

## **Effect on Guava Production and Marketing during pre and post lockdown phase of COVID pandemic in Baruipur, South 24 Parganas, West Bengal**

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**Abstract:** Baruipur block is very famous and unique place for guava production. Guava is cultivated in about sixty to seventy percent of the agricultural land in Baruipur region. Many people depend on guava production. Many fruit processing units also depend on quality of guava of Baruipur region. The purpose of the present study was to unfold the socio economic scenario of guava growing farmers in lockdown phase in covid'19 pandemic situations of three villages of Baruipur block of South Twenty-Four Parganas of West Bengal. The seventy-five guava growers of three Villages were randomly selected. Twenty-five villagers were selected from each village. On the basis of nature of data various techniques, statistics and GIS tools were used to analysis the study. The major problems of guava growers were gradually decreasing of demand of guava due to shut down of vehicles during lockdown period. So business and marketing has declined with this effect. Guava farmers are faced financial crisis and have affected their livelihood. The guava growers were not get any financial subsidy from west Bengal Government to recover from present situation.

**Key word:** Guava Growers, Pandemic, Lockdown.

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### **I. INTRODUCTION**

Baruipur block is part of greater Kolkata. It is a municipality area of District South Twenty Parganas in West Bengal. The latitude of Baruipur Block is 22°21'34" N to 22°28'N and longitude is 88°20'54" E to 88°38'E. Baruipur Block is very much well connected with rail, road ways. Baruipur is important railway junction of South Bengal.

Baruipur block is famous for production of Guava which is reputed due to its size and taste. Local name of guava in Bengali is "Peyara". Guava is mainly produced in tropical and subtropical zone<sup>1</sup> of the world and it is found throughout the year. Common name of Guava is poor man's apple or native fruit. It has maximum sources of minerals like phosphorus, calcium, iron, fibre, folic acid and mainly vitamin C other than vitamin A,B.It balances sodium, potassium levels in the body. Guavas varies from two to six days, depending on the stage of fruit maturation at harvest time<sup>2</sup>. Its leaves, bark, fruits and roots are used in treatment of cough, fever, diarrhoea, constipation, bad breath, gum problems and numerous other health problems<sup>3</sup>. Production of guava fruits depend upon climatic situation;60 to 65 plants perhaps flourish in one bigha land. It can be picked when mature, light green in colour and firm. Though it is subsistence types fruits farming but now it is practicing as commercial fruits farming.

There are several factors like poor management, illiteracy of guava farmers, labour problems, conventional process of agricultural methods farming all are found during survey work which is very much related to marketing and business and building the economics structure. Mainly unscientific process of controls of pest and diseases of plants are also affected the productivity of guava<sup>4</sup>.

The present study was conducted to determine the effect of the lockdown due to COVID 19 pandemic on economic changes among the guava growers.

#### **Physical condition:**

**Land:** Mild low land with square or rectangular shaped land with sandy loamy soil is required for guava farming. Land preparation required with ploughing, levelling and cleaning from summer season to before rainy season.**Climate:** Guava is plain land climatic fruit; mild rainy season is required for growth of guava properly. It requires dry climate condition at the time of flowering. **Soil:** Guava plants have adaptability with any types of soil. Production is not depending on fertile soil but required organic matter to grow properly. It is hardy fruit crop but cannot tolerate saline soil. It can grow well in light alkaline alluvial or lateritic soil. For

good growth of trees well drained sandy loams to clay loams with 6.0 to 8.0 pH and less irrigated soils are best suited<sup>4</sup>.

## II. METHODOLOGY:

The present study was conducted in the 24 Parganas (South) of West Bengal. Out of total 30 Blocks of 24 Parganas (South), the Baruipur Block has the record of maximum production of guava per year.

Three villages (Hariharpur, Kalyanpur & Shikharbali) were selected from this block for study. 25 guava growers from each village were randomly selected so the final sample size was 75. The different parameters of the study were obtained through the questionnaires by online method (e-mail or what's app). The collected data was tabulated in Microsoft excel spreadsheet and analysed by epi info 7. & SPSS 20 software. Software ERDAS, Arc GIS also were used for mapping the location.

