RESEARCH REVIEW International Journal of Multidisciplinary 2021; 6(4):145-152
ISSN: 2455-3085 (Online)
https://doi.org/10.31305/rrijm.2021.v06.i04.024

Research Paper

Double Blind Peer Reviewed/Refereed Journal
https://www.rrjournals.com/

A Geographical Analysis of Agricultural Commodities Arrival in the Regulated Markets in Murshidabad District

*[1]Mostafijur Rahaman, [2]Prof. Nizamuddin Khan, [3]Firoj Biswas and [4]Mary Raza

[1]*Senior Research Fellow, Department of Geography, Aligarh Muslim University, Aligarh*
[2]*Professor, Department of Geography, Aligarh Muslim University, Aligarh*
[3]*Senior Research Fellow, Department of Geography, Aligarh Muslim University, Aligarh*
[4]*Senior Research Fellow, Department of Geography, Aligarh Muslim University, Aligarh*

ABSTRACT

Regulated markets are the markets which are controlled and governed by the state government authorities. The regulated market centres are the primary locations for the transaction of marketed surpluses of agricultural commodities. The arrival intensity of the surpluses varies from one geographical area to another. In the Murshidabad district, a large number of producer-sellers depend on regulated markets to sell their agricultural outputs. The main objectives of the present study are- to evaluate the trends and pattern of agricultural surpluses arrivals and to present a geographical analysis of the intensity of agricultural commodities arrivals in the regulated markets in Murshidabad district. The study is based on secondary sources of data. The study analyzes the market arrivals of paddy, Wheat, Mustard, Jute, Potato and pulses in the five major regulated markets of the district. Statistical tools like Compound Annual Growth Rate (CAGR) and linear regression have been used for detailed analysis. The study finds that the CAGR of market arrival of Mustard and Potato is positive in the majority of markets during the study period. In contrast, it recorded negative growth for Wheat and pulses. The long-run linear regression output also shows that the market arrivals of paddy decreased during the study periods in the selected regulated markets.

Keywords: *Market Arrivals, Regulated Markets, Marketed Surplus*

Article Publication

Published Online: 15-Apr-2021

***Author's Correspondence**

Mostafijur Rahaman

Senior Research Fellow, Department of Geography, Aligarh Muslim University, Aligarh

mrahaman1@myamu.ac.in

Introduction

The primary locations for market arrivals of agricultural commodity surpluses are the regulated markets. The main objectives of the regulated markets are to provide the remunerative price and fair dealing to the producer-sellers in exchange for selling the marketed surpluses (Khan, N., & Rehman, A., 2011). The arrival intensity of the marketed surplus reveals the nature and potential of the regulated markets. Due to numerous geographical factors, the sold surpluses arrivals are unpredictable and vary throughout various periods. Farmers must make decisions about "when to grow and where to sell" and "when, where, how to store and dispose of the agricultural produce" to sell their products to consumers. This requires market intelligence on potential markets and the number of agricultural commodities arriving at different times (Lawal, M., & Kumar, A.2017). Market arrival is the term used to describe the arrival of any commodity's marketable surplus for trading. It is a key indicator for assessing the condition of the markets. The market arrivals are very erratic and change throughout both time and location. Arrivals of different agro-commodities on regulated markets are pretty outstanding, mainly because of fair dealings throughout the marketing process and the availability of varying infrastructure facilities, such as market yards, storage facilities, banking facilities, etc., are available there. Therefore, it will be easier for the producer-sellers to carry their goods to the market yard rather than discard them in their segregated places (Siddiqui Z, 2009). The

volume of transactions involving agricultural commodities in the regulated markets determines the farmers' eagerness and interest in participating in the marketing process (Arya, A, 1993). In this study, an effort has been made to evaluate the frequency of arrival of important agricultural commodities in the Murshidabad district's regulated marketplaces.

Objectives of the Study:

The main objectives of the present study are as follows

1. To evaluate the pattern of market arrivals of major agricultural commodities in the regulated markets of the study area,
2. To present a geographical analysis of agricultural commodities' arrival intensity in the Murshidabad district regulated markets.

