3rd INTERNATIONAL CONFERENCE on ADVANCED EDUCATION TECHNOLOGY and MANAGEMENT SCIENCE

AETMS 2016

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Preface

It is exciting to announce that the 3rd 2016 International Conference on Advanced Education Technology and Management Science (AETMS 2016) will be, on January 24 and 25, held in Bangkok, Thailand.

As an important international conference on education and management subjects, AETMS has made great contribution in both areas. It has helped presenting and publishing advanced education and management theories and putting them into practice. By doing this, it has benefited a lot of people like teachers, students, managers etc.

The 1st AETMS 2013 and the 2nd AETMS 2014 were successfully held on December 1 and 2, 2013, and December 25 and 26, 2014 in Hong Kong respectively. Both conferences have been attended by outstanding participants from various countries. All the papers accepted by AETMS 2013 and AETMS 2014 were published by the excellent DEStech Publications, and all papers have been successfully indexed by CPCI/ISTP. AETMS 2016 will also be published by the DEStech Publications this year.

With these previous achievements, it is safe to say that AETMS 2016 will continue to play an important role in future studies in the area.

The preparation for AETMS 2016 is also adequate and thorough because of the experience with previous conferences. The AETMS 2016 Committee is composed of professors and doctors with international influence in related area; the reviewers are also experienced scholars and academics. These preparations are the key to make sure the high quality of the papers.

The number of submissions to AETMS 2016 exceeds 260, but the number of papers that are eventually accepted is far less than that. After reviewing all the submissions, 91 original papers are accepted for presentation at AETMS 2016. All accepted papers for AETMS 2016 are included in the following chapters:

Chapter 1: Teaching Theory and Practice Research
Chapter 2: Educational Informationization Technology and Application
Chapter 3: Enterprise, Economic and Industrial Management Research
Chapter 4: Management Informationization Technology and Application

Finally, I would like to give my thankfulness to those who have helped AETMS 2016, especially the organizer- the Advanced Science and Industry Research Center, Hong Kong, the DEStech Publications, all our contributors and reviewers, and all the committee members.

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Value Chain Constraints of Dairy Industry towards Smallholder Farmer Development in Yogyakarta, Indonesia

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Keywords: Value chain, Dairy industry, Smallholder farmer.

Abstract. The purpose of this study is to provide a comprehensive view of the value chain of dairy industry in Yogyakarta Province, and how to improve the value chain to improve market access. The specific objectives are: to identify the value chain constraints in the dairy industry, which is expected to find challenges and potential in the development of dairy farming in Yogyakarta province. Respondents were used in this study were dairy farmers located in Sleman, cooperatives, dairy processing industries, middlemen and consumers. Data collection tool by using a questionnaire that had been tested for validity and reliability. Primary data collection used two techniques, namely observation; collecting data by observing directly the object of research, and interviews; namely the collection of data by requesting information from the respondents, mapping the value chain analysis determined the general approach to the analysis of the value chain, the method of bottom-up and top-down. The data were analyzed using descriptive analysis. The results showed that the dairy value chain / industry on milking line of Yogyakarta was combined distribution channels of various dairy products from producers (farmers), processing, and marketing. Value chain requires that the addition of the value of the product every passing activity (line). At the farm level had not found that all farmers have an activity to raise the value of a product (milk). At the cooperative level: in addition to milk, value added through pasteurization, cheese, yogurt. At the milk processing industry: processing of products into a wide variety of processed milk powder, formula, cereal, baby food, dietary supplements, either alone products, the product license, and its subsidiaries. Retailers: milk, heating milk (3 times the base price of milk). Advanced retailers: processing milk into yogurt, heating, and kefir.

Introduction

In general, there are several functions attached to the livestock production such as manure production, store of wealth, risk mitigation and display of social status [1]. Value chain analysis in the indigenous cattle sector is increasingly becoming a subject of interest for many researchers in developing countries [2]. A value chain intervention along market channels and possible actors, coordinated efforts of all concerned stakeholders and integrated marketing policy could alleviate the current market barriers and empower smallholder producers to participate in formal markets [3]. Constraints for value chain development are in our view related to market access and market orientation [4]. Value chains can be seen as a vehicle by which new forms of production, technologies, logistics, labor processes and organizational relations and networks are introduced [5]. Important in value chain analysis are the relationships between different actors in the chain (producers, traders, processors etc.), vertical relationships (upstream or downstream in the chain) as well as horizontal relationships (between firms in the same link of the chain) [6]. The driving force is the recognition that each member of a net chain can enhance its performance and the product quality by integrating its goals and activities with other organizations to optimize the results of the entire net chain [7]. Study relationships between clustering and innovation focusing on Latin American cases. They find that product and process upgrading may be strongly supported by knowledge and technology in related industries [8]. Upgrading as the shifffrom lower-to higher-
value economic activities by using local innovative capacities to make continuous improvements in processes, products and functions [9]. The study has observed that the procurement cost of cooperative dairy societies was higher than of the private milk collection centres due to increased costs of milk transportation, chilling and reception [10]. Approach the value chain (value chain) has been used by development practitioners and researchers to describe the interaction of market dynamics in Indonesia and to test/measure the relationship between the actors involved in the stages of market channels [11]. The value chain approach provides a framework to mobilize pro-poor development in the context of agri-food networks that explain the vast reaches farm livelihood society, especially in the agricultural sector, increasing role in reducing rural poverty [12].

