CHAPTER - IX

SUMMARY AND SUGGESTIONS

The present chapter is divided into two sections. Section I contains a brief summary of the main findings of the previous chapters. In Section II certain policy suggestions are made for the development of agriculture in the selected region in particular and in Karnataka in general.

SECTION - I

Introductory chapter deals with statement of the problem including research methodology and a review of literature. Though a number of studies have been made to investigate into the problem of modernization of agriculture in India, due to limited nature of their objectives and approach they have not been able to probe deep into various problems that the farmers confront in the process of change over from traditional farming to modern improved farming. Hence to make good this lacuna, the present study was undertaken. For gaining a proper perspective of the problem in all its dimensions it was decided to collect both primary and secondary data. While the primary data were collected from actual discussion with the farmers with the help of interview schedule, the secondary data were collected from the Government publications and Government agencies and
other relevant literature and records. Two representative talukas (Saundatti and Navalagund) in the Malaprabha Command Area were selected for the study. With a view to gaining a comparative picture all the villages of these two talukas were classified into two main categories namely 'advanced' and 'backward' on the basis of availability or non-availability of infrastructural facilities like dependable transportation, availability of extension and education facilities, health centres, etc. From each of these categories, four villages (two advanced and two backward villages from each taluka) were selected for the study amounting to eight villages in all. All the farm families in these selected villages were listed according to the size of their land holdings. Afterwards ten farm families belonging to each of the three size groups (small, medium and big) from each village were selected on the basis of random sampling. Thus, in all a total of 240 farm families were covered for the purpose of collecting primary data for the present study.

Chapter Two analyses the role of agriculture in economic development. Three important contributions by way of factor utilization, product contribution and market diversification need to be highlighted in this context. There is no gain-saying the fact that agriculture plays a crucial role in the Indian economy. Fluctuations in the agricultural production have their immediate impact on the general economy of India. This fact is evident, for instance, in the year
1965-66. During that year the index number of national income dipped from 120.1 in 1964-65 to 115.3 in 1965-66, despite the increasing income in mining and large scale manufacturing sectors. This was mainly because of decrease in the index number of income from agriculture. In view of the fact that even to this day 70 per cent of Indians live on agriculture, this indicates that for many more years to come, agriculture in India will hold a powerful sway on the entire economy.

Karnataka is no exception to this general rule. Like other states in India, in Karnataka also, agriculture constitutes the backbone of the economy. It accounts for about 65 per cent of the total employment and contributes about 51 per cent of the net state domestic product of the State's economy.

Agricultural development programmes implemented in selected Asian countries and in India have been assessed in Chapter III. It is observed that the success of Japanese agriculture has been mainly due to increased use of chemical fertilizers, adoption of selective breedings, use of pesticides on a large scale, improved agricultural practices and rational methods of crop production. The innovative and intensive use of indigenous technologies is also one of the important factors responsible for the acceleration in the growth. It is interesting to note that the human capital is also greatly responsible for the development of agriculture.
Naturally among others, massive investment on social overheads is responsible for the growth of Japanese agriculture.

Similarly, it is observed that the factors which contributed to the development of farm sector in Taiwan have been extensive use of farm land, increased use of chemical fertilizers, adoption of new HYV strains like "Ponlai Paddy" and use of pesticides, the Government encouragement of the multiple and rotational cropping through development of irrigational facilities. Besides, research and extension facilities have also been extended to the farming communities.

For stimulating agricultural production and raising the living standards of agricultural families it is imperative that prices of agricultural inputs be fixed favourably relative to prices of agricultural output through proper price policies. This was done in Japan and Taiwan. Efficient infrastructure facilities like education, extension, training marketing, financial institutions, transportation etc., were developed in Japan and Taiwan in the early years of agricultural development. In India, however even today, after 35 years of planned programmes, some of the above said programmes are not developed on sound and satisfactory lines. For example, in India, hardly 27.4 per cent of the net cropped area is under irrigation whereas in Japan and Taiwan, it accounts for more than 60 per cent of the net cropped area.
In Chapter IV, an attempt is made to assess the Agricultural Development Programmes in Karnataka. The Agricultural Development Programmes, during First Three Five Year Plans, were mainly carried out through the Community Development Programme. Attention was paid for bringing more area under the plough and its development. Research work, extension facility, demonstration and training programmes were at a low ebb and progress made in this direction was not satisfactory. Improved seeds and chemical fertilizers were used and popularised only in irrigated pockets and dry land regions were left out.

