CHAPTER III

MODERNISATION OF AGRICULTURE

Agriculture is considered as the backbone of the Indian Economy. The economic prosperity of the country largely depends on the development of agriculture. The term agriculture is derived from the Latin words ‘Ager’ and ‘culture’, ‘Ager’ means ‘Soil’ or ‘Field’, ‘Culture’ means ‘Tilling’. So agriculture means tilling the soil. The main objective of tilling the soil is to raise the crops and plants for the use of mankind. The act of cultivating crops, rearing animals, along with fisheries and forestry is collectively known as agriculture. It contributes to nearly 25% of gross domestic product and 70% of the population is dependent on agriculture for their livelihood.\(^1\) Agriculture is, an activity involving a close interaction with the environment. Soil, climate and topography and hydrological, biological condition together, extract a major control upon forming operation and profitability of agriculture.\(^2\)

Factors Influencing Agriculture

Tamilnadu has a rhomboidal shape bordered by the Western and Eastern Ghats and the sea on the eastern and the south eastern side. Though Kanyakumari is the second smallest district of Tamilnadu it has a varied geography. On the north of the district is the extension of the Western Ghats and hence forest, while the south of the district is endowed with low lying lands which meet the ocean. The district is warm and sunny. At the same time it gets good rainfall spread almost throughout the year. The average annual rainfall in the district is 1470 mm.\(^3\) However, the forest areas in the northern part receives

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a higher rainfall at around 2000 mm.⁴ The runoff water from the hills is used for irrigation in the southern Plains, in addition to the rainfall.⁵ The soil map of the place shows the existence of three principal types of soil. Red soil is spread over almost the entire upland region, lying between the two Ghats, interspersed with a few patches of black soil while alluvial soil is found mainly in the coastal areas. Forests occupy more than 30 percent of the geographical area. But outside the forests the other lands are the most intensively utilized agricultural regions. Thus the district is very rich from the point of agriculture including horticulture.⁶

Land has deciding influence over the other factors of production. Quality of soil often determines the quantity as well as the quality of the crops. The prevailing soils of Kanyakumari District are predominantly red ones, poor in lime, potash and iron oxide and low in phosphorus.⁷ Alluvial soil, found in some parts of Nanchilnad, was comparatively fertile with more organic contents than the soils of Kalkulam and Vilavancode.⁸

Topography also should be taken into account before determining the soil-crop relation. Undulating land provides little facility for progressive farming. The lands of Kanyakumari District formed three distinct types – the highlands, the midlands and lowlands.⁹ The highlands and lowlands were unsuitable for paddy cultivation. Even in the midlands, a considerable big portion, except the Nanchilnad valley was disagreeable to

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⁶ Ibid.,
⁸ Assistant Agriculture Chemist (Soil Survey), Department of Agriculture, Tirunelveli, dated 15 May 1987.
wet cultivation, owing to their elevated nature and rugged terrains. So cultivation was restricted to the small patches in between the undulating hillocks.\textsuperscript{10}

Apart from rain and soil the availability of other sources of irrigation is an important factor which influences the cropping pattern.\textsuperscript{11} Tanks and canals are the major sources of irrigation of Kanyakumari district.

The gross cropped area of this district is nearly 33 percent of net cultivated area excluding the forest. Double cropping is the rule in the lowlands. Almost the whole of the irrigated area is utilized for rice cultivation in both seasons. Rice is not cultivated anywhere outside the irrigated areas. The upland areas which cannot be irrigated by canals or Tanks are used for growing drier crops like tapioca, condiments and spices. Both paddy and tapioca come under competition in the lowlands including horticulture crops. The warm and sunny climate of the district with a heavy rainfall makes it extremely suitable for horticulture. The district has extensive mango, banana, cashew, coconut and rubber orchards and plantations.

Horticultural crops are of different varieties which is suitable for a specific type of land. Coconut in particular can be grown on any type of land. Generally all these horticultural crops are tall and perennial crops. This bring in a type of neighbourhood effect, that is change introduced in one plot affects the rest of the plots. When the shades of the tall perennial crop trees spread over the neighbouring crops, the growth of the other annual crops is effected. In such a situation, cultivators find it impossible to continue the cultivation of paddy or tapioca. So they are forced to shift their plots from annual crops to perennial tree crops. Within a short duration of time, the whole area gets converted

\textsuperscript{11} K.C.Alexander, \textit{Some characterization of the Agrarian Social Structure of Tamilnadu, Economic and Political Weekly}, p.667.
towards perennial crops. Thus, hundreds of acres which have been traditionally used for paddy and tapioca are facing this crisis.$^{12}$

**Factors influencing Modernization: New Land System**

The following factors are responsible for shifting traditional method of cultivation to modernization. At the time of Independence, India inherited a semi feudal agrarian structure. The ownership and land control of land was highly concentrated in a relatively landlords and intermediaries. The British left the process of rent fixation to the free market mechanism. The increasing demand for land for a growing agricultural population led to an exorbitant increase in rent. Land was transformed in this process to an attractive capital asset. Thus there was a great desire among the money lending classes to acquire land. The rise in prices of land enhanced the value of the security in the form of land against which peasants could borrow. This led to increase in agricultural debt of the Indian peasantry which was repeatedly exposed to uncertainties. By offering a higher market price as bait, the peasants were induced to substitute commercial crops for the food crops. Consequently the peasants shifted to industrial crops and in some districts, the movement for commercial agriculture became so strong that the peasants started buying food stuffs from the market for their domestic needs.

The two categories of landholders existed in the rural areas are small farmers and the landless farmers. Recent researchers have proved that productivity in small farms is as high as that on large farms. The planning commission therefore stated “There are no technological barriers to a small holding achieving high productivity per unit of land. Some of the highest yields in the world are of rice in Japan and cotton in Egypt”.$^{13}$ The

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destruction of the Indian handicraft increased unemployment in the rural areas. So the labour force thrown out of employment in traditional industries could only choose agriculture. The major taxes were for land revenue, excise, salt, stamps and opium. Apart from these, all other taxes fell on the rural class. Land revenue was the chief fiscal engine and this increased the burden on the peasantry.\textsuperscript{14}

The average holding in India is very low it is less than 2 hectares or 5 acres. Not only agricultural holdings are small but they are fragmented too. In certain parts of the country plots of land have become so small, that it is impossible to move even an ordinary plough. Since the average agricultural holdings are too small they are less scientific.\textsuperscript{15} Cultivation with its proved implements and seed, small sized holdings lead to great waste of time for labour and cattle power, difficulty in proper utilization of irrigation facilities, quarrels and consequent litigations among farmers and wastage of crops in the absence of fencing\textsuperscript{16}.

