

Empowering Communities of Mango Agribusiness in North Lombok, Indonesia

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ABSTRACT

System and sub systems of mango agribusiness in North Lombok, Indonesia have not fully worked well. One of the parts of the weaknesses is on the human side, i.e. the entrepreneurs of the mango agribusiness. Therefore actions need to be taken to this human capital to be empowered with necessary skills and knowledge to improve the condition of mango agribusiness in the area as well as the livelihood of the people. This paper describes the condition of the implementation of all sub systems of mango agribusiness in North Lombok. Authors capitalized data of their own research and experiences in several research and other activities related to mango agribusiness in North Lombok and other places. These data are then complemented with data from other research reports and literature. The study found that some parts in all of the agribusiness systems of mango need improvement, by which mango agribusiness communities need to be empowered, such that the capacity of the communities get improved and helpful for themselves and to the region too. The main subsystems that run comparably well are the subsystems of mango farming and marketing, although also have several notes for improvement, as well as in the other three subsystems of the agribusiness systems, i.e. the subsystems of inputs, processing and supporting service. The areas for empowerment are in all subsystems of agribusiness as well as in the whole system of agribusiness, covering mango growers, traders, and the government.

Keywords: *Agribusiness, Agribusiness community, Community development, Mango production, Supply chain.*

1. INTRODUCTION

It is evident that mango is one the most important crops in North Lombok. It is important for its production quantity and quality, its plantation place, and its position in social life. In terms of production, mango is number one fruit in North Lombok Regency, leading over other fruit crops. The production of mangoes was 9,578,100 kgs in 2020, with an increase of 20,000 kgs from previous year [1]. The increased production also shows the increasing importance of this crop. North Lombok mango is also mentioned as one of the best for its good taste and sweetness [2], resulting from dry land conditions of North Lombok areas, with rainfalls of only 1.327 mm in 2020 [1]. Another factor that makes the mangoes as the champion fruit in North Lombok is due to its plantation placement. Mangoes are grown almost everywhere in North Lombok, with plantations on orchards (relatively large parcels of land) or on house

yards (with limited space). The individual number of mango trees in an orchard is more than those on individual house yards. However, the number of house yards is much more than the number of orchards, albeit of insufficient data on mango tree distribution between the two places. Both places of plantation of mangoes have made mango production as the main fruit crop in the regency. Apart from the production and growing place of mango, the crop or the fruit is one of the important fruits in social life [3]. In addition, information from traders (retailers to be exact) [2] reveals that people purchase mango fruits as parcels when visiting friends or families. People of North Lombok consume mango fruits in fresh mature or in fresh immature one (served as fruit salad, locally well known as 'rujak'). It can be stated in brief that mango is important for the regency of North Lombok as well as for the people of that regency.

Mango agribusiness in North Lombok Regency has not been implemented in a fully business sense, with some growers considering mango production as a hobby. This means that having mango trees has already been happiness for them, then having fruits or money from them is additional happiness. The consequence of this paradigm of having mango trees as a hobby is that mango production is managed not in a purely business way. The further consequence of not doing the activity in a total business way is that several elements of subsystems of agribusiness have some weaknesses, leading to low quantity and quality of mango fruits. Mango growers are losing the opportunity to generate higher income than now, from those lower quantity and quality of mango production.

The weaknesses in mango business could come from the growers themselves or from other stakeholders alongside the system of agribusiness, from upstream through to downstream. Therefore, actions need to be taken to this human capital to be empowered with necessary skills and knowledge to improve the condition of mango agribusiness in the areas, as well as the livelihood of the people. This paper describes the condition of the implementation of all sub-systems of mango agribusiness in North Lombok Regency, and identifies areas for improvement through empowering related stakeholders. This activity is expected to be useful in improving the condition of mango agribusiness in the regency.

2. MATERIALS AND METHOD

This study took place in North Lombok, on agribusiness of mango and possible empowerment for related communities. Research method applied for this study is a descriptive method [4-6], to describe and understand the topics under investigation. For this article, authors capitalized data of their own research, extension activities and personal observation during author activities related to mango agribusiness in North Lombok and other places. These data are then complemented with data from other research reports and literature. Some of the major research reports that support data for this article are listed in the references [2, 15, 16, 25, 32]. Similarly, several extension activity reports that are particularly referred here are also included in the reference list [26, 30].

In addition, some other resources cited in this article are listed in the list of references. At times of conducting research and extension activities, authors made notes on observations of the location of the undergoing project as well as notes on interviews with key informants at the time.

Data in this article are analyzed in qualitative way [7, 8], so that the condition (the weaknesses and strengths)

of mango agribusiness in North Lombok are identified. It is from those identified weaknesses in each subsystem of the mango agribusiness system, empowerment issues are addressed. Results of these analyses are presented in the next section.

