At this stage we are in a position to present the summary of the foregoing discussion, the main findings of the study, and the policy implications too. In our effort to analyse the agricultural infrastructure in Kerala delineating the four components viz. Land Reforms, Irrigation, Marketing, and Research, we have reached the conclusion that a weak and insufficient infrastructure existed during the study period although the need for a strong and extended one in all the above four components was substantial. The importance and role of infrastructure in agricultural development are theoretically established in Chapter II. Hence it flows out that the inadequacy in the agricultural infrastructure in Kerala has crippled the agricultural development programme in the state.

The five year plans have been formulated in the state as also in India, in order to accelerate the pace of development. Under a definite policy of agricultural development, programmes for the implementation of the policy have been drawn up. But even though the plan periods have passed comfortably, the targets set there in could
not be reached. "The targets constitute a minimum which must be assured, but their true purpose is to open the way to a still more intensive endeavour and deeper sense of urgency."¹ So the evaluation of any programme or project in the plan may in one way be made by comparing the targets set and the achievements made. It may sometimes be commented that the targets set in the plans are either large or ambitious, but these comments are untenable because the targets are "large only in comparison with the past, not in relation to needs or to the nation's capacity to achieve."²

The important crops in Kerala are paddy, coconut, tapioca, pepper, banana and plantains, arecanut and cashew-nut, which dominate the cropping pattern by the area occupied by them and by the percentage contribution to the total value of output. In an analysis of the area effect and yield effect on increase in production, we find that the increase in production was largely due to area effect in the case of many of the crops rather than yield effect. This suggests

¹. Government of India, Third Five Year Plan, p.xiv
². ibid. p. xiv
the importance of increasing productivity. But productivity could not increase due to the absence of any large scale effort to modernize agriculture. The majority of farmers are small and poor with less than one acre of land. Inspite of the attraction to improve productivity with the rising prices for farm products, innovation has been less because of increasing cultivation costs.

The cost of cultivation can be reduced to an extent by improved infrastructural facilities. In our analysis of land reforms in the state as an important component of agricultural infrastructure we have observed that even as late as 1971, the land reform measures could not bring necessary changes in the agricultural sector. This is because, in a situation of complex and enormous tenancy relations, even the basic requirement of abolition of intermediaries was possible only in 1972 by the passing of Land Reforms(Amendment) Act, 1972. Though ceiling legislations have been passed, the land rendered surplus could not be distributed as yet. The hesitant legislations, inefficiencies in implementation and frequent changes in reform laws all have diluted the measures taken for a change in the agrarian structure.
An analysis of irrigation and other allied services like soil conservation, flood controls and waterlogging is also attempted. The analysis has disproved the misconception that irrigation is not a problem in the state. The uncertainty of rains in adequate quantities have caused crop failure through frequent floods and droughts. The irrigation, if provided adequately, can more than double the yields of crops like coconut, sugarcane etc which would bring high income to farmers. Already Kerala ranks first in the net return from investment in irrigation among all the Indian states. But the percentage of area irrigated of non-food crops of all crops irrigated was only 8.60% in 1971-72 which actually had declined from 11.3% in 1955-56. Soil conservation is another problem which had remained without proper attention. Only 7.3% of the total estimated area is conserved till the end of Fourth Five Year Plan. Thus the analysis unravels the inadequacy of irrigation measures in the state.

Improved agricultural marketing facilities in the state seems to be highly essential. The costs and losses involved in the present processing, storage, transport and marketing can be reduced to a great extent if these facilities are adequately improved thereby helping the
farmers to fetch a higher price for their products. Even as late as the end of Fourth Five Year Plan, out of a number of 56 important markets, the number of regulated markets were only 6 and the state ranks at the bottom among all the states in India, in the matter of coverage of area by regulated markets. Again, cooperative marketing, processing and storage, and warehousing facilities are not sufficient to influence the farm sector. In this matter the cash crops are the worst hit. Proper grading facilities are also absent. In view of the fact that the marketing facilities can be improved only in the presence of all weather rural roads, the analysis brings to light that the conditions of rural roads too are pitiable and according to the minimum needs programme the construction of a new network of 3,000 kms. of rural roads are yet to be started in the Fifth Plan period.

Inspite of the existence of 8 research stations, many of the important crops have not received adequate attention in research and for those for which much research has been undertaken, the efforts have not been able to provide a 'Suitable', 'Profitable' and 'Dependable' technology for the farmers. Thus paddy and tapioca are the two crops on which considerable research has been undergone. But researches have made little progress in the case of
crops like coconut, cashewnut, pepper etc. Because of the long gestation period involved in the researches on these crops, steps should have been taken for research much earlier. Among the major reasons for the neglect of research, scarce allocation of resources, belated establishment of research stations, and the relatively low significance to research until a decade ago can be pinpointed. The establishment of an agricultural university too has come as late as 1971 only. Plant protection activities too are to be spread to a large extent and crop loss has been recorded due to plant diseases.

Thus the overall analysis bears out the fact that the agricultural infrastructure in Kerala is weak and inadequate. Hence the following policy prescription is suggested in the context of agricultural development in the state:

1. The above discussed factors should be accepted as agricultural infrastructure for agricultural development in the state,
2. The investment should be selective and priorities should be given to the important crops in a policy of developing individual crops,
3. Agricultural marketing facilities should be modernized by more regulated markets, cooperative
marketing societies for sales and purchases, storage and warehousing, processing and the early completion of the construction of rural roads.

4. Agricultural research on cash crops should be given emphasis to provide a 'suitable', 'profitable' and 'dependable' technology,

5. Irrigation network should be expanded to include the non-food cash crops also under it, 

6. Land reforms should be implemented in their entirety removing the remaining impediments and consolidation of fragmented holdings should be undertaken immediately, and 

7. Urgent measures on pest control, soil conservation, and flood control should be undertaken which otherwise would hamper agricultural production considerably.

Agricultural backwardness of the state seems, thus, to be due to the insufficient development of the agricultural infrastructure. Both in qualitative and quantitative sense, agricultural development can be considerably attained if bold and imaginative measures are introduced to eliminate the obstacles.