

# **The role of a small town in the flow of agricultural commodities with its hinterlands before and after the construction of the Trans Sumatra Toll Road (case study: Kalianda District South Lampung Regency Indonesia)**

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## **Abstract**

Linkages between rural and urban areas assist numerous regions in a variety of ways. As a meeting place for villages and cities, a small town with hinterlands of agricultural areas acts as a market for village commodities, intermediary markets in larger markets, places for agricultural processing, places for production facilities, and a center for other activities. The construction of the Trans Sumatra Toll Road (JTTS), which crosses Kalianda District as a small town connecting several big cities, allows Kalianda alters its role. This study aims to examine the flow of agricultural commodities in a small town and its hinterlands and analyzed the role of small towns before and after the construction of JTTS. The data analysis was carried out by creating an Origin-Destination Map and providing the description. The results showed that seven agricultural commodities sold in Kalianda Market came from seven sources (origin), while commodities in rural areas had four selling destinations area. The small town illustrates its proper function as an intermediary market for larger markets, centers of health activities, administrative services, and banking services. However, the small town has not been able to play much of a role as an intermediary market for larger markets, rural commodity processing places, and places to find high-order goods. The small town is also incapable of being a destination for the identification of agricultural production facilities. In general, the existence of JTTS does not significantly change the role of small towns.

**Keywords:** small town; rural hinterlands; agriculture supply chain; Trans Sumatera Toll Road

## **1. Introduction**

Various activities related to villages and towns are closely connected, making it difficult to separate villages and cities or towns precisely. For example, many households are multi-spatial (Daldjoeni, 2014; Harini, Yunus, & Hartono, 2012; Rijanta & Suhardjo, 2003), so administrative boundaries lose their rigidity gradually. The classification of economic activity into rural economic activity and urban economic activity separately ignores the economic activity that occurs between the village and the city. Consequently, the correlation between rural and urban areas no longer receives much emphasis (Akkoyunlu, 2015). The attention given to rural-urban linkages will provide numerous benefits for many regions. von Braun (2007) reveals that strong rural-urban linkages increase regional growth because it facilitates

the flow of resources to places with the most significant economic and social benefit. In contrast, the lack of optimal rural-urban linkages will have a negative impact on economic growth at large because it leads to inefficiency and is the root cause of inequality which in itself will hamper regional growth (Holis, 2017). Rural-urban linkages in regional development may also result in development failures due to miscoordination (OECD/WTO, 2019) because regions that focus on or attach importance to rural-urban linkages will inevitably prioritize coordination.

A transitional area from rural to urban areas can observe the complementary (supposedly) relationships. This area is known as a small town. In simple terms, the primary function of small towns with hinterland areas in the form of agriculture is as a liaison between villages and big cities in the context of the flow of agricultural production from manufacturing to marketing (Wijayanti & Ma'rif, 2017). Meanwhile, Rondinelli (1979) put forward a more complex role of a small town. They explained that small towns connect national and international markets to sell rural products, be supply centers, and support agricultural production. Small towns also serve as the destination for finding agricultural production facilities and infrastructure (Douglass, 2018), along with centers of growth and consolidation of rural non-agricultural activities and employment, which often relate to processing agricultural products (Tacoli & Agergaard, 2017). Besides, they also become providers of administrative and social services for rural areas (Wandschneider, 2004). However, different regional variations in each region influence the role of small towns positively role as a link between villages and cities, so we cannot generalize their roles (Courtney & Errington, 2000; Douglass, 2018).

Infrastructure development is one example of regional variation, which has often been a concern in the last ten years. In the Medium Term Indonesian National Development Plan 2020-2024, the President of Indonesia's directive stipulates infrastructure development as the second top strategy for implementing the country's vision and mission. The more massive acceleration of infrastructure development is observed outside Java, aiming to resolve the constant economic inequality issues due to infrastructure inequality (Sukwika, 2018). One of the most excellent projects of the Government of the Republic of Indonesia is the toll road construction, which has reached around 2,674 km and is still ongoing (Yanwhardana, 2021). In Sumatra Island, Bakauheni-Terbanggi Besar Toll Road (JTTS) is the first segment to be completed because of its exact position as the gateway to and from Sumatra Island. This segment adds regional variations to Kalianda District that is a small town that is the capital of South Lampung Regency.

The construction of JTTS is expected to be a gateway to opening new economic centers and increasing community welfare, especially in Lampung Province. However, Zhang, Hu, and Lin (2020) concluded there is no consensus among experts regarding the effect of toll roads on the regional economy. Therefore, a study of the impacts of JTTS on the dynamic roles of small towns it passes should be investigated to identify whether it supports, hinders, or stagnates their roles.

As a small town surrounded by rural areas, agriculture is certainly a mainstay sector for Kalianda District and even more so for the surrounding districts, as reflected in the land use in South Lampung Regency. Until 2031, 75,167, 42,171, and 37,317 ha of land in South Lampung are predicted to be used as gardens, fields, and rice fields, respectively, followed by 34,810 ha

of built-up land (Adhiatma & Lubis, 2020). Additionally, the agricultural sector constantly presents the most significant contribution to the Gross Regional Domestic Product (GRDP) of South Lampung Regency each year (in billion rupiahs, 2015 = 9.6, 2016 = 10.5, 2017 = 11.4, 2018 = 12.3, and 2019 = 12.9). Accordingly, 57.52% of people in the South Lampung Regency work in the agriculture sector (Central Bureau of Statistics of South Lampung Regency, 2021). Moreover, compared to the other 14 regencies or cities in Lampung Province, the number of agricultural households in the South Lampung Regency ranks third highest, with 142,689 households (Central Bureau of Statistics of Lampung Province, 2019).

The rural-urban relationship related to agriculture in Kalianda District and the surrounding area is an interesting topic of discussion due to a number of factors. First, they have a relatively close distance to two big cities (Bandar Lampung City ( $\pm 70$  km) and Java Island ( $\pm 130$  km to Merak Port, Banten Province), while also located between the corridors of two big cities. Second, its direct access toll road may transform the role of Kalianda District in the linkage of the flow of agricultural commodities. The changes may enhance or weaken Kalianda District's position after the opening of this JTTS. Therefore, this study attempts to: 1) examine the flow of agricultural commodities in small town and its hinterlands and 2) analyze the role of small town before and after the existence of the Bakauheni-Terbanggi Besar Trans Sumatra Toll Road.

## 2. Method

This research used a qualitative approach. This research was carried out in five districts, namely Kalianda District (as a small town), as well as Sidomulyo, Rajabasa, Way Panji, Palas, and Penengahan Districts (as rural hinterlands). Five of the nine districts around Kalianda District were chosen because our initial research suggested that they supplied agricultural commodities to Kalianda Market. The study did not include the other eight districts (Natar, Jati Agung, Tanjung Bintang, Merbau Mataram, Tanjung Sari, Katibung, and Way Sulan) due to their location being closer to Bandar Lampung City (a big city) compared to Kalianda District. Thus, these districts were presumed to have a more vital direct interaction with Bandar Lampung City without going through Kalianda District. Kalianda District itself was chosen as the research location because since the construction of JTTS, this small town has become the 'gateway of Sumatra Island'. This is usually passed by many vehicles to transport people and goods from Java Island to Sumatra Island (and vice versa) through the Sumatra Main Road. It must be shared the role with the new way. Kalianda highway doesn't made few stops point for rest area. Therefore, this research tries to take one aspect of supply chain dynamics due to the construction of a new road, which has become one of the district's leading commodities, namely the rural-urban agricultural supply chain.

This study focuses explicitly on several roles of the small town, namely: 1) as markets for surrounding rural products, 2) as centres of intermediate markets in larger markets, 3) as centres of agricultural processing for surrounding rural areas, 4) as centres of agricultural facilities and infrastructure supply for the surrounding area, and 5) as service centres for other rural communities (Douglass, 2018; Rondinelli, 1979, 2019; Tacoli, 1998; Tacoli & Agergaard, 2017; Wandschneider, 2004). Those roles are taken from various theories and concepts that are often used in assessing the position of small towns in agricultural supply chains around the world, especially developing countries in Asia, Africa and Europe, for example, Douglass (2018) and Rondinelli (1979) explained that small towns in rural-urban linkages have a role for centres of production supply and support, centres for processing agricultural commodities,

and centres for providing non-agricultural jobs to a rural working employee. Complemented by Douglass (2018) explains that small rural towns also function as agricultural and rural commodity market centres for regional and extra-regional sales and distribution.

The informants in this study were farmers, fishermen, market traders, or distributors in Kalianda Market, along with farmers, distributors, or managers of rice factories in the surrounding rural areas. The informants were selected through two techniques of purposive sampling and snowball sampling. Purposive sampling was applied in determining informants in a small town (Kalianda Market), using criteria of the type of commodity being traded. The selected informants were traders or distributors who sell agricultural commodities broadly (food agriculture, plantations, fisheries, livestock). Further, snowball sampling was used to find out the flow of commodities comprehensively, not only within the small town but also in the surrounding areas. First step of collecting information were asked traders or distributors in Kalianda Market about the origin and destination of the commodities they sell. Then, get information through the traders, distributors, or factory managers from a small town and surrounding rural areas mentioned in the previous interview.

