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An analysis of marketing pattern of agricultural production in Hisar district (2006-07 to 2016-17)

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Abstract

In Indian economy, the agriculture industry is extremely important. Agriculture contributes 18 per cent of India's GDP and employs more than half of the population. Agricultural marketing refers to the planning, arranging, directing and management of agricultural products in order to meet the needs of the farmer, consumer and producer. The present study have been keen interested to analyse the marketing pattern of agricultural production and to explore the geographical pattern of production of prominent crops in Hisar District.

Keywords: Agriculture production, agriculture marketing, major crops, geographical pattern, consumer

Introduction

India is the world's largest producer of rice, pulses, wheat, spices and spice products. India has become the second largest producer of vegetables and fruits in the world. According to the Development of Economics and Statics (DES) the country's food-grain production in 2017-18 crops Year (July-June) is now pegged at a record 284.83 million tonne, 3.5 per cent larger than previous year. In 2018-19, Government of India is aiming food-grain production of 285.2 million tonnes (MT). Production of horticulture crops is estimated at record 306.82 million tonnes (MT) in 2017-18 as per third advance estimates.

Agricultural Marketing: A large number of activities are included in doing this, such as planning, growing, harvesting, production, packaging and grading, storage, transport, food-processing, advertising, distribution and sale. In reality, the term involve the entire range of supply chain operations. so agricultural marketing system is an efficient way by which the farmers can dispose/ sell their surplus produce at a profitable price. Enhancement in the condition of farmers and their agriculture depends to a large extent on the comprehensive activities of agriculture marketing. According to the National Commission on Agriculture (1976), "Agriculture Marketing includes all aspects of market structure and system, both functional and institutional, pre and post-harvest operations, assembling, grading, storage, transport and distribution" Therefore, the innovations in the agricultural marketing system help the process of overall development.

APMC: Agricultural Produce Market Committees: Union Government had organized a Model APMC Act in 2003. The Act makes provisions for establishment of primary producers to sell their agricultural produce to consumers. In India, agricultural produce marketing activities are regulated by Agricultural Produce Market Committees (APMC), restricting trade within the notified area of APMCs. The domination (monopoly) of government controlled wholesale markets has prohibited expansion of a competitive marketing system in the country, no help providing to farmers in organizing retailing, direct marketing, a smooth and even raw material supply to agricultural based industries and implementation of innovative or advanced marketing system and technological knowledge. In India, the APMC model has been conduct experiment in Punjab and Haryana by way of the *Apni Mandis*, in Andhra Pradesh using the *Rythu Bazar* and in Tamil Nadu using the *Uzhavar Santhaigal*.

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Electronic - national agriculture market (E-NAM): The NAM is all India electronic trading portal, which networks the already existing APMCs *mandis* to create a united national market for agricultural produces. E-NAM announced by Prime Minister Shri Narendra Modi at April 14, 2016. The E-NAM portal make available a single window service and information of all APMC *mandis*. It includes commodity prices & arrivals, provision to respond to trade offers, buy & sell trade offers, between other services. Agriculture commodities continue to take place through markets (mandis) an online market decreases information asymmetry & irregularity and transaction costs. Agriculture marketing is managed by the States as per their agro-marketing rules and regulations, under which, the State is separated into some market areas, each of which is directed by a separate the APMC which imposes its own specific marketing regulation (including also fees). This disintegration of markets, even inside the State, obstructs free flow of agricultural commodities from one market zone to another and various handling of agricultural produce and several levels of mandi charges ends up raising the prices for the consumers lacking commensurate benefit to the farmer. 470 mandis across 14 States are live on e-NAM as on Oct. 31st 2017.

Review of Literature

Rahman *et al.* (2017) ^[16] have analysed the application of mobile phone in agricultural marketing. This study is basically Qualitative in nature. It examined the uses of mobile phone in performing the agricultural marketing activities in Bangladesh. It evaluated the traditional and new application of mobile hand set in the marketing for agricultural operation in the country. The study based on secondary data and study conduct mainly in Dinajpur District in Bangladesh. Data collected from 100 respondents and response rate was 90%. The conclusion of the study that user attribute towards mobile phone is very useful it over 67.8% through market information. Vilas B, G. (2017) ^[23] has stated that agricultural marketing is crucial to the farmers. The paper based on the study of NAFED, its growth of share capital, reserve and other funds, gross and net profit and loss and also business turnover from 2006-07 to 2015-16. Banu, P.V. (2016) ^[4] has studied to gain information and knowledge about the marketing problem faced by the Paddy growers in Thanjavur District in Tamilnadu. It focus some weaknesses are like mono-cropping of Paddy which has rapidly deteriorated the soil health, siltation of canal system and limited availability of ground water etc. The study found that marketing of agricultural can be made effective if all information is provided to small scale farmers about the market knowledge like fluctuation of demand and supply concept which are core economy. Chand, R. (2016) ^[8] has stated that agriculture markets are characterised by inefficiency, poor competitiveness, frequent price manipulations and presence of excessive middlemen. So that the study based on the Electronic Trading Portal (e-platform) for National Agricultural Market is an important step to use modern technology for transforming the system of agricultural marketing. The study was based on descriptive analysis. The result of the study that the full benefit will be diversify if linking agricultural markets in the country and putting them on electronic platform will come when a single trading licence is valid across the India and when a farmer gets the