Under the zamindari system, as well as land feudalism, the cultivator is not the owner. Even though the zamindari system has been abolished and tenancy legislations have been enacted in various states, the peasants or the tenants condition is far from satisfactory. The cultivator does not often own the land, he has to pay high rent for the land he cultivates and also has no security. Under these difficult conditions, it is impossible to expect the tiller to increase agricultural productivity.

The Indian farmers have been using old and inefficient methods and techniques of production. Since they are tradition bound and also poor they have not adopted the

\textsuperscript{15} Dutt and Sundaram, \textit{Indian Economy}, p.550.
\textsuperscript{16} T.S.Coomaraswami Mudaliar, Compiler, Revenue code containing all the Revenue Regulations and acts all the applicable to the Madras presidency related to Revenue Matters from, 1802-1885, Madras,1887, p.98.
modern methods which are so widely adopted in the countries of the west and in Japan. In recent years to a limited extent, the farmers have started adopting improved tools like steel ploughs, small pumps, water lift barrows, hocs, seed drills and fodder cutter. To revitalize fertility and to utilize lands, the use of natural manures and chemical fertilizers are extremely inadequate. Indian farmers do not have the means to purchase good quality seeds and no proper seed storages. The national seeds corporation has been set up to organize the needed on a country wide scale. Therefore the financial condition of formers controls the use of technology.\textsuperscript{17}

One of the basic causes for the low production of Indian agriculture has been that most of the farmers throughout the country had to depend upon rainfall and very few artificial irrigation. Manmade irrigational facilities that have been available before independence and partition of the country were almost 24 percent of the land was irrigated. Due to various welfare programme, major and minor irrigation works were done during the plan period. Irrigation facilities are being increasingly made available. Double cropping, rotation of crops, fighting plant diseases and pests are being looked into. This shows that there is great scope for artificial irrigation in the country.\textsuperscript{18}

The cultivators had neither resources or knowledge for increasing agricultural production. The principal aim of the First Five Year Plan was to rehabilitate the Indian economy devasted by the effects of the II. Word War and partition of the country and to solve the food crisis. In the first decade of planning (1951 -61) the focus was on institutional and agrarian reforms.\textsuperscript{19} The main elements of the land reform measures

\textsuperscript{17} Dutt and Sundaram, \textit{Op.Cit.}, p.317.
\textsuperscript{18} Ibid.
carried out during this period were. i) to abolish intermediaries such as zamindar and Jagirdars between the government and the tillers so as to ensure security of tenure and eventually to make them the owners of land, ii) To impose ceilings on the ownership of land holdings and distribute the surplus land among the landless labourers. The intermediaries were thus abolished within a few years after independence and the actual tillers who accounted for about 40 percent of the cultivated area became owners\textsuperscript{20} The adoption of new technology, mainly the cultivation of High Yielding Variety (HYV) seeds requires intensive use of fertilizers and pesticides under adequate and assured water supply.\textsuperscript{21} The high rates of interest changed by the money lending class made it impossible for the peasants to repay their debts. Gradually the lands passed on to the money lending class. Thus the new land reforms embodied the creation of a class of land owners and a class of cultivators.

Lack of irrigation facilities and lack of support from Electricity Corporation for irrigation projects also lead to low production. So the traditional pattern of agriculture needed diversification in cultivation to provide adequate proportion of change over the land use pattern. The planning commission took steps to develop the agriculture sector. Its aim was to bring more land under cultivation, to increase the agricultural production.\textsuperscript{22}

Further Indian Agriculture has not achieved self sufficiency. There is a shift from imports of food grains to imports of fertilisers. Major part of land cultivated in one reason only. Because in most part of the country rain comes between June to August. Hence the cultivation is done in this season only. To increase area sown more than once, extension

\textsuperscript{20} C.H.H.Rao, \textit{Indian Economy Since Independence} 15\textsuperscript{th}Edt, Delhi, 2003-2004, p.203.
\textsuperscript{21} Memorandum upon current Land Revenue Settlement in the Temporarily-Settled parts of British India, Government of India, Madras, 1880, p.43.
of irrigation facility is necessary. We have very good builder of dams but very poor in water management. Production of agriculture is determined by labour, capital and technology. The adoption of technology is determined by farmer’s capacity and willingness to take risk.\footnote{B.H. Joshi, \textit{Indian Economics, An overview on Agriculture Sector, Indian agriculture}, unsolved problem, p.7.}

Agricultural Food Production Board of the Ministry of Food and Agriculture formulated a programme under the name of \textit{Intensive Agricultural Area programme} (IAAP) in 1964 – 65. It could cover 20\% to 25\% of the cultivated area of the country and this area could be selected for intensive agricultural development. Intensive Agricultural Area programme was launched for the intensive development of imported crops such as Wheat, Paddy, Millets, Cotton, Sugarcane, Potato and Pulses in 114 selected districts. The importance of this strategy is the application of science and technology for increasing yield per hectare. The traditional agricultural practices were gradually being replaced by modern technology. This strategy is known as the new agricultural strategy or \textit{Green Revolution}.

The programmes included under the new strategy as, 1) High Yielding Varieties programme (HYVP). It meant the use of High Yielding Varieties seeds along with the use of modern inputs. In 1966 in the \textit{Kharif} season of selected areas had assured rainfall and irrigation. The chief \textit{Kharif}\footnote{Anlet Sobitharaj, \textit{Op.Cit.}, p.207.} crops are Rice, Millets, Cotton, Jute and Groundnuts. Wheat was first introduced in areas where water was available like Punjab, Haryana. Then the hybrids of maize, paddy, jawar and bajra, cereals and millets were gradually introduced.
Multiple cropping programme

The multiple cropping programme envisages that more crops per year per hectare are raised. This programme was launched during 1967 – 68. The basic needs of this strategy are the development in irrigation, increased use of fertilizers, proper adoption of water management practices, adoption of late sowing and selection of short duration varieties of new crops in place or along with traditional crops. It was very much useful for small farmers who had greater labour resources to work in a unit of land. This intensive multiple cultivation resulted in increasing the income potential of small holdings, improved human nutrition and animal husbandry thus leading to overall rural prosperity.\[^{25}\]

