

# **irrigation and power development**

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Undeterred by all attempts and plots aimed at overthrow of their rule, the Communists, confident of the support of the masses of the State, continued their efforts to redeem their election pledges to the people. Of all the political parties in the State, only the Communist Party had formulated an outline programme for building the economy of Kerala.

The Kerala conference convened by the Party in June 1956, and later the election manifesto of the State Committee had pointed out that, of all natural resources that Kerala has, its rivers rank first and foremost. There are as many as 26 rivers in the State, each of which is capable of being developed for power, irrigation, navigation and other purposes. The State Committee's election manifesto had said that if voted to power, the Communist government would 'conduct a detailed survey and prepare a plan of irrigation and hydro-electric power generation for fully and properly utilising the water resources of all the rivers in Kerala State.'

Before the first five year plan there was no major irrigation scheme in the State. It was estimated that some 7,44,000 acres were irrigated by means of canals, tanks, wells, etc., out of a net cultivated area of 43 lac acres. During the first five year plan, eight major irrigation projects were taken up at an estimated cost of Rs. 14.47 crores to cater to the needs of a total area of 2.81 lac acres of paddy fields. These are the Malampuzha project, Walayar reservoir project, Mangalam reservoir scheme, Peechi scheme, Chalakudy (first stage) scheme, Vazhani scheme, Kuttanad (Thottappally) scheme, and the Neyyar (first stage) scheme. None of these schemes, however, were completed during the first

plan period, largely due to governmental instability, though there were some other reasons also. A sum of Rs. 10.41 crores out of the targetted expenditure of Rs. 14.47 crores was spent in the first plan period. After States reorganisation certain extensions and improvements were found possible and the revised estimated cost for these projects is Rs. 16.66 crores and the revised estimate of the area benefiting from them is 3.24 lac acres. The Communist ministry has given special attention to the completion of these projects and they are expected to be completed long before the end of the second five year plan period.

In addition to these projects, three new projects, namely, Meenkara, Cheerakuzhi and Periyar valley to irrigate 72,960 acres and estimated to cost Rs. 4.52 crores were included in the second five year plan, with an additional allotment of Rs. 3 crores. Later on, due to the efforts of the Communist ministry, three more projects, viz., Kattampalli, Pothundy and Thanneermukkom salt water barrier with an additional allotment of Rs. 171 lacs have been included in the Plan.

Thus, there are in all 14 major irrigation schemes in the State today in various stages of progress, costing Rs. 24 crores and benefiting 4.1 lac acres of land.

As pointed out earlier, there is tremendous scope for irrigation in Kerala. The total area available for paddy cultivation is roughly 25 lac acres. Out of this, 19.54 lac acres are actually cultivated and 8.11 lac acres actually irrigated. There is scope for irrigating a very large portion of the cultivable area by some kind of artificial irrigation, which will enable two or even three crops being taken on these lands and which will also facilitate intensive cultivation. The present output of rice is 8.92 lac tons and the deficit is of the order of 7 lac tons. The Communist ministry has, after careful study, taken the stand that the production can easily be doubled, not only wiping out the deficit but creating a small surplus.

With this end in view, the Kerala government decided to explore all possibilities of exploiting the water resources of the State to the maximum extent. Separate investigation sub-divisions have been established to examine the feasibility of utilising the waters of all rivers of Kerala. The ultimate aim of the Communist government is to draw up a master plan for irrigation in the State. Dr K. K. Rao, member for irrigation designs in the central water and

power commission, advised the engineers on collection of data, their shifting and coordination. The objective is to prepare a comprehensive plan for the development of power, irrigation and also navigation.

The 1958-59 State budget provides an amount of Rs. 1,80,000 for taking up preliminary work on seven new schemes. These schemes have not yet been approved by the planning commission. The total cost will be about Rs. 20 crores and they are expected to irrigate nearly 2.5 lac acres.

