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研究課題名(和文) Identifying the Determinants of China's Organic Agri-food Exports to the Developed Countries

研究課題名(英文) Identifying the Determinants of China's Organic Agri-food Exports to the Developed Countries

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研究成果の概要(和文)：This research project aims to help agriculture producers to plug in the value-added global value chains of organic products trade. China is studied as an example. The determinants of how China manages to plug in value chains were identified through qualitative and quantitative analysis.

研究成果の学術的意義や社会的意義

The empirical results can set China's example for other developing countries for organic agri-food trade. The methodology, as a combination of traditional agricultural economic studies and econometric analysis, can be generally applied to study other sectors outside the agriculture economics.

研究成果の概要(英文)：This research project is motivated to help more agriculture producers in developing countries to plug in the value-added global value chains of organic products trade. China is studied as it has been exporting organic products to developed countries' markets. The determinants of how China manages to plug in value chains were identified through qualitative and quantitative analysis. The research provides a descriptive study on what are the determinants with farm level analysis while analyze the requirement of the importing market at industry and country level. To quantify the effects of each key determinant at industry/sector-level, basic econometric method is used due to limited trade and industry data. The micro- and macro-level results would 1) be a stepping-stone in organic agri-food trade research and stimulate future research on key determinants; 2) benefit stakeholders in business decision making and shed light on policy making in agricultural production and exporting.

研究分野：agriculture economics

キーワード：organic agriculture trade global value chain

1. 研究開始当初の背景

Organic food has become more and more popular because of the increasing demand of safety food, awareness of sustainable agricultural development, and environment protection (FiBL- IFOAM 2021). In 2013, about 72 billion US dollar organic products were sold globally, with a more than 10% growth rate in most developed countries' markets¹. However, the supply side grows but falls a little bit behind with a 0.98% under demand. Demand in the U.S., Germany, France, and other major organic consumption markets have large potential import need. This can be a great opportunity for most agri-based developing countries² to access to the developed countries' market if they have the capacity to produce standard-compliance organic products.

As the fourth largest organic market for consecutive years, China has been successfully exporting to developed countries' markets³, in addition to meeting the domestic demand. It is the only developing country among the top eight countries exporting organic products. China exports both final and intermediate organic agri-food products to major markets in North America, Europe, and its neighboring developed countries, Japan. The final goods are usually being sold directly in the supermarket or grocery stores while the intermediate goods, for example, the condensed organic fruit juice will be further processed by local firms to drinkable juice with their own brand. Many Chinese organic products are also being exported as the outsourced ODM products.

Many literature (WTO 2007, OECD 2011, 2014, DiCaprio and Lei 2013) show that the GVC has become the new trade pattern with globalization. By exporting the final products and intermediate products to developed countries (plugging in and moving up the GVC), developing countries can make more profits and enjoy some positive spillover (UNCTAD 2013, World Bank 2010). The more value-added the exports are, either more towards final products vertically or more sophisticated products horizontally, the more benefits the exporters can gain. However, a big number of research (Rickard and Lei 2011; OECD/WTO 2013; FAO 2014) on the non-tariff barriers (including sanitary and phytosanitary barriers and public/private standard compliance) of agricultural trade shows that it has been challenging for developing countries to export agri-food products to developed countries (for market accessing, meeting standards, transportation cost and capacity etc.), not even to mention the organic products that generally require more production capacity.

2. 研究の目的

How can China successfully export the high value-added organic agri-food products via GVC to the developed countries' markets? This project studies China's organic agri-food exports to developed countries. Given it's a field with relatively limited research, this project will identify the key determinants

¹ This growing trend continues despite the pandemic shocks in other sectors, the organic food market has experienced its highest growth in 2020, exceeding 129 billion USD, a total increase of 15 billion USD (FiBL 2022). The growth rate of the Global Organic Food Market is 14.5%, with an estimated value of \$380.8 billion by 2025 (ResearchandMarket 2021).

² More than 91% of organic producers were in Asia, Africa, and Europe in 2019 and the top 5 countries with most organic producers are India, Uganda, Ethiopia, Tanzania, and Thailand (FiBL 2021b)

³ For example, China has been the top exporting country the European market in 2019 (FiBL 2021a)

promoting and hindering the exports. The results will be the stepping-stone for continuing detailed studies in this important topic later.

3. 研究の方法

The research investigates the key determinants from following categories (OECD/WTO 2013): 1) business environment and investment climate (access to finance, corruption and graft, investment and tax policy, government support, information diffusion, historical connection with importing countries); 2) productive capacity (skilled labor supply, production cost, certification cost, supply capacity); 3) infrastructure (transportation (capacity and links), storage or cold chain, sanitary); 4) trade facilitation (customs procedures, administration, communication and logistic costs). In addition, differences in 1) exports of final and intermediate products (to study position change along the GVC; 2) industry and selected crop are addressed.