System of Agriculture

There are three system of agriculture followed in the district namely, the Nanjilnad system, the Kuttanad system and Nilankrishi. The Taluks of Thovala and Agasthiswaram in South Travancore are commonly known as Nanjil land, ie Lands upon which rice is grown and are known as Nanjay. Kanyakumari District with an area of 1684 sq.km occupies only 1.29 percent of the total area of the state. Out of this total area, 1641.3 sq.km are rural and 42.7 sq.kms are urban. About 32.7 percent of the total area is forest. As said earlier the economy is predominantly agricultural and plantation based. Agriculture is the main stay of the people especially in rural areas. Out of the total area of 144249.98 hect, of the total cultivable area 60.86 percent land is irrigated.\[^{26}\]

\[^{25}\textit{Ibid.},\text{ p.208.}\]
\[^{26}\textit{Souvenir on Development Schemes of Various Departments},\text { Kanyakumari District, Collector office, Nagercoil, 1 October, 1980}.\]
During the early part of the 19th century landless labourers constituted about one half of the adult male population of the district and of these nearly two thirds were engaged in agriculture. They were chiefly pailars and Paraiars who were predominantly attached to the farm.\(^{27}\) It was a common practice that certain people submitted themselves to the money lenders for slavery due to financial crisis.\(^{28}\)

The land based food related activity is agriculture. As agriculture is the Chief economic activity on land, the Kanyakumari area is often referred to as Nanchjil Nadu means “Land of the plough” in literary works and historical sources. Nanchjil means plough\(^{29}\). By being the master implement in the agricultural operation Nanchjil “plough” symbolizes agriculture and earns the name Nanchjilnadu meaning ‘land of the plough’, suggesting that the district is primarily an agricultural land. Even though agriculture implies, in general, food crop cultivation, strictly speaking in this district it implies paddy cultivation. Indeed the plough, or Nanjay is practically associated with paddy cultivation. The district stretches over an area of 1, 67, 251 hectares, of this 91,808 hectares are used for the cultivation of a variety of crops. Of the total cropped area, paddy occupies 23.65 percent land (21,709 hectares).\(^{30}\) Crops like tea, coffee, rubber, coconut, cocoa, pineapple, cloves and pepper are cultivated in high level lands. Paddy, coconut, banana, tapiaco, groundnut, and vegetables are cultivated in middle low level land. The district has all natural factors necessary for paddy cultivation as paid before. Paddy cultivation is the commanding economic activity on the land in the district.\(^{31}\)

\(^{27}\) Srinivasa Ragavan Iyanger, Memorendum on the Progress of the Madras Presidency
\(^{28}\) H.Tremenheere, Note on the Parish of Chengalpet, Madras, 1891, p.22.
\(^{29}\) K.Kathiraiver Pillai, Tamil Mozhi Akarathi, New Delhi.
\(^{31}\) M.Gopalakrishnan, Gazetteer of Kanyakumari District,1989, p.39.
Paddy is the principal crop of Kanyakumari District and the staple food of the people. For paddy cultivation, more availability of natural factors are necessary. Manpower is also a requisite factor. As paddy cultivation is a intensive labour activity, it requires manpower to till the land and to carry on other agricultural operations. The district stretches over an area of 1,67,251 hectres. Of there 91808 hectres under the cultivation of a variety of crops. Of the total cropped area paddy occupies 23-65 percent land (21,709 hecters).\(^{32}\) The district has a population of 16,76,034 as per 2001 census. Of them, 13,434, are cultivators and 56,811 are agricultural workers.\(^{33}\) This manpower supply is no doubt sufficient for managing and performing the operation involved in the economic activity of seasonal nature cultivation. With all these advantages, paddy cultivation thrives in “Nanchil Nadu” where also paddy is raised as a double crop in two seasons. On the onset of South–West monsoon the first season called Kannipoo season (Kharif crop) starts and paddy is sown in the month of May. By the time the harvest is over in the month of September, the North – East monsoon sets in and the second season called Kumbapoo season (corresponding to Ragi crop) starts. There after paddy is sown in the month of October and harvested in the month of February. During the Kannippoo season (May) such paddy varieties like Kattisamba, Kuruvai, TKM 9, ABT 36 and TPS 1 are cultivated and in Kumbappoo season Thattarvellai, Vallarakkan, Kochi Samba, IR20, Ponni, Vellai Ponni, AU 2, TPS 2 and CD 1009 are cultivated. Thats why, when Nanchilnadu was a part of Travancore State (before 1956) it was called as the granary of


the Travancore State.\textsuperscript{34} In both seasons the district gets paddy yield to the extent of 1,67320 tones on an average in a year and no doubt, this yield is remarkable.\textsuperscript{35}

The southern taluks of Kanyakumari District on the contrary, enjoy the benefit of an almost perfect system of irrigation, but manure is their great stumbling block and every day it is becoming more scarce. The jungle valleys on the other hand, have no end of manure in them. This is a great advantage, but the labour is scanty and the ploughing is difficult, which process requires strong cattle for which however and for the workers the climate is unfavorable.\textsuperscript{36}

Normally, two crops of paddy are raised such as, \textit{Kanni} and \textit{Kumbham}. The first crop is a short duration one, ranging from 110-120 days. It is sown dry crops in 2/3 area with the help of summer rains by the end of April or the beginning of May every year and treated as wet crops with the onset of South West Monsoon or the receipt of water in the channels, whichever is earlier. In the balance 1/3 area, dry nurseries are raised with the help of summer rains during May and then transplanted with the help of water received from channel during June. The rainfall during August and September is low and during that period, the harvesting of the first crop paddy is done.\textsuperscript{37}

The second crop viz., \textit{Kumbam}, starts with the raising of wet nurseries in August, which is longer in duration from 150 to 175 days, transplanted during September-October and harvested during February-March. These are known as \textit{Kanni-poo} and \textit{Kumbha-poo}.

\textsuperscript{34} \textit{Census Report of Travancore}, 1891, p.210
\textsuperscript{35} First Five Year plan (1959-56) Planning Commission, Government of India, New Delhi, p.92.
respectively.\textsuperscript{38} The average yield per acre or \textit{Kotta} (both are the same according to the settlement calculation) is about 15 \textit{Kottas}, which comes to nearly three-fourths of the average yield of \textit{Kanni} (September-October) and \textit{Kumbham} (February – March) crops taken together.

As the holdings are small and the farmers mainly depend upon this area for their livelihood, a high standard of cultivation is maintained and fairly good yields are obtained. A seed multiplication unit of 69 acres is run by the Agricultural Department for the multiplication and supply of paddy seeds at Thirupathisaram in Thovalai Taluk.