What is called minor irrigation by the government of India, that is, irrigation projects costing less than Rs. 10 lacs, is classified variously in Kerala as medium, special minor and minor. Under the second five year plan there is a provision of Rs. 133.6 lacs set apart for medium (Rs. 86.0 lacs) and special minor (Rs. 47.6 lacs), and a small provision under minor.

The provision for minor irrigation works to be executed through panchayats is Rs. 72 lacs. The total number of works contemplated is 95, which will benefit 89,000 acres. In the first year of the second plan, however, under president's rule, a sum of only Rs. 4.5 lacs could be spent. The Communist government soon after coming to power launched a vigorous drive in this regard. Till now about 80 schemes have been investigated and sanctioned, and work on 43 schemes has already started, the revised budget estimate for 1957-58 being Rs. 19.34 lacs. The 1958-59 budget has provided Rs. 23.5 lacs for taking up 7 new schemes.

Another important method of irrigation in Kerala is 'lift irrigation.' The topography and other conditions in Kerala are favourable for extensive irrigation by pumping water from perennial rivers. In the first five year plan, 55 lift irrigation schemes irrigating in all 11,000 acres and costing Rs. 22.00 lacs were undertaken and completed. They were all, however, in the Periyar river valley near Alwaye.

The schemes were considered to be uneconomic by the adviser's regime, specially when there was no enactment providing for the collection of enhanced water cess. The advisor's regime accordingly adopted a go-slow policy and ordered a re-examination of the whole matter.

The Communist ministry disapproved this approach and reversed the policy. The government decided to go full steam ahead with lift irrigation. The beneficiaries will be asked to pay cess also. Work has been resumed on all old

schemes and new ones have been taken up. Thus, in addition to the 55 schemes already completed, work is in progress on 30 new schemes which are likely to be completed by the end of June 1958. These will cost Rs. 15 lacs and benefit about 9,000 acres. The expenditure per year on new schemes of lift irrigation is likely to be to the tune of Rs. 25 lacs. It is expected that after some time, when lift irrigation begins to work satisfactorily, the ryots can be made more and more responsible for their management and their working will become economical and self-supporting. Already a scheme to encourage agricultural cooperatives to take up small lift irrigation schemes and maintain them with aid and subsidies from government has been drawn up and is being implemented. Lift irrigation is expected to show spectacular results after some time, increasing the output of not only food crops but cash crops as well.

The topography of the western ghats in Kerala and the high intensity of rainfall make most of the rivers of the State rich in hydel potential capable of very economic development. A realistic assessment of the hydro-electric resources indicates that firm power to the extent of over 2.25 million kw could be developed at costs ranging from Rs. 650 to Rs. 850 per kw of installed capacity. However, as irrigation minister V. R. Krishna Iyer, said at the inauguration of the Thannirmukkom regulator work on 3 February 1958, 'We have not tapped even a tenth of this potential abundance of energy.' He advocated the formation of a southern grid comprising the States of Madras, Andhra Pradesh, Mysore and Kerala by linking up the power systems of the various States 'whereby we in Kerala could export electricity to many other southern States in need, if only our giant schemes like the Idikki, and the Pamba and the Sholayar, etc., are taken up with a sense of national priority and regional developments.'

During the first plan period 744 new villages were electrified in the Travancore-Cochin area and 51,456 consumers and over 17,500 street lights were introduced. The generating capacity rose from 28,500 kw to 85,500 kw, and the energy generated from 151 million units to 350 million units per annum. It was seen from the past experience that the demand for power in the State was doubling every 5 years. The second five year plan had, therefore, to meet the problem of meeting this growing demand.

