PRINTED BY THE DIRECTOR OF PRINTING, GOVERNMENT OF ANDHRA PRADESH
AT GOVERNMENT CENTRAL PRESS, HYDERABAD,
1976

INTEGRATED TRIBAL DEVELOPMENT PLAN
FOR
TRIBAL AREAS OF EAST GODAVARI DISTRICT

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TRIBAL CULTURAL RESEARCH AND TRAINING INSTITUTE
TRIBAL WELFARE DEPARTMENT
GOVERNMENT OF ANDHRA PRADESH
HYDERABAD
1976

C O N T E N T S

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List of Maps and Charts

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RESOURCE INVENTORY

CHAPTER-I

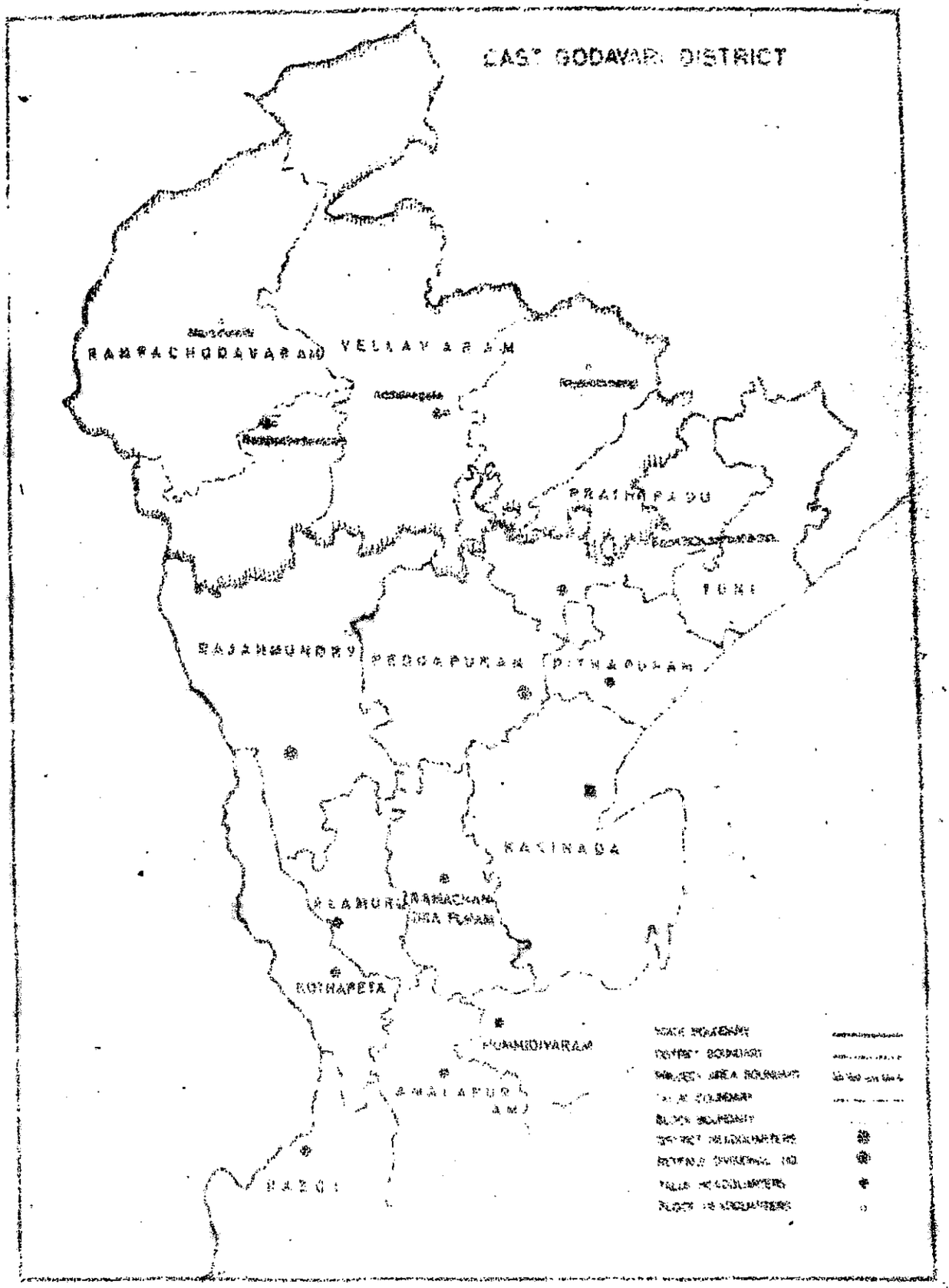
ORIENTATION

SETTING:

Rising near Nasik in the Western Ghats and skirting many districts enroute, the Godavari river forces its way through a narrow gorge in the Eastern Ghats before forming a delta a few miles east of Rajahmundry, where a gigantic rail-cum-road bridge spans the mighty Godavari river. On the eastern flank of the river Godavari is situated East Godavari District. Centrally situated on the Calcutta and Madras National Highway, the East Godavari District is bounded on the North by Visakhapatnam District and the State of Orissa, on the East and the South by the Bay of Bengal and on the West by the Khammam and the West Godavari District. It is situated between 16° 19' and 18° North and 81° 30' and 82° 37' East.

The District can be broadly divided into three distinct zones namely -- the agency or the hilly tracts, the delta and the upland. The agency or the hilly tracts comprises Yellavaram and Rampachodavaram Taluks. The Eastern Ghats rise by gradation from the level of the sea coast and spread throughout the agency. Most of this area is covered by the dense forests and hills. The deltaic portion consists of the whole of the Konaseema and portions of Kakinada, Ramachandrapuram, and Rajahmundry taluks. It presents a vast expanse of rice fields dotted with plantains, betel and coconut gardens. The upland portion comprises of the taluks of Tuni, Pithapuram, Peddapuram, Prathipadu, and portions of Rajahmundry, Kakinada and Ramachandrapuram taluks. It forms a gently undulating and fairly wooded plains.

The District comprises of 14 Taluks of which 6 are independent sub-taluks. Rampachodavaram and Yellavaram independent sub-taluks are exclusively scheduled areas while remaining 12 taluks have no scheduled area. State Planning Department has classified 12 Panchayat Samithis as advanced blocks, 4 Panchayat Samithis as ordinary blocks and 4 Panchayat Samithis as Tribal Development Blocks in the District.


EAST GODAVARI DISTRICT
RAMPACHODAVARAM
VELLAVARAM
PRATHAPADU
TUNI
RAJAMUNDRY
PEDDAPURAM
PITHAPURAM
KAKINADA
RAMACHANDRAPURAM
ROTHAPETA
PUNDIVARAM
AMALAPURAM
RAZOLE

There are no Backward Blocks in this District. It is observed that this district has more number of advanced blocks than any other district in the Coastal region. The district covers an area of 10,970 Sq.KMs. with a total population of 30.87 lakhs of which 1.19 lakhs belong to Scheduled Tribes constituting 3.85% to the total population of the district*. The tribal population is mainly concentrated in two scheduled taluks viz., Rampachodavaram and Yellavaram taluks while in other taluks they are sparsely distributed.

PROJECT AREA:

The present habitat of the tribal population in East Godavari District is almost confined to the scheduled tracts and surrounding hill and forest villages of Prathipadu taluk. The scheduled tract is confined to Yellavaram and Rampachodavaram Sub Taluks in the District. These two sub taluks are covered by four T.D.Blocks. The Project area for implementation of Integrated Tribal Development Plan in the East Godavari District is therefore carved out of all the villages of Yellavaram and Rampachodavaram scheduled taluks and adjoining 49 non-scheduled tribal villages of Sankavaram Block in Prathipadu taluk. This

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* 1971 Census.

non-scheduled pocket is hereinafter referred to as Sankhavaram pocket. The geographically contiguous project area consists of 725 tribal villages of which 142 are uninhabited.* The project area falls under two revenue divisions viz., Rajahmundry and Peddapuram. The identified area for the I.T.D.P.' lies between 81° 3' and 82° 30' east and 17° 10' and 18° 0' North. The Project area covers 4,191.65 Sq.KMs and constitutes 38.2% of the total geographical area. The total population in the Project area is 1.51 lakhs of which 0.99 lakhs are scheduled tribes.** The Scheduled Tribe population in the Project area thus constitutes 65.9% to the total population in the Project area.

PHYSIOGRAPHY:

The Project area can be broadly divided into two physiographic tracts:

1. Hill ranges in high altitudes ranging from 2,500' to 4,000' covered by dense forests narrow and steep valleys.

2. Flat area covered with scrub jungle and interspersed by small hills and undulating terrain with rock out crops.

The valleys in the north of Chodavaram are very steep and narrow especially to the North of Pamuleru. The mountains of this region are of

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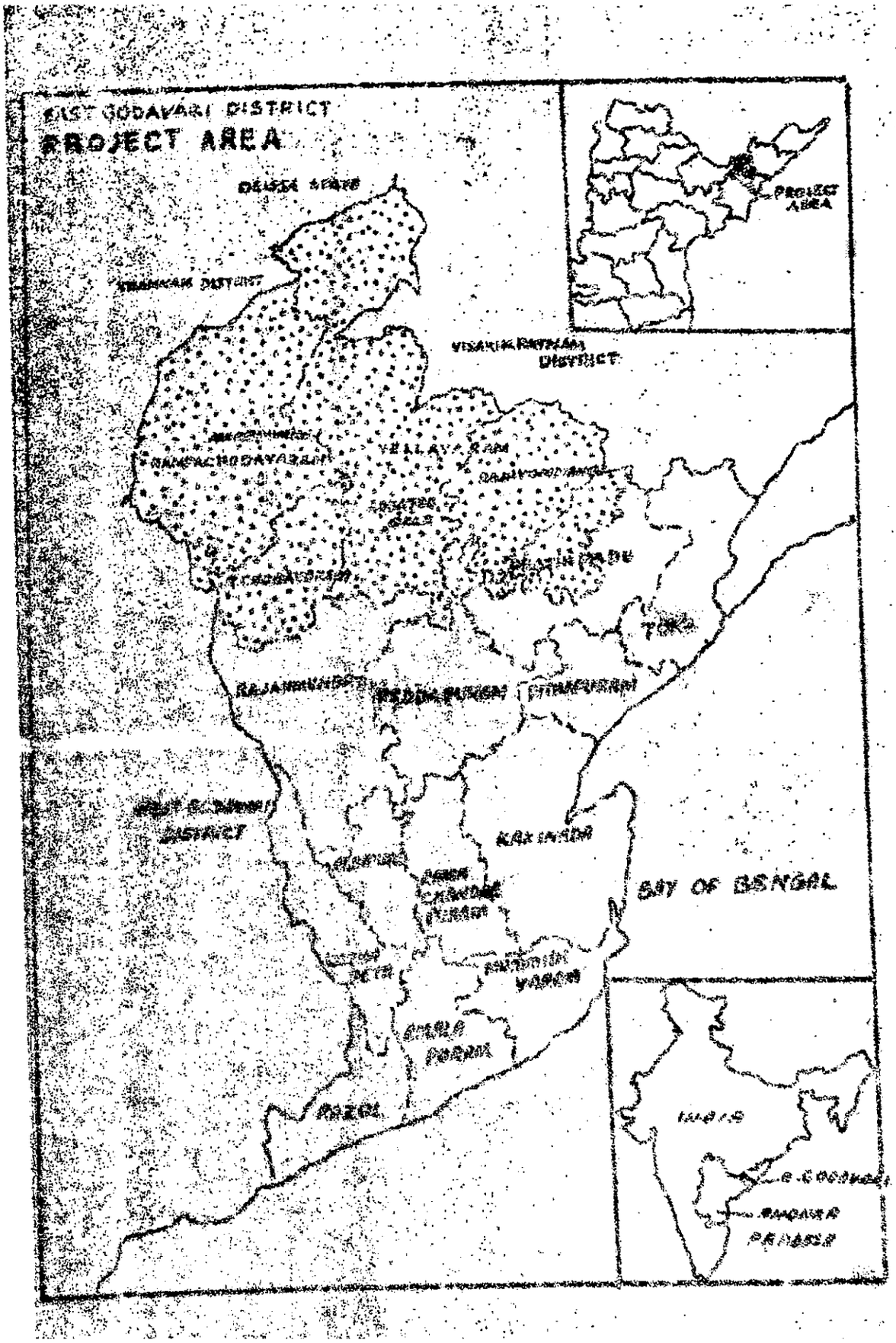
* Block-wise distribution of villages - Refer Annexure No.I (2)

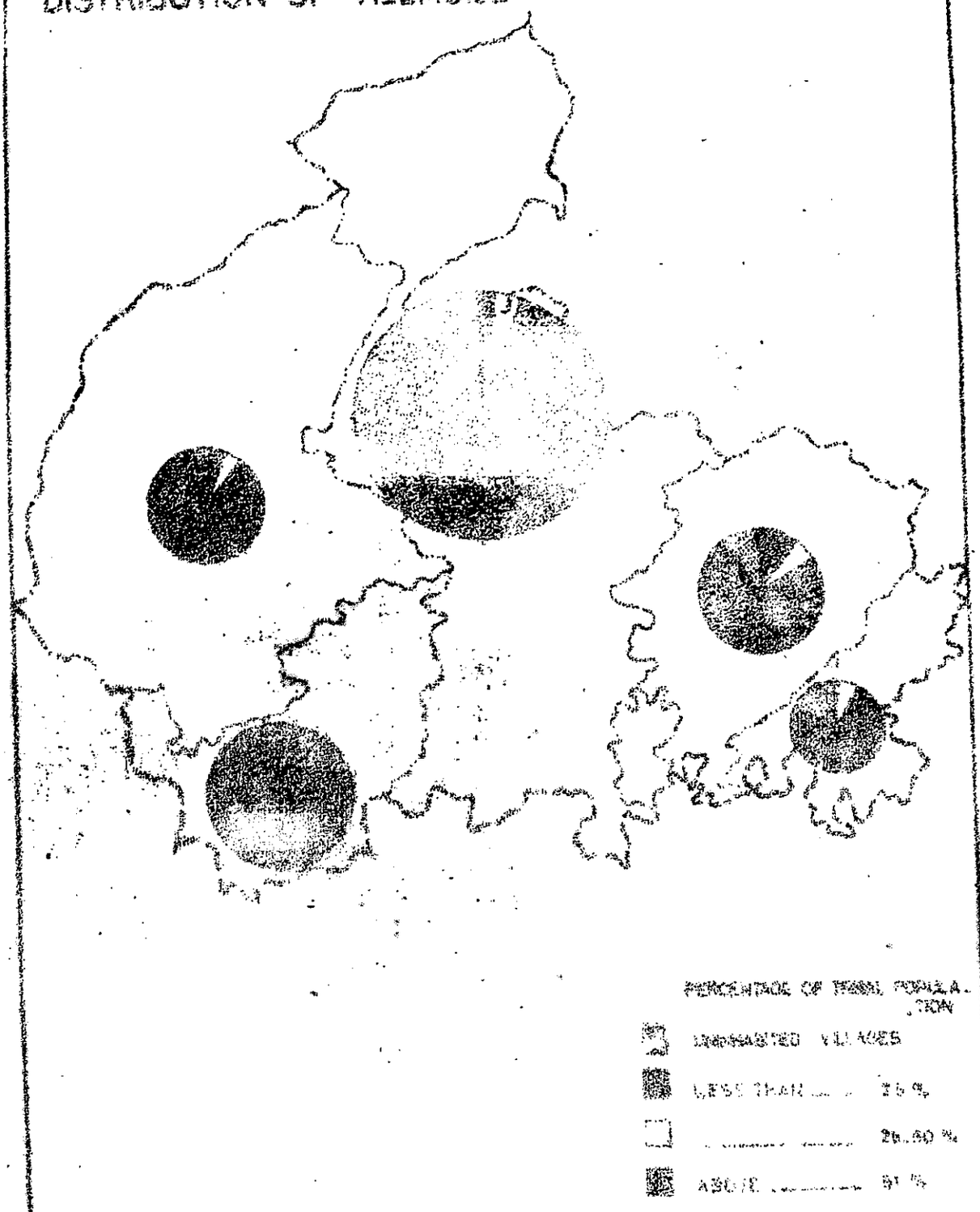
** Block-wise population - Refer Annexure No.I (1)

' Integrated Tribal Development Project.


EAST GODAVARI DISTRICT
PROJECT AREA
PROJECT AREA
VISAKHAPATNAM DISTRICT
VELLAVARAM
TORA
RAJANDRAPURAM
PEDDAPURAM
KAKINADA
BAY OF BENGAL
INDIA
ANDHRA PRADESH

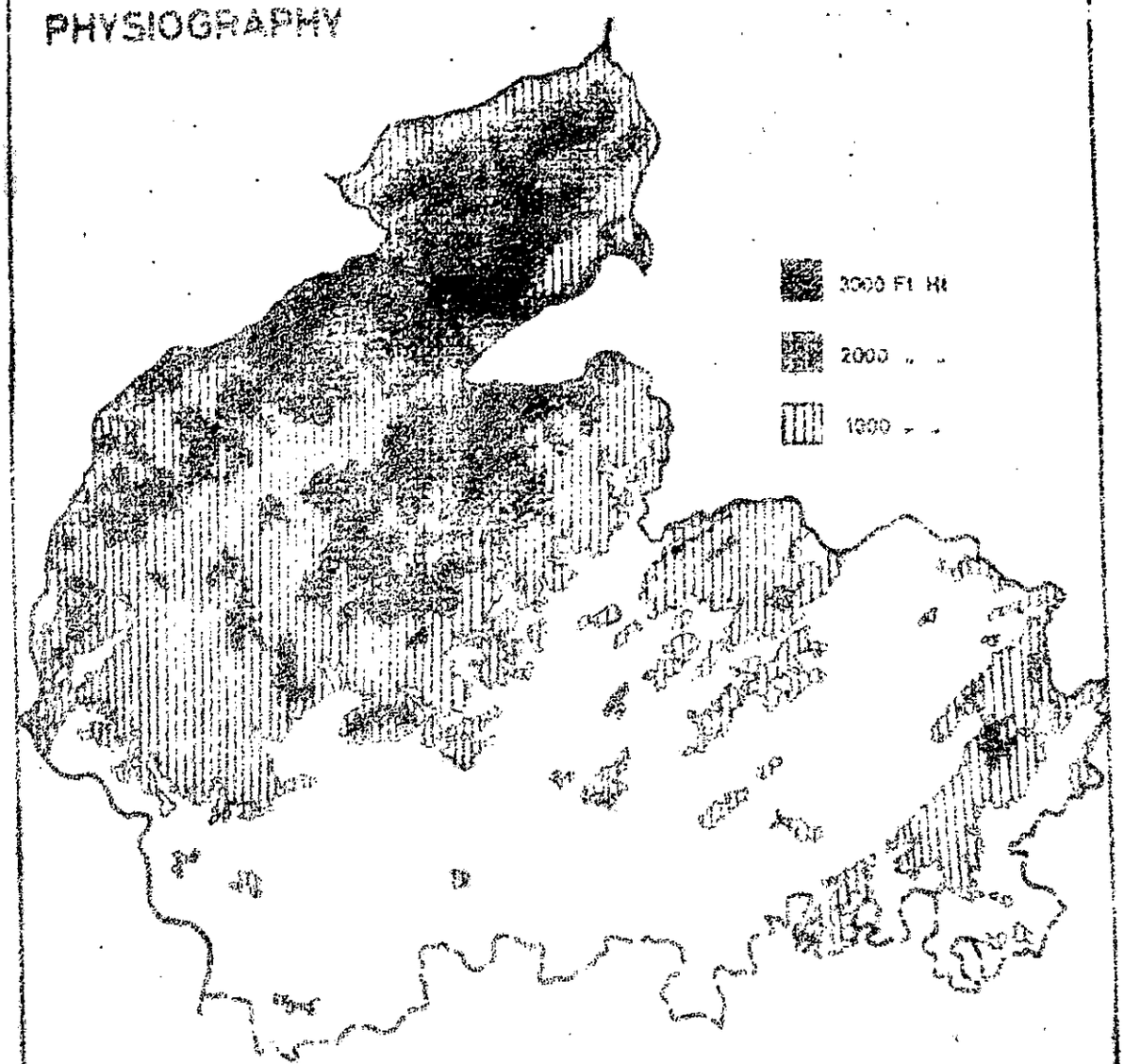
EAST GODAVARI DISTRICT PROJECT AREA

DISTRIBUTION OF VILLAGES



EAST GODAVARI DISTRICT PROJECT AREA

PHYSIOGRAPHY



very high altitude ranging from 2,500' to 4,000'. Northern portion of Yellavaram taluk i.e., beyond Ravamavaram is hilly and the conditions of Physiography of this portion is almost similar to that of Chintapalli agency of Visakhapatnam district. Thus the entire Northern portion of the Project area is covered by hill ranges having luxuriant forest growth with thick, huge and tall timber trees. The tropical semi-deciduous forest with patches of ever green forests can be seen in this region where the altitudes vary from 2,500' to 4,000'. These hill ranges include the flat topped crest of famous Papi Hills.

The Southern portion of the Project area is almost flat land interspersed with small hills covered with scrub jungles and gentle undulating terrain. The maximum altitude found in this region about 2,800'. The hills in this region are covered with mixed deciduous forests.

GEOLOGY AND MINERAL RESOURCES:

The East Godavari District with the adjoining West Godavari District forms one of the most interesting regions, geologically, in Andhra Pradesh because of its variety in geological formations which also include

coal bearing rocks. Most of the project area occuring within the Easter Ghats is represented by Archaeans. A considerable part of the district is covered by gneisses and schists which form the foundation of all the latter rocks. There are three general types of rocks i.e., graphitic, garnetsillimanite - schist or gneiss, with or without felspar. Some sub-types of these contain a highly 'cleaved' pink variety of orthoclase murchisonite.

The whole of hilly region from the ghats down to the coastal tract is composed of all the "prejurassic" formation while the jurassic and later rocks rest upon it evenly. Jurassic age is thus indicated for the new topography of the region.

Unlike in Khammam District the Project area is not richly endowed with minerals. However, there are considerable deposits of minerals like Bauxite, Tungsten etc.

BAUXITE:

Good quality of bauxite has been discovered recently by the Geological Survey of India in the flat topped plateau of Dumkonda hill range along Eastern Ghats near Ramavaram in Yellavaram taluk and Chidipalem

and in the interior hills around Maredumilli. The deposits are likely to contain large reserves of bauxite suitable for aluminium manufacture and for use in steel, refractory and abrasive chemical and other industries.

C L A Y S:

Extensive deposits of Tertiary semidentary clays associated with Rajahmundry sand stones occurs at Satlawada and other places along the coastal uplands of the District. These are found to be fairly of good quality. Plastic white clays and fine clays found in the Project area are suitable for ceramic, fine clay, graphite crucibles and other industries.

TUNGSTEN ORE:

Small occurances of tungsten ore in association with the graphite deposits are found in Rampachodavaram and Yellavaram taluks. This being a strategic mineral is much needed for steel, carbide and other industries, and the location of this mineral is of great significance. Hence, an intensive search is on by Geological Survey of India in the Eastern Ghats. The preliminary investigation at Burgubanda have shown that large deposits of wolframite is available in

the Eastern Ghats. Graphite is also found near Velagapalli and Yerramtla of Rampachodavaram Taluk.

CLIMATE AND RAINFALL:

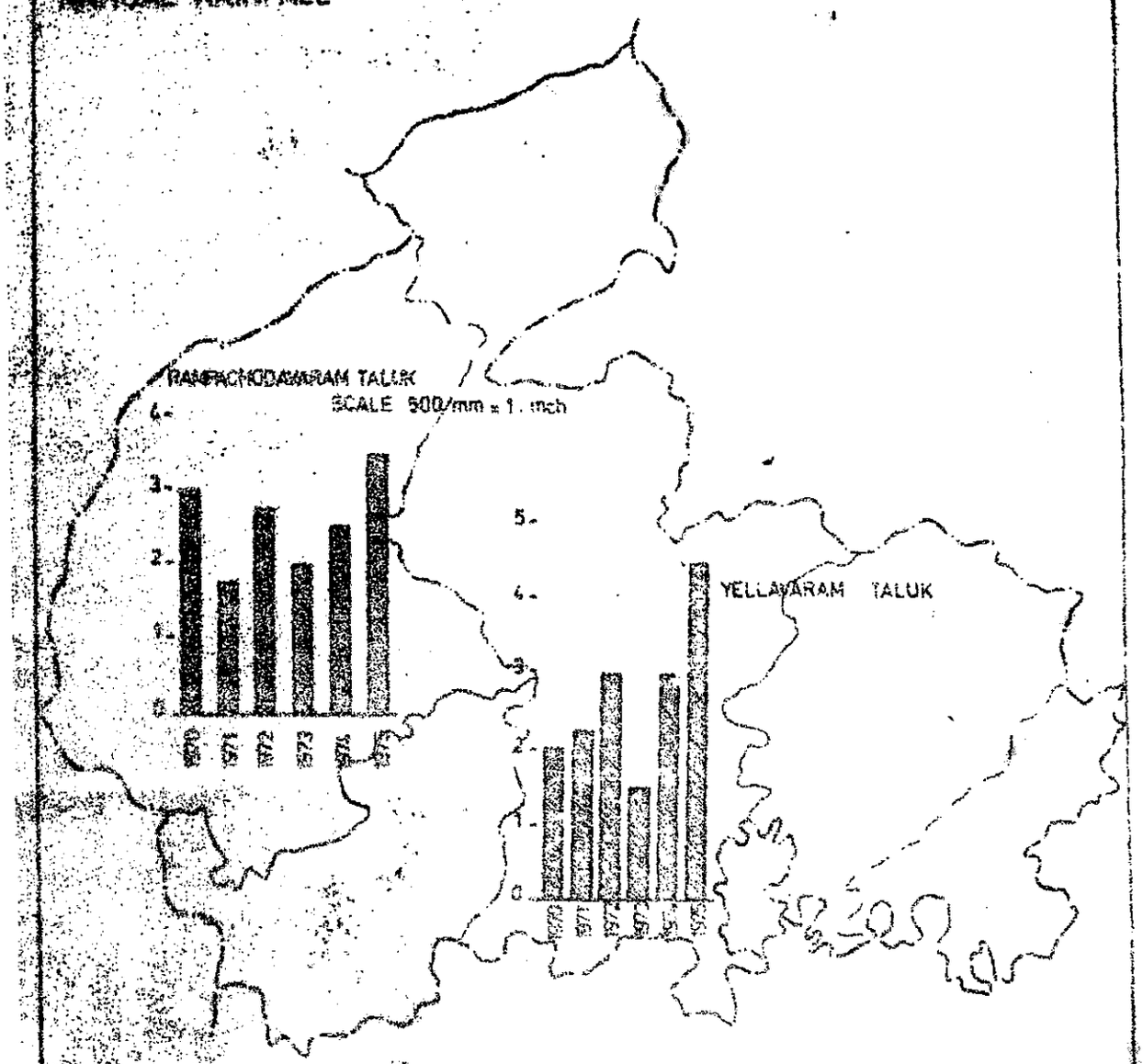
In the upper agency the winter is severe and summer is not oppressive. The climate of upper agency of Yellavaram taluk is similar to the Chintapall agency. Temparature ranges from 65° F. in winter to 97°F. in Summer.

The average annual rainfall in the Project area is 1,320.5 mm.. South-West monsoon contributes the bulk of rainfall in the Project area. As much as 67.05% of the total annual rainfall is accounted for by South-West monsoon starting from early June to September. The Project area also receives considerable amount of rainfall during October and November due to North East monsoon. The details are furnished in Annexure No. 3 and 4.

DRAINAGE PATTERN:

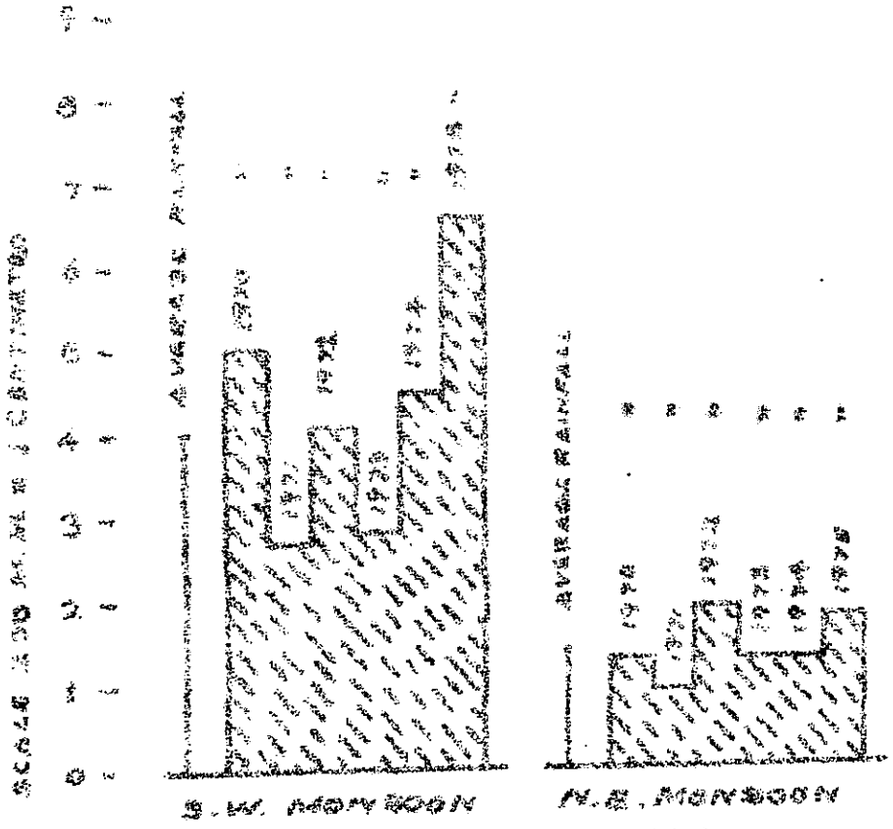
The Project area is endowed with perennial rivers and seasonal hill streams. The major streams that meander through the project area are Pamuleru and Vottigedda in Rampachodavaram taluk and Yeleru, Donigada and Maderu in Yellavaram taluk.

