Supporting organic rice exports: the success story of West Java organic rice exports

H P Saliem*, S H Susilowati¹, E Ariningsih¹, A Agustian¹ and Muksin²

¹Indonesian Center for Agricultural Socio Economic and Policy Studies, 3B Tentara Pelajar Street, Cimanggu, Bogor, West Java, Indonesia
²State Polytechnic of Jember, Mastrip Street, Mail Box 164, Jember, East Java, Indonesia

*E-mail: handewipurwati@gmail.com

Abstract. Organic rice has been developed in various regions in Indonesia, where West Java is the largest organic rice producing center. The organic rice market's development trend has increased significantly from year to year but faces competition from other ASEAN countries. This study aims to formulate an export strategy for Indonesian organic rice, particularly West Java. The research locations are Tasikmalaya and Bandung Regencies. The survey was conducted in March-October 2018. Data and information were collected at the provincial and regency levels through in-depth interviews with respondents related to organic rice development, including farmers, administrators of farmer groups/farmer groups association, and traders. SWOT analysis was employed in processing the data and information. The analysis results show that organic rice exports are in the Strength – Threat (S – T) quadrant, which indicates that the organic rice export strategy has a decisive strength factor but faces significant challenges. The main strategy needed to encourage organic rice exports is to take advantage of the strength of support from the Regional Government in developing organic rice to overcome the threat of expanding organic rice from other producing countries with higher competitiveness.

1. Introduction

One of the strategies to face competition in the ASEAN single market is to produce premium and specialty rice, especially organic rice, because Indonesia has great potential in the development of organic agriculture. Organic rice was developed in Indonesia in line with the “Go Organic 2010” program, although it has not run as expected due to various problems [1][2]. National data shows the total area of organic rice to reach 54 thousand hectares in 2018 [3]. The main organic rice-producing centers in Indonesia are West Java, Central Java, and East Java. The three regions produce export quality organic rice.

Indonesian organic rice is increasingly in demand by the export market, so that the export volume continues to increase. In 2016, organic rice export was recorded at only 81 tons, but in 2018 the Ministry of Agriculture has issued a recommendation to export 143 tons of organic rice. As of June 2019, 252 tons of organic rice has been recommended for export to several countries, such as Japan, Hong Kong, Germany, the US, France, Malaysia, and Singapore. The export was carried out by CV Shinta Rama, PT Bloom Agro, PT Bumi Subur Sejahtera Lestari, and PT Sejahtera Makmur Semesta. Organic rice exported is white rice, black rice, and brown rice [4].

Indonesian organic rice is valued quite highly in the export market, from IDR40,000 to IDR80,000 per kg. In Belgium, the price reaches IDR70,000 to IDR90,000 per kg [5]. The selling price at the
farmers themselves is around IDR20,000 per kg. On the one hand, the high selling price of organic rice in the world market is an incentive that can encourage the export of organic rice. The high selling price of organic rice is expected to help improve farmers' welfare. On the other hand, the high selling price of organic rice from Indonesia is a disincentive to encourage organic rice exports. Indonesia is still far behind with Thailand and Vietnam as the world's largest exporters of organic rice. In the domestic market, organic rice's high selling price is one of the obstacles in market development.

In general, the high selling price is due to the relatively high cost of organic rice production [6][7]. The domestic organic rice market segment is still limited. This condition is reflected in the elasticity of demand for organic rice, which is very elastic. One percent increase in organic rice prices will be responded by a decrease in demand by consumers of more than 16 percent [8]. Product price competitiveness is still a challenge for Indonesian organic rice development in penetrating the export market and domestic articles. However, the prospect of exporting Indonesian organic rice to the world market is still wide open. In terms of global demand, Indonesia's organic rice market share in the world market is still less than 10 percent [9].

This study analyzes the strengths, weaknesses, opportunities, and threats of organic rice exports from West Java Province. Furthermore, this study also aims to formulate a strategy for organic rice export in West Java Province.

