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RESEARCH PAPER

Understanding the effectiveness of minimum support price policy on area, production and productivity of oilseed crops in India

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Abstract: The purpose of the study was to investigate the impact of the Minimum Support Price (MSP) policy on the expansion of oilseed cultivation area, production and productivity in India, aiming to address the country's heavy reliance on costly edible oil imports, which exceed 65 percent of its total requirements, costing over ₹ 70,000 crores annually. The study aimed to assess how the implementation of the MSP policy could contribute to increasing domestic oilseed production and reducing the dependence on imports.The data on MSP, oilseed cultivation area, production, and productivity was collected for the period 1985 to 2020. Compound Annual Growth Rate, correlation analysis, and scatter plots were utilized to analyze the trends and associations between MSP and the area, production and yield of key oilseed crops in India, namely Groundnut, Sunflower, Rapeseed-Mustard, Soybean, and Safflower. The study revealed that there was a positive and statistically significant Compound Annual Growth Rate (CAGR) between the Minimum Support Price (MSP) and yield for all five oilseed crops. Additionally, a positive and significant trend was observed in the CAGR of Soybean and Rapeseed-Mustard for both area and production. The scatterplots and Spearman correlation analysis further supported these findings, indicating a strong positive correlation between the MSP of Soybean and Rapeseed-Mustard with their respective area, production, and yield. It was also noted that the government provided higher MSP support to oilseed crops such as Sunflower, Safflower, and Groundnut, where a negative CAGR in the area was observed.

Key words: Area, Edible oils, Minimum Support Price, Oilseeds, Production, Yield

Introduction

The agricultural sector is considered as the backbone of Indian economy as it contributes significantly towards the Indian economy and provides employment opportunities in rural areas (Siddayya *et al*., 2016). In addition to the meeting food demands of growing population, the agriculture sector also serves as a source of raw material for various industries such as textiles, sugar, food processing, *etc*. (Sharma and Patil, 2018). India is ranked fourth globally in terms of oilseeds production, accounting for 20 percent of the global cultivation area and 10 percent of global production (Kumar and Tiwari, 2020). However, despite being self-sufficient in the edible oils sector before the 1980s, India has now become the largest importer of edible oils (Sahu, 2020). This shift can be attributed to factors such as increasing urbanization, changing dietary habits, and a preference for highly processed foods containing vegetable oils. The Economic Survey of 2021-22 projects a continued high growth rate of 3.4 percent per annum in India's cooking oil imports until 2030.The annual demand for edible oils in India exceeds 25 million tonnes, of which around 10 million tonnes are domestically produced, while the remaining 65 percent is met through imports (Gulati, 2020). In the 2020-21 period, edible oils accounted for 2.8 per cent of the country's total imports (Economic Survey, 2021-22). Over the years, India's total edible oil imports have surged from 0.031 million tonnes in 1960-61 to 13.13 million tonnes in 2020-21. In terms of value, the import of edible oils has risen from ₹ 4 crores in 1960-61 to ₹ 1,17,000 crores in 2020-21. Additionally, per capita availability of edible oils in the country has increased from 3.2 kg in 1960-61 to 19.2 kg in 2019-20 due to population growth.The widening gap between demand and domestic supply of edible oils puts inflationary pressure on the economy. The latest government data reveals that inflation in oils and fats stands at 34.78 percent. To address this issue, the government has implemented short-term measures to control retail prices in the domestic market. These measures include suspending futures trading in certain oilseeds, imposing stock limits on edible oils and oilseeds, and reducing import duties.In the long run, the government has focused on reducing import dependency and increasing domestic oilseed production. The Minimum Support Price (MSP) policy has been instrumental in incentivizing oilseed production in the country. By providing price support to farmers, the government aims to enhance domestic production and reduce reliance on edible oil imports.