Database and Methodologies:

The secondary data sources provide the foundation of the current investigation collected from the Murshidabad Zilla Regulated Market Committee Office, the Directorate of Marketing & Inspection, and regulated marketplaces in the study region. Out of the 21 regulated markets in the district, a total of 5 regulated markets, namely Raghunathganj-1, Jiaganj, Berhampur, and Jalangi, have been chosen for comprehensive investigation utilizing stratified random sampling procedures based on the arrival intensity of selected agricultural commodities. Figure 1 shows location of the selected regulated markets in Murshidabad district. Furthermore, seven essential commodities—rice, paddy, Wheat, Mustard, Jute, potatoes, and pulses—have been chosen for this study based on the arrival intensity in all of the region's regulated marketplaces. The arrival trend is analyzed based on data gathered between 2010 and 2020.

Results and Discussion

Trends and Patterns of Major Agricultural Commodity Market Arrivals in Regulated Markets

The market arrivals of agricultural products in the Kandi-regulated market from 2010 to 2020 are shown in Table 1. Jute, which provides roughly 33.5% of all commodities' arrivals in this market, is the most significant, followed by paddy-rice (31.84%) and potatoes (20.1%) between 2010 and 2020. The arrival rates of Wheat (7.46%) and Mustard are also considerable at this time. Except for paddy and Jute, all the other commodities had a negative CAGR in Kandi regulated market between 2010 and 20. Mustard experienced a very high negative growth rate of -16.12%, followed by Wheat (-17.04%), potatoes (-4.27%), and pulses (-1.97%). This shows that the producer-sellers in this market area are more focused on selling commodities like paddy-rice and Jute, which generate more income than the other agricultural outputs. Figure 2 shows that market arrivals of paddy rice, Wheat, Mustard, Jute, and pulses fluctuate from 2014 to 2020. From 2014 to 2020, paddy-rice, potatoes, Wheat, and mustard market arrival intensity all dropped at rates of -72%, -90%, -86%, -40%, and -11%, respectively. In contrast, potatoes had a positive growth rate of 11% over the same period.

The marketed arrivals of agricultural surpluses in the Raghunathganj-1 regulated market from 2010 to 2020 are shown in Table 2. It demonstrates that from 2010 to 2020, the Potato had the largest arrival intensity of all farm commodities, with a share of 31.09%, followed by paddy-rice (22.87%), Mustard (20.44%), Jute (13.67%), and Wheat (11.48%). On the other hand, with a proportion of 0.44% among all agricultural commodities, pulses have the lowest arrival intensity. Figure 3. illustrates the peak arrival intensity of the marketed paddy-rice surplus, which was 155117 tonnes in 2013, and fluctuated at a pace of -96% from 2013 to 2020 in the Raghunathganj-1 regulated market. Except for paddy rice, every other commodity sees an increase in arrival at this time. The rate of growth in the arrival of potatoes between 2013 and 2020 was 144%, followed by Mustard (98%), pulses (43%), and Wheat (24%). The data further reveals that the arrivals of Mustard, potatoes, pulses, and Wheat in the Raghunathgnj-1 regulated market saw positive CAGR of 12.07%, 9.21%, 4.47%, and 3.41%, respectively, between 2010 and 20. Paddy and Jute had recorded negative CAGR. Perhaps because commodities like Mustard, potatoes, and pulses saw positive growth rates relative to other outputs, producer-sellers received greater or better returns for their disposal of these products in the Raghunathganj-1 regulated market. Pulses have a substantially lower market arrival intensity than other agricultural commodities, ranging from 363.6 tonnes in 2010 to 1323.5 tonnes in 2017. This may be because the farmers in this area gain more from growing cereal crops and fibres.

Table 3 and figure 4 make it abundantly clear that the closure of the major jute mills and declining demand over time in the Jiaganj block are to blame for the sharp decline in jute arrivals in the Jiaganj regulated market, which fell from 24787 tonnes in 2014 to 736.9 tonnes in 2020 at a rate of -97%. Paddy-rice contributed the most to the marketable surplus of all the goods over the period 2010–20, with a proportion of 29.06%, followed by Jute (27.8%), Potato (16.99), Wheat (13.05%), Mustard (10.85%), and pulses (2.26%). It is evident that Mustard arrivals have increased at a pace of 180% during the same time period. In contrast, from 2010 to

2020, market arrivals of pulses decline by -82%. Table 3 also demonstrates that from 2011 to 2020, all the agricultural outputs had positive CAGRs with the exception of pulses. In the Jiaganj regulated market region, which is primarily focused on the trade of oilseeds, fibres, and cereal crops, the arrival of Mustard has registered the highest positive CAGR, which is 6.87%, followed by Wheat (3.41%), potatoes (3.30%), Jute (1.36%), and paddy (0.56%).