### Result and Analysis:

Total number of observed cases were 75 (Owners) and the average area of guava production was 2.6067 bigha with standard deviation of 1.0439 bigha (Range=1-5 bigha). Baruipur guava is very much famous for its taste and also nodal point of guava marketing and business. So Demand of Guava in pre lockdown Covid '19 situations is maximum (100%). Every time per day production of guavas were sold out. Due to demand, guava business spread out up to 10 kilometres to 90 kilometres, which distance was covered by various types of conveyance. But in lockdown period Covid '19, the burning problems of land owners are gradually decreasing of demand day by day. The average demand is 20.7333 percent with standard deviation is 4.0011 percent (Range=15% to 30%). So it is proved that demand of guava /day is gradually decreasing due to pandemic lockdown situation. Rest of the part of average production 79.2667% with standard deviation is 4.0011% which were used as manure, cattle feed and fish food.

**During pre-lockdown period (Pre Covid '19)** The average income of guava growers is rupees 64346.6667/month with standard deviation is rupees 22643.8306/month (Range=30000/m to 120000 /m) and average expenditure of guava growers also in Covid '19 situations is rupees 12373.333/m with standard deviation is rupees 4438.0825/m (Range=6000/m to 20000/m). Average profit of the guava growers is rupees 51973.333/month with standard deviation is rupees 19577.9615/m (Range=24000/m to 100000/m).

**During lockdown period (Covid '19 situation)** the average income of guava growers is rupees 18013.333/m with standard deviation is rupees 5279.9809/m (Range=10000/m to 30000/m). The average expenditure of guava growers on COVID pandemic lockdown is rupees 1488.00/m with standard deviation is rupees 499.1777/m (Range=800/m to 2500/m). Due to lockdown condition guava demand, marketing and business is gradually decreasing. So, the land owners are very much affected by loss in business. The average reduction of profit of guava growers is rupees 16525.3333/m with standard deviation is rupees 4864.6572/m (Range=9200/m to 27500/m).

**Table-1** shows that there is a significant difference is present in the mean values of income and profit before and during the time of Covid '19. So during lockdown period demand, business and marketing were significantly affected.

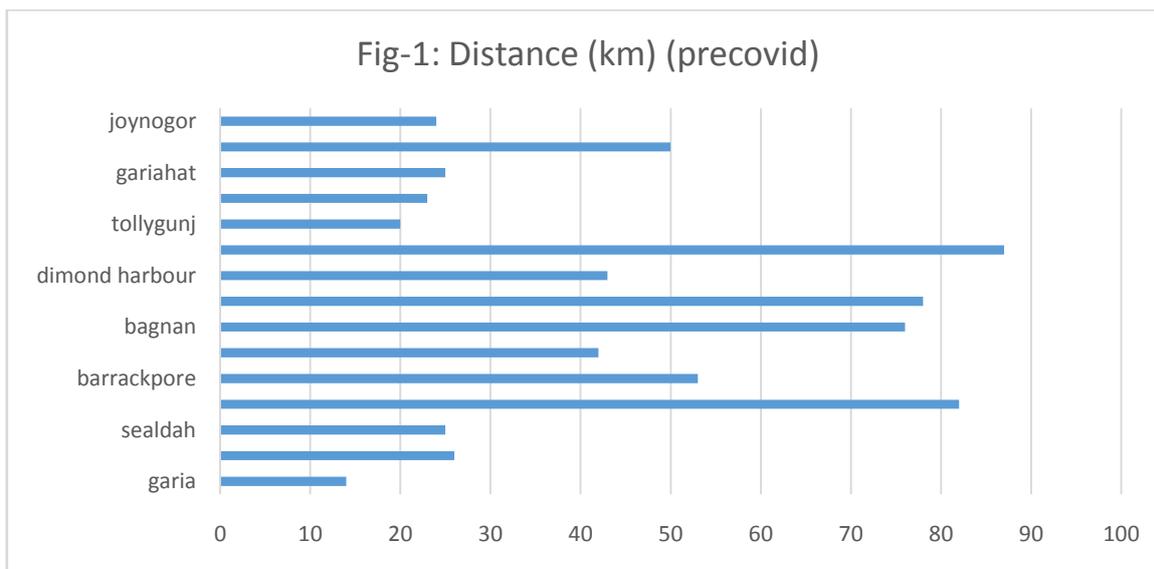
**During Pre lockdown period (pre Covid '19)** supply zone of Baruipur Guava were 10 to 85 km (by Train, truck, 407 truck etc.). Guavas were supplied from Baruipur to various places for selling by train, truck, 407 cars, 809 cars, small truck etc. Bongaon (87 km), Barasat (50 km), Kakdwip (78 km), Kalyani (82 km), Barrack pore (53 km), Sealdah (25 km), Canning (26 km) were connected with Baruipur by train before lockdown. Baruipur was also connected with Garia (14 km), Behala (23 km), Howrah (42 km), Tollygunj (20 km) by road at the same phase of time. The guava marketing and business was very lucrative in Baruipur area. The supply was very much proportionate with the demand and so broad supply zone was observed. The guava farmers of Baruipur region would have benefitted financially due to high demand.

