchasing among 10 farmers. Each farmer gave a cash contribution for rent a car, and than gather the *ikan rucah* in fish landing places or fillet by product in fillet fish processing units. *Nasi aking* (dried rice), *bekatul* (rice mill by product), and fabricant concentrate are generally supplied by eggs traders, both by cash transaction or credit system. For the credit system, farmers paid their credit by eggs barter with price compensation of Rp.25 – 50 for each egg. The *ece* was generally supplied by collectors who comes and sale their product at stable areas.

The feeds formula differently for each farmer, and tend to periodically changes. The various among farmers are influenced by technical consideration, which has been found by farmers from their self-working experiences. The composes change generally caused by some factors, for instance, fluctuation of feed prices material, lack of feed material supply, farmers cash condition, and of course the farmers technical consideration. Picture 1 showed the trend of monthly feed materials prices. The price of ***ikan rucah*** (fishing by catch) was the most unstable one. The feed composition changed was taken place at a time in a year minimal, here was in wet season. As the role of farmers self-technical consideration, there will be many new composes for each season. For example, along the wet season some farmers prefer to increase the allocation of nasi aking, while the others decrease the allocation of nasi aking. The changes, which commonly done by the whole farmers are the allocation patterns of dried rice and fishing by catch. Along the wet season, there are low quality and scarcity of those materials supply. On that situation, farmers decide to reduce the allocation of those feed materials, and then substituted by adding the allocation of dried rice, and ece, and or fillet by products, and or fabricant concentrate.

Normally those feed management survive farmers business. Nevertheless, on the situation where the feed material prices extremely increase, just like on the period of

December 2005 to April 2006, more strategies must be done to eliminate the wrong impact of that situation, and sustain the business. Table 6 and Table 7 show the impacts of feed materials price hiking to the some indicators of ducks cultivation performance on two farmers groups. Those feed materials price hiking caused a number of farmers tend to stop their ducks cultivation business.

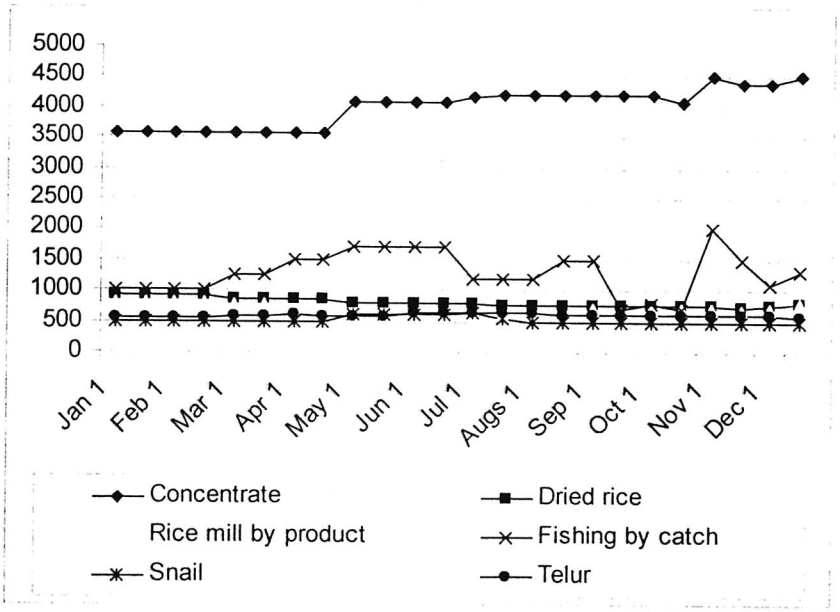

Table 5. The seasonally pattern of feed composition changes

Feed materials	Pattern-1		Pattern-2		Pattern-3		Pattern-4	
	Dry season	Wet season	Dry season	Wet season	Dry season	Wet season	Dry season	Wet season
Fabricant concentrate	0	0	0	3	0	0	3	0
Dried rice	25	42	27	33	40	60	67	33
Rice mill by product	125	108	90	100	70	50	133	100
Corn mill	0	0	0	0	0	0	0	33
Fishing by catch	83	0	80	67	100	100	100	100
Ece / small snail	25	42	0	0	25	0	33	0
Mineral	0	0	2	2	0	0	0	0
Productivity decrease		± 20%		± 7,5%		± 15%		± 15%

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Table 6. The impacts of feed crisis to the some business performance indicators of Sumber Pangan ducks farmers group, Village of Gondo Suli, District of Brebes, Brebes regency

