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## Analysis on Characteristics of Three Dairy Cooperatives Sampled in East Java

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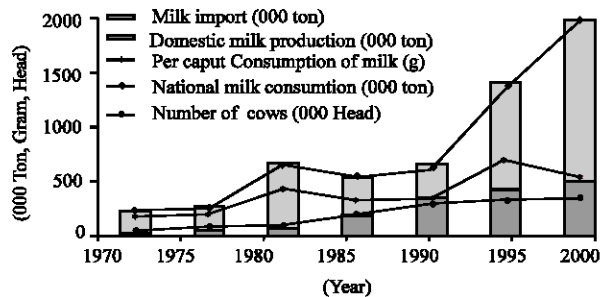
**Abstract:** This research attempts to analyze the characteristic of Indonesian's dairy cooperative and its performance. The study revealed that, all dairy cooperatives sampled facilitates and gives opportunities to farmers to carry on their small business unit and to improve. They attempt to develop the smallholding dairy farms into economically successful enterprises. It was found that the source of the increasing of cooperative's capital and the total milk produced in this study is neither farmer's productivity larger nor cooperative operational unit working efficiently, other than due to the influence of increasing the number of farmer and the dairy cattle. Theoretically, the success of the increasing of capital for the productive investment will afford an upcoming advantageous for the members in the form of better supports and services. However, this study has not yet found a significant correlation between the success in performance of the cooperative and the improvement of farmer's dairy enterprises.

**Key words:** Dairy cooperative, dairy production, smallholders, East Java

### INTRODUCTION

Smallholders in developing countries have few opportunities to increase their income because of limited access to land and capital. Dairy production enables the poor to earn income from animals grazing on common property pastures or fed with household waste. Dairy production offers one of the few rapidly growing markets that poor, rural people can join even if they lack substantial amounts of land, training and capital. Evidence from studies and a pattern from developing countries show that the poor earn a higher share of their income from livestock than do the wealthy (Kuntoro and Shiratake, 2005; UNESCAP-CAPSA, 2005).

The dairy industry in Indonesia is a sector that has large markets (Beghin, 2005). In addition, it has potential to improve the welfare of dairy farmers likely to solve the seasonal incomes problem of farmers in the rural areas. Nevertheless, production of domestic milk has not increased very much in recent years and the level of production is insufficient to satisfy the fast growing demand for this commodity. In 2000, domestic production is still below 20% of the national requirements (Fig. 1). At the moments, around 90% of Indonesian fresh milk production comes from smallholder dairy farms which characterized by its small scale and household nature. Most dairy farms use conventional management practices. Therefore, productivity levels are still very low and fluctuate. In these circumstances, it is seem that the existent of dairy cooperative become significant to



Source: DGLS (2001) and GKSI East Java (2002)

Fig. 1: Indonesia Dairy Industry Circumstances 1970-2001

support the farmers to improve (Uotila and Dhanapala, 1994; Riethmuller, 1999; Yusda *et al.*, 1999).

Actually, dairy cooperatives are among the type of successful agricultural cooperatives organized in Indonesia. The dairy cooperatives have been an important part of the industry in this area. They have played very significant role in the procurement, processing and marketing of milk and dairy products, as well as representing farmers politically at both the local and national level. A huge amount of money has been spent on the creation of infrastructure and provision of facilities for the cooperative dairies (GKSI, 1996, Uotila and Dhanapala, 1994). In March 1979, GKSI (Union of Indonesian Dairy Cooperatives) was established. Most of the dairy cooperatives in East Java are members of the Union. Under GKSI East Java Region, in 2001, there were 49 village cooperative milk unit/dairy cooperatives which

cover 33 thousand dairy farmers and 125 thousand dairy cattle that produce 515 ton milk per day (DGLS, 2001; GKSI East Java, 2002). The role of dairy cooperatives in Indonesia is very important as a way to develop the cooperative entrepreneurship. While farmers' cooperatives of various types play a useful role in promoting rural development, dairy cooperatives have special attributes that make them particularly suitable. Among these, they can facilitate the development of remote rural economies, thus upgrading the standard of living of the poor (Brandenburg and Sukobagyo, 2002; Kuntoro and Shiratake, 2005).

