



## ORIGINAL RESEARCH PAPER

**Agricultural Economics**

### TRENDS IN AREA AND PRODUCTION OF GRAPES IN INDIA

**KEY WORDS:** Trends, Area, Production, Growth Rate, Performance, Steady, Decline, Moderate.

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#### ABSTRACT

The study outlines the evolution of area, production, and yield of grapes over a period of three decades i.e. 1991-92 to 2021-22. In the early 1990s, moderate growth in area was observed, followed by substantial increase in subsequent years, notably in 1993-1994 and 1994-1995. Production levels fluctuated with significant surges and declines in different years, while yield showed a consistent decline initially. The beginning period of 2000 demonstrated steady positive trends, especially in area expansion. There is a significant growth in the area from 2001-02 to 2010-11. However, yield experienced fluctuations with a negative CGR in certain years. Overall, starting from 1991-92 to 2021-22 showed positive CGR for the area and production, reflecting overall growth, while yield exhibited minimal growth – at times negative.

#### INTRODUCTION

India is the seventh largest economy in the World. As measured in terms of its Gross Domestic Product (GDP). The Horticulture Sector is one of the major contributing sectors to the GDP. The Horticulture goods and proceeds are very popular in national and international agriculture exports in India. The Horticulture food product Grape is an important fruit crops in India. Grape (*Vitis vinifera*) is an important fruit crop of India and its commercial production is possible in temperate and sub-tropical areas of the country. In India Grapes are cultivated in an area of 111.40 thousand ha with a total production of 1,234.9 thousand tons and productivity of 11.10 tons/ha. Because of special training arbour systems provided for grape cultivation in India, productivity is the highest among the grape growing countries of the World (Shinde,2016).

Grape has a rich history in India, dating back, thousands of years to ancient times. The introduction of grapes in India can be traced to the time of the Indus Valley Civilization, where the evidence suggests their cultivation for consumption and winemaking. Over the centuries, grape cultivation expanded across different regions of India, with notable developments during the Mughal era and later under British Colonial influence. Today, India is one of the leading grape-producing countries globally, with diverse varieties grown in various states such as Maharashtra, Karnataka, Andhra Pradesh, and Telangana. The Indian grape industry has witnessed significant modernization and technological advancements, leading to improved quality, yield, and export opportunities. Grapes are not only consumed fresh but also processed into products like juices, wine and raisins contributing substantially to both domestic consumption and international trade. Therefore an effort is made in this paper to understand the trends in area, production and productivity of grapes in India.

Towards this we have collected the data for a period of about 30 years starting from the year 1990-91 to 2021-22 consisting of 30 years (three decades). The data has been classified into three Regments viz., 1991-92 to 2000-2001, 2001-02 to 2010-11 and 2011-12 to 2021-22. We have used CGR to analyse the data and presented in the tabular form to reveal the results.

#### Performance of the Area Under Grapes

The data in relation to the area under grapes has been collected from the Ministry of Agricultural and Farmers welfare published by the Government of India. The data consists for about three decades starting from 1991-92 to 2020-21. We have worked out annual percentage change for the entire period and also the CGRs are worked by dividing the data into three major periods starting from 1991-92 to 2000-2001; 2001-02 to 2010-11 and 2011-12 to 2020-21.