EAST GODAVARI DISTRICT PROJECT AREA
ANNUAL RAINFALL

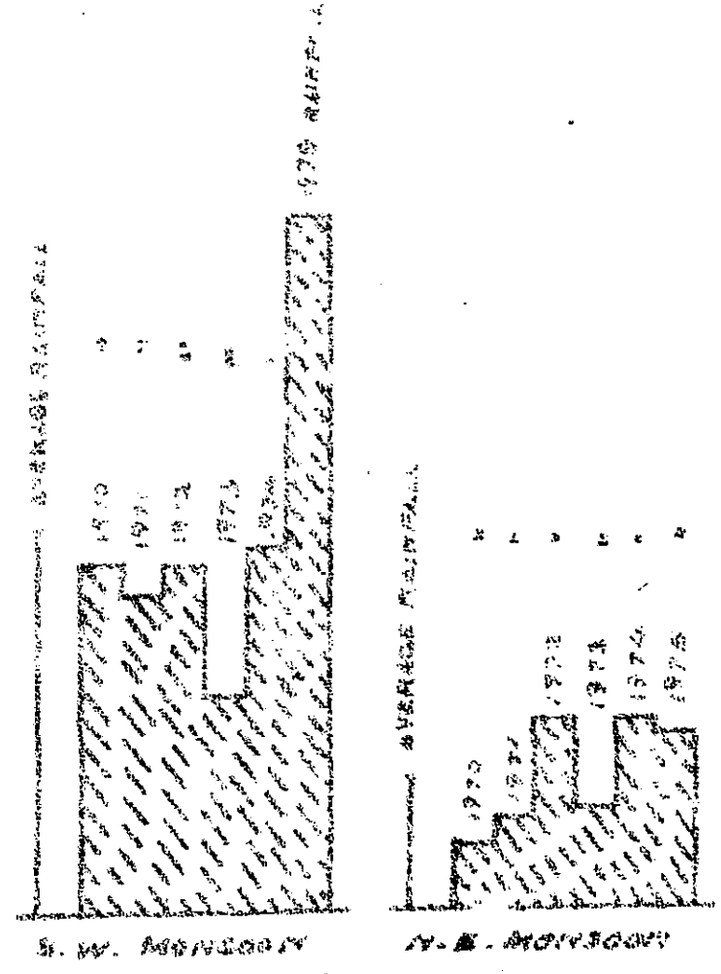


PROJECT AREA

MONSOON WISE RAINFALL



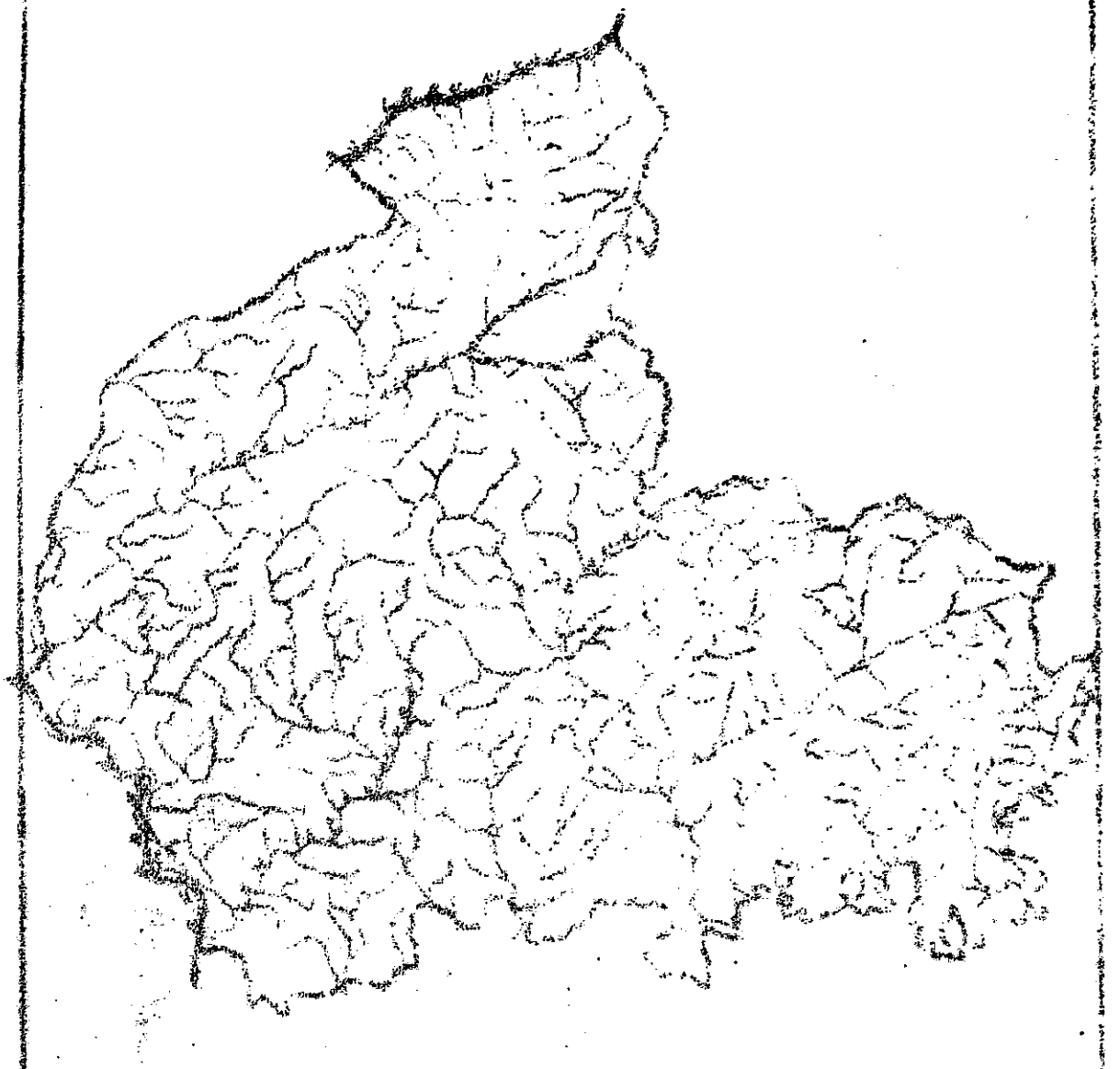
RAMPACHODAVARAM



YELLAVARAM

EAST GODAVARI DISTRICT PROJECT AREA

DRAINAGE PATTERN



The river Godavari the most important river of the State flows in South Eastern direction and forms natural boundary of the project area on the Western side. The river touches the project area near Bison Hills and thereafter it forms a boundary between the East and West Godavari Districts. The river Sileru originates in the hills of Jaipur of Orissa State and forming the State boundary for some distance in the Northern side of the Project area and separates it from Koraput district of Orissa State.

Another important river in the project is Yeleru which takes its origin near the villages of Mathahi Bhimavaram. From Velagalapadu village this is known as Eleru river and flows in southern direction in between villages of Sattipalli, Rayigudem and Lakshmipuram in upper reaches of the agency. It receives several small hill streams on the way. In the lower reaches i.e., Yellavaram and Muttlapadu it is again known as Yeleru River from the point of its emergence near Demudu Pinjarikonda and finally empties into sea near Kakinada. Pamuleru is a major hill stream in the project area originating at Gurtedu hills and flowing from North-East to south east and draining into river Godavari near Bison Hills. Another important hill stream is Seetapallivagu originating in Rampachodavaram taluk and slopes generally from north.

east to south-west and empties into river Godavari near Devipatnam.

SOILS:

Red loamy soils are predominant in the Project area. The coverage is more in the blocks of Rampachodavaram, Addateegala, Maredumilli with 75%, 100% and 88.5% of villages respectively.

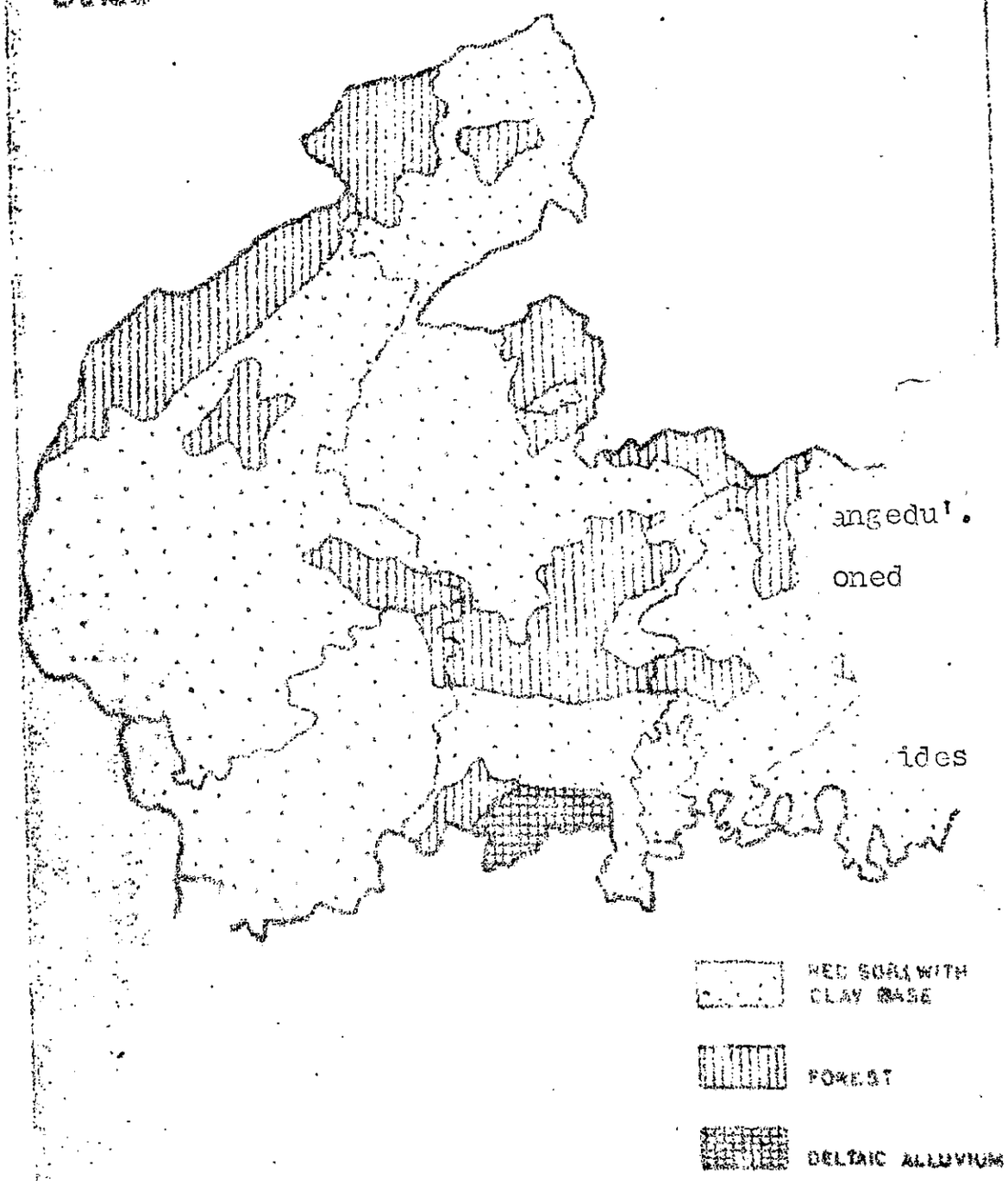
FLORA AND FAUNA:

The total geographical area of the Project is 4,19,028 hectares. Of this 27,287 Hectares constituting 49.46% is covered by forests. The type of forests is essentially a function of climate and rainfall, soils and land use pattern. The above factors have influenced the variation in the type of forests of the Project area. The forests of the Project area can be divided into 1) Dry mixed deciduous forests and 2) Semi-moist deciduous forests.

There are two distinct Zones in Rampachodavaram taluk i.e., Northern Zone and Southern Zone. The predominant species in the northern zone is Kondatangedu mixed with 'Kodisa', 'Yegisa', 'Maddi' 'Teak' is almost absent, but it is artificially grown in

EAST GODAVARI DISTRICT PROJECT AREA

SOILS



some patches near Maredumilli. Rattan cane is found in shady moist localities near Satlavada. In Southern Zone mixed deciduous type of forest is found on the hills. The predominant sp-ecies met with are 'Chirumanu' mixed with bamboos other soft woods and jettigi. The lower slopes with good soils and the lankas consists of Yegisa, Kodisa, Maddi soft wood species etc.

The forests in Yellavaram taluks are similar to that found in Southern Zone of Rampa- to which this tract adjoins. The main species is 'Maddi'. Its common associates are chennangi 'Dirisanam', 'Chirumanu', 'Yegisi' and 'Konda Tangedu'. Bamboo occurs in mixture with the species mentioned above and is the main source of income.

Dense forests and perennial streams provides congenial surroundings for wild life. The wild life has enormously decreased due to unrestricted hunting, clearing of forests for cultivation. 'Carnivorous beasts like panthers, tigers, bears and herbivorous animals like deer, sambhar, bison and a wide variety of wild birds are found in the forests'.

TRANSPORT AND COMMUNICATIONS:

Transport and Communications play a vital role in sustaining the process of development. It connects different places dispersed over space and people living in interior areas. And it also facilitates economic development by enabling the movement of people and raw materials for sales and ultimate consumption. The net work of road and transport system is moulded in the light of topographic details of the area. The project area is purely rural, its exports are mainly agriculture produce and forest produce. The project area is characterised by poor net work of road system as surfaced road length is only 4.65 KMs. per 100 Sq.KMs. as against 9.6 KMs in the district and 13.8 KMs. in the State. While the roads connect various places within the project area and the project area with various places situated outside the project area, the river Godavari provides navigation facility for the villages situated on the river bank. The movement of men and material mainly depend on the launch plying from Rajahmundry to Badrachalam. There is no railway line passing through the project area. The nearest Railway Station is Rajahmundry situated at a distance of 45 KMs from the Project area.

OCCUPATIONAL PATTERN:

Agriculture is the sheet anchor of the tribal economy as the major portion of the working population draws their sustenance from the agriculture sector. However, there have been some changes in the occupational pattern which is the result of operation of many factors like inflow of non-tribal settlers who have occupied tribal lands and consequently the tribal became landless labourers, adoption of changed operational definition of concepts in occupation pattern etc. The gradual improvement of transport and communication facilities, and implementation of development programmes have exposed the tribals to new occupations which were hither to unknown in their habitat. The data on the occupational pattern is furnished hereunder:

Sl. No.	Item.	Rampachodavaram.	Yellavaram.	Total.	Percentage.
1.	Cultivators	12,981	15,700	28,681	45.24
2.	Agriculture Labour	10,157	17,121	27,278	43.03
3.	Livestock,, forestry, fishing, hunting, etc.	289	510	799	1.26
4.	Mining and Quarrying.	10	1	11	0.01
5.	Household Industry	200	400	600	0.94
6.	Other than Household	112	227	339	0.53
7.	Construction.	65	342	407	0.64
8.	Trade and Commerce	459	822	1,281	2.02
9.	Transport and Storage	39	55	94	0.14
10.	Other Services.	1,068	2,829	3,897	6.47

It is evident that 63,387 persons or 41.84% of the total population, constitutes the working force. The distribution of working force over various occupations indicates that 45.24% of the total workers are engaged as cultivators, while 43.03% are agricultural labourers. Mining, Quarrying, Forestry, Fishing and Hunting provide employment to only 1.27%, while other occupations have insignificant contribution to employment. There is very heavy dependence on primary sector i.e., agriculture, which calls for intensive development of the primary sector on one hand and diversification of occupational structure on the other with the development of secondary and tertiary sectors.

OCCUPATIONAL MOBILITY:

The following table brings out sharp focus changes in the occupational structure over a decade i.e., 1961 and 1971:

	1961 Percentage to the total working force	1971 Percentage to the total working force
1. Agricultural sector:		
a) Cultivators.	64.60	45.24
b) Agricultural labourers	26.33	43.03
	90.93	88.27
2. Other sectors --	9.07	11.73

It is seen from the above table that there has not been significant change in the occupational pattern in the project population over the decade. The agricultural sector has recorded slight decline (2%) in terms of persons dependent on agriculture. However, there has been remarkable change in the per centage of cultivators and Agricultural workers within the project area. The per centage of cultivators has sharply declined from 64.60% in 1961 to 45.24% in 1971 with corresponding incurease in the per centage of agricultural labourers over the decade. The per centage of agricultural labourers which stood at 26.33% in 1961 swelled to 43.03% in 1971. This sharp change is attributed to the large scale alienation of tribal land in the Project area.

LAND USE PATTERN:

In the Project area the net sown area constitutes 10.32% to the total geographical area, which is much lower than the District (37.90%) and State (40.4%) average. Area under forest is considerable in the Project representing 49.46% of the total geographical area which is much higher compared to State average of 22.9% and district of 26.82%. Cultivable waste accounts for 11.93% and current fallows 5.01%. Old fallows

accounts for 6.01%. Land under tree crops and groves constitutes 2.30%, barren and uncultivable land 6.62%, and land put to non-agriculture uses 6.02%. There is scope for bringing the cultivable waste and fallows under cultivation in scheduled area. In non-scheduled area of the project, out of total geographical area 37 lakhs acres net sown area constitutes 20%, area under forests is 48.64%, cultivable waste is 5.14%, old and current fallows are 6.73%.

AGRICULTURAL PRACTICES:

The tribal cultivator in general is traditional agriculturist. There is even a tribal group engaged in primitive 'podu' cultivation in the hilly areas of Maredumilli and Addateegala Samithis. Land under cultivation is limited. The important crops grown in the Project area are Paddy, Bazra, Jowar, maize etc. In the podu land they raise white Jowar. Redgram, Groundnut, Caster, Gingelly are grown as mixed crops. Generally Paddy is grown in Khariff season under rainfed conditions and irrigated conditions. The production is low in the project area due to limited assured water supply, poor soil fertility, traditional cultivation practices and poor inputs.

Citrus fruits especially and batavia and organges are grown in higher altitudes of Rampachodavaram taluk. The climate and rainfall are also suited for raising orchards like mango, cashew etc. Sandy and uneven type of lands which are left as fallow can be fruitfully utilised for raising orchards.

Tanks and Kuntas are the main source of irrigation in the project area. In Yellavaram taluk, canals are important source of irrigation. Numerous hill streams are flowing in the project area. If these are properly harnessed, the large chunks of fertile land can be brought under cultivation and a sizable portion of land can be converted into wet land.

MAJOR PROJECTS AND THEIR IMPACT:

The river Sileru forms boundary for the Project area for a short distance. This Sub-tributory of the river Godavari is a boon to Andhra Pradesh as well as Orissa for generation of hydro-electric power. The history of hydro-electricity development in Andhra Pradesh so far is mainly the history of development of the Sileru-Machkhund complex. The river is harnessed at four places for power development. The Lower Sileru Hydro-electric Project is the last in the chain of

projects on the River Sileru. The 234' high masonary dam with a gross storage of 16.55 T.M.Cft. is part of the Lower Sileru Hydro-electric Project. This reservoir is situated at Donkarayi village of the Addatigala block in the Project area. However, no village in the project area is submerged in the reservoir.

MARKETING:

Whatever little Marketable surplus of agriculture produce is available with tribal farmer is purchased by the itineary petty traders. Who move about in interior tribal villages and pay rock bottom prices for their produce, besides using false and weights and measures. Due to the absence of organised markets, the tribal was at the mercy of private traders and soucars who were holding the price line. As a result, the tribal was put to heavy loss. Inadequate transport and communications have added disadvantage

to the tribals in marketing their produce. Realising this need, Government came to the resuce of the tribal, in a big way by establishing Girijan Co-operative Corporation under cooperative sector in order to eliminate exploitation and depreadation of private traders. This institution is engaged in purchasing Agricultural produce and Minor Forest Produce at fair prices and supplying to them Domestic Requirements through a net work of sales and purchasing centres. The important items of hill produce brought to the weekly shandies are tamarind, sheekai, soapnut, myrabolam etc., over which Girijan Co-operative Corporation has got monopoly rights to purchase from tribals. The Girijan Co-operative Corporation has two Primary Marketing Societies i.e., one at Rampachodavaram and another Yeleswaram which have 27 Daily Requirement Depots and 16 shandies in the Project area.

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Demography:--- The total population in the project area is 1,51,464 of which 99,845 or 65.9% belong to scheduled tribes. Nearly 84% of the tribal population of the District will be covered by the project area and about 20,182 tribals living in the rural areas of the District remain out side the project area. The spill over tribal population will be covered by the normal tribal welfare programmes.

The major tribal groups inhabiting the agency area are Koyas, Konda Reddis, Kammaras, Valmikis, Kondakapu and Konda Dhoras, while in the plains area are Yerukulas and Yanadis are major tribal groups. The tribe-wise population of the District in descending order is given below:

Sl.No.	Name of the tribe	Population
1	2	3
1.	Konda Reddy	37,726
2.	Koya	23,655
3.	Kammara	13,355
4.	Konda Kapus	12,502
5.	Konda Dhoras	11,924
6.	Yerukulas	9,011

Rampachodavaram has registered lower growth rate over 1961 while Yellavaram has recorded higher growth rate during the corresponding period. During 1921, the project area has recorded a very low growth rate of population. In the low growth rate of population was the result of the worst influenza fever of 1918 that swept the project a-rea. The project area recovered from this set back and has exhibited a sudden spurt i.e., 16.11% increase in the following decade i.e. 1921.*

The Table No. 2 presents the percentage variation in population since 1901 between project, district, State and the Country.

The project area when compared with District, State and the country has not recorded a steady increase in growth rate during 191-1 and 1931, however, the project area has recorded higher percentage of growth rate than District and State and India. The growth rate of population in the project area during 1971 was 22.93% which is higher than the district 18.35% and State 20.9% and lesser than India 24. During 1961 the project has recorded 18.69% increase, while district and state has recorded only 13.32% and 15.61% respectively. During 1951 the project has recorded lowest percentage. However, the project has recorded comparatively a higher growth rate of population than

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* For details refer Annexure No.I (5).

TABLE NO. 2

PERCENTAGE OF GROWTH OF POPULATION
DURING EACH DECADE

Year	Project	District	Andhra Pradesh	India
1901	--	--	--	--
1911	23.33	12.86	12.49	5.73
1921	0.80	1.70	0.15	0.31
1931	16.11	14.31	12.99	11.01
1941	12.5 9	12.52	12.55	14.22
1951	9.86	16.45	14.02	13.31
1961	18.69	13.32	15.61	21.50
1971	21.60	18.4	20.90	24.57
Total:	101.86	89.56	88.43	90.03

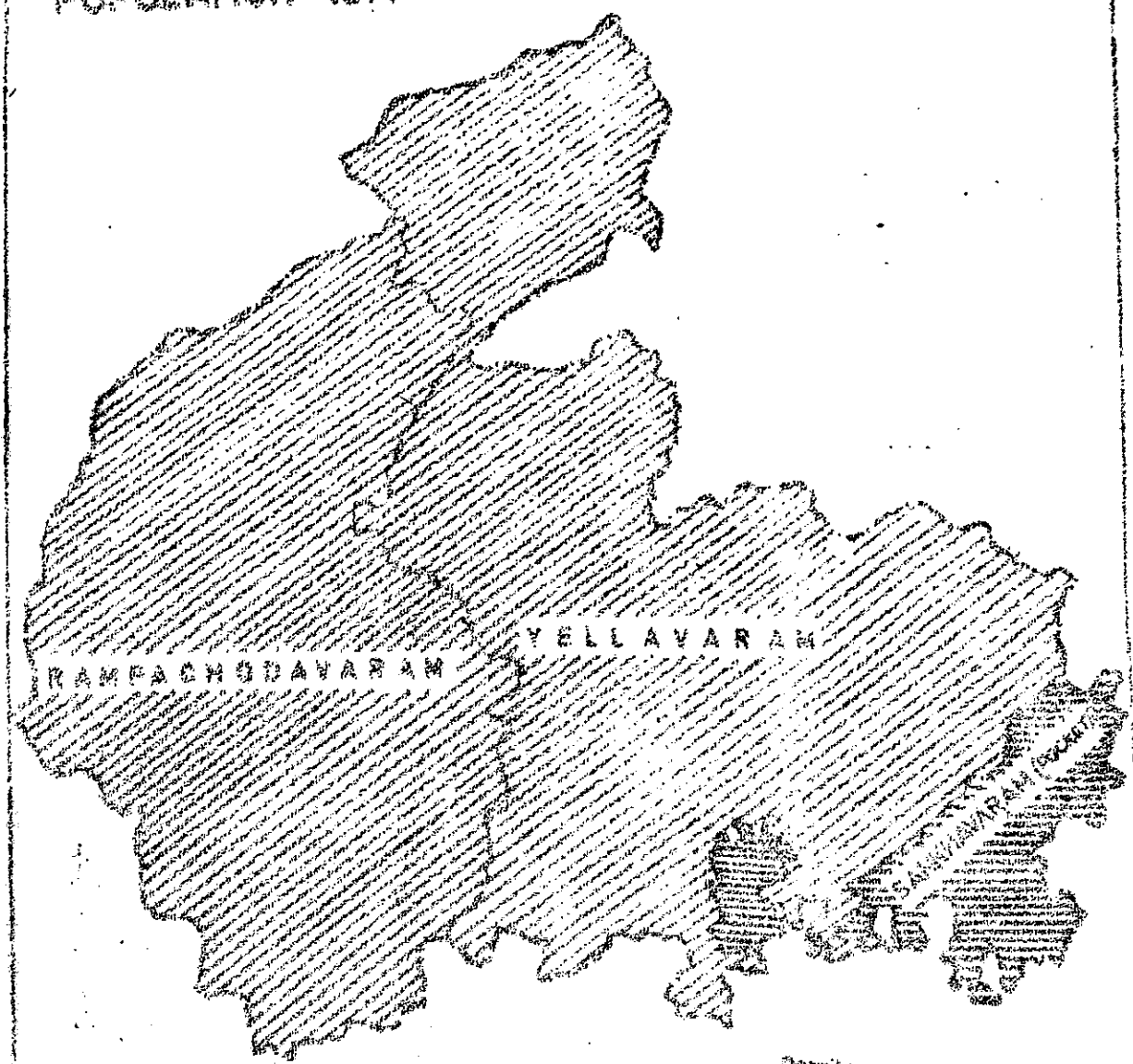
district, State and country

Density of Population:--- The density of population in the project area is 36 persons per sq.km., while for the district and state it is 282 and 157 per sq.km. respectively according to 1971 Census. The blockwise density of population shows that Sankavaram has highest density followed by Rampachodavaram and Rajavommangi, while low density is found in Addateegala and Maredumilli. Block-wise density of population is furnished in the table No. 3 at the end of this Chapter.

Sex Ratio:---- Out of 151,464 persons, males constitute 50.30% while females account for 49.70%. The sex ratio in the project area works out to 988 females for every 1000 males. Taluk-wise sex ratio analysis(vide Table No.4) brings out variations between Rampachodavaram and Yellavaram as there are 1012 females for 1000 in Rampachodavaram while Yellavaram has 973 for every 1000 males. There is no urban population in the project area. [illegible]

EAST GODAVARI DISTRICT PROJECT AREA

POPULATION 1971



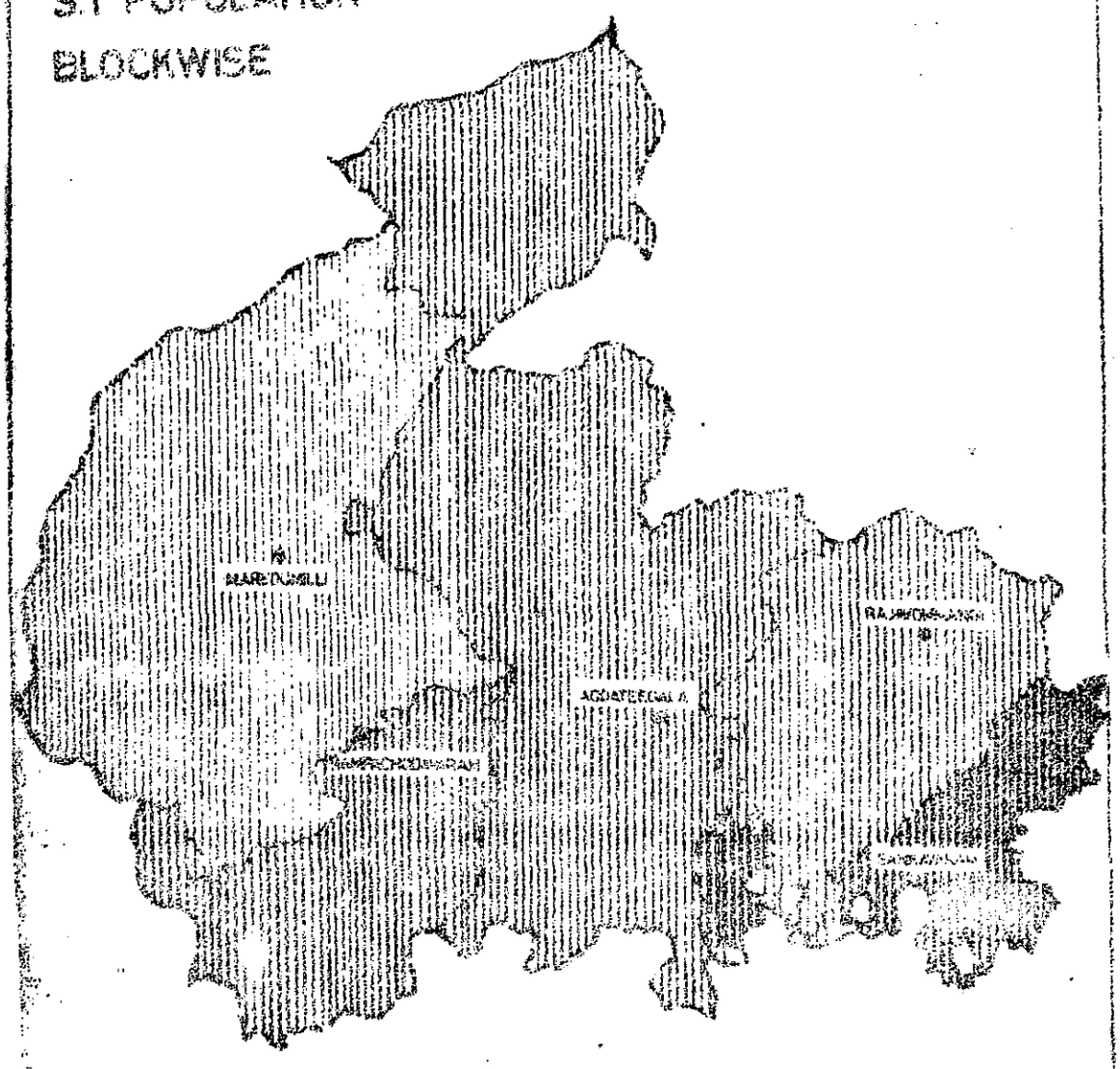
Density

LESS THAN 100 PERSONS PER km^2

100 AND MORE PERSONS PER km^2

EAST GODAVARI DISTRICT PROJECT AREA

S.T POPULATION BLOCKWISE



Density

20 PERSONS AND BELOW Km^2

20 TO 40 PERSONS

40 TO 60 PERSONS

TABLE NO.3

DENSITY OF POPULATION

Block	Area in Sq.Kms.	Total population	S.T.Population	Density per Sq.Km. Total Population	Density per Sq.Km. S.T. Population
Rampachodavaram	492.00	30,757	18,906	62	38
Maredumilli	1,347,00	22.583	20,386	16	15
Addateegala	1,605.56	56,577	37,447	35	23
Rajavommangi	595.94	26,881	14,504	45	24
Sankavaram	151.15	14,666	8,602	97	57
	4,191.65	1,51,464	99,845	36	24

traders and have in many places taken to horticulture, while the Kammaras are village artisans.

In terms of level of development, the tribal population presents a heterogenous picture. While the Koya are settled cultivators in the lower agency, the 'Koi' dialect speaking Koyas in the interior areas of Maredumilli and Addateegala Blocks are as backward as the primitive 'podu' cultivating Konda Reddis. They are educationally very backward and they remained out side the main stream of development. The extension programmes of the Tribal Development Blocks did not have any perceptible impact on these preliterate and primitive groups. The Konda Reddis and Koyas inhabiting the interior areas depend more upon forest labour.

The social structure is also marked by diversity. The Koyas social organisations is based on totemistic clan organisation, while the social structure of the Konda Reddis is conspicuous by the absence of clans. The Konda Dora social structure is also based on totemistic clans while the Valmiki have exogamous septs called 'Intiperulu' to govern their social relation within the tribe. On the basis of social status, the tribes form into a social hierarchy. The beef eating tribes - Konda Dora, Koya and Valmikis occupy

lower positions than the Konda Reddi who are considered superior to other tribes due to their abstenance from beef consumption.

Every tribe has its own traditional council to safeguard the rights of its members and protect its social, cultural and religious institutions. The village council of the Koyas is headed by 'Pinna Pedda' whose office is hereditory. The Konda Reddis also have a traditional council headed by 'Kula Pedda'. There is a higher council to adjudicate the matters unsettled by the village councils. A group of Koya villages form a Samuthu and Samuthu Koya council is presided over by the Samuthu Dora. The other tribes also have village level councils of their own whose jurisdiction encompasses social, cultural religious spheres of activity of every member of the tribe.

In ritual structure, the project area presents a picture of diversity. The Koyas have their unique rites de-passage and their pantheon is different from those of other tribes. The important deities of Koyas are Bhudevi and Ganganamma while Saralamma and Muthyalamma are the important deities of the Konda Reddis. The Koyas perform Bhudevi panduga and Ganganamma panduga

TABLE NO. 4

SEX RATIO IN THE PROJECT AREA

Taluk	Total	Rural M	Rural F	Sex ratio females per 1000 males.
Rampachodavaram	54,325	26,998	27,327	1012.18
Yellavaram	83,610	42,370	41,240	973.33
Sankavaram	14,666	6,962	7,704	1106.00

SOCIO-CULTURAL MILIEU:

The tribal population of the project area mainly comprise of five major tribes -- Koya, Konda Reddi, Konda Dora, Kammara and Valmiki. Each of these aboriginal groups living in the hilly and wooded habitat from times immemorial fashioned their own artifacts, mentifacts and socifacts according to their own genius. This gave rise to an enchanting cultural diversity. The cultural diversity is characterised by linguistic variation, occupational diversity and cultural pluralism. However, centuries of co-existence in the same geo-ethnic environment gave rise to a broad cultural configuration characterised by certain common socio-religious and political institutions among the various ethnic groups in the project area.