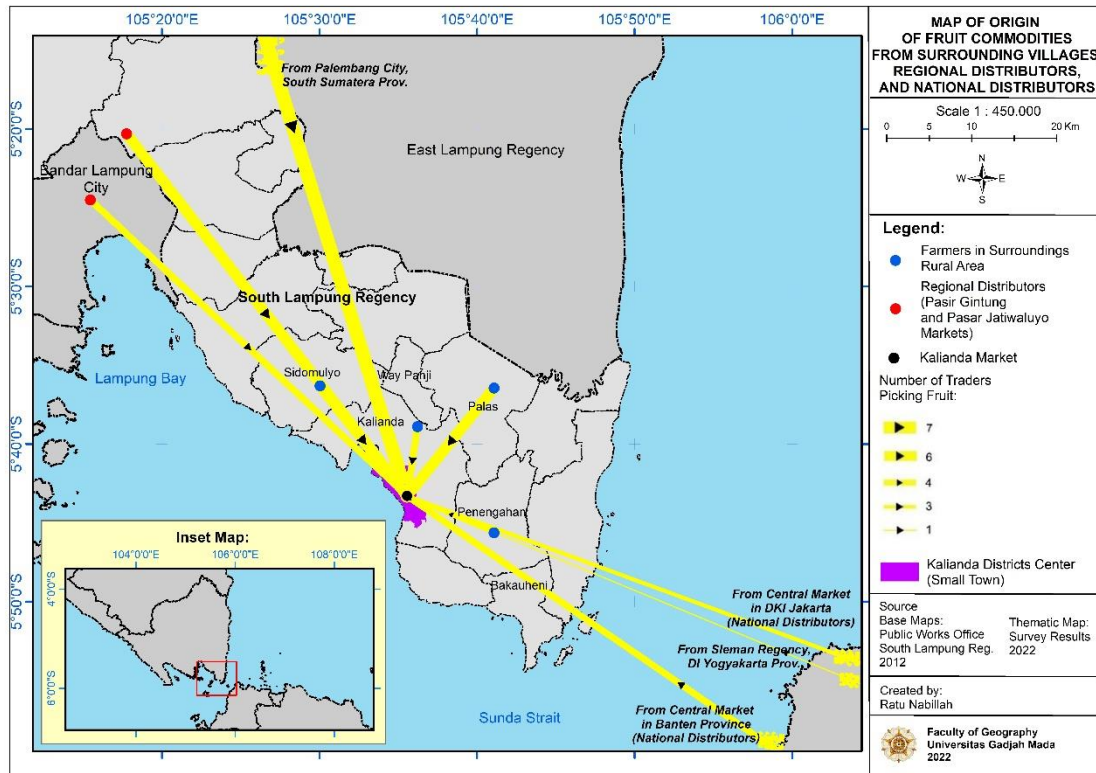
The first research purpose was assessed from data of the origin and destination of commodities then Developed the Origin-Destination Map. This map spatially depicts the origin and destination areas. The second research purpose was achieved through qualitative descriptive analysis. The second purpose more thorough version of the first purpose, referring to relevant ideas and providing numerous examples of the function of small towns globally. The second purpose were analyzed the function of a small town by comparing its role before and after the construction of JTTS. Comparison between the time series (before-after JTTS development) became a way of measuring the variables. The qualitative data analysis technique used is Miles and Huberman, where the steps taken in general are data collection, data display, data reduction, data verification, and data conclusion. These steps are not carried out sequentially, considering the flexibility of data collection as a feature of qualitative research until the data is fulfilled based on the researcher's assumptions.

### **3. Results and Discussion**

#### **3.1. The Origin of Agricultural Commodities in the Small Town Before and After the Construction of JTTS**

The origin of the seven commodities in Kalianda Market can be broadly divided into seven categories, namely from: 1) farmers or fishermen in Kalianda District directly, 2) farmers in surrounding villages, 3) local distributors in Kalianda District, 4) distributors in surrounding villages, 5) regional distributors, 6) national distributors, and 7) rice factories in Kalianda District. The first commodity is fruit. There are four sources in the distribution flow of fruit commodities, namely local, regional, national, and surrounding villages, as illustrated in Figure 1. Local distributors are certainly the primary sources of fruit traders at the kiosk in Kalianda Market because local distributors are most often associated with regional (the City of Bandar Lampung and Palembang) and national distributors (traders in Java Island). The local distributors frequently pick up the fruit in bulk and then sell it to the kiosk traders. However, sometimes the kiosk traders in Kalianda Market also take the fruit directly to regional and national distributors without going through local distributors. That condition occurs when traders have other needs, such as recreation or health treatment in Bandar Lampung City.

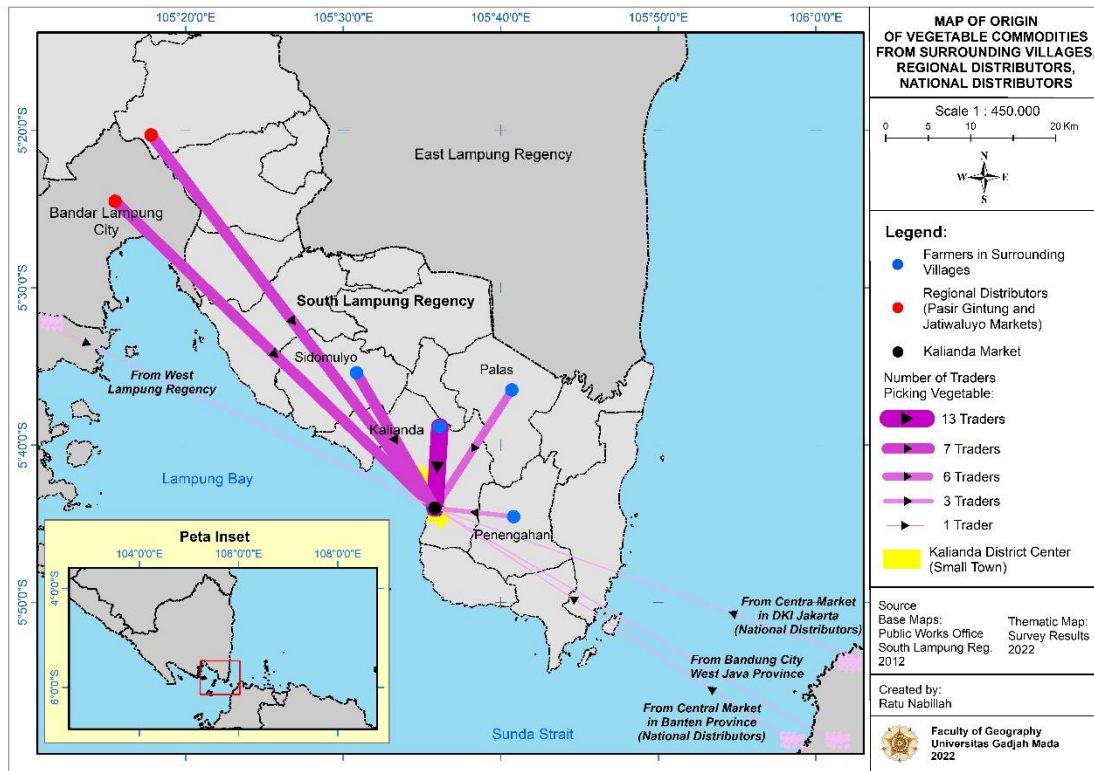
Traders who pick up directly from national distributors take advantage of expeditionary delivery services or the 'goods deposit' system using buses, although this is very rare. Local kiosk traders and distributors in Kalianda District also get their fruit from the surrounding rural areas directly from farmers or through rural distributors. The fruits regularly obtained from these four districts are melon, watermelon, and papaya.



**Figure 1. Map of Origin of Fruit Commodities from Surrounding Rural Areas, Regional Distributors, and National Distributors**

The second commodity is vegetables. Vegetables in Kalianda Market have four distribution channels, namely local, regional and national distributors, along with farmers or distributors from surrounding villages (Figure 2). In general, vegetable distribution origin is similar to fruit distribution, where local distributors take vegetables from regional distributors and then distribute them to small traders at kiosks. However, unlike fruit commodities, for vegetables, the regional distributors come directly from Bandar Lampung City to Kalianda Market daily. They will leave using a pick-up car around 03.00 AM and arrive at around 04.30 AM. Local distributors are the actors most frequently associated with regional and national distributors. One out of three local distributors sources their vegetables directly from Bandung City and various Main Markets in Jakarta, Bogor, Depok, Tangerang, and Bekasi, such as Kramatjati Main Market or Tanah Tinggi Main Market. Traders at Kalianda Market also get vegetables from local farmers. Different from fruit commodities, most vegetable products at Kalianda Market come from Kalianda District itself. Additionally, the most popular vegetable distribution channel is that farmers sell them directly to the market using a door-to-door system. However, some vegetable commodities are still taken from Palas, Sidomulyo, and Way Panji districts. After the JTTS opening, the main difference is only in the distribution channel. Before JTTS, regional distributors had to leave at around 02.00 AM. As JTTS can shorten the

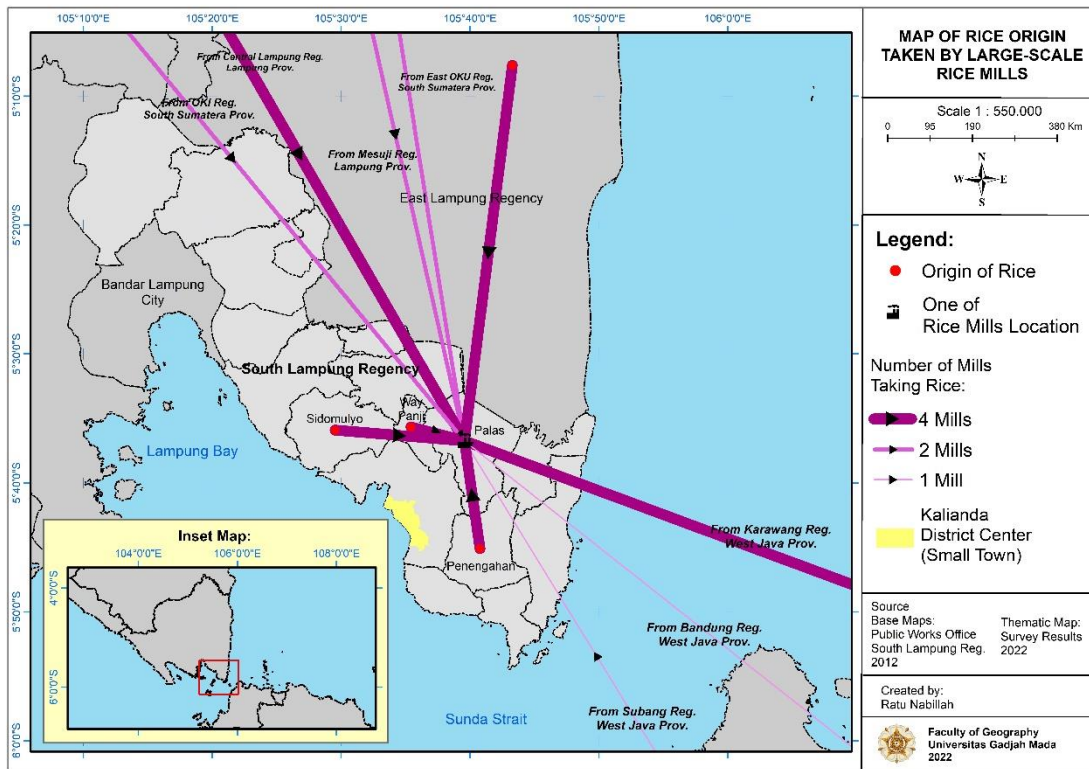
travel time from Bandar Lampung City to Kalianda District, many regional distributors choose to use JTTS to get additional rest time when they have no other areas to be visited.



