A STUDY OF DIGITAL MARKETING ON SELECTED AGRICULTURAL PRODUCTS IN DINDIGUL

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ABSTRACT

The Electronic National Agriculture Market (e-NAM) is a pan-India digital trading system that integrates the existing Agricultural Produce and Livestock Market Committee (APMC) mandis to create a unified national agricultural market. The Small Farmers Agribusiness Consortium (SFAC) is the lead agency for e-NAM implementation under the Ministry of Agriculture and Farmers Welfare, Government of India. The e-Nam was established in April 2016. There are currently 417 combined mandis in 13 states, including Tamil Nadu. The challenge is convincing traders who have always done business in person and with cash to become digital. The Dindigul Agricultural District is grouped into three agricultural divisions in this study: Natham, Oddanchatram, and Palani. Each Agricultural Division is supervised by an Assistant Director of Agriculture. The secondary data were gathered from various departments of the Tamil Nadu government and analyzed by using forecasting analysis to determine the growth of trade crops and the number of trade values in the Dindigul district areas. The present study explores the growth and forecast of trade value and trade quantity in selected agricultural products. This study revealed that the positive and negative growth levels on varied crops.

Keywords: E-Nam, Agricultural, Products, Digital Marketing, Trade.

INTRODUCTION

The National Agricultural Market Facilities for e-trading, e-bidding, e-auctioning, assaying, and related infrastructure will be provided, which would fetch competitive and better prices for the product thereby improving the livelihood of farmers. GOI released a total amount of Rs. 16.10 Crore for the 23 Regulated Markets (@ Rs.70 Lakh per Regulated Market). Additionally, Rs.123.63 crore has been sanctioned under NABARD for the infrastructure facilities in 30 Regulated markets (Suprita Anupam, 2019). To provide expanded market access to the traders and farmers, the Unified Single Licence was introduced to trade in the Regulated Markets of other Market Committees too which in turn enhances the opportunity of the farmers in getting a better price (AGMARKNET, 2000). A trader who obtained the Unified Single License can trade in all the notified markets of the State and this License is valid for three years. So far 1235 numbers of Unified Single Licenses have been issued to the traders (Department of Agricultural Marketing & Agri Business, 2022).

Dindigul Agricultural District is headed by the Joint Director of Agriculture. Dindigul Agricultural District consists of three Agricultural Divisions for this study, namely, Natham, Oddanchatram, and Palani. Each Agricultural Division is headed by an Assistant Director of Agriculture (Digital Mandi India, 2015). There are 13 Agricultural Development Officers and 28 Agricultural Extension Centres in Dindigul District. There is one Soil Testing Laboratory and one Fertilizer Testing Laboratory in the Dindigul District (National Informatics Centre, Ministry of Electronics & Information Technology, Government of India, 2022). In this study, the secondary data collected from the various departments of the Tamil Nadu government are analyzed by using forecasting analysis and the growth of Trade crops and the number of Trade values under the electronic national agriculture markets (e-Nam) in the areas of Oddanchatram, Palani, Natham at the Dindigul district. The specific objective is to study the Growth and estimate of Trade of selected agricultural products through E-NAM in the Dindigul District.

METHODOLOGY

Secondary data was collected and analyzed in order to forecast and analyze trade growth in e-Nam, Dindigul. The data was gleaned from the Annual Report of the Department of Agriculture, Cooperation & Farmers' Welfare of India, National Agricultural Market Head Office in Dindigul District, covering the three-year period 2017-2021. The acquired data is analyzed using charts and forecasting analyses.

