CHAPTER IV
DEVELOPMENT OF IRRIGATION, AGRICULTURE AND INDUSTRIES

FOOD CRISIS IN TAMILNADU BEFORE 1954

The composite State of Madras, as per 1951 statistics, had a total of 8.14 crores (81.4 million) acres of land and 5.7 crores (57 million) population.\(^1\) After the language based split of Madras Presidency in 1953, the remaining population of Tamilnadu was 35.7 million and Andhra Pradesh had a population of 25.7 million.\(^2\)

Both the States had roughly about the same land size after the split, however, due to the 30% more population Tamilnadu had, the ratio of the land size per person had come down and thus the food deficit had become worse than before.\(^3\) Home Minister Bakthavatsalam stated that the cultivatable agricultural land in Tamilnadu was only 20.4 million acres and for every individual in the State there was only about 61 cents for food production.\(^4\)

Since the separation of Andhra Pradesh from Madras Presidency the irrigation resources of Tamilnadu had been deeply affected. Critical rivers Krishna and Godavari went to Andhra and Tamilnadu was left with Cauvery. So the preference of the Government was to improve the acute food crisis situation by increasing food production. Kamaraj mentioned that the self-

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\(^1\) A. Gopanna, *Kamaraj Oru Sagaptham (Kamaraj – An Epoch)*, (Chennai: Nava India Publishers, 2003), p.172

\(^2\) Ibid.

\(^3\) A. Padmanabha Ayyar, Special Chief Engineer, Public Works Department, “Public Works Plan in Madras State”, *Madras Information*, (January, 1955), pp.54-55.

\(^4\) *Navasakthi*, (Tamil Daily), October 2, 1961, p.3.
sufficiency in food production had to be achieved through efficient utilisation of the available resources and improvements in processing industries.\footnote{A. Gopanna, \textit{Op. cit.}, p.172.}

After the famine year 1942-43, ‘Grow More Food’ campaign had been started in the State in order to increase food production and the area of cultivation land. From the year 1951-52, under the First Five Year Plan (FFYP), even more intensive cultivation schemes were adopted.\footnote{“Inspiring Record of Achievement in Irrigation and Electricity”, \textit{Madras Information}, Vol. XI, No. 5, (May 1957), pp.33-35}

The table below shows the food and grains production from 1951 to 1956;\footnote{Report of the Committee on Agricultural Production, TNA, Madras, 1959, p.5}

\textbf{Table No. 23 - Total Food and Grains Production of Madras State (1949-1956)}

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Food Production of Grains (Rice and Millets) in Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>3,047,000</td>
</tr>
<tr>
<td>1950-51</td>
<td>3,084,330</td>
</tr>
<tr>
<td>1951-52</td>
<td>3,463,970</td>
</tr>
<tr>
<td>1952-53</td>
<td>3,101,560</td>
</tr>
<tr>
<td>1953-54</td>
<td>4,107,280</td>
</tr>
<tr>
<td>1954-55</td>
<td>4,530,240</td>
</tr>
<tr>
<td>1955-56</td>
<td>4,421,980</td>
</tr>
</tbody>
</table>

It could be noted that the total food production in 1952-53 had encountered a dip, due to the unfavorable seasonal conditions. In addition, Government of India had also imposed ban on importing...
food grains from 1951 onwards. So Kamaraj Government, which assumed power in 1954, was under pressure to feed people and accelerate irrigation programs that were expected to solve the shortage in food production in long term.  

IRRIGATION PROJECTS UNDER FIRST FIVE YEAR PLAN (1951-56)

Launch of the First Five Year Plan, in 1951, helped to make national study on the availability of water resources and the needs of the various regions. The irrigation projects that were at hand were speeded up. Madras State had following major construction projects;  

<table>
<thead>
<tr>
<th>Name of the Project</th>
<th>Cost in Lakhs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Bhavani Project</td>
<td>1,0000</td>
</tr>
<tr>
<td>Malampuzha Project</td>
<td>528</td>
</tr>
<tr>
<td>Mettur Canals Scheme</td>
<td>245</td>
</tr>
<tr>
<td>Manimuthar Project</td>
<td>505</td>
</tr>
<tr>
<td>Araniar Project</td>
<td>104</td>
</tr>
<tr>
<td>Walayar Project</td>
<td>100</td>
</tr>
<tr>
<td>Mangulam Project</td>
<td>89</td>
</tr>
<tr>
<td>Sathanur Project</td>
<td>289</td>
</tr>
<tr>
<td>Krishnagiri Project</td>
<td>202</td>
</tr>
<tr>
<td>Amaravathi Project</td>
<td>297</td>
</tr>
<tr>
<td>Vaigai Project</td>
<td>330</td>
</tr>
</tbody>
</table>

Among the listed projects, the last four projects were originally intended for the Second Five Year Plan and had been taken

up for First Five Year Plan in 1954 to accelerate the development of irrigation.\textsuperscript{10}

**Lower Bhavani Project**

This was the biggest of all projects that were taken up under FFYP for the State. The dam was built across the Bhavani, a tributary of Cauvery, and was five and half miles long. The area of water spread when the reservoir was full was 30 square miles. This was also the first earthen dam of over 100 feet height to be built in India. The main canal on the right side was 124 miles long and irrigated 207,000 acres of land, half cotton and half millets, in Coimbatore and Trichirappalli districts.\textsuperscript{11}