2. Material and methods

2.1. Data, location, and time of research

This study uses primary data and secondary data. The study was conducted from March to September 2018. Secondary data were collected through interviews with key informants from related agencies at the provincial and regency levels. Primary data were collected through in-depth interviews using a structured questionnaire with farmers, administrators of farmer groups/farmer groups association (Gapoktan), and collectors in Tasikmalaya and Bandung Regencies.

2.2. Data analysis

SWOT (Strengths-Weaknesses-Opportunities-Threats) analysis was employed to assess the strengths, weaknesses, opportunities, and threats of organic rice export, mainly from West Java. Factors influencing export can be divided into two categories: internal and external factors. Internal factors include strengths and weaknesses, while external factors include opportunities and threats. This analysis was carried out using the following guidelines.

Strengths are situations or conditions that can have a positive influence now or in the future. The followings are guidelines for assessing the aspect. (a) What advantages does the province (the actor) have so that it can export? (b) What makes the actor able to export? (c) What uniqueness (surplus value) do exporters have in exporting? (d) What causes the importing country to import from actors considered to be the advantages of exporters?

Weaknesses are situations or conditions of exporters that can have a negative influence at present or in the future. The followings are guidelines to assess the aspect. (a) What factors export player's lack or limitation in exporting that can still be improved or increased? (b) What factors have the potential to cause exports to decline? (c) What factors should exporters avoid in conducting trade relations with partner countries? (d) From the importing countries' views, what factors are the weaknesses in exporting? (e) What did the export competitors (if any) do to be better than the export actors (who were the respondents)?

Opportunities are situations or external conditions that become opportunities to develop at a later date. The followings are guidelines to assess the aspect. (a) What opportunities can be exploited to increase exports? (b) What are the current developments/trends in the national and world economy and prospects that can be used as opportunities to increase exports?

Threats are any threats that may be faced by exporters that can hamper the rate of export development. This analysis can be completed using the following guidelines. (a) What barriers do you currently face to undertake and increase exports? (b) What are the things that the competitors do that are
considered a threat to exporters in increasing exports? (c) What obstacles are faced by exporters in carrying out and increasing exports (technical, economic, social, regulatory)?

3. Results and discussion

3.1. Organic rice development in West Java

West Java Province is the largest organic rice-producing center in Indonesia and is one of the provinces that has succeeded in developing and exporting organic rice to various countries. This is due to the particular rice development program in West Java Province, which consists of local, geographical indication, and organic rice. Organic rice-producing areas in West Java are Tasikmalaya, Karawang, Cianjur, and Indramayu Regencies. However, until now, the one that has been able to penetrate the export market is organic rice from Tasikmalaya [10].

At the beginning (2004), organic rice development in West Java Province focused on Tasikmalaya because of its more expansive area, covering more than 15 sub-districts. Organic rice development in Tasikmalaya Regency has become a program of the Tasikmalaya Regency Government, and all components of society support it. To manage organic rice farming development, the Simpatik Gapoktan, which so-called the pioneer of organic rice in the Tasikmalaya Regency, was formed. Organic fertilizers and pesticides are made by farmers or farmer groups themselves under the supervision of the Internal Control System (ICS) to maintain organic quality.

Organic rice farming is growing, so to absorb production, it is necessary to export. Export activities are facilitated by PT Bloom Agro, including conducting certification. PT Bloom Agro and Simpatik Gapoktan share the certification fee of around IDR200 million/year equally. After obtaining the international certification in 2008, in 2009, organic rice exports began to carry out. To further develop the organic rice export market, a cooperative incorporated under the name CV Alam Subur was formed so that Simpatik Gapoktan could carry out its exports through the cooperative. The formation of the Simpatik Gapoktan Cooperative also aimed to better monitor Gapoktan activities through the Annual Member Meeting.

