Model Development Industrial Cluster Coffee Arabica in The District Bangli, Province of Bali

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Abstract— Indonesian coffee commodity is non-oil export commodities the which contributes to the increase of in foreign exchange. The coffee agribusiness development Efforts have been undertaken by the government, but there are still many obstacles, especially in maintaining the quality of products that meet international market standards and continuity of production in accordance with market demand and to support a downstream industry of agricultural production. This research is the development of industrial clusters Earlier research arabica coffee. The results Showed that the human resources and knowledge about the importance of the coffee plant in Bangli society is still very low, this is evidenced by the many farmers replacing the coffee with citrus plants. Cluster models produced is the result of the development of the models on previous research. In the development of this models and the results of the field survey results show the need for forming FGD Control of Agro-Industry Forum Bangli. This forum Aimed to control and anticipate the development of information to replace the coffee plant with coffee other than agricultural industrial commodities like oranges. Many coffee farmers have replaced coffee with citrus plants. If this continues to Happen it is feared that coffee production has gained International recognition will Decrease. This controller Bangli Agro-Industry Forum in collaboration with Industrial Cluster Management Communication Forum Coffee Arabica and core industry of arabica coffee

Keywords— Human Resources, industry cluster of arabica coffee, Cluster Development

I. INTRODUCTION

Commodity coffee is Indonesia's non-oil exports that contributed to the increase in foreign exchange, hence the need for policy and strategy development of the coffee in Indonesia to continue to compete. The coffee agribusiness development efforts have been made by the government, but there are still many obstacles, especially in maintaining the quality of products that meet the standards of the international market as well as the sustainability of production in accordance with market demand and to support the downstream industry of agricultural production.

Governments, employers and communities still rely on coffee plantations to make a profit. Another thing the level of socio-economic conditions of coffee farmers increase is more likely to slow, due to the amount of bureaucracy in the marketing of coffee from farmers to the export market. Coffee associations formed tend to also benefit managers association only, not touching the coffee farmers who mostly reside and live in coffee plantations located in the suburbs and close to the forest so it is prone to conflict. If left unchecked it will affect the motivation of farmers to increase production and maintain quality. Industry cluster approach is

as one of the alternatives that are appropriate for development in the regions that have a competitive advantage.

Based on the above, the research on the development of industrial clusters arabica coffee needs to be done. Development kintamani quality arabica coffee today are getting better. It is characterized by the presence of a request from several foreign countries, including Japan, USA, Netherlands, Germany, Australia or France, as well as domestic demand from Lampung and East Java. However, the request was still not able to be met. The reason, the extent of the existing area cannot be utilized optimally by the community, not to mention about the face weather changes often so extreme that it is not favorable for the production of the coffee fruit.

Meanwhile in Book Road Map Commodities Plantation (Coffee arabica) in Bangli regency (2011) prepared by the Department of Agriculture, Plantation and Forestry Bangli Regency stated that the potential development of Arabica coffee plantation in Bangli regency in 2011 reached 12571.09 ha with vast achievements area of 4003.05 ha and the rest of the potential reach 8568.04 ha. Plants produce 2979.28 Ha , Ha immature 921.21 , 102.76 Ha damaged crops . Productivity 0.592 tons / ha , 1731.29 tons of coffee

production 8656.46 tons of rice or red spindles . Also stated that the development of Arabica coffee plantation crops is very prospective, as has long been cultivated by the people and is the largest commodity cultivated in Bangli regency. In terms of commodity production contributes 40 % - 50 % of total production in the province of Bali, has an average productivity is higher than the average productivity of the province .Arabica coffee cultivation provides the highest employment compared to other plantation crops.

Potential and prospects are very good , the direction of this arabica coffee plantation development is to increase production , productivity , and quality of farm production with the support of improving the quality of human resources , natural resources through technology and social engineering, facilities infrastructure , capital and markets. Also realized that turns coffee is one of the essential commodities and widely traded in the world with such taste preference dynamics consumers to enjoy a more diverse flavor and consumer trends lead to non- conventional products such as goumet coffee , specialty coffee (specialty coffee) organic coffee (bio- organic coffee or coffee) . Where the specialty coffee promise better price and when it has captured the market in the long term the market will be more stable and can give a good image for the producing countries. The increasing market demand for coffee Bali (OSE) if wet system (WP) where the request arabica coffee 20 containers (18 tons per container) , but can only be met between 8-10 containers , while the specialty coffee market segmentation tends to increase , so that this opportunity should be utilized for the development of specialty coffee plants . Therefore, efforts are needed to improve productivity and quality of coffee Bali in order to meet market demand. For that Bangli is one potential area for development of specialty arabica coffee plants that have specifically market segmentation and powerful in the world coffee trade and has a price premium because of their specifics.