**Malampuzha Project**

This project was across the Malampuzha River. Though the average rainfall for the Malabar district was 80 inches, it was unevenly distributed and most of the times only one crop was successfully harvested.\textsuperscript{12} The project was to irrigate 40,000 acres and expected to increase the production of food grains by 10,000 tons. During the State Reorganisation in 1956, this project was transferred to Kerala.\textsuperscript{13}

**Manimuthar Project**

The project was a storage reservoir across the Manimuthar River three and half miles upstream of its confluence with the

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\textsuperscript{12} *Ibid.*
Tambraparni River. The capacity up to its crest was 5511 million cubic feet. About 20,000 acres in Tirunelveli district was to be fed for an additional projected production of 22,000 tons of paddy.\textsuperscript{14}

**Mettur Canals Scheme**

The scheme was to irrigate 17,000 acres in Coimbatore district and another 1,000 acres in Salem district. At about fourth mile of the West bank canal, a branch of 40 miles took off to irrigate 27,000 acres more in Salem district. So a total of 45,000 acres were set to be irrigated. Four lakh (0.4 million) tons of food grains were to be produced per annum through the project.\textsuperscript{15}

**Araniar Project**

The project that laid across Araniar, in Thiruvallur district, though comparatively a small project, was set to be irrigated 17,000 acres to produce 50,000 tons of food grains.\textsuperscript{16}

**Amaravathi Reservoir Project**

Across Amaravathi the reservoir project was built that could hold 3600 million cubic feet of water. The dam was partly masonry and partly of earth. In Coimbatore district, about 21,000 acres were irrigated and about 8,000 tons of food grains produced in addition.\textsuperscript{17}

\textsuperscript{14}“The Farmer, who took Advice”, *Madras Information*, Vol. XI, No.12, (December 1954), pp.24-25
\textsuperscript{15}G.O.No.553, *Public Works Department*, 23\textsuperscript{rd} February 1955.
\textsuperscript{17}“Amaravathi and Manimuthar Opened for Irrigation”, *Madras Information*, Vol. XII, No. 2, (February 1958), p.20
Vaigai Project

The project in Madurai district, across the Vaigai River to irrigate about 20,000 acres, was built with a capacity of 6,800 million cubic feet of water and produced 7,500 tons in addition.\textsuperscript{18}

Sathanur Project

Across the river Ponniar in North Arcot district with a capacity of 4,600 million cubic feet, with a provision of increasing it to 8,100 million cubic feet, the construction of the reservoir had been completed. The project irrigated about 40,000 acres.\textsuperscript{19}

Krishnagiri Reservoir Project

This project was also built across Ponniar River in Salem district, completed in 1958. 10,000 acres were benefitted and the capacity of the reservoir was 1,666 million cubic feet.\textsuperscript{20}

IRRIGATION PROJECTS UNDER SECOND FIVE YEAR PLAN (1957-62)

Pullambadi Canal Project

Trichy district Pullambadi canal project was built at an expense of Rs.16 million to irrigate about 15,000 acres of land and thus to produce 100,000 tons of food grains.\textsuperscript{21}


\textsuperscript{19} V.P. Appadurai, Chief Engineer for Electricity, “Periyar Hydro-Electricity Scheme”, \textit{Madras Information}, Vol. IX, No.8, (August 1955), p.18.

\textsuperscript{20} C. Swamiboss, “Sathanur: An Ideal Tourist Spot”, \textit{Madras Information}, Vol. XIV, No.6, (January 1960), p.27

Puthiya Kattalai Project

The project did cost Rs.18 million and 13,000 acres of land in Trichy district were irrigated to produce 40,000 tons of food grains.\textsuperscript{22}

Vidur Reservoir Project

Across Varahanadhi, near Vidur in South Arcot district, the project was built to irrigate 3,200 acres including 1,000 acres in Pondicherry State. The construction cost was shared between the two States accordingly. In 1959 the project was officially opened.\textsuperscript{23}

During the FFYP Kamaraj Government gave utmost importance to irrigation by building dams and reservoirs of varying capacities across the State as food production was the priority for the State. By the end of SFYP, Madras State had achieved self-sufficiency in food production even after an annual draw-off about 200,000 tons of rice to Kerala district.\textsuperscript{24}

Consequently, during SFYP, attention of the Government turned towards increasing agricultural production, productivity and small industries development as an alternative or complementary to agricultural production.\textsuperscript{25}

\textsuperscript{22} Ibid., p.151
\textsuperscript{23} Kamarajar Aatchiyin Sadhanaigal (Achievements of Kamaraj Rule), (Chennai: Viduthalai Publishing, 1961), p.34.
\textsuperscript{24} The Second Plan, Madras State, 1959, p.59.
\textsuperscript{25} Address of Bishnuram Mehdi, Governor of Madras, Joint Session of Madras Legislature, 5\textsuperscript{th} December 1959; G.O.No.34, public (Election) Department, 11\textsuperscript{th} January 1960
IRRIGATION PROJECTS UNDER THIRD FIVE YEAR PLAN
(1962-67)