The Koyas in the northern region of the project area speak their dialect called 'Koi' while the majority of Koyas speak Telugu. Konda Doras have their own dialect called 'Kubi', while Konda Reddis, Valmikis and Kammaras speak Telugu. There is also marked occupational diversity. The Koyas and Konda Doras are mostly settled agriculturists while the Konda Reddis, who mostly inhabit the hilly tracts, are shifting cultivators and forest labourers. The Valmikis are petty

to propitiate their deities while Konda Reddis celebrate festivals in honour of their deities. However, other tribes are not forbidden to participate in any of these festivals. In fact, the festivals are celebrated by the entire community without any clan, tribe or religious barriers. The famous Peram Kok Ata (bison horn dance) is performed by the Koyas during Ganganamma and Bhudevi Panduga. There are broad similarities in the ritual structure in the project area. The most striking similarities are performance of 'Kotha' (First crop eating ceremony), and ancestial worship. There are certain institutions of positive character like 'Nestham which forge horizontal solidarity among various ethnic groups in the project area. Despite diverse social and cultural traditions, the life in the project area is marked by a semblance of social harmoney. Recipros-ity and corporate life are the hall marks of tribal life in the project area.

With the introduction of Panchayat Raj system in the tribal areas of Andhra Pradesh, the tribal have been involved in decision making and execution of development programmes. The tribals are now represented on various Standing Committees of the Panchayat Samithi as well as Zilla Parishad to draw up various schemes for the planned development of the tribal areas.

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CHAPTER-II

DEVELOPMENT IN RETROSPECT

Development efforts were initiated in pre-independence era in the Tribal areas of State but these efforts were not intensive and integrated. The achievements were not significant enough and the tribal areas were lagging very much behind the relatively advanced non-tribal areas. and it necessitated rethinking among planners and administrators. As a result in December, 1949, a conference was held to take stock of the situation and evolve suitable plans for amelioration of hill tribes in East and West Godavari, Srikakulam, Visakhapatnam Districts of the State. The conference recommended a survey to be made by a team of experts. Accordingly a team was constituted with subject specialists like Executive Engineer, Special Agency Development Officer, Forest Officer, Agricultural Officer, Public Health Officer, Geologist and a Medical Officer. The Special Agency Development Officer was the Chairman of this Expert Committee. The Expert team extensively toured all over the Agency tracts of Srikakulam, Visakhapatnam, East Godavari

and West Godavari Districts in 1950 and suggested a good number of schemes in their report submitted to Government in the year 1951 for development of the tribal areas and tribals. A new deal promised during the first five year plan is fulfilled in successive Five Year Plans. Systematic development process was initiated in First Five Year Plan. Some new techniques were adopted to handle the tribal problems on a wider perspective. With the introduction of Community Development Programme during the first year of III Five Year Plan 2 pre-extension Blocks were constituted with headquarters at Rampachodavaram and Addateegala, while in the 2nd year of Third Five Year Plan 2 more Blocks were constituted with headquarters at Maredumilli and Rajavommangi. With the conversion of these Panchayat Samithis into Tribal Development Blocks during the later half of the 3rd Five Year Plan the tribal development programmes received further fillip. These Blocks are receiving financial assistance from Central and State Government. New schemes have been taken on hand to benefit all sections of the tribal communities in the scheduled areas of the Project. Huge amounts were allotted from Community Development and Tribal Development Grants on various developmental programmes like agriculture, Animal Husbandry, Education, Minor Irrigation,

Medical and Health etc. During the Second Five Year Plan the approach remained basically unchanged. Minor Irrigation programmes received special emphasis by way of getting special funds for the first time. Expenditure incurred on various programmes during III Five Year Plan* is furnished hereunder:

Sl. No.	Scheme	Expenditure (Rs.)
1.	Agriculture and Animal Husbandry	1,72,269
2.	Irrigation and reclamation	21,050
3.	Education	12,171
4.	Social Education	34,759
5.	Health and Sanitation	30,759
6.	Rural Arts and Crafts	10.396
7.	Communications (Roads)	1,66,269
	Total:	4,47,851

It can be seen from the statement that major share has gone to Agriculture and Animal Husbandry and Communication programmes as they constitute 39% and 37% respectively. An amount of Rs.4.47 lakhs was spent during III Five Year Plan. Programme-wise expenditure incurred during IV Five Year Plan for 3 Tribal Development Blocks is furnished hereunder:

* Financial targets and achievements for I and II Five Year Plan are not available.

EXPENDITURE ON VARIOUS PROGRAMMES DURING IV FIVE YEAR PLAN.*

Sl. No.	Block.	Agriculture. Rs.	Animal Husbandry. Rs.	Education. Rs.	Medical and Health. Rs.	Block Headquarters Rs.
1.	Rampachodavaram	4,76,514.59	1,22,250.49	9,75,280.66	2,48,914.33	7,50,162.22
2.	Rajavommangi	5,07,539.03	55,557.00	8,42,204.58	20,719.36	20,34,911.80
3.	Addatesgala	4,01,667.15	1,93,596.60	12,03,061.33	2,37,974.22	21,73,606.27
	Total:	13,85,720.77	3,71,404.09	30,20,546.57	5,07,607.91	49,58,680.29

* Figures for Maredumilli Block are not available.

The IV Five Year Plan expenditure analysis indicates that out of Rs.1.12 Crores, an amount of Rs.49.58 lakhs was spent on establishment and Block headquarters, while the remaining expenditure was incurred on developmental programmes. Programme-wise expenditure indicates that 60% of the amount was spent on Education and 26% on agriculture, while 8% was spent on medical and health services.

As a result of implementation of various developmental programmes enumerated above, the following economic, human resource and Infrastructure Developmental Institutions have come into existence in the Project area.

Economic Development Institutions:	Nos.
1. Seed Stores	4
2. Agricultural Farm	1
Human Resource Development Institutions;	
3. Government Hospitals	2
4. Gover ment Dispensaries	5
5. Primary Health Centres	4
6. P.H.C. Sub-Centres.	15
7. Family Planning Centres(Main)	4
8. Family Planning (Sub-Centres)	28
9. Maternity and Child Health Centre	1
10. N.M.E.P. Sub-Units.	2
11. N.M.E.P. Surveillance Inspectors	24
12. N.M.E.P. Surveillance Workers	100
13. Family and Child Welfare Project	1
14. Leprosy Centres	2
15. Cholera Unit	1
16. Primary Schools	258

17.	Primary Ashram Schools	29
18.	Upper Primary Schools	13
19.	High Schools	5
20.	Junior College	1
21.	Hostels	14
22.	Housing Colonies	5
23.	Shandies	16
24.	D.R.Depots	27
25.	Girijan Primary Societies	2
26.	Multipurpose Co-operative Societies	16
27.	Koperi grass Rope making unit	1
28.	Bee-keeping Units	4
29.	Khandasari Sugar Unit	1
30.	Cotton Slivers and Umbar Yarn Unit	1

Infrastructure Development Institutions:

31.	Veterinary Hospital	1
32.	Primary Veterinary Dispensaries	4
33.	Minor Veterinary Dispensaries	3
34.	Rural Veterinary Dispensaries	4
35.	Veterinary First Aid Centres	4
36.	Sub Post Offices	4
37.	Branch Post Offices	38

AGRICULTURE:

There is a Horticultural Farm at Sirigindalapadu in Rampachodavaram Panchayat Samithi. It was originally started as Demonstration-cum-Exploratory Farm in the year 1955 to give fillip for the Horticultural development in the Agency areas. The farm was started with 30 acres plot and in the year 1960 another 20 acres was added to the farm. Different fruit crops viz., Mango, Citrus, Guava, Sapota, Jack and other fruits, spices, beverage crops were raised

and improved methods and demonstrations were conducted in the farm. Experiments were also conducted for identifying promising strains. Now the farm is serving as a demonstration-cum-seed multiplication centre.

The farm is managed by Asst.Director with supporting staff.

For development of agriculture various programmes are implemented by Panchayat Samithi and Agriculture Department. The programme includes supply of short term and medium term inputs, demonstrations etc., The achievement made in agriculture sector in the year 1972-73 onwards are mentioned in Annexure No. II(1)

SOIL CONSERVATION:

The Project area is exposed to soil erosion problem in general, while the northern portion with highly undulating terrain is subjected to severe soil erosion. As a part of the land development programme, soil conservation measures are taken in the Project area. A soil conservation unit is functioning in the Project area with its headquarters at Kakinada. The soil conservation measures taken in this area includes contour, bunding and terracing. It is estimated that 0.60 lakh acres is affected by severe soil erosion.. Under this

programme an amount of Rs.73,500/- was released during the year 1974-75. The programme is implemented at five centres viz., Rajavommangi, Thimmapuram, Addateegalla, Rampachodavaram-I and R.Chodavaram-II. Asst.Agricultural Officer is in-charge of each Centre and he is assisted by Sub-Assistants. Achievements under soil conservation programme during the year 1974-75 are as follows:

Sl. No.	Taluk.	Targets		Achievements	
		Physical (Hectors)	Financial Rs.	Physical (Acrs)	Financial Rs.
1.	2.	3.	4.	5.	6.
1.	Yellavaram	207	44,100	288.33	44,100
2.	R.Chodavaram	138	29,400	189.37	29,400
	Total:	345	73,500	478.70	73,500

It is estimated that an amount of Rs.3,25,000/- would be required to cover an area of 202.45 Hectares. Due to non-availability of funds much progress could not be made in soil conservation. The details of achievements under soil conservation programme from 1968-69 onwards is given in Annexure No.II (2).

ANIMAL HUSBANDRY:

The livestock population of the Project area is mostly non-descript and stunted in growth. Due to poor cattle management practices, milch animals are suffering from malnutrition and consequently the milk yield is fairly low i.e. ¼ litre per day. Under Animal Husbandry programme Government have taken measures to open Veterinary Institutions to cater to the Veterinary Service needs of the livestock. Now there are 4 Primary Veterinary Dispensaries in the Project area i.e., at Rampachodavaram, Maredumilli, Addateegala and Rajavommangi, 4 Minor Veterinary Dispensaries at Chidimamidi, Thimmapuram, Gantivanipalem and Devipatnam. Besides these, there are 3 R.V.Ds at Molleru, Geddada and Narsapuram. In addition to the above, 4 Veterinary First Aid Centres are functioning at Lagarai, Donkarai, Indukurupeta and Kondamodalu. During 1974-75, 133 exotic birds, 437 pairs of rams and Ewes were supplied to tribals. The physical achievements in animal husbandry during 1974-75 are furnished hereunder:

Sl. No.	Samithi	No. of cases treated.	No. of inoculations done	No. of tratio done.
1.	2.	3.	4.	5.
1.	Addateegala	12,389	27,939	832
2.	Rajavommangi	11,153	20,288	823
3.	R.Chodavaram	19,998	61,928	1,331
4.	Maredumilli	7,513	38,783	452
	Total:	51,053	1,48,938	3,438

The performance of various Veterinary Institutions in the Project is furnished in the Annexure No.II

FISHERIES:

River Godavari is a major potential source for fishing. There are Reservoirs, Hill streams and seasonal tanks in the Project area. Most of the tanks in the Project are rainfed and the period of water retention in these tanks depends upon the rainfall received in these areas. Fishery wealth is either leased out to Panchayat Samithi or sold to the highest bidder in Public auction as no tribal is coming forward. For the purpose of development of fishery, 6 reservoirs

were taken over from the P.W.D. by Fisheries Department. As the beds of the reservoirs were not cleared by the P.W.D. at the time of construction and sufficient funds were not available for Fisheries Department, pisiculture was not developed in these reservoirs.

Fishing is an important subsidiary occupation to the tribals in general and in particular for Konda Reddis inhabiting the villages located on the river banks. They use crude traditional implements such as fishing traps, nets etc. for fishing. The details of the tanks, its catchment area are furnished hereunder:

Sl. No.	Name of the Block.	Name of the Reservoir.	Average water spread area in acres.
1.	2.	3.	4.
1.	Rajavommangi	1) Vattigedda (Rajavommangi)	150
		2) Mangaligedda (Singampalli)	25
		3) Kolagammigedda (Kodalingamparthi)	30
2.	Rampachodavaram	4) Ginnepalli (Ginnepalli)	12
		5) Deyyalagummi (Divisinapalli)	25
3.	Maredumilli	6) Lingavaram (Lingavaram)	35

The details of achievements under Fishery programme are furnished in the Annexure No. II (4)

MINOR IRRIGATION:

There are minor and medium irrigation sourc in the Project area. It has no major irrigation sour The irrigation works are executed by Public Works Department and local bodies like Panchayat Samithis and Zilla Parishad. Tanks, wells and perennial hill stre are the major source of irrigation in the Project ar There are 189 Panchayat Raj Department irrigation tanks with an ayacut of 8705 acres, besides 3 P.W.D. tanks and 16 reservoirs in the Project area, with 669 acres and 4,463 acres of ayacut respectively. Further, there are 29 irrigation wells and 13 perenni hill stream irrigation sources maintained by Panchaya Raj Department which irrigate 204 acres and 760.22 ac respectively. Thus total ayacut under various source of assured water supply in the Project area is 14,132 acres constituting 12.83% to the net sown area. Duri 1974-75, four irrigation works were under execution y an estimated cost of Rs.2.95 lakhs.

FORESTS AND PLANTATIONS:

The forest area constitutes 49.46% to the total geographical area of the Project as against the State average of 22.8%. The total revenue from the forests was Rs.97.34 lakhs during 1974-75. Plantation works were taken up in the Project area to provide avenues of income and employment to local tribals. The progress of plantation schemes in the Project area is as follows:-

Sl. No.	Scheme.	Area covered in Hectares.
1.	Teak Plantations	4,876.80
2.	Bamboo Plantations	5,464.60
3.	Eucalyptus	1,276.80

Bamboo, fire wood, and timber coupes fetch substantial revenue to the Forest Department. All the coupes in the Project area have been sold in public auction except 16 Bamboo coupes which were leased out to Andhra Pradesh Paper Mills. The revenue realised by sale of timber, fuel and bamboos during 1974-75 is as follows:-

	Rs.
Timber	43,92,121.87
Firewood	11,77,200.00
Bamboos	12,80,101.63
M.F.P. & Beedi leaves	71,116.25
Receipts from Plantations	2,59,430.50
Other items	43,683.46
Total:	72,23,653.71

In addition to the Regular plantation work 80 Hectares of casuarina have been taken up during 1974-75.

LAND ASSIGNMENT:

Land assignment programme was taken up by the Government to rehabilitate the landless labourers in the Project area. Under this programme 13,581.43 acres were assigned as against 14,388.97 acres available for assignment leaving a balance of 307.43 acres (1975-76). The details of assignment particulars from 1968-69 onwards are furnished in the Annexure No. II (

LAND COLONISATION SCHEME:

Land Colonisation scheme was taken up by Government to wean away the tribals from practising Podu cultivation and to rehabilitate them. Under this programme - four land colonisation schemes have been implemented in the Project area, of this 4, two schemes were sanctioned under 'Grants-in-aid' and the other two under 'Centrally Sponsored' Schemes.

Grants-in-aid Schemes:

i) AMINABAD LAND COLONISATION SCHEME: This was sanctioned in the year 1952. under this programme 1000 acres of land was reclaimed and assigned to 100 tribal landless households, who were settled in this colony. Most of them are practising settled cultivation, while some are working in Forest Department as casual labourers.

ii) GUJJU MANIDIVALASA LAND COLONISATION SCHEME: This was sanctioned during 1958. 90 tribal families were settled in this colony and an extent of 1,000 acres was assigned to the tribals @ 10 acres per household, of this only 797.85 acres was reclaimed and the tribals are cultivating the same.

Centrally Sponsored Schemes:

iii) KANNARAMLAND COLONISATION SCHEME: This wa sanctioned during the year 1960-61 to sett 30 tribal families at Kannaram of R.Choda taluk at a cost of Rs.69,000/-.

iv) DONELAPALEM SCHEME: This was sanctioned i the year 1959 to settle 20 tribal families at a cost of Rs.46,000/-.

EDUCATION AND EMPLOYMENT:

258 Primary Schools, 13 Upper Primary School 5 High Schools and 1 Junior College are functioning in the Project area. In addition to this, 29 Ashram Schools and 14 Hostels are functioning in the Project area. Despite spending huge amounts on education programme and providing good number of educational institutions the literacy rate is very low i.e., 10.5% as agai 30.8% and 24.6% of the district and State respectivel Even the enrolment rate in the Project is far belo than District. The education programme includes open of Primary Ashram Schools, Boarding homes, supply of reading and writing material, dress, sanctioning of scholarships etc. During 1974-75 an amount of Rs.55,7(was spent on supply of dress material, books, scholarships etc.

The live register of District Employment Exchange at Kakinada has 149 tribal candidates of which only 62 have secured jobs. 50 Tribal candidates were given training to qualify themselves to hold the post of Village Officers and these trained candidates would be absorbed as and when vacancies arise.

MEDICAL AND HEALTH:

Though the dreadeful disease, like 'Yaws' has been controlled, the other water borne diseases like Cholera, Gastro-enteritics etc., besides Malaria occasionally ravage the project population. Leprosy is commonly found in tribal areas of the project. The Project area is served by four Primary Health Centres located at Maredumilli, Y.Ramavaram, Indukurupeta and Rajavommangi. Two hospitals i.e., at Rampachodavaram and Addateegala, 4 Dispensaries i.e., at Devipatnam, Boduluru, Zaddangi and Rajavommangi, besides, one Ayurvedic dispensary at Mohanapuram, maternity and child welfare centres and Family Planning Centres are catering maternity and child care services in the project area. Leprosy unit and N.M.E.P.are also functioning in the Project area. Family and Child Welfare Project sponsored by Central Social Welfare Board is implemented in the Project area. Six Balwadi Centres are functioning in the following villages.

1. Addateegala
2. Rachapalem
3. P.Yerragonda
4. Y.Ramavaram
5. Gangavaram
6. Mohanapuram

While there is shortage of protected drinking water facilities in the Project area in general, there is acute shortage of drinking water in summer specially in the interior villages of the project area. The major source of drinking water in the tribal areas are hill streams, River Godavari, but many of the hill streams are not perennial source for drinking water. Government have taken necessary steps to solve this problem by sinking drinking water wells in 400 villages of the Project area. The efforts have been intensified under minimum needs programme. There are 225 villages without drinking water wells.

SPECIAL NUTRITION PROGRAMME:

The Special Nutrition Programme was introduc in 1970 to combat malnutrition among the pregnant and lactating mothers and tribal children of 0--6 years ag group. Block Development Officers are implementing t scheme. 14,630 beneficiaries are fed by 234 feeding centres in the Project area. During 1974-75, an amou

of Rs.5,85,675.92 was spent under this programme. Block-wise details of beneficiaries and amount spent on this programme is furnished hereunder:

Sl. No.	Block.	No.of Centres.	No.of Beneficiaries.	Expenditure (Rs.)
1.	Addateegala	60	3,807	1,46,500.00
2.	Rajavommangi	56	3,440	1,46,500.00
3.	Rampachodavaram	61	3,646	1,46,177.60
4.	Maredumilli	57	3,737	1,46,498.32
	Total:	234	14,630	5,85,675.92

INDUSTRIES:

Project area is endowed with rich raw material for development of forest based industries while it has ample scope for development of agro raw material resource based industries. **Industries have not progressed in the Project area** due to many factors like topography, poor infrastructural facilities, lack of power supply technical knowhow, skilled man power, investment capacity etc. Even the indigenous skills are not properly developed and utilised. There is not much to be said about achievements in industrial sector except the following which are mostly managed by non-tribal entrepreneurs:

1) M/s. Venkateswara Fibre and Rope Industries at Addateegala.

2) M/s. Zilla Grama Swarajya Mandali at Addateegala.

3) M/s. Mrugaraju Sungam at Rajavommangi.

4) M/s. Ram Gopal Mining Corporation at Puligogulapadu.

5) M/s. Krishna Small Scale Industries at Dusaripalem.

'Godavari Plywoods', a medium scale industry has been established very recently at Rampachodavaram with the assistance of A.P.I.D.C., Hyderabad. The total cost of the Project is Rs.142 lakhs and provides employment to nearly 2,500 persons. The total production capacity of plant is 1.50 lakhs Sq.Metres of commercial and decorative ply-wood.

Besides, these there are cottage industries like Adda leaf stitching units and bee-keeping centres in Rajavommangi, Rampachodavaram, Maredumilli and Addateegala blocks which are managed by Girijan Co-operative Corporation and Khadi and Village Industries Commission. Training-cum-Production Centres established in the Project area were closed for want of funds and proper followup programme to the trainees coming out of these centres.

COMMUNICATIONS AND TRANSPORT:

There are 4 Sub-Post Offices of which two are having telegraph and telephone facilities. 38 villages are having Branch Post Offices facilities in the Project area.

The Project area has road length of 14.0 KMs. per 100 Sq.KMs. The total road length in the Project area is 589.82 KMs. of which 126.80 KMs. is black topped, 70.52 KMs. metal surfaced and 392.50 KMs. earthen roads, The A.P.S.R.T.C. are plying buses regularly connecting many important places in the Project area with the district and Revenue Divisional headquarters.

WOMEN AND CHILD WELFARE:

There are 3 Women Welfare Centres in the Project area of which two are located in Addateegala Tribal Development Block and the other one is located in Rampachodavaram Tribal Development Block. The Women Welfare Organisers of these branches conduct Pre-Primary classes in the fore-noon from 8.00 A.M. to 10.00 A.M. to the children in the age group of 3 to 5 years and the teacher makes house visits in the after-noon, advises the tribal women folk on personal cleanliness, environmental sanitation, kitchen gardening etc. under CARE

programme food is served to the children in the mc hours. In the afternoon the women welfare organis conducts community service centre classes and impa training in tailoring, handicrafts to the women. progress of these 3 branches during 1974-75 is furn hereunder:

Item	No.
1. Pre-basic class students enrolled.	85
2. Tribal women enrolled as members in the Centre.	63
3. Women attending craft classes.	48
4. Labour cases attended.	28
5. No.of Antenatal cases attended.	190
6. No.of postnatal cases attended.	138

There 6 creche centres in the Project area to take care of the children whose mothers go out to attend cultural operations and other works. The children v be looked after by the staff members from 9.00 A.M. to 5.00 P.M. These centres also serve as demonstrat centres in child rearing and child care practices. The achievements made under women and child welfare programmes from 1972 onwards is furnished in Annexu No. II (7).

GIRIJAN CO-OPERATIVE CORPORATION:

The Girijan Co-operative Corporation has started Agency Produce Co-operative Marketing Societies at Gokavaram and Yeleswaram in the year 1962 and 1960 respectively to purchase minor forest produce, agricultural produce and sell D.Rs to tribals at reasonable prices through a net work of D.R.Sales Depots and Shandy Centres. These two societies are intended to serve the tribals of scheduled area of the Project. Recently the Gokavaram Society headquarters was shifted to Rampachodavaram. Girijan Co-operative Corporation has monopoly rights over minor forest produce while it has to compete in open market with the private traders. It is offering D.R. items at competitive prices to the tribals at shandy points and through net work of D.R.Depots. The two societies has a net work of 47 D.R.Depots and 19 shandies. The business turnover of the Corporation in respect of minor forest produce, agricultural produce and D.Rs in the Project area is furnished hereunder:

PURCHASES AND SALES DETAILS OF MINOR FOREST PRODUCE, AGRICULTURAL PRODUCE AND DOMESTIC REQUIREMENTS BY GIRIJAN CO-OPERATIVE CORPORATION

Sl. No.	Item.	Year.	Sales in Rs.		Purchases in Rs.	
			Rampachodavaram	Yellavaram	Rampachodavaram	Yellavaram
I.	Agricultural Produce	1970-71	--	1,500	--	1,200
		1971-72	--	--	102	--
		1972-73	98,666	72,700	95,756	69,200
		1973-74	62,793	29,700	2,05,928	84,000
		1974-75	1,52,536	14,500	42,605	79,200
II.	Minor Forest Produce	1970-71	1,27,786	2,29,400	1,42,386	2,46,300
		1971-72	93,803	89,800	55,845	58,000
		1972-73	3,55,698	1,99,800	6,65,577	4,29,200
		1973-74	3,77,317	1,21,400	8,21,596	4,19,800
		1974-75	7,02,055	4,66,000	6,46,817	4,35,800
III.	Domestic Requirements.	1970-71	2,59,354	3,24,200	2,56,366	3,29,700
		1971-72	5,68,136	7,49,000	5,31,662	7,34,800
		1972-73	6,67,502	6,00,100	6,82,687	6,28,300
		1973-74	12,22,556	9,96,900	10,68,431	8,98,400
		1974-75	15,79,859	13,29,000	13,55,133	11,53,400

Under credit scheme tribals were granted short term loans. So far an amount of Rs.2.58 lakhs was advanced as short term loans to the tribals of the Project area. The details of disbursed loans under this scheme is furnished hereunder:

REVOLVING FUND LOANS GIVEN BY GIRIJAN CO-OPERATIVE CORPORATION

Sl. No.	Year.	Amount issued in Rs.		No. of beneficiaries		Amount outstanding in Rs.		Purpose.
		Rampachodavaram Society.	Yeleswaram Society.	R.Chodavaram Society.	Yeleswaram Society.	R.Chodavaram Society.	Yeleswaram Society.	
1.	2.	3.	4.	5.	6.	7.	8.	9.
1.	1970-71	38,095	60,000	225	542	33,977.00	44,335.50	For seasonal agricultural operations.
2.	1971-72	1,905	--	4	--	22,979.11	28,674.00	
3.	1972-73	--	--	--	--	19,390.34	26,904.00	
4.	1973-74	--	--	--	--	10,392.39	20,505.00	
5.	1974-75	--	--	--	--	8,848.00	18,367.42	
						95,586.84	138,785.92	

In addition to the above loaning programme Corporation is providing loans to promising tribals under 'Trade Assistance' for starting small business units like Tea Stalls, Provision Stores, Cloth Stores, etc. Under this programme 40 tribals were benefitted. The details of allotment and expenditure under trade assistance programme is furnished hereunder:

TRADE ASSISTANCE BY GIRIJAN CO-OPERATIVE CORPORATION

Sl. No.	Name of the Panchayat Samithi.	Allotment		Amount spent		No.of beneficiaries.	
		1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
1.	2.	3.	4.	5.	6.	7.	8.
1.	Addateegala	5,000	N.F.	5,000	--	10	--
2.	Rajavommangi	5,000	N.F.	5,000	--	10	--
3.	Rampachodavaram	5,000	N.F.	5,000	--	10	--
4.	Maredumilli	5,000	N.F.	5,000	--	10	--
	Total:	20,000	N.F.	20,000	--	40	--

SERVICE CO-OPERATIVE SOCIETIES:

There are 55 Service Co-operative Societies in the Project area of which 27 societies are in Rampachodavaram Taluk, 23 in Yellavaram Taluk and 5 societies in Sankhavaram Pocket. The total membership of these societies is 6,561 of which 4,690 are tribals and 2,871 are non-tribals. These societies have paid up share capital of Rs.4.02 lakhs. These societies have advanced an amount of Rs.15.87 lakhs to 5,469 members to defray agricultural operations expenses under loaning programme. The details regarding villages, members, loans advanced and amount recovered so far etc. are furnished in the Annexure No. II (9).

LABOUR CONTRACT CO-OPERATIVE SOCIETIES:

There are 6 labour contract Co-operative Societies in Rampachodavaram taluk with 393 tribals as its members and it has paidup share capital of Rs.9,585. Of the six societies, five are dormant while one society in Maredumilli is functioning. For want of proper supervision and guidance and adequate finances these societies are dormant.

PRIMARY MULTIPURPOSE CO-OPERATIVE SOCIETIES:

There are 16 Multipurpose Co-operative Societies in Yellavaram taluk with 2,198 members and paid up share capital of Rs.47,541. These societies are getting financial assistance from Co-operative Central Bank, Rajahmundry and Kakinada. These Societies are issuing both short term and medium term loans to its members, so far an amount of Rs.105.80 lakhs and 2.44 lakhs were issued as short term and medium term loans to its members.

E X C I S E:

In accordance with the guidelines issued by the Board of Revenue 27 arrack shops and 16 toddy shops are opened in the Project area. Besides, these 14 Arrack Co-operative Societies are functioning in the Project area. Two Arrack Depot Managers of Deputy Tahsildar cadre are stationed at Rampachodavaram and Addateegala to look after the supply of arrack to the above shops. 4 Excise Sub Inspectors and 2 Excise Circle Inspectors are working in the Project area to look after the excise matters. The excise revenue for the year 1974-75 is furnished hereunder:

	Yellavaram Taluk. Rs.	Rampachodavaram Taluk. Rs.
Net income from Arrack shop rentals.	4,73,227.62	1,59,127.56
Net income from Arrack Sales @ Rs.4.07 per litre.	3,94,098.10	3,29,922.34
	8,67,325.72	4,89,049.90

The details of Arrack Co-operative Societies and shops in the Project area are furnished in the Annexure No. II (10).

LAND TENNURE SYSTEM:

The Andhra Pradesh muttas (Abolition and conversion into ryotwari) Regulation 2 of 1969 came into force with effect from 26-12-1970 consequently all Muttas were abolished. The Settlement Officers were appointed and posted at Rajahmundry and Peddapuram to implement the provisions of Regulation II of 1969 in Mutta villages of Rampachodavaram and Yellavaram taluks. Subsequently the Office of the Settlement Officer at Peddapuram was shifted to Narsipatnam of Visakhapatnam district and the Settlement Officer, Rajahmundry is looking after the settlement work of agency area of

PROTECTIVE REGULATIONS:

Various protective legislations have been passed by the Government to afford necessary protection to tribals against the exploitation of the advanced section. Some of the important regulations are: 1) Andhra Pradesh (Scheduled Areas) Land Transfer Regulation 2) Andhra Pradesh (Scheduled Area) Moneylenders Regulation and 3) Andhra Pradesh Debt Relif Regulation. Besides these the Government of Andhra Pradesh have also passed an ordinance to abolish Bonded labour and imposed morotorium for outstanding debts.

A.P.(Scheduled Areas) Land Transfer Regulation:

Despite the enforcement of the provisions of the Regulation in the Project area land measuring 15,605.28 acres has been alienated to non-tribals. Suo-moto enquiries were initiated in 2006 cases.of which only 1423 cases were disposed off involving 3,880.95 acres and it was restored to tribals. There are problems in implementation of the regulation, for example there is no provision in the regulation to evict the non-tribal from the land with the standing crop though the court decides to in favour of tribal.

A.P.Money Lenders Regulation 1960:

According to provisions of the Regulation any one engaged in Money lending operation in scheduled area is expected to obtain license from the competent authority. 10 cases of illegal cases were detected and disposed off.

Bonded Labour:

An ordinance was promulgated in August, 1975 which was subsequently replaced by the Central Law which came into force from October, 1975. Government have also empowered all Revenue Divisional Officers and Tahsildars to exercise judicial powers for the trial of offences under bonded labour law. The High Court has issued instructions to all the presiding officers of the Civil Courts to review immediately cases of all persons detained in civil prisons and issue release orders in respect of bonded labourers covered by the State and Central Bonded Labour System (Abolition) ordinance 1975. The Collectors have been authorised to pay reward of Rs.100/- to any member of public giving information about existence of bonded labour. Rehabilitation schemes are also implemented to help the labourers released from debt bondage.

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CHAPTER - III

LEVEL OF DEVELOPMENT

VARIOUS developmental programmes have been implemented in the project area and consequently various institutionalised functions and infrastructure facilities have come up in the project as mentioned in the preceding pages. Though huge investments were made on various sectors it has not resulted in the balanced development among the various units of the project area as the difference in level of development appears to be more pronounced among the various micro units of the project area. These variations in progress is attributed to several factors.

The level of development among various units in the project area is gauged with the help of a set of selected socio-economic indicators which are broadly classified into 3 categories viz., Economic Development, Human Resource Development and Infrastructure Development. Indicators pertaining to agriculture sector have been included in the economic development, medical and health education facilities

East Godavari district. He is implementing the provisions of following Regulations.

1) Estates Abolition Act 1948:- All the Zamin, under tenure, Inam and Sub divided Estates in the district under Section-I(4) of the said Act were taken over by the Government in the Project area.

2) Andhra Pradesh Muttas Abolition and Conversion into Ryotwari: The land is covered by the provisions of the said Act. Under the provisions of the said regulation the Muttas were abolished and converted into ryotwari settlement. Settlement operations are being carried out under the provisions of Andhra Pradesh (Scheduled Areas Ryotwari Settlement Regulation -II of 1970).