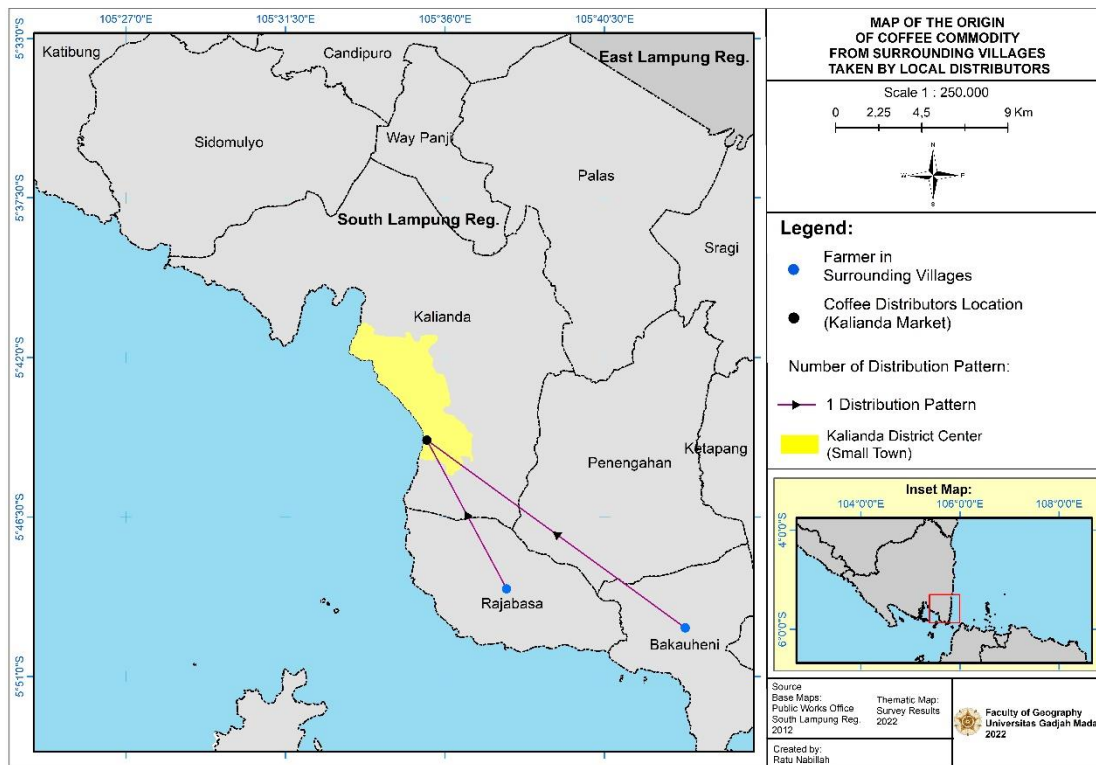
**Figure 2. Map of Origin of Vegetable Commodities in Kalianda**

In addition, seven rice mills were selected for the data collection based on their brands and information obtained from traders in Kalianda Market. Of these seven rice factories, all managers stated that they prioritized harvested rice from farmers around their factories for various reasons. When local yields are insufficient, four large factories take raw materials from multiple regions, as presented in Figure 3, while three small factories choose to stop producing. As a result of the construction of the JTTS, there are two new areas for rice harvesting in South Sumatra Province. This happened because the travel time was reduced by about 4 hours compared to before the construction of JTTS, allowing factory owners to take rice from South Sumatra Province.

The fourth commodity is coffee. The coffee that is Kalianda District's flagship is WC Coffee. Three of the four WC Coffee traders in Kalianda Market directly grind coffee and sell it in front of their shop, as shown in Figure 4. One other shop (the most prominent and pioneer shop) cooperates with a mill in Kalianda District. Based on information from the clerk at the mill, the coffee beans that are ready to be ground come from two local distributors who are also still in Kalianda District. These two distributors routinely receive harvests from farmers in Rajabasa and Bakauheni districts. Unlike other commodities, the JTTS presents the little impact on this local coffee trade because the two districts that supply coffee beans have the same adequate access to Kalianda District with or without JTTS.

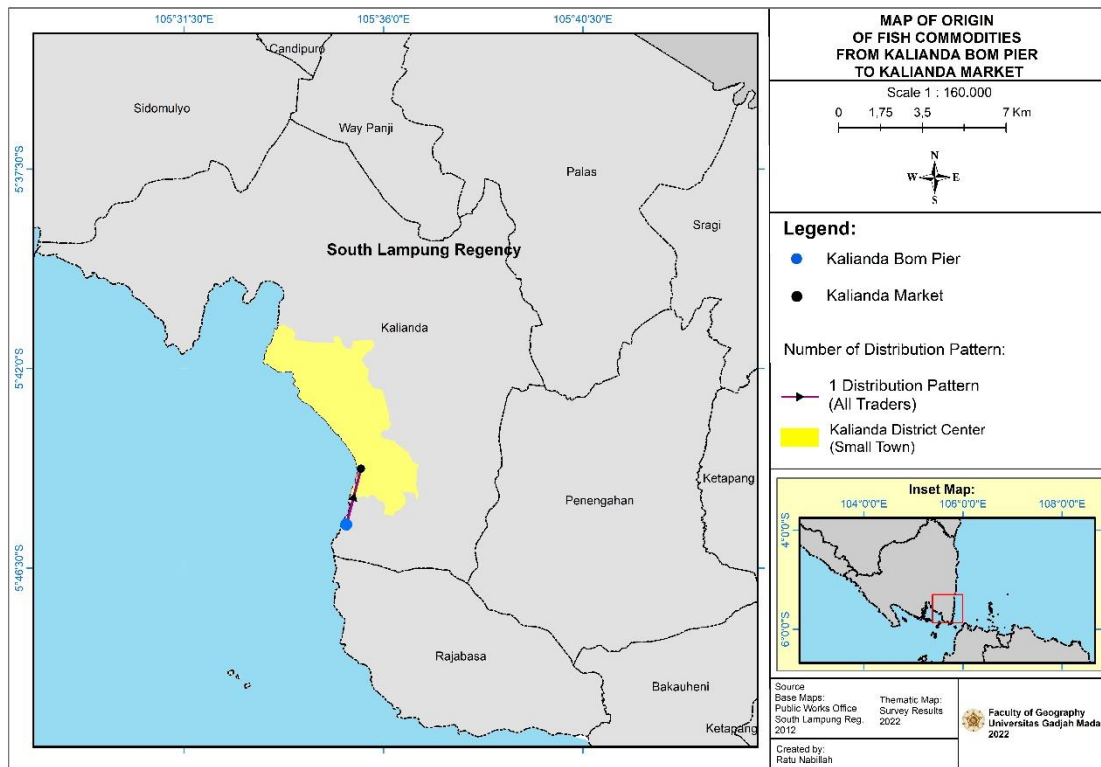


**Figure 3. Map of Rice Origin Taken by Large-Scale Rice Mill**



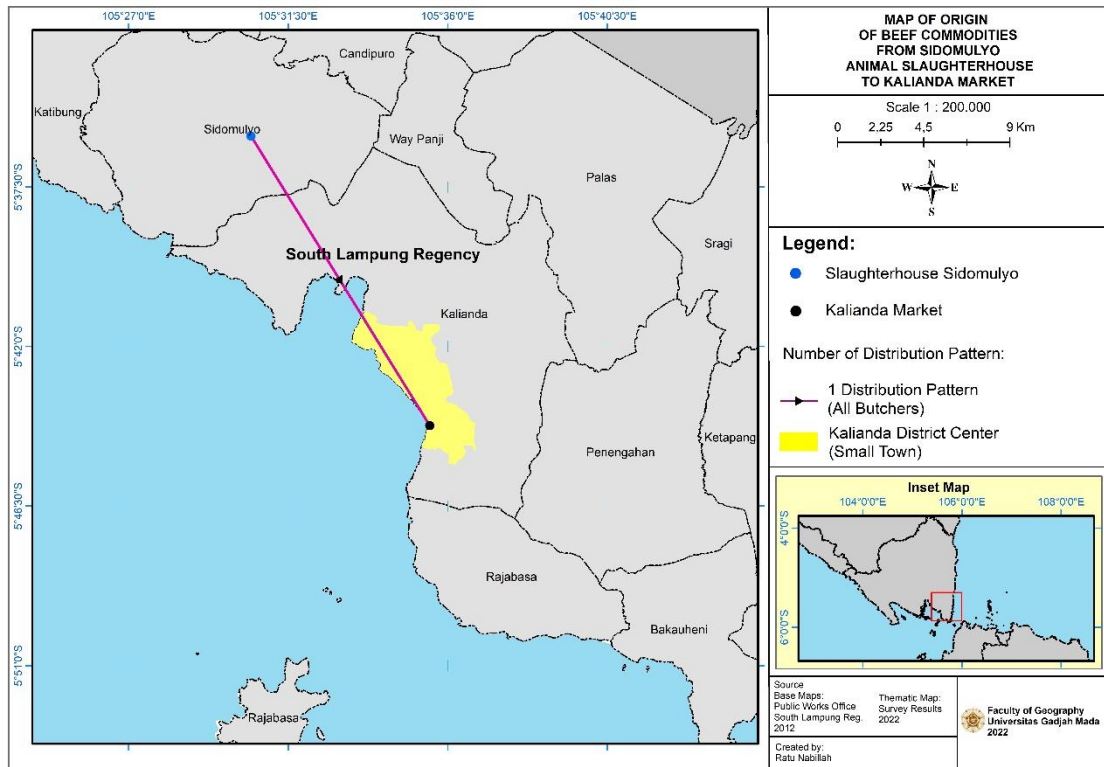
**Figure 4. Map of Coffee Origin from Nearby Rural Areas Taken by Local Distributors**

The fifth commodity is fish. Eleven traders being interviewed said that all the fish sold in Kalianda market came from the Kalianda Bom Pier, only about 2.5 km from Kalianda Market, as shown in Figure 5. When the sea conditions are receding, sometimes these traders import fish from the coast of North Jakarta City, although this is a rare condition. This local trade is not much affected by the existence of JTTS.