As per Table 4, Jute is the most significant agricultural product in the Berhampur regulated market, accounting for around 38.81% of all outputs between 2010 and 2020. Jute is followed by potatoes, paddy rice, Wheat, Mustard, and pulses. Figure 5 shows that between 2010 and 2020, the arrival volume of paddy, potatoes, Jute, and Wheat grew at 219%, 190%, 68%, and 51%, respectively, in the Berhampur regulated market. During the same era, less Mustard and pulses arrived. Similarly, the market arrivals of paddy rice, potatoes, Mustard, and Jute all saw positive CAGRs of 7.72%, 5.36%, 3.74%, and 1.75 per cent, respectively, during the same period. In contrast, the marketed surplus arrival of pulses and Wheat in the Berhampur-regulated market showed a negative CAGR.

Table 5 displays the arrivals of agricultural surpluses in the Jalangi regulated market from 2010 to 2020. It makes it abundantly clear that among all agricultural products, potatoes are the most significant one, accounting for 42.52% of the total, followed by pulses (15.41%), paddy-rice (14.33%), Jute (12.47%), Mustard (7.89%), and Wheat (7.37%) in that period. In 2016, the market arrival of potatoes had the largest arrival; there was a significant variation in the intensity of arrivals. From 22815 tonnes in 2016 to 16101 tonnes in 2020, a 29% decline was seen. The arrival intensity of pulses also declined from 20744 tonnes in 2012 to just 901 tonnes in 2020, as shown in figure 6. It indicates that the farmers are focusing on the transaction of other cash crops throughout this decade. Additionally, it should be mentioned that the Government's restrictions on the production of Wheat in order to prevent the spread of lethal wheat blast disease have resulted in a minor decline in the arrivals of Wheat from 2017 to 2020 (Ray Chaudhuri S., July 2017). Only two commodities had positive compound annual growth rates between 2010 and 2020: Mustard and potatoes, at 4.33% and 9.66%, respectively. Pulses reported a very high negative CAGR of -25.53%, followed by Jute (-4.1%), paddy-rice (1.87%), and Wheat (-1.82%). Poor transportation infrastructure, a lack of automation, and inadequate cold storage capacities are the main factors contributing to this market's negative CAGR.

Linear Trend Analysis

The long-term movement in the arrivals of agricultural surpluses in the selected regulated marketplaces is calculated using a linear regression model. The results are given in table 6. The results show a negative coefficient of paddy, Wheat and pulses arrivals, which indicate that the market arrivals of these commodities decreased during the study period at the rate of -3454.71, -1553.69 and -1665 tonnes per annum, respectively. In the case of the marketed surplus arrival of Mustard, jute and potato positive coefficient was observed. The highest increasing rate of the marketed surplus arrival was recorded for Potato (4442.6 tonnes/annum), followed by Mustard (456.07 tonnes/annum) and Jute (446.29 tonnes/annum).

Conclusion

This study analyses the trends and patterns of marketed surplus arrivals of paddy, Wheat, Mustard, Jute, Potato and pulses in the five selected regulated markets of the Murshidabad district. The study finds that the CAGR of market arrival of Mustard and Potato is positive in the majority of markets during the study period. In contrast, it recorded negative growth for Wheat and pulses. The long-run linear regression equation also shows that paddy's market arrivals decreased at -3454 tonnes/annum rate during 2010-2020. Therefore, there is a need to enhance the production and productivity of paddy, Wheat and pulses to increase the farmer's income.

References

1. Latwal, M., & Kumar, A. (2017). Market arrival and price behaviour of Potato in Uttarakhand. *International Journal of Development Research*, *7*(1), 11219-11225.
2. Siddiqui Z, (2009). Agricultural Geography: Marketing & Development, *Neha Publishers & Distributors,* New Delhi
3. Arya, A (1993), Agricultural Marketing in Gujarat, *Concept Publishing Company*, New Delhi.
4. Ray Chaudhuri S. (July 2017), Tackling wheat blast: Bengal government bans wheat cultivation within 5 km of B'desh border, *Hindusthan Times*
5. Khan, N., & Rehman, A. (2011). Vegetable Marketing in Rural Areas. *Vista International Publishing House.* p- 24-25

Tables

Table 1. Market Arrivals of Agricultural Commodities in Kandi Regulated Market from 2010-2020

