CHAPTER - VIII

SUMMARY, FINDINGS AND POLICY MEASURES

This is the final chapter. It attempts to give summary of the elementary chapters, to recapitulate the important findings of the present study and mention some policy measures.

SUMMARY:

Growth and instability is the most widely studied issue. Many studies have come up at the national/state level in India. Present study is also a similar study which attempts to study growth and instability in the oilseed crop economy of Maharashtra at the regional and district level for the period 1968-69 to 1992-93. Main objectives of the study are:

1) To study the growth in area, production and yield of major oilseed crops in Maharashtra at the regional and district levels;

2) To study the instability in yields of major oilseed crops in Maharashtra at the regional and district levels; and

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3) To study the nexus between growth and instability in yields of major oilseed crops at the Maharashtra state level.

Data related to area, production and yield of major oilseed crops was collected from the published sources such as Season and crop Report of Maharashtra, Districtwise General statistical Information of Agricultural Department (Epitome of Agriculture in Maharashtra), Population census of India, Economic survey of Maharashtra and office of the Directorate of Agriculture, Pune.

To calculate growth rates of area, production and yield of major oilseed crops a semi-log function of the form \( \log y = a + bt \) was used and significance was tested using student's 't' distribution. To study instability in these crops, measures like co-efficient of variation around the trend line (C.V.T.L.), co-efficient of variation (C.V.), probability of crop failure [P(C.F.)] and crop loss ratio (C.L.R.) were employed. All these measures are free of unit of measurement and hence are comparable. Cropwise yield growth and instability nexus was considered at the state level by classifying the districts into low, medium and high growth and instability in yields.

The state of Maharashtra came into existence on 1st May 1960. It is the third largest state in population and area.
The state falls in three main agro-climatic regions—the coastal, the Deccan plateau and the eastern central zone. The state receives rains from the Arabian sea current and from the Bay of Bengal current. Near about one-third of the state area is drought prone area. Western Maharashtra has higher irrigation percentage but the state is lagging behind in irrigation. Percentage of net area irrigated to the net area sown in the state is just 13.92 percent in 1993-94. Irrigated area under oilseed crops comes about ten percent of the total irrigated area in the state. More than 60 to 70 percent water is used for sugarcane crop and other crops are denied their legitimate share in irrigation water. Net area sown in the state has remained about 59 percent of the total geographical area. The main crops grown in the state are—rice, wheat, jowar, bajra, pulses, groundnut, cotton and sugarcane. Nearly 13.29 percent of area is under total oilseed crops in 1994-95. The percentage of primary sector is on decline in the state. In brief, Maharashtra is considered as an industrially developed state but it is lagging behind in agriculture.

Many researchers have studied the issue of growth and instability in various crops at the national/state level in general and with respect to the oilseed crops in particular. Ashturkar (1988), Hedgire and Acharya (1988), Korde and
Mahalle (1990), Waghmare and Katepattewar (1993), Rahane and Joshi (1993), Sale, Pawar and Shete (1993) have studied the oilseed crops in Maharashtra. Many of the researchers have concluded that the growth in agriculture is followed by instability. Review of literature of the learned scholars helped a lot in selecting appropriate methodology of the present study.

Oilseed crop policy during the seventies encouraged area expansion but the role of technology accorded explicit recognition as a major input in oilseed crops production during the eighties. Government adopted a policy of implementing various schemes and programmes like integrated oilseed development scheme, scheme for the development of non-traditional oilseeds, crop insurance scheme, nigerseed, soyabean and sunflower demonstration schemes, export promotion programme, intensive oilseed development programme, national oilseeds development project, oilseeds production thrust project and setting up of technology mission on oilseeds in May 1986 for the development of oilseed crops. As a result, the production of oilseed crops improved spectacularly in the recent period in India.
FINDINGS:

The main findings of the present study are summarised below:

Growth performance

1) Total oilseed crops demonstrated significant production growth of 5.32 percent during the period 1968-69 to 1992-93 where yield growth of 3.38 percent was comparatively higher than the area growth rate of 1.88 percent. All these growth rates were significant at one percent level. The significant production growth in the post green revolution period for total oilseeds came mainly through significant area expansion. Area expansion was more prominent in the sesamum, safflower and sunflower while groundnut and linseed crops lost some area under cultivation in the state.

2) Western Maharashtra and Marathwada regions proved to be important producers of oilseed crops in Maharashtra. Growth performance in the Western Maharashtra was spectacular for total oilseed crops in the post green revolution period but Marathwada region showed poor performance during the same period. Konkan region do not constitute an important producer in the total oilseed crops in all the periods. All the growth rates for total oilseed crops were significant in all the regions in the overall period except for area growth in the Konkan region.
3) Jalgaon, Ahmadnagar, Pune, Solapur, Satara, Sangli, Kolhapur, Aurangabad, Beed, Osmanabad, Nanded, Parbhani, Buldhana, Amravati, Wardha, Nagpur, Bhandara and Chandrapur are the important oilseed producing districts in the state. Their production growth performance was significant in the overall period. Total oilseed crops depicted that production growth in most of these districts came through area expansion in the green revolution period and no district registered significant fall in area in the post green revolution period. Western Maharashtra districts emerged as leading producers of total oilseed crops in the post green revolution period. Districts from the Marathwada region proved to be important producers of oilseed crops in the overall period.

Yield instability:

4) Yield instability has reduced in the post green revolution period for groundnut, nigerseed and total oilseed crops as a category at the state level while it increased in the case of sesamum, linseed and safflower crops. Castor seed, nigerseed and sunflower reflect high yield instability but their relative shares in the state oilseed production are less.