However, the commencement of the Three Annual Plans (1965-67, 1967-68 and 1968-69) marked a shift in the emphasis of agricultural development programmes. Thereafter top priority was given for the introduction of new agricultural technologies like HYV seeds, chemical fertilizers, pesticides, improved tools and implements etc. Realising the importance of extension machinery to carry these new technologies to the rural areas, the Government not only took laudable measures to strengthen the extension machinery but also initiated measures to encourage research activities aimed at improvement of effective hybrid variety of seeds and other inputs like fertilizers, pesticides, implements etc. Care was also taken to see that quality of the inputs was maintained at a desirable level. Another note worthy shift
during this period was the encompassment of dry areas within the purview of agricultural development.

Laudable though they were, these progressive measures left much to be desired in bringing about the expected change as compared to the revolutionary agricultural changes introduced in states like Punjab.

The factors influencing agricultural productivity have been studied in the Chapter V. Various studies undertaken to identify the factors influencing agricultural productivity have come to the conclusion that the main factors are: (1) HYV seeds, (2) Chemical fertilizers, (3) Irrigation, (4) Pesticides, (5) Rainfall, (6) Improved tools and implements, (7) Cropping intensity, and (8) Price and other economic incentives. With a view to examining whether it holds good in the case of agricultural productivity in the Malaprabha Command Area primary data collected from the 240 cases of our sample were analysed by applying the Multiple Regression Models. Our findings reveal that though the above mentioned factors do play a decisive role in influencing agricultural productivity, the three components namely HYV seeds, Chemical fertilizers and Irrigation facilities are crucial in affecting agricultural productivity in the Command Area. Another significant fact that emerged out of the analysis of data is that there is inverse relationship between the farm size and the productivity.
In Chapter VI efforts are made to study the trends in the utilization of water by farmers and various problems connected with irrigation facilities in the agricultural economy of Karnataka. As compared to the pre-independence period, significant strides are made in Karnataka in the development of irrigational facilities. The State Government has not only invested sizable funds in the development of major and medium irrigational networks throughout the state, but has also advanced considerable financial help to the farmers to purchase the necessary equipments to make use of the irrigational facilities. But surprisingly, despite these laudable measures of the Government, the progress made in this direction is far from satisfactory. There are various reasons for this tardy progress such as under-utilization of water resources, regional disparity in the development of irrigation facility, faulty energisation of pumpsets, negligence of minor irrigation schemes, lack of land levelling and land shaping, water-logging and salinity, maintenance of the main canals, tail enders problems etc.

In order to examine the various problems faced by the farmers in the Malaprabha Command Area, efforts were made to collect information on these issues. The findings show that the farmers are facing several problems such as variations in the use of strategic inputs among different size groups of farmers, non-adoption of recommended doses of water for
crops, variations in the adoption of recommended doses of water between advanced and backward villages and among different size groups of farmers, land levelling, lack of maintenance of the field canals, silt and weed, irregularity of the officials, tail-enders problems and the problems of water-logging.

In Chapter VII the use of High Yielding Variety seeds and their related problems in the agricultural sector of Karnataka are discussed in detail.