3) Andhra Pradesh (Scheduled Areas) Ryotwari Settlement Regulation-2 of 1970: 19 Estate villages of Rampachodavaram taluk and 2 ara villages of Yellavaram taluk were taken er by Government and Ryotwari System is int duced in these villages.

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have been included in the Human Resource Development, while infrastructure development includes transport and electrification, postal facilities etc. Composite Index of level of development for the project area and District was worked out to assess the extent of variation and gap between these two units. For this purpose 15 indicators associated with agriculture, medical and health, education, transport and electrification, postal facilities etc., have been selected. The level of development was also assessed in various micro units i.e., Panchayat Samithi in the project area to find out inter Block (i.e., micro units) variations. The comparative indicators of level of development for micro units in the project area are furnished hereunder:

INDICATORS

Sl. No.		Rajavommangi Panchayat Samithi.	Index.	Addateegala Panchayat Samithi.	Index.	R.Chodavaram Panchayat Samithi.	Index.	Maredumilli Panchayat Samithi.	Index	Sankavaram Panchayat Samithi.	Index.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
I.	ECONOMIC DEVELOPMENT:										
a)	Percentage of cultivated land to geographical area.	18.56	(3) 60	18.18	(4) 59	30.53	(1) 100	4.94	(5) 16	23.05	(2) 76
b)	Per capita cultivated land.	1.01	(3) 79	1.27	(1) 100	1.20	(2) 94	0.72	(4) 56	0.58	(5) 45
c)	Percentage of irrigated area to net sown area.	35.09	(1) 100	6.60	(5) 18	9.53	(3) 27	6.75	(4) 19	14.43	(2) 41
d)	Percentage of forest area to geographical area.	57.33	(2) 88	65.00	(1) 100	23.69	(5) 36	36.87	(4) 56	48.14	(3) 74
e)	Crop Intensity	84	(3) 77	66	(5) 61	105	(2) 97	67	(4) 62	108	(1) 100
	Total:		(1) 80		(4) 65		(2) 70		(5) 41		(3) 67

(figures in paranthesis indicate rank of the Block in respect of that indicator)

Contd....

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
II.	HUMAN RESOURCE DEVELOPMENT:										
a)	Hospitals per lakh of population.	Nil	Nil	2	(2) 66	3	(1) 100	Nil	Nil	Nil	Nil
b)	Hospital beds per lakh of population	Nil	Nil	16	(2) 44	36	(1) 100	Nil	Nil	Nil	Nil
c)	No.of Doctors per lakh of population	8	(2) 53	6	(3) 40	15	(1) 100	15	(1) 100	Nil	Nil
d)	No.of Schools per 1000 students.	20	(3) 87	18	(4) 78	14	(5) 60	23	(1) 100	22	(2) 95
e)	Literacy (percentage)	13.3	(1) 100	13.3	(1) 100	12.3	(3) 92	12.3	(3) 92	6.1	45
	Total:		(4) 48		(2) 65		(1) 90		(3) 58		(5) 28

Contd...

Contd...

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
III.	INFRASTRUCTURE DEVELOPMENT:										
a)	Surfaced road length per lakh of population.	152.00	(1) 100	60.00	(4) 39	144.00	(2) 94	90.00	(3) 59	Nil	(5) Nil
b)	Surfaced road length per 100 Sq.KMs.	6.30	(2) 65	1.75	(3) 18	9.60	(1) 100	1.30	(4) 11	Nil	(5) Nil
c)	Percentage of Villages having road connectivity.	89	(1) 100	22	(4) 24	76	(2) 85	63	(3) 70	20	(5) 22
d)	Percentage of Villages electrified.	3.5	(3) 23	5.1	(2) 28	14.9	(1) 100	Nil	(4) Nil	Nil	(5) Nil
e)	Percentage of Villages Postal facilities.	8	(2) 50	1.6	(4) 10	16	(1) 100	8	(2) 50	6	(3) 38
	Total:		(2) 67		(4) 24		(1) 96		(3) 26		(5) 7

COMPOSITE INDEX

Sl.No.	Block	Economic	Human Resource Development	Infra-structure	Aggregate composite index.	Deviation from average (165)	Composite Index Rank
1)	Rajavommangi	80	48	65	195	(+) 29	2
2)	Addateegala	65	63	24	152	(-) 14	3
3)	Rampachodavaram	70	90	96	256	(+) 90	1
4)	Maredumilli	41	58	26	125	(-) 41	4
5)	Sankavaram	67	28	7	102	(-) 64	5

It can be seen from the above indicators that Rajavommangi Panchayat Samithi ranks first in the project area followed by Rampachodavaram, Sankavaram, Addateegala and Maredumilli in the level of development. This indicates that Maredumilli is the most backward unit in regard to economic development. In human resource development, Rampachodavaram stands first followed by Addateegala, Maredumilli, Rajavommangi and Sankavaram, indicating that Sankavaram has poor human resource development. Regarding infrastructure facilities development, Rampachodavaram ranks first followed by Rajavommangi, Maredumilli, Addateegala and Sankavaram. The aggregate composite index reveals that Rampachodavaram is relatively advanced over other units and it is followed by Rajavommangi, Addateegala, Maredumilli and Sankavaram. It is also interesting to note that Non-Scheduled Area (Sankavaram pocket) of the project has recorded a poor index of development as against the scheduled area. In the Sankavaram Block, the development functions are mostly confined to non-tribal villages which constitute the major chunk of the Block, which is, however, outside the project area. Moreover, the tribal villages in the Sankavaram Block (included in the project area) could not receive due attention as the

Sankavaram Block is not a Tribal Development Block. Further, it is also observed within the Scheduled Area, Maredumilli Panchayat Samithi is the most backward unit as it has exhibited a much pronounced negative variation index of development over the other Panchayat Samithis, while Rampachodavaram has recorded highly positive variation index of development. The development indices have recorded widely varied differences reflecting their level of progress, besides indicating the need for development efforts and also to bridge the gap among various units of the project.

	1961	Index	1971	Index
I. Demographic Indicators				
1) Density of population per Sq. K.M. (Sch. Area)	28	100	34	121
2) Decennial growth of population.	18.36	100	20.48	111
3) Sex ratio	1002	100	988	98
4) Percentage of tribal population.	69	100	66.69	96
5) Percentage of cultivators to total workers	65	100	45	69
6) Percentage of Agrl. labourers to the total workers	26	100	43	165
7) Percentage of workers engaged in household industry	1	100	1	100

8) Percentage of other workers to total workers	8	100	6	75
9) Percentage of non-workers to total population.	38	100	54	142
		100		108

II. Economic Development

1) Percentage of cultivated land to the geographical area.	7.77	100	10.32	143
2) Percentage of net irrigated area to the net sown area	14.1	100	12.83	92
3) Percentage of Forest area to the Geographical area	33.95	100	49.49	147
		100		127

III. Human Resource Development:

1) Hospitals per lakh of population	1	100	1	100
2) Bed strength per lakh of population.	17	100	13	76
3) No. of primary schools per lakh of population.	1.57	100	168	107
4) Literacy	7.4	100	12.8	173
		100		100

IV. Infrastructure Development:

1) Road length per 100 Sq.Kms	3.19	100	4.65	133
2) Percentage of Electrified villages.	0.56	100	3.90	689
		100		411
Composite Index:		100		190

Levels of development in the scheduled area over a decade i.e., 1961-1971 was assessed with the help of four sets of indicatiors viz., demographic, economic development, human resource development and infrastructure development. It can be seen from the data presented in the Statement that in demography the index recorded 8 points increase during the decade. In Economic Development the Index has recorded 27 points increase. In Human Resource Development the index has increased 14 points while in Infrastructure Development the index has recorded a four fold increase during the decade. However it may be noted that the Scheduled Area is still lagging far behind the district as mentioned earlier in infrastructure development. Eventhough the project area has registered steady progress during the decade under review, the pace of development is not so fast as to bridge the gap between the project area and the non-tribal areas in the District. For want of sufficient data the develop over decade for non-scheduled areas of Sankavaram Block could not be worked out.

After comparing the level of development among the various units in the project area, decade development in the scheduled area, development index of the project is compared with that of District. For this purpose the development indicators have been broadly

categorised into three groups as mentioned earlier. Under Economic Development the project compares unfavourably with the District as Project has recorded 72 against 93 of the District. Under Human Resource Development, the project has recorded 60 against 100 of the District, while in infrastructure development the project has recorded 18 against 100 of District.

It is evident from the above comparision Infrastructure Development is very poor in project area as the gap between the project and District is very much pronounced, while Human Resource Development index recorded perceptible gap as the project has recorded 60 against 100 of the District. Under Economic Development, the gap between project and District is considerable one. As indicated above that Infrastructure Development is the immediate felt need in view of the poor facilities existing in the project area. The aggregate composite index of the project works out to 50, while it is 98 for the District. The difference in levels of development between the project and district is too wide and suggests the need for massive development efforts for integrated development and to bridge the gap existing between the project area and the district. It is to achieve this objective during the perspective plan an exercise has been done to identify the growth centres which help to generate growth impulses and have spread effect over the space.

LEVELS OF DEVELOPMENT

	Project.	Index.	District.	Index.
I. Economic Development:				
1. Percentage of cultivated land to geographical area.	10.05	27	38.50	100
2. Per capita cultivated land	0.72	90	0.80	100
3. Percentage of Forest area to geographical area.	46.3	100	35.0	76
4. Percentage of irrigated area to net sown area.	12.33	20	62.6	100
5. Crop intensity	80.00	86	93.00	100
		64		95
II. Human Resource Development:				
1. Hospitals per lakh of population.	1	100	1	100
2. Hospital beds per lakh of population.	13	43	41	100
3. No.of schools per 1,000 students.	19	76	25	100
4. Literacy	10.5	33	31	100
		50		100
III. Infrastructure Development:				
1. Road length per 100 Sq.KMs.	3.00	31	9.6	100
2. Road length per lakh of population.	90.00	40	222.00	100
3. Percentage of villages Electrified.	4.97	11	42.8	100
		27		100

CHAPTER - IV

IDENTIFICATION OF CENTRAL PLACES

DURING the first three Five Year Plans much emphasis was laid on sectoral planning with schematic budgets under various heads like Agriculture, Industry, Transport, Communications, Health etc. Though there were appreciable gains in the economy and social over heads, the approach has resulted in lopsided development. In the Fourth Five Year Plan approach document, the planning Commission expressed its concern over the regional disparities and emphasised the need for a basic change in approach. It is to correct the lopsided development and ensure flow of funds from general sector for the accelerated development of the tribal areas, the Task Force on Tribal Development constituted by the Planning Commission recommended preparation of Sub-Plan for tribal areas in each State. (Macro level) and Integrated Tribal Development Plans for each District (Meso Level) within the State. The Policy frame given by the Planning Commission envisages integrated area planning with growth centre approach for the development of tribal

areas in the V Five Year Plan. The main objectives of Sub-Plan are narrowing the gap in levels of development between the tribal and other areas and to improve the quality of life of tribal communities in the regions with tribal concentration. Elimination of exploitation in all spheres accelerating pace of social and economic development, building up of inner strength of the people and improving the organisational capabilities are main among the objectives of the Sub-Plan. To achieve these objectives it was decided that a Sub-Plan for the tribal areas be drawn in such a manner as to present an Integrated view of the tribal problems together with broad objectives, strategies of development, outline of various programmes, physical requisites, financial outlays, suitable legislative and administrative frame etc., in the Sub-Plan area. Integrated Tribal Development Plans at meso level have been envisaged to achieve the objectives of the Sub-Plan. Formulation of Integrated Tribal Development Project has been initiated for the tribal areas of each Scheduled District with main emphasis on Integrated Area Development programmes and spot lighting the specific problems of the area and people in the region. The new area approach envisages sharing of programme benefits between tribal and non-tribal inhabitants of the project area. However, it is to be ensured that non-tribals do not monopolise the benefits

at the cost of tribals. It is therefore, envisaged that 5 year time-lag will be bridged by the end of Sixth Plan and the level of development in tribal areas will be brought on par with the general level of development.

Integrated Area Development refers to two types of integration i.e., functional and spatial as both are inter-related aspects. Functional integration refers to integration of overlaping economic and social functions such as agriculture, industries, education, health etc. The assumption is that change in the one aspect necessarily results in change in the other. Eventhough Community Development Programmes had rudiments of functional integration by way of having different subject specialists at block level it did not yield the desired results as the spatial dimension was lacking in the approach. Consequently the benefits accrued to a limited number of beneficiaries as the activities were confined to certain areas in the Block. Proper understanding of interrelationship between various functions and their location over the space is highly imperative to chieve the balanced growth. The interrelationship between various functions depends upon their location in space to some extent and there is a set pattern of the dispersal or concentration of functions in spatial dimension. The location of a

function in relation to other functions depends upon several factors like level of development, demand for specific services, their supply, infrastructure in terms of roads and transportation, time, distance and cost of travel etc. The tribal areas are deprived of these facilities due to various factors, while in the case of advanced areas there is concentration of such facilities. This implies the need for clear understanding of inter-relationship between functions and space in the development process of an area.

Integrated Area Development refers to appropriate location of social and economic functions over a physical space for balanced development of a region. It also implies selectivity on one hand and decentralisation of these functions for optimum utilisation by locating them in most appropriate places.

The frame for distribution of economic functions and social facilities for achieving integrated development comprises two steps - preparation of regional plan, determination of right inputs at most appropriate places. Meso level tribal concentration regions have been carved out by including all tribal villages situated in contiguous tribal belts in each district having Scheduled Areas. Thus all these meso regions constitute a macro region or Sub-Plan Area at State Level which ultimately forms a part of the State Plan. Thus 7 meso tribal regions have been identified

and perspective plans have been prepared for 5 out of the 7 meso regions. This perspective plan is the sixth excercise.

Different methods were devised and employed for identification of functional and settlement hierarchy in the five meso regions for which perspective plans have been prepared. Methods employed in each of the five meso regions vary from one meso region to the other, as each of them was devised on the basis of the topography, settlement pattern, ethnic composition of the settlements, topography, communication pattern, agrarian practices etc. For identification of central places in the East Godavari project area, all the methods which have been employed earlier in the other meso regions have been experimented and found to be unsuitable. This necessitated the adoption of new method suited to the peculiar topography, settlement pattern, ethnic composition of the settlements, communication pattern and agrarian practices of the project area.

The range of good method for identifying Central Places has certain advantages over the other methods. The range of good is the maximum distance which the consumer is willing to travel for obtaining a particular service. The tribal regions are characterised by larger range of good and limited

consumer choice resulting in exploitation by the private merchants. This situation called for substitution of private agencies by institutionalised goods and services in the public sector. The data on availability of various services and goods managed by private agencies with their distances to other villages were collected for the project area. In this process, if a particular service was not available within the village, the distance at which it was available was noted for each function. In case, if more functions are available in the same village the man miles travelled to avail these facilities would be less. If the services are not available in the surrounding areas, the man miles travelled would be more. This indicates that these villages are isolated. Thus the distance travel for all settlements for all functions was computed. After computing the distance travel, the villages on the 'x' axis and the total score on 'y' axis were plotted. The graph thus plotted did not indicate any uniformity and set pattern. It did not give any correct picture of the hierarchy of settlements. The functional hierarchy could not be identified with the help of this method due to peculiar distribution settlements and functions in the Project area. Consequently the other methods were tried to identify central places.

All the settlements in the Project area were arranged in ascending order depending on their

size of population for identifying Central Places. 30 functions were considered for this purpose. These functions pertain to Economic and Social Service facilities like Banking, Marketing Institutions, Health, Education, Transport and Communication facilities. Presence or absence of these functions was noted against each village. The analysis revealed that these functions have recorded erratic distribution and their clustering did not show any set pattern. Hence this method was given up.

WEIGHTED SCORING METHOD:

As an alternative, functional complexity wieghted scoring method was adopted for arriving at the Centrality Score of each settlement. It may be stated here that there is no statistical method or a standard scale by which the different levels of a given function can be assigned appropriate weightage. In the absence of it, it was decided to evolve a procedure for assigning weightage for various levels of functions which would help to minimise the extent of arbitrariness or subjectivity. In the present exercise weightage to various sub-functions was assigned according to their distribution among the settlements of the Project area on the basis of principle "that greater the scarcity greater the importance in terms of centrality, therefore, higher the weightage". In other words, higher

level functions always get higher weightage as they are scarce in number. In this way, each function was given weightage. For example, there are 5 high schools in the Project area, out of 583 inhabited settlements. Therefore, the weightage for high school is 116.60. For each village total score was arrived by computing centrality score of each function present in the each settlement of the Project. After computing total score of each settlement, the frequency distribution of settlements with reference to total score was arrived at. Based on the frequency, relative frequency and cumulative relative frequency was also worked out. The end value of score of settlements was plotted on 'x' axis and corresponding cumulative relative frequency was plotted on 'y' axis of double log probability graph. It was noticed that there were three visible breaks in the graph. These breaks were identified with reference to total score i.e., end value score and corresponding cumulative relative frequency. The settlements were categorised into 4 classes with reference to centrality score. It is also noticed the cumulative relative frequency raised from 0.3241 to 0.5444. There were distinct gaps at 0.3686, 0.4933 and 0.5376 which helped the classification of Central Places.

Score	Frequency of settlements	Cumulative relative frequency.
Less than 20	215	0.3685
Less than 100	73	0.4933
Less than 1000	26	0.5376
More than 1000	4	0.5444

The first break covered as many as 215 villages having less than 20 points weighted score. The second was located at 100 points weighted score covering 73 villages. The third one was noticed at 1000 points weighted covering score 26 settlements. The last one contained 4 settlements whose score was more than 1000 points.

At the outset, villages with less than 20 point score were eliminated, as 215 out of 583 inhabited setlements cannot be treated as Central Places. Thus the settlements with more than 20 points were considered for identifying central places. These 103 Centres were classified and designated as lower, middle and higher order places and they were plotted on the project area map. It was noticed that there was clustering in lower and middle order centres. In order to have a rational distribution of centres over a space the process of elimination was adopted with the help of 'minimum aggregate distance matrix'. Further predominantly non-tribal villages were avoided as far as possible in view of the fact that non-tribals have

higher receptivity and easy accessibility to the functions available in the Central Places. However, some of the central places though predominantly non-tribal in population composition were retained as their command area contained sizeable tribal concentration and these centres are in very close proximity to tribal villages. Finally 4 higher order centres, 17 middle order centres and 51 lower order centres have been identified in the project area. The names of identified central places of various orders are furnished in Annexure No.VII-(1). Based on service potentialities and requirements of the area, developmental inputs have been proposed at the identified central places of various orders to fill up the spatial and functional gaps*.

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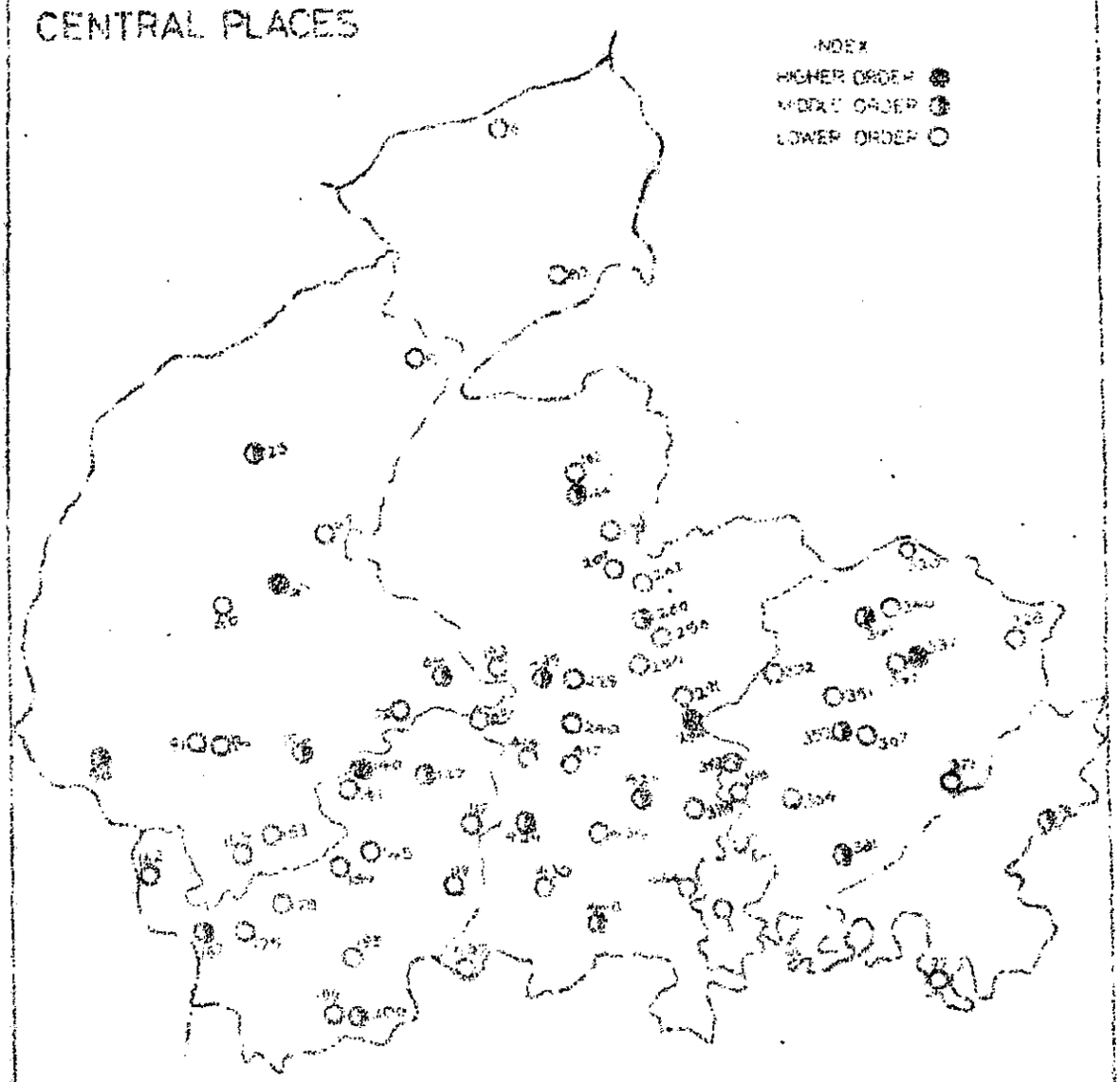
*Existing and proposed functions are furnished at in Annexure No.VII-(2).

EAST GODAVARI DISTRICT PROJECT AREA

CENTRAL PLACES



CHAPTER - V

PLAN IN OUTLINE

THE 'Meso' tribal region for Integrated Tribal Development in East Godavari District is carved out by including all the Scheduled villages in Rampachodavaram and Yellavaram Taluqs and 49 contiguous Non-Scheduled villages from Sankhavaram Panchavat Samithi of Prathipadu Taluq. Thus the Project area constitutes 536 scheduled villages and 47 non-scheduled villages. All the scheduled villages in the project area are distributed over 4 Tribal Development Blocks viz., Maredumilli, Rampachodavaram, Addateegala and Rajavommangi. The project area covers 4,191.65 Sq. Kms. and constitutes 38.2% to the total geographical area of the District.

The Plan envisages various programmes for Integrated Development of the tribal areas of East Godavari District. Recommendations have been made for a period of 13 years commencing from current financial year. The plan suggests various programmes

to harness the existing as well as potential resources through optimum method of decentralising benefits of such development. To achieve spatial and functional integration a net work of judicious locations for various services has been worked out.

A resource inventory has been made in the project area for estimating the development potentialities on resource base - physical and human, and their level of development. Backward Communities viz., Konda Reddi, Konda Dora and Kammaras have been identified and keeping their level of development suitable schemes have been suggested in the perspective plan.

INTEGRATED AREA APPROACH:

Functional complexity weighted scoring method was employed for identification of optimum locations for various services. Centrality score for all settlements in the project was computed with reference depending to number and level of functions available in the settlement. After completing total centrality score of each settlement the frequency distribution of settlement with reference to centrality score was worked out. Based on the frequency, relative frequency and cumulative relative frequency was also worked out. The end value of centrality score of

settlements was plotted on 'x' axis and corresponding cumulative relative frequency was plotted on 'Y' axis of a double log probability graph. There were 3 visible breaks in the graph. The settlements were categorised into 4 classes with reference to centrality score. The first category consists 215 villages with less than 20 points weighted score. The second one consists 73 villages with 100 points of score. The third had 26 settlements with 1000 points weighted score. The last category contains 4 settlements with more than 1000 points. The first category with less than 20 points score was deleted and the other 3 varieties were retained. They were plotted on the graph and there was uneven distribution. In order to have a rational distribution of central places i.e., elimination process with the help of minimum aggregate distance matrix was adopted. Moreover, non-tribal concentration villages are also a-voided in selecting the central places. Consequently 4 Higher order centres, 17 middle order centres and 51 lower order centres have been identified in the project area. All these centres are harmoniously integrated with the centres identified by the State Planning Department.

The Development programmes envisaged under the perspective plan have been broadly classified as Agriculture, Animal Husbandry, Industries, Forestry, Irrigation and Power, Education, Communication etc., credit marketing etc.

AGRICULTURE:

The Agricultural programme in the perspective plan aims at removal of constraints on tribal inhabitants as well as on their environment which confine them to the present low level of production and consumption standards. Agricultural production is proposed to be stepped up by introducing qualitative and quantitative shifts in the cropping pattern. Under quantitative shift the vast expanse of cultivable waste land is proposed to be brought under plough after reclamation in a phased manner. The area under fallows would be minimised by adopting proper crop rotation and cropping pattern. The extent of under utilisation of land in the project would be reduced with provision of irrigation facilities by harnessing the surface and under ground water potential and adoption of short duration varieties of crops. The extent of cropped area is anticipated to be increased from 1,10,568 to 2,15,713 acres. "Crop Cafetaria" evolved on the basis of climate, irrigation potential, soil, topography, dietary and economic conditions in the Project area is recommended for bringing about qualitative and quantitative shifts. As a result of this shift by the end of VII Five Year Plan the existing utilisation gap would be reduced to minimum and much of the area would be brought under double cropping. It is proposed to bring the large portion of irrigated area under short duration fertilizer responsive high yielding

varieties by the end of VII Five Year Plan. Requirements of fertilizers, seeds and pesticides are estimated exclusively for tribal holdings in the project area. Adequate infrastructure for marketi[illegible] and storage of the agricultural produce to ensure [illegible]-munerative prices to the farmers is proposed on th[illegible] of projected agricultural production, cocoa develop[illegible] tapioca, pine-apples cultivation, orchard develop[illegible] is suggested with massive investment.

IRRIGATION:

The net irrigated area in the project is 14,132 acres which accounts for only 12.83% of the [illegible] sown area. There is glaring disparity between the project area and the District in the percentage of net irrigated area as net irrigated area in the Dis[illegible] works out to 62%. During the perspective plan, it is proposed to bring 32,156.41 acres by harnessing 27[illegible] minor irrigation sources at an estimated cost of Rs.3.[illegible] crores and another 15,800 acres under medium irrigation sources at an estimated cost of Rs.2.42 crores. [illegible] addition to this under horticulture development p[illegible]gramme it is proposed to provide irrigation facil[illegible] at an estimated cost of Rs.3.72 crores. By the e[illegible] of V Plan additional 15,105 acres will be added [illegible] the existing 14,132 acres and the net irrigated area [illegible] be 29,237 acres.

FORESTRY:

Under the Forestry sector it is proposed to raise quick growing and minor forest produce yielding species in the project area, which will not only provide employment to the tribals but also replenish the dwindling minor forest produce yielding species to provide supplementary source of income for tribals. It is also proposed to raise orchards and permit the tribals to collect usufruct from these orchards. Scheme for bringing about 1500 acres under Coffee for the landless tribal households is proposed under this programme.

ANIMAL HUSBANDRY:

The strategy for livestock development consists of the following programmes (a) Cattle development is to bring about an improvement in the milking capacity and draught efficiency of the cattle taking into consideration of the prevailing conditions (b) Controlled breeding operations, effective disease controls, management and adequate feeding methods have been proposed in the Plan.

(c) Distribution of Milch Animals:

The requirements of milch animals would be met mainly by supply of crossbred cows and high yielding she buffaloes.

d) Establishment of Milk Cooling Centres:

To collect the surplus milk in the project area, it is necessary to have milk collection points and necessary processing facilities and therefore it is proposed to set up 4 milk cooling centres at Tribal Development Block Headquarters.

e) Setting up Feed Mixing Plant:

Under this scheme it is proposed to supply cheap feed to dairy units, other livestock and poultry units suggested in the project area. Locally available ingredients and the forest produce can be used for making feed mix.

f) Veterinary Services:

It is proposed to establish 6 additional Dispensaries, 34 First Aid Centres ~~are suggested~~ in the plan. The tribal boys will be posted at these centres after imparting compounder's training.

g) To Upgrade the Local Sheep, the distribution of crossbred rams and ewes to the tribal families is envisaged. The main-tenance of improved sheep will be supervised by the staff attached to First Aid Centres. In the plan period 500 households will be selected for rearing improved sheep. To start with this rearing will be at the areas identified for this purpose.

INDUSTRIES:

The project area has very poorly developed in industrial sector and the industrial labour constitutes negligible percentage to the total working force. To siphon off the pressure on land it is envisaged to establish resource based, labour intensive small scale and cottage industries in the project area. The project area has rich potential for the development of forest, resource based industries as large quantities of Bamboo, Teak, Nux-vomica seed, Addaleaf, Koperigrass, Tamarind Seed, Seekai, Myrobolams etc., are abundantly available. The project area is endowed with deposits of graphite and their exploitation will generate employment to the project population. The following agro-forest based industries are suggested,

1) Adda Leaf stitching Units at Addateegala, Rampachodavaram, Maredumilli, Maredubaka, Rayapalli, Indukurupeta, Kundada and Vatangi.

2) Bamboo Rattan Units at Rampa, Manturu, Chavitidibbalu, D. Ramavaram, Maredumilli, Aminabad and Rajavommangi.

3) Fruit Pulp Extraction Unit at Addateegala and Satlavada.

4) Red Bricks manufacturing Unit at Dusaripamu, Devipatnam and Bhimudupakalu.

5) Splints and Veneers Manufacturing Unit at Rampachodavaram and Mohanapuram.

6) Tamarind Dall Unit at Gangavaram.

7) Tamarind Starch Extraction Unit at Devipatnam, Y. Ramavaram, Geddada and Kondapalli.

8) Sheekai and Soapnut Powder Unit at Bandapalli, Y. Ramavaram, Maredumilli and Bornagudem.

9) Palm Fibre Processing Unit at Bhimudupakalu, R. Chodavaram and Boyapadu.

10) Jaggery Making Units at Gangavaram, Y. Ramavaram and Dusaripamu.

11) Oil Rotary Unit at Indukuripeta, Y. Ramavaram, Yellavaram, Boduluru, Kondamodalu, Zaddangi, Rajavommangi, Pedamallapuram etc.

12) Rice and Flour Milla at Bandapalli, Yellavaram, Vetukuru and Rajavommangi.

13) Sago Pellets Unit at Rampachodavaram and Thimmapuram.

14) Beekeeping Unit at Rampachodavaram and Addateegala.

MEDICAL AND HEALTH:

A comprehensive programme for Health and Medical Services has been evolved to cater the to

the health and medical needs of the project area and improve health conditions of the people. To achieve the effective dispersal of Medical Services and Institutions in the project area, it is proposed to upgrade and convert existing hospitals, dispensaries. This programme includes both curative and preventive measures. The bed strength in the Primary Health Centres are also proposed to be increased. In addition to the existing Sub-Centres 4 more Sub-Centres, one more Cholera Unit and one Mobile Medical Unit are suggested. It is also proposed to increase and strengthen Malaria eradication units with adequate Surveillance Workers.

It is also proposed to provide package of service like supplementary nutrition diet, immunization health education and propaganda etc., through Integrated Child Development Project in the project area. Higher order centres are proposed to be brought under protected water supply scheme (piped water) and every settlement is proposed to be provided with a drinking water well.

COMMUNICATIONS:

The road programme has been drawnup to provide linkages with central places identified in the project area. The programme is as follows:

(a) Preference is given for the formation of surfaced roads connecting higher order centres with middle order centres during V Plan.

(b) Metalled roads connecting middle order centres with lower order centres in the project area during VI Plan.

(c) Other link roads are proposed to connect most of the villages in the project area in the VII Plan period.

At the end of the project period the road length would increase from 589.82 K.M. to 1313.02 K.M. and thus the road length per 1000 Sq. K.M. would be 31.20 K.M.