The objective of this study is to investigate the role of the dairy production in improving farmer's level of livelihood in general. Focus analyses of this study is to describe the characteristic of Indonesian's dairy cooperative and its performance. This paper attempts to illustrate and examine whether the organization performance influences success of their farmers dairy business or not. The basis analyses were using variation on cooperative size, total milk produces and its organization aspects.

**MATERIALS AND METHODS**

Location of study was in East Java Province, where the dairy industry is concentrated. In year 2000, more than thirty-three-thousand households otherwise 40.8% of Indonesian households with dairy cattle were on this area. This is the province in the country that had the highest number of cattle since the start of this decade (Table 1). The survey was conducted during August 2003 and it was selected three representative sampled of dairy cooperatives in the location of study.

In this study, the cooperatives were selected base on the scale of the organization size namely; Setia Kawan (SK) dairy cooperative which is located in Nongkojajar district during Pasuruan regency represented the large scale of cooperative. Dadio Ayeming Urip (DAU) dairy cooperative sited in Dau district during Malang regency represented the medium scale. Whereas the small type represented by Jaya Abadi (JA) dairy cooperative located in Sanan Kulon district during Blitar regency. To identify the performance of dairy farms inside the cooperatives, 20 dairy farmers randomly selected in each dairy cooperative sampled. The dairy farmer's data were collected by

conducted structured interview and filled out the prepared questionnaire of 60 respondents in total. The survey also interviewed the managers/officials of the dairy cooperatives. The information of farmers, cooperatives profile, annual reports and other documents were collect to obtained selective information regarding performance of the organization, characteristic of farmers as well as cooperatives development.

**RESULTS OF STUDY**

**Figure of cooperatives sampled:** The cooperatives sampled on this study were established varies from 1978 (SK) to 1995 (JA). Likewise, the total members range from the largest one of SK which has 5,901 members to the small one of JA which has just 397 members. Moreover, it is noticed that SK is large scale cooperative type with low milk productivity of farm and cattle. On the other hand, JA is small size of cooperative type with high productivity of farm and cattle, whereas DAU is the medium one (Table 2).

Those cooperatives sampled are like a common cooperative model in Indonesia. They have almost the same function, organization management and structure. Whereas the general meeting is the highest hierarchy inside the organization and the chairman delegated mandate to the manager as a professional executive to control the business unit. The distribution of staffs regarding job are depends on the variation of activities and business unit belong to the cooperatives. Most of the workers in all cooperative cases engage with milk collecting activity otherwise delivery of milk to the contracted milk processor or administrative jobs. However, the entire cooperatives sampled also given a significant intention to livestock husbandry activities such as veterinarian as well as feed stock and supplies. In DAU, milk processing unit also seemingly become a priority of the cooperative business regarding the total number of employees involved in this study.

To get an idea of how the profits of the dairy business unit fit in with the total profits of the cooperatives, it is necessary to have details information of all dairy cooperatives enterprises. Table 3 shows in detail the portion of the profits of each business unit and how the distribution of it. The survey was revealed that the cooperatives sampled operate more than two businesses. Furthermore, the profits gained by the fresh milk marketing unit is the greatest ones range by 53.26 to 85.08% in share, conversely, profits of other units are relatively small. In DAU, it is followed by milk processing

Table 1: Number of dairy farm of Indonesia and East Java province

Year	1963	1973	1983	1993	2000
Indonesia (Household)	56600	31438	64663	98000	80931
East Java (Household)	12391	10519	25748	39000	33031
East Java Share (%)	21.9	33.5	39.8	39.8	40.8

