

# The Improvement of Local Citrus' Competitiveness to Strengthen the Rural Community Economy

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**Abstract.** The competitiveness of local citrus from rural communities is generally low, in which it results in a weak economic community. The efforts to increase the competitiveness of local citrus was through improving the cultivation technology, market structure, and industrial structure, and demand conditions for local citrus. Those efforts would strengthen the economics community. The objective of this study was to calculate the value of competitiveness of local citrus for rural communities. The location was in East Java which includes Banyuwangi, Tulungagung, and Magetan. The respondents were 280 people. The data collections utilized Participatory Rural Appraisal (PRA), Focus Group Discussion (FGD) methods, Rapid Rural Appraisal (RRA) method, and In-depth interview and Survey. This study employed quantitative data analysis. Related to the competitiveness of local citrus, the researchers conducted an analysis of comparative and competitive advantages by calculating the value of DRCR (Domestic Resources Cost Ratio) and PCR (Private Cost Ratio). The results revealed that the competitive and comparative competitiveness of the local citrus of the Siem tangerine was high as indicated by the PCR value: 0.4261 and the DRCR value: 0.4397. Even though the competitive and comparative competitiveness is high, the average profit was IDR. 1,483,742 / ha / month. It contributed to the family revenue 48.05%. There were six production facilities needed to increase the competitiveness of local citrus. They were human resources, technology, capital, raw materials, machinery, and markets.

**Keywords:** local citrus competitiveness, comparative and competitive advantages

## INTRODUCTION

Local citrus (Siamese citrus, tangerines, lime and others) as one of the national commodities that have a competitiveness potential. The commodities can be increased through profitability and market share. The factors to lead the competitiveness include technology, productivity, inputs and costs, industrial structure, and demand conditions [1]. The efforts to improve the competitiveness of local citrus was through improving

the cultivation technology (including improvements in productivity, quality, inputs and costs), market structure management, industrial structure, and conditions for local citrus demand. Those efforts would strengthen the national economy. The main areas of local citrus production in Indonesia include East Kalimantan and East Java [2]. Meanwhile, the production of citrus production was 2.565.543 tons [3].

The centers of local citrus production in Indonesia were West Kalimantan, South Kalimantan, East Java, East Kalimantan and South Sulawesi. Indonesia holds the 13th rank in the world citrus producer with 2.565.543 tons [3]. The potential for local citrus production and its competitiveness can continuously increase to fulfil the domestic consumption needs, 3.26 kg/capita/year. As a consequence, Indonesia imports citrus in the amount of 160.254 ton [3]. Due to the fact, the focus of the study is to the effort to increase the competitiveness of local citrus from rural communities by involving various related institutions (universities, research centers, Agriculture Service, Disperindag, NGOs and others). This was stated in the national commitment and political will of Indonesia government No. 12 / 1992. The law concerns with crop cultivation systems based on capital, technology and other resources, and based on benefits, preservation and sustainability.

The results of previous studies done by Prayuginingsih and Is [4] found out that the quality and productivity of local citrus is generally low. It was caused by several reasons: (a) local citrus are only considered as a side business with less attention to the proper cultivation technology; (b) weak capital, (c) weak technology; (d) weak market structure and trade system for local citrus; and (e) weak quality control at every stage of production to post-harvest. These have resulted in a weak economy of local citrus farmers in rural areas, for example in East Java: Tulungagung, Banyuwangi, Jombang, and Magetan [2]. In addition, it threatens the domestic local citrus conservation efforts and triggers the desire of the government and entrepreneurs to import citrus from several countries, namely Argentina (6.6 thousand tons), China (5.6 thousand tons), Australia (5.1 thousand tons), the United States (3.4 thousand tons), and other countries such as Pakistan, South Africa, Egypt, Spain, Uruguay, Hong Kong, Taiwan, Turkey, Japan and South Korea [5].

Thus, the objective of this study is to calculate the value of competitiveness of local citrus for rural communities.

#### METHOD

The approach employed in this study was participatory approach. The locations of the study includes several districts in East Java: Banyuwangi, Tulungagung, and Magetan[2].

The researcher employed stratified random sampling. It is since the community living in rural areas as a population consisted of groups that were quite heterogeneous. The stages of selecting respondents are: (1) having the population stratification by classifying populations into homogeneous groups based on type of work and economic activity; (2) the selection of respondents once the researcher obtains the population stratification, i.e. each stratum is taken 70 people in each sub-district randomly. Therefore, the respondents were 280 people.

The data sources in this study are grouped based on the type of data (including primary and secondary data). The sources of primary data were obtained from interviews and direct observations. Meanwhile, the secondary data sources were obtained from therelevant agencies. The data collections employed in the study were Participatory Rural Appraisal (PRA) and Focus Group Discussion (FGD) methods, Rapid Rural Appraisal (RRA) method, and In-depth interview and Survey.