option to sell their products in any markets all-over the country. Dey, K. (2016) ^[11] has stated that the creation of National Agricultural Market in India is a great move against the weakness of Agricultural Produce Marketing Committee Reforms (APMC), 2013 and APMC Model Act 2003. The main objectives of the study are introducing a technology-based trading environment and integrate primary and secondary markets at the regional and national level. The study based on descriptive analysis. The rationale for a national market can be two fold. First: electronic auction platform to be installed in earmarked APMCs that can bring transparency in broad based price dissemination, Second: the common market platform that can promote a single licencing system across the states. Hatai, L.D. (2016) ^[14] has analysed the study area taken of two regulated market namely, Mowing Regulated Market in Myllem Block of East Khasi Hills and Garobadha Regulated Market in Sellsella Block of West Garo Hills District in Maghalaya. The sample size consists of 120 farmers from both selected regulated area. The sample was selected based on Purposive and Random Sampling Technique. The study based on primary and secondary data of the year 2012-2013. The result of the study that it is necessary to ensured flow of regular and reliable data to producers, consumers and traders to drive maximum benefits of their sales and purchases and also agriculture marketing information should be deliver fast, reliable and accurate information for utilization by the farmers and stakeholders.

Objectives of the study: The study have been keen interested to analysis the marketing pattern of agricultural production of Hisar District in recent time. The broad objectives are:

1. To analyse the geographical pattern of production of major crops in Hisar District.
2. To consider the relative position of Hisar District in Overall agricultural production of Haryana.

Sources of data collection: The study based on mainly secondary data and available from the sources

- Economic Survey of Haryana 2006-07 to 2016-17. - It is an annual publication of economic & statistical organisation Government of Haryana.
- Statistical Abstract of Haryana 2006-07 to 2016-17. - It is an annual publication of economic and statistical organisation, planning department Government of Haryana.

Methodology: The rates of fluctuations in agricultural production and percentage of a particular crop to total agricultural production in Hisar District have been worked out along two dimensional tabular, Percentage and Graphical presentation with Range and Coefficient of Range are the methods used in the study. The formula for calculation Coefficient of Range is

$$\frac{\text{Largest Value} - \text{Smallest Value}}{\text{Largest Value} + \text{Smallest Value}}$$

About Haryana: The study has been conducted in Haryana State. Haryana emerged as a separate state in the federal galaxy of the Indian Republic on November 1, 1966 as a consequence of the bifurcation of bilingual State of Punjab. Haryana is situated adjoining Delhi on the north western

side of the Indian union. It extends from 27°3 to 31°9 north latitude and 74°6 longitudes. The natural boundaries of the State are the Shivalik Hills in the north and river Yamuna in

the east and also Ghaggar in the west and the south western limit is providing by the range of Aravali Hills.

Table 1: Land Utilization in Haryana 2016-17

| | |
|---|----------------|
| Area under forest | 4 per cent |
| Net Area Sown | 3522,000 Hect. |
| Area sown more than once | 3014,000 Hect. |
| Total cropped area | 6536,000 Hect. |
| Area sown more than once to net area sown | 85.58 per cent |

Source: Economic Survey of Haryana of 2017-18.

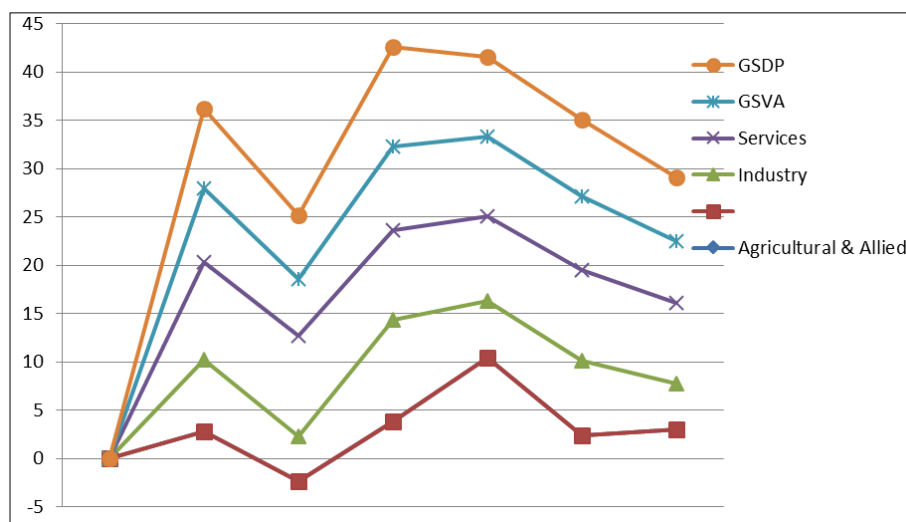
The climate of the Haryana state is sub-tropical continental monsoon type. The soil type is alluvial and the main crops

sown are wheat, paddy and cotton. The south of Haryana is dry, sandy and *barren*.