Source: DGLS (2001) and GKSI (1996)

Table 2: Initial information of dairy cooperatives sampled

Characteristic	Dairy cooperative		
	SK	JA	DAU
Established (year)	1978	1995	1980
Dairy farmers in 2002 (people)	5,901	397	750
Total dairy cattle 2002 (head)	13,767	3,543	2,500
Total milk production in 2002 (liter)	17,501,471	9,642,586	4,380,000
Total organization staff	202	58	97

Table 3: The cooperatives profit sources and distributions in 2002 (in %)

Gained from varied business unit	SK	JA	DAU
Fresh milk	73.35	85.08	53.26
Cattle feed (include forages)	18.34	34.50	12.88
Milk processing (Pasteurizes)	0.00	0.00	15.98
Credit	5.93	-19.58	5.79
Shopping unit, service and other	2.38	0.00	12.09
Total	100.00	100.00	100.00
Profit distribution:			
Return to members (Dividend)	40	25	50
Reserve fund or investment	35	65	45
Social and education fund	25	10	5
Total	100	100	100

unit, cattle feed then shopping unit, service and other business division by share 15.98, 12.88 and 12.09%, respectively. In SK and JA cases, cattle feed supplying become the second largest source of profit after fresh milk business unit. Credit and other units also awarded profit to the cooperative, but in JA it was yield a negative profit (loses). Whereas DAU cooperative has the most complete of variety business unit compare to others. The economic profit conferred by cooperative societies on their members and business activities are of various kinds and become available according to circumstances in a variety of ways. They may take the form of money, goods or services. They may be immediate, short-term or long-term. Some may be enjoyed collectively; others can only be enjoyed individually. The distributions of profit in cooperatives sampled are comprised of dividend, reserve fund or investment as well as social and education fund, as shown in Table 3.

**Conditions of dairy production in the field:** Allocation of time is very important to identify the intensity of certain activities carried out by agricultural households (Davis *et al.*, 2005). In this study, information about time allocation of every single one of family labor within one year, during 2002, has been collected as presented in Fig. 2. The average labor allocation within cooperatives sampled shows in the Fig. 3 stated that family labor time allocation for dairy farm and for agriculture non dairy are 290:256.69, 345.90:49.51 and 224.30:90.26 man days in SK, DAU and JA cooperative, respectively. It is revealed that total family working time allocated for dairy farm in all regions is higher than that for agriculture non dairy farm. Therefore, it shows that dairy farm is overwhelming agriculture non dairy as the source of reliable income for farmers in these areas.