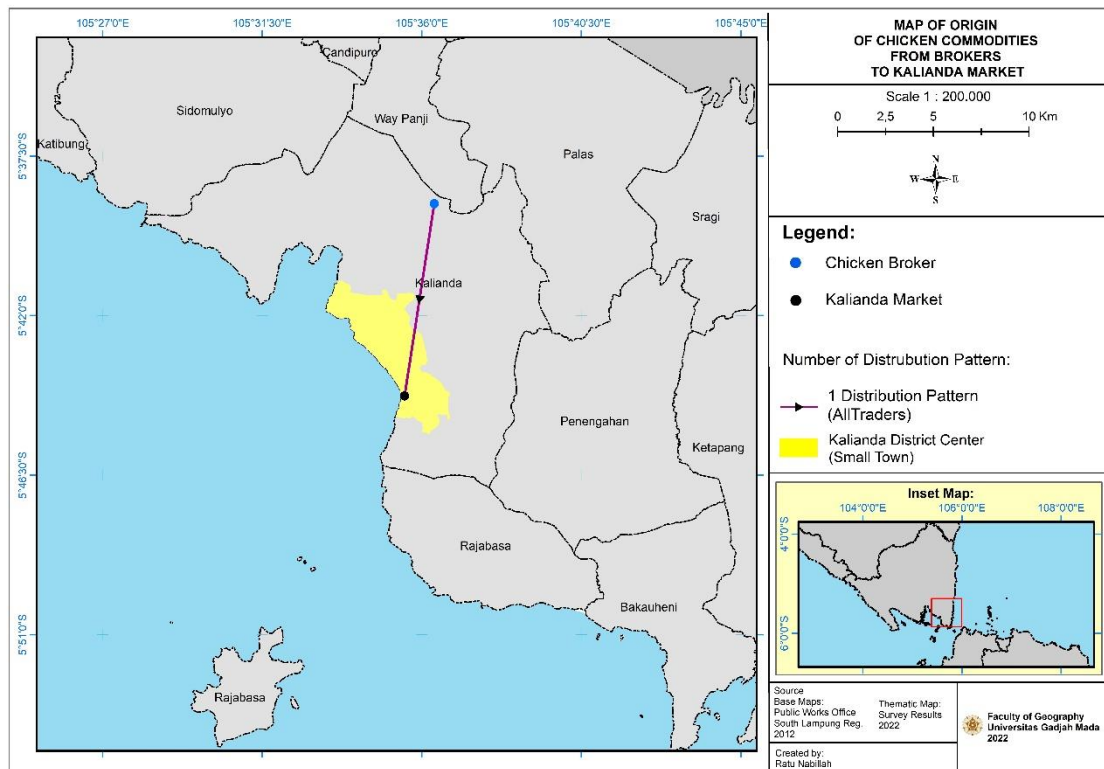


**Figure 5. Map of the Origin of Fish Sold at Kalianda Market**

The sixth commodity is beef and chicken. The beef sold by the four traders came from the Sidomulyo Slaughterhouse (*Rumah Potong Hewan/ RPH*), as illustrated in Figure 6, under the guidance of the Livestock Service Office of South Lampung Regency. The data obtained from the Animal Health Division of the Livestock Service Office of South Lampung Regency showed all cattle slaughtered came from PT. JAAI (initials), which is also still located in Sidomulyo District. All of the slaughtered cattle are from Australia, while local farmers only slaughter the local cattle for trades outside government control (e.g., the fulfillment of Islamic ceremonies, as known as Aqiqah or Eid Al-Adha). As for chicken commodities, eight traders said they took the chicken from a chicken broker in Sukatani Village (border between Kalianda and Way Panji districts), as illustrated in Figure 7. One of the most well-known traders prioritizes taking chickens from several local farmers located in the same village, as they have had a partnership. At the very least, this trader will take chickens from Way Panji District. The opening of JTTS also possesses no significant effects on the local meat trade.



**Figure 6. Map of Origin of Beef Sold at Kalianda Market**

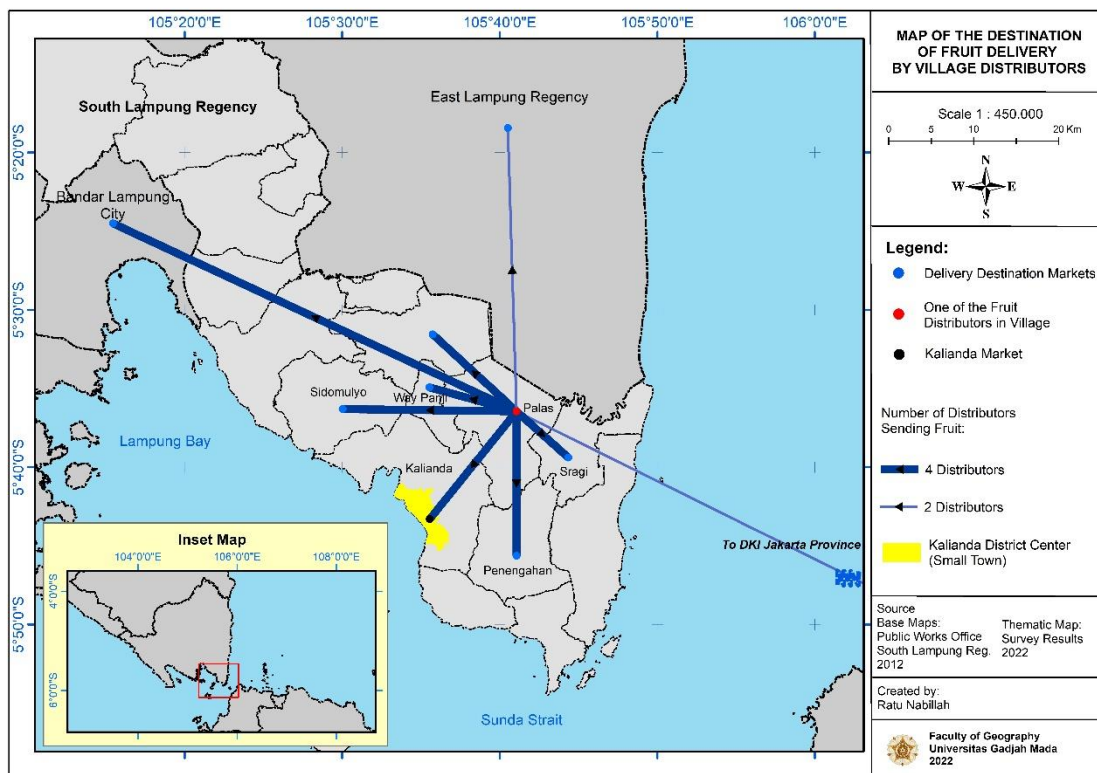


**Figure 7. Map of Origin of Chicken Commodity from Broker to Kalianda Market**

The last commodity is agricultural production facilities such as seeds, fertilizers, insecticides, and herbicides. The four traders at Kalianda Market who sell these commodities said they took them mostly from Bandar Lampung and Metro cities. The distribution system works using cars traveling to various districts in South Lampung Regency. JTTS does not affect this distribution channel because distribution cars have to stop at many districts, so they cannot pass through JTTS.

### 3.2. Marketing Destination of Agricultural Commodities in Rural Areas Before and After the Construction of JTTS

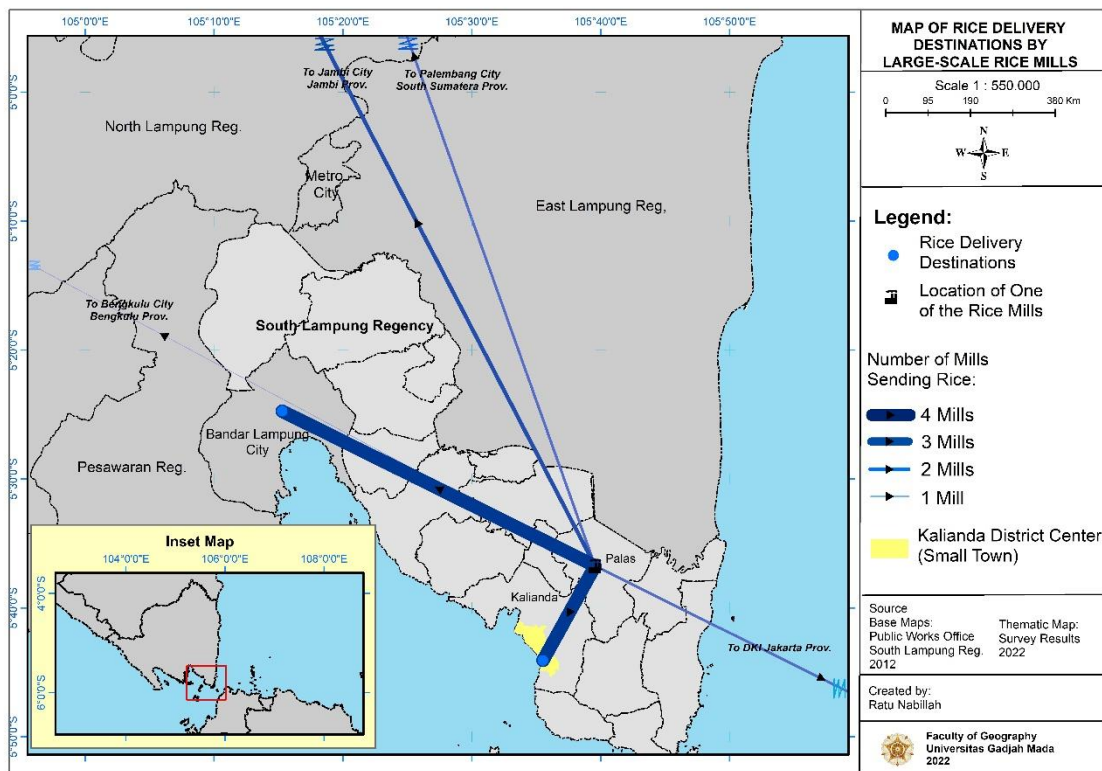
This session addresses the second point of view from rural areas around small towns. The first commodity is fruit. Our informants were fruit farmers from the Sidomulyo, Palas, Penengahan, and Kalianda itself, especially in the Sukatani sub-district, as shown in Figure 8. Three melon farmers and one melon distributor in the Sidomulyo district, three melon and watermelon distributors in the Palas district, and one watermelon farmer and distributor in the Penengahan district said that their land area of less than 1 hectare hinders their direct connection to the market. As they had various limited access to the market, the role of distributors is crucial. Different circumstances were reported by five farmers who own 3-5 hectares of land. These farmers already have a contract with the company to pack their fruits without going through a distributor. The rest of the fruit that does not meet the company's standards in Java Island or the big city market is sold in nearby markets at a lower price. All respondents said that JTTS did not provide much difference in their trade flows.



