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REVITALIZATION OF FARMERS ORGANIZATION FUNCTIONS TOWARD AGRIBUSINESS FOR ITS SUSTAINABILITY: IDEAS FOR TRADITIONAL IRRIGATION ORGANIZATION IN BALI PROVINCE, INDONESIA

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ABSTRACT

Agricultural sector has significant roles in Indonesian economic development as an agrarian country. In case of Bali, agricultural development is still being become a priority through *subak*, even though the tourism development is highly increased. Widely speaking, *subak* constitutes a customary law community having very strong characteristics, namely socio- agriculture –religious which manages an irrigation system in rice farming. Nowadays, it has been clearly found that several problems happened within *subak* regarding its sustainability, as follows: (i) competition of water uses; (ii) lack of capital; (iii) lack of agribusiness skills; and (iv)pests and diseases attack. In the long run, the mentioned problems might bring about some consequences, such as low income of farmers (*subak* members), the rice field areas will be decreased, less motivation/interest to work in farming activity, including worsen the environment. Hence, these could threaten the *subak* sustainability. One of the key important thing in keeping sustainability of *subak* is agribusiness oriented-activity that has still based on the local wisdom. Some recommendation strategies for developing agribusiness activities in *subak* are: (i) improvement of operation and maintenance of irrigation system; (ii) supporting capital; (iii) extension and training about agribusiness system; (iv)crop diversification; and (v) establishment of cooperative unit.

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INTRODUCTION

In the entire nation, some farm organizations from time to time assert that agriculture has been a primary determinant of the economic activity (Knutson, 1983). In Indonesia, agriculture is one the sectors supporting economic development, including in Bali as it has significant roles in terms of economic, social, culture, environment and others. In order to maintain the activities of development, it is needed to change the development paradigm orientation, strategy and policy. The sustainable agricultural development paradigm can be chosen as the best solution to increase social welfare, without neglecting natural resource and environment preservation. Sustainable agricultural development will be succeeding, if could be integrated by a strong commitment among the

agribusiness actors (Saptana and Ashari, 2007). Therefore, agribusiness approach in agricultural development consists of : (i) change the production to business approaches, and (ii) agricultural development is not merely partial thing but must be integrated and comprehensive sectors. Yet, it still have been found some problems in the relation to achieving agribusiness goals (such as high productivity, income and others). Recently, it shows that agricultural development in Indonesia has still looked marginal in which its local resources have been exploited without any involvement of local people (farmers). As Fatah (2006) said that one of the causes of unsuccessful results in the implementation of agricultural development is the limited participation of existing local organization. In Bali, it is called *subak* (irrigators association). Actually *subak* s have great roles in the implementation of government programs,

particularly on farming activities. Sutawan (2002) and Mitzutani (2002) cited that *subak* has multi-functions, as follows: (i) production and economic for the food security; (ii) environment, such as flood control, erosion prevention and ground water recharge, etc. (iii) ecology, for the particular species life; (iv) social-cultural aspects, sustain and develop the activities relating to social interaction among the members and other and other activities in agriculture and irrigation based on culture and tradition; (v) rural development, it creates the employment for the villagers; and (vi) eco-tourism/agro-tourism, it has fascinating view, such as terraces and cultural performances. Another failure of agricultural development for the agribusiness activity is the bad assumption toward local institution that is lacking entrepreneurship spirit (Syahyuti, 2007).

Chambers (1983) added that the outsiders do not trust that local people (farmers) actually have capacities for economic activities. Even Pranadji (2003) said that there will be big losses if the creativities of local group might not be explored and strengthened in the farming activities. The consequence of this is farmers as *subak* s' members still have low income. It means that local people and local group (*subak*) actually have good potential for developing economic activities in order to increase the incomes of farmers and *subak* itself. Concerning the mentioned above, this study would like to discuss the problems encountered by *subak* s in implementing agribusiness activities, and describe the strategies for reorienting *subak* s' functions towards agribusiness.