About MSP

The Ministry of Agriculture announces the MSP twice a year, ahead of the sowing seasons for *Kharif* (autumn) and *Rabi* (spring) crops. This practice aims to provide farmers with the assurance that they can sell their produce to the government at the MSP during harvest time. Consequently, this helps farmers plan their cropping patterns effectively. MSP offers farmers the opportunity to sell their produce to government agencies at the time of harvest, granting them the right without any obligation to do so (Sabnavis, 2021). The Commission for

Agricultural Costs and Prices (CACP) is the governmental agency responsible for recommending the MSP to the government. The CACP determines the MSP by considering the cost of cultivation and adding a markup to it.Before recommending the MSP to the government, the CACP conducts a thorough analysis of multiple factors. These factors include the demand and supply dynamics, production costs, market price trends (both domestic and international), price parity among different crops, the terms of trade between agriculture and non-agriculture sectors, ensuring a minimum margin of 50 percent over the cost of production, and assessing the potential impact of MSP on consumers of the respective product.Ultimately, the Government determines the MSP based on the recommendations provided by the CACP. The primary goal of setting the MSP is to safeguard farmers from resorting to distress sales by ensuring a fair and remunerative price for their agricultural produce (Mahalle *et al*., 2018). The MSP is fixed for 23 agricultural commodities including oilseed crops. A higher MSP for any crop can potentially increase its production as it offers farmers more financial incentive to cultivate it. In addition, the MSP plays a crucial role in stabilizing the prices of agricultural commodities. It provides price stability to farmers and encourages them to embrace modern farming technologies and practices (NITI Aayog, 2016). The favorable output prices, in addition to assured marketing support, will help in creating a conducive environment for the adoption of modern technologies in crop production, which lead to enhancement of productivity, improves profitability, and indirectly bring more area under cultivation of such crops (Ali *et al*., 2012). The impact of the MSP policy is such that the buyers and sellers in the market will consider MSP as the benchmark price while transacting agricultural commodities (Sabnavis, 2021).

MSP of oilseeds

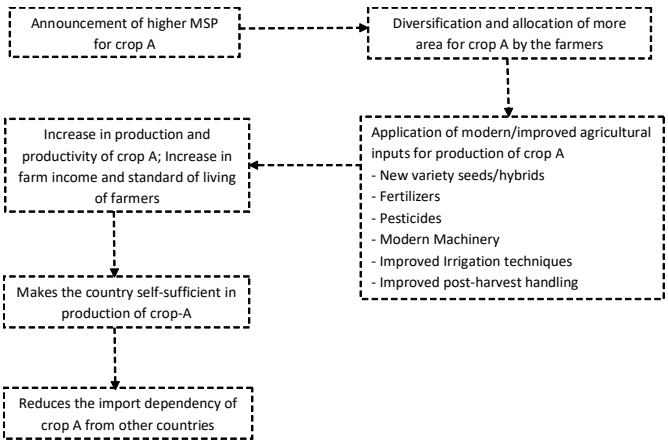
For the past 20 years, India has been spending about Rs. 70,000 crores per year for importing 70 per cent of its domestic consumption of edible oils (Reddy, 2021b). The Indian government has consistently intervened periodically by implementing various policies related to production, trade, and pricing in order to enhance the domestic availability of edible oils. The government is providing MSP support for oilseeds for increasing production since the 1980s (Renjini and Jha, 2018) and there has been a steady increase in the MSP of oilseeds. A higher MSP for any crop can potentially increase its production as it offers farmers more financial incentive to cultivate it. The intention of the government is that with increased MSP, the farmers can decide to change their cropping pattern and divert more area towards oilseed crops from foodgrains which helps in increasing the domestic production of oilseeds by which India could become self-reliant and reduce its import dependency. The percentage increase in the MSP oilseeds is much higher as compared to the MSP of foodgrains. For instance, in September 2021, the government announced the MSP for the *rabi* season crops wherein, the MSP of wheat was increased by 2 per cent, while that of rapeseed-mustard was up by 8.6 per cent.

The Ministry of Agriculture commonly utilizes the announcement of the MSP before the crop sowing season as a policy instrument to influence the demand and supply dynamics of specific crops (Reddy, 2009).In India, extensive research has been conducted to analyze the effects of the MSP policy, particularly on cereals such as Paddy and Wheat. The implementation of this policy has been highly effective for both paddy and wheat, leading to remarkable success in achieving self-sufficiency in foodgrain production within the country.But much literature was not available on the implications of MSP policy on the oilseeds sector. Due to India's reliance on imports for approximately 65 percent of its total edible oil requirements, amounting to an annual expenditure of ₹ 70,000 crores, the Indian government has consistently raised the MSP for oilseed crops. This upward trend in MSP began in 1985-86 and witnessed a significant increase from 2007-08 onwards, with the aim of enhancing the cultivation area, production and productivity of oilseed crops in the country. Hence, the current research is an attempt to investigate the implications of the MSP policy on oilseed crops in India.