3. RESULTS AND DISCUSSION

3.1. Condition of mango agribusiness in North Lombok and areas for community empowerment

This section describes the current condition of mango agribusiness in North Lombok, accompanied by areas in each sub system of the agribusiness system, where weaknesses are identified, and then they are given solutions in empowering programs or activities. The purpose of putting all of these together is to provide straightway and accurate solutions to the problems or issues as they found.

Agribusiness is a system consisting of five sub systems, i.e. the sub systems of input, farm, processing, marketing, and supporting service [9-11]. To have a higher impact than the conventional practice, agribusiness needs to be implemented in an integrated way [10, 11]. This means that in agribusiness there is collaboration and connection among sub systems within the agribusiness system. In particular this means that running agribusiness must be good as a whole as well as in each of the five subsystems of agribusiness [12].

To improve the condition of agribusiness, it requires identification of current conditions, so that the wrongs and the rights in each sub-system become known. This knowledge then is used for improving the condition. Condition of each sub system of mango agribusiness is described consecutively below from the upstream through to downstream.

3.2. Subsystem of input

Inputs in agricultural productions on farmlands include seed, fertilizer, pesticide, insecticide, and labor [13, 14]. To get high production, these inputs must be of high quality. Research results revealed that the quality of each input in mango production is not as good as could be and some inputs were not applied. Description of these inputs is presented here. Seeds were obtained from the grower's own collection, or from seed providers nearby the growers' homes or orchards. Some growers also received mango seeds from the government. In most cases, growers got seeds by accident, in the sense that growers plant mango trees without seed selection, but rather plant whatever they have on the time, with quality as is. Fertilizers were not specifically applied, although organic fertilizers are sometimes available from livestock of plant wastes. It appears that the amount of fertilizers is insufficient for the mango trees, both in terms of doze

and frequency. Pesticides and insecticides were generally not applied. Yet, some growers usually smoked their trees by burning rubbish under the mango trees, to make insects and pests go away. In brief, it can be stated that inputs in mango production are still not of the highest quality. Therefore, the quality of inputs needs to be improved for better production in terms of quantity and quality of mango fruits. Another important input in crop production is water. Water and watering of plants is usually applied only during planting times. After having initial growth, the mango trees are usually left to receive water only from rain. Hence, it is insufficient for optimal mango growth, so that mango fruits are not of the highest quality.

As a consequence, community groups that need empowerment are the growers of mangoes. It has been described above that the areas for which improvement are needed is the application of quality and quantity of inputs (seeds and other inputs). Therefore, empowering in this issue is by equipping the community with knowledge and skills on input applications.

Who should empower this community group? The farmers themselves can learn by using resources available from anywhere, for example from Google. However, initiative should come from the government, as the government has the task to develop their regions and the livelihood of the people, and has more capacity than the growers of mango or other crops. In mango production, the farmers need to find by themselves or to receive information from other stakeholders (particularly the government) on mango production with sufficient and quality inputs, and also update themselves with new technology. One example of new technology is the technology for producing mango fruits outside of the normal season, by application of Paclo Butrazol, a growth regulator [15].

3.3. Subsystem of production

In practice, farmers plant mango seeds, with less or lack of complementing inputs, such as fertilizer and pesticides. Watering is also dependent on rainfalls, i.e. no regular irrigation provided to the crops. The input of labor is also very minimal, in the sense such as there is no maintenance of pruning, such that some parts of orchards are covering each other, hence sunlight could go through to reach all parts of the plants. As a result, mango trees do not produce fruits in high quantity and quality. It was observable that fruits on trees are less or not so densely, and with various sizes. Similarly the quality of the fruits is not as good as expected, for example, the fruits are not so clean, with some black spots in the fruits, irregular forms, or in different sizes [2, 16]. This description shows the importance of growing and maintaining mango trees during pre-production, production, and post production (post-harvest and handling), since high quality products (including mango

fruits) will match market demand [9, 17-19]. Markets are willing to pay for better prices for better fruits, for their increased satisfaction [17, 20-22]. Therefore, empowering people in this area of mango production is important to produce mango fruits of high quantity and quality. Knowledge and skills required by the community in this mango production is to implement good agricultural practice, for example, as prescribed by Zainuri et al. [23], although those are recommended for cocoa, yet the principles are applicable for almost all crops.

3.4. Subsystem of processing

Most mango fruits are usually sold fresh or without processing. The ground for these mango producers to sell mostly fresh is due to demands for the fresh products, for example from local markets, nearby markets, by middlemen, wholesalers or retailers [2]. The selection of selling products in fresh rather than in processed ones, is a rational behavior [9, 17, 22, 24] that producers get the most with less efforts (that is of not needing processing).