Revitalization of *Subak* functions towards agribusiness

***Subak* System in Agricultural Development**

One of the *subak* s' characteristics is the *Tri Hita Karana* philosophy three causes for happiness consisting of (i) relationship with the God; (ii) relationship with the people/human being; and (iii) relationship with environment. The main function of *subak* s comprises (i) distributing and allocating irrigation water; (ii) operating and maintaining of irrigation system, (iii) mobilizing of resources (contributions of money, execution of mutual assistance), (iv) handling conflicts among the members; and (v) conducting ritual activities. In coping with modernization and economic forces, functions of *subak* should be revitalized toward agribusiness in order to increase the productivity and income for the sustainability of agricultural development, particularly on rice farming development.

Problems Encountered by *Subak* in the Relation to Agribusiness Activities

Many studies showed various problems happened within *subak* regarding the sustainability of *subak* s existence. In general, *subak* s have still emphasized the activities of agriculture on socio-cultural basis (Windia, 2006). Some problems encountered by farmers relating to agribusiness activity, as follows: (i) competition of water uses; (ii) lack of capital; (iii) low knowledge of agribusiness; (iv) lack of agribusiness skills; and (v) pests and diseases attack. In the long run, problems that could not be solved might bring about some consequences, such as income of farmers (*subak* members) still relatively low, the rice field areas will be decreased, less motivation/interest to work in farming activity, including worsen the environment.

Competition of water uses

Nowadays, the availability of water at the source level (river) is scarcity as a result of deforestation and limited protection on catchment area within hilly areas. In other side, the uses of it become increased by many sectors, such as industry, domestic use, and others. *Subak* s always have a serious problem of irrigation water especially during dry season since the members (farmers) could not plant rice or other crops on their rice fields. This means that water is competitively used by the said sectors in which the *subak* s perceive as a loser due to the policies of government do not much concern to water uses for irrigation. In term of agribusiness, farmers as *subak* 's member could not effectively apply good agricultural practices since the irrigation water is limited. In some *subak* s, it is seemed that many areas might not be cultivated and let empty due to water is very scarce. In the relation to irrigation water, another problem found is bad quality of water at the source and irrigation canal levels. It is noted that some irrigation canals of *subak* s become one with the drainage in the villages and city. This is caused by the industries' waste and lack of people' awareness in throwing waste/garbage directly to the canal or drainage of *subak* passing the areas of villages. Pollutant flowing on the canal/drainage might bring about a bad impact for the plant/crops growth on the rice fields. Thus, the productivity of rice or crops might not be optimally reached (Sedana, 2005).

Lack of capital

Capital problem is commonly happened within agricultural sector, especially in the rice farming activity, including in *subak* s. Most farmers in Bali have limited landholding size, that is about 0,35 ha resulting low income gained from rice farming activity. Limited income thus might them have an insufficient capital for buying agro inputs, such as seed and fertilizers. Minimum uses of agro inputs might bring about low productivity of crops and land. This is likely a cycle starting from low productivity, low income and low saving that would be used for capital. Lacking capital of farmers bring about the technologies recommended by agricultural extension workers as change agents could not be completely applied by farmers. In term of agribusiness and sustainable agriculture development, the sufficient capital is extremely required by farmers as individual and institution as well. Similar situation was found in Pakistan, in which a major constraint for agribusiness small-medium enterprises development is the lack of access to formal sector debt and equity finance. Many entrepreneur surveys confirm that lack of access and the cost of bank financing are significant barriers to expansion (Fawcett *et al.*, 2005).

Low knowledge about agribusiness

Based on the direct observation in the sites, it seems that farmers still have low level of education relating to agribusiness. Their formal education equals to senior high school in average. They thought that agribusiness is only the activities for processing and marketing (Sedana, 2005). As rice farmers, they do not take a processing activity for having value added on their harvested rice. A main factor of this condition is farmers have limited access to information about agribusiness that might give better productivity and quality of products produced on farmers' lands. In particular crop--rice—the price is always felt still low compared with the increase of

agro inputs prices. Aside from this, they do not have strong bargaining power to gain proper price. It is funny that farmers as the one who sell product should ask the price to the buyer (local trader). Price taker is still on the hand of local trader.