Theoretical framework

The basis for the relationship between farmers' crop diversification, specifically transitioning from foodgrains to oilseeds, and the announcement of higher MSP for oilseeds is rooted in the theory of livelihood diversification. Livelihood diversification refers to the process in which rural households engage in a variety of activities and establish social support networks to improve their standard of living and overcome challenges for survival (Ellis, 1998).According to this theory, farmers proactively respond to policy changes, environmental factors, and resource limitations by adjusting their choice of crops. This study operates under the assumption that the implementation of an increased MSP for a specific crop will influence farmers' decisions to diversify their cropping patterns and shift towards cultivating that particular crop.

In India, fine cereals such as paddy and wheat have significantly displaced the land area once used for the cultivation of coarse cereal crops, demonstrating the MSP's bias in favour of paddy and wheat (Aditya, *et al*., 2017). Farmers will be inclined to allocate more area to those crops for which



higher MSP is announced by the government. The higher MSP support for a particular crop will motivate farmers to diversify to that crop by allocating more land area to that crop. To increase productivity the farmers will use high-quality agricultural inputs such as new variety seeds/hybrids, fertilizers, pesticides, micro-irrigation, modern machinery, *etc*. which ultimately results in increasing higher production per unit area and increase the farmers' income. The Indian government steadily increased the MSP of oilseed crops from 1985-86 and a steep increase was observed from 2007-08 onwards. The major intention of the Government is to reduce its import dependency on oilseed crops and make India self-sufficient in their production. Our aim here is to see whether the announcement of higher MSP for oilseed crops resulted in diversifying into oilseed crops and resulted in increasing the area, production and productivity of oilseeds or not.

Announcement of higher MSP for crop A

Diversification and allocation of more area for crop A by the farmers

Application of modern/improved agricultural inputs for production of crop A

- New variety seeds/hybrids
- Fertilizers
- Pesticides
- Modern Machinery
- Improved Irrigation techniques
- Improved post-harvest handling

Makes the country self-sufficient in production of crop-A

Reduces the import dependency of crop A from other countries

Increase in production and productivity of crop A; Increase in farm income and standard of living of farmers

Material and methods

Selection of Crops: The major oilseed crops produced by India *viz*., Groundnut, Sunflower, Rapeseed Mustard, Soybean, and Safflower we purposively selected for the study.

Data Collection: The data for MSP has been obtained from the Commission for Agricultural Costs and Prices covering the period from 1985-86 to 2019-20. Similarly, data on area, production, and productivity of different crops have been collected from the Directorate of Economics and Statistics website for the same time frame.

Growth Rate Analysis: To ascertain the growth rate in MSP, cultivated area, production, and productivity of Groundnut, Sunflower, Rapeseed Mustard, Soybean, and Safflower, the Compound Annual Growth Rate (CAGR) was employed. This calculation encompassed a period of 35 years, specifically from 1985-86 to 2019-20.

The following functional form was used

$Y_t = ab^t e^u$

where Y_t - Dependent variable; a – Intercept; b – Regression coefficient; t – Time variable; u – Disturbance term.

The growth rate coefficients were computed by transforming the above equation to the log-linear form as

$\ln Y_t = \ln a + t \ln b + u,$

The CAGR in percentage was calculated using the following relationship:

r = [(Anti ln of b) – 1] x 100.

Spearman Rank correlation: Correlation is a precisely used statistical technique to compare various pairs of data. It describes whether or not the correlation drawn from a scatter plot is significant. Spearman's rank correlation coefficient is adopted when the data fails to follow a normal distribution. Shapiro-Wilk test for normality described that the data is not normal. Mathematically, Spearman's Rank correlation is calculated as:

$$\rho = 1 - \frac{6\sum d^2}{n^3 - n}$$

Where "d" represents the difference between the two ranks of each observation, and "n" represents the total number of observations.

The crops which display all positive associations between MSP and area, production, and yield are further investigated using polynomial regression for further data fitting and forecasting.