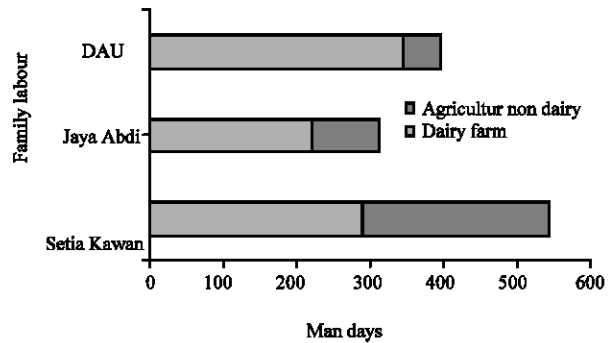


Fig. 2: Family labor time allocation for agriculture activities within one year

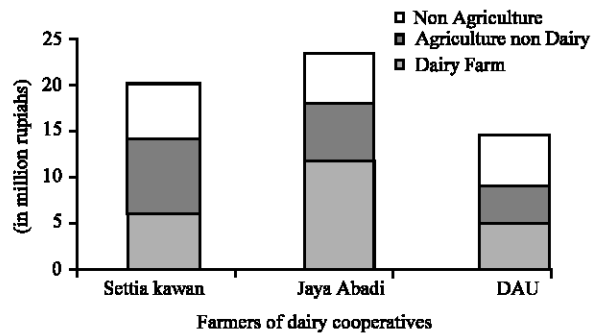


Fig. 3: Contribution of dairy farming toward farmer's total income in 2002

Regarding the business unit manage by the cooperatives, shown in Table 4 obviously noticed that the most impressive success was achieved by JA cooperative. Total revenue growth of this cooperative reached 22.31% annum and this is the highest one, whereas DAU and SK just reached the growth rate by 11.53 and 9.08% per year, respectively, during the period 1996 to 2002. In addition, the annual growth of profit of JA cooperative is the highest one by 70.09% annually, as well as the increasing of cooperative's fix asset by 33.54% per year. Whereas in these matters DAU and SK cooperatives just reach 12.89 and 30.61%, respectively for profit received as well as annual growth rate for cooperative's fix asset just 11.05 and 1.00%, respectively. On the other hand, DAU leads in the annual growth of member fund by 13.98%.

More details about growth of the dairy business under cooperative cases are given in Table 5. The number of dairy farmers has decreased in SK and DAU cooperatives by 3.57 and 1.74%, respectively, per year over the seven-year period from 1995 to 2002 and the cattle number fell by 1.32 and 4.31%, respectively, per year. On the contrary, in JA the number of farmers has

Table 4: Average annual growth rate of financial performances during 1996-2002

Growth items	Growth rate (%)		
	SK	JA	DAU
Total revenue	9.08	22.31	11.53
Profit (after tax)	30.61	70.09	12.89
Member funds	-8.16	10.87	13.98
Fix asset	1.00	33.54	11.05

Table 5: Average annual growth rates of farmers, dairy cattle and fresh milk production during 1995-2002

Items	Growth rate (%)		
	SK	JA	DAU
Farmers (people)	-3.57	19.82	-1.74
Dairy cow pop. (head)	-1.32	38.30	-4.31
Production (liter)	-3.20	38.03	-0.92
Prod./farmer	1.21	15.03	0.83
Prod./cow	-1.95	0.10	3.28
Cows/farmer	3.28	15.18	-2.54

increased by 19.82% and the number of cattle increased by 38.30% per year. This could indicate whether dairy farming is attracting in the area. Otherwise, farmers have experienced failure or success in their enterprises. In SK and DAU cooperatives, total cows owned by farmers remained at three to four head per farmer. On the other hand, in JA they increased doubly. Production per farmer saw little increase in all the cooperative types; however production per cow decreased in SK by 1.95%. The increase of production per farmer in SK and JA was due to the ratio of cow per farmer, which increased by 3.28 and 15.18%, whereas in DAU cooperative, it was since productivity of cattle increased by 3.28%.

## DISCUSSION

**The characteristics of dairy cooperatives and its members:** Dairy Cooperative as a rural business unit, besides supports member's dairy farms, they also have many other activities and responsibilities. All dairy cooperatives in the field provided almost the same facilities to the farmers in order to support dairy production. It was revealed that milk marketing is the main function for all of the cooperatives sampled. They give collecting service for member's milk produces and sell it to the contracted processors, otherwise processed their own (DAU case). Other services are offer medicine and farm materials, as well as access to veterinary and extension services. Cooperatives employ the veterinarians and trained stockmen and ensure that every member obtains veterinary aid at this door for his cattle. Dairy cooperatives play a role of rural intermediary institution by systematically encouraging the members to save and generate capital. It also channels the loan from bank (state or private) as well as from private company to the farmers. Calf support, also provided by all the cooperatives case.