However, there was a portion (about 30%) of mango fruits that were unsold, due to lack of maturity or damage [16, 21, 25]. These fruits are left as rubbish, although some are sold to fruit salad industries, but the demand by this type of industry is small. It can be concluded that 30% of mango fruits went destroyed or became rubbish. These mango fruits need to be processed into more useful or more importantly to be profitable products. These unsold mango fruits can be processed into economically valuable products, such as mango crisps, canned mango, or others [26]. Which part of the community should be empowered to process unsold fresh mango into profitable products? In rural life, this job can be taken by housewives (of mango growers or traders), who have much spare time, and those times can be allocated for processing products. They can do it in their own homes or in specific locations that they can arrange. Staff from government, universities or NGOs can train that community in preparing them to be skillful and knowledgeable in processing of mango fruits. They can continue their activity with marketing. By doing these activities they can integrate product processing and marketing activities, so that their activities may be done efficiently and effectively.

3.5. Subsystem of marketing

Marketing of mango fruits is done mostly locally (in your own house, farm, or market in the villages or districts). There are buyers of mango fruits coming from outside or from inside the districts, they are called assemblers [2]. These assemblers visit one location to another in the villages or districts to buy mango fruits. As a result, nearly all of the mango fruits are sold to them, and mango owners in the villages felt it unnecessary to

sell outside their own village location. The portion of mango fruits sold in retailing is very small, and carried out by only several people in the village. On one hand, the practice of selling mango to assemblers is considered a justified action, as mango producers can get their fruits sold easily. However, on the other side, the selling limits the potential of mango producers to increase their gains. In practice, this means that prices of mango fruits are controlled by buyers, therefore mango producers are in a weaker bargaining position than the buyers.

Knowledge and skills of marketing for mango producers are important ones to be mastered by mango producers. In particular, the knowledge and skills required here is on negotiation with business counterparts and finding information on markets, such as markets with high prices for the products. These skills then will improve the bargaining position for mango producers, and gain better prices for the products since they got informed. The department of trading from the government of regency, province, or central, can become resources for training for the mango producers in knowledge and skills of marketing. Off-course, non-government organizations and universities can also be involved in this capacity building, enabling mango producers and traders to be empowered.

3.6. Subsystem of supporting service

Supporting service in agribusiness is any service that supports the development of agribusiness in any subsystem of agribusiness. Therefore, supports can be in the sub system of input, farm, processing, and marketing [10, 27, 28]. The government of North Lombok Regency has been supporting the agribusiness development of many crops [29-31], including mango development [3, 15, 32], and be done through several departments. Some of the supports are from the department of agriculture in providing extension service for farming; department of trade and industry in processing and marketing activities for mangoes. However, interviews with key informants, such as village officers, farmer leaders in related topics, revealed that the frequency of support is considered insufficient, in the sense that most of activities were of mango producers' decisions, not due to directions provided by the extension officers. In general, most mango producers needs more support than currently, especially during the peak of mango seasons, during which mango prices are low and much lower at the beginning or at the end of the seasons [2, 32], when the number of mango fruits were less available. In brief, it can be confirmed that more supports are needed by the mango growers in several aspects of mango production, processing, and marketing. Empowering mango producers here means specifically of providing information on technical and marketing issues in mango production.

3.7. System of agribusiness

The condition of agribusiness as a system in North Lombok can be described as lacking connections among the subsystems of agribusiness. For example, growers grow any type of mango according to the seeds available on the time and on the location. The seeds should be ones of the good types like Gedong Gincu, which has high prices [2] for its interesting appearance and sweet taste, the features that consumers like and are willing to pay for higher prices. Another example of weak link among the subsystems is on production control. Production times so far have relied on nature, in the so-called normal season. Following production of the normal season is not very beneficial or even making loss to growers, as the mango fruits have low prices. While new technology enabling production outside of normal sessions has been available for a few years [15]. Therefore, empowering people here is to enable growers and traders to make mango business more profitable than the current one. Technology and information of market and technology is of high importance for improving the livelihood of mango community, or others.

4. CONCLUSION

Mango agribusiness in North Lombok has been one of the important businesses for the economy of the region and the people. The main subsystems that run comparably well are the subsystems of mango farming and marketing, although also have several notes for improvement, as well as in the other three subsystems of the agribusiness systems, i.e. the subsystems of inputs, processing and supporting service. It is recommended that mango agribusiness communities need to be empowered, such that the capacity of the community improves and is helpful for themselves and to the region, too. The areas for empowerment are in all subsystems of agribusiness as well as in the whole system of agribusiness, covering mango growers, traders, and the government.

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