Dairy industry in Indonesia is an industry based on a small group of farmers who are members of cooperatives. With the small farm size, livestock ownership is not more than 5 lactating cows. Livestock farming is still based on traditional management, as well as the feed source of uncertainty, the consequence is that the low performance cattle reproduction and resulted in the dairy industry is getting weaker [13]. Yogyakarta has concentrated milk line in Sleman regency, which concentrated on the three cooperatives namely Warga Mulya, Sarana Makmur, and UPP Kaliurang which still have common issues such as quality and feed management, animal reproduction, length of calving interval, mastitis, milk quality, farmer and cooperative relations, marketing, and cooperative extension services and management. Farmers generally only focus on the production of such preparations feeding, raising, milking, but in fact they could be involved in other activities such as processing, transportation and sales or marketing. Small farmers are very competitive, especially in the local market. However, the market will continue to provide opportunities for farmers in the long term as a source of income. Without pro-active policies and investments, small farmers dairy cow would be more difficult to participate in the value chain.

The challenges facing small farmers dairy cattle is how to improve greater access to the market, improve the position of the value chain and increase added value that can accelerate the increase in incomes and reduce poverty. Small farmers often and even always be at the lowest position in the value chain. Without special support, small farmers will have more risk of becoming marginalized. Market accessibility is needed to increase revenue and improve the livelihoods of small farmers. Markets rarely able to fulfill what they want. This study answered the following problem: "How is a picture of dairy industry value chain?". With this research we can find the challenges and potential in dairy farming development in Yogyakarta. The objectives of this study are to provide a comprehensive view of the dairy value chain, and how to improve the value chain to improve market access.

Materials and Methods

Respondents were used in this study are dairy farmers located in Sleman 90 farmers selected to represent dairy farm people in Yogyakarta Province, three dairy cooperatives, one milk processing industry, and 43 retailers. Data collection tool by using a questionnaire that had been tested for validity and reliability. This research was conducted in dairy cattle development centers in the Province of Yogyakarta, namely Sleman Regency. Primary data collection used by observing directly the object of research, and interviews by requesting information from the respondents, while secondary data using recording techniques; namely the collection of data by noting the existing data on the agencies involved in this study. Mapping the value chain analysis determined the general approach to the analysis of the value chain, the method of bottom-up and top-down. The data were analyzed using descriptive analysis.

Results and Discussion

From interviews with farmers, generally farmers only sell milk to the cooperative because the cooperative surely receive their milk. Farmers often sell milk directly to consumers/retailers who come to the farm, but it was very rare/no farmer would rather sell to the cooperative because of the
cooperative direct cash payments, if farmers late depositing milk collection to the cooperative, consequently farmers would be responsible by themselves and not purchased by the cooperative.

**Barriers in the Farmer Levels**

Business barriers complained of by the farmers includes: (1) The price of feed is considered expensive and the quality is not good IDR 3300/kg concentrates, forage price of IDR 20,000-30,000 per carry, hard to find if the dry fodder; (2) Artificial insemination (AI) is often repeated, can be 4-5 times, there were also cases of incipient 8-11 times of AI. It spent of cost on the cooperatives was IDR 30,000, IDR 40,000 for each veterinarian/inseminator; (3) Prices of milk at the farm level is considered too low for farmers, results of operations/selling milk fortunately becomes how after deducting the cost of feed; (3) Cases of the disease in cattle such as bloating, diarrhea, intestinal worms, mastitis which interfere with the production of milk; (5) Most small farmers complained of IDR 50/liter milk pieces performed by a collection of milk (milk pickup heading cattle belonging to the group), the piece has been blamed as quota/incentive for administrators of the group. Table 1 describes the characteristics of three cooperatives UUP Kaliurang, Warga Mulya and Sarono Makmur based on the number of members, production, purchase price and the selling price and distribution.

