



Developing Strategy of *Terubuk* Farming (*Saccharum edule* Hasskarl)

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Abstract

Terubuk is *endog tiwu* in Sundanese (sugarcane's roe-like), which is a perennial flower-plant resembling to sugarcane that is yet to grow up and blossom. *Terubuk* is used for food material due to containing nutrition facts and vitamins. Based on its nutrition facts, *terubuk* contributes positively toward health. In Sukabumi Regency, *terubuk* is found in 22 districts out of the existing 47 districts. However, not all farmers have worked a particular effort on it, as most of *terubuk* are considered as catch-crop on the land owned by them. The demand on *terubuk* for consumption activity is adequately high, yet it is not yet able to be fulfilled for not many farmers have been intentional to farm *terubuk* itself. The research was aimed to obtain developing strategy of *terubuk* farming. The research was conducted descriptively by applying survey method. The result of the research shows that in order to develop *terubuk* farming, it is required to take note on human resource (farmer), product, land, technology, market and organizational aspects.

Keywords: *Terubuk*; Strategy; Farming

Introduction

Terubuk is one of farming commodities that are considerably found in Sukabumi Regency, potential to be developed according to its benefits and economic values, yet it has not been developed in a serious manner as well as not been touched by technology. *Terubuk*, that has Latin name *Saccharum edule* Hasskarl, is one of plants from Poaceae (grasses) family which possesses an economic value functioning as local food resource. This plant is originated from Southeast Asia and Pacific Archipelago. According to Sukmawani, *et al.* [1,2], in several regions, this plant has various distinguished local names, such as *terubuk*, *turubus*, *tububuk* (in Sunda), *telur tebu/tebu endog* (in Java; English=sugarcane's egg), *bunga tebu* (in Sumatra; english=sugarcane flower), *sayor lilin* (in Manado), *sayur trubu* (in Maluku), *Didiliutu* (in North Halmahera), *idawaho* (in Ternate), while in Pacific regions it is known as *duruka*, Fijian *asparagus/dule* (in Fiji), and *pitpit* (in Melanesia).

Terubuk is used for food material because it contains nutrition facts and vitamins. Based on its nutrition facts, *Terubuk* gives positive contribution toward health. Regarding to its utilization, demands on *terubuk* is adequately high. Acquired from the result of initial survey to *terubuk* farmers and distributors, it is informed that demands on *terubuk* are not only for and from customers in the area of Sukabumi City and Regency only, but for and from those out of Sukabumi as well, namely Bogor, Depok, and Tangerang. However, such demands have not been fully and continuously met

because most of the farmers have not conducted any particular effort on the commodity. Farmers have generally just planted *terubuk* as catch-crop between paddy and crops planted in dry season with the purpose of strengthening the paddy dikes and fulfilling their family's consumption needs only.

Another result based on the initial result is that *terubuk* planted by farmers are found in a good condition either in an intentional or unintentional way of planting spreading in various land condition, such as in garden, paddy dike, pool-side, and house yard. This matter shows that *terubuk* has good enough potential based on its adaptability in various lands so that it is able to be easily cultivated. The survey also displays that there has not been a special cultivation of *terubuk* in Sukabumi regency within the scale of agriculture/plantation as primary farming although *terubuk* has adequately high economic potential. The result of the research conducted by Sukmawani Reny, *et al.* [1,2] shows that *terubuk* possesses a good enough economic value to be developed. Only for its potential to be well maximized as a source of either vitamins or revenue for the farmers, it is required a focused development.

Concerning the idea above, this study on *terubuk* is directed for formulating a developing strategy of farming of *terubuk* itself, for the potential that has been possessed is able to be developed well. As a result, *terubuk* in Sukabumi Regency can be one of leveraging powers of the region by means of its specific and special quality.

Literature Review

According to Nugroho (2006), there are three motivations of development, such as: job creation, fiscal improvement, and poor area development. Meanwhile, the essence of development is the entire activities that run simultaneously, including planning, actuating and evaluating in order to attain a purpose directed to a change in a better society's welfare. And, so is it in the development of farming, in which all activities being conducted is aimed for a better society's welfare. Many strategies have been implemented for improving farming development for the sake of the improvement of welfare of farmers. One of those is by means of optimization of role and utility of local resources. Thus, one of local resources whose role can be improved is ones that becomes local commodity possessing special feature based on the region itself. Such statement is in compliance with a Nugroho (2006) saying that development planning shall be made based on regional basis, it is a geographical area that has certain features and functions as a media for everything to locate and to interact. The regional development planning is an effort for formulating and applying theoretical framework into an economic policy as well as into a program of development that considers regional aspect by means of integrating social and environmental aspects that strives to an optimum and sustainable welfare.