All the rivers in the State had been harnessed by the end of SFYP and no major reservoirs scheme was left over to Third Five Year Plan (TFYP). So the administration took efforts for minor irrigation projects and completing of the ones that had been started in the SFYP. Following was the list of such projects;

Table No. 25 - Irrigation Projects under Third Five Year Plan

<table>
<thead>
<tr>
<th>Name of the Schemes</th>
<th>Name of the Districts Involved</th>
<th>Estimated Cost (Rs. In lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modernising existing Vaigai Channels</td>
<td>Ramanathapuram</td>
<td>125</td>
</tr>
<tr>
<td>Modernising existing Channels</td>
<td>Thanjavur</td>
<td>100</td>
</tr>
<tr>
<td>Improvements to Palar Anicut and Channels</td>
<td>North Arcot</td>
<td>48</td>
</tr>
<tr>
<td>Chittar Pattnamkal Scheme</td>
<td>Kanyakumari</td>
<td>178</td>
</tr>
<tr>
<td>Upper Kalingarayan Channel</td>
<td>Coimbatore</td>
<td>262</td>
</tr>
<tr>
<td>Marudayar Scheme</td>
<td>Tiruchirappalli</td>
<td>188</td>
</tr>
<tr>
<td>Cheyyar Anicut Scheme</td>
<td>North Arcot</td>
<td>77</td>
</tr>
<tr>
<td>Sathanur Project (2nd Stage)</td>
<td>North Arcot</td>
<td>55</td>
</tr>
<tr>
<td>Palar Porandalar Scheme</td>
<td>Madurai</td>
<td>178</td>
</tr>
<tr>
<td>Noyyil Reservoir Scheme</td>
<td>Tiruchirappalli</td>
<td>124</td>
</tr>
<tr>
<td>Diversion of West Flowing Rivers</td>
<td>-</td>
<td>500</td>
</tr>
</tbody>
</table>

Gomukhi Nadhi Reservoir Scheme | South Arcot | 87
---|---|---
Manimuktha Nadhi Scheme | South Arcot | 88
Manjalar Scheme | Madurai | 86
Mambazhathurai Scheme | Kanyakumari | 60
Gatana Reservoir Scheme | Tirunelveli | 89
Ramanadhi Scheme | Tirunelveli | 18
Chinnan Scheme | Salem | 40
Thoppiar Scheme | Salem | 85
Reservoir across Vellar | Tiruchirappalli | 100
Reservoir across Ayyar in Kolli hills | Tiruchirappalli | 442
Kodaganagar Scheme | Tiruchirappalli | 20
**Total Estimated Cost** | | **2950**

**Parambikulam - Aliyar Project**

Though had been started in SFYP, since started late in 1958, the project was complete in 1963. This was an inter-State project for mutual benefit. The concerns of, Tamilnadu and Kerala, Governments were successfully negotiated, with mediation from the then Home Minister of India, Govind Vallabh Pant, and an amicable settlement was arrived.\(^28\) The project provided irrigation for 2,400,000 acres in Coimbatore district and produced about 70,000KW electricity.\(^29\)

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Minor Irrigation Programs

Since all the major irrigation works of the River projects in the State had either been completed or in the verge of completion, minor irrigation programs were started. The programs consisted of:

1. Special minor irrigation program
2. De-silting cum reclamation of irrigation tanks
3. Scheme for sinking tube wells
4. River Pumping scheme
5. Filter Point Well Scheme

The minor irrigation schemes, each, were costing slightly less than a million rupees. 19 continuations and 71 new desilting cum reclamation works were included in the overall program for 1960-61. Sinking tube wells were explored as an alternate source, for rivers and tanks, to tap ground water. Rs.46 lakhs (4.6 million) was provided for the State in SFYP for 225 sinking tube wells. For filter point well schemes, loans were granted up to Rs.2500 for pumping machinery on a hire-purchase basis.

DEVELOPMENT OF AGRICULTURE

Land Reforms

When Kamaraj assumed power as Chief Minister in 1954, Madras State’s 43% revenue came from Agriculture and 75% people had engaged in agricultural activities. The first act of the

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Government was the abolition of the Zamindari system. But the abolition did not remedy the situation and Government confronted the following problems:

1. The system of lease tenure of cultivation land
2. The terms on which lands were held and cultivated
3. The size and distribution of the holdings
4. Whether the existed land system provided the opportunity for agricultural productivity

Several Committees had been commissioned in the past to address these issues, right from the freedom of India in 1947, and in essence they had suggested the following:

1. There should be no intermediaries
2. Land should belong to the tiller and conferment of rights of ownership on tenants by their paying the price for them
3. The farmer should develop his personality
4. There should be no scope for exploitation of one class by another
5. Maximum efficiency of production should be aimed at
6. Any scheme for reform should be within the realm of practical ability

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35 Ibid.
Madras Land Reforms (Fixation of Ceiling on Land) Act

Prime Minister Nehru mentioned that land reforms were the fundamental essence of Congress Party principles. Kamaraj declared that equality in society depends greatly on the wealth of people and land reforms were to bring equality in the society. The Madras Land Reforms (Fixation of Ceiling on Land) Act, 1961, was first published as Madras Act 58 of 1961 on May 2, 1962.