In Pre Covid '19 situations, the average distance of transport was 44.5333 km/day with standard deviation 25.2894 km/day (Range=14- 87 km/day).

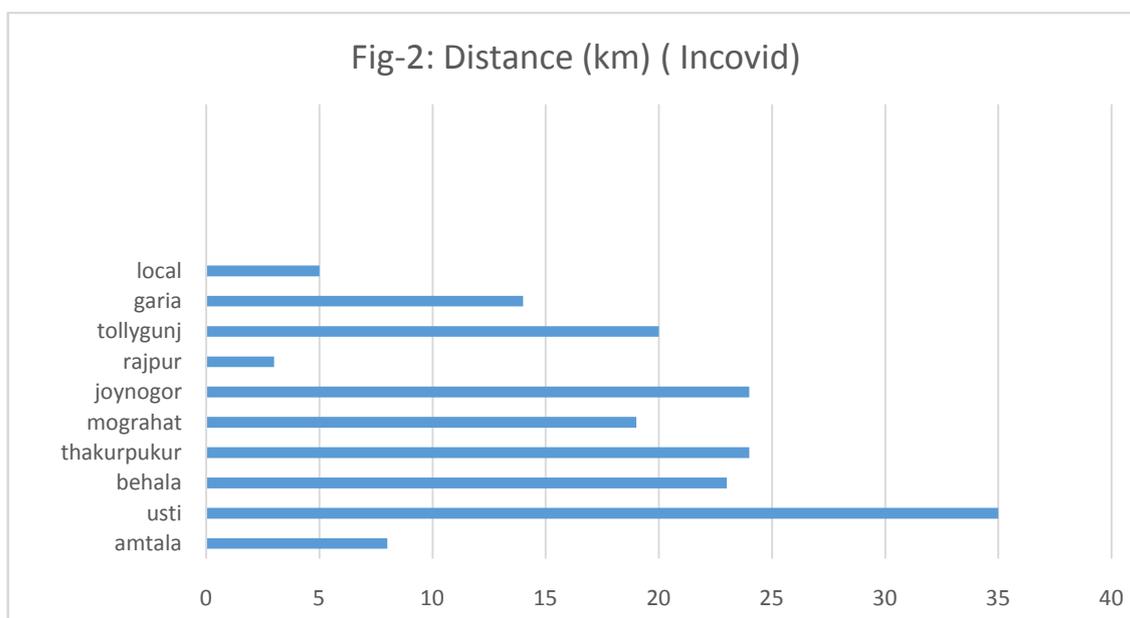
But in COVID situation, during pandemic lockdown the supply and demand for guavas continued to decline as all travel was stopped. So all guavas were distributed up to 3 km to maximum 35 km through local van, pull rickshaw and electric van due to lockdown. The average travelling distance during lockdown period that was 17.500 km/day with standard deviation 9.9917 km/day (Range=03-35 km).

