

CHAPTER-8
SUMMARY

Over the last two and half decade, pomegranate has emerged as one of the potential enterprise in accelerating the growth of agro economy of Nashik district. This is because of semi arid climatic conditions congenial for the pomegranate crop in general and improved agro-technology adopted by innovative farmers for increasing productions in particular. In addition, a number of thoughtful research, technological and government policy initiatives also resulted to make this fruit crop sustainable and viable venture even for the small and marginal farmers. By and large, pomegranate farming enriched the agro environment by improving productivity of land through crop diversification, generating employment, progressing economic conditions of the entrepreneurs and providing nutritional security to the peoples. Therefore, there is a great scope for the pomegranate industry to grow and flourish in forthcoming years.

Against this background, present research work was organized by taking both the pomegranate crop and grower at the central place of study. Salient findings emanated from Geo-economic analysis of pomegranate farming in Nashik District are presented in the section below.

8.1 Physical Determinants:

Firstly, the suitability of the environmental factors involved in the pomegranate agro-ecosystem was examined from the geographer’s point of view.

i) The altitude was not found restriction for growing of pomegranates in the study region. Topographically, the orchards were raised on gentle slopes as well as at few locations on undulating surfaces, lower hill slopes and terraces. The altitude of sample orchards ranged from lowest 330 meter ASL in Amode village (Nandgaon tehsil) to highest 735 meter ASL at Rahud village (Chandwad tehsil).

ii) The northeast portion of drained by Girna river basin dominated in pomegranate farming in the study area. The Girna and its tributaries (Aram and Mosam) are low enough to use water through lift irrigation. Though seasonal in flow but dug wells in river channels was an important source of
irrigation water by pipelines especially for large category pomegranate growers.

iii) The thermal conditions prevailing around the Malegaon station i.e. located in semi-arid belt revealed high summer and cool winter temperatures are conducive to growth of pomegranate.

iv) The rainfall was found as the single most dominant weather element in pomegranate cultivation. The correlation coefficient analysis between annual average rainfall and area under pomegranate cultivation at the tehsil level revealed significant negative co-relationship for 17 years data period (1990-2006). The pomegranate cultivated area decreased with an increase in annual rainfall and vice versa.

v) The isohyets between 550 mm to 1050 mm indicated the limits for pomegranate cultivation in the study area. The eastern parts recording average rainfall below 700mm is a chronically drought prone area; where almost 90% of pomegranate cultivation is concentrated. Uncertain and low amounts rainfalls lead growers to adopt this crop due its low water requirement.

vii) Pomegranate orchards favored the light and coarser soils especially sandy loamy soils, those are dominated especially in east scarcity tract. These soils are free water draining in characteristic possessed good potential for pomegranate production. However, lateritic soils of high rainfall tract, deep black cotton and alluvial soils were not found suitable for this crop.

viii) The availability of surface water for agriculture is limited. Even if there are 15 large and 8 medium water reservoirs but they are unable to meet the demand for irrigation water. Because the reservoirs has to fulfill daily water need of the growing population of the district (4 Crores in 2001 to 6 crore in 2011) as well as to provide enough water for expanding industrial sector in Nashik, Sinnar, Igatpuri and Malegaon headquarters.

ix) Underground water resources are also inadequate and distributed unevenly in the district. Except four western tehsils, the water level in remaining 11 tehsils has been considerably declined that attained the level beyond 5 meter. The alarming drop of water level in Deola, Chandwad, Kalwan, Satana tehsils more than 7 meter proves that the water table is totally disturbed.
Everyday withdrawal of large quantity of underground water resulted into lowering of water level. There existed an indirect competition among neighbour growers to exploit water from greater depths despite of hard igneous rock strata beneath. The dug wells of 92% respondents attained the depth beyond sustainable water table (7.5 meter). And tube wells of 82 % respondents were beyond 70 meter depth. Overall, suitable underground water table is much depleted all over study region.

High rate of evaporation and evapo-transpiration in summer causes large deficiencies of moisture in soil during summer. Therefore, the water tankers were essentially used by 10% respondents for irrigating their orchards severe water scarcity period (April and May).

In brief, the natural resources in terms of relief, climate and soil are quite favorable in the eastern half of study area consisting Satana, Malegaon, Deola, Nandgaon, Chandwad, Yeola and Sinnar tehsil to yield good quality pomegranates.

### 8.2 Non Physical Determinants:

Combined efforts of all cultural factors viz. technological, social, institutional and government policies also worked together in creating progressive agro-environment for making the study region more prosperous in pomegranate farming.