**Figure 8. Map of Rural Fruit Commodity Marketing Destinations by Distributor**

The second commodity is vegetables. For this commodity, our informants were vegetable farmers and distributors in the Sidomulyo and Kalianda districts. Similar to fruit commodities, small farmers must collaborate with vegetable distributors in the village to sell their items. Distributors in rural areas sell their commodities to Kalianda Market as the primary market for local vegetables. The remaining unabsorbed commodities are sold directly using a door-to-door system to small stalls or village markets around them by the farmers. This local trade also receives no significant effects from the JTTS.

The following rice commodity destination can be seen in Figure 9. Six of the seven rice factories in three districts use Kalianda Market as a marketing destination. However, large and small factories have different marketing expansions. Small factories only sell their products to Kalianda Market, village or district markets, and basic food shops. In contrast, large factories have a marketing objective to Jambi, Bengkulu, Palembang, DKI Jakarta, and Bandar Lampung City after the demand for rice in South Lampung Regency are fulfilled. The presence of JTTS presents no influence on the target market for large-scale rice mills. However, all owners of large-scale rice mills admitted that JTTS helped speed up their distribution and opened up opportunities for additional markets.



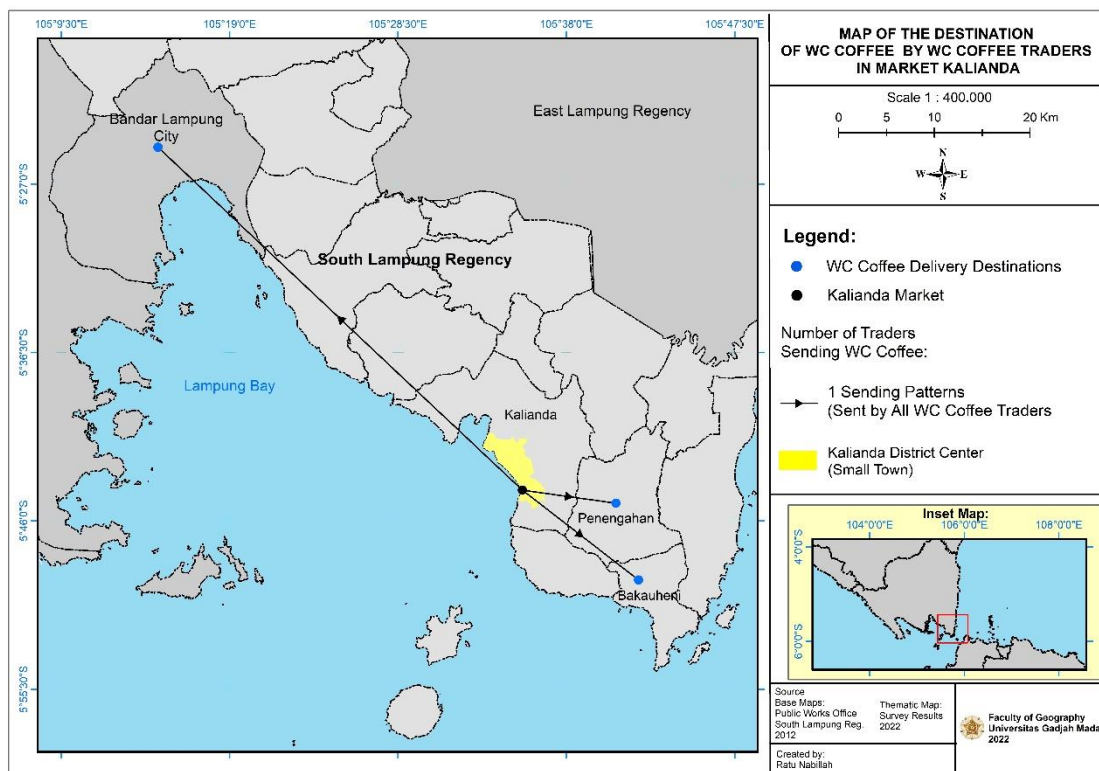
**Figure 9. Map of Rice Marketing Destinations by Large-Scale Rice Mills**

The fourth commodity is coffee. Two coffee distributors described that their priority market for marketing was the coffee grinders at Kalianda Market, especially the large-scale coffee mill previously mentioned. The pioneer of WC Coffee shop has two marketing systems, namely in-store (offline) and online. Aside from using Facebook, Instagram, and WhatsApp, online trading also utilizes the services of 'deposit goods' with bus brokers. After the opening of JTTS, the marketing destinations or delivery routes experience no changes because the

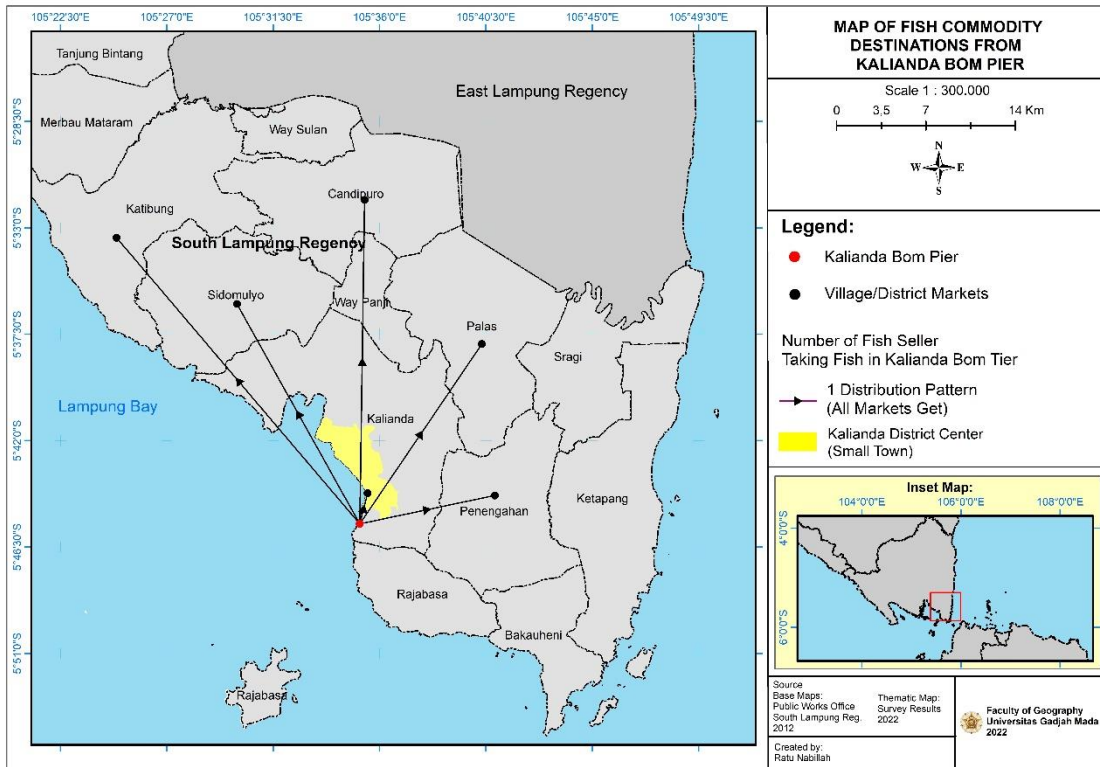
'deposit of goods' system is implemented in two districts in Sumatran highway (hereinafter known as Jalinsum/*Jalan Lintas Sumatera*), as shown in Figure 10.

The fifth commodity is fish. Most of the marketing fish destinations from the Kalianda Bom Pier fishermen are in the Bom Pier Fish Market, Kalianda Market, Sidomulyo, Candipuro, Penengahan, Palas, and sometimes Katibung Districts, as shown in Figure 11. However, the most common marketing system for fish commodities is that market traders directly come to Kalianda Bom Pier during the ship loading and unloading. Then, the traders bring the fish using pick-up cars or motorbikes. As the local trade still dominates fish marketing, no change in marketing route occurred due to the existence of JTTS. Further, to get to these districts, the traders prefer taking the Jalinsum since it is more effective than the JTTS.