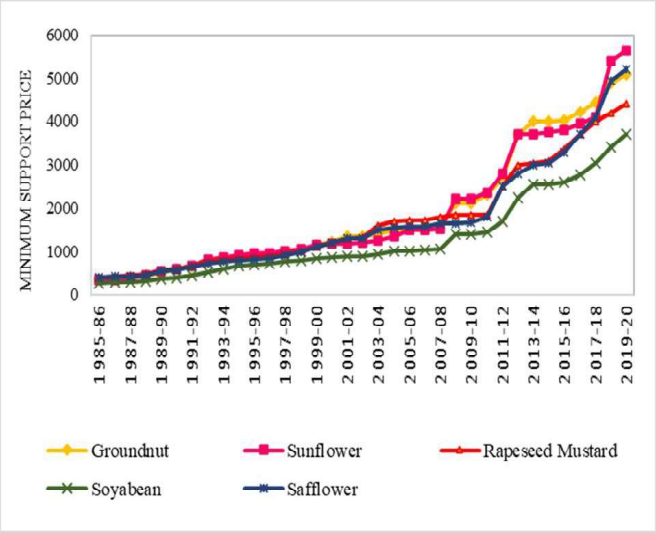


Fig. 1 Trends in MSP of oilseed crops between 1985-2020

Table 1. CAGR in MSP of oilseed crops between 1985-2020 (In percentage)

Crops	CAGR in MSP of Oilseeds
Groundnut	8.05*
Sunflower	7.95*
Rapeseed-Mustard	7.17*
Soyabean	7.52*
Safflower	7.39*

Note: * Significant at p-value<0.01;

Results and discussion

Trends and CAGR in MSP of oilseed crops

Fig 1 depicts the trends in MSP for oilseed crops from 1985-86 to 2019-20. Table 1, on the other hand, presents the CAGR values for the MSP of oilseed crops during the same time period. It can be seen that there is a gradual increase in the MSP of Groundnut, Sunflower, Rapeseed Mustard, Soybean, and Safflower from 1985-86 to 2019-20. The CAGR in MSP of all the oilseed crops was positive from 1985-86 to 2019-20. Groundnut recorded the highest CAGR of 8.05%, followed by Sunflower (7.95%), Soybean (7.52%), Safflower (7.39%), and Rapeseed-Mustard (7.17%).

There was a drastic increase in MSP of Groundnut, Sunflower, and Rapeseed Mustard by 35.48 percent, 46.68 percent, and 32.38 percent, respectively, during 2008-09 from 2007-08. Similarly, during 2012-13, the Government hiked the MSP of Groundnut (37.03%), Sunflower (32.14%), Rapeseed Mustard (20.00%), Soybean (32.54%), and Safflower (12.00%). This measure was implemented with the aim of enhancing domestic production, reducing the import expenditure of the nation, and ensuring improved returns to farmers by addressing the escalating input costs.A sudden increase in Sunflower's MSP was observed to be 31.41 percent during 2018-19 compared to 2017-18 for increasing its production in the country. As Soybean is a key foreign exchange-earning oilseed crop, the farmers have always received higher prices than MSP in the open market due to better prices fetched by the Indian Soybean defatted oil cake in the international markets (Agarwal *et al.*, 2013).

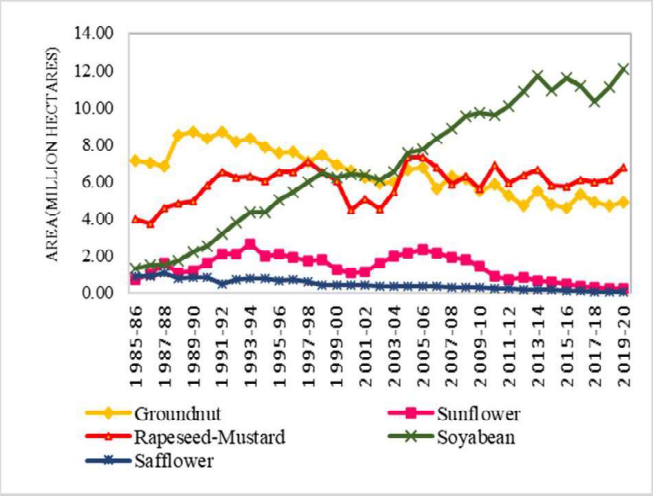


Fig. 2 Trends in Area under the oilseed crops between 1985-2020.