**Table 1 : Performance of the Area Under Grapes in India (1991-92 to 2020-21)**

| Year         | Area (in 000 Hectare) | Annual Change in MT-changes |
|--------------|-----------------------|-----------------------------|
| 1991-1992    | 32.4                  | ---                         |
| 1992-1993    | 34                    | 4.94                        |
| 1993-1994    | 38.8                  | 14.12                       |
| 1994-1995    | 42.1                  | 8.51                        |
| 1995-1996    | 35.6                  | -15.44                      |
| 1996-1997    | 42.9                  | 20.51                       |
| 1997-1998    | 40.8                  | -4.90                       |
| 1998-1999    | 42.6                  | 4.41                        |
| 1999-2000    | 44.3                  | 3.99                        |
| 2000-2001    | 45.2                  | 2.03                        |
| CAGR         | 3.77 %                | ----                        |
| 2001-2002    | 49.4                  | 9.29                        |
| 2002-2003    | 52.1                  | 5.47                        |
| 2003-2004    | 57.8                  | 10.94                       |
| 2004-2005    | 60.5                  | 4.67                        |
| 2005-2006    | 63.5                  | 4.96                        |
| 2006-2007    | 65.8                  | 3.62                        |
| 2007-2008    | 68.3                  | 3.80                        |
| 2008-2009    | 79.6                  | 16.54                       |
| 2009-2010    | 106.4                 | 33.67                       |
| 2010-2011    | 111                   | 4.32                        |
| CAGR         | 9.23                  | ----                        |
| 2011-2012    | 116                   | 4.50                        |
| 2012-2013    | 117.6                 | 1.38                        |
| 2013-2014    | 118.7                 | 0.94                        |
| 2014-2015    | 123                   | 3.62                        |
| 2015-2016    | 122                   | -0.81                       |
| 2016-2017    | 137                   | 12.30                       |
| 2017-2018    | 139                   | 1.46                        |
| 2018-2019    | 140                   | 0.72                        |
| 2019-2020    | 150                   | 7.14                        |
| 2020-2021    | 155.3                 | 3.53                        |
| CAGR         | 3.52                  | ----                        |
| Whole period | 5.55                  | ----                        |

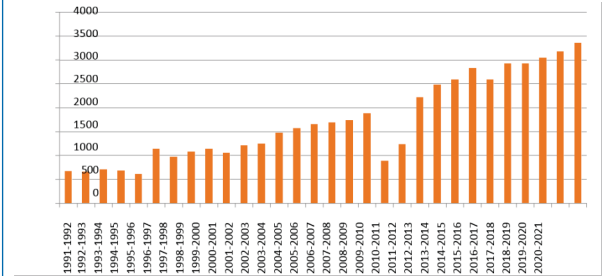
Source : Ministry of Agriculture and Farmers Welfare, Govt. of India at Glance.

If we observe the annual percentage change (on year to year basis) the results are very much distributing. During the first period i.e. 1991-92 to 200-2001, we find the positive change for seven years time period and the negative change for two times. They are from 1994-95 to 1995-96 and 1996-97 to 1997-98. The negative percentage change is 15.44 and 4.90 percent respectively. Whereas the overall GR is 3.77 percent for the decade. i.e. from 1991-92 to 2000-2001. Though there is annual

fluctuations during the decade, but for the entire decade the GR is positive, which is a welcome trend.

During the second period of the analysis i.e. from 2001-02 to 2010-11, we find that for the entire decade, there is a positive development as the figures are positive for all the 10 years. The percentage change from the year 2008-09 to 2009-10 it was 33.67 percent showing the highest percentage change where there was a jump from 16.54 percent to 33.67 percent. Though there are fluctuations in the percentages there is no negative development - during the decade. Even the CGR for the period viz., 2001-02 to 2010-11 it was 9.23 percent, which is most welcome.

During the third period i.e. from 2011-12 to 2020-21 the annual percentage reveals that for the entire 10 years period, we find the results are very much positive showing the results ranging from 0.72 percent to the highest 12.30 percent. Only one year i.e. 2014-15 to 2015-16 the percentage change was negative constituting 0.81 percent. The CGR for the same period it is 3.52 percent. Therefore, it can be concluded that during the first phase of liberalization period the GR was low consisting of 3.77 percent and during the 2<sup>nd</sup> phase if liberalization the GR is 9.23 percent and finally the last phase i.e. during the post liberalization period it is all the time low consisting of 3.52 percent. This tells us that the performance is declined for the first period is 3.77 percent to third period 3.52 percent the overall GR i.e. from 1991-92 to 2020-21 it is 5.55 percent. The overall GR is positive and encouraging but the GR from one decade to another it is a disturbing trend and it is the cause for concern towards more clarity we have given the Graph-1, which reveals that there is a constant increase in the area from year to year but overall the growth is not stable.