**A) Technological Determinants:**

Modern agro technology utilized by growers was found key factor in changing the agricultural typology of the study region. Development in irrigation techniques and sources indeed minimized the adverse impact of unreliable rainfall.

i) Invention of ‘plastic-culture’ enabled the growers to build up small water harvesting structures known as “agro ponds” at the farm. It was only assured source of irrigation for nearly 5% respondents.

ii) The drip irrigation technology proved more efficient for coarser soils suitable for pomegranate; which were irrigated frequently due to poor moisture retention capacity. Today, 100% pomegranate orchards are raised on drip irrigation. This water efficient technique gave a popular motto among pomegranate growers to harvest ‘more crop per drop’ of water. It became one
of the valuable orchard trees in this water scarcity area. Therefore, growers often call this tree as ‘Kalpavriksh’ of the dry land areas.

iii) For good quality production of pomegranates, the water soluble chemical fertilizers were applied along with drip irrigation water (fertigation technique) by 75% of respondents including small farmers. In addition, utilization of chemical technology by aerial spraying agro chemicals of different brand names and types also brought confidence among growers to cultivate the pomegranate profitably.

iv) Rapid plantation of pomegranate is also the outcome of multiplication of biotechnology innovated ‘plant tissue culture’ saplings. The ‘Bhagawa and Aarkta’ varieties propagated by this technique were found superior with respect to plant vigour, growth and yields compared to hardwood cutting saplings.

v) Respondents to the extent of 53% adopted mulching technique to conserve the soil moisture. They used organic materials like saw dust, bajara husk, maize husk or grass to cover the soils.

In brief, it is concluded that drip irrigation, fertigation, plant protection and high yielding varieties were four important pillars, on which pomegranate farming of the study area is raised. The growth in pomegranate cultivation is a result of these sorts of modern agro technology applied by growers.

B) Social Determinants:

The social movement and co-operative nature of all pomegranate concerns had resulted in gainful employment resulting in agronomic upliftment of pomegranate villages in general and individual grower in particular.

i) Pomegranate cultivation was enterprise of literate young and middle aged farmers. Especially the unemployed rural youths were at the front position. About 19.69% respondents were graduates, 2.21% post graduate and 2.65% diploma holders. As such good educational background created awareness for adoption and production of pomegranates through the application of modern farm technology.
ii) In the initial stages the researchers, agriculture officials and progressive farmers played crucial role in conveying the growers to cultivate the pomegranates. The agro service centers acted as a catalyst and growth centers in area under their influence for implementation of modern technologies. Along with material inputs they extended necessary help by providing technical knowhow to the 19.38% respondents.

C) Infrastructural Services:

i) Political will or decision of Maharashtra state government by granting subsidy ` 45000 ha⁻¹ for pomegranate plantation fulfilled the initial capital need for orchard establishment of the 70% of respondents. The large scale expansion of pomegranate orchards was also the outcome this horticulture development program.

ii) The capital support in terms of crop loan provided by Nashik District co-operative Bank (NDCC) and nationalized banks helped the growers to provide timely material and labor inputs. About 60% respondents availed short-term crop loans ` 75000 ha⁻¹.

iii) It was found that pomegranate crop consultants hold significance in creating channels for diffusion of technology into the rural areas. They consultant were either experienced growers or qualified (B.Sc. Agri) unemployed youths appointed on remunerative basis especially by 10.13% respondents or new pomegranate growers.

iv) Wide network of various roads linked remote pomegranate farms with urban places. About 35% villages in the study area are accessible either by ‘Pucca’ (black top) and remaining by ‘Kuchcha’ roads (gravel or earthen). It facilitated the transport of input material and sale of pomegranates from local to national markets.

In brief, accessibility of sound and responsive infrastructure also brought positive changes in cropping pattern from traditional cereal based towards the high value fruit crop.
D) **Agriculture Landuse:**

Even if, fruit crops were grown on smaller proportion of agricultural land but matter of satisfaction is that the district farmers had shifted towards the superior crops i.e. aimed towards higher returns. Total fruit area grown rapidly from only 1.53% in 1991 to 6.53% in 2005. But the production of a particular fruit is restricted to specific locations in the study area consequently four fruit farming zones were identified viz.