Year	Paddy-Rice	Wheat	Mustard	Jute	Potato	Pulses
2010	2298	313.25	411	16056	5789	119.5
2011	20658	7619.5	6683	12698	15531	151.2
2012	67322	30511	35810	18003	55556	225
2013	13585	4598	2515	22537	19703	178
2014	89092	12836.8	6952.7	32384	19398.5	163
2015	8556.2	2569.9	1807.9	32334.9	4303.3	147
2016	4868.5	1266.7	1307.4	40877.2	2101.4	88
2017	7090.9	978.4	708.7	30722.9	3961.2	131
2018	12315.1	619.1	591.7	28267.2	9151	110
2019	19665.5	739.9	826.14	31231.5	13689	160
2020	24863	1294.2	976.5	19407	21457	145
CAGR (%)	2.21	-16.12	-17.04	6.33	-4.27	-1.97

Source: Kandi Principal Market Yard Administrative office, 2021

Table 2. Market Arrivals of Agricultural Commodities in Raghunathganj-1 Regulated Market from 2010-2020

Year	Paddy-Rice	Wheat	Mustard	Jute	Potato	Pulses
2010	6155.5	20140	14903	26589	36272	363.6
2011	20302.9	16000	14987	40261.5	36788	374.85
2012	70050.5	7628.8	41019	6274.1	28226	615.7
2013	155117	19895.4	21987	15813.7	25467	622
2014	25060	13688.5	18210.5	15943.5	19298.3	823
2015	20735.6	24400	23309	25242.5	84738.5	928
2016	21024.5	18979.5	32830	24698.2	62896.5	536
2017	22923.5	16663.5	40019	20122	56764.1	1323.5
2018	22196.5	17165.5	45270	21930.5	55898.5	137.77
2019	21432.5	17118	53573	20119.5	63411	960.45
2020	6155.5	24682	43584.5	16811.5	62069.8	887.7
CAGR (%)	-6.36	3.41	12.08	-0.36	9.22	4.48

Source: Raghunathganj-1 Sub Market Yard Administrative office, 2021

Table 3. Market Arrivals of Agricultural Commodities in Jiaganj Regulated Market from 2010-2020

Year	Paddy-Rice	Wheat	Mustard	Jute	Potato	Pulses
2010	1933.5	469	315	390	1364	418
2011	2535.5	805	654	483	567	38
2012	5000.5	409	700	1044	1541	194
2013	3082.5	476	1696	618	1562	180
2014	7182	3939	2916	24787	4990	704
2015	3925.5	4304.1	2214.6	4975.9	4186	442
2016	2605.9	2745.8	1320.1	1218.5	2084.7	271
2017	2532.4	1496.7	1273.7	759	1497.7	356
2018	2801.7	1592.2	1305.4	764.8	1412.1	171
2019	3159.8	418.6	992.6	766.3	1433.6	119

2020	3444.2	497.9	880.9	736.9	1696	77
CAGR (%)	0.57	3.41	6.88	1.37	3.31	-3.45

Source: Jiaganj Sub Market Yard Administrative office, 2021

Table 4 Market Arrivals of Agricultural Commodities in Berhampur Regulated Market from 2010-2020

Year	Paddy	Wheat	Mustard	Jute	Potato	Pulses
2010	4075	5616	3559	14363	6568	4201.6
2011	7181.5	5735.5	2732	30273	16799.5	852.5
2012	13621	13885	1841.4	28605.5	11600	189
2013	30022.5	22661.5	8888.5	29887.5	22032	186
2014	16209	20809	12990.5	37802.5	18298	165
2015	13947	14382.8	8100.2	34699.9	11820.5	137
2016	13231	8651	8077	47930.5	11354	233
2017	12469	3015.5	6400	24878.6	13848.5	233
2018	19355	3190.5	9159	25195	18895	118
2019	16305.5	5378.5	3816.2	28890	18445	128
2020	13014	8486	2926	24178	19020	160
CAGR (%)	7.72	-6.60	3.74	1.75	5.36	-20.00

Source: Berhampur Sub Market Yard Administrative office, 2021

Table 5. Market Arrivals of Agricultural Commodities in Jalangi regulated market from 2010-2020