An amount of Rs. 23.6 crores has been allocated for power development scheme under the second plan. Out of this, Rs. 11.2 crores will be spent on hydro-electric projects and the rest on works relating to further extensions to the transmission and distribution networks and rural electrification. The new hydro-electric projects to be completed in the second plan period are Neriamangalam, Panniar and Sholayar. These together will add 1,29,000 kw of additional generating capacity to the system. The installation of an additional generating set of 8,000 kw is also to be completed during this period. When these works are completed, the total installed capacity in the system will be 2,46,500 kw, which will be quite adequate to meet the anticipated demand. It is also programmed to start work on the Pamba hydro-electric scheme which will be one of the biggest projects in the State. The ultimate installed capacity of this project is 3,00,000 kw and is to be completed in two stages. The first stage of the project for developing 1,00,000 kw will be taken up for execution immediately and is scheduled to be completed early in the third plan period. The second plan makes provision for investigation of a number of new hydro-electric projects also.

The transmission and distribution schemes included in the second plan again give high priority for distribution and rural electrification works, on which nearly Rs. 7.63 crores are to be spent. 1,344 more village areas are to be electrified and 1,05,260 more consumers are to be connected to the system. A comprehensive programme for installation of 50,995 additional street lights is also included.

The second plan has already been given a flying start. All the three generating sets, each of 8,000 kw capacity at Peringalkuthu, have been commissioned by the end of the first year of the second plan. The finishing works on Pallivasal and Sengulam hydro-electric projects were also completed in all respects. The work on Neriamangalam, Panniar and Sholayar hydro-electric projects are in full swing. The transmission and distribution projects are also progressing satisfactorily. The main 100 kv transmission line of about 180 circuit miles from Sengulam to Pallom and Pallom to Kundara has been completed and energised during the first year of the second plan. Even though these schemes were included in the first plan and the work started during the

first plan period itself, they were actually completed in all respects during the second plan period.

Power generation in the State has now risen to about 430 million units against 350 million units per annum by the end of the first plan. Nearly 4,000 industrial establishments including large, medium and small-scale industrial units draw power from the system. Draining water-logged areas with electric pumps have been started. Thus in the Kuttanad and *kole* areas of the State alone, nearly 70,000 acres of water-logged lands have been made fit for cultivation. Electricity is also being supplied for lift irrigation in about 30,000 acres of land. About 1,200 villages in the State are now enjoying the benefits of electricity catering to the needs of about 1,02,600 consumers. Out of the plan provision of Rs. 12.19 crores for transmission, distribution and rural electrification schemes, Rs. 3.44 crores have been expended by now. On power projects by now about Rs. 1.56 crores have been spent.

The generating capacity as now provided for in the second plan will be just sufficient to meet the growing demand, and any hold-up in the implementation of any project will create difficulties and there is likely to be serious power shortage. The two steps immediately necessary are: (1) the release of foreign exchange required for the power station plant and certain other construction plants for going ahead with the work on Panniar schemes; (2) the quick settlement of river water disputes raised by the Madras government regarding the Sholayar hydel project, having an installed capacity of 54,000 kw.

On these questions, which depend for their satisfactory solution on the central government and the government of Madras, the Kerala government is carrying on negotiations.

Then there is the question of taking up the Idikki project. The spokesmen of the government of Kerala have sometimes expressed their regret that in spite of the availability of cheap water-power resources, no giant hydro-electric schemes have been thought of for Kerala, which would benefit not only this State but also the neighbouring States. The Kerala government has now succeeded in getting the central water and power commission to conduct detailed investigation of the Idikki project in collaboration with State engineers. The completion of the investigation is likely to take some time—the results are expected only

next year—but essential data for assessing the merits of the scheme is already available. The power potential of this scheme is 5,00,000 kw installed capacity with firm power of over 4,20,000 kw and will prove to be a very economical one. The Communist government is urging the central irrigation and power ministry to actively consider the question of taking up construction of this station and transmitting some power from this station at 400 kv or even higher voltage to a point near Salem. Along with this, the Kerala government also pursues with the central government its proposal for the formation of a super high voltage southern grid.

All this shows, that, realising the decisive role of the development of water resources in the State's economy, the Communist government has given commendable attention to it and has achieved considerable success.