Table 2: Growth in Gross State Value Added at Constant (2011-12) Prices (Per-cent)

| Sector | Haryana | | | | | All India |
|-----------------------|---------|-------------|-------------|-------------|-------------|-------------|
| | 2013-14 | 2014-15 (P) | 2015-16 (P) | 2016-17 (Q) | 2017-18 (A) | 2017-18 (A) |
| Agricultural & Allied | 2.8 | -2.3 | 3.8 | 10.4 | 2.4 | 3.0 |
| Industry | 7.4 | 4.6 | 10.5 | 5.9 | 7.7 | 4.8 |
| Services | 10.1 | 10.4 | 9.3 | 8.8 | 9.4 | 8.3 |
| GSVA | 7.6 | 5.9 | 8.7 | 8.2 | 7.6 | 6.4 |
| GSDP | 8.3 | 6.6 | 10.3 | 8.2 | 8.0 | 6.6 |

P: Provisional Estimates, Q: Quick Estimate, A: Advance Estimate, Source: Economic Survey of Haryana (2017-18)



Source: Economic Survey of Haryana of 2017-18

Graph 1: Growth in Gross State Value Added at Constant (2011-12) Prices

It is show from the table and graph that there are continuous fluctuations in all sectors. Agriculture & allied sector increasing but service and industry sector decreasing over the previous year.

In Haryana, Haryana State Agricultural Marketing Board (HSAMB) integrates 54 mandis with the E-NAM in the starting phase of this project.

Table 3: Principal Agricultural Markets (as on 31st March 2017) in Hisar District

| District | Name of Market | |
|----------|----------------|-------------|
| Hisar | 1. Hisar | 4. Uklana |
| | 2. Hansi | 5. Barwala |
| | 3. Adampur | 6. Narnaund |

Source: Statistical Abstract of Haryana 2016-2017

E-NAM in Hisar District

In Hisar 4 Principal Agricultural Markets are connecting with E-NAM it is Barwala, Hansi, Narnaund and Adampur.

Different crops are includes in different agricultural market in Hisar District under E-NAM.

Role of Hisar District in Agricultural Production in Relation with Haryana and India (2006-2007 to 2016-2017).**Table 4:** No. of Regulated Markets and Sub-Yards in Hisar

| District | No. of Market | | No. of sub-yards | | Average no. of villages served per regulated market | | Average area served per regulated market (Sq. Kms) | |
|------------------|---------------|---------|------------------|---------|---|---------|--|---------|
| | 2015-16 | 2016-17 | 2015-16 | 2016-17 | 2015-16 | 2016-17 | 2015-16 | 2016-17 |
| Hisar | 6 | 6 | 21 | 21 | 45 | 45 | 664 | 664 |
| Total in Haryana | 108 | 108 | 173 | 173 | 64 | 63 | 403 | 409 |

Source: Statistical Abstract of Haryana 2016-17

The contribution of Haryana in Major crops production of India is given in table-5

Table 5: Estimate of Major Crops in Haryana and India (2006-07 to 2016-17) (In 000 Tonnes)

| Production Year | Rice | | | Wheat | | | Cotton | | |
|-----------------|---------|--------|----------|---------|-------|----------|---------|-------|----------|
| | Haryana | India | Per cent | Haryana | India | Per cent | Haryana | India | Per cent |
| 2006-07 | 3371 | 93400 | 3.61 | 10059 | 75800 | 13.27 | 1805 | 22600 | 7.99 |
| 2007-08 | 3606 | 96700 | 3.73 | 10232 | 78800 | 12.98 | 1882 | 25900 | 7.27 |
| 2008-09 | 3299 | 99200 | 3.33 | 11360 | 80700 | 14.08 | 1862 | 22300 | 8.35 |
| 2009-10 | 3628 | 89100 | 4.07 | 10488 | 88800 | 11.81 | 1919 | 24000 | 8.00 |
| 2010-11 | 3465 | 95300 | 3.64 | 11578 | 85900 | 13.48 | 1747 | 33400 | 5.23 |
| 2011-12 | 3757 | 105300 | 3.57 | 13119 | 93500 | 14.03 | 2616 | 35200 | 7.43 |
| 2012-13 | 3941 | 105200 | 3.75 | 11117 | 93500 | 11.89 | 2378 | 34200 | 6.95 |
| 2013-14 | 4041 | 106600 | 3.79 | 11800 | 95800 | 12.32 | 2027 | 35900 | 5.65 |
| 2014-15 | 4006 | 105500 | 3.80 | 10354 | 86500 | 11.97 | 1943 | 34800 | 5.58 |
| 2015-16 | 4145 | 104400 | 3.97 | 11352 | 92300 | 12.30 | 1993 | 30000 | 6.64 |
| 2016-17 | 4453 | 110200 | 4.04 | 12382 | 98400 | 12.58 | 2041 | 33100 | 6.17 |