RESULT AND DISCUSSION

The data analysis is divided into two parts. The first section focuses on the growth of traded crops in the Oddanchatram, Palani, and Natham sectors of the Dindigul district as part of the electronic national agriculture market (e-Nam) in the years 2020 - 2022. The second section investigates the outcomes of the sale of e-Nam trade value in the same sectors of the Dindigul district up to 2024.
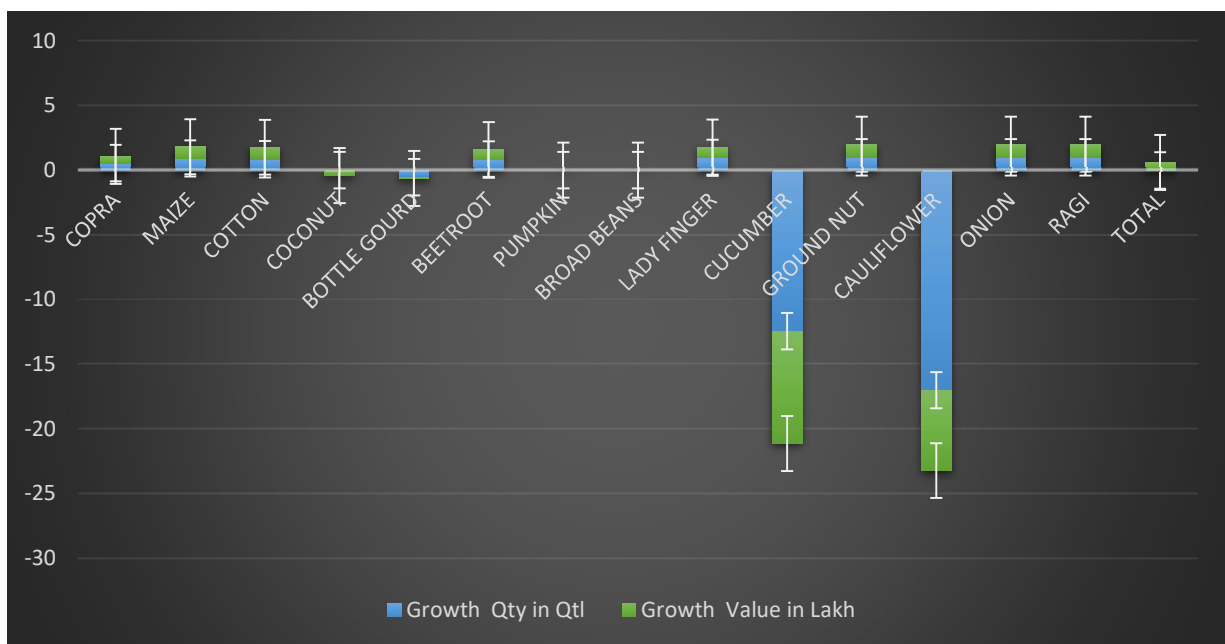
TABLE 1
GROWTH FOR VALUE OF CROP IN ODDANCHATRAM

Crop	2020-2021		2021-22		Growth	
	Qty in Qtl	Value in Lakh	Qty in Qtl	Value in Lakh	Qty in Qtl	Value in Lakh
COPRA	838.09	82.9514	1846.32	172.982	0.546075	0.520462
MAIZE	1822.35	24.648	19887.8	248.355	0.908368	0.900755
COTTON	35.68	1.232	229.32	17.408	0.84441	0.929228
COCONUT	0	9.896	0	6.951	0	-0.42368
BOTTLE GOURD	49779.82	60.7953	32486.41	54.998	-0.53233	-0.10541
BEETROOT	2707.18	4.994	14502.75	23.693	0.813333	0.78922
PUMPKIN	3450	3.85	0	0	0	0
BROAD BEANS	850	1.7	0	0	0	0
LADY FINGER	131.95	1.319	3055.7	7.889	0.956818	0.832805
CUCUMBER	13451.99	19.362	1000	2	-12.452	-8.681
GROUND NUT	0	0	15.93	0.842	1	1
CAULIFLOWER	1871.65	3.7434	103.9	0.519	-17.014	-6.21272
ONION	0	0	6.67	0.14	1	1
RAGI	0	0	335.71	11	1	1
TOTAL	74938.71	214.493	73470.52	546.778	-0.01998	0.607715

SOURCE: DEPARTMENT OF AGRICULTURAL MARKETING AND AGRI-BUSINESS, DINDIGUL, COMPUTE FROM TABLE 1

Table 1 shows that the total growth of the traded crop was decreased by -0.019 percent, particularly the cauliflower was decreased by -17.014 and the total value of crops was increased by 0.60 percent in 2022, particularly the cotton was increased by 0.929228 Lakhs in 2022. In comparison to the other crops in Table 1, the ladyfinger had a higher growth rate of 0.95 percent of the quantity in the quintal, and maize had the second highest growth rate of 0.90 percent of the quantity in the quintal. Cotton had the highest level of marketing value gain, at 0.92 percent, when compared to the other crops in Table 1; maize had the highest level of marketing value increase, at 9.92 percent, when compared to the other crops in Table 1.