Lack of agribusiness skills

Farmers in Bali has limited skill on agribusiness activities, such as in providing agro inputs collectively, practicing proper technologies for their crops, harvesting, processing and marketing. Farmers and *subak* s still employ traditional manner in farming activities. The adoption rate of agribusiness innovation is relatively low, thus they could not increase their productivity and income (Sedana; in Pitana and Setiawan, 2005). This also concern to organization and management of *subak* s in performing agribusiness system. Agribusiness skill condition is also being a problem in the development of agribusiness enterprises in some countries (Oliver, 2003). Agribusiness skills include the skill to define a market of product which might give higher price; processing, grading and packing of products that would be sold; and other business activities.

Pests and diseases attack

As the rice production is conducted within the “open place”, farmers are always threatened by the attacks of pests and diseases. Aside from this, their rice farming is prone to failure of harvest owing to disasters (e.q. flood). This failure make farmers loss their chance to gain production and income from the crops they planted. on their harvest, thus losses will be come and income of farmers will be low. In some cases, farmers apply pest and diseases control by using chemical pesticides with high cost. Aside from this, chemical pesticides might bring about a damage of environment. Under the belief of farmers as *subak* ' members, they also usually performance a ritual activity for control the pest and diseases attacks.

Strategies for revitalizing *subak* to have agribusiness activities

Subak s as traditional system for irrigators association should be strengthened for improving farmers' welfare and keeping sustainability of environment. Agribusiness is the sum total of all operation involved in the manufacture on distribution of farm supplies, production operations on the farm, and the storage, processing, and distribution of farm commodities and items made from them (Davis and Rai, 1957). It means that an agribusiness is not only include those who farm the land but also the people and firms that provide the inputs (such as seed, chemicals, credit etc.), process the output, manufacture the food products, and transport and sell the food products to consumers, and support the farming activities, such as irrigation system and road construction, etc. Acharya (2007) clearly stated that agribusiness in the developed country, is defined as the total output arising from farm production and product processing at both pre- and post-farm gate levels. In developing countries like India, the agribusiness sector encompasses four distinct sub-sectors, viz. agricultural inputs; agricultural production; agro-processing; and marketing and trade. Agribusiness provides the inputs, expertise, and services needed for farm production and the markets for farm products. It also provides employment and entrepreneurial opportunities in rural and urban areas and contributes to the growth of micro- and small enterprises though the establishment of

market links. Owing to *subak* is social-agrarian-religious organization, Based on the agribusiness system, *subak* s' functions could be reoriented for agribusiness activity by considering the problems happened. Some recommendation strategies for developing agribusiness activities in *subak* are: (i) improvement of operation and maintenance of irrigation system; (ii) supporting capital; (iii) extension and training about agribusiness system; (iv) crop diversification; and (v) establishment of cooperative unit.

Improvement of operation and maintenance of irrigation system

Operation and maintenance (O&M) of irrigation system is the way to distribute and allocate irrigation water among the farmers and among *subak* s. Owing to scarcity of water, this activity must be organized well among them and government staff (Water Resources Department, under The Public Work Service). Under the law and regulations, O&M at the main system level are responsible by government, and *subak* s have responsibility at the farm level. Although this has been clearly defined, the *subak* s could also have function to assist the works of O&M at the main system level. *Subak* should have more intensive activity on making efficient O&M relates to the water requirement for the rice farming. An integrated Extension and Training (E&T) on irrigation management is needed to conduct by government involving agricultural technologies and institutional aspects.

Supporting capital.

One of the *subak* 's functions is resources mobilization that would be important for O&M activities, ritual ceremonies and others. In each *subak* , it has found fund raising activity in which the members periodically contributed a sum of money that would be a specific function that is micro credit with traditional system. Grant given to members is fully based on the mutual trust among the members and management board. Concerning the capital problem for the agribusiness activity, *subak* could strengthen this function to be more productive. It could be done by increase the members' contribution, so that they might have opportunity to get bigger value of credit from the *subak* . Yet, this is related to the improvement of productivity and income of farmers that should be gained by employing Good Agricultural Practices (GAP) and Good Postharvest Practices (GPP). For this capital management, *subak* should be improved its capacities on forecasting of demand and supply, administration which are needed to use for fulfil the requirement to get loan or credit from the bank. The role of bank is very crucial to support the capital working for *subak* in order to intensify the activities of agribusiness.

