CHAPTER 6

SUMMARY, CONCLUSION AND POLICY IMPLICATIONS

The results of the present study are summed up in the following paragraphs.

6.1 Summary:

1. Economic reform measures have mixed response on agricultural trade in the countries of the world. European Community and CIS countries have benefited by becoming net exporters of food grains from being the countries importing them. While countries like Cuba, Zimbabwe, Mali, New Zealand, Bangladesh, Sri Lanka, Indonesia and Vietnam had a beneficial effect of the liberalisation and globalisation policies on their agricultural economies, the countries like Kenya, Malawi, Australia and Philippines had an adverse effect on their agricultural economies.

2. Agricultural marketing policies and programme followed in different countries over the years have helped improve the agricultural marketing system. Particularly, they have helped in protecting the interests of the farmers against the organised groups. The policies followed by India since independence have greatly benefited in agricultural production enhancement, improvement of the marketing practices and provision of facilities at the primary wholesale markets level. But the activities performed by the APMCs in the changed circumstances and scenarios are found to be not satisfactory. There is a need for these bodies to review their working and reprioritise their activities according to the needs and requirements through necessary changes in government policies and programme.

3. The pattern of world agricultural trade is changing. The bulk commodity trade is decreasing. It was 43% of the total international agricultural
trade during 1980, which came down to 33% during 1991 and further down to 26% during 2003. The trade in processed and consumer-oriented products like, beverages, bakery products, meat, etc. are increasing. It has increased from 18% in 1980 to 28% in 1990 and further to 35% in 2003. The trade in semi-processed products (28% to 29%) and fresh horticultural products (10% to 13%) are, however, have not changed significantly. Exports of processed agricultural products grew 6 percent per year during the period 1981-2000, compared with 3.3 per cent for primary products. The rate of increase of processed products in total agricultural trade was 60 per cent during the period 1981-1990 and 66 percent during the period 1991-2000.

4. Increase in per capita income and urbanisation in developing countries have **increased the demand** for food grains at the rate of 2.2% per annum during the last two decades. Further, change in life style and food consumption habits have increased the demand for value added products and fresh fruits and vegetables.

5. The liberalisation and globalisation **policies adopted in India** did not benefit the agricultural sector directly. In fact, the overall growth rate of crop production declined from 3.72 per cent per annum between 1979-80 and 1989-90 to 2.29 per cent per annum during 1989-90 to 1999-2000 and productivity declined from 2.99 per cent per annum to 1.21 per cent per annum during this period. Export of agricultural commodities from India increased by 381 % and imports increased by 1232 % between 1990-91 and 1999-2000. Non basumati rice, fresh vegetables, processed vegetables and processed foods are added as major items of exports along with traditional items like basumati rice, tea, coffee, spices, cashew, oil meals and marine products. Similarly in case of imports cotton, vegetable oil, wood and wood products are added as major items of imports along with traditional items like pulses, raw cashewnut, fruits and nuts. However, the liberalisation policies are causing changes in agricultural production and marketing in India. The changing demand caused by increased per capita income as a result of positive impact of reforms on manufacturing and
service sectors has changed the cropping and marketing pattern of agricultural commodities.

6. Even though the actual spending on food has not decreased over the years, there has been a **fall in percentage of expenditure on food in India**. Average per capita consumption of all food grains has come down from 510.1 grams per year during 1991 to 417.0 grams per year during 2001. On the other hand, demand for fruits and vegetables, milk, meat, etc., has increased during this period.

7. The changed cropping and marketing pattern has brought in **changes in marketing of agricultural commodities in India**. The state control on marketing has decreased. The role of state agencies and parastatals in agricultural marketing is decreasing. New pattern of marketing i.e., marketing outside regulated markets, in place of traditional marketing through regulated markets, is emerging.