**Table-1: Income and profit of guava production before & during lockdown due to COVID Pandemic. (n=75)**

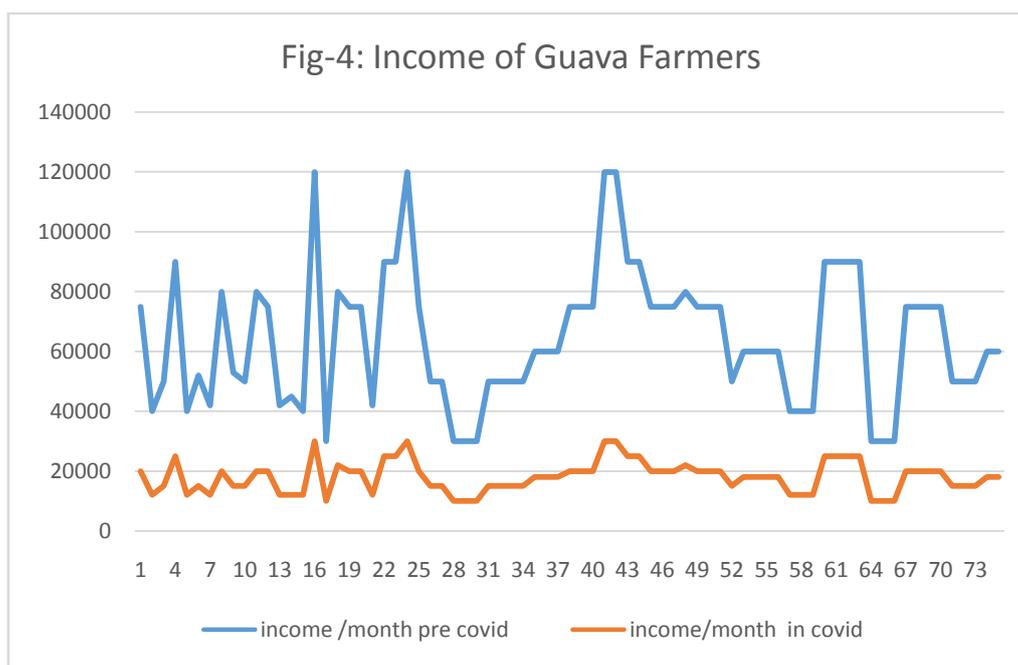
Parameters	Pre-lockdown period (Pre Covid'19) (Mean±Standard Deviation)	During lockdown period(Covid '19 period)(Mean±Standard Deviation)	Test of significance
Income (in rupees)	64346.67±22643.83	18013.33±5279.98	P<0.05 <b>Significant</b>
Profit (in rupees)	51973.33±19577.96	16525.33±4864.66	P<0.05 <b>Significant</b>



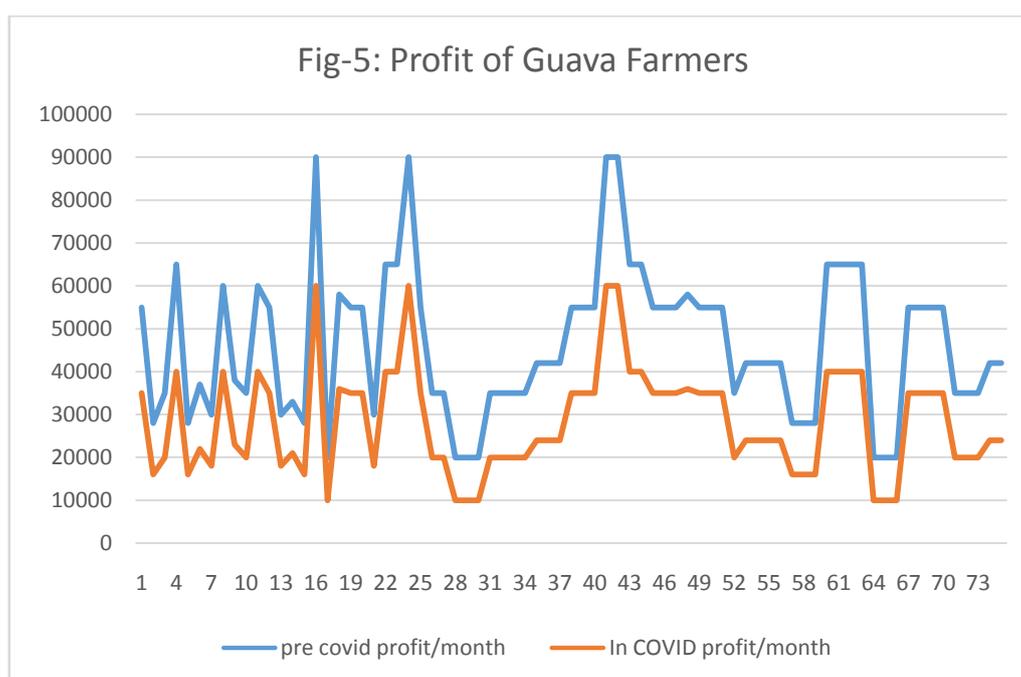
**Fig. 1: Pre Covid'19 supply zone of Guava from Baruipur.**