Descriptions	Before November 2005	December 2005 to April 2006	Mei to August 2006
Number of members (farmers)	40	40	40
Number of members who actively manage ducks cultivation (farmers)	40	20	20
Total population of duck layers on local farmers group (adult ducks)	23.550	11.700	11.700
The prices of feed materials (Rp / Kg):			
- Rice mill by product	600-750	1000-1200	600-850
- Fishing by catch or fillet by product	400-500	900-1000	600-700
- Dried rice	750-900	1400-1500	900-1000
The price of eggs (Rp / Kg)	600	600	675-725
Productivity (%)	45-50	50-60	60-65

Table 7. The impacts of feed crisis to the some business performance indicators of Maju Jaya ducks farmers group, Village of Limbangan Wetan, District of Brebes, Brebes regency

Descriptions	< Before November 2005	December 2005 to April 2006	Mei to August 2006
Number of members (farmers)	50	50	50
Number of members who actively manage ducks cultivation (farmers)	50	30	30
Total population of duck layers on local farmers group (adult ducks)	35.600	19.300	19.300
The prices of feed materials (Rp / Kg):			
- Rice mill by product	600-750	1000-1200	650-850
- Fishing by catch or fillet by product	400-500	900-1000	600-700
- Dried rice	750-900	1400-1500	900-1000
The price of eggs (Rp / Kg)	600	600	675-725
Productivity (%)	50-55	55-60	60-70

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Table 8. The financial performance of ducks cultivation

Indicators	Number of ducks (adult ducks)	Average Revenue (Rp/Egg)	Average Cost (Rp/ Egg)	Total Revenue – Total Cost Ratio
Average	376	118	457	1.45
Max	720	331	784	2.33
Min	200	-184	258	0.80
Stdev	153	147	148	0.48
CV	76.39	-80.32	57.38	59.44

N=29

The whole farmers who stopped their ducks cultivation business were the farmers who had any other alternative job or business. The farmers who successful sustained their ducks ultivation business generally had the single source of income only. To survive from that crisis, they did some strategies, i.e. :

Shepherd the ducks. The increasing of the feed material prices was on time of paddy harvesting season (December – April), where there were a lot of harvested low land rice areas, which commonly used to be the ducks shepherding place. The shepherding can hold by both the ducks farmer owners and a shepherd, who looks for that professional fee. The cost of shepherding is about Rp. 300.000 to Rp. 400.000 for a month for 300 to 500 of ducks. The risk of that cultivation system is the decreasing of productivity achievement, i.e., around 40% of ducks population. Nevertheless, this cultivation system seem being the profitable strategy to pass the crisis, further more for low capital farmers.

Changing the composition of feed to find out the cheapest formula from the available materials. Farmers commonly do this strategy to enhance the impact of prices increasing and scarcity of feed materials along the wet season.

Stocking feed materials by credit to eggs intermediaries. This was also the common strategy which farmers done. On the wet season, eggs traders, both by cash transaction or credit system, generally supplied dried rice, rice mill by product, and fabricant concentrate. For the credit system, farmers paid their credit by eggs barter with price compensation of Rp. 25 – 50 for each egg.

Replacement unproductive ducks. This strategy done by selected the unproductive ducks, and then exchange with the productive one.

Combinations of more than one strategy. There are no a best strategy, farmers usually done combinations strategy.

Table 8 showed the financial performance of the ducks cultivation. According to the value of total revenue: total cost ratio, there were indication that despite the low technically productivity, the whole of ducks farms were going on healthy financial. A number of farms (15.38%) get loses, both caused of low productivity and inefficiently of production factors allocation. High determinant on average revenue and average cost indicated the high gap on technology application among the farmers. Those technology gaps influenced the business performances. These results imply the importance of technology improvement inevitable to increase the Tegal ducks farming performances.

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CONCLUSION

Duck feed composition in northern coast of Central Java consists of fishing by catch, dried rice, rice mill by product, small snail in river and wet land, and fabricant concentrate mill. Duck productivity mainly depends on fishing by catch since it is being the main source of protein. The problem arises since the fishing by catch supply depend on seasonal and fluctuate catch-fish production. In lean season, scarcity of the fishing by catch caused the sharp price increase. In contrast, the price of duck egg did not instantly follow the increasing of cost production. Farmers do some strategies to eliminate the impacts of feed crisis, i.e., shepherd the ducks, changing the composition of feed to find out the cheapest formula from the available materials, stocking feed materials by credit to eggs intermediaries, replacement unproductive ducks with the productive one, and combinations of more than one strategy. The study implies the urge development of alternative source of feed and newly promising feed formula to improve duck farmers performance.

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