i) Pomegranate zone: Satana, Malegaon, Deola and Kalwan tehsils in northeast

ii) Grape zone: Niphad, Nashik and Dindori tehsils in the southwest

iii) Mango zone: Igatpuri, Peth and Trambak tehsils in the western downghat

iv) Mix fruit zone: Chandwad, Yeola and Sinnar tehsil in the Southeast and central

### 8.3 Pomegranate Cultivation:

i) The production process of pomegranate in the study area revealed that pomegranate is an ideal fruit crop for drought prone regions because of its distinguishing characteristics. Such as versatile soil adaptability, low requirement of water, drought tolerant plant, hardy nature of fruits and year round growing seasons. Those were main features responsible for its widespread cultivation.

ii) In addition, government subsidies for plantation, low inputs, good market prices, remunerative returns, demand in national and international markets, ability to generate employment in all sectors of agriculture were some encouraging economic factors that also favoured its cultivation. Furthermore, it also proved best fruit crop for replacing subsistence farming as well for crop diversification.

### 8.4 Spatio - Temporal Analysis:

i) Presently almost World’s pomegranate is confined in the northern hemisphere. India, Iran, China, USA, Turkey, Spain, Tunisia, Egypt, Afghanistan and Israel are top ten pomegranate producing countries in the World. And India occupied the topmost position by sharing 54% of area and 38% of production in World’s total.
ii) India is the only country, which produce pomegranate fruit throughout the year. And pomegranates are mainly concentrated in semi-arid tropics over ‘Peninsular India’. The Deccan plateau of Maharashtra, Karnataka and Andhra Pradesh together shared 95.43% of area and 93.89% production of pomegranate in total of India.

iii) Over 70% of pomegranate production in India comes from ‘Deccan plateau of Maharashtra’. Only two districts namely Solapur and Nashik located in western Deccan plateau located in rain-shadow area of Sahyandris contributed nearly 74% area of pomegranate of the state.

vi) The spatial distribution pattern at tehsil level virtually remained stable throughout the study period. But the percent volume of change indicated three phases of growth of pomegranate crop viz. adoption (before 1991), expansion (1991 to 1996) and stabilization (1995-2005). Recently decline in area under pomegrante (2006 to 2010) was observed due to the epidemic spread of devastating wilt and bacterial blight diseases.

vii) The trend line analysis indicated that all tehsils shows a rising trend in the area under pomegranate cultivation. However, minimum fluctuations in the data curve of Malegaon and Satana tehsils were observed, which indicated stabilization of pomegranate in this region during the study period. The upward shift of the original data curve from a trend line was observed for Kalwan, Chandwad and Yeola tehsils up to 1997 only, which means in later years the response to this crop decreased. The grape growing region namely Niphad, Nashik and Dindori tehsils indicated large yearly fluctuations or uncertainty in pomegranate cultivation.

viii) Location quotient in terms of crop concentration indices amply revealed a diversified pattern of the pomegranate landscape in Nashik district. Except initial year (1991), the concentration index of each tehsil revealed insignificant changes and its ranking almost remained same. It proved that distribution patterns of pomegranate are relatively permanent and even maintains the same core and fringe area of pomegranate in the district. Based on percentage analysis, volume of change and location quotient; three concentration zones of pomegranates were identified.
a) **High concentration zone:** The strong localization of the pomegranate was found in the rain shadow area located in northeast part of district. It consists of Kalwan, Satana, Malegaon and Deola tehsil locally called as “Kasamade belt”. It was a single nucleus of high concentration throughout the study period. Here origin, intensification and further expansion had resulted to form the core area or ‘heartland of pomegranates’ of Nashik District.

b) **Medium concentration zone:** This zone extends to the east and south from above core pomegranate area covering Nandgaon, Yeola, Chandwad and Sinnar tehsil. Although this portion reflects geographical continuity of the rain shadow area like high concentration zone but the slow response of farmers due to lack of technical know-how may be causing medium concentration of pomegranates.

c) **Low concentration zone:** The lowest pomegranate concentration was found in the upper course of Godavari River covering Western Niphad, Nashik and Dindori tehsils. It has a favorable agro-environment for grape cultivation rather than pomegranates. And Socio-economically backward western tribal block covering had unfavorable edapho-climatic conditions for pomegranate cultivation. Hence it can be said as ‘negative areas’ of pomegranates.