One bale - 170 Kg

| Production Year | Total Food grain | | | Oilseeds | | | Sugarcane | | |
|-----------------|------------------|--------|----------|----------|-------|----------|-----------|--------|----------|
| | Haryana | India | Per cent | Haryana | India | Per cent | Haryana | India | Per cent |
| 2006-07 | 14759 | 217300 | 6.79 | 837 | 24300 | 3.44 | 9651 | 355500 | 2.71 |
| 2007-08 | 15294 | 230800 | 6.63 | 617 | 29800 | 2.07 | 8850 | 348200 | 2.54 |
| 2008-09 | 16178 | 234400 | 6.90 | 911 | 27700 | 3.29 | 5206 | 285600 | 1.82 |
| 2009-10 | 15346 | 218100 | 7.04 | 862 | 24900 | 3.46 | 5707 | 292300 | 1.95 |
| 2010-11 | 16568 | 241800 | 6.85 | 965 | 32500 | 2.97 | 6042 | 339200 | 1.78 |
| 2011-12 | 18370 | 259300 | 7.08 | 758 | 29800 | 2.54 | 6953 | 361000 | 1.93 |
| 2012-13 | 16150 | 257100 | 6.28 | 968 | 30900 | 3.13 | 7500 | 341200 | 2.20 |
| 2013-14 | 16970 | 265000 | 6.40 | 899 | 32700 | 2.75 | 7499 | 352100 | 2.13 |
| 2014-15 | 15236 | 252000 | 6.05 | 706 | 27500 | 2.57 | 7169 | 362300 | 1.98 |
| 2015-16 | 16293 | 251500 | 6.48 | 855 | 25300 | 3.38 | 7169 | 348400 | 2.06 |
| 2016-17 | 17111 | 275700 | 6.21 | 946 | 32100 | 2.95 | 8223 | 306700 | 2.68 |

Sources: 1. Statistical Abstract of Haryana, Various Issues. 2. Economic Survey of India, Various Issues

The contribution of Haryana in Major crops production of India is given in table-5.

Haryana is a small state in area but its soil is very fertile. Here we are comparing the production between years 2006-07 to 2016-17. In the study,

- The food grain production in Haryana with respect to India the study found that Haryana was producing about 3.61 per cent rice, 13.27 per cent wheat, 7.99 per cent cotton, 3.44 per cent oilseeds and 2.71 per cent of sugarcane in 2006-07. There are fluctuations in the production of all crops between the years 2006-07 to 2016-17.
- The share of rice to total production of rice in India is highest in the year 2009-10 it was 4.07 per cent. The share of rice is 4.04 per cent in Haryana to the total production of rice in India in 2016-17. We see that the share of wheat, rice and oilseeds are highest in the year

2009-10.

- The share of cotton was highest 8.35 per cent to the total production of cotton in India in the year of 2008-09. We find that Haryana is producing about 4.04 per cent rice, 12.58 per cent wheat, 6.17 per cent cotton, 2.95 per cent oilseeds and 2.68 per cent sugarcane during 2016-17.
- During year 2016-17 Haryana is producing about 6.21 per cent of total food grain in comparison with total food grain producing in India which is less than the share of total food grain 6.79 per cent in the year 2006-07.

Now let us compare the share of major crops of Hisar district in the total production of Haryana during the period 2006-07 to 2016-17.

Table 6: Share of Hisar District in Major Crops Production of Haryana (In 000 Tonnes)

| Production Year | Rice | | | Wheat | | |
|--------------------|-------|---------|----------|-------|---------|----------|
| | Hisar | Haryana | Per cent | Hisar | Haryana | Per cent |
| 2006-07 | 57.9 | 3371 | 1.72 | 138.5 | 10059 | 1.38 |
| 2007-08 | 57.9 | 3606 | 1.61 | 138.5 | 10232 | 1.35 |
| 2008-09 | 68.1 | 3299 | 2.06 | 363.3 | 11360 | 3.20 |
| 2009-10 | 69.1 | 3628 | 1.90 | 532.8 | 10488 | 5.08 |
| 2010-11 | 86.1 | 3465 | 2.48 | 445 | 11578 | 3.84 |
| 2011-12 | 89.1 | 3757 | 2.37 | 492.1 | 13119 | 3.75 |
| 2012-13 | 73.5 | 3941 | 1.87 | 665 | 11117 | 5.98 |
| 2013-14 | 82.5 | 4041 | 2.04 | 425.8 | 11800 | 3.61 |
| 2014-15 | 101.6 | 4006 | 2.54 | 461.8 | 10354 | 4.46 |
| 2015-16 | 112.7 | 4145 | 2.72 | 501.3 | 11352 | 4.42 |
| 2016-17 | 160.6 | 4453 | 3.61 | 446.2 | 12382 | 3.60 |

| Year | Cotton | | | Oilseeds | | |
|---------|--------|---------|----------|----------|---------|----------|
| | Hisar | Haryana | Per cent | Hisar | Haryana | Per cent |
| 2006-07 | 106.5 | 1805 | 5.90 | N.A. | 837 | N.A. |
| 2007-08 | 106.5 | 1882 | 5.66 | N.A. | 617 | N.A. |
| 2008-09 | 74.1 | 1862 | 3.98 | N.A. | 911 | N.A. |
| 2009-10 | 67.6 | 1919 | 3.52 | 36.7 | 862 | 4.26 |
| 2010-11 | 91.9 | 1747 | 5.26 | 65.7 | 965 | 6.81 |
| 2011-12 | 163.9 | 2616 | 6.27 | 36.6 | 758 | 4.83 |
| 2012-13 | 239.3 | 2378 | 10.06 | 25.2 | 968 | 2.60 |
| 2013-14 | 165.8 | 2027 | 8.18 | 24.2 | 899 | 2.69 |
| 2014-15 | 92 | 1943 | 4.73 | 29.5 | 706 | 4.18 |
| 2015-16 | 38.7 | 1993 | 1.94 | 32.4 | 855 | 3.79 |
| 2016-17 | 73.9 | 2041 | 3.62 | 24.8 | 946 | 2.62 |

One bale - 170 Kg. Sources: - 1.Statistical Abstract of Haryana, Various Issues.