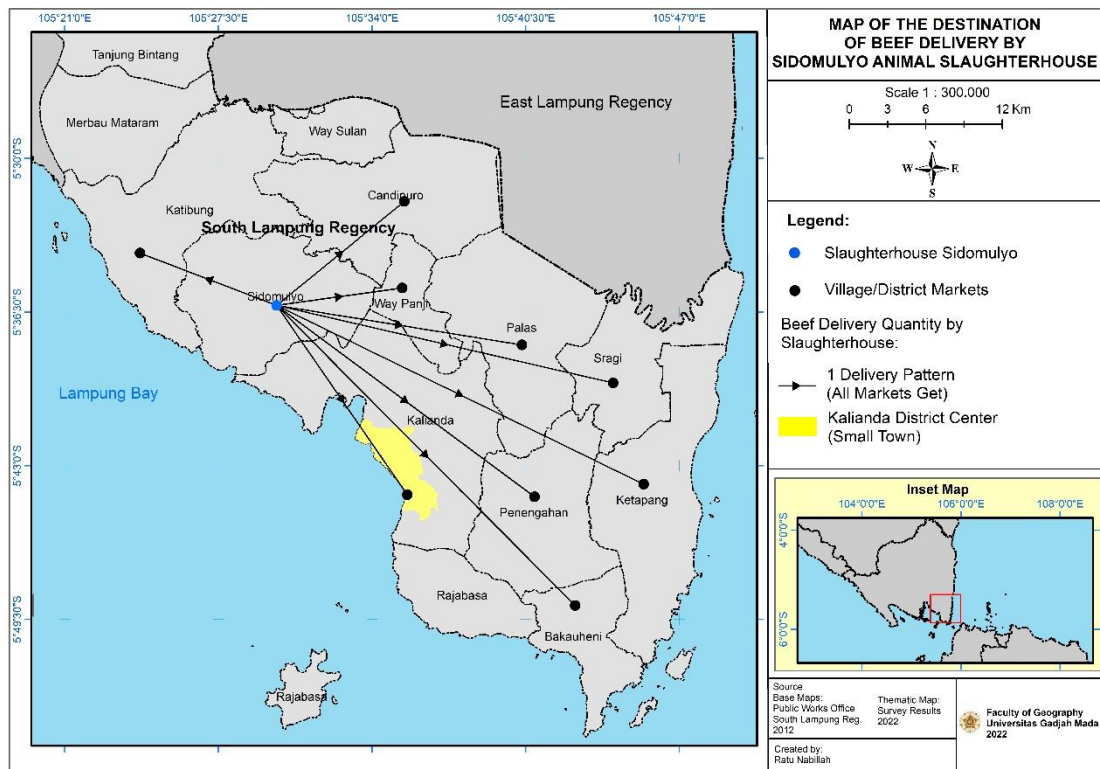
The sixth commodity is meat. The meat commodity in this area is mainly supplied by Sidomulyo slaughterhouse. The delivery areas of this slaughterhouse are the Districts of Sidomulyo, Kalianda, Candipuro, Palas, Way Panji, Sragi, Katibung, Bakauheni, Rajabasa, and Penengahan, as illustrated in Figure 12. The first three districts have always been the marketing target for Sidomulyo slaughterhouse because they have daily markets. Meanwhile, the marketing destination of the trustworthy chicken distributor in Kalianda Market is Kalianda Market (dominant), Penengahan, Palas, Candipuro Districts, and markets in East Lampung Regency. Two breeders who collaborate with the distributor also aim to market their supply in Bandar Lampung City and Riau Province because they have teamed with a broiler chicken company.



**Figure 10. Map of Coffee Marketing Destinations by Farmers and WC Coffee Shops**



**Figure 11. Map of Fish Commodity Marketing Destinations from PPI Bom Kalianda Pier**



**Figure 12. Beef Daily Marketing Destinations Map by RPH Sidomulyo**

### **3.3. Small Town as a Market for Rural Products**

Apart from their function as administrative centers, small-town markets are also significant in facilitating exchanges between rural and urban areas. Rural communities depend on urban services, including access to traders and markets to sell their agricultural produce (Tracey-White, 2005). Small-town markets are also the main center facilitating rural communities to earn income from selling products (Sietchiping, Kago, Zhang, Tuts, & Reid, 2014). Based on our data analysis on the six commodities, Kalianda Market has become a market for village products. However, the quality and types of village products sold in this market tend to be limited. Export leftovers and perishables products dominate the village products in Kalianda Market. Another point to consider is that the Kalianda Market absorbs items from adjacent rural regions and districts, as well as ample products from inside the Kalianda District itself. The summary of a small town's role as a market for village commodities is presented in Table 1.

In addition, the opening of JTTS gives neither positive nor negative influence. In other words, no changes were observed before and after the JTTS operation. The small town market's role as a market for village products does not disappear or get more significant because more village products enter Kalianda Market via local roads and Jalinsum. This is because the districts that supply products to Kalianda District are located right on the edge of Kalianda District, so JTTS does not present effective access for them. As the presence of JTTS provides immediate access, Kalianda District no longer becomes a squandered opportunity.

The small town has indeed become a market for village commodities being the focus of this study. However, this study reports different results from the study carried out by Kamete's (1998), discovering that villages were a source of supply for small-town communities because small-town communities needed village agricultural products. In this study, the goods observed without the fruits and vegetables produced from the surrounding village, the people of Kalianda District can still enjoy fruits, vegetables, and beef through deliveries from big cities, offering complete variety.

Small towns are rural farmers' first gate to sell their products and earn an income (Sietchiping et al., 2014) since most commodities are dominated by local products, especially from horticultural farmers. However, for fruit commodities, the farmers' hope for a substantial income is accomplished by cooperation with big cities or the successful distributors who sell their products to various markets, especially big cities. Kalianda Market is only a 'sideline,' so it cannot be the central market in absorbing the superior commodities of fruit.

However, various market limitations induce a number of problems. Limited market access increases farmers' vulnerability to shocks and hinders economic opportunities (Rapsomanikis, 2015). Besides, the farmers' central problems, especially for small farmers in reaching Kalianda Market, are limited land area, limited production output, lack of public transportation facilities, and remote location, with a distance of about 4-10 km to reach district markets or small-town markets and bad road conditions.

The interconnected transportation system can be realized by establishing transportation services in rural areas to support village products, or at least the local farmers should be provided with information on rental trucks or other cars for transportation (Maryadi, 2017). In the rural areas observed in this study, most means of transportation are

private vehicles, such as motorbikes or pick-ups. With the distance and existing road conditions, the only possible transportation service to reach Kalianda Market is a pick-up car owned by a distributor in rural areas. Consequently, small farmers in rural areas prefer to entrust their commodities to village distributors since they have limited access to Kalianda Market. Moreover, rural transportation only operates routinely when student want to go to Kalianda District.

The existence of JTTS may transform the small town's role or the route of commodity distribution (using JTTS) if Kalianda Market could absorb village products from peri-urban areas of Bandar Lampung City, because the distribution could be more effective through JTTS. Unfortunately, observation did not include agricultural commodities from these districts in Kalianda Market.

#### **3.4. Small Town's Role as Middle Market Centers in Larger Market**

The advancement of small towns has become more prominent and central because of the opportunities offered by globalization, technological development in the region, and new economic opportunities in small towns adjacent to big cities (de Noronha Vaz & van Leeuwen, 2016). A big city is not an island separated from the rest of the mainland. Thus, even if most economies are clustered, interactions with the surrounding area are essential for the city's economic success (Swinney, McDonald, & Ramuni, 2018). Tacoli and Agergaard (2017) reveal that small towns have a crucial role as a link for the market system. Various studies, especially in Africa, have shown that secondary cities carry an essential role at the regional level, in which its connection with the rural interior as market and redistribution points (to a larger area) creates demand and stimulates local production (Mainet, 2017). Therefore, small cities have become transit areas before commodities from villages arrive in big cities and vice versa.

As described previously, the marketing destinations of village commodities can be divided into three broad categories, namely: 1) within Lampung Province, 2) Sumatra Island Region, and 2) Java Island Region. The delivery is carried out by various actors, including farmers, breeders, and distributors, to ensure that all commodities reach big cities. The study carried out by Courtney and Errington (2000) suggested the relatively low excessive supply between small towns and surrounding rural areas, showing that small towns hold no significant role as economic centers for rural areas. Our data analysis results confirmed that small towns could act as markets for village products. However, most of the commodities are non-durable, so the people of Kalianda District always buy them out. Therefore, Kalianda District presents a non-significant role as the center of the intermediary market in a larger market. A summary of the role of Kalianda District as the center of the intermediary market in the larger market is illustrated in Table 2.

The distributors in rural areas are the leading cause of the minimum flow of village commodities in Kalianda Market or Kalianda District being forwarded to big cities. Their intermediary role incapacitated small towns to become 'outposts' between rural and urban economies, as reported by Mainet and Edouard (2017). Although their role is often criticized, intermediaries play an essential role in developing marketing networks (Chigusiwa, Bindu, Muchabaiwa, & Mudavanhu, 2013; Rcaud & Mainet, 2015). Without intermediaries, small farmers in rural areas are predicted to be only capable of supplying the weekly village market,

stalls around the house, or even only in front of their houses due to various access limitations to get to Kalianda Market or greater markets.

Based on the serviceability, two main regional markets in Lampung Province are the Pasir Gintung Market (Wisnuwardhani, Lestari, & Santoso, 2015) and the Jatiwaluyo Market. Although the Jatiwaluyo Market is administratively included in South Lampung Regency, its location is still in the peri-urban area of Bandar Lampung City. Meanwhile, the results of brief interviews with traders in the Pasir Gintung and Jatiwaluyo Markets indicated that the intense competition with melon, watermelon, and papaya-producing areas in West Lampung, East Lampung, Central Lampung, Pesawaran, and Pringsewu regencies coupled with the smooth supply from the island of Java has carried greater challenges for commodities from South Lampung Regency to be recognized by the market of Bandar Lampung City or other big cities, especially without the help of a distributor. Similarly, the tight commodity competition in the big city market, especially in Bandar Lampung City, is also reported by Nairobi (2013). That study discovered that Bandar Lampung City required no supply from the remote area for certain commodities to fulfill its demand because of other various supplier choices with closer distance to this town.

In addition, in other areas, the weekly district market functions appropriately as a center for intermediary markets to take village commodities to the broader market (Sabet & Azharianfar, 2017; Sarwade & Chetan, 2017) and also plays little role. Local weekly markets located in Palas, Way Panji, and Penengahan districts have only facilitated the selling of commodities from the Kalianda market by local people during the day.