8. In **Karnataka state the cropping pattern is changing**. Food grains production ratio, which was 24.7 per cent of all the commodity types under study during 1978-79, came down to 16.3 per cent during 1989-90 and further down to 14.2 per cent during 1999-2000. Similarly the share of oilseeds decreased from 2.68 per cent during 1978-79 to 1.72 per cent during 1999-2000. The share of plantation crops under study also declined from 30.5 to 24.28 percent during this period. But the share of spices marginally went up from 0.28 to 0.3 per cent that of fruits from 0.3 to 1.82, vegetable from 1.36 to 2.63 per cent and other crop types from 40.1 to 55.05 per cent during 1978-79 to 1999-2000.

9. An analysis of the **percentage changes in the arrivals** of commodities in the 47 selected regulated markets in the selected 22 districts of the state reveals that there is an average of 143.13 per cent increase in arrivals in regulated markets over a period of 18 years taking into consideration the average arrivals from 1983-84 to 1986-87 to that of average arrivals of 2000-01 to 2004-
05. There is change in the quantity as well as the type of commodity marketed in these markets. The percentage of arrivals to regulated markets in production in the state varies from commodity types and between periods. In case of food grains the percentage of arrivals in production was 10 per cent during 1978-79, which increased to 25 per cent during 1989-90 and which further increased to 34 per cent during 1999-2000. In case of oilseeds the arrivals has come down from 43 per cent to 31 per cent and then went up to 35 per cent during this period. In case of spices it was 64 per cent, 155 per cent and 57 per cent during the said period. In case of plantation crops it was 16,18 and 24 per cent, in case of fruits it was 29, 24 and 14 per cent; in case of vegetables it was 62, 12 and 55 per cent and in case of others the ratio was 4 per cent during 1978-79 and 1989-90 and 1.47 per cent during 1999-2000.

10. The acreage under cultivation of fruits and vegetables increased by about 795 and 67 per cent respectively during the post reform period of 1989-90 to 1999-2000 in Karnataka state. The production of these commodities increased by about 141 and 191 per cent respectively during this period. The arrivals to regulated markets increased by about 47 per cent and 1189 per cent and values by about 366 per cent and 168 per cent respectively during this period. The arrivals and values of plantation crops increased by about 91 per cent and 433 per cent respectively during the post reform period. The acreage, production and arrivals of oilseeds show a decline of about 12 per cent, 14 per cent and 5 per cent respectively during the post reform period. The study, therefore, reveals a paradigm shift in favour of production and marketing of fruits and vegetables in the state.

11. Compared to pre reform period, spices, plantation and other commodity types show higher increase in the prices of commodities during the post reform period. The increase in the prices during the post reform period are 298.63 per cent for spices, 178.93 per cent for plantation and 2058.28 per cent for others, compared to pre-reform period increase in prices of 82.38 percent, 110.5 per cent and -68.47 per cent respectively. Other commodity
types, except vegetables the prices of which have declined (to -79.22 per cent compared to 2181.93 per cent), show lesser increase in prices during the post reform period compared to the pre reform period. The increase in prices of food grains during post reform period was 139.78 per cent compared to 175.82 per cent during the pre reform period, of oilseeds 81.14 per cent compared to 204.27 per cent and of fruits 215.82 per cent compared to 248.44 per cent during these periods.

12. Based on the changes in the prices and arrivals of commodities to APMCs the shift in agricultural marketing is measured for the state of Karnataka with the help of Fisher's Index taking 1978-79 as the base period. The study reveals that during the post reform period the change in all commodity types is 849 per cent compared to 183 per cent during the pre reform period. Significant shift has taken place in marketing of food grains (1326%), spices (989%), plantation (877%), fruits (820%) and others during the post reform period. Compared to the pre reform period, except vegetables, all other crop types reveal increased percentage points. This increase is due to increase in the quantity of arrivals to a certain extent and to increase in the normal price levels to a large extent. Since the analysis is based on the arrivals of commodities to markets and their value, (the latter is based on the prices), the study reveals that agricultural marketing was more dynamic during the 1990s compared to 1980s. This dynamism could be due to the economic reform measures initiated during the 1990s.