Organic rice is also being developed in Bandung Regency as a pilot leader related to the System of Rice Intensification (SRI) activity generated by the Directorate General of Agricultural Infrastructure and Facilities, Ministry of Agriculture. Unlike the case of Tasikmalaya, the development of organic rice in Bandung Regency is in small spots. At the beginning of its development stage (2010‒2011), it was halting, and it was only in 2014-2016 that its development increased significantly. During that period, the Regency Government was more responsive so that growth was faster.

3.2. Rice organic export from West Java

The export of organic rice in West Java is carried out by Simpatik Gapoktan in Tasikmalaya Regency. It has been actively exporting organic rice to various countries in Asia, America, and Europe with an increasing trend. Organic rice exported is white rice, black rice, red rice, and brown rice. In 2009 Gapoktan Simpatik started the first export of organic rice as much as 18 tons to the United States. In the following years, besides the United States, exports were also directed to other countries such as Germany, the Netherlands, Italy, the United Arab Emirates, Singapore, Malaysia, and Belgium. In 2013, total organic rice exports carried out by Gapoktan reached 183.7 tons. In September 2016, this Gapoktan exported 40 tons of organic rice to Belgium. The volume and export destinations of organic rice carried out by Simpatik Gapoktan, Tasikmalaya Regency in the 2009-2016 period are presented in table 1.

3.3. SWOT analysis results of organic rice export

The factors of strengths, weaknesses, opportunities, and threats of organic rice exports and the strategy to encourage organic rice exports are described as follows.
3.3.1. Strengths. The strengths owned to encourage the export of organic rice from West Java are as follows.
1. Regional potential for developing organic rice areas. The potential land and water in West Java are extensive for the development of organic rice, covering 22 regencies/cities, especially in Tasikmalaya, Sukabumi, Garut, and Bandung.
2. Local government support for the Organic Village development program. The slogan and flagship program of West Java Province to develop a Thousand Organic Villages is a strength to accelerate West Java's organic rice exports.
3. Established export cooperation between Gapoktan and partners. In collaboration with PT Bloom Agro, since 2009, Simpatik Gapoktan has been exporting organic rice to several Asian, European, Middle East, and American countries.
4. Local government support in increasing the capacity of farmers to cultivate organic rice. Training programs and technical guidance for farmers in organic rice cultivation are an integral part of developing a Thousand Organic Villages in West Java Province.
5. Farmers' interest in producing organic rice is relatively high. Based on data compiled by the West Java Provincial Agriculture Office, farmers interested in cultivating organic rice continue to increase from time to time.

3.3.2. Weaknesses. Internal factors that serve as weaknesses and hinder the export of organic rice from West Java are as follows.
1. The area that meets the requirements for organic rice cultivation is still limited. The potential areas for the development of organic rice in West Java are extensive. However, the limited capacity of farmers, social problems, and institutions cause the potential of this large area cannot be utilized optimally. Besides, farmers were not consistent in cultivating organic rice [12]. This happens because of the strong behavior of conventional rice cultivation among farmers and the perception that organic cultivation is too troublesome to do, especially in time and labor allocation.
2. Not all farmers/Gapoktan have sufficient capacity to obtain organic rice certification. To obtain a certificate of organic rice cultivation requires seriousness and diligence to obtain national and international certificates that not all farmers can fulfill. Cultivation techniques that require land, water, and crop management following organic rice development principles have not been fully mastered and practiced by farmers [13][14].