Year	Paddy-Rice	Wheat	Mustard	Jute	Potato	Pulses
2010	1595.8	180.67	2162.5	314.3	5560.5	11481
2011	3491.2	562.06	2153.5	965.9	15292.5	13659
2012	14258.5	9043.75	1327.8	7762	9499.45	20744
2013	5106.5	2937	875.5	7012	6409.5	837
2014	6307.6	5327.4	4366.5	20093.5	6933	1125
2015	3065.4	1913.8	2883	1684.9	15740	872
2016	2555.7	1333.8	4271	944.9	22815	1143
2017	2944.2	1640.2	1921	845.3	18992	1004
2018	3160.1	1125.1	2682	840.3	14485	779
2019	3288	1190	2282	1476.1	16089	1057
2020	4079	384.6	2523	1454.6	16102	901
CAGR (%)	-1.87	-1.82	4.33	-4.10	9.66	-25.53

Source: Jalangi Sub Market Yard Administrative office, 2021

Table 6. Linear Regression Output of the Market Arrivals of Agricultural Commodities, 2010-2020

Agricultural Commodities	Coefficient of Arrivals	Intercept	R^2
Paddy	-3454.71	7095982	0.019
Wheat	-1553.69	3168350	0.137
Mustard	456.07	-909573	0.206
Jute	446.2918	-815190	0.004
Potato	4442.6	-8857172	0.47
Pulses	-1665	16574	0.55