The concept developed within the developing strategy of local-based agriculture is a development of agriculture that has the characteristic of being sustainable by putting the concept of local resources utility forward. The local resources proposed are human resources, natural resources and cultural values reflected in the society's custom of life which usually becomes an associated part of life that can be observed through daily attitudes and behaviors. According to Wisnusaputra [3], a number of values can be stated as local on the condition that its validity is only inclusive of certain group of society, although such values are probably relevant to prevailing values outside. For this reason, many among such values considered as local are actually relevant to the value in regional, national, global levels.

The utilization of these local resources is in order to create economic growth and job creation within related areas. Besides that, it is also able to arisen local values for the interest of development so that such utilization can be meaningful for any regional struggle in attaining the best achievement. Based on that matter, therefore, in a local-based development strategy of farming contains several misions of conduct, such as developing farming and regional economy, society's participation facilities, society and producer empowerment, poverty alleviation, and cross-sectors regional corporation.

This is in line with the concept of Local Economic Development (LED) by Blakely Edward J and Ted K Bradshaw [4] that states LED is a process in which local government and society's organization are involved in the creation of job field so that a better economic growth is created in local level. The theory of Blakely Edward J and Ted K Bradshaw [4] is strengthened by AHJ Helming [5] saying that LED is a process in which mature partnership among local government, society-based community, and business world are involved in managing available resources in order to create job field and stimulate the (growth of) economy in a certain area. Meanwhile, the implementation is emphasized on local control and the use of human, organizational, as well as physical resources. According to the statement above, developing *terubuk* as one of local potential commodities available in Sukabumi Regency is expected to be one of leveraging powers of the region that can help push the improvement of welfare of farmers. Such matter can be achieved if its developing strategy is in compliance with the local-based supportability of the region. It means that natural preservation has to be taken into consideration of sustainability.

Every region has special distinguished local commodity, in accordance with natural resources possessed that ends up generally as a leading sector in each region. In developing this local commodity, a particular strategy is required so that it can give optimum contribution for economic development.

Researches that generate strategy of farming development have been conducted. Such researches are mostly subjected to popular commodities consisting of horticulture groups, crops, and plantation. However, research that specially generates developing strategy on *terubuk* commodity has never been conducted.

The research on developing strategy of farming, among all, has been conducted by Sonobe Tetsushi., *et al* [6]. The result of that research concludes that the proper strategy and policy of sustainable development of certain commodity is by means of improving competitiveness. According to Porter [7], the improvement of competitiveness can be implemented through three strategies, such as: cost advantage strategy, differentiation strategy and focus strategy. For this reason, it is required an activity that has the characteristic of resources base. Meanwhile, the result of research conducted by Vinsensius [8] sums up that the developing strategy of local's superior commodity can be implemented in the manner of: (1) conducting central cultivation development by constructing facilities and infrastructures; (2) conducting integrated counseling; (3) weaving domestic and foreign cooperation; (4) providing

capital of the development; (5) creating partnership with core-plasma pattern.

The research related to *terubuk* is generally sparse, even based on the trace on various international journal the specific research on *Saccharum edule* cannot be found, only a little mentioned in the studies about *Saccharum officinarum* (sugarcane). Such researches have been conducted among all by Arsela Primadiyanti [9], about aspects of its cultivation namely *In vitro* regeneration of *terubuk* (*Saccharum edule*) and Chaniago Ramadhani., *et al.* [10], about Integration between *Terubuk* (*Saccharum edule* Hasskarl) Plant and Cattle as Effort on Rural Economic Development. Thus, the research conducted by Sukmawani Reny., *et al.* [1,2] about *terubuk* as potential vegetal resource shows that (1) *terubuk* contains good nutrition facts as vegetal source, (2) *terubuk* possesses advantage of competitiveness due to its uniqueness and (3) *terubuk* possesses good economic value to be developed. Therefore, based on that result it is recommended that a focused development is conducted with the support from the government.