FIGURE 1

In comparison to the other crops in Figure 1, cauliflower had a lower growth rate of -17.04 percent of the quantity in the quintal, and maize had the second lower growth rate of -1.2 percent of the quantity in the quintal. Cucumber had the lower level of marketing value drop, at -8.68 percent, when compared to the other crops in Table 1; cauliflower had the lower level of marketing value decrease, at -6.21 percent, when compared to the other crops in Table 1.

TABLE 2

## FORECAST ANALYSIS FOR VALUE OF CROPS IN ODDANCHATRAM (2022-2024)

Crop	2020-2021 Value in Lakh	2021-22 Value in Lakh	2022-23 Forecast Value in Lakhs	2023-24 Forecast Value in Lakhs
COPRA	82.9514	172.982	263.0126	353.043
MAIZE	24.648	248.355	472.062	695.769
COTTON	1.232	17.408	33.584	49.76
COCONUT	9.896	6.951	4.006	1.061
BOTTLE GOURD	60.7953	54.998	49.2007	43.4034
BEETROOT	4.994	23.693	42.392	61.091
PUMPKIN	3.85	0	-3.85	-7.7
BROAD BEANS	1.7	0	-1.7	-3.4
LADY FINGER	1.319	7.889	14.459	21.029
CUCUMBER	19.362	2	-15.362	-32.724
GROUND NUT	0	0.842	1.684	2.526
CAULIFLOWER	3.7434	0.519	-2.7054	-5.9298
ONION	0	0.14	0.28	0.42
RAGI	0	11	22	33

SOURCE: DEPARTMENT OF AGRICULTURAL MARKETING AND AGRI-BUSINESS, DINDIGUL, COMPUTE FROM TABLE 2

Table 2 shows that the forecast analysis for the value of the crop will be increased by the following crops, COPRA, MAIZE, COTTON, COCONUT, BEETROOT, LADY FINGER, GROUND NUT, ONION, RAGI will be 353.04 Lakhs, 695.76 Lakhs, 49.76 Lakhs, 1.061 Lakhs, 43.4034 Lakhs, 61.091 Lakhs, 21.029 Lakhs, 2.526 Lakhs, 0.42 Lakhs, 33 Lakhs in the year of 2024. The value of the PUMPKIN, BROAD BEANS, CUCUMBER, and CAULIFLOWER will be decreased by -7.7 Lakhs, -3.4 Lakhs, -32.724 Lakhs, -5.9298 Lakhs in the year 2024. In comparison to the other crops in Table 2, the maize crop with the highest marketing value increased by 472.66 lakhs in 2022-2023, while the copra crop with the second highest marketing value increased by 263.01 lakhs. In comparison to the other crops in Table

2, the maize crop with the highest marketing value increased by 695.76 lakhs in 2023-2024, while the copra crop with the second highest marketing value increased by 353.04 lakhs.