The ceiling was calculated in terms of ‘Standard Acres’. One acre of wet land assessed at Rs.10 and above but not exceeding Rs.15 was equal to one Standard Acre. The ceiling per person and for a family of consisting not more than five members was 30 Standard Acres. For a bigger family of more than five members, an additional five Standard Acres were added up to each member in excess of five subjected to a maximum of 60 Standard Acres. The scope of the Act was limited to exclude the lands held by religious trusts, charitable and educational institutions of public in nature.

The compensation for surplus land was described with reference to net annual income from the land and it was also considered as the Fair Rent, less the revenue payable in respect of it. The compensation paid for excess lands was as follows:

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39 Viduthalai, August 1, 1961, p.2
42 “Land Reforms in Madras State”, Madras Information, Vol.XVII, No.4, April 1963, p.27
1. For the first sum of Rs.5000 of net income, 12 times
2. For the next sum of Rs.5000 of net income, 11 times
3. For the next sum of Rs.5000 of net income, 10 times
4. For the balance of the next annual income, 9 times of such balance

**Madras Cultivating Tenants Protection Act**

The Act, from 1955, provided that no cultivating tenants shall be evicted from his holding during the continuance of the Act, except for the non-payment of rent, doing any act which is injurious to the land for any purpose other than agriculture or horticulture or denial of the title of landlord to the land.  

**Madras Cultivating Tenants (Payment of Fair Rent) Act**

The Act, from 1956, prescribed the rate of Fair Rent payable by tenants as 40%, 35% and 33% in respect of the various classes of the lands.

**Agricultural income Tax Act**

Kamaraj Government realised that taxation was not fair without considering the nature of cultivated product and the quality of the land. It was obvious that there was huge disparity in income between farmers of different crops. The Act, from March 30, 1955, taxed for plantation of cash crops like tea, coffee, rubber, etc under a group and grouping was gradually extended to other crops with similarity.

43 Sagupadiyalar Paathugappu Chattam (Cultivating Tenants Protection Act), TNA, Chennai, 1956, pp.7-8
44 “Land Reforms in Madras State”, Madras Information, Vol.XVII, No.4, April 1963, p.28
**Fertiliser Control**

From September 1, 1957, the fertiliser control order 1957 was implemented in the State. The order provided licensing of dealers, registration of mixed fertilisers, inspection, testing and analysis of manure samples for the control of quality. Adulteration of fertilisers and fair prices were prevented.\(^{46}\)

**Thanjavur Package Program**

An Intensive Agricultural District Program was initiated in Thanjavur in April 1960. The program had package deals for farmers to fulfill the needs of manures, pesticides, implements, credit and marketing facilities through cooperatives over a period of five years. The scheme was aimed at expansion of compact areas and also increasing agricultural production between 30 and 40%. Some special features of the scheme were;\(^{47}\)

1. Helping individual cultivators in the preparation of farm plants for individual holdings
2. Demonstrations to bring home the benefits of improved agricultural practices
3. Supply of credit and production requisites within bullock cart distance
4. Provision of go-downs and marketing facilities

For the first time in India, Kamaraj Government allowed grants for fertilisers like urea and other supplements to encourage farmers to increase efficiency.\(^{48}\) Government also set up improved

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\(^{46}\) *Souvenir of the Madras Pavilion*, Director of Agriculture Subcommittee, Madras, 1962, p.20

\(^{47}\) *Ibid.*

seed farms to better the quality of seeds.\textsuperscript{49} Madras Farmers Credit Compensation Act 1955 came into effect by March 1, 1955, enabled farmers to pay their credits in four simple installments. It also protected the farmers by making them no farmer can be sued in a civil court for not paying their credits.\textsuperscript{50}

**POWER PRODUCTION PROJECTS:**

By 1962, after almost a decade of Kamaraj’s rule, Madras held an impressive record in the power production and utilisation. It ranked third in India after Maharashtra and Bengal.\textsuperscript{51} In the utilisation of power for irrigation, in number of requestors for new connections and in the number of electrical motors connected, Madras State was in the first position among the States of India.\textsuperscript{52}

**Power Projects under First Five Year Plan**

New projects at Moyar and Madurai besides extension projects in the existed power production stations at Pykara, Papanasam and Madurai were taken up under the FFYP so as to increase a total of 110,200KW power output on top of the existed capacity in the State.\textsuperscript{53}

Kamaraj pursued talks with Travangore-Kochi Government, as the Periyar hydro project was in the jurisdiction of that Government, and was successful in arriving at an agreement. Kamaraj had recommended to the Planning Commission that to include Periyar and


\textsuperscript{50}Vivasayigalin Kadan Vaida Chattam (*Farmers Credit Compensation Act*), (Madurai: Vivekanada Publications, 1955), p.4.


\textsuperscript{52}Ibid.

Kundah hydro-power projects in the FFYP itself, which was originally intended for the SFYP.\textsuperscript{54} Followed by the agreement, Planning Commission included the Periyar hydro-power project in the FFYP itself.\textsuperscript{55}

**Power Projects under Second Five Year Plan**

Kamaraj administration did expect that the electricity production would be doubled by the end of SFYP through power projects that was put into operation. The total allotted sum from central Planning Commission was Rs.53.4 crores (534 million).\textsuperscript{56} Starting a power project in Madurai district with 105,000KW capacity in Periyar, four dams and two tunnel ways at Kundah project to produce 180,000KW be setting up two stations was also planned. This project was estimated at Rs.35.44 crores (354 million).