Research Method

Sampling on this research was conducted by means of survey method on which the respondents were farmers planting *terubuk*, businessmen (distributor), agricultural instructor and related institution. Meanwhile, the sampling technique applied was cluster sampling. The first phase was determining the location of the district, the second place was determining the location of village and determining samples of farmer randomly, in each of selected villages. Respondents from the elements of distributor, agricultural instructor, and bureaucracy were determined purposively.

Data of the result of the research were descriptively tabulated for describing the potential of *terubuk* based on its strength, weakness, available opportunity, and threat that must be faced. The SWOT analysis was deployed in order to find out the developing strategy by taking notes on the aspects of manpower resource, product, land, technology, market, and organizational resources.

Results and Discussion

Potential of *Terubuk* based on strength, weakness, opportunity dan threat

Developing *terubuk* will be successful by paying attention on significant indicators that are able to influence in terms of both internal and external factors. In the study case of Sukabumi Regency, the indicators are inclusive of manpower, product, land, market, technology, and organizational resources. *Terubuk* farming will develop well if the components of superiority and value are achieved. In order to achieve it, it is of course required a contribution of various resources that can implement working process and improvement well. Based on that matter, those six factors have to be maximized in the name of their functions and roles. Explanation for each of those six indicators is as follow:

1. Human Resource/Manpower/Farmer: As a man whose life is dependent on agriculture land, farmer has to be able to be a business manager who has duty to maintain his farming business. In implementing his duty and role, a farmer cannot conduct it solely but in team.
2. Natural Resource (land): The natural resource proposed here is land. The expansion of planting area and intensive planting has to be supported by the availability of partnership and infrastructural improvement so that farmer can apply GAP in running his farming.
3. Product: The success of farming can be observed according to its productivity. In order to optimize the productivity of *terubuk*, therefore, it is necessary to conduct an effort for improving value added of the product, refinement of GAP (*Good Agriculture Practic*) and arrangement of proper.
4. Technology: Vivid status of technology for *terubuk* farming is very important. In order to obtain it, it is required an intensive guideline of *terubuk* farming through the arrangement of GAP which is oriented on local resources preservation. Therefore, the technology developed has to be non-organic.
5. Market: No matter how abundant and best the product is, it becomes meaningless without the presence of market. For this reason, market becomes significant aspect in developing local's superior commodity. Market is related to its activity, not the place where it is located. It is also required an effort and mutual agreement within its transaction for the market is solemnly acquired. Competition often takes place within market; therefore, only by good working process and performance, this market can be subdued.
6. Organization: Organization can be in terms of group, joint-groups, association, or corporation. Organization is facilitated and empowered by government and/or local government in order to grow and develop to be a strong and independent organization so that it can achieve a goal expected by its members. One farmer group usually consists of 20 - 30 members. Farmer group must be able to maximize its role as a media of learning process, cooperation, infrastructure provider unit, production unit, processing and marketing unit, and supporting service unit. Farmer organization shall be able to grow and develop to be a strong and independent organization so that it can achieve the goal expected by its members. Therefore, it is important to conduct organizational supervision intensively.

According to those six factors, the strength, weakness, opportunity, and threat can be mapped as served on table 1.

Strength	Weakness
<ol style="list-style-type: none"> 1. Experience of farming of more than 30 years 2. Adaptability toward higher growing area. 3. Land/soil condition in line with growing requirements 4. Able to grow with simple technology (doesn't need complicated treatment) 5. Accepted in various market 6. Availability of organization of instructor in every district 	<ol style="list-style-type: none"> 1. Low motivation on <i>Terubuk</i> farming 2. Segregated quality 3. Difference level of difficulty in land accessibility 4. Unavailability of GAP (<i>Good Agriculture Practice</i>) 5. Yet to be extensive market 6. Lack of organizational function and role on <i>terubuk</i> development
Opportunity	Threat
<ol style="list-style-type: none"> 1. Availability of opportunity of improving farmer's knowledge from instructor 2. Consumable along with various dishes 3. Availability of vacant land 4. Development ability of <i>Terubuk</i> farming technology 5. Very opened access of market opportunity 6. Potential to establish new <i>Terubuk</i> organization 	<ol style="list-style-type: none"> 1. Better farmer's knowledge of <i>Terubuk</i> from other regions (outside Sukabumi Regency) 2. Influence of weather toward <i>terubuk</i> quality 3. Bushes look-alike without good management 4. Improvement of product quality and quantity using non-organic substance 5. Market competition from other regions 6. Low awareness of participating in organization for farmers

Table 1: Matrix of Strength, Weakness, Opportunity and Threat of *terubuk*.