Table 2. Growth in area under the oilseed crops in Inida (1985-2020)

Crops	CAGR (%)
Groundnut	-1.7*
Sunflower	-3.96*
Rapeseed-Mustard	0.74*
Soybean	6.16*
Safflower	-7.11*

Note: * Significant at p-value<0.01;

Trends and CAGR in Area under oilseed crops

Fig.2 showcases the trends in the cultivated area under various oilseed crops from 1985-86 to 2019-20. Table 2 provides the CAGR values for different oilseed crops during the same time period. It was observed that Soybean exhibited a significantly positive CAGR of 6.16%, and Rapeseed-Mustard demonstrated a significantly positive CAGR of 0.74% (p-value<0.01).In contrast, a negative CAGR was observed in the case of Groundnut (-1.70%), Sunflower (-3.96%), and Safflower (-7.11%). A substantial decrease in Safflower, Sunflower, and Groundnut area was observed during 2019-20 compared to 1985-86 by 94.50 percent, 68.00 percent, and 31.32 percent respectively, whereas the area under Soyabean and Rapeseed-Mustard increased by 802.23 percent and 70.35 percent respectively during the same period. The government has provided higher MSP support to those oilseed crops in which negative CAGR in the area is observed (Sunflower, Safflower, and Groundnut). The MSPs of Sunflower (₹ 5650/Quintal), Safflower (₹ 5215/Quintal), and Groundnut (₹ 5090/Quintal) were found to be highest in 2019-20. However, the MSPs of Soyabean and Rapeseed-Mustard were lowest at ₹ 3710/Quintal and ₹ 4425/Quintal, respectively, among the five selected oilseeds. This clearly indicates the Government's intention to escalate the area under Sunflower, Safflower, and Groundnut along with Soybean and Rapeseed-Mustard to boost the oilseed production in the country with the help of MSP policy.

The unprecedented growth in the area of Soybean is mainly attributed to its establishment as a main rainy season crop in the rainfed agroecosystem of India (Agarwal *et al*., 2013). The introduction of the Soybean crop has led to increased cropping

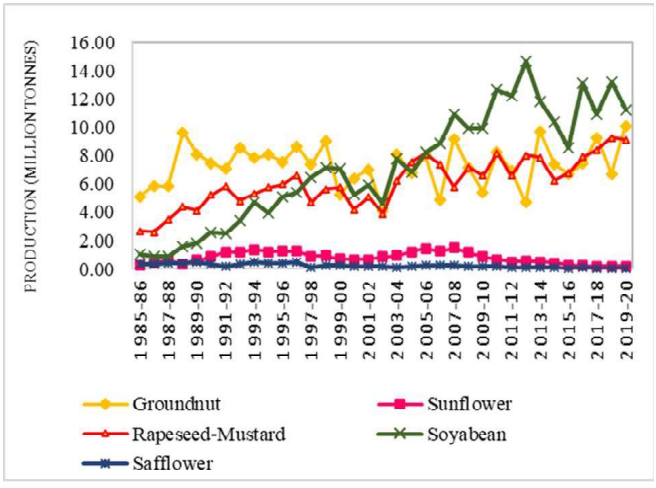


Fig.3 Trends in production of the oilseed crops between 1985-2020

Table 3. Growth in production of oilseed crops in India (1985-2020)

Crops	CAGR (%)
Groundnut	0.22#
Sunflower	-2.24*
Rapeseed-Mustard	2.56*
Soybean	7.29*
Safflower	-6.01*

Note: * Significant at p-value<0.01; # Not Significant.

intensity and profitability per unit area. In 2019-20, due to substantial expansion in cultivated area, Soybean surpassed other oilseed crops in terms of both area and production. Cultivating Soybean has proven to be a lucrative option for a significant number of small and marginal farmers in the country. This is primarily due to the fact that Soybean cultivation offers better income with minimal agricultural inputs, less dependence on rainfall, effective management practices, and resilience to climatic adversities. As a result, farmers have been able to achieve improved returns by opting for Soybean cultivation. Due to high input costs, Safflower does not appear as a popular crop in India (Nimbkar, 2008). Despite India holding the position of being the world's largest producer of Safflower with a share of 29%, followed by the United States (17%), Argentina (13%), and Kazakhstan (12%), farmers are increasingly shifting their focus from Safflower to alternative crops like Chickpea or other oilseeds. This shift can be attributed to the lack of demand in the market and lower price realization that farmers experience for Safflower produce (Bose, 2017).