FIGURE 2
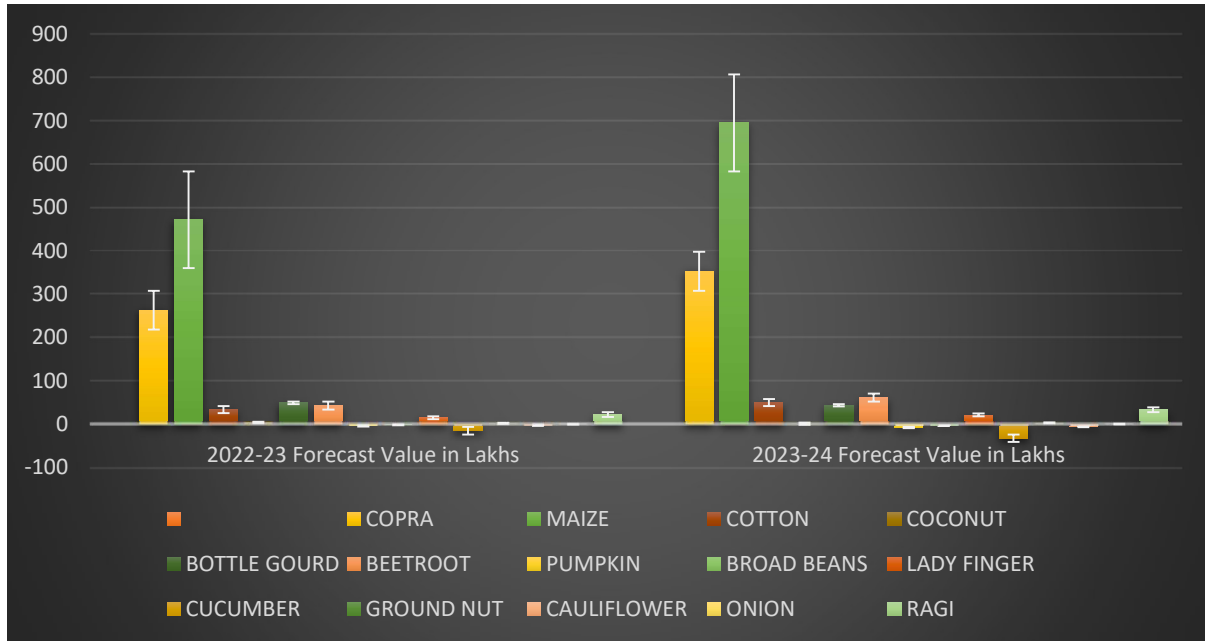
SOURCE: COMPUTE FROM TABLE 2

In comparison to the other crops in Figure 2, the cucumber crop with the lowest marketing value decreased by -15.36 lakhs in 2022-2023, while the cauliflower crop with the second lowest marketing value decreased by -2.70 lakhs. In comparison to the other crops in Table 2, the cucumber crop with the lowest marketing value decreased by -32.72 lakhs in 2023-2024, while the cauliflower crop with the second lowest marketing value decreased by -5.92 lakhs.
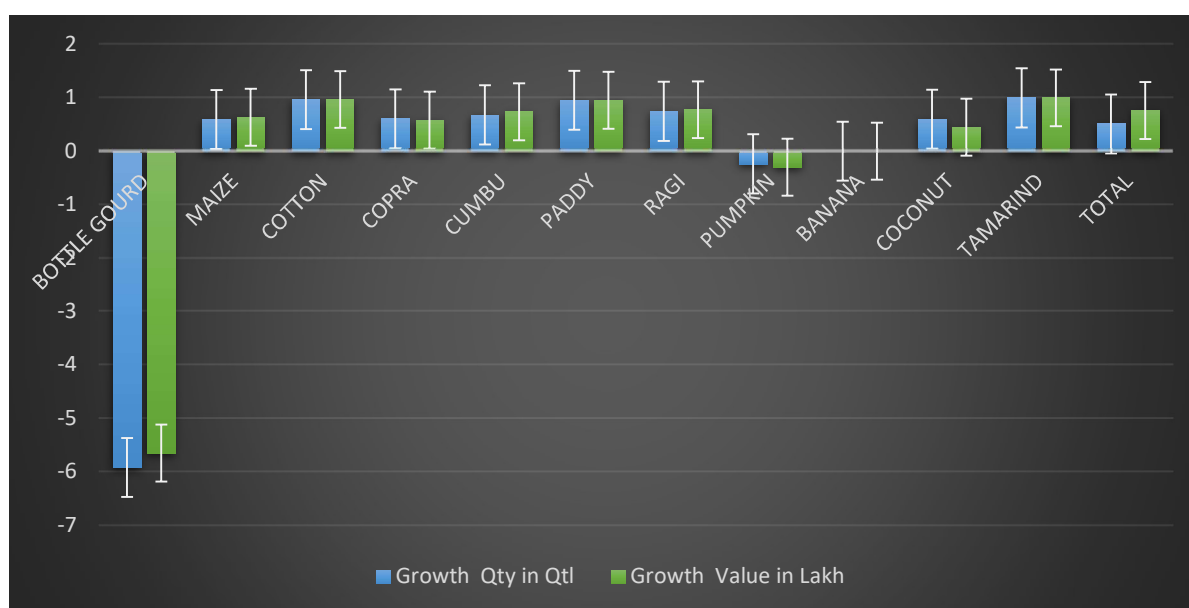
TABLE 3

GROWTH FOR VALUE OF CROP IN NATHAM

Crop	2020-21		2021-22		Growth	
	Qty in Qtl	Value in Lakh	Qty in Qtl	Value in Lakh	Qty in Qtl	Value in Lakh
BOTTLE GOURD	1435.75	2.747	207.43	0.413	-5.92161	-5.65133
MAIZE	1244.583	12.783	3054.98	35.325	0.592605	0.638132
COTTON	24	1.08	711.3	35.565	0.966259	0.969633