This study employed quantitative data analysis. Related to the competitiveness of local citruss, the researcher conducted an analysis of comparative and competitive advantages by calculating the value of DRCR (Domestic Resources Cost Ratio) and PCR (Private Cost Ratio) [6].The criteria to determine the competitiveness are as follows: 1) If the value of DRCR and PCR is<0.25,itmeansavery high competitiveness and is efficient; 2) If the value of DRCR and PCR is0.25 - 0.50, itmeans ahigh competitiveness and is efficient; 3) If the value ofDRCR and PCR is 0.51 - 0.75, it meansamoderate competitiveness and is less efficient, and 4) If the value of DRCR and PCRis0.76 - 1.00, itmeans alow competitiveness and is inefficient.

#### RESULT

The profile of the farming business of *Siem* local citrus in the research sites in East Java (Banyuwangi, Tulungagung, and Magetan) is shown in Table 1.

#### Improving the Local Citrus Competitiveness

The Siem Local Citrus competitiveness values howed the superiority of a commodity, both comparatively and competitively. The competitive advantage revealed the efficient use of domestic production factors in providing added value of the product in the domestic market as measured by PCR (*private cost ratio*) value. Meanwhile, the comparative advantage measured the efficiency of the use of domestic production factors in generating

additional foreign exchange measured by the DRCR (*domestic resources cost ratio*).

Table 1. The profile of the farming business of *Siem* local citrus in the research sites

Description	Unit	East Java
Land Area	(ha)	0.57 – 2.09
Farmer Age	(year)	43 – 47
Education	(year)	5 – 8
Experience	(year)	17
Family members	(life)	4
Productivity	kg/ha	860 – 1805
Amount of plants	stem/ha	973 - 1.106
The age of Plant	Year	17
Competitive Competitiveness	PCR value	0.4261
Comparative competitiveness	DRCR value	0.4367
Average Profit	Rp/ha/month	1,483,742
Contribution to family income	Percent	48.055

Source: Primary data analysis (2018)

PCR analysis refered to a financial analysis calculated based on private prices. It meant the actual price received or issued by the farmers. These prices have been influenced by the government policies in the form of subsidies, protection, imposition / exemption of import duties, taxes and other policies.

DRCR meant as an economic analysis, which took the economy as it is without any interference from government intervention / policy into account. The consideration in the economic analysis was the total result. It meant the productivity or profits derived from all sources used in the project for the community or the economy, regardless of who provided these sources and who receives the results of the project in the community. The results were "the social returns" or "the economic returns" of the business. Therefore, the prices used in the calculation were the social prices or called as the shadow prices[7]. The determination of shadow prices for DRCR calculations in this study was determined by the following.

Tradable input: a) Chemical fertilizer. Chemical fertilizers used in farming citrus were Urea, SP-36, and KCl. Indonesia has exported urea fertilizer.As a result, the shadow prices were calculated based on FOB prices and imported SP-36 and KCl. Then, the shadow price was calculated based on CIF prices; b) Drugs/Pesticides. The pesticides used by the farmers in this study were not found by the researchers as eitherexported or imported commodities. Therefore, the shadow prices of pesticides were set equal to their private prices.

Untradeable input: a) The manure used was equal to the private price, because manure is included as untraded good; b) he workforces used in this study were freelance from the local community who were unemployed if there were no citrus plantations. Therefore, it was assumed that the production value of foregone was zero.Besides, because the freelances were from the local community, it was assumed that there was no cost of transporting

workers. Hence, the shadow price of labor wages or shadow wage is equal to the value of the wages of the local financial workforce; c) The shadow prices for processing and transportation costs were grouped into agricultural equipment. In addition, pesticide sprayers have equal value as the private price; d) Capital interest. The shadow price of capital interest was the interest rate of the July 2018 private savings average. The interest value was 12.16% and the average monthly inflation rate of the same period was 5.03%. Based on these calculations, the shadow interest of capital interest was 17.19%, and e) Land. Land was included in the untradeable input. The shadow price of the land used was similar with the value of forgone land. It meant the highest production selling value of other plants lost if the land was not being used as a citrus plantation. In the study location, citrus planted in the area were subject to cheap rent at private prices. Therefore, the shadow price was set at the price of land rent in general, IDR. 3,000,000 / ha / year [4].

**Output.** The output in this study was the citrus, the shadow price of the citrus is obtained from the FOB border price for it is an export commodity.

**Currency exchange rates.** The shadow price of the Rupiah exchange rate was calculated against Dollar. The acceptance and usage of production factors in local citrus farming can be arranged into the PAM (Policy Analysis Matrix) matrix. It was measured by the private and the social prices as the basis of calculations. Therefore, the PCR and DRCCR values can be recognized [8].

The efforts done to improve the competitiveness of local citrus in East Java are carried out through: improving human resources through farmer training, improving technology using balanced fertilization, improving the capital by farming credit, improving raw materials through the use of superior varieties, using machinery agriculture and improving market structure.

#### CONCLUSION

The results of the study showed that the competitive and comparative competitiveness of the local citrus of

the Siem tangerine was high as indicated by the PCR value, 0.4261, and the DRCCR value, 0.4397. Even though competitive and comparative competitiveness was high, the average profit was IDR. 1,483,742 / ha / month. It contributed 48.05% to the family income. Besides, there were six production facilities needed to be improved for the competitiveness of local citrus: human resources, technology, capital, raw materials, machinery, and markets.

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