The existence of Kalianda Market positively influences village commodities marketing, although it presents no significant role in connecting village commodities to larger markets. Without secondary cities in the rural economy, the consumers are only centralized in large cities. In that case, the model from Vandercasteelen, Beyene, Minten, and Swinnen (2018) predicts that small farmers with remote locations will find it increasingly difficult to make a profit. Without the Kalianda Market, small-scale horticultural farmers will have no other market reference than to trade vegetables in front of their homes or village markets. Besides, WC coffee is one of the commodities successfully branded through Kalianda Market until it gains national popularity.

In general, JTTS presents no significant influences. Instead, the internet network gives more significant role in facilitating direct trade between villages and big cities, maintaining the quality of other regional commodities, shortening the distance from Bandar Lampung City to other village centers and big cities, and direct cooperation between big city traders and village distributors/farmers, than before presence of JTTS.

### **3.5. Small Town as Center for Agricultural Products Processing in the Surrounding Area**

Agricultural commodities are generally produced as raw materials and easily damaged, so they need storage, maintenance, and processing. The processing can increase the usage value of the commodity (Soekartawi, 2002). Agricultural product processing can be interpreted as changing food ingredients into diverse forms, extending shelf life, and having much greater added value (Burrahmad, Baihaqi, Sariyanto, & Iskandar, 2020). Small towns have a role in the processing of agricultural products. According to Tacoli and Agergaard (2017), one of the

functions of small towns is as a center for growth and consolidation of non-agricultural activities and rural employment, often related to processing agricultural products. The Urban Development Office of the US Agency for International Development (USAID) in Rondinelli (2019) described that the function of (small) urban centers is essential to stimulate rural economic growth, including providing the marketing, storage, and processing of commodities from the rural areas. This analysis of the first aspect clearly suggested the minimum and moderate quantity, quality, and variety of village commodities in Kalianda District. Oftentimes, traders from big cities come to the village to buy commodities (for example, fruit commodities) directly, adding no value to the village community's economy. Consequently, Kalianda District has limited places for processing agricultural commodities.

Coffee and fish are two successfully processed commodities in Kalianda District. Consequently, their products have successfully become typical souvenirs of Kalianda District—followed by processed fruit, especially bananas. WC coffee and rice have durable properties so that they can be easily modified (in big cities) in terms of packaging and taste. A summary of the small town's role as centers for processing village commodities is presented in Table 3. However, the processing of these commodities also encounters problems. As previously explained in the first research problem, village products can be processed in a small town, then absorbed by big cities. When these products arrive in a big city, the small town's products will be 'stamped or branded' as the big city's products since various production and marketing problems occur in small towns or rural areas. Additionally, the existence of industrial locations, primarily in cities and peri-urban areas, results in the village commodities being absorbed in raw condition because the town offers all processing facilities for marketing (Ramappa, 2020). Lack of material and non-material resources in rural and small cities also impacts their marketing activities (Niedomysl & Jonasson, 2012). Meanwhile, big cities have a relatively high population density that presents a significant correlation with structural strength. Socio-economic status (Davies & Michie, 2011) or the diversity of purchasing power, supported by a good transportation network and accessibility to welfare services, increase the dynamic of city market turnover (Parr, 2007). The more diverse economic condition of the Bandar Lampung people, along with the presence of national and international tourists, enhance the importance of product packaging to increase its added value, especially in terms of attractiveness.

It is rare to find supply processing in small towns because big city markets prefer absorbing their raw commodities. Besides, supermarkets and fast-food outlets in big cities increase the interest in village products and market opportunities for rural producers (Gebre & Gebremedhin, 2019). However, various underlying obstacles to commodities processing being carried out in villages or small towns hamper the commodities absorption. Instead of attempting to increase its value, it is feared that the processed commodity will not sell well. To answer this challenge, the small town or small town's product must have a unique or distinctive characteristic to compete with big city products. Processed fish products are one of the successful examples of Kalianda District products that offer other uniqueness. *Otak-otak* and *pletakan*, which are processed fish, have succeeded in becoming a typical food of Kalianda District. Apart from its taste and location along the road to the beaches, the success of *otak-otak* branding is also affected by the region's leading tourism areas (Amanda, Sulistyorini, & Ibad, 2017; Suharyanto, 2020).

The opening of JTTS does not change the role of Kalianda District. Before and after the operation of JTTS, this small town remains to have no significant role as a place for processing

agricultural products in the surrounding area. However, JTTS opens tourism opportunities in Kalianda District. Consequently, more tourists are looking for the two typical fish dishes of Kalianda District because most tourists prefer to go to the beach, while the *otak-otak* and *pletakan* are sold along the road to those beaches.

### **3.6. Small Towns as Centers for Supplying Agricultural Production Facilities and Infrastructure**

Agricultural inputs and services are essential requirements in agriculture (Ali & Abushad, 2014). Agricultural inputs must be affordable, accessible, and good quality (Belt et al., 2015). There are different areas that provide various agricultural inputs, ranging from villages to big cities, including intermediary areas, namely small towns. Small towns' role has grown, as it is part of the marketing of products and providing goods and services to farmers (Mainet, 2017).

Tacoli (1998) reveals that spatial linkages with markets do not necessarily increase farmers' access to the inputs they need to increase agricultural productivity. In the context of this research, smallholder farmers have limited access to markets. They can attain accessible inputs from distant places. However, farmers prefer taking agricultural facilities to the nearest shops from their production sites. This is reasonable, considering that the completeness of agricultural facilities and shops in rural areas and small towns are similar. This similarity in supply occurs due to the distribution system by regional distributors who come by traveling to many stores in various districts. In addition, there is also a reverse flow where Kalianda farmers will take agricultural facilities to the surrounding districts, especially to Sidomulyo District. The reverse flow is caused by the existence of a large shop in the Sidomulyo District.

The results of this study are similar to the survey reported by Lazaro, Agergaard, Larsen, Makindara, and Birch-Thomsen (2017) carried out in 4 rural centers in Tanzania (Madizini, Kibagwa, Ilula, and Igowole) with a population ranging from 8,000 to 23,000. These four rural centers have become a destination for finding agricultural facilities for rural farmers without going to medium-sized cities. The existence of shops for agrarian production facilities and infrastructure in rural areas results in no tiered distribution system in this research, similar to the case with other commodities.

The arrival of regional distributors to rural areas, although eliminating the role of a small town, provides many benefits for farmers. As explained in the previous points, various primary obstacles are still experienced by small farmers in the research area, such as the condition of village roads. The existence of shops in rural areas is beneficial for farmers since they no longer need to go through 5 to 11 km of damaged roads to reach Kalianda Market. Poor road conditions lead to increased transaction costs and even decreased production yields (Bell & Jayne, 2009; Newman et al., 2017). The delivery system by regional distributors also presents shortcomings because if traders in the village take inputs individually by going to big cities, chances of delays are very likely, whereas the timely availability of agricultural production facilities is essential for higher crop production (Ullah, 2020).

Regional distributors have also managed to observe the situation and identify opportunities. Agricultural land is more concentrated in rural areas, while the limited mobility of small farmers positions delivery to rural areas as an excellent option. As Newman et al. (2017) described when significant suburban housing development extends to rural areas, the

agricultural land is fragmented, and the local agricultural economy weakens due to a decrease in upstream services, such as less supply of farming inputs. The development of Kalianda District has reduced the pattern of agricultural land use, positioning Kalianda District not as the only potential area to sell agrarian production facilities and infrastructure but rather to compete with rural areas with more potential.

The opening of JTTS has widened the variety of commodities. With this new toll road, there are deliveries from Medan City to Bandar Lampung City. However, JTTS did not change the role of Kalianda District. Besides, the JTTS also enhances the optimism of large-scale rice factory production infrastructure. Also, JTTS opens up investment opportunities for large industries to have branches in Lampung Province (or other Sumatran regions). To date, large-scale rice factories have obtained their production equipment from Surabaya City as a place for loading and unloading goods from China in addition to the Jabodetabek Region.

### **3.7. Small Town as Rural Community Service Centers**

Small towns are also known as centers of production and distribution of goods and services for their rural residents. Concentrating goods and services in small towns reduce costs (transportation from rural communities to large cities) and increases access to various services for rural households and enterprises. These services include agricultural extension, health, education, bars, restaurants, and other manufactured goods from within and outside the region (Kihonge, 2017). The role of secondary cities is not limited to market activities as they are also centers of administrative services, as well as places of socio-economic interaction (Rcaud & Mainet, 2015). A summary of five rural communities' access to non-agricultural activities in a small town before and after the JTTS, including access to banking services, health, education, government, and high-order goods, is illustrated in Table 4.

Access to banking will be established in a small town if the loan made by farmers, distributors, or managers of rice factories exceeds IDR 20 million. If the loans are in small amounts, many available banks in rural centers are the primary choice for almost all research respondents. For health services, the rural community always prefers the service in a small town if they need specialist doctors. The closest health service for the village community is the Public Health Centre District scale (*Pusat Kesehatan Masyarakat/Puskesmas*). All districts have Puskesmas completed with general practitioners.

Access to children's education services will be provided in the small town, especially high school. However, some respondents send their children to the district center, not the senior high school in Kalianda District. Access to government services is mainly provided in Kalianda District since it is the capital regency. However, various policies from the Regional Government Work Unit of South Lampung Regency have created a 'pick up the ball' and online service system, facilitating the village communities not to come to Kalianda District.