After the \textit{Kumbham} crop the lands are left idle for about a month or more, fully exposed to the effects of the sun and winds. Late in the month of April the field is ploughed for the first time and the stubbles left in the previous reaping are gathered and burnt. The field is then ploughed thrice continuously and leveled with a rake. Manure consisting generally of cow-dung ashes and alluvium is then spread from ten to twenty bandy-loads per acre according to the means of the cultivator. In some parts, sheep are penned on the fields and the leaves and branches of any jungle shrub or weed obtained in dry waste lands of fallows are also used as manure. The seed should be sown on or before the tenth of April or the \textit{pattam Udayam}, as it is called in the vernacular, the ordinary quantity being about 100 lbs for an acre.\textsuperscript{39}

Even though in some of the wet lands of Kanyakumari District paddy is cultivated twice a year (double crop lands), in some other places it is cultivated only once in a year (single crop lands). In the case of the latter, sowing is done in the month of June-July the

\textsuperscript{39} \textit{Ibid.}
plants (nurslings) are plucked and transplanted in July-August and the harvest is reaped in January-February.\textsuperscript{40} In the case of the double crop lands, there are two crops namely Kanni-poo and Kumbha-poo, taken in the year.\textsuperscript{41} Seasonal cultivation that is known as Kannipoo is a great success with the two varieties of paddy ASD16 Ambasamuthram, and TPS4 Thirupathisaram. The second seasonal cultivation known as Kumpapoo TPS3 with Ponmani CR10009 is also a great success.\textsuperscript{42}

\textbf{Classification of area under different categories:} Comparative statement on the percentage to the total area of the Kanyakumari district and Tamilnadu for the year 1983-84\textsuperscript{43}

\begin{tabular}{|c|c|c|c|}
\hline
Sl.No & Classification of area & Kanyakumari & Tamilnadu \\
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1 & Forest & 32.6 & 15.6 \\
2 & Barren and uncultivable land & 2.5 & 4.5 \\
3 & Land put to non-agricultural use & 14.2 & 13.8 \\
4 & Cultivable waste & 0.1 & 2.4 \\
5 & Permanent pastures and other grazing land & 0.1 & 1.2 \\
6 & Land under miscellaneous tree crops and groves not included in net area sown & 0.1 & 1.4 \\
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\end{tabular}

\textsuperscript{41} Season and Crop Reports, Government of Tamilnadu, 1995, p.30.
\textsuperscript{42} Personal interview with Dr.Arumugam Pillai, Professor & Head, Agricultural Research Center, aged 47, Thirupathisaram, dated 20 June 2013.
Coconut

Coconut is an important cash crop in Kanyakumari District which decided the financial status of a cultivator. It is believed that coconut palm was imported from Ceylon\(^\text{44}\). Of the natural products, coconut stands in Kanyakumari District, foremost and its cultivation forms an essential feature of the cultivation of Travancore. It is extensively grown in sandy tracts along the coast, on the banks of rivers, lakes, tanks, canals and in low lying valleys. *In fact it is almost we found everywhere.* It bears fruits all the year round and its uses are also quite infinite. All the taluks contains the cultivation of coconut to a greater or lesser extent. The average age of a coconut tree is around sixty years. The productive years may be fixed at about forty five years. The tree sometimes lives up to a hundred years in some cases.

A full grown coconut tree attains a height of thirty to fifty feet with a diameter of about one and a half feet at the bottom and one foot at the top. The yield depending a great deal on the suitability of the soil and climate for its cultivation. An acre is calculated to bear a hundred trees on the average. The chief varieties of the coconut are *chetengu, gaylatram, nakkuvari* or *nicobary, kappal tengu and yappanam* (Jaffna coconut palm).\(^\text{45}\) the *kappal, chentengu* and *gaulipatram* are not used for curry purpose

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\(^{44}\) *Census of India, Travancore, Vol.I, 1931, p.2.*

as they do not contain as much oily matter as the others. The juice or milk extracted from
the fresh kernal is also used in curries and confectionery for medicated oils for infants
and for other medicinal purposes. When the kernels are cut into pieces and dried in the
sun they are called coprah, which forms an extensive article of commerce.

Coconut oil, copra, coir yarn and rope are some of the important by products of
the nut. The oil is used both for edible and industrial purpose. The shell of the coconut
serves as a medium for expression, for some of the finest forms of craftsmanship of the
East. It is called in Malayalam as Kalpa Vriksha or “Tree of the heaven”. The trunk of
the tree is used as building material as well as for making ornamental furniture, walking
sticks and so on. The leaves are used for thatching the roof of houses. The nuts are used
as food and for extracting coconut oil. The shell serves as a valuable charcoal used by
goldsmiths for toning and melting metals and also as a tooth-powder in a finely powdered
state. The sap provides toddy and brown sugar. The coconut water is a refreshing drink.
The husks of the nuts are made into fibre for the manufacture of coir, yarn, rope and
mats. The two major industries in the district are coconut oil and coir making which
depend directly on the cultivation of the coconut palm.

Coir is the fibrous rind of the nuts which is thickly covered. It is generally
separated from the shell by forcing the nut upon the point of an iron spike or sharp piece
of hard wood fixed firmly in the ground used by the people. The coir is then applied to
many uses such as for stuffing couches and pillows, for cordage saddles etc. Large
quantities are annually exported to Europe, where it is made into brush, mat, rug and the

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pith or dust of the husk in used as manure and dried husks are used as fuel. The coconut husks have become a very valuable commodity in the recent years. Toddy is obtained from the unexpanded spadix to procure the sugar known as coconut jaggery. These are some of the important uses of the several parts of the coconut palm. The green leaves with the stalk serve as good fodder for elephants. The ashes of the leaves yield abundance of potash which is used by dhobis for washing cloths.

**Cashewnut**

The cashewnut is one of the profitable industry. It grams in Torrid zone. The native of cashew tree is Brazil, it was introduced by the Portuguese who planned the tree in Goa. In the East under the name of Kaja it was introduced in the Western districts of India. In Western India it was planted for checking the soil erosion. It is known in Travancore as ‘Kasuva – ma’ or ‘Undi-ma’ or Parangi-ma. The nut is the most delicious food whether as a boiled dish as vegetables are or fired when mature. The cashew tree is fraught resistant and grow in all types of soil and under different climate condition. But maximum production is obtained from good sort of climate earth adequate moisture.