From the above two tables it conclude that:

- As far as rice production is concerned the share of Hisar district to the total production of Haryana is continuously increased after the year 2013-14, before it there was fluctuation in the share of Hisar district to the total production of Haryana. We see that the production of rice in Hisar district has been increased more than double from 2006-07 to 2016-17. The share of rice Hisar district to the total production of rice in Haryana is 1.72 per cent in 2006-07 and 3.61 per cent in 2016-17. The share of rice of Hisar district to the total production of rice Haryana in the year 2016-17 is highest but the highest share of rice of Haryana with respect to India was highest in 2009-10.
- Wheat is an important crop of Hisar district. It is a Rabi crop. The topmost production of wheat in Hisar district in the year 2012-13 and low most in the year 2007-08 during the study period. The production of wheat in Hisar district has been increased more than twice from 2006-07 to 2016-17. Hisar's per cent contribution to Haryana's total production is increasing but there is a small decline in the contribution of Haryana's to the total production of wheat in India.
- The production of cotton in Hisar district is continuously fluctuated. The share of cotton was 5.90 in

the year 2006-07 and it became near about double 10.06 in year 2012-13. The share of wheat is highest in year 2012-13. But year 2012-13 to 2015-16 the production of wheat in Hisar district is continuously decrease. The share of Hisar district with respect to Haryana is 3.62 per cent in 2016-17.

- The contribution of oilseeds of Hisar district has not remained constant. The highest production of oilseeds in Hisar district in the year 2011-12 and Haryana state in the year 2010-11.

Market arrivals in Hisar district (2006-07 to 2016-17)

The market arrivals in Hisar District of Paddy also fluctuated in the years but it less fluctuated comparison with wheat. The paddy arrivals increase years to years. The market arrivals in the year 2006-07 was 579 (00 Tonnes) and it became 1606 (00 Tonnes) in the year 2016-17.

The market arrivals of *Bajra* reduce years to years because the production of *bajra* also decreases in the Hisar District. The market arrivals of *bajra* between the years 2006-07 to 2008-09 it increase but next year it reduce many times and it became 20 (00 Tonnes) from 167 (00 Tonnes). The lowest market arrivals of *bajra* was 10 (00 Tonnes) in the year 2012-13.

Table 7: Total Market Arrivals in Hisar District (2006-07 to 2016-17) (00 Tonnes)

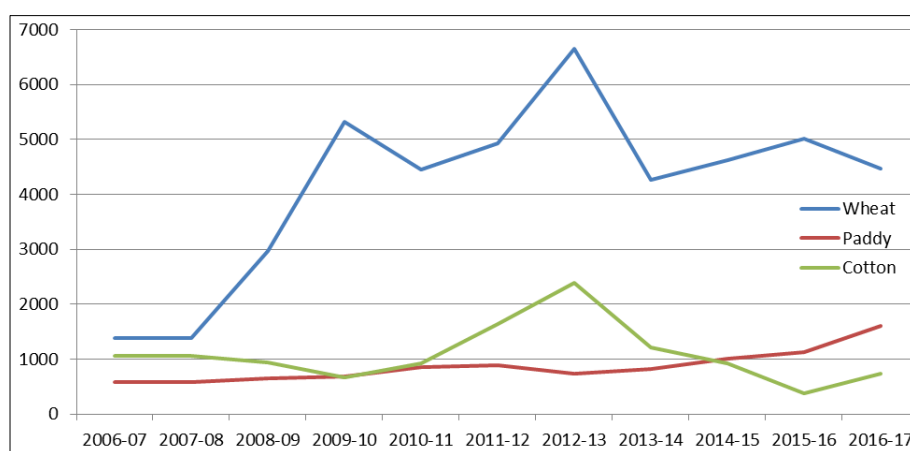
| Year | Wheat | Barley | Maize | Bajra | Paddy | Gram | Pulses | Sarson, Toria Taramira | Oilseeds |
|---------|-------|--------|-------|-------|-------|------|--------|------------------------|----------|
| 2006-07 | 1385 | 56 | 5 | 122 | 579 | 43 | 9 | 542 | -- |
| 2007-08 | 1385 | 56 | 5 | 122 | 579 | 43 | 9 | -- | -- |
| 2008-09 | 2977 | 129 | 1 | 167 | 651 | 21 | 11 | -- | -- |
| 2009-10 | 5328 | 194 | -- | 20 | 691 | 65 | 6 | -- | 330 |
| 2010-11 | 4450 | 62 | 1 | 163 | 861 | 30 | 16 | -- | 802 |
| 2011-12 | 4921 | 110 | 1 | 39 | 891 | 60 | 5 | -- | 366 |
| 2012-13 | 6650 | 96 | 1 | 10 | 735 | 21 | 6 | -- | 252 |
| 2013-14 | 4258 | 151 | 2 | 17 | 825 | 41 | 6 | -- | 242 |

| | | | | | | | | | |
|---------|------|----|----|----|------|----|---|----|-----|
| 2014-15 | 4618 | 29 | 19 | 21 | 1016 | 29 | 7 | -- | 295 |
| 2015-16 | 5013 | 46 | -- | 23 | 1127 | 14 | 5 | -- | 324 |
| 2016-17 | 4462 | 27 | 41 | 89 | 1606 | 41 | 7 | -- | 248 |

(In 00 Tonnes)