EDUCATION:

The educational programme has been evolved in accordance with the norms prescribed under minimum needs programme to achieve 100% enrolment among the boys and 80% enrolment among girls of School age group of 6 to 11 years in the project area. 20 Ashram Schools have been suggested under cluster scheme so as to provide education facilities even to small villages which cannot sustain primary schools independantly. Infrastructure facilities like pucca buildings for schools, residential quarters for teachers and hostel buildings form part of the Education programme.

ADMINISTRATION:

The organisational integration is proposed to be achieved through a single line of administration in the project area with the project Officer as the Chief Executive Officer for implementation of Development programmes in the Project Area. Project Officer is assisted by Assistant Project Officer, and Subject Matter Specialists. The four Tribal Development Blocks have already been brought under administrative control of the Project Officer. All the programmes implemented with the general funds would get administrative clearance from Project Officer.

FLOW OF FINANCES:

The estimated cost of programmes included in the V Plan works out to Rs.10.42 crores while the Sub-Plan financial provision is only Rs.3.82 crores of which Rs.3.07 crores is expected from State Plan funds and the rest from Central Assistance. Thus the gap works out to Rs.6.60 crores. This shortage of finances have to be mobilised from Institutional Finances. Sectorwise financial requirements and the Sub-Plan provisions and the deficit details are furnished in Table No.1. The details of sectorwise financial requirements for perspective plan are furnished at the end of the Chapter. The total estimated cost for the perspective plan works out Rs.44.76 crores, of which major share goes to Agriculture sector i.e., 36.39%, followed by Irrigation and Power 23.50%,

Forestry 13.60, Credit 9.48%, Communications 5.87%, Animal Husbandry 4.10% Education 2.70%, Medical and Health 2.55%, Industries 1.00% which administration constitutes a meagre share i.e., 0.81%.

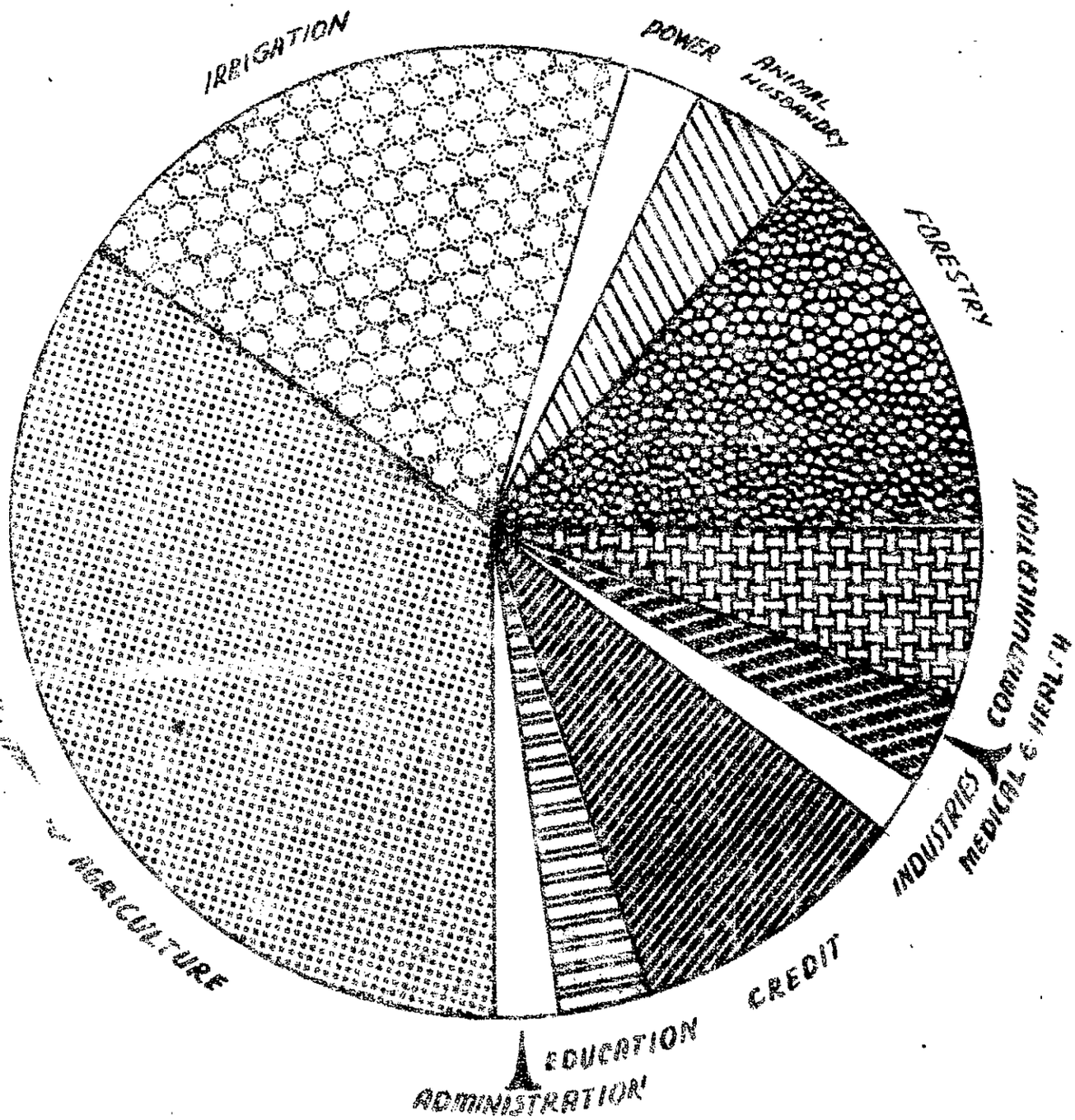
TABLE NO.(1)

FINANCIAL IMPLICATIONS

(Rs.in lakhs)

Sl. No.	Sector	Financial requirements for V Plan	Sub Plan Provision for V Plan	Gap to be filled-up
1	2	3	4	5
1.	Agriculture	274.40	90.99	- 183.41
2.	Minor & Medium Irrigation.	234.84	51.83	- 183.01
3.	Power	49.45	106.58	+ 57.13
4.	Animal Husbandry	35.19	14.71	- 20.48
5.	Forestry	220.83	31.33	- 189.50
6.	Industries	7.61	8.69	+ 1.08
7.	Roads	39.35	16.60	- 22.75
8.	Education	22.06	25.12	+ 3.06
9.	Medical & Health	45.64	60.78	+ 15.14
10.	Credit	96.81	4.47	- 92.34
11.	Administration	10.53	--	- 16.53

SECTOR WISE INVESTMENTS.



FINANCIAL IMPLICATIONS

(Rs.in lakhs)

Sl. No.	Programme	V Plan	VI Plan	VII Plan	Total
1	2	3	4	5	6
I.	Agriculture:				
	a) Assignment of waste land and development	23.00	108.06	187.86	318.92
	b) Soil conservation	5.40	32.40	47.50	85.30
	c) Supply of Inputs:				
	i) Seed	25.48	33.14	41.85	100.47
	ii) Fertilizer	133.79	173.47	219.50	526.76
	iii) Plant protection	55.35	72.55	90.31	218.21
	d) Cocoa development	3.78	5.13	5.41	14.32
	e) Tapioca cultivation	5.70	11.40	20.40	37.50
	f) Pineapplecultivation	6.25	12.50	25.00	43.75
	g) Soil testing laboratory	2.72	2.10	2.10	6.92
	h) Supply of Agricultural implements	0.85	2.10	2.10	5.05
	i) Development orchards	9.00	81.40	162.00	252.40
	j) Vegetable cultivation	3.08	6.16	10.16	19.40
	Total;	274.40	540.41	814.19	*1629.00

* This includes Rs.1218.00 lakhs of Credit component.

Sl. No.	Programme	No.	V Plan	No.	VI Plan	No.	VII Plan	No.	Total
1									
1.	P.W.D.Works	42	70.48	30	89.85	27	110.68	99	271.01
2.	Panchayat Raj Works	22	14.31	157	30.06	--	--	179	44.31
3.	Medium irrigation.	1	138.05	2	103.90	--	--	3	241.95
4.	Special schemes for development of orchards.	80	12.00	800	120.00	1600	240.00	2480	372.00
		145	234.84	989	343.81	1627	350.68	2761	929.33

III. Power:

1.	Pumpsets for energisation	3853.80	70.	7.00	70	7.00	178	17.80
2.	Yellaveram cluster scheme			25.87	41.48	--		65.35
3.	R.Chodavaram cluster scheme			21.78	9.45	--		31.23
	Total:			49.45	57.93	7.00		114.38

IV.	Animal Husbandry	35.19	88.13	59.75	183.07

1	2	3	4	5	6
V.	Forestry:				
1)	Plantations:				
a)	Teak	22.18	--	--	22.18
b)	Quickgrowing species.	9.15	--	--	9.15
c)	M.F.P.Species	2.50	2.50	2.50	7.50
	Subsitence allowance Rs.@5/- per day for a tribal family	91.25	91.25	91.25	273.75
2)	Coffee Plantations	4.50	9.00	9.00	22.50
3)	Scheme for shifting cultivators.	91.25	91.25	91.25	273.75
	Total:	220.83	194.00	194.00	608.83
VI.	Industries:				
	No.of Units proposed	20 7.61	41 22.01	27 16.06	88 45.68
VII	Communications	39.35	106.40	117.35	263.10

1	2	3	4	5	6
VIII.	Credit-cum-Marketing:				
1.	Infrastructure facilities.	6.60	0.38	0.10	7.08
2.	Consumption credit	23.62	101.91	29.35	154.88
3.	Marketing credit	66.59	85.94	107.87	260.40
	Total:	96.81	188.23	137.32	422.36
IX.	Education:	22.06	40.05	58.11	120.22
X.	Medical & Health:	45.64	48.82	20.60	115.06
XI.	Administration	16.53	14.22	14.22	44.97

A B S T R ACC T

1. Agriculture	274.40	540.41	814.19	1629.00
2. Irrigation	234.84	343.81	350.68	929.33
3. Power	49.45	57.93	7.00	114.38
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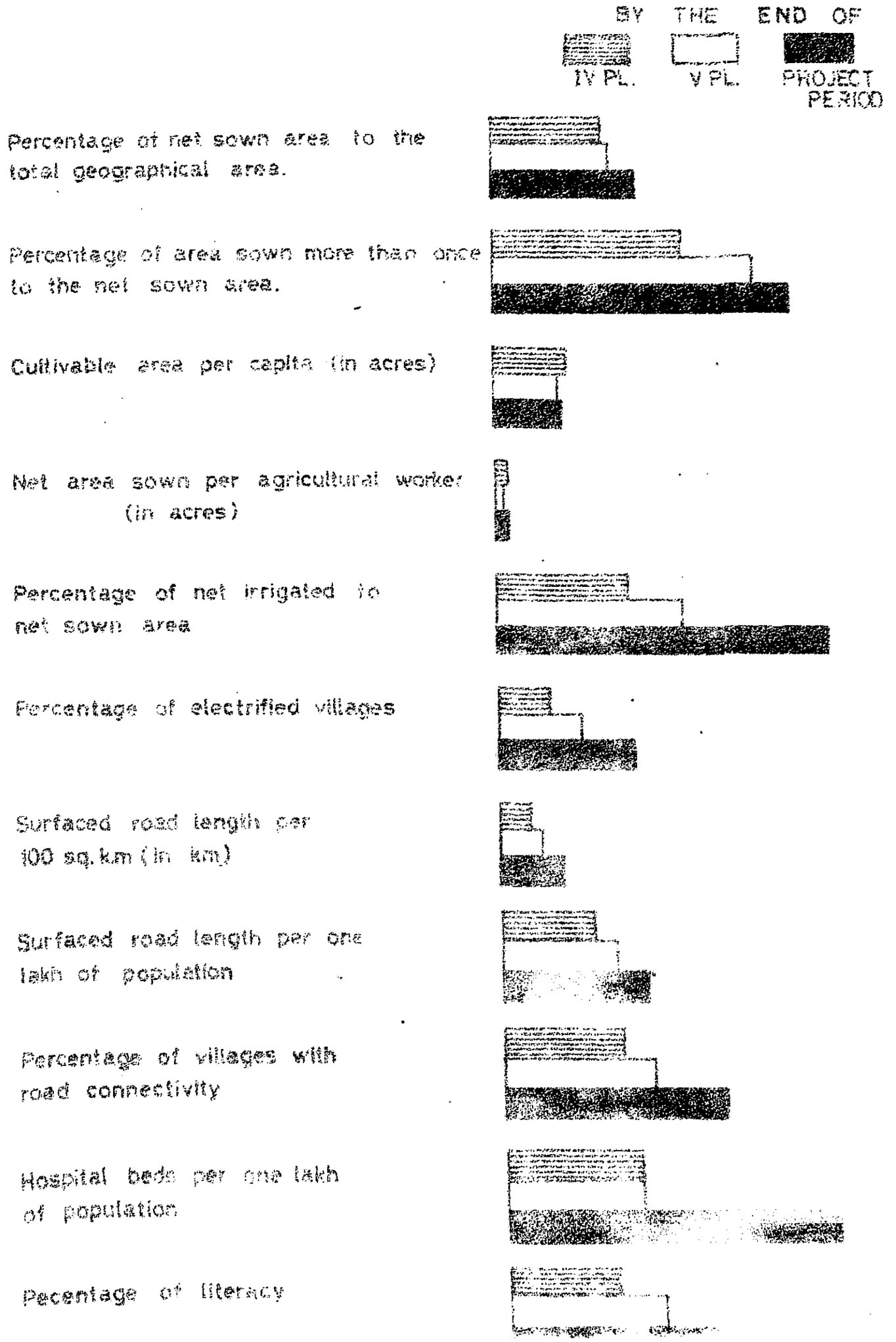
7. Communications	39.35	106.40	117.35	263.10
8. Credit	96.81	188.23	137.32	422.36

1	2	3	4	5	6
9.	Education	22.06	40.05	58.11	120.22
10.	Medical & Health	45.64	48.82	20.60	115.06
11.	Administration	16.53	14.22	14.22	44.97
	Total:	1042.71	1644.01	1789.28	4476.00 or 44.76 Crores.

LEVEL OF DEVELOPMENT

Sl. No.	Item	Projected By the end of IV Plan	By the end of V Plan	By the end of Project period.
1	2	3	4	5
1.	Percentage of net sown area to the total geographical area.	10.50	11.10	13.70
2.	Percentage of area sown more than once to the net sown area	18.3	25.0	28.5
3.	Cultivable area per-capita (in acres)	0.72	0.63	0.65
4.	Net area sown per agri-cultural worker (in acres)	1.35	1.31	1.35
5.	Percentage of net irrigated area to net sown area	12.83	18.00	32.10
6.	Percentage of electri-fied villages.	4.97	8.0	13.0
7.	Surfaced road length per 100 Sq.Kms. (in Kms)	3.0	4.0	5.9
8.	Surfaced road length per lakh of population (in Kms).	90	110	140
9.	Percentage of villages with road connectivity	11.45	14.6	21.5
10.	Hospital beds per one lakh of population	13	13	32
11.	Percentage of literacy	10.5	15.0	20.0

LEVEL OF DEVELOPMENT



75

25
500 —
142

Sec 4
42
537
4.1

PROGRAMMES

(a) AGRICULTURE

THE development of the project area and its population depends very much on the prospects for agriculture development as 90% of the working population draw their sustenance from agriculture sector. The East Godavari District along with West Godavari, Krishna and Guntur Districts constitutes the rice granery of the State and shares the distinction of exporting huge quantities of paddy. The rice exports from this district accounts for about 47,000 metric tonnes. The project area stands in sharp contrast with the district in respect of agriculture sector. The net sown area in the District is 38%, whereas it is 15.16% in the project area. Area sown more than once in the District is about 36%, while it is 3.33% in the project area. The District is rich in irrigation potential as it has got a good net work of delta irrigation system. The net irrigated area in the District works out to 62.6%, while it is only 12.83% indicating the poor irrigation facility in project area, though the mighty perennial river Godavari flows by

the project area. The poor status of agriculture development in the project area is reflected in low per acre yield i.e., 6 quintals as against 15 quintals in the District. The low level of agriculture technology, poverty of soils, inadequate assured water supply have contributed much for this abnormally low yields. The per capita cultivable area works out to 0.72 acres. It is evident from the above discussion that a fairly wide gap exists between the district and the project area. Therefore, it is imperative to identify the factors responsible for low agricultural yields and potential for development. The second step is formulation of perspective plan to remove the constraints and provide for proper harnessing of growth potential in the project area in a phased manner.

LAND USE PATTERN*:

In a developing economy the efficient management of land assumes greater significance to feed the increasing population and also to accelerate the pace of economic growth of the region. Land is an important factor of production and its utilisation assumes special significance in developing economy.

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*In view of the apprant deferences in the land use pattern between the scheduled areas and non-scheduled area of the project the data on land use were analysed separately for scheduled area and non-scheduled area.

PROJECT AREA - LAND USE PATTERN (Area in 1000 acres)

Sl. No.	Land use	Scheduled Area		Non-Scheduled Area	
		Area	Percentage	Area	Percentage
1	2	3	4	5	6
1.	Total Geographical Area	998	100.00	37.00	100.00
2.	Area under Forestry	494	49.49	18.00	48.64
3.	Area under Pastares	23	2.30	0.40	1.08
4.	Land under tree crops and grooves	23	2.30	4.10	11.08
5.	Cultivable Waste	119	11.93	1.90	5.14
6.	Old fallows	60	6.01	1.20	3.25
7.	Current fallows	50	5.01	1.10	2.98
8.	Net sown area	103	10.32	7.40	20.00
9.	Area sown more than once	18	1.80	1.80	4.86
10.	Barren and uncultivable land	66	6.62	2.70	7.29
11.	Land put to non-agricultural use.	60	6.02	0.20	0.54
	T o t a l:				

Land use pattern in the project area has been analysed to assess the level of development of agriculture and to estimate the potential for agricultural development. The total geographical area in the project is 9,98,000 acres. The topography of the area, population pressure on land, rainfall, irrigation potential soil fertility and forest influence land use pattern. The analysis of land use pattern in the project area reveals the intensity of land use or crop intensity, extent of cultivable waste, fallow lands etc. The land use pattern of the project area shows that about 50% of the geographical area is under forests while in the district it is only 26.9%. The area classified as barren and uncultivable land accounts for 6.62%. About 12% of the total geographical area remains as cultivable waste which is fairly large. The project area is hilly and is covered with dense forests. Current fallows accounts for 5.0% to the total geographical area, while the area under old fallows constitutes 6.0%. The other fallow lands (old fallows) constitute 39.2% to the net sown area, indicating that a large portion of land is left fallow. The proportion is on high side if a comparison is made between the total fallow land measuring 1,10,000 acres (old and current fallows) and the net sown area i.e., 1,03,000 acres. It is

clear that total fallow land is higher than the net sown area in the project. The current fallows represent a temporary discontinuation of cultivation mostly for replenishing of soil fertility. This phenomenon is a result of various factors - poor fertility of soils, lack of manuring, ignorance of scientific farming methods, crop rotation etc. But in the project area, soils are extremely poor and consequently they require intensive manuring. As a result, high percentage of land continue to remain as a fallow land. Current fallows as a proportion to the net sown area constitute 48.54%. This abnormally high percentage of current fallows is attributed to many factors like poor soil nutrition, Red loamy soils and absence of inorganic manures. On account of this, lands cannot lend themsleves for continuous cultivation. The heavy manuring is dependent on factors like assured water supply, crop rotation etc. There is limited existing potential for assured water supply in the project area. The cumulative effect of all these factors is reflected in abnormally low per acre yield.

The net sown area is 10.72% to the geographical area. The extent of net sown area is directly related to topography, soil fertility, irrigation facility climate, rainfall, cost of inputs, anticipated returns and other factors like density of population, technical levels of people and social and economic institutions. The net sown

area has recorded an increase by 24,000 acres* (30.3%) over a period of five years. This indicates the fact that the cultivators have brought the sub-marginal lands under plough to compensate low yield per acre. Extensive cultivation forced the cultivators to leave a large portion of land as fallows.

Further, it can be also said that certain portion of net sown area would be earmarked for food production irrespective of prices, rainfall, irrigation etc.

The crop intensity of the project area is 80. The intensity of land use depends largely on the availability of irrigation facilities.

** CROP INTENSITY

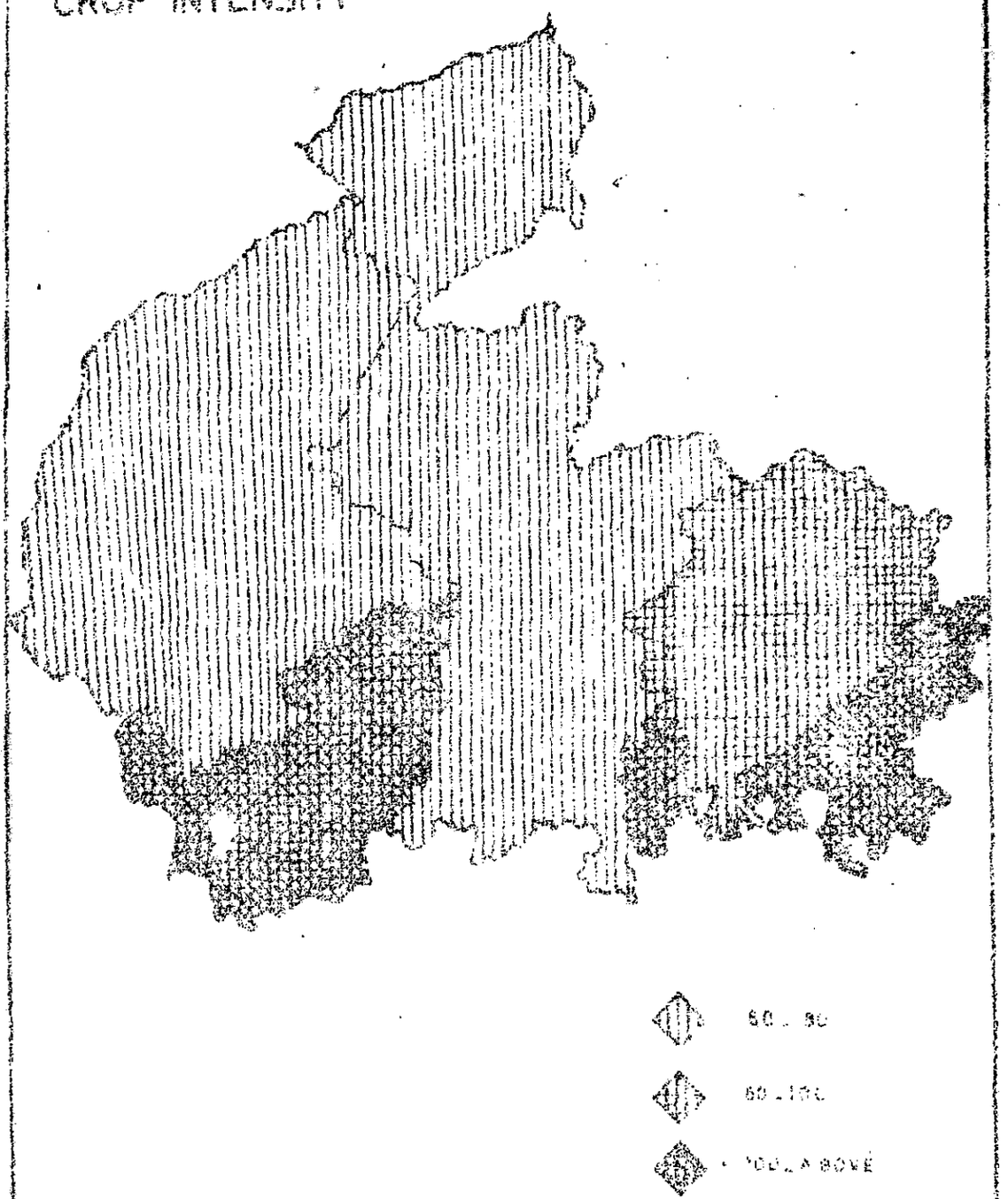
Area	Crop Intensity Index.
1. Scheduled Area	79
2. Non-Scheduled Area	108
3. Rajavommangi	84
4. Rampachodavaram	105
5. Addateegala	66
6. Maredumilli	67
7. Sankavaram	108
8. Project Area	80

** Crop intensity defined as proportion of total cropped area in the total cultivated area.

* East Godavari - Hand Book of Statistics 1970-71, Zillaparishad, East Godavari.

EAST GODAVARI DISTRICT PROJECT AREA

CROP INTENSITY



As the project area has got low percentage of irrigated area, i.e., 12.8% the crop intensity is also low (intensity of land use). A comparision of crop intensity between various Panchayat Samithis within project area brings out sharp variations, as Addateegala Panchayat Samithi has recorded the lowest crop intensity i.e, 66, while Rampachodavaram has the highest intensity 105. Further, a comparison between Scheduled and Non-Scheduled area indicates that there is a wide gap as Scheduled Areas has 79 as against 108 of Non-Scheduled Areas which reflects the backwardness of the Scheduled Area within the project area.

The comparison of land use pattern (among the four T.D. Blocks vide Annexure VI (a) (1)) in the project area brings out marked variations. For example, cultivable waste land is to the tune of 30.29% in Maredumilli which is on high side. In Rajavommangi and Addateegala it is hardly 2%. Similarly net sown area has recorded sharp variations i.e., Rampachodavaram has high percentage 27.23, while the lowest is found in Maredumilli i.e., 3% to the total geographical area. The highest percentage of old fallows is found in Maredumilli i.e., 15.32%, while Addateegala, Rampachodavaram has the least percentage i.e., less than 1%.

The project area also comprises 47 Non-Scheduled villages of Sankhavaram Panchayat Samithi. These villages have sizeable tribal concentration. The analysis of land use pattern in the non-scheduled pocket brings out distinct variations between the scheduled area and non-scheduled villages in respect of net sown area, area sown more than once, cultivable waste, old and current fallows. Non-Scheduled area has 20% net sown area, while scheduled area has 10.32%. Similarly area sown more than once constitutes about 5%, cultivable waste 5.14%, old and current fallows 3.25% and 2.93% respectively in Non-Scheduled Area while the Scheduled area has 1.80% as area sown more than once; 11.93% cultivable waste; .01% old fallows and 5.01% as current fallows. These sharp variations in land use pattern are attributed to topography, soils irrigation facilities, rainfall, agricultural practices etc., in the respective areas. Intensity of land use is also high in the Non-Scheduled Area i.e., 108 as against 79 in Scheduled Area.

SIZE OF HOLDINGS:

The occupational pattern of the population in the Project area revelas that there is heavy dependence on agriculture sector. This is partly

SIZE OF LAND HOLDINGS (In Hectares)

Sl. No.	Size of holding	Rampachodavaram No.	Rampachodavaram Area	Yellavaram No.	Yellavaram Area	Total No. of holdings.	Total Area	As percentage to the total No. of holdings	As percentage to the total area.
1	2	3	4	5	6	7	8	9	10
1.	Below 0-25	353	55	312	65	665	120	4.57	0.23
2.	0-25 - 0-50	417	148	458	162	875	310	6.01	0.60
3.	0.50 - 1.00	722	563	954	762	1686	1325	11.52	2.58
4.	1.00 - 2.00	1160	1695	1991	3095	3151	4790	21.66	9.35
5.	2.00 - 3.00	922	2156	1822	441	2744	6597	18.86	12.88
6.	3.00 - 4.00	476	1611	866	3042	1342	4653	9.22	9.08
7.	4.00 - 5.00	533	2349	881	4095	1414	6444	9.72	12.58
8.	5.00 - 10.00	624	4320	1322	9856	1946	14176	13.37	27.67
9.	10.00 - 20.00	204	2791	402	5601	606	8392	4.16	16.38
10.	20.00 - 30.00	28	655	54	1491	82	2146	0.56	4.19
11.	30.00 - 40.00	9	303	14	656	23	959	0.15	1.87
12.	40.00 - 50.00	1	45	14	781	15	826	0.10	1.61
13.	50.00 and above	--	--	6	476	6	476	0.04	0.92
	Total:	5449	16691	9096	34523	14545	51214		

responsible for reduction of average size of operational (cultivation) holding. The data presented at page-117 bears out this fact. It is observed from the table that there is uneven distribution of size of holdings. A large number of holdings (44%) are of the size of less than 2 hectares. These small holdings cover 12.76% of the total area. The percentage of holdings of 2 to 5 hectares is 38.%, covering 34.54% of the total area. Holdings size varying 5 to 10 hectares cover about 28% of the area distributed over 13% of the total holdings. Holdings of more than 50 hectares constitute 0.04% covering 0.92% of the total area. It is interesting to note that 81.56% of the total holdings are within the size of 5 hectares, covering almost 50% of the total area. 48% of the total area is concentrated in holdings size varying from 5 to 30 hectares. It is evident from the above analysis that 44% of the total holdings covering 13% of the area can be categorised as uneconomic holdings. These uneconomic holdings constitute a sizeable portion. As such no developmental programme can be effective and fruitful if this vital segment is ignored. No doubt the green revolution has helped to increase the agricultural production but its benefits were mostly derived by the large farmers. Consequently

this process has widened the haitus in levels of income not only between the regions but also between different classes namely small and large farmers within the project area. The small farmers could not participate effectively in utilising the benefits of new agricultural technology due to certain handicaps with which they are encountered. These small farmers lag very much behind the large farmers as their purchasing and investing power is very weak. Consequently their risk taking ability is also much less. Therefore, credit plays a vital role in enabling them to participate in improved agricultural technology which helps to accelerate the economic development of the region and Nation as a whole. The bankers also consider the loaning operation among the small farmers as a calculated risk on account of their uneconomic holdings and their socio-economic backwardness. The repaying capacity of the small farmers is also doubted very much by the banking institutions.

It may not out of place to mention about the role played by the cooperative societies in catering to the credit needs of small farmers. These cooperative societies have been successful in certain regions but failed in many places. The modern technology renders possible the conversion of small holdings into

economically viable units by applying a modern agrarian inputs, adoption of suitable agronomic practices and diversification of farming operations. S.F.D.A. and M.F.A.L.D.A. have been set up in East Godavari District to help the small and marginal farmers and agricultural labourers. However, the operations of these agencies are not extended to the project area.

SOIL TYPES:

Red loamy soils are predominant in the project area as 75% of the total area in Rampachodavaram block, 100% in Addateegala, 45% in Rajavommangi, 88% of villages in Maredumilli are covered by this type of soil. Black cotton and alluvial types of soil are also found in the project area.

In Rampachodavaram Panchayati Samithi 75% are red loams, 13% black cotton, 8% shandy loams and 4% alluvial soils. The soils in Maredumilli Block are predominantly red and shandy loams (88.5%). The soils that are met with along the bank of river Godavari are black cotton and alluvial loams where F.C. Virginia tobacco and chillies are grown. The P.H. value of soils range from 6.4 to 7.2 which is slightly lesser than optimum value of P.H. 6.5 to 7.5 for good vegetative growth. Black cotton soils are the next important variety found in this block. Red and sandy

loams of low fertility are predominant in Rajavommangi and Sankhavaram Blocks. Red loams are mixed with laterite. Sandy loams are the next important variety as 36% of villages are covered by this type. Black cotton soils are found in 18% of villages. In Addateegala Block, 100% of villages are covered with red loams with laterite type. The soil are very rich in organic content which is attributed to flora and fauna in the project area. Soil analysis of the area revelas that they are very rich in potash and very poor in nitrozen and phosphate. These red loamy soils are characterised by low silica content (40%) and they are comparatively more leached than others due to open texture.