13. Shift in marketing has to be understood taking into consideration not any particular analysis but a combined result of all the analyses. In this regard the study reveals that even though the traditional crops like food grains, oil seeds, spices and plantation have a major influence in the market their influence is gradually coming down in the state especially after the post reform period. The ratio of food grain production in the total production has come down from 24.7 during 1978-79 to 16.3 during 1989-90 and 14.2 during 1999-2000. In case of oilseeds the figures are, 2.68, 3.2 and 1.72; for spices the figures are, 0.28, 0.12
and 0.3 and for plantation crops the figures are, 30.5, 27.1 and 24.28 respectively. It is fruits, vegetables and others, which are influencing the markets during the post reform period. The ratio of production of fruits has increased from 0.3 during 1978-79 to 1.21 during 1989-90 and further to 1.82 during 1999-2000. The ratios of production of vegetables for this period were, 1.36, 1.45 and 2.63 respectively. For others the figures are, 40.1, 50.7 and 55.05 respectively.

14. That the percentage of arrivals to production of all crop types during 1978-79, 1989-90 and 1999-2000 was about 12.14, 12.37 and 14.04 shows that the regulated markets have remained almost stagnant and not grown during the last two decades. The economic reforms did not have any significant impact on the working of these APMCs.

15. The t-test carried out regarding the performance of production of different commodity types in the study area reveals that during 1978-79 in the areas of 60 per cent of the APMC, during 1989-90 in the areas of 53 per cent of the APMCs and during 1999-2000 in the areas of 40 per cent of the APMCs the average performance is found to be significant. So there is a decreasing trend in the performance of production and it is not significant in majority of the APMCs during 1999-2000. This reveals that during the post reform period there is no significant change in the average performance of production of commodities.

16. The t-test carried out regarding the performance of APMCs in terms of arrivals of commodities revealed that during 1978-79, 47 per cent of APMCs, during 1989-90, 40 per cent of APMCs and during 1999-2000, 47 per cent of APMCs show significant mean performance. The performance of majority of APMCs in terms of arrivals is found to be insignificant in all the three periods. This reveals that the economic reforms have not made any significant impact on the performance of APMCs in attracting the arrivals of commodities to regulated markets.
17. In order to study the **comparative performance of production of commodity types** in APMC areas during pre and post reform periods **two tailed tests** was carried out. That test revealed that there were significant changes in average performance of production during pre reform period in 67 per cent of the APMC areas and during post reform period there was no significant change in the mean performance in any of the APMC areas.

18. In order to find out the **changes in variations in the production of commodity types** the **Levene F test** is carried out The test revealed that in 66.7 per cent of the APMC areas there was significant change in the variations of commodity type production during pre reform period whereas during the post reform period this is found to be significant in 40 per cent of the APMC areas. The study reveals that even though there is variation in the cropping pattern after the reform period this variation is not significant.

19. The **two tailed test** carried out to find out the **changes in mean performance** of APMCs revealed that during the pre reform period the changes in average performance of APMCs were significant in 60 % of the APMCs, whereas during the post reform period the changes in performance were significant in 33.3 % of the APMCs. Economic reforms have not made any significant impact in improving the performance of majority of the APMCs in terms of attracting arrivals to the regulated markets.

20. The **Levene F test** carried out to find out the **changes in the variations in arrivals of different commodity types** to APMCs reveals that before the reform period the changes in variations were significant in 60 % of the APMCs, whereas during the post reform period it was significant in 33.3 % of the APMCs. There is no significant change in the variations of the commodities sold through the majority of the regulated markets after the reform period.
21. Significant changes both in respect of production and arrivals of commodity types were found in 26.6% of APMC areas during pre reform period and 13.3% of APMC areas during the post reform period.