Developing Strategy of *Terubuk* Farming

The result of the research shows that developing *terubuk* farming as local's specific superior commodity in Sukabumi regency has to be implemented by concerning human resource, product, land, market, technology, and organization. Based on the result of analysis, it can be stated that the developing strategy of *terubuk* is compulsorily prioritized in Sukabumi Regency regarding to its human resource are: (1) implementing technical implementation for *terubuk* farming, (2) comparative study to other profitable region by developing *terubuk* and (3) socialization of *terubuk* farming opportunity toward farmers. The focus of strategy on improving farmer quality as manpower is very important. According to (2006), the position of farmer in agriculture development is central. Not only as an object of development, farmer is also expected to be a subject that along with the government implement the development itself. As a subject of the development, farmer shall have sufficient attitudes representing the development that consist of knowledge, skill, and positive attitude toward any development program. By means of those three attitudes, it is expected that farmer can participate maximally in implementing the development of agriculture that eventually give impact on the improvement of his/her family's welfare.

The developing strategy of *terubuk* in Sukabumi Regency based on product indicators are by means of: (1) post-harvest handling for improving value added of product, (2) refinement of GAP (*Good Agriculture Practices*), and (3) arranging cropping pattern and harvesting pattern. Meanwhile, the developing strategy of *terubuk* in Sukabumi Regency based on land indicator are; (1) improving cropping area through partnership with related stakeholders, (2) infrastructure refinement, and (3) arrangement of GAP (*Good Agriculture Practices*). Thus, the developing strategy of *terubuk* in Sukabumi Regency based on land indicator shall be directed to; (1) developing *terubuk* cultivation intensively, (2) recommending research to Agriculture Technology Assessment Center, (3) avoiding the use of non-organic substance, and (4) arranging organic-oriented GAP. Nowadays appropriates technologies have been considerably available and are able to be utilized by farmers in order to leverage the quality, quantity and productivity of various agricultural products. However, these various technology packages have not been able to be fully adopted by farmers due to all sorts of limitation faced and owned by farmers themselves. Including to those is technology package for *terubuk* farming. On the contrary, the technology package for *terubuk* farming shall be

organic-oriented. The developing action for *terubuk* is necessary so that *terubuk*, as local plant of Sukabumi Regency, can be sustainably developed. This case is in line with the result of the research conducted by JP Singh, *et al.* (2011) that concludes the approach of farming developing model should be able to encourage organic agriculture and resources conversation that helps maintain clean, and secure environment, as well as more economical agriculture.

Developing *terubuk* in Sukabumi regency will be outstanding if market indicator is also considered in a special manner. It is because market is a final goal of farming. No matter how good the product is, yet if it is not acceptable in the market-or it doesn't have any market-so the farming itself can be considered as unsuccessful. Therefore, the strategy is by means of: (1) improving the accessibility of market by farmers (networks and partnerships), (2) developing *terubuk* association (reinforcement of intensive organizational supervision), and (3) improving competitiveness of the product. Eventually, the last indicator that has to be concerned is organizational issues. The strategy is through: (1) creating *terubuk* association, (2) thriving economic organization of *terubuk* farmers, and (3) supervising the organization intensively.

Conclusion

Government shall be able to determine developing policy of *terubuk* with the concerns of: (1) human resources is functioned as agent of farming; (2) the product that is in this case is *terubuk*; (3) land that is functioned as the place for the ongoing *terubuk* farming; (4) market that is functioned as the final place for *terubuk* being distributed; (5) technology that determines *terubuk* farming effectiveness; and (6) technology that sustains developing farming of *terubuk*. Furthermore, it is expected that these potentials of *terubuk* can be optimized as it is the source of both vitamins and revenue for farmers. Therefore, it requires a focused-developing action and support, as well as policy, from the government.

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