Table 1. Organic rice export volume from Tasikmalaya Regency and its destination countries, 2009–2016.

| No. | Year | Destination country | Volume (kg) | No. | Year | Destination country | Volume (kg) |
|-----|------|---------------------|------------|-----|------|---------------------|------------|
| 1.  | 2009 | USA                 | 18,000     | 5.  | 2013 | USA                 | 39,805     |
| 2.  | 2010 | Germany             | 950        | 2.  | Germany | USA               | 50,400     |
| 2.  | 2010 | Malaysia            | 36,875     | 4.  | Germany | Malaysia          | 59,625     |
| 3.  | 2011 | Singapore           | 4,000      | 2.  | Belgium | Malaysia          | 8,500      |
| 4.  | 2011 | USA                 | 18,550     | 3.  | Italia   | Italia            | 16,670     |
| 4.  | 2011 | Netherland          | 5,275      | 4.  | Germany | Indonesia          | 16,700     |
| 3.  | 2011 | Germany             | 6,650      | 5.  | Malaysia | Malaysia          | 20,080     |
| 4.  | 2011 | Malaysia            | 17,240     | 6.  | 2014 | USA                 | 58,905     |
| 4.  | 2011 | United Arab Emirates| 16,600     | 2.  | Belgium | Malaysia          | 16,601.2   |
| 4.  | 2012 | USA                 | 57,125     | 3.  | Italy    | Italy             | 33,600     |
| 2.  | 2012 | Germany             | 63,270     | 4.  | Malaysia | Singapore         | 42,280     |
| 3.  | 2012 | Malaysia            | 29,828     | 5.  | 2014 | USA                 | 21,000     |
| 8.  | 2016 | Malaysia            | 21,320     | 2.  | Malaysia | Malaysia          | 21,320     |

Source: [11]
3. The capacity for special processing machines for organic rice is still limited. The processing machine for organic rice owned by Simpatik's Gapoktan is still limited so that the production capacity is not maximized and has an impact on the situation that it cannot meet the demand of the existing export market.

4. Farm record-keeping is still challenging to do for farmers. One of the requirements for the issuance of an organic certificate is detailed farm record keeping. This requirement has not been done well by farmers. Farm record keeping is an absolute necessity to obtain organic certification both nationally and internationally. Therefore, if farmers have not done it well, organic certificates cannot be obtained. Recording and documenting cultivation is difficult, even though the certification procedure must be complete recording. Many failed certification cases occur because the farmers cannot prove the cultivation process carried out (not recorded well).

5. The process, costs, and renewal of certificates that must be done annually are still obstacles. The complicated and expensive application processes require patience and a maximum effort by farmers.

6. Organic rice farmers' access to domestic markets and exports are still limited. It caused the supply chain for organic rice in West Java Province not to run well [15]. Access to markets is a very crucial factor in the sustainability of organic rice farming. Without adequate market access and price incentives, farmers will switch back to conventional/semi-organic methods [16]. Given that the domestic and international markets for organic rice have a particular market share, institutionalization at the farmer level and cooperation with partners to export is a must.

3.3.3. Opportunities. Several external factors that provide opportunities for developing organic rice exports from West Java are as follows.

1. The export market demand for organic rice is still open, and not all can be fulfilled. Organic rice exports are prospective to increase because organic rice farming is financially profitable and has competitive advantages [10].

2. Increased public awareness of organic food consumption. Public awareness of a healthy lifestyle and food consumption and the environment that is not contaminated by chemical substances is an opportunity for the development and export of organic rice.

3. The price of organic rice is higher than that of non-organic rice. Given that organic rice is included in the special rice category, the production process also requires more effort and costs. Organic farming can cut some farming costs, but it requires about twice as much labor [17]. It makes, naturally, the price of organic rice is higher than that of conventional rice. This is an opportunity that the farmers must seize.

4. There is a 2016 Indonesian National Standard (SNI) on Organic Food Systems. The existence of SNI on the organic food system becomes a reference for actors involved in producing, marketing, and consuming organic food.

5. There has been a development of an accreditation and certification system for the Organic Food Quality Assurance System. The presence of the certification body tasked with evaluating and providing recommendations and issuing organic certificates as a policy instrument is expected to guarantee food safety and quality, including organic rice.

3.3.4. Threats. Several factors that pose a threat to the strategy to encourage organic rice exports are as follows.

1. Other organic rice-producing countries are more competitive. Production efficiency that still meets production standards to produce organic rice at a price that can compete with other organic rice-producing countries is necessary. Otherwise, the organic rice produced by other producers could be a threat to West Java organic rice exports' sustainability. In this case, Vietnam and Thailand, which have the world's largest share of organic rice, will easily shift Indonesia's market share [9].