## 8.5 Economics of Pomegranate Cultivation:

The analysis of primary data collected from interviews of 454 sample growers scattered in 56 sample villages from 10 pomegranate growing tehsils of Nashik district revealed following economic features of pomegranate cultivation.

i) The average plantation cost incurred by the respondents was ₹ 81625 ha\(^{-1}\). In addition, average expenses of gestation period or waiting period for 1½ years were ₹ 35615 ha\(^{-1}\). Thus total establishment cost was ₹ 1.17 lakhs ha\(^{-1}\). It was spread over the economic life span (10 yrs) of pomegranate orchard and average annual establishment cost ₹ 11724 ha\(^{-1}\) was obtained, which contributed lowest share (5.77%) in the gross cost of pomegranate cultivation.

ii) The average annual operating cost was ₹ 1.71 lakhs ha\(^{-1}\). It contributed highest share 84.04% in the gross cost of pomegranate cultivation. The fertilizers and pesticides were vital material inputs in pomegranate farming occupied half proportion in total operational cost. Rental value and revenue of
land, depreciation, electricity charges, interest on capital together engaged nearly ¼ share of operational cost. It was found that the share of human labour cost (18.24%) was higher compared to tractor utilization charges (8.29%).

iii) The marketing of pomegranate fruits did not require heavy cost because respondents commonly sold their produce either to private traders or in local markets. There were four major items of cost for local markets viz. harvesting, transport charges, commission of agents and market deductions. It contributed only 10.19 % share in the gross cost of pomegranate cultivation.

iv) Thus, the gross annual cost of pomegranate cultivation was ₹ 2.04 ha⁻¹ annum⁻¹ for the study region as a whole. In the existing edapho-climatic conditions, the pomegranate crop gave good response so average yield 8.68 ton ha⁻¹ was obtained. The fruits realized price ₹ 50.89 kg⁻¹ in the market. Consequently, the net returns ₹ 2.15 lakhs ha⁻¹ annum⁻¹ indicates good economic profitability from pomegranate cultivation.

v) Finally, the cost benefit ratio 1: 2.06 amply clears that why growers had adopted pomegranate crop on a large scale in spite of high initial investments.

vi) Inter-farm comparison of cost benefit ratio cleared that cost of plantation decreased with increase in size of holding, in contrast, operational increased with size of holding. The growers belonging to small holding were unable to provide material at the right time and in appropriate quantities due to lower financial potentials. It resulted in poor quality production of fruits hence lowest cost benefit ratio 1: 2.06 was observed for small farms. But medium sized pomegranate farms orchards were well managed and supplied with optimum material and labour inputs so best possible quality of fruits was produced. Thus, the highest cost benefit ratio 1: 2.29 was realized for medium pomegranate farms. Large growers imputed branded chemical fertilizers, powerful pesticides for getting good results as well as dependent on hiring labor force. So they required high production expenses. But due to a large number of trees, the intensive care could not be taken that limited the quality of produce. So large farms ranked first in the gross cost of cultivation but it lies in second position in cost benefit ratio 1: 2.12.
“Finally it was concluded that the net return was nearly double the gross cost or capital invested in all farm sizes of pomegranate. Therefore, investment made in pomegranate enterprise was economically feasible or financially sound, profitable and in attractive propositions.”

vi) Yield and profits of pomegranates were found to be controlled by biotic factors (soil type, altitude of orchard, Bahar or cropping season) and abiotic factors (variety and age of the orchard).

vii) Well drained medium and shallow soils revealed higher cost benefit ratio 1: 2.71 1: 2.15 respectively. Comparatively, deep black cotton soils and alluvial river plains due to high water holding capacities were found lowly profitable 1: 2.07. Similarly, very shallow soils 1: 1.73 were too expensive for cultivating pomegranates in existing water resource conditions of the study area. Due to high porosity and heavy leaching, they required frequent irrigation and fertilizer inputs.

viii) The noticeable influence of ‘orchard land elevation’ was found on growing of pomegranates. The quality and quantity of pomegranate fruits increased and gross cost of production decreased with altitude due to clear, dry weather condition with bright sunshine at upper altitudes. Overall, this micro level analysis proved positive correlation between the yield of pomegranate and altitude zones.