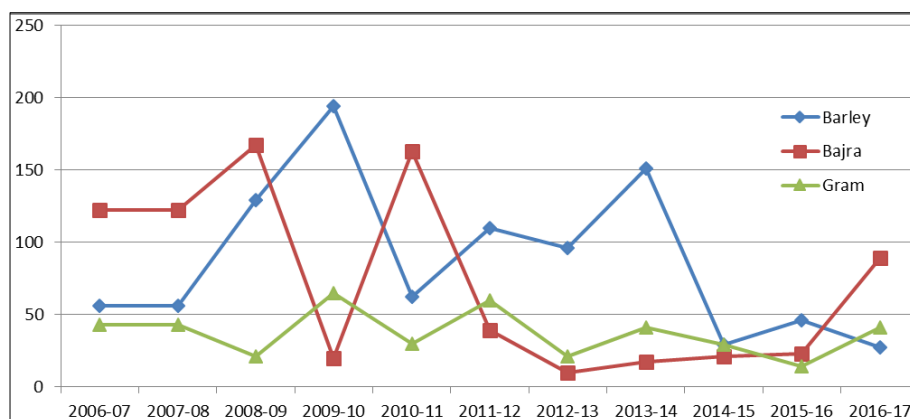
Table continue.... Up to next page

| Year | Cotton seeds | Cotton | Gawar | Onion | Vegetable & Fruits | Chillies | Gur/ Shakkar Khandsari | Ground Nut | Potato | Others | Yearly Total Arrivals |
|---------|--------------|--------|-------|-------|--------------------|----------|------------------------|------------|--------|--------|-----------------------|
| 2006-07 | -- | 1065 | -- | 85 | 655 | 1 | 14 | 57 | 151 | 711 | 5480 |
| 2007-08 | -- | 1065 | -- | 85 | 655 | 1 | 14 | 57 | 151 | 711 | 4938 |
| 2008-09 | 20 | 938 | -- | 84 | 742 | 1 | 787 | 45 | 181 | 52 | 6807 |
| 2009-10 | 8 | 676 | 367 | 86 | 779 | 1 | 15 | 41 | 181 | 47 | 8835 |
| 2010-11 | 42 | 919 | 657 | 70 | 694 | 1 | 19 | 51 | 208 | 205 | 9251 |
| 2011-12 | 6 | 1639 | 1207 | 99 | 896 | 5 | 18 | 73 | 250 | 32 | 10618 |
| 2012-13 | 26 | 2393 | 660 | 89 | 839 | 1 | 18 | 55 | 200 | 29 | 12081 |
| 2013-14 | 5 | 1218 | 1218 | 73 | 852 | 2 | 16 | 53 | 213 | 44 | 9236 |
| 2014-15 | 3 | 920 | 1407 | 88 | 958 | 2 | 8 | 56 | 198 | 50 | 9724 |
| 2015-16 | 8 | 387 | 723 | 91 | 966 | 2 | 6 | 88 | 247 | 56 | 9126 |
| 2016-17 | 16 | 739 | 756 | 124 | 1044 | 6 | 5 | 85 | 279 | 20 | 9595 |

Sources: Statistical Abstract of Haryana, Various Issues**Source:** Statistical Abstract of Haryana, Various Issues**Graph 2:** Total Market Arrivals of Major Crops in Hisar District (2006-07 to 2016-17) (In 00 Tonnes)

The cotton arrivals in Hisar District was 1065 (00 Tonnes) in the year 2006-07. The highest market arrivals of cotton 2393 (00 Tonnes) in the 2012-13 it is because the

production of cotton in this year also highest. The lowest market arrival of cotton in the year 2015-16 was 387 (00 Tonnes)

**Source:** Statistical Abstract of Haryana, Various Issues**Graph 3:** Fluctuations of Total Market Arrivals of Barley, Bajra, Gram in Hisar District (2006-07 to 2016-17)

In Hisar District, the arrivals of wheat are 25.27 per cent of the total arrivals of food grains, cash crops, pluses and

vegetable & fruits in the year 2006-07.

Table 8: Percentage of Wheat Arrivals to Total Arrivals in Hisar District during 2006-07 to 2016-17

| Year | Percentage of Wheat arrivals to total produce |
|---------|---|
| 2006-07 | 25.27 |
| 2007-08 | 28.05 |
| 2008-09 | 43.73 |
| 2009-10 | 60.31 |
| 2010-11 | 48.10 |
| 2011-12 | 46.35 |
| 2012-13 | 55.05 |
| 2013-14 | 46.10 |
| 2014-15 | 47.49 |
| 2015-16 | 54.93 |
| 2016-17 | 46.50 |

Source: Statistical Abstract of Haryana, Various Issues

From the table 8 it is clear that total arrivals of the wheat in Hisar District are fluctuating nature over the period 2006-07 to 2016-17. In the year 2006-07 it was 25.27 per cent to total produce but next year it came increase 28.05 per cent of total arrivals. In the year 2009-10 wheat arrivals in Hisar District are 60.31 per cent of total arrivals. This happen due to high production of wheat in area and another reason of high arrivals of wheat is that people did take wheat into market because they were getting high prices at market than home.