## **4. Conclusion**

This study of commodity flows focus on the origin of agricultural commodities sold in Kalianda District as a small town and the marketing destinations of agricultural commodities, especially in rural areas. The seven commodities sold in Kalianda Market directly come from local farmers or fishermen in Kalianda District and surrounding villages, along with local distributors from Kalianda District and surrounding villages, regional distributors (especially Bandar Lampung, Metro, and Palembang Cities), national distributors (especially the Main

Market in DKI Jakarta Province), and factories in surrounding villages. The destination of the commodity is dominated by Kalianda Market, markets in surrounding rural districts, regional cities (Bandar Lampung and Metro Cities), and outside Lampung Province (South Sumatra, Bengkulu, Jambi, Riau, and DKI Jakarta Provinces). The influencing flow and actors for the distribution are very diverse in each commodity. The small town carries very diverse roles. First, the small town is the center of the market for surrounding rural commodities, centers for health activities related to specialist doctors, centers for government administration services for the district or villages with no government services, and centers for lending money from banks exceeding IDR 20 million. Second, the small town has not been able to present a role as the intermediary market center in larger markets, centers for rural commodity processing, and centers for searching for other high-order goods. Finally, the small towns cannot act as a center for supplying agricultural production facilities and infrastructure. Overall, the presence of JTTS presents no significant influence on the role of small-town due to various reasons that have occurred before the existence of JTTS, such as the trade is still dominated by the local Kalianda District, direct cooperation between villages and big cities facilitated by various actors, quality and quantity of commodities in the small town itself, and competition with the hinterland of the big city.

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**Table 1. The Role of Small Towns as Markets for Rural Commodities Before and After JTTS Development**

	Fruit	Vegetable	Rice	Coffee	Fish	Meat & Chicken
Small Towns as Markets for Rural Products	Kalianda market acts as a market for rural products, especially for melon, watermelon, and papaya California, although those commodities are the residual of exports	Kalianda Market is the main hope for surrounding horticultural farmers	Large-scale and small-scale rice mills prioritize buying paddy from nearby areas. Kalianda Market is one of the main targets for selling milled rice. It can be concluded that Kalianda Market acts as a market for local farmers' crops	The coffee beans received by local distributors are mainly from the farmers in rural areas around Kalianda District. Thus, Kalianda Market, through its WC Coffee, has succeeded in facilitating the absorbance of local farmers' crops	Almost all of the seafood sold at Kalianda Market each day is caught by local fishermen, suggesting that Kalianda Market can become a market for the local fish commodities	Distributors who supply chicken meat to Kalianda Market prioritize sourcing from farmers in Kalianda District and its surroundings. However, for beef commodities, the collaboration between Sidomulyo slaughtering house and the company only used the imported cattle
Differences in Roles Before and After JTTS	The existence of JTTS does not make Kalianda District an area that is bypassed by the distribution flow of fruit commodities. JTTS does not change the role of Kalianda District because the village farmers have cooperated with big city markets even before the existence of JTTS	JTTS only cuts travel time by 1 hour from Bandar Lampung City. Before the existence of JTTS, vegetables from Bandar Lampung City had dominated Kalianda Market	JTTS does not make the Kalianda District miss the flow of rice delivery because collection or delivery to outside areas will be carried out after a request from South Lampung Regency fulfilled	The presence of JTTS does not change the flow of coffee distribution. It does not make Kalianda District miss the coffee distribution due to the successful branding of South Lampung Regency coffee in Kalianda Market	The existence of JTTS does not change the flow of fish distribution. As the commodity is perishables, the fish commodity is predominantly local and does not need to go through JTTS	The presence of JTTS does not affect the chicken and beef supply in Kalianda district. Similar to fish, Kalianda Market remains the main destination for marketing chicken commodities from local farmers

**Table 2. The Role of Small Towns as Middle Market Centers in Larger Markets Before and After JTTS Development**

	Fruit	Vegetable	Rice	Coffee	Fish	Meat & Chicken
Small Towns as Middle Market Centers in Bigger Markets	Village distributors are actors who play the most active role in sending fruit from villages directly to big cities. The active role of local distributors makes the small town an overlooked area.	Almost all horticultural farmers said they only use Kalianda Market as a sales destination other than the village market or small shops. Besides, there is no marketing continuity after the vegetable commodity arrives at Kalianda Market.	Large-scale rice factories that have expanded their marketing across districts or cities, and provinces will send their rice directly without going through Kalianda Market.	Kalianda market is an intermediary market only for the WC coffee, while coffee that is ground directly by farmers will be sent directly to the cities of Bandar Lampung & Bogor.	Only salted fish products can reach the big city market from the salted fish maker in Kalianda District. For other fisheries, Bandar Lampung City has its supply area.	Bandar Lampung City has its own slaughtering house for beef commodities. That condition is different for chicken commodities. The distributors in Kalianda District have succeeded in taking chickens from surrounding villages before being sent to other cities or provinces.
Differences in Roles Before and After JTTS	JTTS does not change the route and role of the small town. Kalianda District does not play much of a role as a transit city because of the quality of the fruit sold and price, as well as direct cooperation between distributors or	The main reasons Kalianda District does not act as a transit city: The quality of horticultural commodities from West Lampung Regency is much better The national horticultural production center can still be reached in 1 night (such as, Bandung City) JTTS makes faster deliveries from the two areas above (to Bandar Lampung City),	The existence of JTTS has positioned Kalianda Market not as a transit area for rice. The owner of a large-scale rice factory mostly has the facilities to send the commodity directly to distant areas without	Kalianda Market has been sending WC Coffee since the 1970s to cities throughout Indonesia. Because of WC Coffee, Kalianda Market has successfully become a	JTTS does not change the distribution flow. The existence of fishing areas in Bandar Lampung City only facilitates salted fish to be absorbed by the big city market.	The distribution flow has been occurring before the existence of JTTS. However, JTTS enables more accelerated delivery of chickens to other regions (especially Riau Province).

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Fruit	Vegetable	Rice	Coffee	Fish	Meat & Chicken
farmers with big city markets, and various other supplier areas around Bandar Lampung City.	weakening the role of Kalianda District.	going through small towns.	transit area for coffee commodities.		

**Table 3. The Role of Small Towns as Centers for Agricultural Processing in the Surrounding Areas Before and After the Construction of JTTS**

	Fruit	Vegetable & Meat	Rice	Coffee	Fish
Small Town as Center for Agricultural Processing in the Surrounding Area	The processing of watermelon, melon, and papaya california in Kalianda District is limited to home processing or restaurants. Meanwhile, the production of banana chips and duran dodol are also dominated by factory products from the cities of Bandar Lampung and Palembang. Thus, most of the fruit commodities are absorbed raw.	Similar to fruit, vegetables and meat are only absorbed to be processed by restaurants.	Kalianda District does not play a role in milling paddy into rice because all rice factories are located in rural areas. Kalianda District also does not play a role in rice branding because unbranded rice is sent directly to big cities, and big city markets carry out branding (in this case Bandar Lampung and Palembang cities).	Coffee commodity is a successful example where a small-town act as a center for agricultural processing for the production of the surrounding rural areas. But unfortunately, the WC Coffee is predominantly unbranded so that the big city market can easily brand it and sell it at a higher price	Although the variety of processing fish product is limited and is only dominated by home preparations, fish processing is a successful example of small town role besides WC Coffee. Otak-otak has become a much sought-after typical food of Kalianda, even though the processing still uses the fish from within the small town.
Differences in Roles Before and After JTTS	JTTS does not change the role of small town because the delivery of local raw fruit to big cities has occurred before the existence of JTTS.	Various rumors stated that many restaurants are closed along Jalinsum due to the presence of JTTS and the opportunity to narrow the possibilities	JTTS enables rice marketing reach other areas of Sumatra, including unbranded rice. Thus, big cities increasingly dominate in the processing or	JTTS does not change the role of Kalianda District or Market. Kalianda Market remains a place for unbranded WC Coffee to be milled and packaged. The existence	JTTS does not change the the small town roles in terms of fish processing. The processing of fish have been started before the JTTS. However, JTTS

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Fruit	Vegetable & Meat	Rice	Coffee	Fish
	for the absorption of vegetables and meat. That rumor was not proven in our research results. In contrast, the development of an increasingly crowded small town has made the emergence of many new restaurants.	branding of this commodity.	of JTTS also does not lowers the amount of coffee to be ground at Kalianda Market, enlarges the additional markets, or increases the number of counterfeiting of WC Coffee due to faster access to big cities.	opens tourism opportunities in Kalianda District, which has implications for the search for typical souvenirs, such as the food processed products.

**Table 4. The Role of Small Towns as Rural Community Service Centers for Other Activities**

	Access to Services:				
	Bank	Health Facilities	Education Facilities	Government	High Order Goods
The Role of Small Town as Rural Community Service Centers for Other Activities	Access to banking is provided in small towns if the loan made by farmers, distributors, or managers of rice factories exceeds IDR 20 million. If the loans are in small amounts, many banks available in rural centers have been the primary choice for almost all research respondents.	Health services provided in small town is preferred by rural communities who need specialist doctors. However, respondents with middle to upper economic backgrounds prefer immediate medication to Bandar Lampung City.	The small town's access for children's education services will be preferred, especially for high school. However, some respondents also chose to send their children to the district center and did not consider the high school in Kalianda District.	Access to government services is mainly provided in Kalianda District, as the district capital of South Lampung Regency. However, the policy of the 'pick up the ball' system and online services does not obligate the village community to come to Kalianda District	Kalianda District is competing with Sidomulyo District to meet the community's needs for high-order goods. Various shops of high-order goods are also found in Sidomulyo District.

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Access to Services:					
	Bank	Health Facilities	Education Facilities	Government	High Order Goods
Role Differences Before and After JTTS	JTTS does not have any influence on the access to banking.	JTTS weakens the role of small town because it provides faster access to big cities. The existence of health facilities at the district center also weakens the position of small towns, but this is not a negative aspect as the presence of health centers at the village level is very much needed.	The existence of JTTS does not change the provision of education facilities. For example, no parents sent their children to big cities considering the easier access, including respondents with middle to the upper economy.	The presence of JTTS did not change the government services provided for the people in Penengahan, Palas, Sidomulyo, Rajabasa, and Way Panji Districts. These five districts do not have adequate access to administrative offices, even after the opening of JTTS. In contrast, for the districts located in the PUA area of Bandar Lampung City, JTTS facilitates the mobility of services to villages far from this district's center.	JTTS certainly opens up the competition of high quality goods considering the preferences of traders and drivers to enter or exit through the Sidomulyo Toll Gate because of its more effective location and supported by market crowds.