Extension and training about agribusiness system

The information of GAP and knowledge of agribusiness system for the farmers and *subak* should come from the extension agents. The extension and training must be done with the principles of participatory approach in order that the farmers could adopt the innovation (Korten, 1987). Some forms of extension and training that might be chosen are on-station trial, demonstration plot trial, and on-farm trial, in which the subjects consist of selection of seeds/seedlings, land preparation, transplanting, maintaining, pest and disease control, harvesting, processing and marketing, management, administration, finance and others. By this extension and

training works, it could be expected that the farmers will have good attitude and knowledge and skill in the relation to agribusiness system. At the beginning, the farmers should be provided agro inputs as an incentive to apply what they have learned during the extension and training. The change agents might work cooperatively with the management board of *subak*. In order to improve the quality of extension and training, it is needed to strengthen research systems for increasing increase the supply of new knowledge and new technologies (World Bank, 2007). E&T at the farmer level must be directly involve farmers as a main actor to work during the implementation of training.

Crop diversification

Based on the extension and training demonstrated to farmers, they are later then introduced and motivated to have crop diversification practices. Kinds of crops should significantly bring much more profit for farmers. The productivity and the prices of products are relatively high. Market survey relating to demand, supply, price and other should be informed to *subak* in order to ensure the crops planted will have good price for farmers. High price of product is one of the incentives for farmers in conducting farming activities. Mosher (1966) clearly stated that incentive is one of the principles factors for agricultural development. This diversification is also important to solve the scarcity of irrigation water and anticipate the failure of harvest on one of the crops planted.

Establishment of cooperative unit

In order to facilitate the agribusiness system in *subak*, change agents could encourage an initiative of farmers or management board to establish cooperative unit. The case of *Subak* of Guama, the cooperative established, called KUAT (Koperasi Usaha Agribisnis Terpadu) has shown good results for the *subak* and farmers. Some benefits of cooperative unit for the farmers are as follows: (i) getting credit for rice farming; (ii) getting credit for cattle farming; (iii) having credit for agro inputs; (iv) having credit for small scale industry; (v) gaining proper price of product as the cooperative buys the farmers' products. This cooperative could be also functioned to run agrotourism activity in the areas of *subak* based on the availability of natural and cultural resources in the *subak* system. Government should provide the training and extension in order to strengthen the capacity of *subak* management boards and members for the agrotourism aspects. This should be also done to the villagers who are living within the similar areas with *subak*, and its surrounding. The main activities of cooperative unit of *Subak* Guama are (i) Integrated Corps Management, that includes the distribution of agro inputs in which farmers must return within 4 months with low interest--1 % /month; (ii) Corps Livestock System that develops integrated system between the rice crops and cattle. Farmers could get the credit for this system for 2 years with the interest of 1 %/month; (iii) micro credit for the women that have business for home industry, such as coconut oil processing, local food, etc. (Sedana, 2011).

Conclusion

Agricultural development has significant role in Indonesian economic development as an agrarian country. Therefore, government has been carrying out a new paradigm, called sustainable agricultural development. In case of Bali,

agricultural development is still emphasized even though the tourism development is highly increased. Widely speaking, *subak* commonly constitutes a customary law community having very strong characteristics, namely socio- agriculture – religious which manage an irrigation system in rice fields. *Subak* has good potential for developing economic activities in order to increase the incomes of farmers and *subak* itself. some problems encountered by farmers relating to agribusiness activity, as follows: (i) competition of water uses; (ii) lack of capital; (iii) low knowledge of agribusiness; (iv) lack of agribusiness skills; and (v) pests and diseases attack. In the long run, problems that could not be solved might bring about some consequences, such as income of farmers (*subak* members) still relatively low, the rice field areas will be decreased, less motivation/interest to work in farming activity, including worsen the environment. Based on the agribusiness system, *subak* s' functions could be reoriented for agribusiness activity by considering the problems happened. Some recommendation strategies for revitalizing *subak* to have agribusiness activities are: (i) improvement of operation and maintenance of irrigation system; (ii) strengthening capital; (iii) extension and training about agribusiness system; (iv) crop diversification; and (v) establishment of cooperative unit. The strategies recommended might ensure to sustain the *subak* existence and thus still support agricultural development.

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