Table 9: Percentage of Wheat and Cotton Arrivals to Total Arrivals in Hisar District

| Year | Per cent of wheat | Per cent of Cotton | Total percentage of Wheat and Cotton |
|---------|-------------------|--------------------|--------------------------------------|
| 2006-07 | 25.27 | 19.43 | 44.70 |
| 2007-08 | 28.05 | 21.57 | 49.62 |
| 2008-09 | 43.73 | 13.78 | 57.51 |
| 2009-10 | 60.31 | 7.65 | 67.96 |
| 2010-11 | 48.10 | 9.93 | 58.03 |
| 2011-12 | 46.35 | 15.44 | 61.79 |
| 2012-13 | 55.05 | 19.48 | 74.53 |
| 2013-14 | 46.10 | 13.19 | 59.29 |
| 2014-15 | 47.49 | 9.46 | 56.95 |
| 2015-16 | 54.93 | 4.24 | 59.17 |
| 2016-17 | 46.50 | 7.7 | 54.20 |

Source: Statistical Abstract of Haryana, Various Issues

It is clear from the table 9 that wheat and cotton are 44.70 per cent, 49.62 per cent, 57.51 per cent, between the years 2006-07 to 2008-09. In Hisar District wheat and cotton both are above 70 per cent of the total arrivals in the year 2012-13 it was highest during the years 2006-07 to 2016-17.

Table 10: Percentage of Paddy Arrivals to Total Arrivals in Hisar District

| Year | Paddy arrivals as percentage total arrivals |
|---------|---|
| 2006-07 | 10.57 |
| 2007-08 | 11.73 |
| 2008-09 | 9.56 |
| 2009-10 | 7.82 |
| 2010-11 | 9.31 |
| 2011-12 | 8.39 |
| 2012-13 | 6.08 |
| 2013-14 | 8.93 |
| 2014-15 | 10.45 |
| 2015-16 | 12.35 |
| 2016-17 | 16.74 |

Source: Statistical Abstract of Haryana, Various Issues

It is quite clear that the per cent age of arrivals of paddy to total produce in Hisar District is highest 16.74 per cent in the year 2016-17. And in the year 2012-13 paddy arrivals in Hisar District are only 6.08 per cent of total arrivals. This happen due to low production of paddy in the area and another reason of low arrivals of paddy is that people did not take paddy into market because they were getting high prices at home than market.

Table 11: Arrivals of Wheat as Percentage of Total Arrivals of Wheat in Hisar District (2006-07 to 2016-17)

| Year | Wheat |
|---------|-------|
| 2006-07 | 3.05 |
| 2007-08 | 3.05 |
| 2008-09 | 6.55 |
| 2009-10 | 11.72 |
| 2010-11 | 9.79 |
| 2011-12 | 10.83 |
| 2012-13 | 14.63 |
| 2013-14 | 9.37 |
| 2014-15 | 10.16 |
| 2015-16 | 11.03 |
| 2016-17 | 9.82 |

Note: Figures calculated on the basis of table 7

Table 11 shows that wheat arrivals increase 3.05 to 11.72 per cent from the year 2006-07 to 2008-09. The highest per cent of wheat arrival 14.63 per cent of total wheat arrivals between 2006-07 to 2016-17 in Hisar District in year 2012-13.

Now we find Range and Coefficient of range of wheat arrivals.

Table 12: Range and Coefficient of Range of Wheat Arrivals as Percentage of Total Arrivals of wheat in Hisar District

| | Hisar District |
|----------------------|----------------|
| Range | 11.58 |
| Coefficient of Range | 0.65 |

Note:

$$\text{Formula for Coefficient of range} = \frac{\text{Largest Value} - \text{Smallest Value}}{\text{Largest Value} + \text{Smallest Value}}$$

Table 12 shows the continuous variation in wheat arrivals of the total wheat arrivals in Hisar District. Range is 11.58 between the difference of largest value of market arrivals of wheat and smallest value of market arrivals of wheat. Let us conclude that the arrivals of annual per cent age increase over the previous year.

Table 13: Variations in Arrivals of Wheat over the Previous Years in Hisar District (00 Tonnes)

| Year | Wheat |
|---------|-------|
| 2006-07 | -- |
| 2007-08 | 0 |
| 2008-09 | 1592 |
| 2009-10 | 2351 |
| 2010-11 | -878 |
| 2011-12 | 471 |
| 2012-13 | 1729 |
| 2013-14 | -2392 |
| 2014-15 | 360 |
| 2015-16 | 395 |
| 2016-17 | -551 |

Note: Figures calculated on the basis of table 7.

In the above table there are more sign of increase and less sign of decrease in arrivals of wheat in Hisar District. In 2009-10 year there is an increase in market arrivals due to bumper crop whereas in 2013-14 there is a decrease in market arrivals of wheat.

Similarly we can compare the trend for cotton in Hisar District.

Table 14: Yearly Arrivals of Cotton as Percentage of Total Arrivals of Cotton in Hisar District (2006-07 to 2016-17)

| Year | Cotton |
|---------|--------|
| 2006-07 | 8.91 |
| 2007-08 | 8.91 |
| 2008-09 | 36.08 |
| 2009-10 | 40.54 |
| 2010-11 | 43.03 |
| 2011-12 | 53.61 |
| 2012-13 | 55.48 |
| 2013-14 | 45.77 |
| 2014-15 | 51.37 |
| 2015-16 | 63.26 |
| 2016-17 | 70.17 |

Note: Figures calculated on the basis of table 7

It is clear from the table 14 that yearly arrivals of cotton continuously increase till the year 2012-13. Next year 2013-14 yearly market arrivals of cotton are decrease and become 45.77 per cent. Between the years 2014-15 to 2016-17 yearly arrivals of cotton as per cent age of total arrivals of cotton are continuously increase and at last it become 70.17 per cent. Now we calculated Range and Coefficient of range of cotton arrivals.