Trends and CAGR in production under oilseed crops

Fig 3 illustrates the trends in production and Table 3 presents the CAGR values for selected oilseed crops from 1985-86 to 2019-20.Positive CAGR was found from 1985-86 to 2019-20 in the case of Soybean, Rapeseed-Mustard, and Groundnut. In contrast, the production CAGR was negative in the case of Sunflower and Safflower for the said period. The production of Groundnut, Rapeseed-Mustard, and Soybean increased by 97.26%, 240.29%, and 1000.00% respectively in the said period, whereas, Sunflower and Safflower production declined by 21.42% and 88.57%, respectively. The production and processing of Groundnut have been significantly affected by various inefficiencies stemming from the uncertain production environment, primarily due to a large rainfed area under cultivation, limited resources available to small holder farmers, and lower adoption rates of improved technology. These factors have led to substantial challenges and inefficiencies in Groundnut production and processing (Reddy and Bantilan, 2012).The rapid expansion in area and adoption of improved varieties by the farmers has led to increased production of Soybean in the country. The decreased area in Sunflower (68.00%) and Safflower (94.50%) could be attributed to the reduced production.

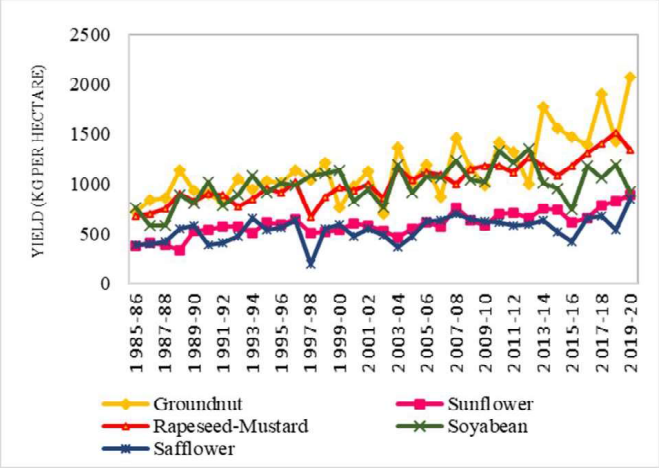


Fig. 4 Trends in the yields of oilseeds between 1985-2020.

Table 4. Growth in productivityof oilseed crops in India (1985-2020)

Crops	CAGR (%)
Groundnut	1.95*
Sunflower	1.77*
Rapeseed-Mustard	1.80*
Soybean	1.07*
Safflower	1.17*

Note: * Significant at p-value<0.01

Trends and CAGR in yield of oilseed crops

The trends and CAGR in yield of selected oilseed crops from 1985-86 to 2019-20 are depicted in Fig. 4 and Table 4 respectively. The CAGR in the case of all the five oilseed crops' yields was found to be positive from 1985-86 to 2019-20. Among the selected oilseed crops, Groundnut demonstrated the highest CAGR of 1.95 percent, followed by Rapeseed-Mustard (1.80%), Sunflower (1.77%), Safflower (1.17%), and Soybean (1.07%).The yields of Groundnut, Sunflower, Rapeseed-Mustard, Soyabean, and Sunflower have increased by 187.20%, 138.23%, 99.60%, 21.46%, and 120.68% respectively in 2019-20 as compared to 1985-86. In the context of oilseed cultivation, over 70% of the total cultivated area relies on rainfed conditions, and traditional varieties dominate in the producing regions. The lack of hybrid varieties, particularly for major oilseed crops like Soybean and Groundnut, coupled with the cultivation of these crops under rainfed conditions with limited inputs due to high risks and resource constraints faced by farmers, has resulted in lower yields (NMOOP, n.d.).

Spearman Rank Correlation between MSP and area, production and yield respectively

The Spearman Rank Correlation between MSP with the area, production and productivity is presented in Table 5. Therefore mentioned results (Table 5) are also verified in the scatterplots displayed in figure 5 showing similar trends between MSP and area, production, and yield.