Graph - 1: Trends in the Area Under Grapes in India  
 Source : Ministry of Agriculture and Farmers Welfare at glance above the table Status of the Production of Grapes in India.

The Table-2 presents the status of the production of grapes in India from 1991-92 to 2000-01. In the table both the decade GRs and annual percentage are presented to understand the GR from decade to decade and also the percentage tells what is happening year to year basis. At the end an effort is made to understand the overall GR for the entire period starting from 1991-92 to 2020-21 for about 30 years. When we take the percentage change of the first decade i.e. 1991-92 to 2000-01 the production is changing and there is instability in terms of the performance. Out of the nine results what we have got five years there is a negative percentage change and only four years the percentage change is positive. The negative performance is upto 10.30 percent from 1994-95 to 1995-96. The positive percentage change was the highest constituting 87.97 percent, which was the highest in the entire decade i.e. from 1996-97 to 1997-98. However the CGR has been positive constituting 5.23 percent.

Table 2 : Production of Grapes in India (1991-92 to 2021-22)

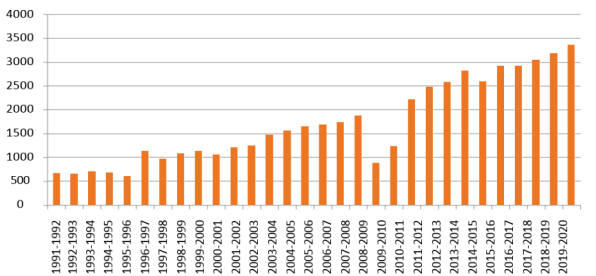
| Year      | Production (in 000 MTE Hectare) | Annual change in Percentage change) |
|-----------|---------------------------------|-------------------------------------|
| 1991-1992 | 668.2                           | ---                                 |
| 1992-1993 | 653.1                           | -2.26                               |
| 1993-1994 | 702.5                           | 7.56                                |
| 1994-1995 | 672.9                           | -4.21                               |

|                   |        |        |
|-------------------|--------|--------|
| 1995-1996         | 603.6  | -10.30 |
| 1996-1997         | 1134.6 | 87.97  |
| 1997-1998         | 969.3  | -14.57 |
| 1998-1999         | 1082.7 | 11.70  |
| 1999-2000         | 1137.8 | 5.09   |
| 2000-2001         | 1056.9 | -7.11  |
| CAGR              | 5.23%  | ---    |
| 2001-2002         | 1209.7 | 14.46  |
| 2002-2003         | 1247.8 | 3.15   |
| 2003-2004         | 1474.8 | 18.19  |
| 2004-2005         | 1564.7 | 6.10   |
| 2005-2006         | 1649.6 | 5.43   |
| 2006-2007         | 1685.3 | 2.16   |
| 2007-2008         | 1734.7 | 2.93   |
| 2008-2009         | 1878.3 | 8.28   |
| 2009-2010         | 880.7  | -53.11 |
| 2010-2011         | 1235   | 40.23  |
| CAGR              | 0.23%  | ----   |
| 2011-2012         | 2220.9 | 79.83  |
| 2012-2013         | 2483.1 | 11.81  |
| 2013-2014         | 2585.3 | 4.12   |
| 2014-2015         | 2823   | 9.19   |
| 2015-2016         | 2590   | -8.25  |
| 2016-2017         | 2922   | 12.82  |
| 2017-2018         | 2920   | -0.07  |
| 2018-2019         | 3041   | 4.14   |
| 2019-2020         | 3181   | 4.60   |
| 2020-2021         | 3357.7 | 5.55   |
| CAGR              | 4.70%  | --     |
| Whole period CAGR | 5.72%  | ----   |

Source : Ministry of Agriculture and Farmers Welfare, Govt. of India at Glance.