Table 15: Range and Coefficient of Range of Cotton Arrivals as Percentage of Total Cotton Arrivals in Hisar District

| | Hisar District |
|----------------------|----------------|
| Range | 61.26 |
| Coefficient of Range | 0.77 |

Note:

Formula for Coefficient of range = $\frac{\text{Largest Value} - \text{Smallest Value}}{\text{Largest Value} + \text{Smallest Value}}$

The range can sometimes be misleading when there are extremely high or low values. And single high value makes the large range, but most value is around low value. Here range of cotton arrivals 61.26. It shows cotton arrivals in Hisar District also increase by years to years. The coefficient of range is 0.77 of cotton market arrivals.

Table 16: Yearly Fluctuations in Cotton Arrivals over the Previous Years in Hisar District

| Year | Cotton |
|---------|--------|
| 2006-07 | -- |
| 2007-08 | 0 |
| 2008-09 | -127 |
| 2009-10 | -262 |
| 2010-11 | 243 |
| 2011-12 | 720 |
| 2012-13 | 754 |
| 2013-14 | -1175 |
| 2014-15 | -298 |
| 2015-16 | -533 |
| 2016-17 | 352 |

Note: Figures calculated on the basis of table 7.

In Hisar District, the arrivals of cotton have been decreasing till 2009-10 and increasing before 2012-13 continuously. After 2013-14 it also was decreasing till 2015-16. There are continuously decrease or increase in arrivals due to fast fluctuations.

Suggestions

The study has been undertaken with a view to undertaking the patterns and trends of market arrivals of agricultural production in Hisar District of Haryana. The rates ratios and per cent age have been worked out. In order to boost up the agricultural production in Hisar District there are the some following suggestion:

- Maintains the transparency between agricultural marketing and farmers.
- Not the same varieties of agricultural products must be graded properly. The gradation and standardisation will fetch remunerative prices to primary producers for their produce.
- The small and marginal primary producers continue to sell a key part these produce to money lenders to meet their credit requirements and these money lenders give them very low prices of their produce. Therefore, it is necessary to farm co-operations of the small and marginal primary producers to empower them to obtain reasonable price for their primary produce. Cooperative marketing can confer provision of credit, storage facilities, marketing intelligence, easier and cheaper transport and increase bargaining strength of farmers.
- The chain of middleman in the agricultural marketing system is very large that the share of agrarians in consumers rupee has been reduced substantially some of the mediators in the agricultural marketing system are village traders, *arhatiyas*, brokers, wholesalers, retailers and money lenders etc. Therefore, for agricultural marketing system, the number of intermediaries in the middle of the farmers and consumers should be minor.
- Licensing procedures should be simplified. It means, single unified license for buying, storage, processing and procuring of all agricultural products for the State as whole be presented.
- Promoting grading, packaging, standardization and certification in the market area.
- There is requirement to diminish fees, taxes, cess and duties on obtaining of agricultural and horticultural produce through any registered contract –farming programme. This would promote improve quality of produce, direct procurement and lead to reduction in the load on the State and Central procurement system.
- Unified website for all activities of equally State and Central Government involved in agricultural marketing services like APMCs, CWC, CACP, DMI, FCI, JCI, NAFED, TRIFED, NHB, SAMB, STC, KVKs must be launched.
- The AGMARKNET portal should be strengthened in PPP mode and should facilitate as Virtual Market with a single window for farmers to inform about their produce and practices and buyers to seek supply/production of their choice. Such Virtual Market will benefit the farmers groups to announce their production profile.
- There is also need for training/sensitization/orientation of food sellers/ including retailers, small wholesalers,

and hawkers, on new technologies of sorting, packaging, quality maintenance, regulatory framework and related aspects of marketing.

- All farm commodities grade standards should be systematically reviewed and reformulated, containing the commodities traded only in the national market.
- Storage facilities by creating warehouses at the village level itself must be created. The farmers must be provided with the facility to use warehouses receipts as an instrument to get credit from commercial banks. The later re already willing to advance loans to traders and producers on the basis of securities. Therefore, efforts must have been made to develop warehousing facilities rapidly for purposes of storage and popularize warehouse receipts as instrument of credit. In this way, the farmers will fulfil their immediate needs of money in post-harvest period and thus, in turn, will be able to sell their produce in the market whenever they think that it will bring to them an appropriate reward for their produce.
- Distribution of market information through ICT media, electronic media, telecommunication media and also print media should be undertaken on priority.
- Last but not least, special efforts should be made for providing greater irrigation facilities. For digging of tube wells and purchasing pumping sets, sufficient incentive in the form of loans and advances at low rate of interest, loan subsidy, easier terms of loan repayment etc. should be provided for increasing the marketing arrivals as well as overall agricultural production. If the above suggestions are implemented through taking suitable administrative and legislative steps it is earnestly hoped that there can be an efficient increase in agricultural marketing and it will protect the interests of farmers in selling their produce in agriculture marketing.

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