5) Konkan and Marathwada regions were with comparatively higher yield instability for oilseed crops on one hand while Western Maharashtra and Vidarbha regions showed relative yield stability in all the periods on the other hand.
(6) Total oilseed crops as a category revealed that Raigad, Ratnagiri, Ahmadnagar, Solapur, Aurangabad, Parbhani, Beed, Bhandara and Chandrapur districts were with high instability and Pune, Sangli, Amravati and Yavatmal districts were with low instability in the overall period. Majority of the districts showed a fall in instability in the post green revolution period compared to the green revolution period in Maharashtra.

Nexus between growth and instability in yield:

(7) Total oilseed crops as a category were having high growth with low instability while groundnut and safflower were having moderate growth with low instability in the overall period.

(8) Sesamum and linseed crops were having high growth with low instability in the green revolution period but their performance decelerated during the post green revolution period. These crops cannot take the advantage of low instability for having faster rate of growth in the overall period.

(9) Western Maharashtra and Vidarbha regions were having moderate growth with low instability whereas Marathwada and Konkan regions experienced high growth followed by high and
moderate instability respectively for the total oilseed crops in the overall period.

(10) Groundnut performance in Kolhapur and Pune districts depicted high growth with low instability in the overall period.

(11) High growth with low instability for total oilseed crops was observed in Pune and Sangli districts whereas high growth followed with high instability was noticed in Raigad, Ratnagiri, Ahmadnagar, Solapur, Aurangabad, Parbhani, Beed and Bhandara districts in the period of 25 years.

POLICY MEASURES:

Now, it is well accepted that oilseed crops cannot sustain in the assured irrigated belts. These crops cannot compete with the high value cereals. Therefore, substantial contribution to the oilseed production at the national level has came from those states which do not have a competitive advantage in the production of cereals. The findings of the present study listed above makes us to state the following policy measures which may prove useful for the sustainable growth of the oilseed crop economy of Maharashtra.

The production of oilseed crops increased at a compound annual growth rate of 5.32 percent at the Maharashtra state
level where in yield growth was comparatively higher than the area growth in the period of 1968-69 to 1992-93. Fluctuations in yield constitute the major cause for the fluctuations in the output hence yield fluctuations are to be controlled to bring stability in output. This implies concentrated efforts in developing new varieties of oilseed crops whose yield potential is stable across different agro-climatic regions. The low production and/or productivity of oilseed crops is mainly on account of low application of new inputs like fertilizers, pesticides, HYV seeds etc., growing these crops in rainfed areas; pushing these crops to marginal and semi-marginal lands; domination of high value crops in the cropping pattern and poor management practices of the farmers.

Total oilseed crops in Maharashtra demonstrated high growth with low instability in the overall period. This implies that these crops are best suited for the soil and climate of Maharashtra. In the case of oilseed crops, agricultural scientists have pointed out that there exists much untapped potentials in Maharashtra even with the use of present state of technology. Further, that the coarse cereals are being successfully substituted by oilseed crops in the central and southern regions of India. Considering the current trend and the growth-instability position of
these crops in the state, it will be of immense profit for the farmers in the state if they go in for oilseed crops on large scale at least where low yield coarse cereals are grown.

Western Maharashtra and Vidarbha regions depicted moderate growth with low instability on one hand and Marathwada and Konkan regions showed high growth with high to moderate instability respectively on the other hand for total oilseed crops in the period of 25 years. Considering this result, it can be stated that Konkan and Vidarbha regions are not comparatively important producers of major oilseed crops in the state. Therefore, the conclusion which stands is that the Western Maharashtra and Marathwada regions constitute the important producers of oilseed crops in Maharashtra. So persuasion of the policy so as to continue the low instability in yield with satisfactory growth in the Western Maharashtra will be in the interest of the oilseed crop economy of Maharashtra. Secondly, the yield instability in the Marathwada region has become a point of concern for the oilseed crop economy of Maharashtra. So, efforts must be undertaken to reduce the yield instability in oilseed crops in the Marathwada region. This, in turn, will help in having sustainable growth of the oilseed crop economy of Maharashtra.
High growth with low instability for total oilseed crops was observed in Pune and Sangli districts whereas high growth followed with high instability was noticed in Raigad, Ratnagiri, Ahmadnagar, Solapur, Aurangabad, Parbhani, Beed and Bhandara districts in the period of 25 years. This district level result of the analysis implies that the growth of oilseed crops in most of the important oilseed producing districts is satisfactory but it comes with high instability. So, for bettering the position, measures to reduce yield instability should be resorted to in the oilseed crop economy of Maharashtra.

Growth improving efforts are required in important oilseed producing districts such as Amravati and Yavatmal while instability reducing measures must be resorted to in Ahmadnagar, Solapur, Aurangabad, Parbhani, Beed, Bhandara, Osmanabad, Buldhana, Satara, Wardha and Nagpur districts. Growth improving and instability reducing measures should be simultaneously undertaken in Nasik, Dhule, Kolhapur, Nanded, Jalgaon, Akola and Chandrapur districts. These measures will improve the overall position of oilseed crops in Maharashtra.

Thirty three percent of the state area is drought prone which comes about 60 percent of the state's net sown area. The water table is declining fast as recharging is
comparatively less than the use in the state. The soil, topography and climate is not favourable for high value crops. Considering this background, the farmers of Maharashtra should shift to the cultivation of oilseed crops as these crops require very low to moderate initial investments and the returns are two to five times more in rainfed conditions and 3-12 times more in areas with assured irrigation.

The oilseed crop economy of Maharashtra may develop at a rapid rate if emphasis is given to the development of non-traditional oilseeds like soyabean and palm along with the traditional oilseed crops in the state. There is further scope to develop the oilseed economy by giving emphasis on tree oriented oilseeds. This effort not only will help in hiking oilseeds production but also will help in having afforestation to maintain ecological balance which is the need of the day.