ISSN: 0975-833X

*Available online at http://www.journalcra.com*

*International Journal of Current Research*
*Vol. 8, Issue, 03, pp. 28223-28227, March, 2016*

**INTERNATIONAL JOURNAL OF CURRENT RESEARCH**

## RESEARCH ARTICLE

# EVALUATION COMPETITIVENESS OF RICE AND RICE PRODUCTION IN SOUTH SULAWESI

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**ARTICLE INFO**

***Article History:***
Received 20th December, 2015
Received in revised form
25th January, 2016
Accepted 29th February, 2016
Published online 31st March, 2016

***Key words:***

Rice production systems
Competitiveness analysis of the balance sheet.

**ABSTRACT**

The role of the agro-industry sector is important because it has strong linkages to other sectors. The linkage is not only the relevance of products, but also through linkages with final demand and primary inputs, namely the relationship of consumption, investment and labor. This implies that an increasing investment in the agro-industry sector will create job opportunities and sources of income of the people, so the farmer households are not only depend on a piece of land that is increasingly narrowed as their livelihood, but it able to support the growth of productivity. All of it will have a positive impact for poverty reduction which is mostly within the agricultural sector. Based on the background problems of production systems and the increase of competitiveness of rice production in the above, it is necessary to develop a model of group-based management of rice fields in order to create a strong structural transformation. One of the requirements that must be met in order to achieve the structural transformation of agriculture (paddy rice) to the manufacturing industry is an association of agricultural sector and industrial sector. The most appropriate link is processing of agricultural products into production systems through the development of business patterns. Strengthening institutions of rice farmers who produce rice needs to be fostered in order to increase capacity in the process of technology transfer and improve competitiveness and achieve their bargaining power in the market. A dynamic rice market conditions is indeed caused by the condition of "supply-demand" of rice in the respective markets. However, since rice is the staple food, the majority of the population demand are "in-elastic" so that the dynamic market conditions are likely to be affected by its supply side.



**Citation: Majdah M. Zain, A. Abd Rahman Syafar, Lasumange, Fatmawati, 2016.** "Evaluation competitiveness of rice and rice production in south Sulawesi", *International Journal of Current Research*, 8, (03), 28223-28227.

## INTRODUCTION

The agricultural sector in Indonesia is still seen as a strategic sector in the national development framework, because it provides a substantial contribution to Gross Domestic Product (GDP) which is equal to 15.94 percent, as well as the largest employer of total national employment of 44.34 percent (BPS Indonesia, 2012). In fact many considered the sector has recorded some successes such as a large contribution in supporting high economic growth during the first PJP which is about an average of 7.2 percent per year. Agro-industry system must also be able to support the agro-industry system of rice production to encourage and increase competitiveness. With the diversity of agro-products, the market of agro-products will be wide open, not only in domestic market but also overseas market. The role of the agro-industry sector is important because it has strong linkages to other sectors. The linkage is not only the relevance of products, but also through linkages with final demand and primary inputs, namely the relationship of consumption, investment and labor. This implies that an increasing investment in the agro-industry sector will create job opportunities and sources of income of the people, so the farmer households are not only depend on a piece of land that is increasingly narrowed as their livelihood, but it able to support the growth of productivity. All of it will have a positive impact for poverty reduction which is mostly within the agricultural sector. In addition, despite the structural transformation from agriculture to industry, the people who work in the agricultural sector, particularly related to the management of paddy fields for rice production and rice, is still more dominant than other nine sectors in GDP. Based on the percentage of working population according to major employment, the percentage of population employed in agricultural sector amounted to 44.47%, while the percentage of population working in industrial sector is 12.16%. This condition indicates that agricultural sector is still the foundation of a source of income for the majority of Indonesian people. Thus, the collapse of agricultural sector development will affect the life of most Indonesian people. Based on the background problems of production systems and the increase of competitiveness of rice production in the above, it is necessary to develop a model of group-based management

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of rice fields in order to create a strong structural transformation. One of the requirements that must be met in order to achieve the structural transformation of agriculture (paddy rice) to the manufacturing industry is an association of agricultural sector and industrial sector. The most appropriate link is processing of agricultural products into production systems through the development of business patterns.

**Literature Review**

**Agribusiness and agriculture-based industrial development strategy**

Saragih (1999) saw the limitation of agribusiness system as an intact and interrelated system among all economic activities, which are upstream agribusiness sub systems, farming subsystem, downstream agribusiness sub system, and agribusiness support services subsystems. Each subsystem can be described as follows: First, upstream agribusiness subsystem (up-stream agribusiness) including off-farm activities (off-farm), such as biotechnology, agrochemical industry (fertilizers, pesticides), agricultural tools and feed livestock. Second, farming Subsystem (on-farm agribusiness), such as nursery / hatchery, aquaculture; farms, plantations, agriculture. Third, downstream agribusiness subsystem (down-stream agribusiness) including processing production agribusiness and food-related industries such as non-food industries. Fourth, support services sub system including activities that support the agribusiness sector, such as industrial processing / preservation, agro-tourism, trade / services, transportation, and financial services / financial. A more complete definition of the agribusiness is given by the originator of the initial term agribusiness, Davis and Goldberg (1957) in Daryanto (1992) as follows:

*"Agribusiness is the sum total of all operation involved in the manufacture and distribution of farm supplies; production activities on the farm; and storage, processing and distribution of commodities and items made from them".*

In short, it covers all activities of agribusiness-agricultural based economy involving all businesses that are in on-farm and off-farm subsystem (Daryanto, 1992: 74-99). Furthermore, Santoso stated that the good traits of agro industry arethe growing of specialization in each processing industry in each agribusiness chain and processing diversification. In turn, it is expected to lead to an increase in value-added industries that are rich with links and the expansion of business and employment (Santoso, 1989: 5).

## METHODS

Coverage of the study site was mainly focused at the province of South Sulawesi as the origin of the shipment, and a few rice inter-island destinations. This area was only limited to some particular provinces which had been the main goal. Various empirical data related to the aspects of rice trade between the island-province were also collected from other provinces in the country. The data used in this study comprised secondary data and primary data. Secondary data were used in variety analytical models developed as the analysis of comparative advantage (LQ) rice commodities in various provinces in the country, the performance of rice trade between islands (Southern Sulawesi rice market share in many key destinations and market concentration indices) and the efficiency of marketing of Southern Sulawesi rice in the market at Southern Sulawesi as well as in the inter-island rice market.

$$LQ_{ij} = \frac{X_{ij} / X_i}{X_j / X}$$

Where:

$X_{ij}$ = * Model 1: The production value of food crop sector in province *j* in Indonesia (million rupiah)
* Model 2: Planting area of food crop commodities *i* in South Sulawesi (Ha)
* Model 3: Planting area of food crop commodities *i* in each *j* province in Indonesia (Ha)

$X_i$ = * Model 1 :Total value of food crop sub-sector in Indonesia (million rupiah)
* Model 2: Total planting area of all food crop commodities in South Sulawesi (Ha)
* Model 3: Total planting area of food crop commodities *i* in Indonesia (Ha)

$X_j$ = * Model 1:PDRB of province *j* in Indonesia (million rupiah)
* Model 2: Total planting area of food crop commodity *i* in Indonesia (Ha)
* Model 3: Total planting area of all food crop commodities at province *j* in Indonesia (Ha)

$X$ = * Model 1: Total PDRB of all provinces in Indonesia (million rupiah)
* Model 2: Total planting area of all food crop commodities in Indonesia (ha)
* Model 3: Total planting area of all food crop commodities in Indonesia (ha)

*i* = food crop commodities: 1, 2, …… n
*j* = province: 1, 2, …… m

Indicator criteria of comparative advantage based on LQ value are as follow:

$LQ_{ij} > 1,$: Sub-sector/food crop commodity *i* has comparative advantage to be developed at province *j*. $LQ_{ij} < 1,$: Sub-sector/food crop commodity *i* has no comparative advantage to be developed at province *j*

## RESULTS AND DISCUSSION

**Geographical condition indicators**

The results of an assessment of the potential districts / cities in South Sulawesi Province by land area and productivity in relation to competitiveness can be seen in the table below.

District / city within a center of rice production, will potentially serve as the basis for economic growth in the rice-producing farmers in South Sulawesi Province. South Sulawesi in 2013 has population around 8.7 million people with the consumption of 133.44 kg of rice per capita per year. It requires the availability of rice for domestic consumption of around 1.1 million ton per year, while the availability of rice in South Sulawesi after conversion reached 2.36 million tons. Thus in South Sulawesi there is a surplus of around 1.27 million ton of rice. Of the total surplus of rice in South Sulawesi region generates surplus BOSOWASIPILU. Approximately 1,126 million tons or 88.81 percent of the total surplus of rice in South Sulawesi. The existence of this surplus concentration caused the emergence of inter-regional trade in domestic rice. In the map domestic rice trade in South Sulawesi, the movement of flow direction is to the centers of consumption of Makassar, Pare-pare and Mamuju, because these three areas are trading centers for the purpose of inter-island in addition of having rice minus.

prices can fall to a 1998 economic crisis period. When such a condition occurs continuously is not possible business conditions can affect rice in South Sulawesi increasingly bleak. It can even lead to the socio-economic conditions of the area declined. In fact, the rice commodity is a mainstay commodity of South Sulawesi Sulawesi of MP3EI corridor related policies that put the food (especially rice) and has contributed to the dominant regional economy, as well as the largest employer of the structure of the regional economy. In addition, rice commodity has become part of socio-cultural life of the people of South Sulawesi. Improvements to the inter-island rice trading activity can cause the domestic rice market conditions in southern Sulawesi are in excess supply conditions; therefore, price at domestic market could fall and would affect the farmers' income, where farmers are the largest component in the community of South Sulawesi. Therefore, in order to formulate policies rice in South Sulawesi to improve competitiveness analysis of competitiveness perspective of inter-islands is expected to provide a constructive contribution.