COPRA	225	19.298	571.25	46.3	0.606127	0.583197
CUMBU	360	3.6	1126.98	13.76	0.680562	0.738372
PADDY	135.282	2.176	2886.35	45.629	0.95313	0.952311
RAGI	301.58	6.075	1192.87	27.34	0.747181	0.777798
PUMPKIN	1172.125	2.462	948	1.896	-0.23642	-0.29852
BANANA	588.5	1.177	0	0	0	0
COCONUT	785	8.18	1967.75	14.878	0.601067	0.450195
TAMARIND	0	0	47.5	0.95	1	1
TOTAL	6201.32	52.773	12714.4	222.056	0.51226	0.762344

SOURCE: DEPARTMENT OF AGRICULTURAL MARKETING AND AGRI-BUSINESS, DINDIGUL, COMPUTE FROM TABLE 3

Table 3 shows that the total growth of the traded crop was increased by 3 percent and the value of crops was increased by 0.51 percent in the year 2022. When compared to the other crops in table 3, cotton had the highest growth rate of 0.96 percent of the quantity in the quintal, and paddy had the second highest growth rate of 0.95 percent of the quantity in the quintal. In comparison to the other crops in table 3, the cotton crop had the highest level of marketing value growth, which was 0.96 percent, while the paddy crop had the lowest level of marketing value increase, which was 0.95 percent.

FIGURE 3

SOURCE: COMPUTE FROM TABLE 3

When compared to the other crops in Figure 3, Bottle gourd had the lowest growth rate of -5.92 percent of the quantity in the quintal, and pumpkin had the second lowest growth rate of -0.23 percent of the quantity in the quintal. In comparison to the other crops in table 3, the Bottle gourd crop had the lowest level of marketing value growth decrease, which was -5.65 percent, while the pumpkin crop had the lowest level of marketing value decrease, which was -0.29 percent.

TABLE 4

FORECAST ANALYSIS FOR VALUE OF CROP IN NATHAM (2022-2024)

| Crop	2020-21 Value in Lakh	2021-22 Value in Lakh	2022-23 Forecast Value in Lakhs	2023-24 Forecast Value in Lakhs
MAIZE	12.783	35.325	57.867	80.409
COTTON	1.08	35.565	70.05	104.535
COPRA	19.298	46.3	73.302	100.304
CUMBU	3.6	13.76	23.92	34.08
PADDY	2.176	45.629	89.082	132.535
RAGI	6.075	27.34	48.605	69.87
PUMPKIN	2.462	1.896	1.33	0.764
BANANA	1.177	0	-1.177	-2.354
COCONUT	8.18	14.878	21.576	28.274
TAMARIND	0	0.95	1.9	2.85

SOURCE: DEPARTMENT OF AGRICULTURAL MARKETING AND AGRI-BUSINESS, DINDIGUL, COMPUTE FROM TABLE 4

Table 4 shows that the forecast analysis for the value of the crop will be increased by the following crops, MAIZE, COTTON, COPRA, CUMBU, PADDY, RAGI, PUMPKIN, COCONUT, TAMARIND will be 353.043 Lakhs, 695.769 Lakhs, 49.76 Lakhs, 1.061 Lakhs, 43.4034 Lakhs, 80.40 Lakhs, 104.53 Lakhs, 100.30 Lakhs, 34.08 Lakhs, 132.53 Lakhs, 69.87 Lakhs, 0.76 Lakhs, 28.27 Lakhs, 2.85 Lakhs in the year of 2024. The value of the BANANA will be decreased by -2.354 Lakhs in the year 2024. In comparison to the other crops in Table 4, the paddy crop with the highest marketing value increased by 89.082 lakhs in 2022-2023, while the copra crop with the second highest marketing value climbed by 73.302 lakhs. In