II. MATERIALS AND METHOD

A. Place and Time Research

The research was conducted in Bangli regency with time study lasted for 2 years. This study was preceded by collecting and processing data based on the needs of the system and are grouped.

Preliminary stage, includes the study of literature and resources to support the implementation of research , field surveys and survey experts . At this stage, the system includes the identification of needs analysis , problem formulation and identification systems . Literature study is focused to obtain the total area of arabica coffee production as raw material , raw material production conditions , factors affecting the production of raw materials , the potential production of raw materials , harvest and post- harvest handling , processing technology and quality of processed products and the market demand for the product . Soil survey and expert surveys conducted to obtain primary data , especially the main data were not obtained from the literature.

The primary data collection will be done by way of discussions, interviews, focus group discussions and questionnaires at study sites to achieve predetermined goals . Experts involved in data collection is an expert in his field that Bangli District Government , Department of Industry and Trade, Plantation Office of Bali Province , Arabica Coffee Company and Universities. Collection of field data obtained through interviews with farmers arabica coffee in Bangli regency and related institutions.

Conduct studies Cluster Development arabica coffee agro-industry

B. Cluster mapping

This stage aims to identify the potential for the development of clusters of coffee in Bangli regency . Description coffee cluster potential diamond refers to the model developed by Porter (1990), which includes components: (a) the condition of the indicator; (b) the strategy, structure , and competition ; (c) related indicators and supporters ; (d) the conditions demand . Thing to do is explore the indicator on each component of the model . The method to do is study the literature and interviews with experts.

C. SWOT Analysis

This stage aims to analyze the internal and external conditions that influence the development of clusters of coffee in Bangli, including strengths, weaknesses, opportunities, and threats.

The steps are performed at this stage include: Exploration of factors strengths , weaknesses , opportunities , and threats associated with the development of clusters of coffee in Bangli regency. The method to do is study the literature and interviews with experts. Each of the SWOT factors using the justification and expert opinion. At this stage can be generated descriptive cluster development strategy coffee in Bangli regency.

D. Analytical Hierarchy Process (AHP)

The principle that must be understood in solving problems using AHP technique is : decomposition is the process of breaking the whole problem into several elements in order to obtain multiple levels (hierarchy) of the issues to be assessed; comperative judgment is a process in relation to the above ; synthesis of periority is the procedure to synthesize and differ according to the form of hierarchy; Logical consistency, grouping and degree of relationship between the objects that are based on existing criteria.

E. Analysis of the structure of cluster development

This stage aims to identify the parties involved in cluster development arabica coffee , as well as the relation between the parties within the cluster structure .

The steps are performed at this stage include : Exploration of the parties involved in cluster development. The method to do is study the literature and interviews with experts. Structuring the parties using the ISM . This method is based on expert opinion. At this stage can also be known actors cluster, which acts both as a core industry, supporting industries, as well as related industries.

III. RESULTS AND DISCUSSION

Bangli Regency is a regency in Bali that the air is cool, does not have a beach area , however, Bangli Regency save some potential , including the beautiful panorama of Mount and Lake Batur is located in the district of Kintamani. Geographical Bangli regency between 08`30`` 080 - 080 South latitude 31` 07`` 43`` and 1150 13` - 27` 24`` 1150 East Longitude. Has a tropical climate , the average air temperature is relatively low ranging between 150-300 C with a humidity level of 88 and an average rainfall ranges from 900 mm annual lows and highs of 3,500 mm , with altitude above 1000-2152 m above sea level . In the southern part of the lowlands and in the northern part is mountainous, namely Peak Writing and Mount Batur. Batur lake has an area of 1067.50 ha , as well as the mountains berelief fine to coarse rock composed of Mount Batur volcanic deposits in the form of lava that is rather compact .

The total area is 520.81 km2 Bangli regency, or 9.24 % of the total area of Bali Province (563.666 ha) . Capital District Bangli Bangli is Urban Area, which is administratively divided into four districts, namely : Sub Losses, Bangli, Tembuku and Kintamani , with 68 villages and 4 villages and 153 pieces of traditional village , with 132 water control system as well as having a population of 197 210 inhabitants.