**Table 1. Surplus-Minus Rice in South Sulawesi in 2013 broken down by district**

| No. | Regency/ City | Population/ People | Consumption Need (ton) | Rice Available (ton) | Surplus/Minus (ton) |
|---|---|---|---|---|---|
| 1 | Selayar | 109.415 | 14.600 | 2.641 | (11.959) |
| 2 | Bulukumba | 371.453 | 49.567 | 109.332 | 59.765 |
| 3 | Bantaeng | 164.841 | 21.996 | 47.841 | 25.845 |
| 4 | Jeneponto | 323.245 | 43.134 | 46.907 | 3.773 |
| 5 | Takalar | 240.578 | 32.103 | 51.021 | 18.918 |
| 6 | Gowa | 552.293 | 73.698 | 130.454 | 56.756 |
| 7 | Sinjai | 216.589 | 28.902 | 44.742 | 15.840 |
| 8 | Maros | 286.260 | 38.199 | 95.864 | 57.666 |
| 9 | Pangkep | 275.151 | 36.716 | 61.026 | 24.310 |
| 10 | Barru | 156.661 | 20.905 | 39.518 | 18.614 |
| 11 | Bone | 679.904 | 90.726 | 469.335 | 378.608 |
| 12 | Soppeng | 224.121 | 29.907 | 95.044 | 65.137 |
| 13 | Wajo | 362.683 | 48.396 | 237.329 | 188.933 |
| 14 | Sidrap | 246.259 | 32.861 | 191.690 | 158.829 |
| 15 | Pinrang | 331.592 | 44.248 | 217.293 | 173.045 |
| 16 | Enrekang | 175.962 | 23.480 | 13.847 | (9.634) |
| 17 | Luwu | 425.834 | 56.823 | 143.719 | 86.896 |
| 18 | Tator | 416.610 | 55.592 | 64.767 | 9.174 |
| 19 | Luwu Utara | 462.437 | 61.708 | 135.946 | 74.239 |
| 20 | Makassar | 1.145.406 | 152.843 | 5.485 | (147.358) |
| 21 | Pare-Pare | 113.057 | 15.086 | 2.363 | (12.724) |
| | Jumlah | 8.213.864 | 1.096.058 | 2.363.604 | 1.267.546 |

Source: Adapted from Statistics Food Crops and Horticulture South Sulawesi Province, 2013.

The survey results showed that a large surplus can actually characterize the two conditions that are mutually counterproductive. In one side, a large surplus of rice is ensuring the food security of all society in the aggregate and on very low point and in turn, it can certainly adversely affect the overall economic conditions.

## Perspective analysis of trade and competitiveness of rice in South Sulawesi

The results of the analysis on the perspective that the rice trade, although South Sulawesi has a great potential for rice production so as to produce a large enough surplus rice, was tended to have an increasing trend. However, it seemed that these conditions were not followed by activity of a significant inter-islands rice trade, especially since the other side, a large surplus that is not accompanied with trading activities to market the excess of production to other areas could create a domestic market oversupply in the domestic market so that

Perspective analysis through the MP3EI study intended to analyze in depth the various aspects that are the key aspects to push inter-islands rice trade of South Sulawesi. There were at least three main aspects of the focus of the analysis: (1) assess the relative position of South Sulawesi in the yield of rice compared to other regions as well as the relative position of rice to other agricultural commodities. This study primarily aimed to identify whether rice commodity is a commodity that can be relied upon in the regional economy and to identify other areas that could potentially be a major rival in the yield of rice. From this aspect, it can be stated that the South Sulawesi rice has prospect if the rice has comparative advantage to be developed, as well as South Sulawesi has a comparative advantage compared to other regions in producing rice, especially if the production system is done with the pattern-based farming groups. (2) Assess the trends and performance of the rice trade in various regions of South Sulawesi for rice inter-island trading purposes. This aspect, mainly aimed to find out whether South Sulawesi 'rice has the

ability to maintain its market share in each region of interest, and has the ability to expand their marketing reach. (3) Assess the barriers for inter-islands rice trade in terms of marketing efficiency. This aspect assumes that the efficiency of marketing is one of the key to push inter-islandsrice trade. An efficient conditions allows prices at home and destination markets to be adjusted so that the changes will move in the same direction. In other words both markets are perfectly integrated. Prices at every level of market players will move in the same direction, so the price can be transmitted up to rice producers.

**Conclusion**

The potential of rice production in South Sulawesi needs to be continually pushed so that its existence as one of the national rice buffer zones can be maintained. Strengthening institutions of rice farmers who produce rice needs to be fostered in order to increase capacity in the process of technology transfer and improve competitiveness and achieve their bargaining power in the market. A dynamic rice market conditions is indeed caused by the condition of "supply-demand" of rice in the respective markets. However, since rice is the staple food, the majority of the population demand are "in-elastic" so that the dynamic market conditions are likely to be affected by its supply side.

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