comparison to the other crops in Table 4, the paddy crop with the highest level of marketing value increased by 132.535 lakhs in the years 2023-2024, while the cotton crop with the second highest level of marketing value was increased by 104.535 lakhs.
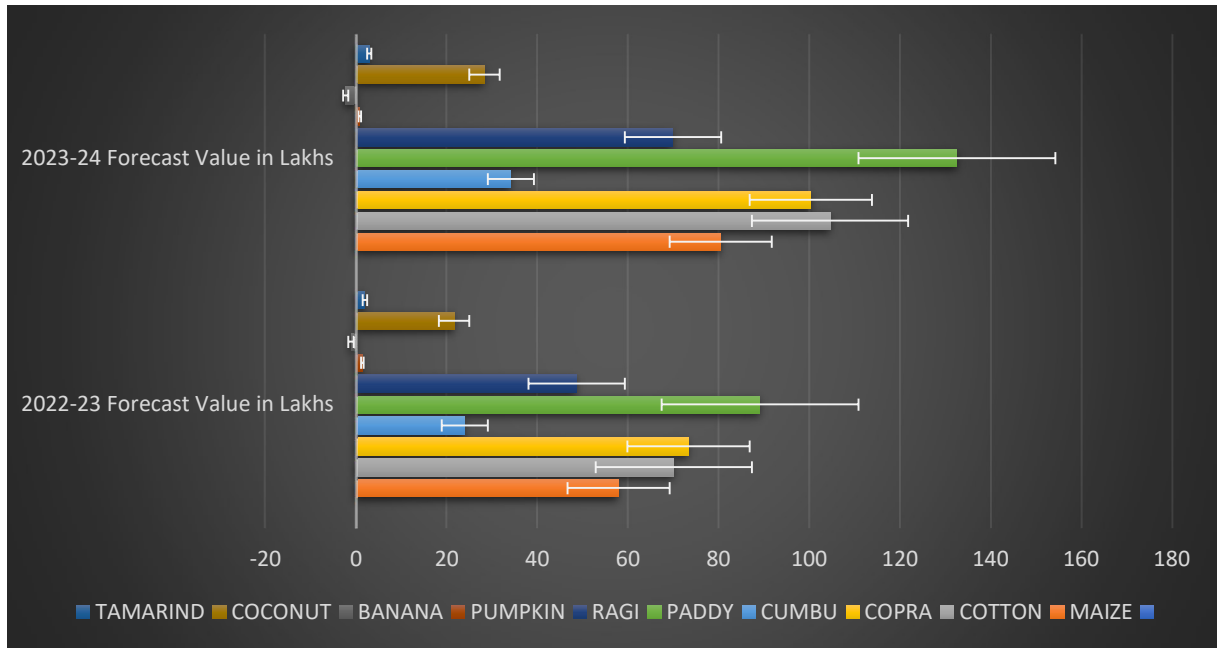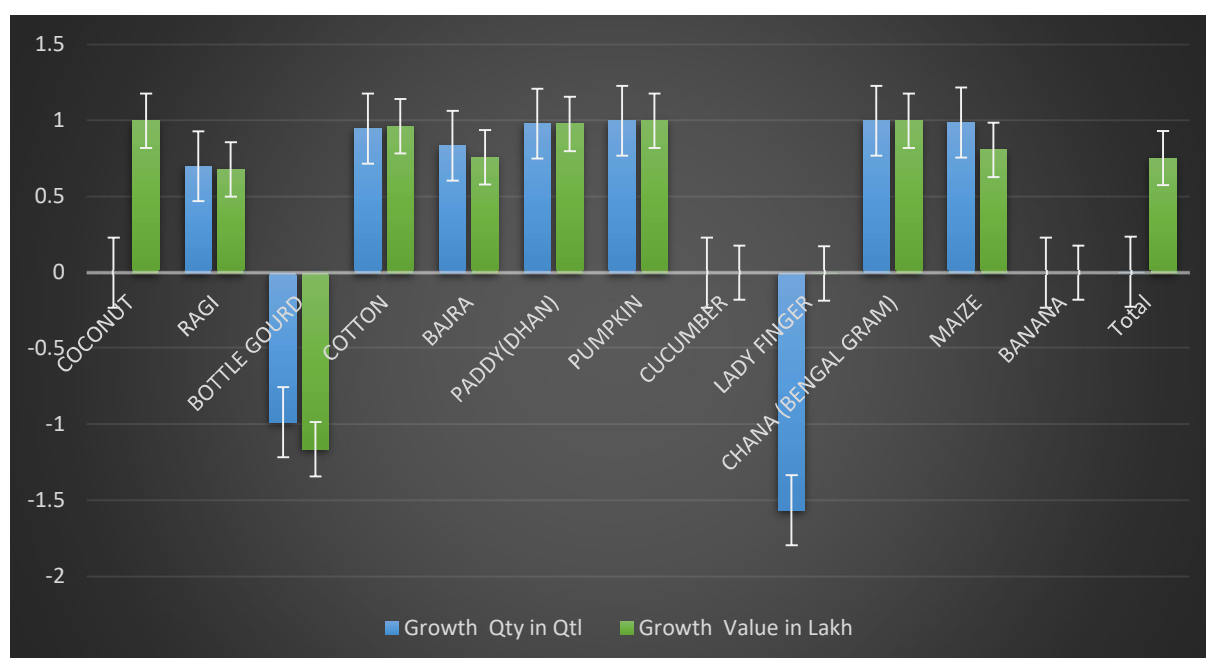
FIGURE 4