ix) The pomegranate fruit crop demonstrated preferentially good yields in dry weather conditions so Ambe Bahar revealed highest cost benefit ratio 1: 2.37. It was highly cost-effective cropping season of pomegranate, but only when sufficient water was available for irrigating orchards in summer season. Secondly, moderate yields and profits were obtained in hast bahar coinciding with mild weather conditions of winter season. This Bahar is also characterized for good market prices as a result second highest cost benefit ratio 1: 2.29 were realized by respondents. Thirdly, humid or moist weather conditions of rainy season revealed adverse effects on flowering and fruiting in Mrig bahar consequently lowest yields and cost benefit ratio 1: 1.84 were obtained.
The variety wise analysis revealed that even if, Bhagawa variety was found too expensive to produce due to late maturity period (7 months) but it was heavy yielder and fruits have good market demand revealed highest cost benefit ratio 1: 2.66. Whereas, Aarkta is an early maturing variety (5 months) that minimized production cost but low consumer preference earned second highest cost benefit ratio 1:2.24. Moreover, the orchards of Ganesh variety were in declining production stage (older ages) that affected yields. The fruits of this variety also have least market demand hence lies in third place in cost benefit ratio 1:1.94. Mridula is new variety but it was not found improved with respect to yield and fruit characteristics hence the lowest cost benefit ratio 1:1.79 was revealed for this variety.

Cost effectiveness of pomegranate cultivation also followed the age-yield pattern of trees. The yield starts to increase slowly with development of tree canopy or progression in age of orchard trees. Being a small bush in the early bearing ages or youth stage (2-6 yrs) the gross yield and cost benefit ratio 1:1.95 was low. But well developed large bushes in the adult stage (6-10 yrs) produced better quality and quantities of fruits. Subsequently, this age group of orchard proved highly cost effective 1: 2.35 throughout the productive life span of pomegranates. Whereas 10th year onwards the reproductive capabilities of pomegranate declined. It lowered down the yields so also the cost benefit ratio 1:2.18 in old ages.

In brief, it can be concluded that Bhagawa and Aarkta variety orchards of the adult age group, those planted in well drained soils was highly profitable and favorable natural sites for cultivation of pomegranate in the study area.

8.6 Marketing of Pomegranate:

Marketing of pomegranate is a multifaceted activity, it involved five major operations harvesting, sorting, grading, packing and transport of fruits. The earlier harvest (before maturity period) was done by 23% respondents due to adverse environmental conditions e.g. water shortages, attacks of bacterial blight disease etc. Normally on the basis of color, size and weight the fruits were graded into four qualities viz. super, king, queen and prince size fruits.
Corrugated boxes were utilized for fruit packing to the national markets but loose fruits were sold in local markets.

ii) The mode of transport used by growers varied with distant from production region. For district markets (60 - 100 km) the pick-up vans were widely used by half of respondents. But for local markets to cover 15 - 40 km distance, auto rickshaws and even motorcycles were utilized by 42.43% respondents. Overall, for local markets the transport cost was not more than ₹ 1 kg⁻¹ of fruits.

iii) Even if, fruits were sold at higher prices in retail markets but growers get relatively lower benefits over cost incurred by them in pomegranate production. This is because of long distances between production and consumption regions involved number of intermediaries (pre-harvest contractors, private traders, commission agents, whole sellers and retailers), who ripe the maximum share of consumer prices. Therefore, it can be stated that existing marketing system for pomegranate is not conducive for its increased production. In view of maximizing profits of growers, organized type of marketing by forming co-operative fruit societies (like Solapur District) linking to national market places is essential in the study area.

iv) The pomegranate growers did not followed the same channel of marketing even to sale the same lot of harvested fruits. There were 6 different channels utilized by respondents but over 95% produce were marketed through local channels.

v) Epidemic spread of wilt and bacterial blight disease on pomegranate declined the production thereby created a shortage of the fruits in all markets. Therefore, the prices of pomegranate were stable around ₹ 50 to 60 kg⁻¹ and even higher prices were realized by respondents for good quality fruits throughout the survey year.

vi) The national markets namely Delhi, Agra, Lucknow, Kanpur and Gorakhpur in the north, Ahmadabad, Surat, Baroda in the west and Indore and Zhansi in central India are located at far distances from pomegranate production regions. Due to higher cost of transport, expenses on packing, long market chains and
risk of post harvest losses, delayed payments; respondents had not preferred national markets.

v) About 95.08% of respondents partly sold their produce to private traders and partly in local markets. In the study area, there are five local pomegranate market places (Nashik headquarter, Malegaon, Satana, Nampur and Pimpalgaon Baswant) located within 20 - 80 km distance, where growers often sold all grades of fruits in loose form filled in plastic crates or gunny bags. Moreover, the produce returned by private traders consisting of underweight below 100 gm fruits, cracked and blemished by diseases were also sold in the above markets at the very low price ₹ 15-20 kg⁻¹.