**Fig. 2: During lockdown period (In Covid'19) supply zone of Guava from Baruipur**



**Fig: 4: Income differentiation of guava growers before Covid’19 and during lockdown**



**Fig: 5: Profit of guava growers in Pre Covid’19 and during Covid’19(lockdown)**

### III. DISCUSSION:

Mainly Rural population can be used tropical plant guava as food and medicine<sup>5</sup>.Baruipur is well known for its guava cultivation and most of the farmers have guava farms here due to the favourable climate, land, of guava cultivation. It is considered one of the favourite fruits for industrialization to produce guava sweet, jam and juice<sup>6,7</sup>.

This study is revealing about the present condition of 75 Guava Farmers during pandemic situation. Pre pandemic situation before lockdown in normal circumstances, guava farmers and guava land owners would have benefitted a lot of financial support and they would have lived a very financial prosperous life.

Their income, expenditure, Demand, profit or loss all criteria are very much affected due to lockdown phase in Covid ,19. Due to lack of demand, lack of proper distribution of total production causes closing of transport system (train, truck, Bus, etc.) guava land owners are faced tremendous economic problem. Most of the guava Land owners lifestyle depend on only business and marketing of Guava, which is main source of

income but in addition to guava production, some of growers engage in assorted profitable livestock activities, such as milk production, fishing or have planted other crops.<sup>8</sup> Lack of cooperative markets<sup>9</sup> is the important problem of guava growers in pandemic situation. Many types of labours were engaged in the field preparation (like guava bearer, gardener, field cleaner, care taker of fruits and trees) for guava agriculture all those labourers have lost their jobs due to lockdown period because the land owner's income is reduced. Mainly Guava marketing and business depends on demand of famous Baruiipur guava, which is related to land owners income increases with increasing demand in the long run. But scenario was that due to pandemic lockdown situation business and marketing has suffered due to the closure of all the vehicles for which the land owners have to faced financial loss.

#### **IV. CONCLUSION**

On the basis of this research study, it could be concluded that guava production is profitable<sup>4</sup> but there are many constraints like advantage of other horticulture crops over guava because mango, papaya and banana are less attacked by pest, lack of training, information sources, motivational support and government support which include scarcity of loan availability, no proper irrigation system and urbanization is another factor due to increasing population lots of townships were made which are causing more pollution ultimately creates fluctuation in temperature/ season<sup>10</sup>. The farm specific technique and training are not up to the mark so this can encourage farmers to remain in the guava farming that means none of the farmers achieved their maximum efficiency level to grow guava. It is described by guava growers that more than thirty-five thousand bigha land of Baruiipur Block is cultivated with guava. Baruiipur guava is very famous in all over in South Bengal. Moreover, if the West Bengal Government arrange any subsidy or grant to guava growers, they will be spared irreparable loss.