In Indonesian cooperative world as in other part, it is common that in the end of the fiscal year the management held the general meeting for the entire members as the highest hierarchy of the organization. However, the meeting also decided in what forms and in what proportions or amounts the profit or savings shall be allocated or divided. A conspicuous economic benefit of a prosperous cooperative is a money payment or patronage refund it makes to its members annually after its accounts have been balanced, audited and approved, along with the proposed allocations and divisions. These payments are called dividend. For cooperative scholar outside Indonesia may be this is confusion, because the same term is used in company practice to denote payments to shareholders from profits. From this confusion arises another, namely, that the payment of a money dividend is an object, even the principal object, of a cooperative society, just as it is of a company. It is dissimilar to cooperative in many developed countries. Theoretically, the net savings or surplus of cooperative societies were to be kept indivisible and added to the societies' capital in order to assist their development into self-supporting communities. However, in Indonesian cooperative the dividend money has also the power to attract and improve the loyalty of members to the cooperative activities or store, whether they are purchasing consumption or actively production goods.

On behalf of dairy farmers, the objective of a dairy production activity is to obtain income for the family. Information about income structure of farmer household and contribution of dairy farming activities toward total family income obtained from survey has explained. The study revealed that the proportion of income generated from non-agriculture (off farm), agriculture non-dairy and dairy farm certainly. It shows that farmers in the areas are no longer relying on single sector for their income. In fact, dairy farming is an important sectors showing large contribution to the income, even though it does not the largest one except in JA's region. It reveals that JA's farmer got the highest total income during one year as well as income received from the dairy business than others cooperatives sampled. However, it seems that all of the household in the region practice crop farming and dairy husbandry as one to be able to optimally allocate their resources including labor and time of work to generate income.

**The improvement of business of cooperatives and farmers:** Most of the cooperatives sampled face similar problems in dealing with the development of dairy production. These problems include low levels of productivity and the inability of the operators of small farms to increase herd sizes. The most pressing problem

is the apparent inability of the cooperatives to develop the smallholder dairy farms into economically successful businesses.

One of the purpose the establishment of the cooperative is to improve their member's business unit through support them and provide them with numbers of facilities and advantageous. Anyhow, to help dairy farmers and support them with many facilities, the cooperative as an organization initially have to get the profit from its activities and develop unit business financial, after that bring the profit to the members in the form facilities and services. The study indicated the entire cooperatives obtained large amount of benefit from their business unit and facilitate them to able to expand the total revenue, profit as well as fix asset and increasing the member fund. However, the success of cooperatives is not judged solely on the size of their assets without inquired its beneficial for the member. In the cooperatives sampled, the large scale of cooperative capital otherwise large in the total production of milk is not because farmer's productivity high or cooperative's operational unit working efficiently other than due to the influence of the large number of farmer and dairy cattle, with the result that in total it will become big amount of capital.

The information described in this study is a useful starting point for policy makers or researchers to contemplating the design of programs and policies aimed at bringing about improvements to the dairy industry in this region. There are some interesting points acquired in this case as follows; Dairy business is the main source of income for the cooperative as well as significantly source of income for households in the location of study. All of dairy cooperatives sampled facilitates and gives opportunities for farmers to carry on their small business unit and to improve. Most of the cooperatives sampled faced with the similar problems in dealing with the improvement of dairy farm. So far, all of them attempt to develop the smallholding dairy farms into economically successful enterprises. Therefore, dairy services and facilities provide, as well as financial support are the main functions of the cooperative.

It was revealed that the source of the increasing of cooperative's capital and the total milk produced in this study is neither farmer's productivity larger nor cooperative operational unit working efficiently, other than due to the influence of increasing the number of farmer and the dairy cattle. In the cooperatives sampled, profit distribution is the authority of the cooperative and planned by its management, it could be return to the farmers as dividend or for cooperative to expand business capital. Theoretically, the success of the increasing of capital for the productive investment will afford an upcoming advantageous for the member in the form of better supports and services. However, this study has not yet found a significant correlation between the success in

performance of the cooperative and the improvement of farmer's dairy business. Therefore, the priority of research in the future should be to determine the relative importance of various problem areas at the individual cooperative level. It is unlikely that any single solution would work to help dairy smallholders to improve in all areas of Indonesia where dairying takes place.

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