A review of the problem faced by the farmers in using the HYV seeds in Karnataka reveals many facets. Over a period of 13 years i.e., from 1966-67 to 1978-79 area under major HYV seeds has considerably increased in the state. But the increase is not uniform. It is seen that Jawar has taken a lion's share and maize is left with the minimal portion. Fluctuations are also observed from year to year in this context. Another notable factor is that the local traditional crops have taken a lead over the HYV seeds in the cultivated area. Further, among the HYV seeds, wheat accounts for 77 per cent of total area. Some of the major problems faced by the farmers all over the state with regard to use of HYV seeds are shortage of supply of certified seeds, adulteration, paucity of distribution centres, non-availability of adequate amount of credit etc.
In the Malaprabha Command Area, the adoption of HYV seeds has significantly brought out the chasm between the advanced and the backward villages. While the commercial crops dominate in the advanced villages it is the food crops that are important in the backward villages. Whereas co-operative banks are playing a laudable role in financing agriculture in the advanced villages, the backward villages are still in the strangle hold of the private agencies.

Though the general problems connected with the introduction of HYV seeds such as adulteration, inflated prices, artificial scarcity are faced by the farmers both in the advanced and backward villages, the severity is more pronounced in the latter than in the former. And among the farmers, the medium and small farmers are easier victims of this human avarice than the big farmers.

The trends in the use of chemical fertilizers and other associated problems have been studied in Chapter VIII. A study of trend in the use of chemical fertilizers tells more or less the same story. The use of chemical fertilizers over a period of 20 years i.e., from 1961-62 to 1980-81 all over the state has shown a twelve fold increase. But as in the case of HYV seeds the use of chemical fertilizers is not uniform in all the districts of the State. While some districts have been prompt in switching over from the traditional manures to the chemical fertilizers, others have not evinced the same zeal.
In the Malaprabha Command Area it is again the advanced villages which are setting the pace. The farmers in the advanced villages who have taken to growing cash crops are the main consumers of chemical fertilizers, whereas the farmers in the backward villages who still continue with the food crops depend mainly on the traditional manures. However, the per acre consumption of chemical fertilizers is more among the small farmers than among the medium and big farmers both in the advanced and backward villages. This is true even taking into consideration the fact that a large number of small farmers never use the chemical fertilizers. Important causes for such non-adoption are non-availability of adequate fertilizers, adulteration and scarcity in their supply, exploitation by the traders, non-availability of sufficient credit, absence of soil testing, inadequate transportation and extension facilities, wrong use of fertilizers, non-adoption of recommended doses of fertilizers etc. These problems are more acute in the backward villages than in the advanced ones. Farmers in both the advanced and backward villages were unanimous in their opinion that credit, soil testing, extension and other Government facilities needed streamlining. However, the outcry was more severe in the backward villages than in the advanced ones and it reached its crescendo among the small farmers in the backward villages.
SECTION - II

The advocates of modernization of agriculture in India have always felt that the main barrier for Indian agricultural growth has been technical and not institutional. Therefore, they have emphasized that the overriding concern in India is an enhancement of agricultural production and mobilization of agricultural resources and nothing else. The new technology with its great emphasis on mechanization and modernization of agriculture will help to increase output and employment.

In Karnataka, in the year 1978, the State Department of Agriculture was re-organized and a new system of extension called 'Training and Visit System' was launched with the assistance of the World Bank. Under the new set-up a good delivery system was created to transfer technology to the farming community through a single line of command with the main objective of motivating the farmers to adopt improved agricultural practices to step up production and to generate surplus in places and among farmers where conditions are favourable. Naturally therefore priority was given to farm family approach.

Looking to the performance of this approach so far, we can say that though it has brought about salutary changes in the farm sector, it is not free from defects. The major defect of this approach is that it tends to widen the gap
between the advanced and backward villages on the one hand, and between the rich and poor farmers on the other. This has led to a considerable frustration among the farmers of the backward villages and the small farmers. Especially the farmers in the backward villages were very vocal in expressing their resentment. They complained that in the absence of infrastructure facilities they were subjected to considerable suffering and stepmotherly treatment meted out to them by the developmental agencies had only added to their suffering. Indeed they felt that victims of the circumstances that they are, their problems ought to have been given the top priority in the developmental activities.