22. The performance of most of the APMCs mainly depends upon the arrivals of food grains. However, apart from food grains, in Bangalore Rural and Kolar districts it is fruits and vegetables and in Raichur district it is oilseeds and others mainly cotton which mainly influence the performance of the APMCs.

23. In order to find out the changes in average performance in production of different commodity types in all the three districts put together, the t-test was carried out. The results reveal that the changes in the average performance were significant in case of fruits, others and spices during pre reform period and the changes were significant in case of food grains, fruits and others during the post reform period.

24. In order to find out the changes in variations in the production of different commodity types in all the three districts put together the Levene-F test was carried out. The results reveal that during the pre reform period the changes in variations of commodity types were significant in case of fruits, oilseeds, others, spices and vegetables and during the post reform period the changes were significant in case of food grains, fruits, oilseeds, others, spices and vegetables. This reveals that the reform measures have brought in changes in the cropping pattern by considerably reducing food grains, oilseeds and spices production but increasing the production of fruits, vegetables and other crops.

25. The t-test carried out to find out the changes in the mean performance of arrivals in different commodity types reveals that during the pre reform period the changes were significant in case of fruits only and during the post reform period the changes in mean performance was not significant in any of the commodity types. This means that reform measures have not brought any significant changes in the performance of arrivals of commodities in regulated markets.
26. The **Levene F test** carried out to find out the **changes in variations in arrivals of different commodity types** reveals that during the pre reform period the changes were significant in case of food grains, fruits, plantation, spices and vegetables. During the post reform period it was significant in case of food grains, fruits, plantation and vegetables. This reveals that the pattern of arrivals of commodity types have changed after the reform period. Arrivals of crop types like fruits and vegetables have increased along with traditional crops like food grains and plantation.

27. In order to find out the **comparative changes in district wise performance of production and arrivals t - test** was attempted. The study revealed that during the pre reform period the changes in the performance of average production were significant in case of Kolar and Raichur districts and during the post reform period it was significant in case of Raichur district only. The changes in average performance of arrivals revealed that during the pre reform period the changes were found to be significant in all the three districts, whereas during the post reform period it were found to be significant in Bangalore Rural and Kolar districts. This reveals that Bangalore Rural and Kolar districts which are proximal to the fast developing city of Bangalore have shown improvement in the performance of in terms of arrivals to notified commodities to regulated markets. In case of Raichur district the significant changes in the performance of production is not reflected in the performance in terms of arrivals to regulated markets.

28. The **opinion survey** conducted among the sample farmers in the study area revealed that the **cultivation** of food grains was reduced by 5.97 %, oilseeds by 4.22 %, and others by 2.45 % during the post reform period compared to pre reform period. On the other hand the cultivation of fruits was increased by 4.66 %, plantation by 4.35 %, spices by 0.71 % and vegetables by 2.92 %.
29. The opinion survey of sample farmers regarding the changes in the preferred market places revealed that during the post reform period the sales in villages came down by 6.74 %, in mills came down by 9.20 % and other places came down by 5.45 %. On the other hand, the sales in markets outside APMC increased by 6.42 %, in APMC increased by 10.12 % and sales in co-operatives increased by 4.85 %.

6.2 Conclusion:

The following conclusions are drawn based on the present study.

1. Economic reforms and liberalisation and globalisation policies have brought improvement in the agricultural sector in many countries of the world. But sudden opening up of the economy without bringing necessary structural adjustments and without building a strong internal foundation can prove detrimental for the growth of agricultural sector in any country.

2. The agricultural production and marketing activities have to be integrated with national and international activities so as to get the benefits of liberalised trade. Further, they should change with the change in demand pattern.

3. The Indian agricultural sector could not derive the benefits of liberalised trade. This is due to the fact that required reform measures were not taken up in agricultural production and marketing fields.