CLIMATE AND RAINFALL:

The project area is not characterised by extremities in temperature. Due to high elevation and dense foliage the summer is not so hot as it is in the plains area of the District where the mercury shoots up to 115°F. On the contrary, in the summer the climate is pleasant especially in the northern portion of the project area where the altitude is high and forests are dense. The climatic conditions are almost identical with that of lower agency of Chintapalli taluk of Visakhapatnam District. Data on temperature

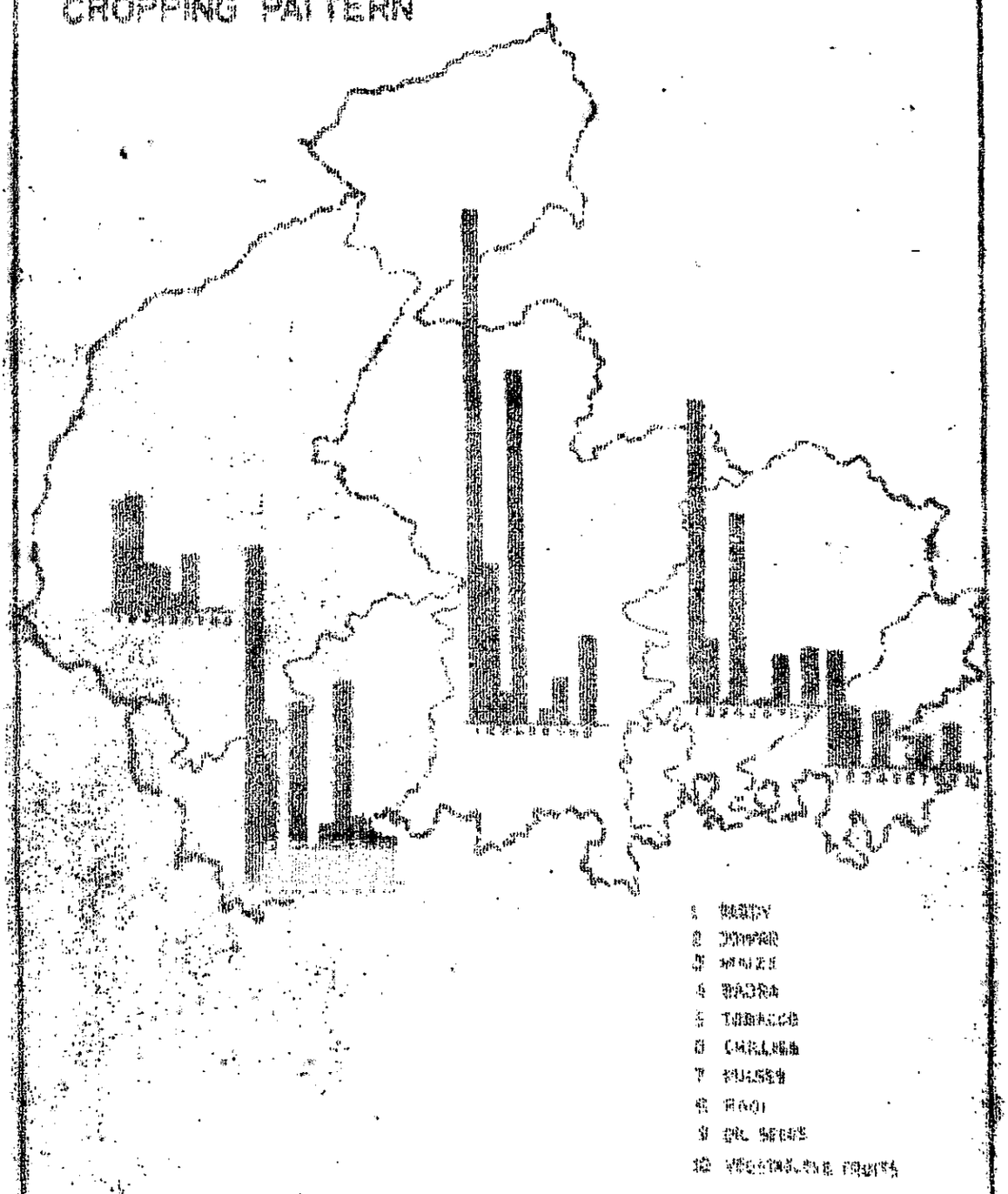
assessed for want of reliable data. Mostly millets, pulses, oil seeds like castor are grown in the podu fields as mixed crops. It requires no ploughing except dibbling the land and seed broad-costing. No manure is applied except burnt ashes which contain a lot of plant food materials especially potash and phosphate. Since no proper ploughing and adequate manuring is done, the soils become poor and consequently yield rate diminishes. This cultivation does not require working animals and requires a few crude implement like hand rake, axe and machete. The hill 'podu' practised in the Papi Hills of the project area mostly by Konda Reddis resulted in destruction of considerable forest wealth and extensive soil erosion.

CROPPING PATTERN:

Prevailing cropping pattern of the project area helps to judge the efficient management of land as a production factor. The data presented in Annexur -VI(a)3 indicates the most important crop in the project area is paddy in terms of area, value and output as 28.52% of the cropped area is under paddy. Bazra is the next important crop in the project area, as 17.53% of land is under this crop. This crop is followed by Jowar which accounts for 11.38% of the cropped area. About 72.00% of the cultivated area is devoted to food crops. While

EAST GODAVARI DISTRICT PROJECT AREA

CROPPING PATTERN



for a period of 5 years indicates that minimum temperature was 65°F while maximum was 97°F. The variation in temperature is significant which is attributed to topography of the area. December is the coldest month in the winter season.

The average annual rainfall received in the project area is 1320.5 MM. Bulk of the rainfall is received during the south-west monsoon as it contributes 67.05% to the total annual rainfall. This rain is very helpful for agricultural operations. The project area also receives rain fall during north-east monsoon in the months of October and November which is helpful to the rainfed crops in the south-west monsoon.

Variations in rainfall could not be assessed among four tribal blocks and non-scheduled area for want of rainfall data from respective blocks. The data available from two rain guage stations i.e., Addateegala and Rampachodavaram were used for working out average rainfall. There is sharp decrease in the quantum of rain received during north-wast monsoon (i.e, from October to December). The dry period i.e., from January to March/received insignificant amount of rainfall, followed by hot weather period (April and May)

where little more rain was received. The impact of distribution of rainfall is reflected in the cropping pattern of the project area.

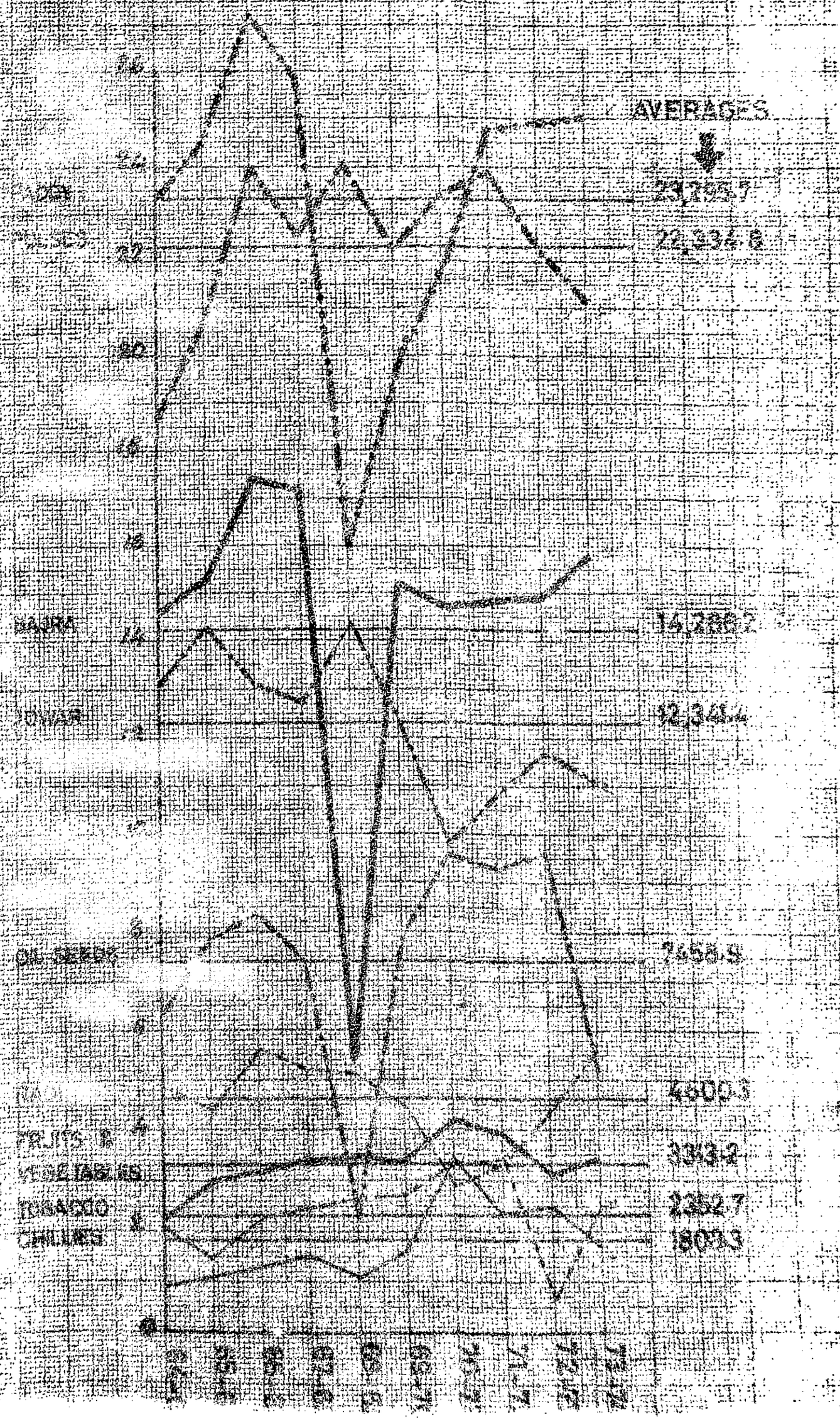
AGRICULTURAL PRACTICES:

Agricultural practices adopted by the tribals of the project area vary from those adopted in Delta and upland taluks of the District. Dry cultivation is predominant as a large portion of the cultivated area is dependent on monsoon which is subject to vagaries of nature. In dry cultivation manuring is mostly done before ploughing the land and only in rare cases it is done at the time of ploughing.

Green leaf manuring and cattle penning is a common practice in the areas bordering non-Scheduled area. Some of the tribal cultivators are availing the concession of free removal of green leaf for manurial purpose. Of late, it is observed that there is growing awareness about the usefulness of chemical fertilisers among the relatively advanced cultivators, who constitute a very small percentage to the total cultivators.

Shifting cultivation, locally called 'Podu' is prevalent in Maredumilli, Addateegala and Rajavommangi Panchayat Samithies. However, the extent of area under shifting cultivation could not be

CROPPING PATTERN-TREND



the balance i.e., 28.% is under non food crops like tobacco, oil seeds other miscellaneous crops etc. A small percentage of the cropped area of the project area is under commercial crops like Chillies. about 2%; tobacco 1.4%; and oil seeds 4.45%. The area under vegetables and fruits constitutes hardly 1%. Other miscellaneous crops are cultivated in about one fifth of the cropped area. The area and output of commercial crops is very meagre as the soils and irrigation facilities are poor.

CROP ZONES:

The village survey operations have been completed in the project area but the settlement operations and villagewise area localisation was not done. In the absence of village boundaries crop zones could not be identified even at the village V.D.O. circle level. In view of this limitation crop zones were identified at Block level, keeping the block as unit. The cropping pattern was analysed in terms of area under each crop and its percentage to the total cropped area (Vide Annexure V (a)3. It is evident from the cropping pattern diagram that rice is the important crop in Rampachodavaram (23.29%) followed by pulses (14.17%). Though Bazra is a food crop, it is occuyping third rank in terms of percentage. In Maredumilli Samithi, Jowar is the major crop (24.19%) followed by

MAIZE:

The area under Maize and Ragi constitutes a small percentage to the total cropped area. Area as well as production of Maize is more in Maredumilli Block than in the other Blocks.

COMMERCIAL CROPS:

Commercial crops like Chillies, Tobacco, pulses oil seeds etc. contribute 15% to the total cropped area. Area under pulses is on the high side, when compared to the area under tobacco and chillies. There is a significant variation between the Blocks in terms of area and output as Rampachodavaram stands first in terms of area and output of chillies.

TOBACCO:

Tobacco is an important commercial crop not only from cash point of view but aslo from a foreign exchange point of view. Small percentage (1.42) of area is under this crop. Rampachodavaram followed by Maredumilli has the maximum extent of area under this crop. In terms of total output and area Rampachodavaram has a significant contribution.

OIL SEEDS:

Area under oil seeds is not significant

in the project area as it accounts for 4.45% of the total cropped area. However, it is more than those under other crops like Tobacco and Chillies. The oil seed crops include groundnut, castor and sesamum. One fifth of the area under oil seeds is covered by groundnut. This crop has good soil recuperative value and serves as an effective cover against soil erosion. This provides good forage for cattle. The area under sesamum is about 50% of the total area under oil seed crops. The yield per acre of this crop is 1.25 quintals, while the oil seed crops in non-scheduled villages of Sankavaram is two quintals per acre. Addateegala has more area under oil seeds than other Blocks.

PULSES:

The area under pulses is 8% to the total cropped area of the project. There is a large variation between the Blocks in the extent of area as Rampachodavaram recorded maximum extent of land locks 1,600 acres while Addateegala has 1.1 thousand acres. This marked variation indicates uneven distribution of area under pulses over various Blocks. In terms of total output, Rampachodavaram recorded maximum, while Rajavommangi has the least.

paddy (22.73%), while other millets are just nominal in terms of area. In Rajavommangi, Rice is the major crop (38.18%) followed by Bazra (23.94%). In Addateegala, rice is the predominant crop followed by Bajra as about 30% and 20.91% are covered by them respectively, while the miscellaneous crops occupy a large area i.e., as much as rice.

PRODUCTIVITY:

The area under principal crops and their total output and average yield per acre in various micro units of the project area furnished in Annexure No.VI(a)(2) throws light on the marked variations in area and output.

PADDY:

It is evident from the data that maximum area is found in Addateegala Block, whereas it is minimum in Maredumilli. The variation in terms of total output and average yield per acre is significant as the total output in Rajavommangi is about 43,000 quintals while in Maredumilli it is only 14.3 quintals. The average yield per acre varies from 3 to 6 quintals in Addateegala and Rajavommangi respectively. The high per acre yields in Rajavommangi are attributed to the high percentage of flat land with irrigation facilities and presence of non-tribal farmers.

BAZRA:

The next important food crop is bajra which accounts for 17.53% of the total cropped area in the project. The comparison in terms of area under this crop indicates that a large area is covered by it in Addateegala Block, whereas Maredumilli Samithi has the least. Variation in output is also significant between the Samithis as the total output ranges from 1828 to 14,616 quintals in Maredumilli and Addateegala respectively. The output per acre is high in Rampachodavaram Block while it is lowest in Rajavommangi The variation in productivity is mainly due to soil and topographic factors.

JOWAR:

Jowar is another important millet crop which accounts for 11.38% of the total cropped area in the project. It is mostly grown in rainfed conditions and it is draught resistant crop. The area under this crop varies from 1505 to 3778 acres in Rajavommangi and Rampachodavaram respectively. The total output is maximum in Rampachodavaram while it is the lowest in Rajavommangi. The output per acre varies from 1.50 to 2 quintals in Addateegala and Rampachodavaram respectively. The difference between scheduled villages and non-scheduled villages in the project area is not significant.

CROPPING PATTERN TREND OVER THE DECADE:

The price structure of various crops, distribution programme of seeds of the Panchayat Samithis, agro climatic factors have influenced the cropping pattern in the project area. An analysis of cropping pattern trends in the project area over the last decade throws into relief the following facts: (Vide Annexure VI (a) 4).

1) PADDY:

The extent of area under paddy has recorded marked fluctuations. The annual variation was as high as (-) 39.04% in the year 1968-69 and as low as (+) 0.23% in 1972-73. The variation was very distinct in the above two years. The annual variations has recorded a mixed trend over the decade.

2) JOWAR:

Jowar a millet crop has recorded contrast trend with paddy as evident from the annual fluctuations. However, the decline was not very much distinct. The annual variation indicates that except in 4 years, the decade recorded decrease. The fluctuations varied from (-) 20.87% in 1969-70 to low of percentage (-) 4.96 in 1973-74.

3) BAJRA:

The area under Bajra a millet crop varied widely and the fluctuation was as high as (+) 179.07% and as low as (+) 0.21 per cent. The maximum positive variation in the year 1969-70 was exceptionally high and it was followed by a slight decline and afterwards the area was almost constant.

4) MAIZE:

Maize a millet crop, though recorded an increase in area, was not free from fluctuations. However, the variations were not very much significant except in the year 1966-67, where it was exceptionally high. The variation was as high as (+) 71.91% and as low as (+) 1.02% during the decade.

5) RAGI:

The area under Ragi varied considerably indicating a mixed trend. The steep decline recorded in the first half of the decade was off set by the sharp increase noticed in the second half of the decade.

6) PULSES:

Pulses have recorded variations characterised by decline and increase. The annual variation was as high as (+) 15.99 per cent and as low as (-) 5.27 percent. The fluctuations were not insignificant and the decade has exhibited an over all decrease as evident from the annual average variations.

7) CHILLIES:

Area under Chillies commercially an important crop varied widely and was characterised by continuous increase with the exception of 3 years in the decade i.e., 1968-69, 1971-72 and 1973-74. The variations were sharp and they were as high as (+) 104.67 per cent and as low as (+) 8.94 per cent.

8) TOBACCO:

Tobacco has recorded constant increase, but for the year i.e., 1972-73 which was followed by a sudden boost in the year 1973-74. During the second half of the decade the variations were very sharp and distinct. The highest percentage was (+) 311.48 in 1973-74 and the lowest was (+) 3.34 per cent in 1969-70.

9) OIL SEEDS:

Oil seed crops have recorded sharp variations and it was very distinct especially in the year 1968-69, and 1969-70. The variations was as high as (+) 254.10 per cent and as low as (-) 3.50 per cent.

10))FRUITS AND VEGETABLES:

Fruits and Vegetable crops have recorded increase in area during decade. However, the variations were not very much sharp as noticed in other crops. The variation was as high as (+) 35.74% and as low as (+) 0.31 per cent.

The cropping pattern data presented in the Annexure No.VI(a)4 reveals sharp as well as marginal fluctuations (either decrease or in increase).

Crop		Average variation (in thousand Acres)
Paddy	(+)	0.04
Jowar	(+)	0.02
Bajra	(+)	0.03
Maize	(-)	0.03
Ragi	(+)	0.04
Chillies	Nil	0.00
Fruits and Vegetables	(+)	0.01
Oil Seeds	(+)	0.30
Tobacco	(+)	0.01
Pulses	(Nil)	0.00

The cropping pattern trend indicates that paddy and ragi have recorded maximum increase followed by Bajra as evident from average annual deviations during the decade, while among commercial crops, oil seeds have recorded the maximum. The extent of areas under various crops in each year varied widely and these were exceptionally high. However, the decade ended with an over all increase in the extent of the area under many of the principal crops. The variation has accounted for (+) 0.42 thousand acres on an average annually. The cultivators reacted to the increasing value of cash crops and adopted them. The area under

paddy, an important food crop, has recorded increase due to supply of inputs like improved seed, chemical fertiliser, increase in irrigation facilities etc.

MINOR IRRIGATION

Tanks, wells and hillstreams are the sources of irrigation in the project area. Of these, tanks form the most important source, followed by reservoirs both in terms of number of sources and extent of ayacut as there are 189 tanks, irrigating 7605 acres and 16 reservoirs irrigating 4463 acres. There are 13 irrigation works on hillstreams irrigating 760 acres. The proportion of irrigated area to the net sown area works out to 62.6% in the district as against 12.83% in the project area. In Sankavaram pocket of Project area, tanks are the only source of irrigation. There are 20 tanks irrigating 1,080 acres. The irrigated area in 47 villages works out to 14.43% to the net cultivated area.

The percentage of irrigated area to net sown area in the scheduled area varies significantly from one taluk to other. For example, Yellavaram taluk has 15.64% as against 8.84% in Rampachodavaram

taluk. This indicates relative advantage of irrigation facility in Yellavaram taluk.

GROUND WATER POTENTIAL:

The Project area is endowed with good rain fall and considerable ground water potential. But a very little of the available ground water potential has been so far tapped and ground water potential could not be assessed due to lack of authentic data on ground water potential in the Project area. Except a recent rapid reconnaissance survey done by the State Ground Water Department in Yellavaram taluk, no other ground water potential survey was carried out in the project area. This gives a broad outline of the situation. It reveals that areas occupied by hills and rivers are not suitable for sinking wells. The general rainfall is the source of ground water in the Project, a part of the rainfall is absorbed by atmosphere by way of evaporation and evapo-transpiration through vegetation. Secondly, a part of run off rain water percolates to the ground to recharge the ground water reservoir. The Ground water in the Project area is controlled by its physiography as well as geology. Ground water of the area is classified as moderately alkaline

having its PH range between 7.50 to 8.50. The ground water of the Project has medium to high salinity content. A detailed discussion on ground water potential, its analysis and scope for development is made in the irrigation Chapter. As mentioned earlier, the extent of irrigated land is very meagre and surface and ground water potential remains unutilised to a large extent. Therefore, much remains to be done in irrigation development, a vital factor which influences the agricultural production.

Dietary Habits:

Jowar, Bajra and Ragi constitute the staple food for the tribal communities. Rice is also consumed extensively. Though all tribal communities consume mixed cereal diets, Kondareddy and Koya tribes prefer Bajra, Jowar and other coarse grains. The cereals are cooked as gruel,'ghatka' and 'Roti'. Among pulses, redgram dal is most popular. Other pulses like cow-peas, horsegram, greengram and bengalgram are also occasionally consumed. Generally pulses are cooked in the form of soup with tamarind water, chilly and salt. Among several varieties of green leaves collected

from the forest for consumption Colocasia and pumpkin leaves are very popular in the interior villages. Vegetable consumption especially that of pumpkin is also very popular. It is one of their favourite dishes. Generally mixed vegetable curries are prepared in which they add some dry fish. The most popular dishes among these communities are chilly chutney and tamarind soup prepared by boiling tamarind water with chilly and salt. Some varieties of wild roots and tubers like "Teegagedda" Chedugadda" etc. are collected especially in interior villages and consumed as the exclusive diet during lean months. They also grow some yams in their backyards. The Project area is abundant in wild fruits like jackfruit, mango, oranges etc., and they consumed in the respective seasons. The first fruit / Vegetable/ cereal, and millet are offered to their deities ceremonially and then consumed by the tribals.

The tribals living on the Godavari Banks consume fish in good quantities, while in other areas dry fish is consumed atleast once or twice in a week. Meat is purchased from the shandy as well as hunted from the forest. It is cooked with much water, chilly powder and salt are added.

The habit of drinking intoxicants is popular. Toddy is a part and parcel of their life and is a must in all their social and religious functions. From December to March they get considerable quantity of toddy and many families subsist on toddy alone. It is given even to small children.

Food Intake

Food Consumption studies conducted in the Project area reveal that the diets of the tribal of this area are deficient in cereals, pulses, flesh foods, vegetables, milk and milk products, fats, oils and sugar and jaggery when compared to I.C.M.R. Recommended daily allowances.

Food	R.D.A.	Observed intake	Deficiency(-) Surplus (+)
1	2	3	4
Cereals (G)	475	329	146(-30.73%)
Pulses (G)	80	23	57(-71.25%)
Flesh foods (G)	40	23	17(-42.50%)
Green leafy Vegetables(G)	125	168	(+) 43
Vegetables	75	54	21(- 28.00%)
Roots & tubers(g)	100	149	(+) 49
Milk and Milk Products(G)	100	26	74(-.74.00%)
Fruits (G)	30	44	(+)14
Sugar & Jaggery(G)	40	5	35(- 87.50%)
Fats and oils	40	2	38(- 95.00%)

It is observed that the deficiency in oils is as high as 95.00% and sugar and jaggery is 87.00% indicating that the tribals are unable to purchase these items due to poverty. The deficiency in milk and milk products is also very high (74.00%) which is attributed to their superstitious beliefs. Tribals consider milking cattle to be a sin. It is also observed that the consumption of pulses is very inadequate (71.25%) deficiency even the cereals the main item of their diet exhibit a deficiency of 30.73%, while vegetables exhibit a deficiency of 28.00%. However the dietary analysis reveals that they are consuming large quantities of wild leaves, roots and tubers to make up the deficiency in their food intake. Based on the I.C.M.R., Recommendations on Daily allowance, the total requirements of cereals and pulses were worked out for Project population. A comparison between requirements and total production of cereals and pulses indicates the 30.53% shortage in cereals and 36.42% in pulses. In order to make up this deficiency suitable agricultural development strategy has been suggested (vide Annexure No.VI.(a)2.

STRATEGY FOR DEVELOPMENT:

Any perspective development programme devoid of a resource base is not likely to yield fruitful results. As such the agriculture programme has been evolved basically keeping in view the resources and their potential for development. The man land ratio is abnormally low. Further the output per acre also is low and the consequently sustaining capacity of land is also very poor. There-fore, it is imperative either to find out ways and means to divert the surplus manpower to non-agricultural sectors or to increase the per acre output substantially followed by increase in cultivated area. The land use pattern bears out the fact that vast expanse of land remains as cultivable waste or follows. The scope for diversification of manpower to non-agricultural sectors is almost nil at present, due to high illiteracy rate, very poor level of technical know-how, lack of skilled labour etc. The alternative left now is to increase productivity of land and to bring more land under plough. Further, the project area has no rich expoitable mineral resources or other substantial potential for development. In this context, it can also be said that there is no scope for development of a feasible

self-sustaining secondary sector. The radical transformation of agriculture would help for providing much needed base for industrial development. However, this can be thought of only when a radical transformation of agriculture is achieved, which is not an easy task in the tribal areas in a short period. This transformation is a long drawn process and it can be attempted by evolving a strategy consisting of (a) bringing more land under plough by way of reclaiming cultivable waste and fallow lands. (b) by adopting improved soil management and conservation measures to prevent soil erosion. (c) by exploiting surface and ground water potential and making more rational use and conservation of water through better water management practices. (d) by changing cropping pattern and effecting necessary modifications in agricultural operations and introducing multicropping pattern in irrigated area etc. (e) by introducing high yielding varieties.(f) by improving agricultural practices and supplying of improved inputs-seeds, chemical fertilisers, agricultural implements etc. (g) by introducing high value cash crops and by promoting horticulture in fallow lands.
(h) and adopting suitable plant protection measures against pests and insects.

LAND ASSIGNMENT-SANKAVARAM.

(Cost.Rs.in lakhs)

	V			VI			VII		
	No.HHS	Extent	Cost	No.HHs	Extent	Cost	No. HHS	Extent	Cost
1. Cultivable Waste	87	435	2.48	150	750	4.27	150	750	4.27
2. Forest Land	120	600	3.42	242	1210	6.89	242	1210	6.89
Total:	207	1035	5.90	3.92	1960	11.16	392	1960	11.16

It is seen from the above table that a sum of Rs.17.10 lakhs in the V Five Year Plan Rs.96.90 lakhs in the VI Five Year Plan and Rs.176 lakhs in the VII Five-Year Plan are required to benefit 600, 3,400 and 6,200 landless Tribal households respectively in Three Plan periods. In view of financial constraints and other problems, only 48% of cultivable waste land has been proposed for assignment. However, this proposal intends ~~intends~~ to cover up the cent percent of the estimated land= less households.

The amount proposed under this programme is meant for the benefit of landless tribal households, the cost of which has therefore to be treated as a grant-in-aid.

Regarding non-scheduled area, it is seen from land utilisation data, the land measuring 1936 acres is classified as cultivable waste. It is estimated that about 991 tribal households are landless and the entire cultivable waste land ie., 1936 acres is proposed for assignment to the landless tribals, @ 5 acres each. Thus 387 tribals would be benefitted by this scheme. The total estimated cost of this scheme works out to Rs. 11.02 lakhs. However, there will be still 604 landless households without land as there is no cultivable waste land available for assignment. Therefore, it is proposed to acquire land measuring 3020 acres from the unreserved forest area. The phasing of the programme together with cost is mentioned at page No.144.

The estimated cost of the programme comes to Rs. 17.20 lakhs benefitting 120 in V Plan, 242 in VI and 242 households in VII plan. The entire amount can be treated as grant-in-aid.

The total estimated cost of the land assignment scheme works out to Rs.3.18 ~~lak~~ crores providing land to 11,191 tribal landless households at the rate of 5 acres each.

LAND ASSIGNMENT-SANKAVARAM.

(Cost.Rs.in lakhs)

	V			VI			VII		
	No.HHS	Extent	Cost	No.HHs	Extent	Cost	No. HHS	Extent	Cost
1. Cultivable Waste	87	435	2.48	150	750	4.27	150	750	4.27
2. Forest Land	120	600	3.42	242	1210	6.89	242	1210	6.89
Total:	207	1035	5.90	3.92	1960	11.16	392	1960	11.16

It is seen from the above table that a sum of Rs.17.10 lakhs in the V Five Year Plan Rs.96.90 lakhs in the VI Five Year Plan and Rs.176 lakhs in the VII Five-Year Plan are required to benefit 600, 3,400 and 6,200 landless Tribal households respectively in Three Plan periods. In view of financial constraints and other problems, only 48% of cultivable waste land has been proposed for assignment. However, this proposal intends ~~xxxxxx~~ to cover up the cent percent of the estimated land= less households.

The amount proposed under this programme is meant for the benefit of landless tribal households, the cost of which has therefore to be treated as a grant-in-aid.

Regarding non-scheduled area, it is seen from land utilisation data, the land measuring 1936 acres is classified as cultivable waste. It is estimated that about 991 tribal households are landless and the entire cultivable waste land ie., 1936 acres is proposed for assignment to the landless tribals, @ 5 acres each. Thus 387 tribals would be benefitted by this scheme. The total estimated cost of this scheme works out to Rs. 11.02 lakhs. However, there will be still 604 landless households without land as there is no cultivable waste land available for assignment. Therefore, it is proposed to acquire land measuring 3020 acres from the unreserved forest area. The phasing of the programme together with cost is mentioned at page No.144.

The estimated cost of the programme comes to Rs. 17.20 lakhs benefitting 120 in V Plan, 242 in VI and 242 households in VII plan. The entire amount can be treated as grant-in-aid.

The total estimated cost of the land assignment scheme works out to Rs.3.18 ~~kxk~~ crores providing land to 11,191 tribal landless households at the rate of 5 acres each.

The measures suggested under strategy for agricultural development would help to raise the agriculture sector from subsistance level to markatable surplus i.e., Commercial level to the advantage of the producer.

LAND ASSIGNMENT:

It is estimated that there are about 10,200 tribal households without land in the scheduled area of the project. The data presented in land utilisation table reveal that the area measuring 1.19 lakhs of acres is classified as cultivable waste. The distribution of cultivable waste land and landless tribal households over four Tribal Development Blocks is furnished hereunder:

Sl. No.	Block	Cultivable Waste land (in acres)	Landless Tribal households (Nos)	Extent of land proposed for assignment at the rate 5 acres each
1.	Addateegala	6,044	1,100	5,500
2.	Rajavommangi	2,645	500	2,500
3.	Rampachodavaram	10,112	2,000	10,000
4.	Maredumilli	1,00,687	6,600	33,000
	Total:	1,19,488	10,200	51,000

It is seen from the above statement that Maredumilli Block has maximum extent of cultivable waste land, while Rajavommangi has the least extent of land. The number of landless tribal households are maximum in Maredumilli Block followed by Rampachodavaram Block.

Under land assignment scheme for landless tribals, it is proposed to assign land measuring 51,000 acres during the project period at an estimated cost of Rs.2.75 crores covering the tribals in four Tribal Development Blocks. The phasing of the programme is furnished in the following table:

LAND ASSIGNMENT PHASING

	V Plan			VI Plan			VII Plan		
	N.H.	E.L.	Cost	N.H.	E.L.	Cost	N.H.	E.L.	Cost
Addateegala	100	500	2.85	400	2,000	11.40	600	3,000	17.10
Rajavommangi	100	500	2.85	200	1,000	5.70	200	1,000	5.70
R.Chodavaram	100	500	2.85	700	3,500	19.95	1200	6,000	34.20
Maredumilli	300	1500	8.55	2100	10,000	59.85	4200	21,000	119.70
Total:	600	3000	17.10	3400	17,000	96.90	6200	31,000	176.70

N.H = No.of Households; E.L = Extent of Land in acres; Cost = Rupees in lakhs

SOIL CONSERVATION:

The magnitude of soil erosion problem is more serious in the scheduled areas of the project area and it is estimated that an area of about 0.60 lakhs acres is affected by severe soil erosion. The loss of fertile top soil is very high in this area due to undulating terrain and unscientific cultivation practices adopted by the tribal cultivators. In view of the magnitude of the problem the soil conservation measures are also given priority as they would help to step up agricultural production. Contour graded bunding is the main item of soil conservation works in the project areas. This includes conservation measures like formation of water ways and diversion drains necessary for the safe disposal of surplus rain water which prevents loss of soil by controlling soil erosion and conserving top fertile soil. The scheme is already being implemented in dry land areas of the four Tribal Development Blocks free of cost for the benefit of tribals. A sub-divisional Office has been established at Kakinada for implementation of this programme. These works also provide employment for the local tribals.