Source: Calculated by the Researcher

Figures

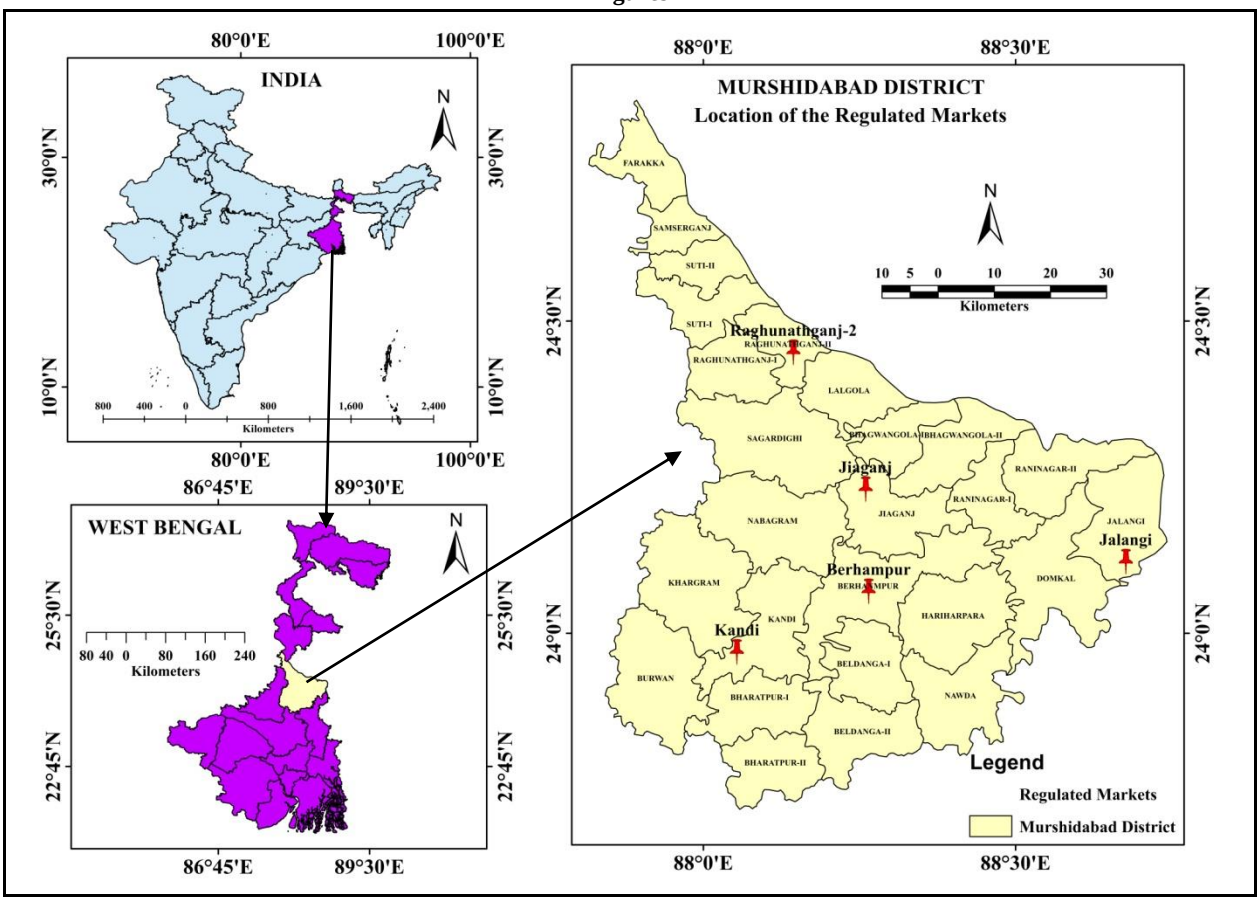

Figure 1. Location Map

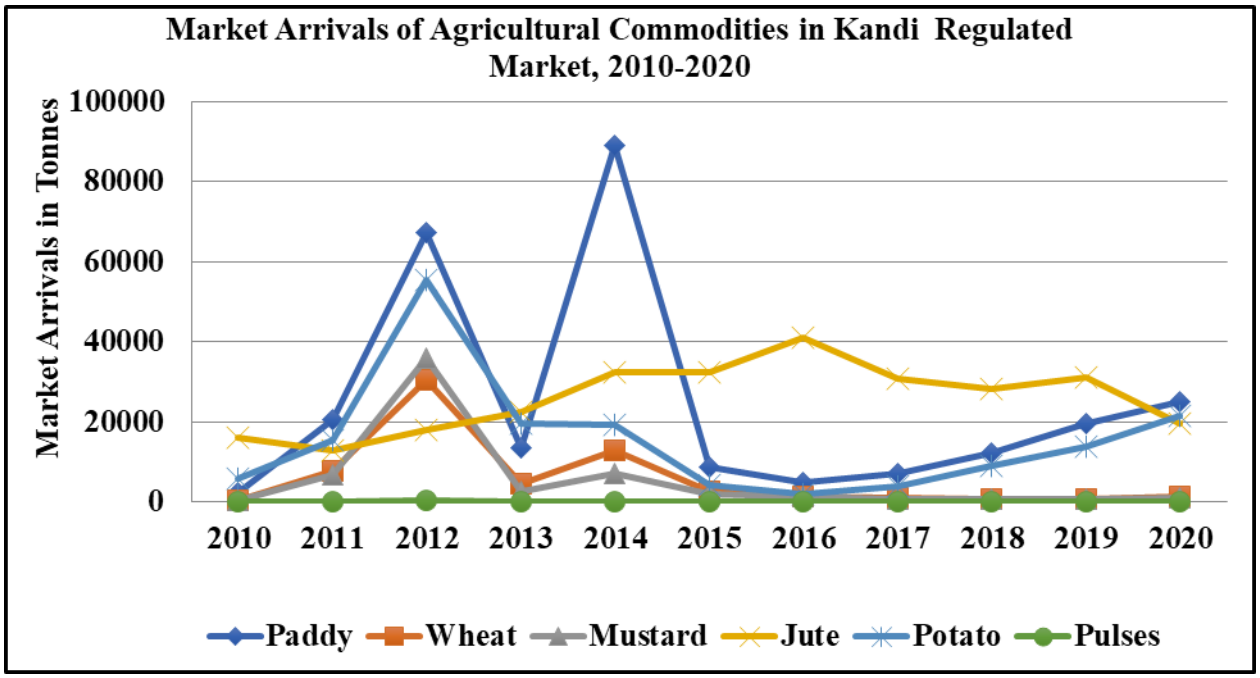

Figure 2.
Source: Based on Table 1.