A strong positive correlation was observed between the MSP of Soybean with its area (0.99) production (0.94) and productivity (0.50). In the case of Soybean, along with MSP, the international markets have also supported providing better returns to the farmers, leading to expansion in its area, production, and productivity. The non-GM (Genetically

Table 5. Correlation between MSP and area, production, and yield of different oilseeds

Spearman Correlation	MSP-Area	MSP-Production	MSP-Yield
Groundnut	-0.90(0.001)	0.08(0.63)	0.73(0.002)
Sunflower	-0.50(0.0024)	-0.33(0.05)	0.82(0.01)
Rapeseed Mustard	0.34(0.05)	0.84(0.001)	0.90(0.004)
Soybean	0.99(0.0002)	0.94(0.0005)	0.50(0.0021)
Safflower	-0.99(0.001)	-0.87(0.00004)	0.51(0.0018)

Note: Figures in the parenthesis are p, values

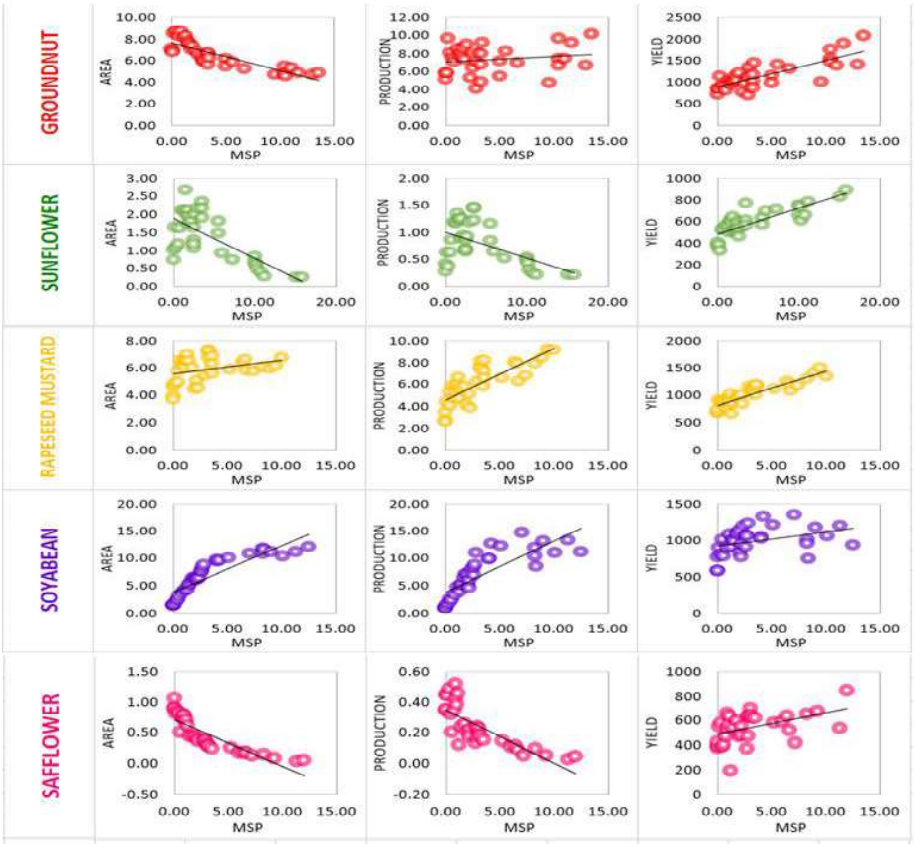


Fig. 5. Scatterplots between percent change in MSP of different oilseed crops and their area, production and yield, respectively

Modified) Soya meal has a high demand in the international markets (Choubey J, 2021). All the area which is cultivated under Soybean in India is non-GM. As Soyabean is a key foreign exchange-earning oilseed crop, the farmers have always received a higher price than MSP in the open market due to better prices fetched by the Indian Soybean defatted oil cake in the international markets (Agarwal *et al*., 2013). Higher MSP support will help the farmers in adopting modern agricultural practices like the usage of a high-yielding variety of seeds, application of fertilizers, pesticides, *etc*. Which ultimately results in increasing the yield of Soybean.

A strong positive correlation was also observed between the MSP of Rapeseed Mustard with its area (0.34), production (0.84), and productivity (0.90). Rapeseed Mustard holds significant importance as a rabi season oilseed crop in India, contributing to over 80% of rabi oilseeds production and 27% of the overall oilseed production in the country (CACP, 2019).An increase in MSP positively impacts the rise in the area, production and productivity of Rapeseed Mustard. In 2021-22, the government raised the MSP of Rapeseed-Mustard by 8.6 percent compared to the previous year. This increase led to a significant growth in the cultivated area of Rapeseed-Mustard, with a 23 percent increase over the sown area during the corresponding period of the previous year (Mohan, 2022).The increase in the area will lead to an increase in its production. The higher correlation between MSP and the productivity of Rapeseed-Mustard indicates that the higher MSP support has resulted in the adoption of modern technologies in farming which lead to the increased yield of Rapeseed-Mustard.