The phasing and financial implication of the programme is furnished in table No.

SOIL CONSERVATION PROGRAMME

(Rs.in lakhs)

Sl. No.	Block	Acreage	Estimated cost	Acreage	Estimated cost	Acreage	Estimated cost.
1.	Rajavommangi	900	0.90	5,000	5.00	8,500	8.50
2.	Addateegala	1800	1.80	5,000	5.00	7,000	7.00
3.	R.Chodavaram	1200	1.20	10,400	10.40	15,000	15.00
4.	Maredumilli	600	0.60	10,000	10.00	15,000	15.00
5.	Sankahavaram	900	0.90	2,000	2.00	2,000	2.00
	Total:	5,400	5.40	32,400	32.40	47,500	47.50

The total estimated cost of the soil conservation programme comes to Rs.0.85 crores covering 0.85 lakh acres.

CROPING PROGRAMME:

The analysis of cropping pattern, production output per acre indicates that there is 6% deficit in production of food crops ie., cereals and millets. This has been worked out on the basis of food

requirements and production. The cropping programme has been suggested in this plan not only to meet consumption requirements but also to achieve marketable surplus level in food production.

The existing cropping pattern of the Project area shows that paddy is a major food crop followed by Bajra and Jowar. Among the commercial crops, Pulses are the most important and next comes oil seeds in terms of extent covered. The overall cropping pattern indicates that about 72% of the cropped is devoted to food crops, while 17% of the cropped area is under cash crops and the balance is covered by other miscellaneous crops. Even the principal food crops are grown under rainfed conditions in the project area due to limited irrigation facilities. Keeping in view irrigation potential, soil nutrition, topography of the area, agro- economic factors, State Policy, food habits and nutritional requirements of the project population the following cropping pattern is suggested. This aims at integration of the factors enumerated above which facilitate both qualitative and quantitative shift. The distribution of area under each crop over the three phases of perspective plan are furnished separately.

It is evident from the table given in the next page/ that the net variation is significant. For example, it is proposed to bring 5.8 thousand acres additional land under paddy in V Plan i.e., 29 thousand acres. The proposed additional area under paddy will of the order of 10.5 thousand acres in the VI plan. In the VII Five Year Plan, it is proposed to bring another 12.2 thousand acres of land over the proposed area of the VI Five Year Plan. Similarly in regard to other crops, it is proposed to bring about a substantial increase in the area, in the three phases of perspective plan. The suggested cropping pattern includes introduction of new crops like cashew, lemon, cotton, sun hemp and mesta. Further it envisages the cultivation of fruits and vegetable on an extensive scale to meet the nutritional requirements as well as for marketing. Taking into consideration the agro-clamatic conditions, in the project area various high yielding, fertiliser responsive, short duration varieties of cereal and millet crops have been suggested to step up production.

P A D D Y:

The area under paddy is 29,262 acres which constitutes 28% of the total cropped area. It is proposed to increase the area under paddy to 57938

by the end of perspective plan.

Existing and Suggested Cropping pattern

(Scheme Area)

(Area in Acres)

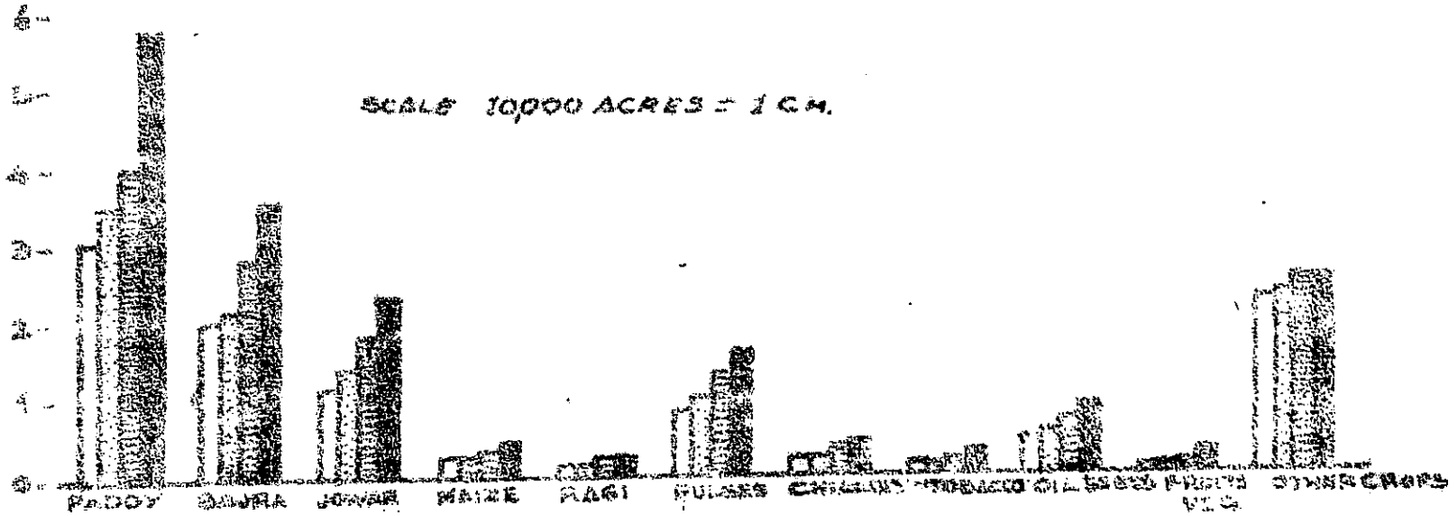
Name of Crop.	Existing	V Plan	By the end of VI Plan	VII Plan.
Paddy	29262	35104	45660	57938
Bajra	17997	21578	28070	35614
Jowar	11684	13987	18195	23086
Maize	2285	2719	3538	4489
Ragi	1453	1737	2260	2868
Pulses	8297	9951	12944	16424
Chillies	1940	2318	3016	3827
Tobacco	1444	1720	2241	2844
Oil seeds	4568	5488	7124	9039
Fruits and Vegetables	994	900	1800	3000
Other Crops	22704	23598	25146	24871
TOTAL:	102628	123000	160000	203000

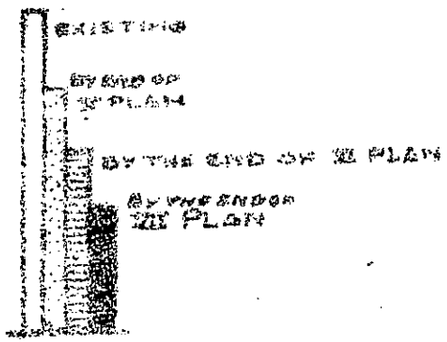
About 2,500 acres of land is at present covered by H.Y.V. of Paddy like Jaya, Hamsa, R.P.4-14, R.P.79.16 and 79.23 and this area constitutes about 9% and these output per acre under these varietus is higher than

EAST GODAVARI PROJECT AREA

CROPPING PATTERN

SCHEDULED AREA





those under local variety. It is proposed to increase the area under H.Y.V. from 2.5 thousand acres to 5 thousand acres in a phased manner. In view of the high cost of cultivation inputs and limited irrigation facilities a substantial increase in the area was not proposed. Under local variety, it is proposed to increase the area from 26.7 thousands to 52.9 thousand acres. Thus the net variation works out to 26.2% over the existing area under local varieties. In order to increase the output per acre, it is proposed to supply improved seed, fertilisers and pesticide and insecticides for the area to be covered under H.Y.V. and local varieties of Paddy. The estimated cost of the inputs are furnished in the Annexure No.IV(a)5,6 and 7.

BAJRA:

The next important food crop is bajra in the Project area. About 1,500 acres is covered by H.Y.V. out of 17.9 thousand acres of the total area under this crop. The H.Y.V. like H.B-5 Bajra and Vijay composite Bajra are raised in this area. It is proposed to increase from 1,500 to 2,700 acres under H.Y.V in a phased programme. It is proposed to increase the area under local bajra also to 32.9 thousand acres by the end of the project period.

Thus the area under bajra will register a two fold increase by the end of the perspective plan. The proposed plan includes supply of inputs like chemical manures, insecticides and pesticides besides supply of seeds under package deal for increasing the per acre output. The total estimated cost of inputs for high yielding variety works out to Rs.25.08 lakhs, while it is Rs.165.14 lakhs for local varieties of Bajra for the proposed area. The following High Yielding strains like Hybrid BJ-104, Hybrid BK-560, H.B.5 are suggested for the project area.

JOWAR:

Jowar is another important millet crop which is richer in essential nutrients than paddy. It is proposed to increase the area under this crop from 11.68 thousand acres to 23.08 thousand acres. At present the area under H.Y.V. is very meagre i.e., 40 acres. CSH, CSH-5,302, 303 are proposed for cultivation during the project period. This crop can be cultivated with little irrigation facility. It is proposed to bring as much as 480 acres under High yielding varieties in a phased programme. Regarding local varieties of Jowar, it is proposed

to increase the area from 11.68 thousand to 22.61 thousand acres, by the end of the project period. There will be two-fold increase of area under this crop by the end of the project period. The estimated cost of inputs for local variety works out to Rs. 110.07 lakhs, while the input costs for Higher Yielding varieties is Rs. 1.66 lakhs.

MAIZE:

Maize is another favourite millet crop of tribals grown in the Project area. This is a short duration crop and provides food in slack season to tribals. The existing area under this crop constitutes 2.23% to the total cropped area and it is proposed to increase the extent of area under this crop from 2.2 thousand to 4.8 thousand acres thus registering a two-fold increase at the end of the project period. The area under High Yielding varieties at present is only 50 acres. During the project period, it is proposed to increase this to 400 acres. Under local varieties, it is proposed to increase the area from 2.3 thousand to 4.08 thousand acres. The estimated cost of inputs for high yielding varieties works out to Rs.3.22 lakhs while it is Rs.23.05 lakhs for local variety.

RAGI:

Ragi, a millet crop is grown in the project area covering 1453 acres. It is proposed to increase this area to 2,868 acres by the end of the project period. The estimated cost of this proposal works out to Rs. 13.70 lakhs towards supply of seed, fertilisers and pesticides and insecticides.

PULSES:

Under Agricultural development programme, it has been proposed to increase the area under cash crops substantially. Pulses are significiant as they constitute 8% to the cropped area. The pulses are grown as mixed crops and in dry conditions/also on account of agro-clamatic conditions. In view of cash value and demand for pulses , fairly a large portion of land is proposed for cultivation of pulses i.e., 16.4 thousand acres by the end of the project period. This would bring a net increase of 8 thousand acres over the existing area. The following varieties of pulses are suggested for growing of pulses in the project.

BLACKGRAM	: 1. T - 9 2. BG -309
REDGRAM	1. P.M. 1 2. Hybrid -1 3. Prabha 4. Sarada
GREENGRAM	: Vaisaki Moong

The proposed pulses include Blackgram, Green gram and Redgram. The estimated cost of pulses cultivation programme works out to Rs. 43.20 lakhs. The above suggested High yielding varieties would help to boost up agricultural production.

CHILLIES:

Chillies are grown in an area of 1900 acres, constituting hardly 2% of the total cropped area. This crop is mostly raised on the river bank of Godavari covering some villages of Rampachodavaram and Maredumilli Panchayat Samithis. It has been proposed to increase the area under chillies to 3.8 thousand acres under this crop by the end of the project period. This would bring a net additional area of [illegible] thousand acres over the existing area under chillies. The estimated cost of this programme works out to Rs. 5[illegible].93 lakhs.

TOBACCO:

It is an important cash crop which has good market value and it is grown mostly in fertile alluvial soils. A small portion of cultivated land is under this crop. In view of its value, and demand, it is proposed to bring about 3,000 acres under this crop by the end of the project period. The estimated cost of this proposal works out to Rs. 47.62 lakhs.

GROUNDNUT:

It is evident from cropping pattern amohg the cash crops, oil seeds occupy the second rank in terms of the extent of area. It is proposed to increase the area under oil seeds to 4,500 acres by the end of the project period as against the existing area 1,500 acres. Under oil seeds ground nut cultivation receives top priority as it is not only high yielder but also of high nutrition value. The estimated cost of this programme works out to Rs. 21 lakhs covering 4,500 acres. The High yielding varieties of groundnut like T.M.V-2, T.M.V-3, T.M.V-7 are suggested for the project area. It is also proposed to bring an area of 4539 acres

under other oil seeds like castor gingelly etc. The total estimated cost of cultivation of oil seeds in the proposed area works out Rs. 11.03 lakhs.

FRUITS AND VEGETABLES:

The existing cropping pattern indicates that hardly 1% of the cropped area is under fruits and vegetables. The project area is ideally suited for growing orchards due to elevation, climate, rainfall etc. Tribals are also familiar with growing fruit and vegetable crops.

In view of the high nutritional value, cash value and increasing demand for fruits and vegetables, a programme has been suggested for raising orchards and vegetables.

Under this programme the fallow lands measuring 30,000 acres have been proposed for conversion into horticulture lands by the end of the project period. This programme will benefit the tribals by way of supplementing their income. The phasing of the programme is furnished in the following statement.

PHASED DEVELOPMENT OF HORTICULTURE

(Area proposed during (in area)

V Plan	VI Plan	VII Plan	Total
1,000	10,000	19,000	30,000

Under Horticulture, the following cropping pattern has been suggested in the project area.

1. Mango and Jack with cocoa as inter crop.
2. Mandarin oranges and citrus.
3. Cashew nut cultivation.
4. Coconut garden inter cropped with pepper.

The available fallow land has been proposed for conversion into Horticultural gardens as mentioned earlier. The land has to be reclaimed by removing shrubs etc. for planting seedlings. Irrigation facilities have to be ensured and plants also require protection from animals for which fencing has been proposed. Adequate measures have to be taken against posts besides applying chemical fertilisers in sufficient quantity. The cost of inputs and various operations are detailed hereunder. Under this programme it is proposed to select the suitable land and divide the samd into blocks measuring 25 acres each for intensive cultivation.

A live fence with local shrubs interspered with Eucalyptus, teak, casuarina will be grown as a live fence around 25 acre proposed blocks. Two bore wells have to be sunk in each block and they have to be fitted with oil engines or Electric Motors so as to provide necessary irrigation facility for each block. The details and cost of the proposal are discussed in the irrigation chapter.

An amount of Rs. 700/- per acre will be required to meet the cost of inputs and cultivation expenses. The estimated cost for 25 acres block works out to Rs. 17,500. Fencing, spraying and other sundry expenses come to Rs. 2,500 for each block. Thus the total estimated expenditure for 25 acres block is Rs. 20,000. The average estimated cost of cultivation per acre Rs. 800/-. The total outlay and its phasing are furnished hereunder:

Amount required as outlay for Horticulture Development Blocks: (Rs. in lakhs):

V Plan		VI Plan		VII Plan.	
No.of Blocks	Estimated cost.	No. of Blocks	Estimated cost.	No. of Blocks.	Estimated Cost.
40	8.00	400	80.00	800	160.00

FERTILISERS:

In the project area, the application of fertilisers is essential input as nitrozen is low, P is medium and K is high. A good management of fertilisers is inseparable adjunct in agriculture development strategy.

The following manuring schedule is recommended for fruit crops in view of the soil fertiliby deficiencies.

Recommonded manurial per acre (in grams)

		N	P	K
1. Mango	1st year	180	90	90
	2nd year	364	182	182
	3rd year	556	272	272
	4th year	728	364	364
	5th year	728	666	606
2. Oranges: (Sathgudi)	1st year	220	113	113
	2nd year	458	227	227
	3rd year	680	340	340
	4th year	908	454	454
	5th year	1,462	908	908
3. Acid limes	1st year	302	151	151
	2nd year	604	302	302
	3rd year	904	454	454
	4th year	1,362	902	903

4. Anona	1st year	100	100	100
	2nd year	150	150	150
	3rd year	225	225	225
	4th year	300	300	300
	5th year	450	450	450

Vegetable Crops:

The vitamin deficiency can be made up through consumption of vegetables to a large extent. The vegetable provides not only required vitamins for the healthy growth of an individual but also supplements the meagre income of tribal farmers. A begining has been made in this direction through introduction of vegetable gardening programme in the Ashram schools of the tribal areas which will serve as demonstration units in educating tribal children who are in turn educate their parents. A comprehensive programme for the development of vegetable gardens is suggested for the project area. The vegetable will not only yield profitable crops but also fits well in the multiple cropping pattern which will help to augment the tribal income.

Season;	Name of the vegetable:
(May to July)	
As first crop before paddy.	1. Bottle gourd. 2. Snake gourd. 3. Ladies Finger. 4. Brinjal 5. Leafy vegetable.
(January to April)	
As third crop after paddy	1. Ridge gourd. 2. Ladies Finger. 3. Brinjal. 4. Chillies (green)

These crops have to be raised in compact areas for providing protection against cattle menace and monkey and other wild animals and to give intensive care. For this purpose, plots of 25 acres are suggested for vegetable gardens. Vegetable cultivation can also be grown in the backyards. Further these crops can also be grown as inter crop in fruit gardens as suggested earlier. The fruit gardens will yield income after 4 or 5 years. If vegetables are grown as inter crop, it can provide income during these first 4 or 5 years to tribal farmers. The phased programme for development of vegetable gardens is furnished hereunder:

(Area in acres)

V PLAN			VI PLAN			VII PLAN		
MC	IC	KG	MC	IC	KG	MC	IC	KG.
300	300	300	600	600	600	1000	1000	1000

MC: Multiple Cropping area; IC: Inter cropping Horticulture KG: Kitchen Gardens.

The estimated cost of vegetable development programme works out to Rs. 3, Rs.6, Rs.10 lakhs during V, VI, VII, Five Year Plans respectively which includes land development, supply of seeds, fertilisers, fencing, protection operations etc.

PINE APPLE: The climate, terrain and gradient of the project are favourable for growing pine apples in general and more congenial in Maredumilli block. Simhachalam pattern of pine-apple cultivation can be safely adopted here for which terraces, according to contours have to be formed and protected drainage channels and irrigation channels have to be provided. The cost of cultivation including supply of inputs, formation of terrace etc, worksout to Rs. 2,500 per acre and it is proposed to cover 1,750 acres by the end of the project period. The total estimated cost worksout to Rs. 43.75 lakhs

and phasing of this programme with estimated cost is given below:

Phasing of Pine apple Cultivation Programme:

	V PLAN	VI PLAN	VII PLAN	TOTAL
Area: (in acres)	250	500	1000	1,750
Cost: Rs (in lakhs)	6.25	12.50	25.00	43.75

SUPPLY OF INPUTS:

The productivity is very low in the project area which is attributed to many factors like quality of seed fertilisers, agricultural practices, plant protection measures etc. In order to increase output per acre, it has been proposed to supply seed, fertilisers, pesticides and fungercides in adequate measures and in time input supply programme is discussed hereunder.

SEEDS: Under supply of seed, it has been proposed to make available both High yielding and improved variety. However, in view of the high cost of High yielding varieties, a moderate increase has been suggested with regard to paddy, Jowar, Bajra, Maize etc. The major portion of the area is proposed to cover under improved variety. The estimated cost of supply of seed worksout to

Rs. 26.24 lakhs in V Plan, Rs. 34.30 lakhs in VI Plan, and Rs. 43.57 lakhs in VII Plan. Thus the total estimated cost is Rs. 107.08 lakhs.

FERTILISERS: In view of poor fertility of the soils and deficiency in nitrozen, the following chemical fertilisers have been recommended for applying to suggested crops in the project area. Besides applying cattle and green manure, N.P.K. Complex, Urea, Ammonium Sulphate, Super Phosphate and Muraite of Potash for intensive manuring has been suggested. The estimated cost of supply of chemical fertilisers for the project area during the three phases of perspective plan works out to Rs. 141.00, 183.72 and 233.22 lakhs respectively. The total cost comes to Rs. 557.94 lakhs.

PLANT PROTECTION: Plant protection measures are equally important for achieving increased output. The tribal cultivators are quite unaware of the plant diseases and their protective measures. They have no plan for plant protection. Any delay in plant protection measures causes heavy damage to the crops. In view of these problems, plant protection programme has been suggested to serve the crops against pests and insects. The

following pesticides and insectcides will be supplied to the tribal farmers:

a) B.H.C. 5% powder @ 10 K.G. per acre.

b) B.H.C.10% powder @ 10 K.G. per acre.

c) D.D.T.50% powder @ 10 K.G. per acre.

d) Agrason G N & 102 per 30 lbs.

e) Endrin 20%

Tribal farmers cannot afford to purchase and maintain the plant protection equipment. As an alternative, contract spraying system is suggested, Under this scheme, manufacturing companies will be requested to adopt villages for spraying. This will serve as a demonstration to tribal farmers as well as protection to the crops. One or two progressive farmers will be selected in each V.D.O Circle and they will be supplied with sprayers on subsidy basis who in turn will lend equipment to the neighbouring cultivators. The estimated cost of plant protection measures works out Rs. 57.49 lakhs Rs. 75.91 lakhs and Rs. 95.05 lakhs in V, VI, and VII Plans respectively. The total estimated cost comes to Rs. 228.45 lakhs crops wise estimated cost of inputs viz. Seeds fertilisers, pesticides are furnished in the following statements.

(Cost Rs. in lakhs)

Crop	V Plan				VI Plan.			
	Area	Fertilizer Rs.	Seed Rs.	Plant Protection Rs.	Area Rs.	Fertilizer Rs.	Seed Rs.	Plant Protection Rs.
Paddy	35104	65.18	9.52	19.07	45666	84.91	12.41	24.83
Bajra	21578	29.26	2.32	16.60	28070	38.05	3.02	21.60
Jowar	13987	18.34	2.79	6.94	18195	23.76	3.63	10.03
Maize	2719	4.22	0.84	1.40	3538	5.60	1.12	1.86
Ragi	1737	2.60	0.34	0.52	2260	3.39	0.45	0.67
Pulses	9951	7.76	1.19	1.99	12944	10.09	1.55	2.58
Chillies	2318	5.79	3.47	4.63	3016	7.54	4.52	6.03
Tobacco	1720	4.50	2.58	5.16	2241	5.60	3.36	6.72
Oilseeds	5488	3.55	3.16	1.18	7124	4.78	4.24	1.59
Fruits	1000	8.00	-	-	10000	80.00	-	-
Vegetables		3.00	-	-		6.00	-	-
		152.00	26.21	57.49		269.72	34.30	75.91

(Cost Rs. in lakhs)

Crop	Area	VII Plan. Fertilizer	Seed	Plant Protection.
Paddy	57938	107.64	15.73	31.46
Bajra	35614	48.16	3.83	27.38
Jowar	23086	30.22	4.60	11.42
Maize	4489	7.33	1.46	2.44
Ragi	2868	4.30	0.57	0.86
Pulses	16424	12.81	1.97	3.28
Chillies	3878	9.56	5.74	7.65
Tobacco	2844	7.11	4.26	8.53
Oil seeds	9038	6.09	5.41	2.03
Fruits	19000	160.00	-	-
Vegetables		10.00	-	-
		403.22	43.57	95.05

	V		VI		VII	
	Area	Cost	Area	Cost	Area	Cost
Cocoa	10	3.78	20	5.13	30	5.41
Tapioca	1500	4.50	3000	9.00	6000	18.00
Pineapple	250	6.25	500	12.50	1000	25.00
Soil Testing Laboratory		2.72		2.10		2.10
Agricultural Implements		0.80		2.00		2.00
Land Development Assignment.		23.00		108.06		187.86

HERBICIDE DEMONSTRATION: Large Chunks of land is faced with weed problem which adversely effects crops and production. Weed problem can be solved by spraying weedicide, but it requires skill and efficiency for handling the equipment which tribals lack. Therefore, it is proposed to entrust this work to the Assistant Agricultural Officer and gradually in course of time it can be entrusted to V.D.O's. By the end of the project period through a series of demonstrations each village will be benefitted by this programme. The estimated cost works out to Rs. 100 per acre which is proposed on Cent Percent subsidy basis. The phasing of this programme is furnished hereunder:

The following weedicides are suggested in the project.

a) 24-D Group For-noxone.

b) Propionicalid group Tatazine-50.W.

c) Acetanilid group-Lasso.

Financial outlay of the Scheme:

Herbicide Demonstration:

V PLAN		VI PLAN		VII PLAN	
No.of (10 acre) Blocks:	Amount (Rs.in lakhs)	No. of Blocks	Amount (Rs.in lakhs	No.of Blocks	Amount (Rs.in lakhs)
12	0.09	120	0.9	541	5.41

Supply of Agricultural implements and Plough Bullocks:

The tribals have to be weaned from primitive agriculture methods and trained in modern practices. Weed growth is serious problem in the tribal fields and the land has to be ploughed thoroughly to have good tillage and to suppress weed growth. All the tribals do not have plough bullocks and sufficient number of agriculture implements. As an integral part of agriculture development programme, it is proposed to supply plough bullocks and agriculture implements like crowbars spades, plough shares etc. on subsidy basis. The estimated cost of supply

of plough bullocks works out to Rs. 0.80 lakhs in V Plan, Rs.2.00 lakhs in VI Plan and another Rs.2 lakhs in VII Plan. The total cost of this proposal works out to Rs. 4.80 lakhs for the supply of 1200 pairs of plough bullocks.

Under the agricultural implements scheme it is proposed to provide a set consisting one crowbar, 2 spades and 2 plough shares at an estimated cost of Rs. 54. An amount of Rs.64,800 is required to supply 1200 sets of implements.

Supply of foundation Seed:- Foundation seed supply to the secondary farms is quite essential as the seed suppliers are disappointing the farmers at the needed hour. Specially the farmers are put to much hardship in securing Hybrid seed in time. With the result the quality of seed is also suffering. To obviate these difficulties, it is proposed to produce foundation seed in Sirigindalapadu agricultural farm existing in the project area which can be made available to the secondary farms. Horticulture development farm at Sirigindalapadu can produce both foundation seeds and general seed which can meet the requirements of secondary seed forms and /tribal cultivators. Under this programme, three secondary seed farms have to be opened at Maredumilli,

Addatigala and Rajavommangi. The Horticulture Development farm at Sirigindalapadu should set apart 5 acre blocks for producing foundation seed of principal crops so as to supply the same for the secondary seed phased foundation seed production programme is mentioned in the following statement.

Foundation Seed Farm Programme

(Area in acres)

Name of the farm	Vth Plan			VIth PLan			VIIth Plan.		
	Composite bajra (CB.)	P R 202 (Ragi)	HYV (Paddy)	C.B.	PR	HYP	CB	PR	HYP
Horiticulature farm, Sirigindalapadu.	5	2	5	10	5	10	15	5	15

The foundation seed produced at Sirigindalapadu will be supplied to the secondary seed farms which will multiply the seed and make available to tribal farmers in time. The phasing of the programme is mentioned hereunder:

Proposed area under secondary Seed Farm (Arearin acres)

Name of the Seed	V Plan	VI Plan	VII Plan.
H.Y.V.Paddy	105	150	200
Millets	35	50	100
Redgram	10	20	50
Groundnut	30	60	150
	180	280	500

Soil Testing Laboratory:- A systematic soil analysis is very much needed for taking care of the soils brought afresh under plough and the soils already under cultivation. The soil analysis helps to prescribe suitable fertiliser complex in the project area. This programme will enable the tribal farmers to increase agricultural production by adopting better soil management practices and more economic use of chemical fertilisers. In view of this, a soil Testing Laboratory to be located at Rampachodavaram is suggested. The recurring cost of this establishment is estimated at Rs. 0.42 lakhs while the non- recurring cost is estimated at Rs.1.50 lakhs. The details of estimates are furnished hereunder:

Establishment of Soil Testing Laboratory at Rampachodavaram.

Sl.No.	Recurring Rs.	Non-Recurring. Rs.
1. Furniture	--	25,000
2. Laboratory equipment	--	40,000
3. Chemicals and Glassware	--	30,000
4. Other contingencies	--	5,000
5. Establishment	30,000	--
6. Replacement of equipment	4,000	--
7. Replacement of Glassware and Chemicals	6,000	--
8. Contingencies	2,000	--
9. Jeep for A.D.A. for Soil Survey.	--	50,000
TOTAL:	42,000	1,50,000

This unit will take up systamatic soil survey and prepare maps for Blocks and for villages. This unit will be headed by an Assistant Director with supporting staff. The staff required for this unit is mentioned hereunder:

Staff	V Plan No	VI Plan (No)	VII Plan (No)
1. Asst.Director of Agriculture(soil Testing Lab)	1	--	--
2. Asst.Agricultural Officer (soil testing lab) Rampachodavaram.	1	2	2
3. Laboratory Attenders	1	2	2
4. Watchman	1	--	--
5. Attenders for the Asst. Director of Agricultural.	2	--	--
6. Asst.Agricultural Officers (Soil Survey)	2	4	4
7. Sub-Assistant	2	4	4
8. Messengers (soil Survey)	2	4	4
9. Skilled workers	4	8	8
10.Ministerial Staff:			
U.D.C.	1	-	-
Typist	1	-	-
Sub-Assistant for Registration of samples	1	-	-
Jeep driver	1	-	-

The Assistant Director will get the soil survey work done with the help of four proposed soil survey teams consisting Assistant Agricultural

Officer, Sub-Assistant and skilled workers. The teams will collect soil samples from each block measuring 25 acres and prepare soil survey maps for each block during the Vth Five Year Plan.

Village level soil survey will be conducted and village maps will be prepared during VIth Plan while in the VIIth Plan, they will conduct depth study in specified areas and data will be transferred to maps Result of this analysis together with recommendations will be communicated to all Panchayat Samithis for fallowup action.

TAPIOCA: Ecological conditions are more conduc-ive for raising various species like citrus, fruits, pine apple, cashew, mango etc., as mentioned earlier. There is also ample scope for tapioca cultivation in the low gradients hill slopes. This programme of tapioca would help in raising tapioca production which will not only feed the proposed sago industry but also meet the domestic consumption requirements of tribals. Further, it would also help to wean away tribals from podu cultivation by way of providing them gainful employment and income. A large extent of area

available under fallows and cultivable waste can be fruitfully utilised for raising cash crops like tapioca. It is proposed to bring 6,000 acres in a phased programme by the end of the project period.

Phased Programme of Tapioca (in acres)

	V	VI	VII
Acres (in Acres)	1,500	3,000	6,000
Cost (Rs in lakhs)	4.5	9.0	18.0

The estimated cost of inputs per acre works out Rs. 300/-

It is also proposed to raise fibre crops like sun-hemp, mesta and cotton in the Project area besides increasing area under sugar cane. The area proposed under this programme is included in the area intended for other crops.

COCOA FARM DEVELOPMENT PROGRAMME:

Cocoa is a beverage crop which can be grown successfully in Maredumilli Samithi as climate soil topography etc., are ideally suited to grow this crop.

A pilot cocoa farm raised on experimental basis at Maredumilli in the year 1965 in a plot measuring 17 acres has produced encouraging results. This can be grown as inter crop in orchards which will not only supplement the income but also increase the yield. The pilot farm is coming up successfully in Maredumilli Samithi. Further the experimental results indicated that cocoa can be raised as inter crop, with pepper and coffee, centres. There is a potential demand for this crop from the 'Horlicks' company located at Rajahmundry for its product namely 'Boost'. In view of the suitability of the area and demand it is proposed to increase the area under cocoa on commercial lines. This will provide employment to tribals and also help to wean away tribals from podu cultivation. The phased programme of cocoa farm development is furnished hereunder: The total estimated cost comes to Rs. 14.32 lakhs.