Vilavancode taluk due to the abundant supply of cheap labour and the low wages paid to the laboures this industry flourished in Kanayakumari District. In Unnamalaikadai village the cashew industry developed because the village is thickly populated and industrially backward. Many people are unemployed. In addition to this transport system, availability of water and electricity and co-operation of the public was

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49 Personal interview with Rajayan, proprietor of a coconut farm, aged 48, residing at Ethamozhi, dated 16 July 2012.
responsible for the location of cashewnut factory in this village.\textsuperscript{51} In this factory 95% of the workers involved are women. It helps to generate rural income in backward areas.  
(Add P.No.160) The national nut company at Palugal, the Vijayalaksmi cashewnut industries and the Raju vilas Roasting plant both located at Palavilai are the main units in the district.\textsuperscript{52}

**Tapioca**

Tapioca is also a common crop of the district and it is cultivated in Kanyakumari District purely on rain fed condition. It is cultivated in 12,000 hectares during the receipt of summer showers in the month of April – May and in September – October. Tapioca, a native of America which was introduced to Africa by Portuguse introduced the crop to India also during 17\textsuperscript{th} century. This crop assumed importance only during the later part of 19\textsuperscript{th} century when it was popularized as subsidiary food crop by the then Maharaja of erstwhile Travancore State Shri Vishakam Thirunal.\textsuperscript{53} This drought resistant tuber crop can thrive in a variety of soil depending upon the rate of moisture. Almost the entire unirrigated lands in the West were planted with tapioca and it was the staple food for a considerable large section of the people of Vilavancode. It was an annual crop and the usual season was between May and March. Inter culture of horse gram, Bengal-gram and black gram was customarily practiced along with tapioca in two different seasons.\textsuperscript{54} After maturity, the tuber was collected, cleaned, dried and stored for consumption during the months of June to August.\textsuperscript{55} Tapioca thrives best in laterite soils in those containing red

\textsuperscript{55} Ibid.
clay, but not in sandy regions. A most climate is needed to its successful cultivation. Usually dry situation is preferable during the time of plantation. Otherwise the roots may decay and perish. Five-hundred trenches can be dug in an acre of land. The crop matures in nine to eleven months.\textsuperscript{56} Its dried leaves are used for manuring the banana plantains. Tapioca root feely enters the menu of the genuine Malayali for his \textit{conjee} and meal. In fact, the poorer classes of Kanyakumari District almost entirely live upon it. Cut into small bits and dried in the sun, it can be kept for a long time without being spoiled.\textsuperscript{57} Now a days dried tapiocas are consumed as snacks in the form of chips. The chief varieties are \textit{vella marachini, chenkomban, pacha aviyan, anai maravan, karimaravan} and \textit{kanya marachini}.\textsuperscript{58}

**Sweet Potato (Sarkaravalli)**

The sweet potato has originated in tropical America. Sweet potato grows well in all lands where tapioca is cultivated. But generally wet lands with alluviam are used for raising. This root plants or creepers are cut into bits of one foot in length with two or three nodes and planted. Ashes and cow-dung mixed with earth constitute the chief manure. The planting takes place generally in May during the prevalence of the South West Monsoon. As the tubers rippen, the leaves and stems becomes yellow and the leaves fall off. The plants require watering once in a week or as often as necessary.\textsuperscript{59}

The tuber about 4 or 5 inches long and about 2 inches round resembles the potato though not so dry. It is sweet, palatable and nutritious containing saccharine matter. The

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\textsuperscript{57} \textit{Ibid.}, pp.63-64.
\textsuperscript{58} K.V.Peter, \textit{Tuber Crops}, New Delhi, 2007, p.184.
herbage is used for feeding cattle. There are two chief varieties, one with red tubers and the other with white.\(^6\)

**Palmyra**

Palmyra is much planted in the drier areas of South Travancore. It is largely grown in the taluks of Thovalai, Agastheeswaram, Kalkulam and Vilavancode.\(^6\) Palmyra is a tall variety of the palm with a spread head of fan-shaped leaves. It is straight like the date and grows to about 40 to 100 feet high with a girth of nearly 5 feet at the bottom and 2 feet at the top and hence it is the largest palm in India.

It flourishes best in interior and especially sandy and acrid ground where scarcely anything will grow.\(^6\) One fruit contains one to four nuts which much be planted seperatively or collectively. They are generally planted in the month of March or April. Any sort of manure in used until they became young plant, the nut remains in the ground for three months. When its outer coating decays the primary root shoots into the soil and the first leaves shoot up. The soil should then be raked and care must be taken to protect it from cattle.\(^6\)

The palmyra begins to yield from its twenty fifth year, in exceptional cases when the soil is very favourable it takes only fifteen or sixteen years. It is always delicious, that is to say bearing male and female flowers on separate trees, one tree producing only inferferous flowers, another bearing the pistil and fruits. The flowering season is generally

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\(6\) File No.67, Education Department, Report of Dr.S.G.Barker on the State of Palmyra Industry in South Travancore, 1917.


the hot months of March and April. Some trees bear flowers also in the cold season. The male flowers are minute and are produced between scales closely set on a branched flower stalk. Each stalk is estimated to bear 90,000 stamen and as there are usually seven of these in each tree the male flowers on a single tree are probably 6,30,000, in number. But none of these flowers can produce a fruit. The female palms bear a flowery stalk with about ten to twenty fruits, about ten of these branches are produced in a year so that over 200 fruits are sometimes obtained from a single tree.  

From the juice extracted, jaggery and arrak are prepared. The fermented form of its juice is toddy which is drunk by the labour classes. The stem of the matured trees are used for construction of houses. The palmyra fiber has a good export market and a number of cottage industries based on it flourished on an astounding scale allowing the conversion of dry lands since the kodayar project adversely affected palmyra farming. The decline of palmyra industries in later year was due to poor returns due to less price and a general shift towards more decent employment.