The results of the analysis are developed through justification by experts of strategy SWOT analysis as described above , outline the necessary three important elements as priorities to be taken as a policy in the development of industrial clusters arabica coffee in the district of Kintamani , Bangli regency are: Need to increase the quantity and quality of production; Cultivate institutional functions; Improving human resources, knowledge and consistency of coffee farmers.

From the three elements to consider which are the most important elements to be done in advance so that other elements supporting other factors . To select the important elements that should be implemented first used hirachy analysis process (AHP). AHP analysis results indicate that Enhance HR , knowledge of coffee farmers and consistency as the first alternative of the policies that must be implemented for the next consecutive cultivate institutional and Need to increase the quantity and quality of production .

A. Cluster Development Model

Cluster models are the result of the development of recommendations of previous research models . In the development of this model in the field survey and FGD results indicate the need to establish Agroindustri Control Forum Bangli (FPAB). The forum aimed to control and anticipate the development of information to replace the coffee plants with agricultural commodities besides coffee industry such as oranges . Many banana coffee that has been decimating the coffee plants and replace with citrus . If this continues to happen it is feared that coffee production has gained International recognition will decrease . Agro-industry forum Bangli controller is working with Industry Cluster Management Communication Forum Coffee Arabica (FKMKI) and Industrial Core Coffee Arabica.
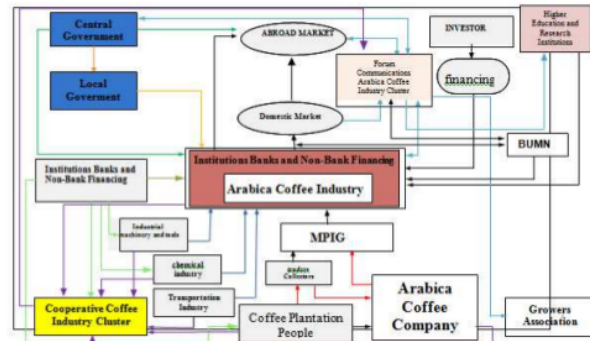

Fig. 1 Model Development New Arabica Coffee Industry Cluster

IV. CONCLUSIONS

The design of industrial cluster development model focused on the vision of arabica coffee to improve the quality of products from upstream to downstream as the main parameter that determines the quality of the final product. To achieve the shared vision it is necessary to collaboration and cooperation between businesses and intensively involved in the cluster through institutional mechanisms that are designed based on the structure of its role within the cluster, which in turn can facilitate the process of innovation. This is caused by the farmers who started replacing coffee with citrus plants. Controlling Communication Forum Agroindustri Bangli (FKPAB) is expected role with more priority to cooperation and establish market strategies , conduct guidance , and assistance in terms of technology and management on all elements of the cluster.

Build Kintamani arabica coffee market strategy in order to compete with other commodities such as oranges at disrict Bangli. This is due to the development of industrial clusters arabica coffee is not only beneficial to businesses involved in the cluster, but also able to provide financial benefits to the region with the contributions made by agro-industry cluster in the region through the mechanism of local taxes. Arabica coffee industry cluster development is also expected to help increase the number of workers absorbed within industrial clusters, especially on labor in the cultivation of Arabica coffee. This indicates that the future will be the achievement of sustainability in economic and social aspects in the development of industrial clusters arabica coffee.

The model developed in the study still has some limitations. The Role of Communication Forum Agroindustri Bangli (FKPAB) is expected to be able to provide progress in Bangli coffee production especially in human resource development so that the coffee farmers do not necessarily replace coffee with other commodity crops such as citrus.

Improvement and adjustment of industrial cluster development model arabica coffee used needs to be done in order to develop the system according to the needs and conditions of the present. For this purpose, it is necessary to support an integrated management information systems, both manual and computerized so that the present data and

reliable information by building networking with coffee beverage company that the price of coffee at the farm level can compete with the price of other commodities such as oranges.

Active role of the government is expected to issue a consistent policy to enhance the competitiveness of arabica coffee, provide interest subsidies to growers of arabica coffee, reduce taxes and help in overcoming market strategy and set policies and restrictions to cut tatau replace coffee with other commodity crops such as citrus with understanding and approach to the farmers more wise and prudent, because the area is excellent potential for the development of the coffee industry.

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