A negative correlation was found between the MSP of Groundnut with its area (-0.90). However, the production (0.08) and yield (0.73) of Groundnut showed a positive correlation with its MSP. The negative correlation between the MSP and the area of Groundnut can be attributed to several factors. One prominent reason is the shifting preference of many Groundnut farmers towards cultivating cash crops like tobacco, cotton, and maize. This shift in farming choices has resulted in a decrease in the overall area dedicated to Groundnut cultivation in India (Gopi, 2013).Gayathri (2018) found that he area dedicated to Groundnut cultivation exhibited a negative CAGR, while both production and yield of Groundnut showed a positive trend. The study recommended the development of improved cultivars and enhanced cultural practices as potential strategies to enhance the area devoted to Groundnut cultivation in India.

Except for the productivity (0.82), the area (-0.50) and production (-0.33) of Sunflower displayed a negative relationship to its MSP. The decline in the area of Sunflower cultivation and the subsequent switch to other crops can be attributed to the absence of guaranteed procurement at MSP by government agencies (Sharma, 2019). This lack of assurance compelled farmers to reduce the area dedicated to Sunflower cultivation. Additionally, Nimbrayan *et al*. (2020) also observed a decreasing growth rate in both the area and production of Sunflowers, while the yield exhibited a positive growth trend.The study concluded that the problems in marketing, higher seed price, adulteration in hybrid seeds, the threat of diseases, and losses due to birds were the reasons behind decreasing the area and production of Sunflowers.

In the case of Safflower, the MSP showed a negative relationship to its area (-0.99) and production (-0.87) but a positive relationship with its productivity (0.51). This was due to the shifting cropping pattern of the farmers from Safflower to other crops. Negative growth in the area and production of Safflower in India can be attributed to various factors. Bose (2017) identified low oil content and comparatively lower price realization compared to other oilseed crops as primary reasons. Additionally, higher remuneration offered by competing crops further incentivized farmers to shift away from Safflower cultivation. The combination of these factors, including low-

price realization, has contributed to the decline in the area and production of Safflower in India.

Conclusion

India imports nearly 65 percent of its total requirement of edible oils from other countries by spending more than ₹ 70,000 crores annually. The gap in the demand and supply situations of edible oils puts pressure on inflation in the economy. The Indian Government had focussed on reducing the import dependency on edible oils and increasing the domestic production of oilseeds with the help of the MSP policy which incentivizes the oilseeds production in the country. A higher MSP for any crop can potentially increase its production as it offers farmers more financial incentive to cultivate it. The percentage increase in the MSP oilseeds is much higher as compared to the MSP of foodgrains. The study revealed a statistically significant and positive CAGR in the MSP of all five oilseed crops (Groundnut, Sunflower, Soyabean, Rapeseed-Mustard, and Safflower), ranging from 7.17 per cent to 8.05 per cent (p-value < 0.01).The study identified a statistically significant and positive CAGR in yield for all five oilseed crops, ranging from 1.07 per cent to 1.95 per cent. Soybean and Rapeseed-Mustard crops showed a positive and significant trend in the CAGR of area (6.16% and 0.74%) as well as production (7.29% and 2.56%, respectively). The findings of the scatterplots as well as the spearman correlation analysis found a strong positive correlation between the MSP of Soybean and Rapeseed-Mustard with their corresponding area, production, and yield respectively.

The MSP policy implemented by the Indian Government has effectively contributed to the expansion of both the area and production as well as the improvement in productivity of Soybean and Rapeseed-Mustard crops.The government had provided higher MSP support to those oilseed crops in which negative CAGR in the area is observed (Sunflower, Safflower, and Groundnut). The specific policy suggested from the study are (a) Assured procurement support by Government agencies, coupled with MSP, can facilitate crop diversification from foodgrains to oilseeds, ultimately leading to self-sufficiency in edible oil production in India; (b) The government may divert some portion of funds of MSP procurement from foodgrains to oilseeds which could bring more area under oilseeds cultivation; (c) Agricultural research institutions have to develop new hybrids and varieties which will enhance the productivity of oilseed crops and increase farmers income;

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