There were also plans to increase the production of power to additional 30,000KW in Madras Thermal Power Plant. The total power production was expected to be 315,000KW.\textsuperscript{57} Canada Government had agreed to supply equipment and other technological assistance for the scheme.\textsuperscript{58}

At the end of SFYP, the total power production had doubled, as predicted, from 256,000KW to 560,000KW.\textsuperscript{59} Though the total expenditure for the Madras State for these schemes was Rs.53.25 crores, adding up Canada’s subsidy of Rs.9.34 crores and other

\textsuperscript{56}V.P. Appadurai, *Op.Cit.*
\textsuperscript{58}G.O.No.2481, *Public Works Department*, 21st August 1959
expenses, the grand total worked up to be Rs.79.16 crores. This was 42% of the total expenditure of the State at that time.\textsuperscript{60}

Since the State had many hydro-power plants, the output of power was seasonal. Production of power dipped in the summer and non-rainy seasons. The Government started working on other sources of power production.

**Thermal Power Project at Neyveli**

Central Government had sanctioned Rs.86 crores (860 million) for Neyveli lignite and captive power projects. Lignite mining was the major project. 35 tons of lignite had to be mined per annum. The project had five phases;

1. Digging Scheme
2. Thermal Power Project
3. Fertiliser Production Scheme
4. Pulverising the lignite
5. Purification of Clay Project

From January 1, 1955, the project was taken over by the Central Government and the project was named as Neyveli Lignite Corporation (NLC). The State Government had come to an agreement to invest, as a partner, whatever the expenses up to that point in the project over a period of more than two years, from 1952 to 1954. Based on the arrangement, the State Government began to enjoy 4.5% interest on the investment from January 1, 1955. Besides, the agreement had also been spelled to share the profit in a 3:1 ratio between the Central and State Governments. From August 1962, the

\textsuperscript{60} *G.O.No.2481, Public Works Department, 21\textsuperscript{st} August 1959*
NLC produced 250,000KW to the grid.\textsuperscript{61} Because of Kamaraj’s careful and cautious planning, a multi-purpose industry like NLC got established in the State.\textsuperscript{62}

**Power Projects under Third Five Year Plan**

Neyveli Lignite Corporation could cater the power requirements of the State by producing 400,000KW during the TFYP. However, the State Government explored further for alternatives to conventional hydro and thermal power production.

When Homi Jehangir Bhabha, father of Indian nuclear programs, was looking for sites to locate a nuclear power project that could produce at least 500,000KW, Kamaraj wrote to him explaining that the State needed nuclear power as much of its hydro potential had already been exploited and the lignite resources were joining the queue\textsuperscript{63}. He got the decision in his favor, with Planning Commission’s consent, to set up the plant in Kalpakam, near Madras.

**Short Summary on Power Development during Kamaraj’s Decade**

In 1954, the Grid of Madras State had the capability to produce 220,000KW electricity through four hydroelectric and two thermal electric power stations. High tension cables length was 5000

\begin{itemize}
\end{itemize}
miles and the low tension cables also ran for the same length.\textsuperscript{64} At the end of his rule, in 1963, the total power production, almost tripled, rose to 630,700KW through seven hydroelectric, two thermal power stations apart from NLC. The high tension and low tension cables’ lengths were 18,000 miles and 30,000 miles respectively.\textsuperscript{65}

The table below captures the total output of various power projects in the Madras State at the end of 1962;\textsuperscript{66}

\begin{center}
\textbf{Table No. 26 - Power Projects in Madras State by 1962}
\end{center}

\begin{tabular}{|l|c|}
\hline
Projects & Power Output (KW) \\
\hline
Pykara Hydro & 70,200 \\
Moyar Hydro & 36,000 \\
Mettur Hydro & 40,000 \\
Papanasam Hydro & 28,000 \\
Periyar Hydro & 105,000 \\
Kundah – I Hydro & 40,000 \\
Kundah – II Hydro & 140,000 \\
Madras Thermal & 98,000 \\
Madurai Thermal & 14,000 \\
\hline
\textbf{Total} & \textbf{571,700} \\
\end{tabular}


INDUSTRIAL DEVELOPMENT

In 1955, just after a year Kamaraj took over as Chief Minister of Madras, the State had started to show improvements towards the right direction, as explained in details in the previous chapters in terms of education, agriculture, irrigation and power production. However, the industrial development was still lagging. The State Government was preparing the grounds for industrial developments were one reason and Kamaraj’s government had depended on the Central government for the large scale industries to the State in terms of the investment was the other.\textsuperscript{67}

For any healthy industrial development in India, at that point in time, at least, the below elements were of prerequisite;\textsuperscript{68}

1. Sound natural resources
2. Availability of Iron ores and Coal for heavy industries
3. Railway connections and Roads
4. Attraction of Entrepreneurs and Innovators
5. Availability of qualified human resources
6. Concessional and Uninterrupted supply of electricity
7. Co-operation between the State and Central Governments on reducing red-tapism and grants allocation

State Industries Development Committee

In 1957, with a view to accelerate industries development in the State, the Government constituted the State Industries Development Committee with Minister for Industries and Agriculture

\textsuperscript{68} \textit{Ibid.}, pp159-160.
as Chairman and other prominent industrialists and technical experts as members.  