The small farmers also have had a similar complaint against the *modus operandi* of the Government. Many have complained that unfair practices were resorted to by the Government agencies right from the time of identifying farmers as contact farmers till the distribution of agricultural aids. Added to this there was a problem of incorrigible corruption. Agricultural aids like free HYV seeds, fertilizers etc., never reached the people for whom they were meant.

Thus the farm family approach threatens to widen the gap between the advanced and backward villages. In view of this fact corrective measures to overcome this problem need to be initiated at the earliest. One suggestion may be made here to tackle this problem. That is, while distributing the
agricultural aids and spreading the new technology, proper care has to be taken to see that they are not cornered by the advanced villages and the rich farmers. Specific instructions are to be necessarily given to the village level workers and other officers to see that due share reaches the backward villages and the small farmers.

In view of the gravity of the problems mentioned above an humble attempt is made in the following paragraphs to make certain concrete suggestions to tackle these and other host of problems.

1. **Selection of the 'Contact' Farmers:**

   The fact that the contact farmers enjoy certain privileges in the distribution of agricultural aids, has led farmers to resort to unfair methods for inclusion in that category. Therefore there is need for streamlining the method of selection so that not only the so-called "progressive" farmers are selected but also the poor farmers whose needs are more acute than the former are also included in the category.

2. **Extension Facilities:**

   Providing extension facilities in the advanced villages is no great achievement at all. What is required is that these extension facilities must first reach the backward villages. The success or failure of extension workers has to be judged
not on how much work they have done in the advanced villages but how much succour they have brought to the backward villages where farmers are groaning under poverty. Therefore it is suggested that immediate steps have to be taken to shift the emphasis of providing extension facilities from advanced to backward villages. In the course of the study, it was found that the extension workers were not adequately equipped with sufficient knowledge and training to perform their extension duties effectively. There are several cases where the gullible farmers had to sustain considerable loss and undergo great suffering because of the wrong advice of the extension workers. Therefore it is suggested that regular refresher courses be conducted by experts for these extension workers to update their knowledge in the field.

3. Transportation:

In the ultimate analysis one major factor that has rendered the villages backward and has been the root cause of all their problems is the lack of means of communication and transport. Most of the backward villages are backward because they do not have good and all weather motorable roads that link them with the world outside. As a result the villages are not only cut off from the main stream of economic development but also feel psychologically isolated from others. Experiences of the farmers in these isolated villages as to how they lost precious fertilizers due to unexpected down-pour
while they were carrying their goods home, total isolation when the villages were marooned by torrential rains and erratic rivers and streams, loss they suffered for not being able to reach their produce to market in right time, are heart breaking. Therefore, it is suggested that topmost priority should be given to improve the transportation network and link all such villages with motorable road.

4. Credit:

At the cultivators level, the transition from backward to modern agriculture involves increasing use of modern inputs. As these are produced in the non-farm sector, cultivators are required to purchase them. Unfortunately, these input-prices have considerably increased without a matching increase in the incomes of the farmers. Therefore, a large number of farmers, particularly in the backward villages, are in need of credit for purchasing of modern inputs. This problem is more acute among the small farmers both in the advanced and backward villages. The integrated credit system which is presently in vogue has not been effective. Therefore, it is suggested that the banking institutions be urged to gear up their credit policies to tackle this problem.

5. Strengthening of Co-operatives:

It is observed that co-operatives are either defunct or functioning ineffectively in the backward villages. As a result the backward villages have come under the hold of
private money lenders. Though there is nothing inherently wrong with these agencies they have a tendency to exploit the farmers. Therefore, in order to discourage them from such exploitation, co-operative societies need to be strengthened and special efforts be made to see that they cater to the needs of farmers in the villages. There is no gainsaying the fact that the present co-operative laws which insist on security for extending of credit facilities have an in-built bias against small farmers who are seldom the beneficiaries of these credit facilities. Therefore, it is felt that promot measures have to be designed to modify the laws so that the poor farmers can also derive the benefit from them.