Rubber

The idea of growing rubber in Kanyakumari District was conceived during the Second Five-Year Plan. Accordingly Mr.V.S.Krishnaswamy, the then Chief Conservation of Forest (1956-58) decided to transfer 3000 acres of second quality teak forest for the purpose of rubber cultivation. It is a perennial tree of a height of 25 to 30 metres. The wood is straight and soft. Seeds are three lobed, each holding three seeds. It

64 Ibid., p.66.
65 File No.67, Education Department Report of D.S.A., Barker.
is quite like a castor seeds. The seeds are oil bearing. The economic life period is around 32 years. Out of the 32 years, the first seven years are considered as immature phase and the next 25 years are called as productive phase. Rubber needs systematic climatic requirements. The region lying in $10^\circ$ latitude on either side of the equator is highly suitable for rubber cultivation. The plantation requires a temperature ranging from $20^\circ$ to $30^\circ$C. The different types of clones planted from 1902 to 2005 are following:

1) G.T.1  2) TJIR-1  3) G.I.1    4) P.B.86  5) PRIM-600  6)PRIM-628  7) PRIM-703 8) IRCA-130  9) IRCA-230  10) RRII-429  11) RRII-430  12) PBM-24  13)BRII -105

Horticulture

Horticulture is one of the main branches of agriculture. Originally it meant specially the cultivation of a garden plants such as flowers, vegetables, fruits and ornaments that were grown in garden which acquired the name, horticulture plant’s. The present meaning of horticulture includes not only the growing of plants in garden for pleasure or for profit, but the large scale production of vegetable, fruits, flowers and ornaments in fields. It also includes many services which are ancillary to the production and marketing of the plants and crops. Kanyakuamri District enjoys both tropical as well as subtropical climate condition obtaining in the Eastern and Southern coastal regions of the district and to some extent in the western costal region also the land is more or less plain and enjoys tropical climate. It is quite favourable for cultivation of sources of horticultural crops like fruit kinds, spices and plantation crops

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67 www.rubberboard.org.in better use a literary source.
69 Ibid.
Jack fruit

One of the medieval travelers, John De Margnolli gives the following description about the jack tree. There is again another wonderful tree called “chake baruke” as big as an oak. Its fruit is produced from the trunk and not from the branches and is something marvelous to see, being as big as a great lamb, or a child of three years old. Almost every house has a few Jack or mango trees. Jack tree flourishes best in clay and laterite soils. The strong timber of the tree well known Jack wood, is valued for making furniture such as cots, carriages, tables, building houses for door and window and musical instruments. There are two varieties of jack fruit are recognized, one known as the Kozhan, the fruits of which are generally used green as curry stuffs being not so delicious when ripe as the other sort Varikkai or the honey-jack is very popular for its sweet taste. It is a delicious fruit, highly valued and always fetches a good price in the market. The tender fruits constitute a good curry stuff known as Idichakka or Kottanchakka, Breadfruit is used only as curry stuff.

Mango

Mango is another delicious fruit of India. It is abundant all over the district. It grows in an evergreen tree blossoming from January to April according to situation, the fruit ripening from May to July. There are many varieties. Among, some of them are used for curries and pickles while others are excellent as ripe fruits. The wood of mango tree is used as fire wood, for building canoes and sometimes for houses and furniture. Among

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71 Ibid., p.65.
72 Personal interview with Vijayakumar, proprietor, Vijayakumar Nursery Garden, aged 60, residing at Kuzhithurai, dated 20 April 2012.
the grafted varieties of mangoes, the most important are pairi, alphonso, neelam, bangalora, bennet alphonso, malgova, jehangir and prior.\textsuperscript{73}

The Government is running a Fruit Research Station near Kanyakumari which is engaged in a research of the off-season bearing in mangoes. It is sponsored by the Indian Council of Agricultural Research and the State Government. The station is also serving the needs of the fruit growers by way of supply of high quality fruit plants. There is scope to step up the production of superior varieties of fruits and to bring additional area under cultivation.\textsuperscript{74} Fruits farm at Vattakotai which is in Kanyakumari District was established in 1922 by Chitrathirunal Maharaja. It consists of 31 acres and 64 cents. Various fruit trees with many varieties are cultivated here. Mango tree has the following varieties such as Hybrid Nelam, Kalapadi, Banglora, Alphonsa, Hemaudeen and Pankanappalli.\textsuperscript{75} Due to good climatic condition, mango fruits are cultivated throughout the year in Kanyakumari District. The profit earn from mango cultivation is Rs. 3 lakhs per year there.\textsuperscript{76}

**Banana**

In ancient Sanskrit literature banana was called the fruit of the wise men. It is grown in plenty every where in the State. Besides, every house has a few plantains in the yard. Almost all kinds of soils in the district are suited for plantain cultivation but an mixture of sand and clay is the best. There is no particular planting season. They are planted in all months in the fields. Banana cultivation is carried on in considerable area

\textsuperscript{73}Ibid, p.63.  
\textsuperscript{74} Personal interview with Subramanian, farmer, aged 53, residing at Bhoothapandi, dated 21 January 2012.  
\textsuperscript{75} Personal interview with Kumar, Assistant Agriculture Officer, Fruits Farm, aged 55, Kanyakumari, dated 23 May 2013.  
\textsuperscript{76} Ibid.
throughout the district more particularly in the western taluks of Kalkulam and Vilavancode. Mostly, banana cultivation is restricted to the slopes and garden lands on rainfed condition, supplemented by lift-irrigation. It is also cultivated along betelvine enclosures, coconut-groves, on the margin of water courses and tank-bunds. The total area under banana cultivation in Kanyakumari District is 5633 hact. The ‘nendran’ variety is largely grown in dry land areas. The other varieties are largely grown in dry land areas. The other varieties are *palayam kottan, padathi, poovan, kadali, chingam* are grown in the area attached to houses and also in farmyards.

**Other cereals**

Of cereals, *cholam*, especially the white variety is grown in the Southern taluks adjoining Tirunelveli. This is cultivated in dry black loam. The ground is prepared around April-May after ploughing several times and penning sheep for three or four nights and otherwise manuring and sown about May-June. No nursery is required. The crop is dependent on rain. But a light rainfall is enough and the crop matures on the four month. A full grown plant is eight to ten feet high. Under suitable irrigation, ploughing and manuring, several crops can be secured in a year from the roots of the same plant. *Raggi, Samai* and occasional *Thinai* are grown in *bunja lands* and also in compounds in open places between trees *Cumboo or kamba pillu* is very sparsely grown in the Southern taluks. Wheat is grown to a small extent only maize is not common but sparsely found in parts adjoining Tirunelvelly.  

Pulses

Pulses are raised purely on rainfed conditions. They are raised in three seasons. It is raised as intercrop with tapioca. Pulses such as green-gram, black-gram and horse gram are grains largely cultivated in this district. Black-gram and the green gram grow well in soils containing lime. Such soils are found in the Taluks of Thovala and Agasteesvaram. Horse-gram is cultivated only in small quantities in open spaces on the hill tops and also in the interspaces between trees in compounds. The cultivation of these pulses do not require much water. The sowing season falls in September to October and the harvest is reaped between January to February. There are other grams such as perumpayar or Kozhinji, Karinjanta, Chendantan, Nadu payar which also cultivated to some extent in the district. Pulses are also grown in paddy fields, soon after the harvest of the second crop paddy.