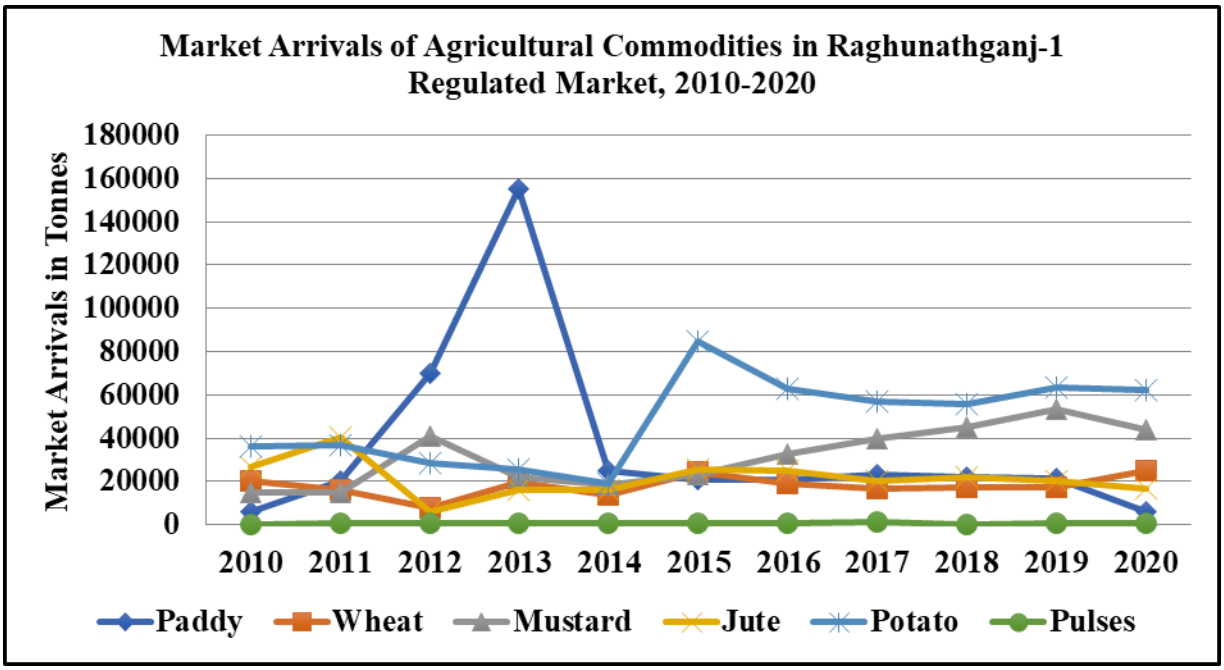

Figure 3.
Source: Based on Table 2.

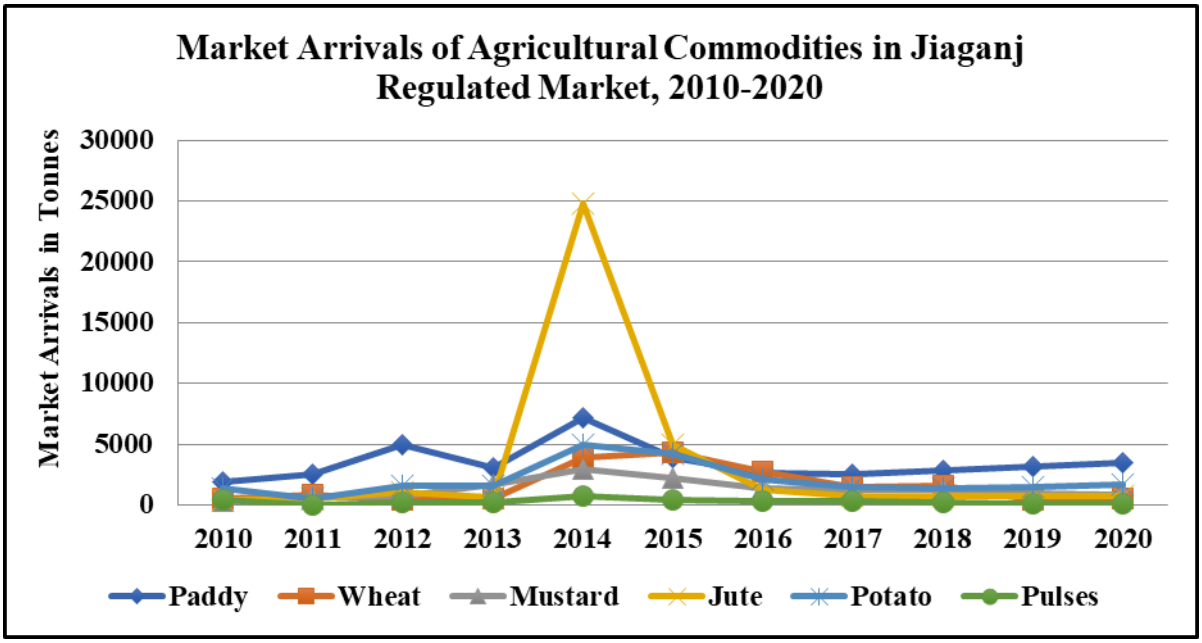

Figure 4.
Source: Based on Table 3.