#### **ACKNOWLEDGEMENT**

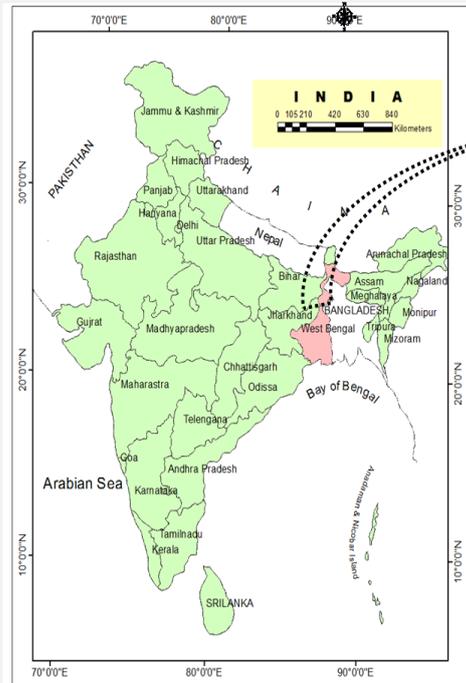
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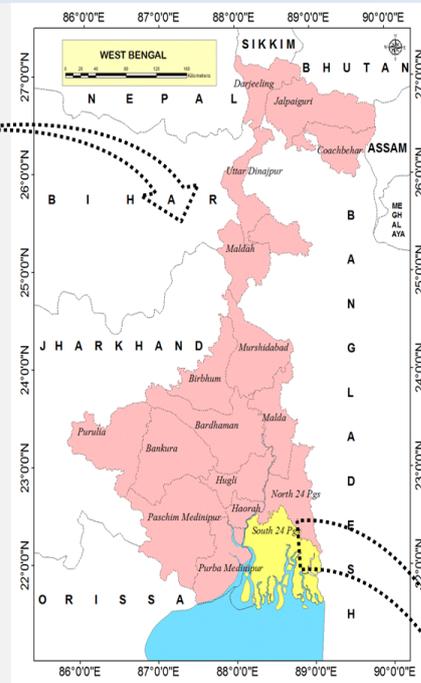
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## LOCATION MAP OF THE STUDY AREA