The Committee set up eight sub-committees, each to deal with specific type of industries, to give recommendations in terms of requirements of raw materials, investment and suitable location. The sub-committees were tasked to give their reports in a month. The sub-committees were;  

1. Medium and Small scale industries  
2. Leather Industry  
3. Ceramic and Refractory Industries  
4. Electrical Industries  
5. Engineering Industry  
6. Chemical Industry  
7. Forest Industry  
8. Agro industry  

Craftsman Training  
Craftsman training, related to industries development that had been planned in SFYP, was taken forth. Under the scheme of opening new Industrial Training Institutes (ITI), four new ITIs were opened. The scheme of integration of industrial school sections attached to Polytechnic at Madras, Madurai and Coimbatore with industrial institutes was implemented from November 1, 1959.

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69 G.O.No.2230, Industries, Labour and Cooperation Department, 2nd July 1957  
The apprenticeship training scheme was intended to supplement trade apprenticeship courses already available in private establishments. The scheme was implemented in Madras city and its suburbs.73 Based on the recommendations of Siva Rao Committee, the Central Government in 1955, the ITIs that were under the control of the Central Government were changed to the State Government from November 1, 1956.74

Based on the projections in Second Five Year Plan, in 1957-58, Cuddalore, Virudunagar, Pettai and Nagapattinam were started with ITIs. By 1961, the total seats in all the four institutions were increased by two folds, from 680 to 1204.75

In addition, in the six ITIs that were transferred to State Government from Central, the inductions were increased by another 508 seats.76

**Engineering Colleges, Polytechnics and Scholarships**

During SFYP, two Engineering colleges and 11 Polytechnics were started to increase the seats of engineering colleges to double and polytechnics to triple. Starting of a Regional Engineering College at Trichirappalli to induct 250 students a year with an investment of 60 lakhs (6 million) was pushed to TFYP. Scholarships were provided to smart but poor students through their course of study.

73 Ibid.
74 *Thozhil Thurai Payirchi (Industrial Training)*, Tamilnadu Government Information Department, 1961, TNA, Madras, pp.3-4.
75 Ibid., p.3
76 Ibid.
Government had also approved a Polytechnic for Girls in Madras City.\textsuperscript{77}

Fourteen ITIs were planned in 1961-62, six of them were started in locations of Salem, Katpadi, Ariyalur, Pollachi, Thanjavur and Tiruchendur and the remaining were started in 1962-63. Part time evening classes were also conducted for industrial workers’ development and upgrading.\textsuperscript{78}

**Industrial Estates**

Madras State pioneered the setting up of industrial estates. These estates had clusters of many industries to create suitable atmosphere for productivity and improved logistics. In 1958, Guindy Industrial Estate was started and during SFYP, from 1957 to 1962, the success of Guindy Estate had encouraged to start many of such Estates in other districts also. The details of those Estates are as below;\textsuperscript{79}

\begin{flushright}
\footnotesize
\textsuperscript{78} Ibid. \\
\textsuperscript{79} Second Five Year Plan (1956 – 1961), Madras State, TNA, Madras, p.79; \\
\end{flushright}
Table No. 27 - Details of Industrial Estates in Madras State by 1962

<table>
<thead>
<tr>
<th>Name of the Estate</th>
<th>Land Acquired (Acres)</th>
<th>No. of Factory Units</th>
<th>Revenue from Subsidised Rent (Rs in lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guindy</td>
<td>181.47</td>
<td>128</td>
<td>5.80</td>
</tr>
<tr>
<td>Madurai</td>
<td>42.00</td>
<td>30</td>
<td>0.92</td>
</tr>
<tr>
<td>Virudunagar</td>
<td>44.11</td>
<td>15</td>
<td>0.31</td>
</tr>
<tr>
<td>Erode</td>
<td>10.37</td>
<td>7</td>
<td>0.11</td>
</tr>
<tr>
<td>Pettai</td>
<td>21.43</td>
<td>12</td>
<td>0.25</td>
</tr>
<tr>
<td>Marthandam</td>
<td>2.37</td>
<td>5</td>
<td>0.03</td>
</tr>
<tr>
<td>Tiruchirappalli</td>
<td>17.64</td>
<td>22</td>
<td>0.37</td>
</tr>
<tr>
<td>Thanjavur</td>
<td>12.04</td>
<td>6</td>
<td>0.10</td>
</tr>
<tr>
<td>Katpadi</td>
<td>14.69</td>
<td>14</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>346.12</strong></td>
<td><strong>239</strong></td>
<td><strong>7.90</strong></td>
</tr>
</tbody>
</table>

From Central Government, SFYP allotment to Industrial Estates for the State was only 95 lakhs in order to start 170 units. However, Kamaraj Government did not contain the revolution and enthusiasm to the limits of expenses and had spent an additional 80 lakhs to start 239 units, a 40% increase from the SFYP target, in all the above 9 Industrial Estates.\(^80\)