2. Fake organic rice products on the market. An unfair market where there are parties who take advantage of faking or mixing organic rice with conventional rice to gain more profit is a threat to the sustainability of organic rice production in Indonesia.
3. The effect of climate change on the continuity of production. Seasonal shifts due to climate change further disrupt the organic rice production pattern of the market's organic rice supply.
4. Termination of cooperation relations by partners in marketing organic rice. The threat that comes beyond organic rice producers' ability is when partners or customers terminate their working relationship in marketing organic rice.

3.3.5. Inter-factor linkages. Based on the identification results of internal and external factors as above, an analysis of each factor's urgency was carried out to encourage the export of organic rice in West Java Province. In this case, it is identified in relative terms which relationship of each factor is more important than the other factors. Through a matrix of relationships between internal factors for each factor of strengths and weaknesses, it can be seen the urgency weight of each internal factor in an effort to encourage the export of organic rice in West Java Province. Table 2 presents the key success factors for organic rice development in West Java.

Furthermore, the analysis is carried out to examine the relationship between factors, both internal and external. By analyzing the relationship between factors through a matrix at a glance by entering the weight of each factor, it can be obtained the average value of the relationship between the associated weight value and the total weight value (table 3).

| Internal factors       | Weakness                                 |
|------------------------|------------------------------------------|
| Support of West Java Government in developing rice organic through aid package | Limited farmers’ access to rice organic domestic and export market |

| External factors       | Threat                                   |
|------------------------|------------------------------------------|
| Opportunity to develop partnership in production and marketing (export) | Competition from other rice organic producing countries |

### Table 2. Key success factors of West Java’s rice organic export.

| Category               | Total weighted value |
|------------------------|----------------------|
| **Strengths**          | 4.76                 |
| **Weaknesses**         | 1.66                 |
| **Opportunities**      | 3.22                 |
| **Threats**            | 3.33                 |

Based on each weight's total value, which is a key success factor for encouraging organic rice exports in West Java, it can be described in a four-quadrant map where each quadrant has a different strategy to promote organic rice exports in West Java. It can be seen that the results of the SWOT analysis of organic rice exports in West Java are in the Strength – Threat (S – T) quadrant with the coordinate point at (3.01; -0.11) (figure 1). This shows that with the existing strength factors, namely the support of the West Java Regional Government in developing organic rice, efforts to encourage the export of organic rice in West Java Province must be followed by formulating strategies to deal with existing threats.

3.3.6 Strategy to support increased rice organic export in West Java. To implement the main strategy, namely optimizing local government support facilities in the development of organic rice and overcoming the threat of other country producers to produce more competitive products, the programs or activities that need to be carried out are as follows.
1. Optimizing local government support in terms of strengthening farmers' human resources' capacity by increasing the intensity and quality of training on organic rice management, post-harvest handling, and marketing.

![Figure 1](image)

**Figure 1.** Power map of West Java’s rice organic export, 2018.

2. Identify the key factors that cause Indonesian organic rice products to be less competitive than organic rice from producers in other countries. Henceforth, the key factors that have been identified are corrected, and solutions are sought if there are problems and obstacles encountered.

3. Improve the efficiency of organic rice farming and marketing so that Indonesian organic rice can compete with other producing countries. This requires coordination and program synergy with related institutions so that efforts to increase production efficiency and marketing of organic rice can be carried out properly. The efficiency of the organic rice production and marketing system needs to be observed throughout the agribusiness chain, starting from the upstream (preparation of the availability of production facilities and institutions), the production process, harvesting, post-harvest, to marketing, both in the domestic market and the export market.