In comparison to the other crops in Figure 4, the banana crop with the lowest marketing value decreased by 1.77 lakhs in 2022-2023, while the pumpkin crop with the second lowest marketing value decreased by 1.33 lakhs. In comparison to the other crops in Figure 4, the banana crop with the lowest level of marketing value decreased by -2.35 lakhs in the years 2023-2024, while the pumpkin crop with the second lowest level of marketing value decreased by 0.76 lakhs.

TABsLE 5

GROWTH FOR VALUE OF CROPS IN PALANI

Crop	2020-21		2021-22		Growth	
	Qty in Qtl	Value in Lakh	Qty in Qtl	Value in Lakh	Qty in Qtl	Value in Lakh
COCONUT	0	0	0	29.633	0	1
RAGI	252.05	9.82	842.63	30.663	0.700877	0.679744
BOTTLE GOURD	16482.9	25.38	8309.07	11.737	-0.98372	-1.16239
COTTON	10	0.6	192.49	16.827	0.948049	0.964343
BAJRA	17.4	0.44	105.72	1.832	0.835414	0.759825
PADDY(DHAN)	91.2	1.28	4847.52	59.741	0.981186	0.978574
PUMPKIN	0	0	1488.5	4.458	1	1
CUCUMBER	1550	2.4	0	0	0	0
LADY FINGER	835	1.62	325.75	1.612	-1.56332	-0.00496
CHANA (BENGAL GRAM)	0	0	6.83	0.341	1	1
MAIZE	38.98	10.16	3274.21	53.029	0.988095	0.808407
BANANA	0	0	0	0	0	0
Total	19277.5	51.7	19392.72	209.873	0.00594	0.753661

SOURCE: DEPARTMENT OF AGRICULTURAL MARKETING AND AGRI-BUSINESS, DINDIGUL, COMPUTE FROM TABLE 5

Table 5 shows that the total growth of the traded crop was increased by 0.0059 percent and the value of crops was increased by 0.75 percent in the year 2022. When compared to the other crops in Table 5, maize had a higher growth level of 0.98 percent of the quintal quantity, and paddy had a second higher growth level of 0.98 percent of the quintal quantity. When compared to the other crops in Table 5, the paddy crop had a greater level of marketing value rise, which was 0.97 percent, while the cotton crop had a lower level of marketing value growth, which was 0.96 percent.

FIGURE 5

When compared to the other crops in Figure 5, ladyfinger had the lowest growth level of -1.56 percent of the quintal quantity, and bottle gourd had the second lowest growth level of -0.98 percent of the quintal quantity. When compared to the other crops in Table 5, the bottle gourd crop had the lowest level of marketing value decreased, which was -1.162 percent, while the ladyfinger crop had a second lower level of marketing value growth, which was -0.004 percent.

TABLE 6

### FORECAST ANALYSIS FOR VALUE OF CROP IN PALANI (2022-2024)

Crop	2020-21 Value in Lakh	2021-22 Value in Lakh	2022-23 Forecast Value in Lakhs	2023-24 Forecast Value in Lakhs
COCONUT	0	29.633	59.266	88.899
RAGI	9.82	30.663	51.506	72.349
BOTTLE GOURD	25.38	11.737	-1.906	-15.549
COTTON	0.6	16.827	33.054	49.281
BAJRA	0.44	1.832	3.224	4.616
PADDY(DHAN)	1.28	59.741	118.202	176.663

PUMPKIN	0	4.458	8.916	13.374
CUCUMBER	2.4	0	-2.4	-4.8
LADY FINGER	1.62	1.612	1.604	1.596
CHANA (BENGAL GRAM)	0	0.341	0.682	1.023
MAIZE	10.16	53.029	95.898	138.767