**HEAVY INDUSTRIES AND ROLE OF KAMARAJ**

Second Five Year Plan, a nationwide plan for 1957 to 1962, was intended to develop the nation with industries. Until then the State Government’s emphasis was more on the small industries development. The reasons were the investments and resources required were meager and the time for setting up was also relatively

\(^{80}\) *Ibid.*
short. Most importantly the impact of success of small industries on the lives of people was direct, immediate and significant. The State Government could do more with Rs.810 lakhs (81 million) or industries development in SFYP.\textsuperscript{81}

\textbf{The Integral Coach Factory - ICF}

The Integral Couch Factory at Perambur, Madras, that started production on October 2, 1955, had already been initiated in 1952. By 1963, the first broad gauge 25KV electric mobile unit A.C Motor coach designed and built by ICF was rolled out of the factory.\textsuperscript{82}

Planned under FFYP to make Indian Railways self-sufficient in the supplying of passenger coaches, the factory was realised at Rs.7.35 crores (73.5 million).\textsuperscript{83}

A technical training school to man the factory efficiently was started, a year and half before the factory opening, to ensure the supply of skilled workers. The school also provided refresher courses as well as training for apprentices. 7,500 men were employed and the productivity exceeded by more than 60\%, from targeted 30 shells a month to 50 shells a month.\textsuperscript{84}

The factory had been built with collaboration from Switzerland and eventually reached a stage where the costs of

\textsuperscript{81} \textit{The Second Five Year Plan (1956 – 1961)}, Madras State, TNA, Madras, p.68.
\textsuperscript{82} “ICF – The Integral Coach Factory”, \textit{Madras Information}, Vol. XVII, No.9, (September 1963), p.34.
\textsuperscript{83} \textit{Ibid}.
\textsuperscript{84} \textit{Makkal Thittam (Plan for People)}, Department of Public information, Government of Tamilnadu, TNA, Madras, 1961, p.72
production became so competitive that exports to Pakistan and Argentina became possible.\textsuperscript{85}

\textbf{Neyveli Lignite Corporation - NLC}

Some details of this project have already been given under the power development. The emphasis here is more on its industrial development aspect rather than power production side of it. This was a project of mining, fertiliser plant, briquetting plant, clay washing plant and a captive thermal power plant.

Neyveli Lignite Corporation situated in Neyveli in South Arcot district was capable of excavating about 3.5 million tons of lignite per annum. About 40\% (1.5 million tons) was to be utilised for power production and another 45\% (1.6 million tons) for domestic and industrial fuel after briquetting it and the remaining 15\% went for the fertiliser production.\textsuperscript{86}

Employment opportunities, in all these plants, were created in thousands, both directly and indirectly. Prime Minister Nehru was not convinced of the huge investments on this project and was cynical of the potential returns from it during the initial stages of this huge project.

Kamaraj guaranteed the profitability to him and secured an agreement with the Central Government and through that the State

\textsuperscript{86} \textit{G.O.No.2793, Industries, Labour and Cooperation Department, 22\textsuperscript{nd} August 1957}
Government has been sharing a third of the annual profits of the project to this day.\textsuperscript{87}

**Bharat Heavy Electricals Limited - BHEL**

This project, near Tiruchirappalli, was invested with Rs.18 crores (180 million) to produce an annual output of twelve boilers that could earn Rs.20 crores. The plant started production in 1964. The location was well connected through railways, national highways and a civilian airport and good supply of water, which were the prerequisites for the project. Czech Republic was in collaboration of the project.\textsuperscript{88}

The selection of the location of this project in the State could be attributed directly to Kamaraj himself. When the experts, who were in charge of assessing a suitable location for the project returned almost hopeless, not finding any, after screening the State, Kamaraj suggested the location, where now the BHEL is, and it was well within the expectations of the experts.\textsuperscript{89}

**The Teleprinter Factory**

‘Olivetti’ Italian collaboration was acquired and the Teleprinter factory at Guindy was established to produce a total of 100 teleprinters per annum. The factory started with an employment of 200 workers.\textsuperscript{90}

\textsuperscript{87} Personal Interview with Mr.Thamizharuvi Manian, Ex.General Secretary of Tamilnadu Congress Committee, 30\textsuperscript{th} July 2012, at Tiruvarur.
\textsuperscript{89} Neelam Madhumayan, *Padikkatha Medhai Kamarajaridam Padikkavendiyavai (Genius of Kamaraj)*, (Chennai: Manimegalai Prasuram, 2002), pp.43-44
\textsuperscript{90} *G.O.No.244, Public Department*, 25\textsuperscript{th} February 1961
Raw Film Factory

With French collaboration, a raw film factory was set up in Ooty to produce photo films for cinema, X-ray and photographic films. The cost of the project was Rs.6.5 crores (65 million) and a thousand people were employed, including 400 experts. Annually, the factory created products worth of Rs.5 crores (50 million). The State Government had sanctioned 270 acres of land for the project.

Surgical Instruments and Defence Industries Factories

With Russian collaboration, a surgical instruments factory was set up in Madras at an outlay of Rs.5 crores. State Government allotted 115 acres of land for free for setting up this factory. Defence Industries at Avadi, Madras was also started with significant help from the State Government.