**4. Conclusion**

Organic rice exports based on the SWOT analysis are in the Strength – Threat (S – T) quadrant, which indicates that the organic rice export strategy has a decisive strength factor, but faces significant challenges as well. The results of this study suggest that the main strategy needed to encourage organic rice exports is to harness the strength of local government support in developing organic rice to overcome the threat of the expansion from other rice organic producing countries with higher competitiveness.

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**References**

[1] Mayrowani M 2012 Pengembangan pertanian organik di Indonesia *Forum Penelit. Agro Ekonomi* **30** 91–108

[2] Lestari Y K and Suryana A T 2013 Sustainability of organic rice farming in Indonesia *Proc. the 10th Hokkaido Indonesia Student Association Scientific Meeting* (Hokkaido: Hokkaido Indonesia Student Association) p 55–60
[3] Aliansi Organis Indonesia 2019 Statistik Pertanian Organik Indonesia 2018 (Bogor: Aliansi Organis Indonesia)

[4] Agrifood.id 2019 Beras organik diminati, beras ketan hitam diekspor Available at https://agrifood.id/beras-organik-diminati-beras-ketan-hitam-diekspor/

[5] MSN 2017 Kemtan genjot ekspor beras organik Available at https://www.msn.com/id-id/ekonomi/ekonomidobisnis/kemtan-genjot-ekspor-beras-organik/ar-AAo1SLh

[6] Haghjou M, Hayati B, Pishbahar E, Mohammadrezaei R and Dahti Gh 2013 Factors affecting consumers’ potential willingness to pay for organic food products in Iran: case study of Tabriz J. Agric. Sci. Technol. 15 191–202

[7] Barkley A 2002 Organic food growth: producer profits and corporate farming. Presentation at the Risk and Profit Conference (Manhattan: Dept. of Agricultural Economics, Kansas State University)

[8] Risty C T B, Iskandarini and Rahmanta G. 2013. Elastisitas permintaan beras organik di Kota Medan J. Soc. Econ. Agric. Agribusiness 2 1–10

[9] Jakiyah U 2017 Analisis daya saing usahatani beras organik di Provinsi Jawa Barat J. Hexagro 1

[10] Istiqomah A, Nindyantoro and Novindra 2019 Analisis land rent dan daya saing pertanian padi organik di Kabupaten Tasikmalaya J. Ekon. Pertan. Sumberd. Lingkung. 2 13–25

[11] Dinas Pertanian Kabupaten Tasikmalaya 2018 Laporan Tahunan 2018 (Tasikmalaya: Dinas Pertanian Kabupaten Tasikmalaya)

[12] Supyandi D, Sukayat Y and Heryanto M A 2014 Beras organik: upaya meningkatkan daya saing produk pertanian (Studi kasus di Kabupaten Bandung Provinsi Jawa Barat) J. Proc. Fak. Ekon. Bisnis Univ. Jend. Soedirman 4 190–201

[13] Ishak A and Afrizon 2011 Persepsi dan tingkat adopsi petani padi terhadap penerapan System of Rice Intensification (SRI) di Desa Bukit Peninjauan I, Kecamatan Sukaraja, Kabupaten Seluma Inform. Pertan. 20 76–80.

[14] Nugraheni S and Purnama A F D 2013 Problems and prospects of organic farming in Indonesia: lesson from five districts in West Java Province. Bina Ekon. 17 112–20

[15] Purwandoko P B, Seminar K B, Sutrisno and Sugiyanta 2019 Analisis rantai pasok beras organik di Provinsi Jawa Barat J. Pangan 27

[16] Permatasari P, Anantanyu S and Dewi W S 2018. Pengaruh tingkat adopsi budidaya padi organik terhadap keberlanjutan budidaya padi organik di Kabupaten Boyolali. Caraka Tani J. Sustain. Agric. 33 153–68

[17] Komatsuzaki M and Syuaib M F 2010 Comparison of the farming system and carbon sequestration between conventional and organic rice production in West Java, Indonesia Sustainability 2 833–43