Field investigations in China were conducted by 2019 to first verify initial hypotheses in above categories. Additional discoveries were also analyzed to supplement for an intact argument. Selected production regions and farms of vegetables, tea, and rice were investigated particularly, as the most produced and exported three categories of organic agri-food products in China. These products are exported from China to developed countries as either final goods or intermediate goods. Due to the COVID-19 outbreak, the micro-data collection process has been limited in China. After 2019, the research has switched to focus on the importing market, taking the European market among the developed countries importers as an example. From the perspective of importing market, China's organic exports and determinants are further analyzed. The analysis could be better adapted to other exporting countries in this way as they are targeting the same importing markets.

In addition to the qualitative descriptive analysis derived from field investigation and literature, straight forward quantitative analysis was also conducted with limited available data. To analyze and quantify the key determinants of China's participation in organic agri-food trade according to the determinants information gathered in field investigations, a two-tier approach to 1) measure the determinants of general organic products; 2) restrict the analysis to certain crop subsector to reflect sector specific determinants. Particular attention will be paid to the differences between exporters of final and intermediate goods to understand the movement along the organic value chain.

4. 研究成果

The Chinese government has attached high attention to protect environment, while developing sustainable agriculture is one of the key parts. Along with the "Green food", "Non-Hazard food", organic agriculture has been a major task when government make policy planning. A bunch of supportive policies have been published to encourage organic agriculture. In addition to the supportive policies, more certification regulation and monitoring systems are also implemented. To ensure the products quality and better the image of food safety, certification issuing, and tracing processes were strengthened. In addition to the development plan and policy guidance published by the central government, a top-down local implementation system is also observed. Local governments have also played important roles in adapting the central policies combing local production characteristics. Examples are in tea, vegetable, and dairy sectors.

Upgrading production capacity is another key factor. Agriculture production is heavily influenced by natural endowment and regional climate. Thus, it is important to keep and continue with the traditional

way of farming, which is the essence of thousands of years of wisdom and experiences. Meanwhile, introducing modern technology and learning from other countries, especially the targeted importing markets are also essential. Investing in human capital is also an important strategy. Abundant training and advisory have been provided to farmers and enterprises. Younger generation is also being encouraged to work in the organic agriculture sector.

At micro level, successful cases of exporting organic products share following key determinants: 1. exporting orientation, so far, most enterprises/firms who have been successfully selling to foreign markets are doing exporting solely. From the very beginning of the business, they have been exporting oriented. Their entire business, from land conversion, production, quality control, certification, labeling, packaging, etc. everything was produced for specific country, market, and demand. The advantage of such focused production is efficiency. All the resources and production are clearly targeted and tailored. Those firms either have no domestic business or just a small share. This kind of production way has not only been observed in developing countries but also in developed countries. It may work particularly well for developing countries business with relatively limited capacity. 2. brand building, this is such an important factor in all kinds of business. It takes time and a lot of investment, which are usually being lacked in small-medium sized agriculture business in developing countries. Small-medium size business have been utilizing the platform of social medium which can be a good starting point. 3. ICT, is the key to develop and plug in the global value chain. Online selling and product innovation etc. all require the supports of ICT. 4. Products processing, as the key to create more added value, processed organic products are a big part of Chinese organic exports. Although processed products require more resources, technique, and other factors in the production, actually the quality assurance becomes easier and more standardized as agriculture products. Because comparing to the production risk, risks in processing can be more manageable.

Above is a brief summary of selected findings based on qualitative interviews in a narrative way. These findings were represented in the quantitative study with proxy variables. Their significance in positively affecting China's organic agri-food products to developed countries markets were verified as well.

5. 主な発表論文等

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3. 雑誌名 Environment, Development and Sustainability	6. 最初と最後の頁 2739-2761
掲載論文のDOI（デジタルオブジェクト識別子） 10.1007/s10668-020-00699-w	査読の有無 有
オープンアクセス オープンアクセスではない、又はオープンアクセスが困難	国際共著 該当する

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オープンアクセス オープンアクセスとしている（また、その予定である）	国際共著 該当する

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掲載論文のDOI（デジタルオブジェクト識別子） 10.1016/j.jclepro.2019.01.050	査読の有無 有
オープンアクセス オープンアクセスとしている（また、その予定である）	国際共著 該当する

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4. 発表年 2018年～2019年

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4. 発表年 2018年～2019年

〔図書〕 計0件

〔産業財産権〕

〔その他〕

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6. 研究組織

氏名 (ローマ字氏名) (研究者番号)	所属研究機関・部局・職 (機関番号)	備考

7. 科研費を使用して開催した国際研究集会

〔国際研究集会〕 計0件

8. 本研究に関連して実施した国際共同研究の実施状況

共同研究相手国	相手方研究機関