Turmeric and Ginger

Turmeric or manjal is an underground tuber and can be cultivated throughout the year. Black soil or red soil is suitable for its cultivation. Watering is done once in ten days and the weeds are cleared and manure applied. The root is a common ingredient in curries. It is specially useful as a medicine, and prescribed by native doctors for many disease. It is also useful in the preparation of dyes. It is also a necessary ingredient in all marriage ceremonies and religious festivals.

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Ginger is cultivated in the Taluks of Vilavancode and Kalkulam. The only suitable kind of soil is red earth that is free from gravel. Rain is essential and a requisite for the cultivation of ginger. The plant matures in eight to ten months. The height of a full grown plant is one and a half feet. It is mainly used for cooking and for medicinal purposes.\textsuperscript{82}

**Pepper**

Pepper is the general term for the dried pungent fruits of the number of perennial creeping plants of the zone having certain common characteristics. For centuries pepper has been a product of export to European countries from the Malabar coast. History shows that the pepper of the Malabar coast has had a great deal to do with the kindling of an enterprising spirit in Europe in the middle ages. Even from the days of the Roman Empire, pepper became a luxury among the Romans and largely contributed to the constant anxiety in Rome against the draining of money into the Eastern markets. The Portuguese, the Dutch and lastly the English all sought the Malabar coast with a view to have the sole monopoly of the pepper trade. In fact the earliest trade relation between the English and the Travancore state were established by means of a pepper contract.

The pepper of Malabar coast maintained its high reputation for quality more than other countries like Sumatra and Penang. It is largely cultivated on the northern and central divisions of Travancore and Kalkulam, two varieties, the black and the white.

Pepper is one of the most useful medicines of the Hindu Pharmacopoeia (the Ashtangahridaya and the Ayurveda). It forms the chief remedy for several disease

\textsuperscript{82}Ibid., pp.36-37.
according to the Dravidian medical science. The value of pepper exported from Travancore in 1903-1904 amounted to Rs.21,62,353 and formed one tenth of the entire export of the country.\(^{83}\) There are three methods of cultivation that can be adopted

1) By planting the seeds in the ground 2) By planting the cuttings from a matured vine, and 3) By propagation by the method of layering. The layering process is the best and produces the best and the largest quantity of fruits. The plant if left free would propagate itself by running from tree to tree along the ground as is the case in the forests. The layering method is the same as the natural process of propagation.\(^{84}\)

**Pepper nursery in Kanyakumari District**

In Kanyakumari District a Pepper nursery was established in 1967 at Valiya Yela Pechiparai. The total area of the farm is 6 hectares and it is located on the road from Pechiparai to Kothayar dam near zero point. The farm is on forest land. An area of 5.6 hectares is used for pepper, clove and nutmeg cultivation apart from the nursery. There is an open well for irrigation. The farm produces annually two lakh pepper plants of the variety “Kuttanadan” for distribution to growers of their district and in other parts of Tamilnadu through Hill area development schemes. In the same farm, scheme for hybrid pepper development (Panniur -1) is also implemented on an area of 8 hectares and 10,000 clove seedlings are produced for distribution.

Further the Congress government implemented various permanent plan and non-plan schemes in the district. Under permanent schemes government fruit farm,
Kanyakumari, Pepper nursery Pechiparai, Areca nut development scheme in fruit farm Kanyakumari were established.85

Schemes and plans

1. Development of subtropical fruits and spices in Kanyakumari District and Tirunelveli District under Western Ghat Development Programme with Central and State assistance.
2. Development of “KEW” variety pineapple (state plan)
3. Development of hybrid pepper (state plan)
4. Distribution of hybrid Vegetable seeds (state plan)
5. Banana development scheme (state plan)
6. Cashew development scheme (central plan)
7. Distribution of pulses and vegetable mini kits (central plan)

Betal vine

Betal is cultivated throughout the state. The betal vine requires a moist situation. Black sandy soil is the best suitable soil for the cultivation of vine. On red sandy soil and on soils with clay and red sand also betal flourishes in some parts. It does not grown in elevated places. The cultivation of the betal vine forms a chief occupation for Cheras and Christians and rarely to others. The cultivation is a very profitable one though it involves a good deal of trouble. The fresh juice of the leaves is a valuable stomachic and is also prescribed along with musk in hysteria. The leaves are presented to guests and visitors

during marriage and other festival occasions. The leaves are always given with the
dakshina or money in religious donations or gifts.\textsuperscript{86}

\textbf{Cardamoms}

Cardamom is grown well drained forest soils, ever green forest, heavy humus
accumulation and adequate moisture. The forest area selected for the plantation is
prepared by clearing the under growth and managing the shady trees to give optimum
shade.\textsuperscript{87} They are used as spice and also as a flavoring material in confectionary, liquors,
curies and medicines. Cardamoms are grown in the hilly tract of Kanyakumari District.
The plant was indigenous to the evergreen forests of Kanyakumari District. Up to the end
of 1896, A.D. cardamoms were controlled by government monopoly all over the state.\textsuperscript{88}
In the year 1869, A.D cardamom branch was severed from the forest department and
established as a separate department under. J.D. Munro.\textsuperscript{89}

\textbf{Vegetables}

In the low rain belts of Thovalai Taluk, a variety of dry crops like groundnut,
cotton and chillies are grown under rainfed condition. Due to scanty and erratic nature of
the rainfall during most part of the year dry cropping is quite in profitable. Apart from
these, trees and plants, vegetables like cucumber, chillies, bottle guard, bitter guard,
drumstick, brinjal, pumkin, onion and ladies finger are cultivated in Kanyakumari
District.\textsuperscript{90}