Steel Plant

It was decided to start a steel plant in Salem, because it had iron ore resources but the iron content was deficient. It was researched and found that the lignite from NLC could be used to compensate this in the Steel Plant. In TFYP, the Central Government had allocated Rs.75 lakhs (7.5 million) for preparatory works and Rs.25 crores (250 million) for the completion of the project. Kamaraj had resigned under K-Plan in 1963 and the project was completed with continued support under Bakthavatsalam as Chief Minister.

93 Ibid., pp.73-74
PRIVATE CAPITAL INDUSTRIES IN THE STATE

Kamaraj administration encouraged private capital to flow freely in view of increasing their participation and expertise for industrial development. State Government had shares in private industries like Madras Industrial Investment Corporation, Madras Aluminum Company, Chennai Radio Electrical Corporation, Southern Structurals Limited and Madras Cements Limited. Apart from the listed, over 200 private industries had shares from the State Government.96

Ashok Leyland in Chennai to produce 5,400 chasses every year, T.I.Cycles of India to produce 350,000 bi-cycles per annum and Standard Motors at Vandalur to produce 6,000 small cares and 2,000 trucks every year were also begun during Kamaraj’s regime.97

The table below shows the credits that were allotted to private industries from 1955 to 1962;98

Table No. 28 - Details of Credit allotted for Private Industries (1955-1962)

<table>
<thead>
<tr>
<th>Year</th>
<th>Credit (in lakhs of Rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>75.60</td>
</tr>
<tr>
<td>1956</td>
<td>95.60</td>
</tr>
<tr>
<td>1957</td>
<td>30.90</td>
</tr>
<tr>
<td>1958</td>
<td>233.10</td>
</tr>
<tr>
<td>1959</td>
<td>297.20</td>
</tr>
<tr>
<td>I 1960</td>
<td>132.20</td>
</tr>
<tr>
<td>1961</td>
<td>123.60</td>
</tr>
<tr>
<td>1962</td>
<td>280.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1268.70</strong></td>
</tr>
</tbody>
</table>

It can be noted that, in support for the private capital encouragement, the State Government have extended its credits by at least four folds in a span of slightly over six years from Rs.75 lakhs to Rs.280 lakhs.

**SMALL INDUSTRIES UNITS IN THE STATE**

The small industries units were the units with less than Rs.5 lakhs investment and at least 50 works with the aid of electricity worked and produced. Without the aid of electricity, up to 100 workers were considered as small industry unit.99

For an inclusive development of industries in the State, small industries development was also an essential feature. During his decade of rule of the State, Kamaraj had assisted the figure of small industries units to rise to 4,500 and that number helped to put the

99 *Valarum Siruthozhilgal (Developing Small Industries)*, Department of Information, Government of Madras, TNA, Madras, 1959, p.3.
State in third position in small industries development behind Maharashtra and Bengal when he left office.\textsuperscript{100}

Under the State Aid to industries Act of 1922, financial assistance was provided to small industries development. The Act was amended by Kamaraj Government, revising many criteria for making the condition more liberal, and the amendment was named as Madras Small Scale and Cottage Industries Loan and Subsidy Rules 1956.\textsuperscript{101} The loan amount offered based on the security of assets was raised from 60% to 75% for small industries and as high as 100% for cottage industries.\textsuperscript{102}

The table below contains the details of loan amounts during his tenure as Chief Minister for small industries;\textsuperscript{103}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
Year & Number of Beneficiaries & Disbursement in Rupees \\
\hline
1957 & 201 & 1,127,965 \\
1958 & 3,400 & 2,483,965 \\
1959 & 4,060 & 2,559,687 \\
1960 & 4,100 & 2,650,000 \\
1961 & 4,500 & 3,060,500 \\
1962 & 4,850 & 3,665,600 \\
\hline
\textbf{Total} & \textbf{21,111} & \textbf{15,547,717} \\
\hline
\end{tabular}
\caption{Loan disbursement details to Small Industries (1957-1962)}
\end{table}

\textsuperscript{100}“Small Scale Industries”, \textit{Madras Information}, Vol. XVII, No. 9, (September 1963), pp.14-16.

\textsuperscript{101}G.O.No.648, Industries, Labour and Cooperation Department, 19\textsuperscript{th} February 1957


\textsuperscript{103}Madras Information, Vol.XVI, 1962, p.35.
AGRO-RELATED INDUSTRIES AND CEMENT INDUSTRIES

Sugar Industries had a significant share of Agro-related industries. In 1953, the State had only 3 Sugar Industries in Pugalur, Nellikuppam and Pandiyarajapuram. A total of 3500 tons of sugar was produced from these plants. By the end of Kamraj’s rule in 1963, a total of 14 sugar plant had been operating in the State.104

In 1953, the State had 4 cement industries. During his tenure, over 15 more cement industries were started including the bigger ones like Dalmiapuram Cement Factory, Madukkarai Cement Factory, Ramnad Cement Factory, Thalayuth Cement Factory and Madras Cements Limited.105

During his decade of administration of the State, he had ensured new industries – big, small and medium – had developed fairly well distributed over the State and complementing each other in their respective types besides providing employments and industrialisation to the State.106