4. In Karnataka state the agricultural production has not changed significantly over the last two decades. But a change in cropping pattern from traditional crops like food grains, oilseeds, spices to horticultural crops like fruits, vegetables crops has taken place during this period especially during post reform period.

5. Reforms lead to change in agricultural marketing pattern from traditional channel to non-traditional channel as revealed in the study. The increased
production of fruits and vegetables after the post reform period has not reflected significantly on the arrivals in the regulated markets. On the other hand the farmers have found either terminal markets or processing centres or selling at farm or near farm more beneficial.

6. The performance of APMC\s have remained stagnant and have not improved significantly during the last two decades as the study reveals that they are handling nearly 12 to 15 percent of production of commodities since last two decades.

7. The APMC performance does not depend upon the production of crops in the area since there is no correlation in the pattern of production and marketing.

8. The APMC performance was better during pre reform period compared to post reform period.

9. Provision of required infrastructure facilities and fair marketing practices would attract the farmers to the trading centres.

6.3 Policy Implications:

The present study reveals that economic reform measures have brought in certain changes in the cropping and marketing pattern of agricultural commodities in India. The present system of institutional arrangement of marketing through regulated markets is inadequate to meet the emerging challenges. The drivers of change in agricultural and food marketing like, industrialisation of agricultural production and marketing and changes in government philosophy have created the need for new agricultural marketing policy. Since the present study involves the marketing of agricultural commodities at the primary markets level where farmer is involved certain policy changes to be brought in to improve the agricultural marketing system are suggested in the following paragraphs.
Necessary policies and programme to strengthen the internal system of agricultural marketing are to be initiated to improve the agricultural production and marketing system and to bring in necessary structural changes so as to integrate with the international marketing activities. Further the agricultural policy shall always include the marketing policy and these shall not be framed in isolation but to be considered as a part of the over all economic, monetary, fiscal and trade policy of the country.

Activities of the Agricultural Produce Market Committees are to be reviewed and appropriate changes are to be brought in by properly identifying the priority areas. Necessary amendments to the Agricultural Produce Marketing Acts are to be brought in to suit the liberalised and global trade policies. Activities like quality testing, processing and value addition, packaging, cleaning, grading, sorting, marketing extension, transport, storage, etc., on their own or in partnership with private or co-operative ventures, shall become the priorities of APMCs. Information and modern technology shall be applied in various marketing activities such as, mechanical handling, electronic tendering or auctioning, modified or controlled atmosphere storage and packaging, mechanical grading and processing, etc.

Appropriate policies with encouragement to private participation in market infrastructure development, including new foreign direct investments are to be evolved and implemented.

Suitable infrastructure with pack houses to be developed near the village or farm centres to take up post harvest operations like cleaning, grading, sorting, drying, quality testing, packing, storing and such other value addition activities. The private entrepreneurs and co-operatives are to be encouraged to invest in these areas and special incentives are to be announced to such persons or organisations to take up these activities.
Appropriate policy measures are to be taken to produce and market more of **value added products** according to the trend in the international and national markets. Farmers groups, self-help groups, farmers co-operatives, private entrepreneurs are to be given **incentives** by the governments to take up value addition of these commodities.

**Private investments** are to be encouraged in the field of market infrastructure like, establishment of quality testing laboratories, pack houses, processing units to take up value addition activities, construction of truck terminals, railway stations, ports and airports.

**Public-Private and Public-Co operative** venture investments are to be taken up in the field of marketing infrastructure including construction of roads, ports, mechanical handling of commodities, establishment of market centres, cool chain system, etc.

Marketing through farmers co-operatives, associations, self-help groups, unions, etc., are to be encouraged through **incentives like tax concessions, easy credit, provision of land**, etc. This is essential because the small and marginal farmers are to be given an opportunity to take up marketing activities on an economy of scale and shall compete with private enterprises. Necessary policies to be framed to establish and strengthen vertical and horizontal linkages among producer groups, grass-roots institutions, processors, local marketing chain and exporters.