**Retail and Milk Processing Industry**

Fresh milk as one of the raw materials used for the production process must be in accordance with the requirements imposed by PT Sari Husada. This company has many suppliers of fresh milk in several centers small dairy farms. Raw materials such as fresh milk obtained from farmers who are members of the group, and then collected at the shelter milk (TPS). To ensure the availability of fresh raw milk quality and production standards, PT Sari Husada forming milk quality improvement team (STD), which served to hold guidance to dairy farmers cooperative members, which milk is deposited into the Sari Husada with the aim of increasing productivity of dairy farming to obtain the high quality of milk production. Fig. 1 shows the value chain based on the smallholder dairy industry. Milk flows from farmer to consumers.

![Value chain based smallholder dairy farmers industry in Yogyakarta.](image)

**Lessons Learned**

Lessons learned from this study: (1) It is more secure to produce for a well-known market rather than seek new market opportunities; (2) milk trade is less risky within a given (domestic segment) than between different countries (cross border segment); (3) Transportation and handling costs are the largest components of marketing costs; (4) Enhanced direct communication between buyers down and/or upstream in the value chain and the primary producers can be a powerful tool to boost the income of producers and increase their competitiveness; (5) Learning innovation and adaptation are essential competences for sustaining competitiveness; (6) Low market integration can best be overcome by developing and effectively deploying milk market information systems; and (7) Market institutions such as cooperative associations and intermediaries can play a key role in reducing
transaction costs, facilitating milk trade and achieving better market integration at the national and regional level. In a fast-changing business sector many other factors may potential limit smallholder participation including low market prices, an inadequate infrastructure, high quality standards, financial constraints, difficulties in accessing productive assets and lack of knowledge. Within this context, development practitioners are called upon to support the integration of small-scale and poor farmers into formal livestock markets as an important step towards reducing rural poverty. Attention should be focused not just on increasing productivity and improving animal health services, but also on increasing advocacy efforts through improved farmers’ organizations, and building the capacity of local institutions to deal with the standards and regulations.

Table 1. Identify the characteristics of cooperative UUP Kaliurang, Warga Mulya and Sarono Makmur based on the number of members, production, purchase price and the selling price and distribution.

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<td>UPP Kaliurang</td>
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<td>Active members (people)</td>
<td>206</td>
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<td>The number of milk per day (liters)</td>
<td>5,000</td>
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<td>The purchase price (Rp/liter)</td>
<td>3,500</td>
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<td>Selling price (Rs / liter ) a. IPS</td>
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<td>c. Consumer</td>
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<td>Distribution (liters)</td>
<td>a. Milk processing industry</td>
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<td>b. Traders Retailers</td>
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<td>c. Consumer</td>
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Some Management constraints are: (1) Some of the obstacles and challenges faced by dairy farmers, namely: a) The low productivity of dairy cattle maintained, b) The low quality of the milk which is shown among others by the high content of bacteria; c) Dairy cows are very dependent on the availability of land as a feed producer; d). The small number of livestock ownership by farmers, making it less promising benefits for farmers and cattle breed availability (replacement stock) has not been able to supply in accordance with the needs; e). The scarcity of human resources in the form of young workers who do business on a dairy farm; f) Yet the harmonious integration and coordination among government agencies, private companies, cooperatives and farmers, so that policies implemented by the government less anticipated by the business; (2) Cooperative. Most of the dairy farm business conditions dominated by people within the scope of cooperative farmers and small and medium enterprises, but in the arena of marketing the business are still dominated by the company of dairy processing industry; and (3) Dairy Processing Industry. Along with the release of the milk processing companies for not always absorb milk from farmers and given the freedom of imports of milk, the farmers and cooperatives should be able to compete with dairy products from abroad.

Conclusion

Value chains dairy farm/dairy industry in Yogyakarta is a combination of various distribution channels of dairy producers (farmers), processing and marketing. The value chain requires added value of the product in every passing activity. At the farm level has not found that all farmers have an activity to raise the value of a product (milk). At the cooperative level: value added through pasteurization, cheese, yogurt, etc. At the milk industry possessing level: processing of products into a wide variety of processed milk powder, formula, cereal, baby food, dietary supplements, either alone products, the product license, and its subsidiaries. Retailers: milk, heating milk. Further Retailers: processing of milk into yogurt, heating, and kefir. Some obstacles were found in every
passing activity which need to be solved by synergizing among actors in dairy industries including farmers, government, traders, and company industries.

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References


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