### West Bengal in India

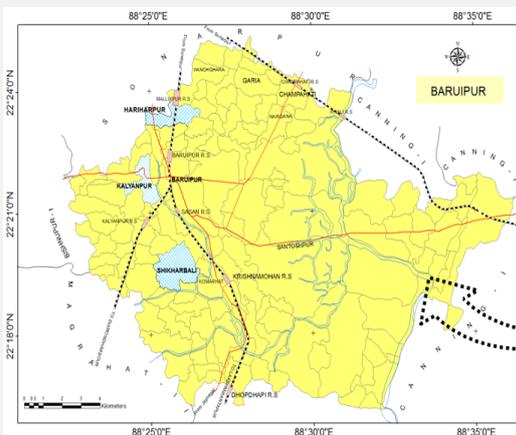


### South 24 Parganas in West Bengal

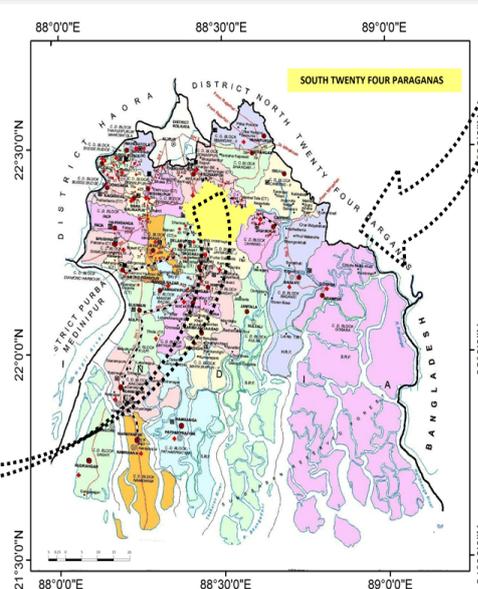


### Study Area

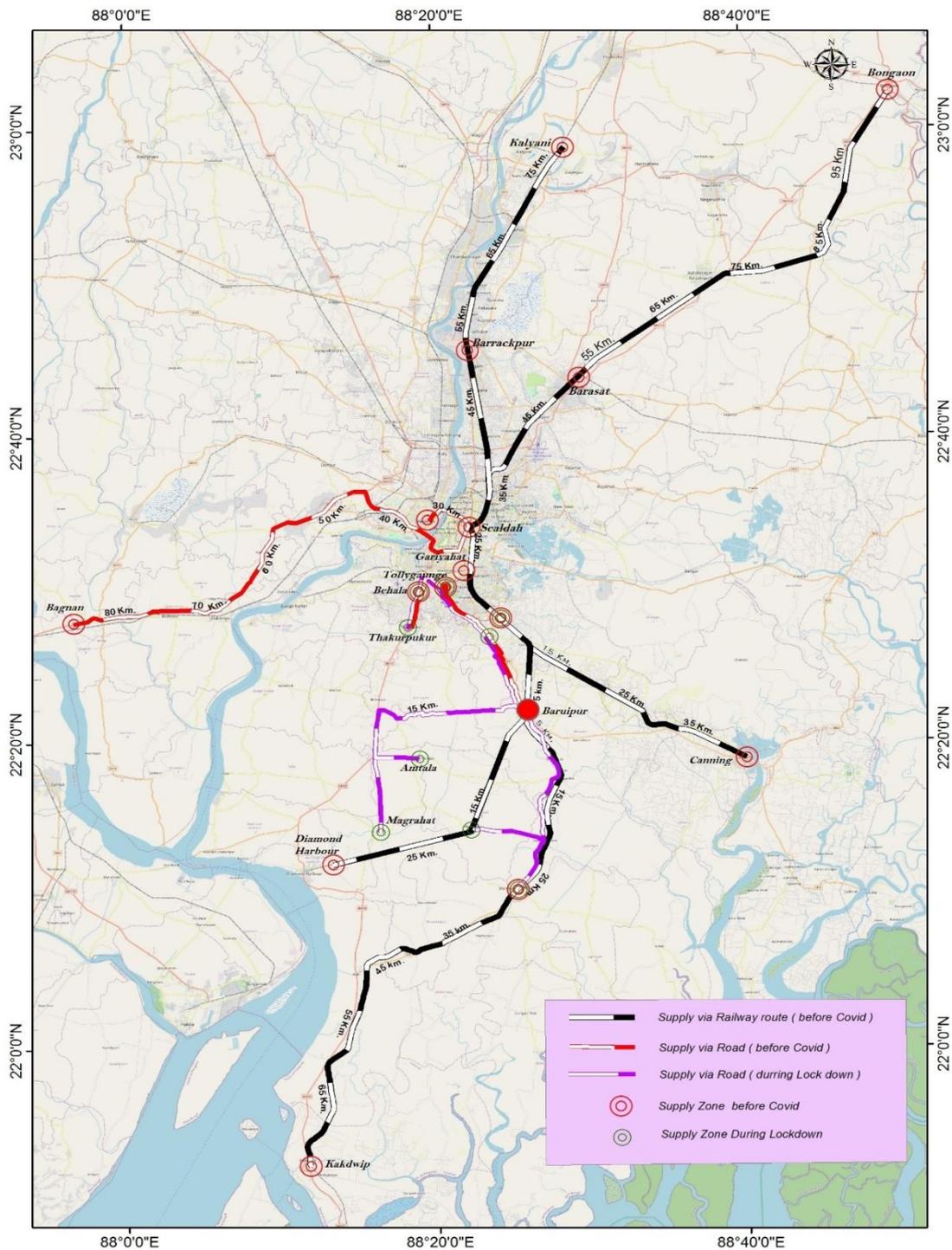
- Hariharpur.
- Kalyanpur.
- Shikharbali



### Baruipur in South 24 Parganas



**SUPPLY ZONE OF GUAVA AND TRANSPORT ROUTE FROM BARUIPUR**



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