SOURCE: DEPARTMENT OF AGRICULTURAL MARKETING AND AGRI-BUSINESS, DINDIGUL, COMPUTE FROM TABLE 6

Table 6 shows that the forecast analysis for the value of the crop will be increased by the following crops, COCONUT, RAGI, COTTON, BAJRA, PADDY, PUMPKIN, LADY FINGER, CHANA, MAIZE will be 88.89 Lakhs, 72.34 Lakhs, 49.28 Lakhs, 4.616 Lakhs, 176.66 Lakhs, 13.37 Lakhs, 1.59 Lakhs, 1.02 Lakhs, 138.76 Lakhs, in the year of 2024. The value of the BOTTLE GOURD and CUCUMBER will be decreased by -15.54 Lakhs and -4.8 Lakhs in the year 2024. In comparison to the other crops in Table 6, the paddy crop with the highest marketing value increased by 118.202 lakhs in 2022-2023, while the maize crop with the second highest marketing value increased by 95.898 lakhs. In comparison to the other crops in Table 6, the paddy crop with the highest marketing value increased by 176.663 lakhs in 2023-2024, while the maize crop with the second highest marketing value increased by 138.767 lakhs.

FIGURE 6
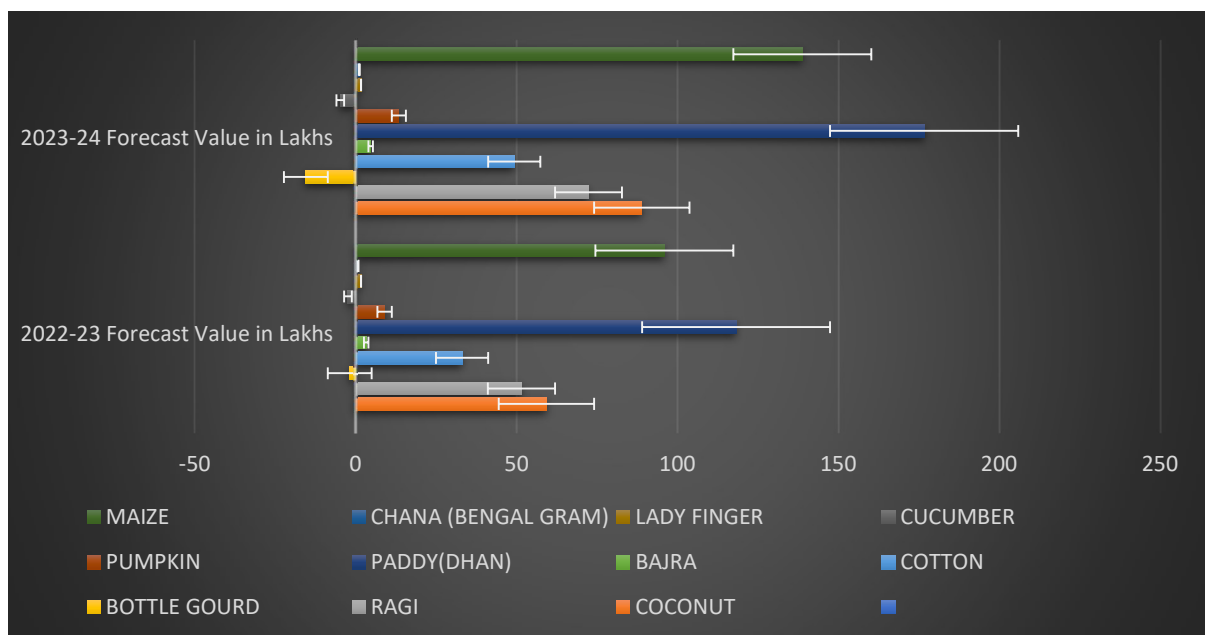
SOURCE: COMPUTE FROM TABLE 6

In comparison to the other crops in Figure 6, the cucumber crop with the lowest marketing value decreased by -2.4 lakhs in 2022-2023, while the bottle gourd crop with the second lowest marketing value decreased by -1.90 lakhs. In comparison to the other crops in Figure 6, the bottle gourd crop with the lowest marketing value decreased by -15.54 lakhs in 2023-2024, while the cucumber crop with the second lowest marketing value increased by -4.8 lakhs.

CONCLUSION

The percentage study explores the positive and negative growth of trade value and trade volume as well as trade crops in the Oddanchatram, Palani, and Natham sectors of the Dindigul district as part of the electronic national agriculture market (e-Nam) in the coming years estimated up to the year 2024. It shows that the growth and forecast analysis is in the same period on a downtrend.

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