\textsuperscript{86} Nagam Aiya, pp.41-42.
\textsuperscript{88} Ibid., p.48.
\textsuperscript{90} Census Report 2011, Chennai, p.18.
Agriculture in India is undergoing transforming, Traditional technology is slowly giving way to modern technology. This technological break through has brought about spectacular changes in agricultural production. In paddy growing areas a large number of bullocks are maintained by farmers to finish the pudding of field faster, so that transplantation of seedlings is finished, in time. The use of machines for cultivating, harvesting, threshing etc has made vast strides in recent years. The modern equipments and ploughing by bullocks are mainly used for wet cultivation in Agasteeswaram and Thovalai taluks. The use of tractor in Kalkulam and Vilavancode taluks for wet cultivation has also been gaining momentum in the past. It bring more lands under cultivation of uncultivated wastes, by leaning of undulating areas, clearance of jungles by tractors extensive and intensive cultivation is achieved on a large scale. The agricultural extension centres functioning throughout the district cater to the needs of the farmers by supplying the required plant production chemicals.\(^91\) The Government established agricultural centres in the district are State Seed Farm at Thirupathisaram, Model Orchard at Kanyakumari, Pepper nursery at Pechiparai, Pineapple nursery at Pechiparai and Paddy Experimental, Research Station at Thirupathisaram. The Agricultural Research Station at Thirupathisaram was started in the year 1976 and it was under the control of the Director of Agriculture till 31 March 1981. On April 1981 the station was merged with the Tamilnadu Agricultural University.\(^92\) The forest areas in the northern part receives a higher rainfall. The runoff water from the hill is used for irrigation in the southern plains, in addition to the rainfall. Thus the district is very rich from the point of agriculture

including horticulture.\textsuperscript{93} In an economy dominated by subsistence cultivation, production of food grains is the important economic activity. Among the different food grains such as Rice, Cholam, Cambu and Ragi, Rice occupied the chief place in the Tamil culinary hierarchy. Because of the high status occupied by rice in the dietary hierarchy, people were motivated to cultivated the land with good soil and land where irrigation was available.\textsuperscript{94}

Because of the low evaluation of work connected with paddy cultivation, all these farmers tried to avoid actual work in paddy fields and got it done through labourers.\textsuperscript{95}

Because of the correlation among different sources or bases of social status there a correlation between one’s status on the basis of the occupational hierarchy and other bases of status such an caste, wealth, possession and so on. As a result of this, members of the high castes were likely to be the main land owners and castes on the lowest ranks were likely to be agricultural labourers and castes in the middle level were likely to be lease holders. The lower caste people were employed in the low occupation as agricultural daily wages. Even among them the lowest ones of lowest castes were likely to be employed in the meanest of like wet paddy cultivation. The scheduled castes in those areas were employed in lowest occupation.\textsuperscript{96} This happened differently in the different districts of a State in the different taluks as within a district, or within different villages with in a taluk.

\textsuperscript{94} \textit{Ibid.},
\textsuperscript{96} \textit{Ibid.}, p.666.
Extent of Conversion

Crop conversion happens due to different reasons. Some of the important reasons are to create trouble in case of enmity, Secondly for easier supervision in cultivation and to avoid difficulties in labour management. No doubt cash crops are now replacing subsistence crops like paddy but still, it is a forced change. Few persons made the change willingly, while the rest had to follow for they had no other alternative, impacting crop conversion.

Most of the area has now been converted into rubber or coconut plantations. Naturally rubber trees extend theirs shadow over a wide area and many tapioca fields are affected, particularly in the northern areas of the district adjacent to the hills. The new rubber plantation proved to be a very attractive abode to the monkey’s of the forests. While Rubber trees are the least affected by the monkeys. The residing primates invade the neighbouring tapioca fields and pluck the plants for the tubers. The menace is so extensive that the cultivations find it impossible to continue cultivation of tapioca near the hills. A number of them have already converted their fields to rubber.\footnote{Ibid.}

In Kalkulam taluk, one immediately notices the sparse and miserable condition of paddy cultivation in that area. Large number of yelas are now affected. In some of the places the process of conversion is nearing completion and in other areas it has just started. Apart from coconut, rubber is also being planted in the fields where previously paddy was cultivated. Even the most fertile areas irrigated by ‘Valliarru’ river has not escaped this process of change. In the northern part of the Taluk, Near the hills where tapioca used to be cultivated extensively, nearly a half of the tapioca cultivation is already converted to rubber. In Vilavancode taluk which is adjacent to Kerala, the
change is equally prominent. However, in Thovalai taluk on the east, the changes is limited to the uplands and in Agastheeswaram taluk the change is not significant.\textsuperscript{98}

Some improvement in the productivity of land was definitely taking place because of the adoption of the new techniques of production.\textsuperscript{99} The aggregative physical parameters of agriculture show remarkable achievement. Between 1950 and 1996-97 agricultural production increased from 49 to 176 tonnes of food grains from 52 to 161 tonnes and yield of non food grains from 45 to 201 tonnes. Per hectare yield of all crops increased from 74 to 149 tonnes. It may be mentioned that the agricultural scenario had been stagnant in the decades prior to independence. Between 1950-51 and 1994-95 the gross cropped area increased from 132 million hectares to 188 million hectares. Gross irrigated area went up from 23 million hectares to 71 million hectares. Between 1950-1951 and 1996-97 distribution of improved seeds increased to 20 quintals, fertilizers use increased from only 69 thousands tones to 14 million tones with per hectare fertilizer ratio of 77 kg. The use of Pesticides increased from 2 to 4 thousand tones to 56 thousand tones while consumption of electricity in agriculture went up from 15200 million K.W.H in 1981-82 to 85736 millions Kw.H in 1995-1996. Institutional credit (Co-Operative societies, Commercial Banks and Regional Rural Banks) was 28653 crores in 1996-97 compared to 16186 in 1989-90.\textsuperscript{100}

Kanyakumari District produces paddy, tapioca, pulses and oilseeds such as groundnut, gingelly and coconut. Besides Commerical crops such as cashewnut, rubber, fruits like mango, jack, pineapple and spices like pepper, clover and nutmeg, arrow root

\textsuperscript{98}Ibid., p.63.
\textsuperscript{99} Radhar Dutt and K.P.M.Sundaram, \textit{Indian Economy}, 1975, p.313.
are also grown in small areas of this district. Another important feature of this district is the production of off season mangoes, especially in and around Kanyakumari. Coconut is an important cash crop in this district pulses are raised purely in rice-fallows and as mixed crop in tapioca. The important pulses are grown exclusively in rice fallows. Pot watering is the local practice vegetables are grown as third crop, after the harvest of second crop of paddy in some parts of this district. The progress of scientific in Agriculture undergoing transformation. Traditional technology is slowly giving way to modern technology. The new strategy comparison the introduction of new and high yielding varieties of seed materials increased application of the recommended doses of fertilized and extension of the use of pesticides. This technological transformation has brought about spectacular changes in agricultural production. The use of machines for cultivating, harvesting, threshing has made vast strides in recent years. The use of machine is to substitute human effort and to increase its productive efforts.