vii) Analysis of primary data proved that the profitability of pomegranate increases with local, district and national markets. Respondents earned profit about ₹ 27.44 kg⁻¹ of fruits in case of on farm sale. And it was ₹ 31.22 kg⁻¹ who sold fruits in district market. But it was still higher Rs. ₹ 37.93 kg⁻¹ for national market. However, due to labor shortage for harvesting, grading and packing and after working in the orchard throughout the year; the growers were not willing to handle marketing operations. As well as they were also not ready to pay the high market cost for national places. Only 1.38% respondents sold their produce to national markets. Therefore, on farm sale of fruits and local markets will continue to have its importance in pomegranate marketing of the study region.

viii) Even if profits could be higher in foreign markets but pomegranate exports in the study area had not been substantially increased yet. Because the Phyto-sanitary standards are stricter in European and US markets. They do not tolerate any chemical residues in pomegranate fruits. On the other hand, it was difficult for the growers to produce the export quality fruits without utilization of agro-chemicals. The growers also face problems in completing the procedures and documentation for export purpose. Therefore, not the single respondent was found to export the pomegranates.

8.7 Problems and prospectus of pomegranate cultivation:

The pomegranate growers were struggling with one challenge after another. The problems faced by growers were complex in agro environment related to natural,
technological, intercultural operations, financial crisis, marketing, insect-pest and diseases on pomegranate. After constraint analysis, the major problems that need immediate attention in view of sustainable pomegranate farming were found as below.

i) Among all natural factors the adverse impact of unreliable and low amounts of rainfall can’t be underestimated subsequently river are seasonally flowing, in addition, underground water levels are also declining. The water shortages are increasing all over pomegranate regions. Therefore, micro-irrigation projects like ‘agro ponds’, which is only assured source of irrigation in dry climate should receive first priority in horticulture development programs.

ii) The respondents were facing the problems in the availability of technical knowledge for adoption of improved intercultural practices. Such as the quantity of water applied by drip irrigation systems, the method and doses of fertilizer applications, techniques of pruning, collection of soil samples, unable to identify and differentiate pest and diseases etc. In brief, growers were lacking in technical knowhow and field levels do how. In this context, sub-research center on pomegranate established by MPKV, Rahuri at Lakhmapur village (Malegaon tehsil, Dist: Nashik) would act as an extension agency for pomegranate technology.

iii) More than ¾ the respondents also suffered from the timely availability of material and labor inputs e.g. artificial shortage of chemical fertilizers and organic or farmyard manure, inferior quality of pesticides etc. Similarly, the shortage of laborers (unskilled, semi-skilled and skilled) was the persisting problem that resulted in higher wages. Utilization of small tractors at medium and large farms as well as labour work sharing method at small farms was found best solution to overcome on labor shortage.

iv) After selling the fruits of farm to private traders 44.15% respondents also suffered from financial losses due to low prices, non payments, violation of contracts and rejection of fruits etc. Therefore, there is a need to improve existing marketing system of pomegranate by giving cold storage facilities and processing units in production regions, setting uniformity in gradation standards at national levels.
v) The pomegranate orchards were also suffering from occurrence of many insects, pests and fungal diseases and some of them were manageable by applying chemicals. But recently, the epidemic spread of uncontrollable blight and wilt diseases became a devastating factor in growing pomegranates. The boon commercial fruit crop turned as big bane after the severe attacks of these two diseases to the affected growers in the study area. The production cost has gone up drastically; growers were spending more amounts of pesticides. Whereas, net returns were showing declining trend year by year as a result of disease affected yields. Moreover, inadequate credits in terms of crop loans, delayed subsidies were other constraints on capital inputs. Overall, pomegranate farming in the study area is going through serious financial crises from last few years.

Finally it can be concluded that agro-climatic conditions for production of pomegranate are very congenial in the study area. Additionally, initiatives taken by growers, horticulture scientists and government have impacted the development in terms of increased production, the productivity of this crop. Indeed, the recommendations or suggestions given by scientists from MPKV, Rahuri and NRCP, Solapur (MS) are based on experiments carried on each cultural practice at various research farms. But in practice, pomegranate growers did not follow the recommendations due the greed of higher yields. With this intention, growers were adopting short planting distances, minimizing the gestation period and short rest period, maximum use of chemical fertilizers, frequent pesticide sprays, improper water and nutrition management etc. As such excessive desire of growers for higher yields and monetary returns resulted into mismanagement in turn wiping out the pomegranate orchards. If such condition will continue, the pomegranate farming would become unsustainable in the study area.
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