During the second period i.e. from 2001-02 to 2010-11 the percentage change is positive from the year to year. The positive percentage change was upto 18.19 percent from 2002-03 to 2003-2004. However, there was negative change from the year 2008-09 to 2009-10, which constitutes 53.11 percent, which is very much higher side. During the decade the percentage change is not smooth as there is lot of ups and downs. The overall GR seems to be very low constituting just 0.23 percent. The CGR has been much lower than the first phase of the liberalization regime.

During the third phase of the liberalization regime i.e. from 2011-12 to 2020- 21 the percentage change is very much positive for the eight years and only during two points of time it is negative constituting 8.25 and 0.07 percent from 214-15 to 2015-16, 2016-17 and 2017-18. The percentage change was the highest during 2011-12 to 2012-13 constituting 79.83 percent. When it comes to the decade CGR it was 4.70 percent, which was more when compared to the second phase of the liberalization regime. The overall CGR has been 5.72 percent constituting the highest, when compared the first and second phase of the liberalization regimes. Towards more clarity Graph-2 is given, which reveals the performance of the production of grapes.



Graph - 2: Performance of the Production Under Grapes in India

Source :Ministry of Agriculture and Farmers Welfare,

5. Ghosh, D., Chakraborty, C. & Dasgupta, R. (2017). A Survey on Indian Grapes at Sangli, Maharashtra, India. International Journal of Current Microbiology and Applied Sciences, 6, 1904-11.

In the Table-3 we have presented the overall growth rate of the area, production and yield from the year 1991-92 to 2000-01; 2001-02 to 2010-11; 2011- 12 to 2021-22 and also the CAGR for the entire period starting from 1991-92 to 2021-22. The Table reveals that during the beginning period of liberalization from 1991-92 to 2000-01 area has grown at the rate of 3.77 percent, production was grown at the rate of 5.23 percent and the yield was grown only at the rate of 1.43 percent. The same Table – 3 contains the CGR for the second phase of the liberalization period i.e. from 2001-02 to 2010-11. During this period the area was grown at the rate of 9.41 percent, the production was grown at the rate of 0.23 percent and the yield rate was negative grown rate constituting -8.42 percent.

**Table 3: CAGR of Area, Production and Yield of Grapes in India (1991-92 to 2021-22)**

| Decade             | Area (000 MT Hectare) | Production in 000 TE/Hectare | Yield in MT/Hectare |
|--------------------|-----------------------|------------------------------|---------------------|
| 1991-92 to 2000-01 | 3.77%                 | 5.23%                        | 1.43%               |
| 2001-02 to 2010-11 | 9.41%                 | 0.23%                        | -8.42%              |
| 2011-12 to 2021-22 | 3.29%                 | 4.70%                        | 1.38%               |
| 1991-92 to 2021-22 | 5.55%                 | 5.72%                        | 0.16%               |

Source :Author calculation

During the third phase of the liberalization period i.e. from 2011-12 to 2021- 22 the area was grown at the rate of 3.29 percent, the production was grown at the rate of 4.70 percent and the yield rate is grown at the rate of 1.38 percent. The same Table-3 contains the overall growth rate of the area, production and yield from 1991- 92 to 2021-22, the area has been growing at the rate of 5.55 percent, the production is growing at the rate of 5.72 percent and the yield rate is grown at the rate of 0.16 percent. Out of the data analysis it can be understood that during the first phase of the liberalization regime the performance of the area, production and the yield is positive. During the second phase of the liberalization regime, the performance in terms of production and yield has been low and negative. When it comes to the third period the performance has been really good as the area, production and yield they are growing positively. Even the overall growth rate is positive for all the three variables viz., area production and the yield.

## CONCLUSION

It can be concluded out of the data analysis that the grape has been an important crop, which has been generating income and employment for various categories of farmers, labourers and other processing units. And moreover, it has been generating foreign exchange for the country and there, it is highly important issue to develop the crop and related activities. And therefore priority has to be given for its development and growth. During the second phase of the liberalization regime, the performance was really bad and also during certain years there is a negative trend. And hence by studying the loopholes the policy needs to strengthen at the country and also state level to improve the performance of the grapes in terms of area, production and yield.

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