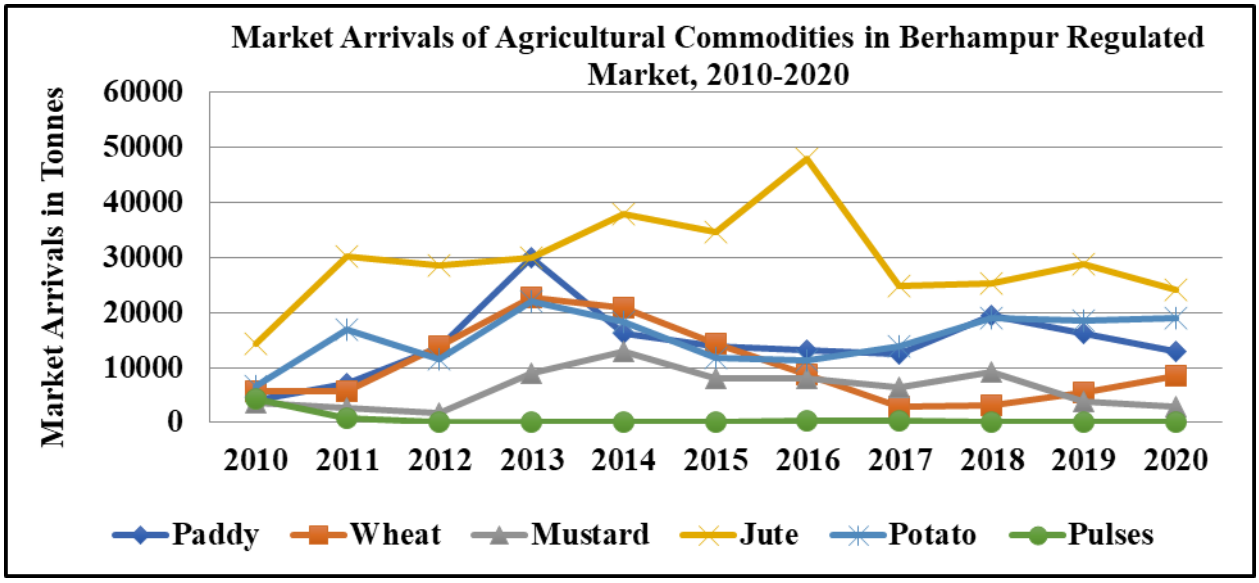

Figure 5.
Source: Based on Table 4.

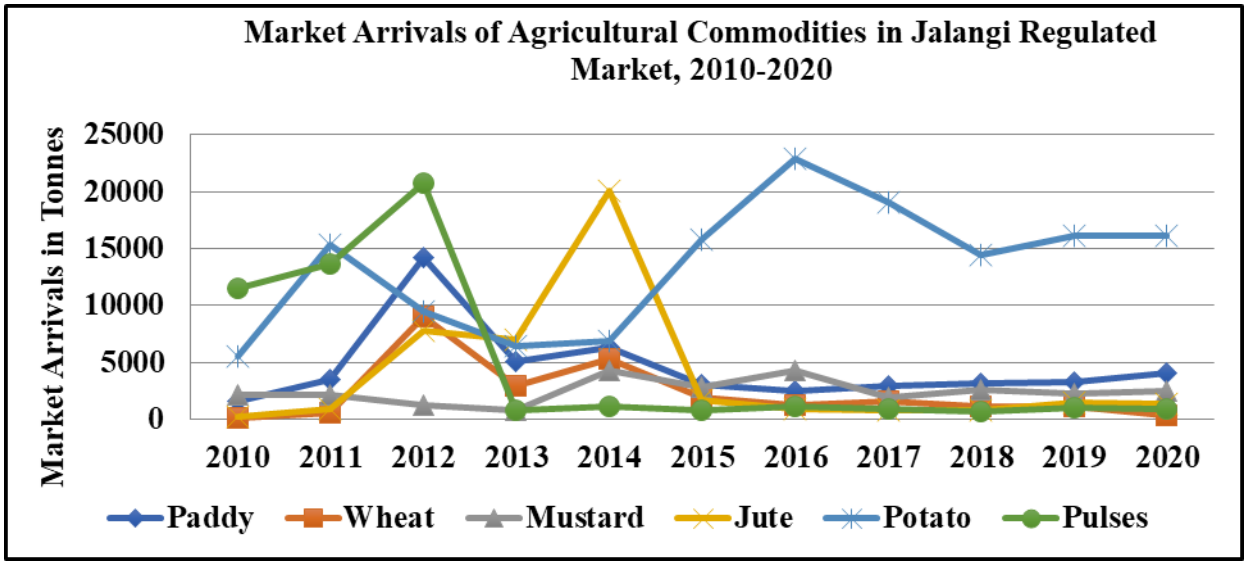

Figure 6
Source: Based on Table 5