6. **Strict Measures:**

It is pointed out in this study that farmers are facing problems like adulteration, artificial scarcity, non-availability of certified seeds, excess prices etc. Though the Essential Commodity Act, and Seed Act have been passed with the intention of curbing such irregular and unfair practices, the implementation of these laws is far from satisfactory. Therefore, it is suggested that stringent measures be taken against those who indulge in such malpractices so that the poor farmers do not groan under these hardships any more.
7. **On-Farm Development Measures:**

Modernization of agriculture not only calls for efficient transportation, credit and extension but also the development of 'on-farm' activities. It was observed in the present study, that on-farm development activities in the advanced villages are quite satisfactory and the farmers in these villages apply water efficiently and timely under the guidance and supervision of experts. But on-farm development activities are conspicuous by their absence in the backward villages. As a result, scientific water management is unheard of in these areas.

Therefore, it is suggested that on-farm development activities like land-levelling, soil conservation, bunding etc., need to be implemented expeditiously in the backward villages. It is well known that the primary step for the extension of irrigation facilities is land-levelling. Land levelling is a kind of operation which has to be taken up on area basis and not on individual farm basis. In view of this fact the Government is expected to devise ways and means of persuading all the farmers in a particular area to join hands in taking up such developmental activities. One of the ways for achieving this would be, not to grant land levelling loans on individual basis but on the basis of a village or an area.
8. Construction of Impregnable Canals:

It is found from this study that the Malaprabha Command Area is lacking in permanent and impregnable canals main and sub. As a result farmers are facing problems of seepage, water-logging, salinity, scarcity of water etc. In order to solve these problems, Government has to give first priority for the construction of permanently impregnable canals.

9. Problems of Tail-Enders:

It is found from the present study that the farmers in the tail-end regions are subjected to a specific problem such as failure to receive sufficient water in time. This has resulted in the high incidence of crop failure. It has led to raising of inferior crops leave apart more than one crop. This has brought in its wake a wide disparity in the income of the farmers in the areas nearby the dam and those particularly in the tail-end regions. Though a number of corrective measures are taken by the officers to mitigate the problems of tail-enders, such measures have not yielded much results mainly because of the non co-operation of the beneficiary farmers. In view of this it is suggested that such farmers have to be motivated to co-operate with the Government in this regard. Yet another solution for this problem is sinking of wells and taking up other minor irrigation programmes. Though this suggestion is expensive it does deserve a serious consideration.
10. **Creation of More Irrigation Facilities:**

The fillip that irrigation facilities are giving to increase agricultural production, cannot be exaggerated. In Karnataka, it is found, for instance, that the per acre output of the farmers in the irrigated belts is 5 times that of the farmers in non-irrigated areas. Despite this fact, unfortunately, sufficient measures are not taken by the Government to increase the irrigation network in Karnataka. As a result, many of the water resources such as rivers, streams, tanks are yet remaining unharvested. This is indeed a serious lapse. Therefore, it is strongly felt that nothing should come in the way of taking up the work of developing an efficient irrigation network on war footing all over Karnataka.

11. **Land Reform Measures:**

The Multiple Regression Analysis of various factors influencing agricultural productivity as has been done in the present study reveal that there is an inverse relationship between farm size and productivity. Therefore, it is suggested that bigger size of land holdings be discouraged by implementing effectively the land reform measures.

12. **Distribution of Modern Inputs:**

Another major hurdle faced by the farmers is inadequate supply of HYV Seeds, chemical fertilizers, and other inputs. There are several bottlenecks at various stages which
hamper the steady supply of these inputs to the farmers. Therefore, care has to be taken to see that such bottlenecks are removed by channelising these inputs through the agricultural departments and other Government agencies.

In brief, the Malaprabha Command Area Development Authority has to intensify its activities of various dimensions and directions in a well-knit and co-ordinated manner. The Government of Karnataka need to allocate sufficient funds for its effective functioning. In addition, the Integrated Rural Development Programmes needs to be pursued vigorously and has to be synchronised with the programmes of MCAD authority so as to promote agricultural development in the concerned regions.