PHASED PROGRAMME OF COCOA FARM DEVELOPMENT AT MAREDUMILLI

	V	VI	VII
Area (increase)	10	20	20
Cost (Rs. in lakhs)	33.78	5.13	5.41

Programme for Non-Scheduled Area of the Project:

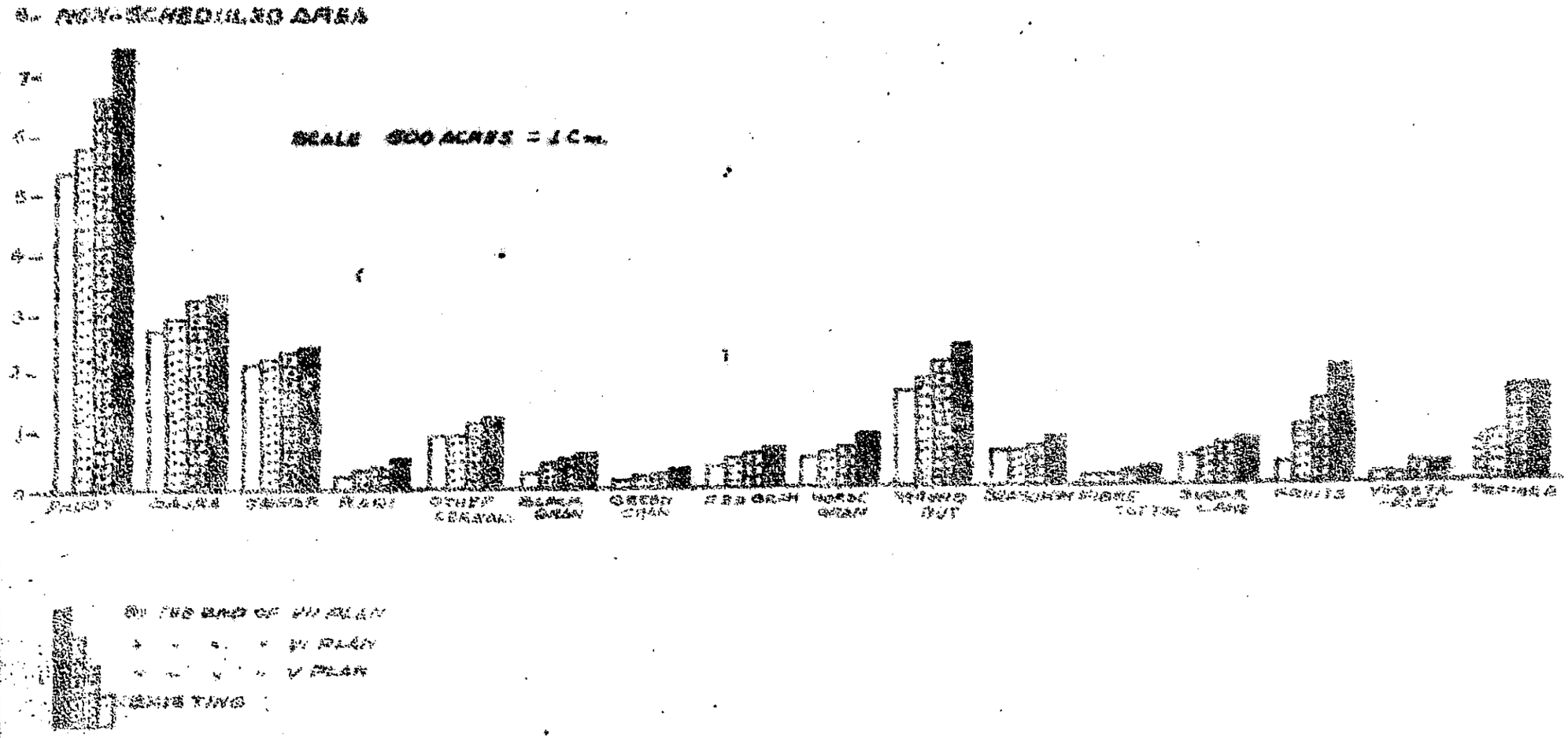
The bulk of the income is generated in the agriculture sector which engages 66% of the total working force. Agriculture is the key sector of the economy of the Non-Scheduled area.

Cropping pattern:

Prevailing cropping pattern of the Non-Scheduled villages of the project area indicates that it is in favour of food crops which accounts for more than 80% of the cropped area. This is largely due to the small size of holdings, subsistence farming, inadequate assured water supply etc. Even among the food crops as much as 70% is devoted to cereals and millets. Paddy followed by Bazra are important food crops. Among the non-food crops, oil seeds occupy first place followed by cotton. These Commercial crops are grown under rainfed conditions. The existing cropping pattern is presented in Annexure No.VI (a)(8).

EAST GODAVARI PROJECT AREA

CROPPING PATTERN



It can be seen from the data that chillies and Tobacco are conspicuously absent. Oil seeds are predominant by covering 13% of the cropped area as against 4% in the Scheduled Area of the project area, while among food crops, Paddy, Bazra and Jowar are equally important crops in Scheduled and Non-Scheduled Area. It is note worthy that fruits, vegetables and sugarcane cover fairly sizeable area i.e., about 3% of the total cropped area. Due to the paucity of data, cropping pattern trends over the last decade could not be studied.

Suggested cropping pattern:

In view of type of soil fertility, irrigation potential, climate and rainfall, food requirements of the area, the following cropping pattern is suggested. Under this programme 9,409 acres in the Vth Plan 11,303 acres in VI Plan and 12,719 acres in the VII Plan are proposed to be brought under various crops.

Paddy:

The area of paddy is proposed to be increased to 3,688 acres in order to step up production. It is proposed to increase the area to 1,500 acres under high yielding variety, while the area under local variety will be increased to 2,188 acres by the end of the project period.

Bazra

Among the food crops, Bazra is the next important crop as about 17% of the cropped area is covered by this crop. It is proposed to increase the area under this crop from 1,348 acres to 1,648 by the end of the project period. This proposal covers also the introduction of high yielding varieties as part of the strategy for increasing agricultural production.

Jowar:

Jowar is the third important food crop covering 13% of the cropped area. It is proposed to increase area from 1,039 acres to 1,189 acres by the end of the project period. It is proposed to increase the area under high yielding varieties to 845 acres as against existing area of 530 acres.

Pulses:

Blackgram, green gram, Redgram etc., are grown in 691 acres. It is proposed to increase the area under pulses to 1,196 acres to meet the requirements of the area and also produce marketable surplus.

Oil Seeds:

Groundnut is important cash crop among oil seed crops grown in this area. About 90% of the area covered under oil seeds is devoted to groundnut. In view of its suitability, it is proposed to increase the area to 1,196 acres as against 776 acres of existing area.

Sugar Cane:

Sugarcane, an important commercial crop, is grown in area of 241 acres constituting 3% to the total cropped area. It is proposed to bring 400 acres under this crop by the end of the project period which amounts to twofold increase.

It is proposed to increase the area under cotton to 150 acres as against existing area of 34 acres.

Tapioca:

There is ample scope for tapioca cultivation in the low gradients of the non-scheduled villages. The cultivation of tapioca would help in raising production which will not only meet the raw material of proposed sago industry in the project but also the local consumption requirements. It would also help to supplement the meagre incomes of the tribal households. A large extent of fallows are available for cultivating the Tapioca. It is proposed to bring 800 acres under Tapioca in a phased manner.

Fruits and Vegetables:

The last and important item is fruits and vegetables. In view of the local requirement and their commercial value it is proposed to enhance the area to 1200 acres as against 227 acres existing area. Mangoes and cashew-nut gardens have been proposed as the area is ideally suited for growing these orchards. It is proposed to increase the area under vegetable gardens to 200 acres.

Supply of agricultural implements:

The tribal cultivators do not possess required agricultural implements for their agricultural operations. As a part of the programme, it has been proposed to provide necessary agricultural tools and impart training. Under this programme supply of plough bullocks and agricultural implements like crowbars, spades, Iron ploughs on subsidy basis has been suggested. The estimated cost for this programme works out to Rs.0.05 lakhs in V Plan, Rs.0.10 lakhs in VI Plan and another Rs.0.10 lakhs in VII Plan.

As mentioned early in this Chapter, the massive development effort for increasing agriculture production requires investment. The supply of inputs like seeds, fertilisers pesticides, plant protection form an integral part of the Agricultural development strategy to achieve increasing production. The following programme is suggested with regard to supply of inputs. The estimated cost of seeds, fertilisers and plant protection measures works out to Rs.11.38, Rs.21.05, Rs.40.62 lakhs respectively. The phased programme of supply of inputs together with estimated cost is furnished hereunder.

SEED REQUIREMENTS

(Cost in Rupees)

Crop	V		VI		VII	
	Area	Cost	Area	Cost	Area	Cost
Paddy						
H.Y.V.	1000	50,000	1200	60,000	1500	75,000
Local	1888	47,200	2088	52,200	2188	54,700
Bajra						
H.Y.V.	100	4,000	150	6,000	150	6,000
Local	1348	20,960	1448	28,960	1498	29,960
Jowar						
H.Y.V.	50	2,000	100	4,000	100	4,000
Local	1039	20,780	1039	20,780	1089	21,780
Ragi	145	2,900	195	3,900	245	4,900
Groundnut	896	71,680	1046	83,680	1196	95,680
Blackgram						
H.Y.V.	20	400	30	600	50	1,000
Local	165	1,980	205	2,460	235	2,820
Green Gram						
H.Y.V.	15	300	20	400	25	500
Local	65	780	85	1,020	130	1,560
Redgram	226	2,712	276	3,312	326	3,912
Horsegram	310	3,720	370	4,440	430	5,160
Fibre Cotton	100	5,000	125	6,250	150	7,500
Sugarcane	291	29,100	350	35,000	400	40,000
Fruits and	100	5,000	700	35,000	1000	50,000
Vegetables	100	2,000	200	4,000	200	4,000
Sesumum	296	14,800	346	17,300	396	17,800

FERTILISERS

(Cost in Rs.)

Crop	V		VI		VII	
	Area	Cost	Area	Cost	Area	Cost.
Paddy H.Y.V.	1000	300000	1200	360000	1500	450000
Local	1888	188800	2088	208800	2188	218800
Bajra H.Y.V.	100	30000	150	45000	150	45000
Local	1348	35048	1448	376480	1498	389480
Jowar H.Y.V.	50	10000	100	20000	100	20000
Local	1039	135070	1039	135070	1089	141570
Ragi	145	21790	195	29250	245	36750
Other Cereals	455	79625	530	92750	605	105875
Blackgram H.Y.V.	20	2500	30	3750	50	6250
Local	165	13200	205	16400	235	18800
Groundnut	896	80640	1046	94140	1196	95680
Greengram H.Y.V.	15	2650	20	3000	25	3750
Local	65	5850	85	7650	130	11700
Redgram	226	18080	276	22080	325	26000
Horsegram	310	24800	370	29600	430	34400
Fibre Cotton	100	30000	125	37500	150	45000
Sugarcane	291	87300	350	10500	400	120000
Fruits and Vegetables	500	50000	700	70000	1000	100000
	100	4000	200	8000	200	8000
Sesumum	296	29600	346	34600	396	39600

PLANT PROTECTION

(Cost in Rs.)

Crop	V		VI		VII	
	Area	Cost	Area	Cost	Area	Cost
Paddy						
H.Y.V.	1000	100000	1200	120000	1500	150000
Local	1888	94400	2088	104400	2188	109400
Bajra						
H.Y.V.	100	15000	150	265000	150	26500
Local	1348	134800	1448	144800	1498	149800
Jowar						
H.Y.V.	1039	51950	1039	51950	1089	54450
Local	50	4500	100	9000	100	9000
Ragi	145	4350	195	5850	245	7350
Other cereals	455	45500	530	53000	605	60500
Groundnut	896	26880	1046	31380	1196	35880
Blackgram						
H.Y.V.	20	1000	30	1500	50	2500
Local	165	3300	205	4100	235	4700
Greengram						
H.Y.V.	15	750	20	1000	25	1250
Local	65	1300	85	1700	130	2600
Redgram	226	4520	276	5520	325	6500
Horsegram	310	6200	370	7400	430	8600
Cotton	100	15000	125	187500	150	18750
Sugarcane	291	58200	350	70000	400	80000
Fruits and	50	500	700	35000	1000	50000
Vegetables	277	100	200	4000	200	4000
Sesumum	296	14800	346	17300	396	19800
Total:		5.89		9.16		7.96

The successful implementation of the massive agricultural development programmes suggested in this Chapter partly depends upon the net work of institutional infrastructure for supplying inputs. The Central places of various orders have been interlined for the implementation of various programmes. In view of the magnitude of programme implementation the following agricultural institutions have been suggested.

4 Main Agricultural Depots.

17 Agricultural Sub-Depots.

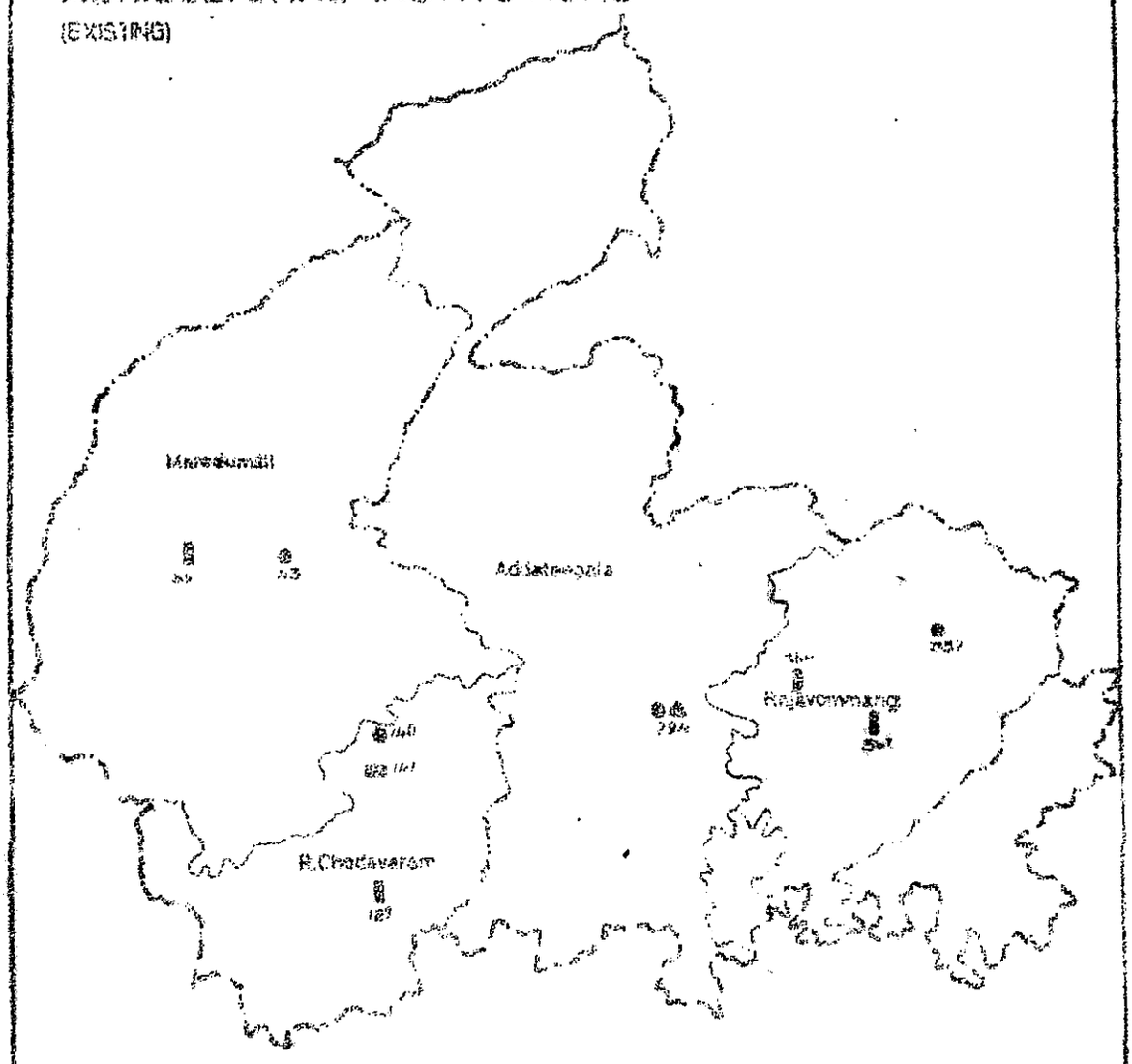
51 Distribution Centres.

There are 4 Seed stores at T.D. Block Headquarters which are identified as higher order centres. These seed stores will have to be expanded suitably to accommodate the proposed inputs - seeds, fertilizers, pesticides etc. The concerned Assistant Agricultural Officer of the Block will be incharge for the concerned main depot. The 17 Agricultural Sub-Depots will be located at the identified middle order central places for supplying proposed inputs. These institutions will be managed by Agricultural Sub Assistants. The

EAST GODAVARI DISTRICT PROJECT AREA

AGRICULTURAL INSTITUTIONS

(EXISTING)

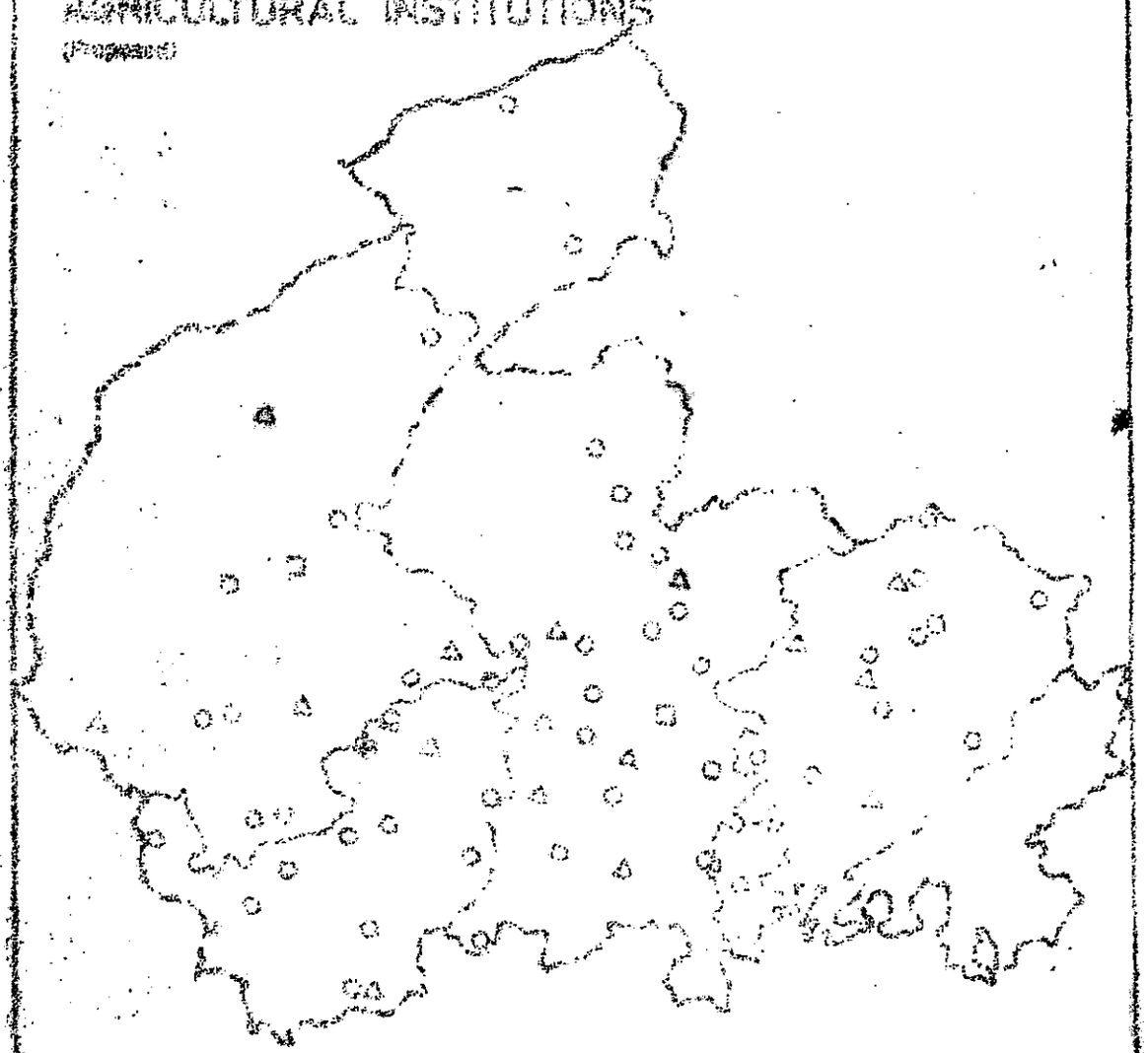


- SEED STORES
- AGRICULTURAL DEPOT
- AGRICULTURAL RESEARCH FARM
- LAND COLONIZATION SOCIETIES

EAST GODAVARI DISTRICT PROJECT AREA

AGRICULTURAL INSTITUTIONS

(Proposed)



SOIL TESTING LABORATORY

AGRICULTURAL MAIN DEPOTS

SUB DEPOTS

DISTRIBUTION CENTRES

distribution centres will be located at identified lower order centre and they are proposed to be managed by the existing Village Development Officers wherever there is need, additional staff would be appointed. The Assistant Agricultural Officer will guide and supervise and he will be responsible for maintenance of stocks, delivery and accounts of inputs at main Depot level. The concerned functionaries at Sub-Depot and sales centres will be responsible for sales and accounts of the stocks received by them.

Farm Management:

Farm Management will yield a good devidend to the cultivators in the project area as the irrigation water is a scarce commodity therefore, it is quite essential to take up the water management practices. The tribal cultivators have low receiptivity towards adoption of improved agricultural practices, as such the developmental functionaries should launch management Minikits Programme in every village if possible or atleast at Village Development Officer's Circle level so that the benefits of this system can be demonstrated to the tribal cultivators. A - B Type of Management Minikits will be ideally suited for this project area.

A	B

A : Farmers methods (Traditional)

B: Management method (Improved)

Details of practices to be adopted in 'B' Plot.

1. Proper puddling and levelling of the field.
2. Adequate provision for irrigation and drainage channels.
3. Water tight demarcation bunds are to be provided.
4. Size of the plot 0.50 acres.
5. Planting young seedlings with close spacing of 15 x 10 Cm. preferably to shallow depth.
6. Application of moderate N and 40 P and 30 K
7. N to be applied in 3 split doses.
8. Adequate plant protection measures when needed.
9. Regular tiller counts to check up the growth of the crop.

Water Management Minikits:

Conservation and Management of water is highly essential in the project area in view of the limited irrigation facility. It is quite essential to lay out water management minikits in 5 acres plot so that these will serve as demonstration plots for tribal cultivators. These have to be laid either under canal or streamlet irrigation sources or tank fed areas. Each Assistant Agricultural Officer would have to lay one Water Management Minikit in his Block Jurisdiction in the V Plan, while in the VI Plan the Minikits programme will be extended to Village Development Officer Circle level for the benefit of cultivators of his group of villages.and during the VII Plan these minikits will be extended to each village.

Lay out of Water Management Minikits:

1) The entire selected area should have a clear demonstration with an irrigation channel and drainage channel separately.

2) The entire area should be divided into two equal parts as 'A' and 'B'.

3) In the 'A' plot the farmers practice of water management will be adopted.

4) In the 'B' Plot the following levels of water will be maintained.

1) 5 Cm. of water upto 10th day.
2) 2 Cm. of water upto 45th day.
3) 7 Cm. of water from 45th day.

5) Locally made indicator yard stick is enough to measure the levels of water in the field.

REQUIRED AND PROJECTED AGRICULTURAL PRODUCTION

(in Quintals)

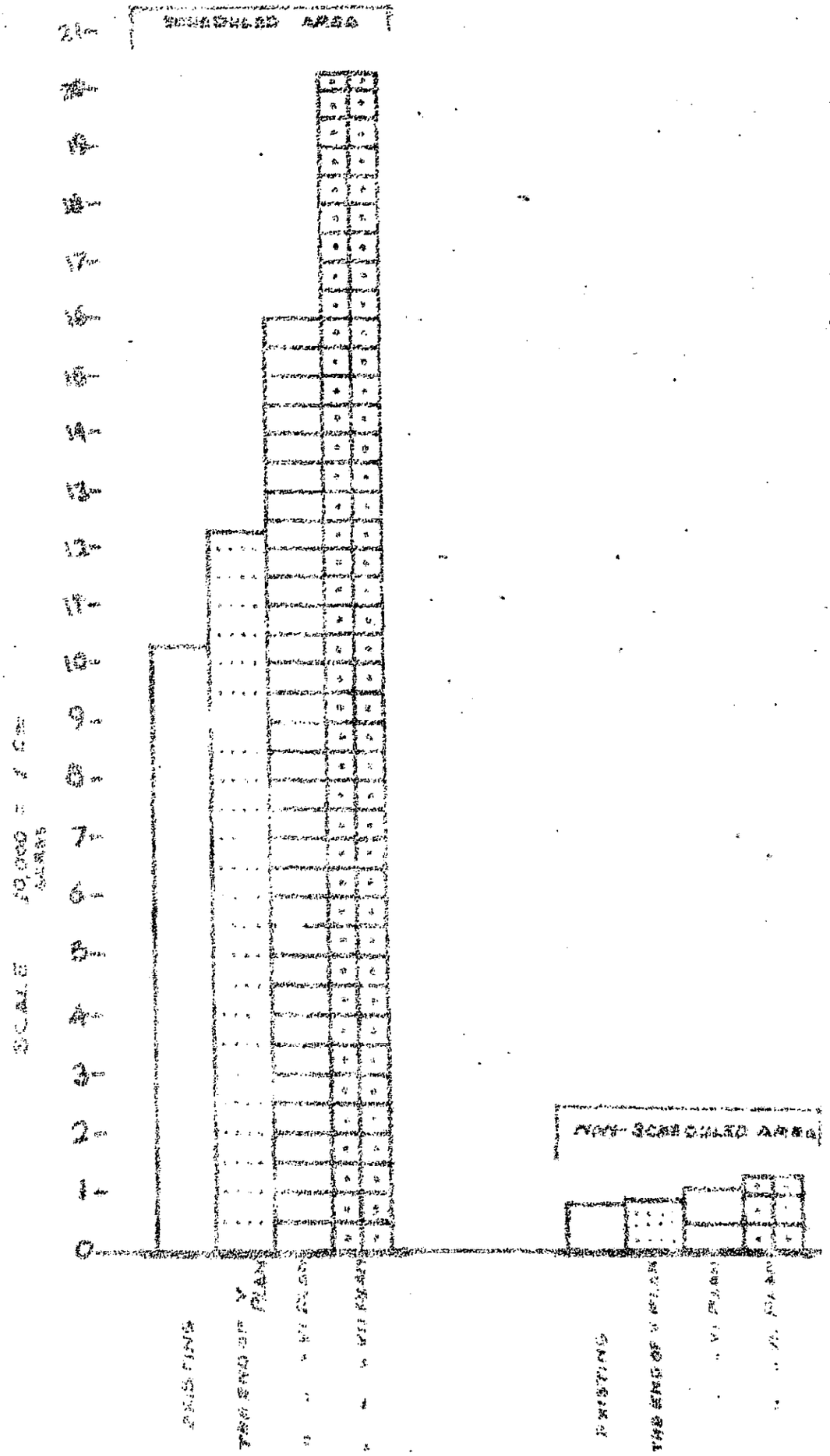
Sl.No.	Requirement	Projected production	(+) Surplus or (-) Deficit
1. Cereals	5,60,914	7,71,012	+ 2,10,098
2. Pulses	44,240	68,760	+ 24,520

It is evident from the above table that the projected production in the project area by the end of VII Plan would not only meets requirements of the project population but also provides scope for marketing of the surplus production. The projected population of the project area by the end of VII Plan would be about 2.19 lakhs. Production estimates have been prepared on the presumption that proposed increase in area under high yielding varieties, application of improved inputs like seed, fertilisers, plant protection measure would step up production by the end of project period. The estimated net increase would be two fold over the existing yield rate. The estimated growth rate in population is @ 2.29% per annum.

The total estimated cost of various programmes suggested in agricultural plan works out to Rs.16.29 crores for the scheduled area while it is Rs.1.06 crores for non-scheduled area of the project. The phased programme in agriculture sector is furnished hereunder:

EAST GODAVARI PROJECT AREA

TOTAL CROPPED AREA



FINANCIAL IMPLICATIONS

Sl. No.	Scheme.	V Plan						VI Plan					
		Subsidy		Loan		Grant		Subsidy		Loan		Grant	
		Sch. area	Non-Sch. area	Sch. area	Non-Sch. area	Sch. area	Non-Sch. area	Sch. area	Non-Sch. area	Sch. area	Non-Sch. area	Sch. area	Non-Sch. area
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1.	Land assignment and development.	--	--	--	--	17.10	5.90	--	--	--	--	96.90	11.16
2.	Soil Conservation programme	--	--	--	--	4.50	0.90	--	--	--	--	30.40	2.00
3.	Supply of Inputs:												
	a) Seed	17.68	1.42	5.90	0.48	--	--	15.43	1.13	15.44	1.14	--	--
	b) Fertilizer	95.17	5.16	31.73	1.73	--	--	82.67	4.06	82.67	4.07	--	--
	c) Plant protection	38.80	2.70	12.94	0.91	--	--	34.15	2.12	34.16	2.12	--	--
4.	Cocoa development	2.83	--	0.95	--	--	--	2.56	--	2.57	--	--	--
5.	Tapioca cultivation	3.37	0.60	1.13	0.60	--	--	4.50	1.20	4.50	1.20	--	--
6.	Pineapple cultivation	4.68	--	1.57	--	--	--	6.25	--	6.25	--	--	--
7.	Soil testing laboratary.		--	--	--	2.72	--	--	--	--	--	2.10	--
8.	Supply of Agricultural implements.	0.60	0.03	0.20	0.02	--	--	1.00	0.05	1.00	0.05	--	--
9.	Development of Orchards.	6.00	0.75	2.00	0.25	--	--	40.00	0.70	40.00	0.70	--	--
10.	Vegetable cultivation.	2.25	0.06	0.75	0.02	--	--	3.00	0.08	3.00	0.08	--	--
	Total:	171.38	10.72	57.17	4.01	24.32	6.80	189.56	9.34	189.59	9.36	129.40	13.16

Contd...

Sl. No.	Scheme.	VII Plan					
		Subsidy		Loan		Grant	
		Scheduled area.	Non-Sch. area.	Sche. area.	Non-Sche-area.	Sche-area	Non-Sche area.
1.	2.	15.	16.	17.	18.	19.	20.
1.	Land assignment and development.	--	--	--	--	--	--
2.	Soil Conservation programme	--	--	--	--	176.70	11.16
3.	Supply of Inputs:	--	--	--	--	45.00	2.50
	a) Seed	9.80	0.66	29.41	1.98	--	--
	b) Fertilizer	52.54	2.33	157.62	7.01	--	--
	c) Plant protection	21.38	1.19	64.16	3.58	--	--
3.	Cocoa development	1.35	--	4.06	--	--	--
5.	Tapioca cultivation	4.50	0.60	13.50	1.80	--	--
6.	Pineapple cultivation	6.25	--	18.75	--	--	--
7.	Soil testing laboratary.	--	--	--	--	2.10	--
8.	Supply of Agricultural implements	0.50	0.02	1.50	0.08	--	--
9.	Development of Orchards	40.00	0.50	120.00	1.50	--	--
10.	Vegetable cultivation.	2.50	0.04	7.50	0.12	--	--
	Total:	138.82	5.34	416.50	16.37	223.80	13.66

FINANCIAL IMPLICATIONS (Rs. in lakhs)

Sl. No.	Scheme	V Plan				VI Plan			
		Scheduled Area		Non-Scheduled Area		Scheduled Area		Non-Scheduled Area	
		Tribal	Non-Tribal	Tribal	Non-Tribal	Tribal	Non-Tribal	Tribal	Non-Tribal
1	2	3	4	5	6	7	8	9	10
1.	Land Assignment and Development	17.10	--	5.90	--	96.90	--	11.16	--
2.	Soil Conservation	4.50	--	0.90	--	30.40	--	2.00	--
3.	Supply of inputs:								
	a) Seed	23.58	2.63	1.90	1.28	30.87	3.43	2.27	1.52
	b) Fertiliser	126.90	14.10	6.89	4.60	165.34	18.38	8.13	5.42
	c) Plant protection	51.74	5.75	3.61	2.42	68.31	7.60	4.24	2.83
4.	Coco Development	3.78	--	--	--	5.13	--	--	--
5.	Tapioca cultivation	4.50	--	1.20	--	9.00	--	2.40	--
6.	Pine-apple cultivation.	6.25	--	--	--	12.50	--	--	--
7.	Soil Testing Laboratory	2.72	--	--	--	2.10	--	--	--
8.	Supply of Agricultural implements	0.80	--	0.05	--	2.00	--	--	--
9.	Development of orchards.	8.00	--	1.00	--	80.00	--	1.40	--
10.	Vegetable cultivation.	3.00	--	0.08	--	6.00	--	0.16	--
	Total:	252.87	22.48	21.53	8.30	508.55	29.41	31.86	9.77

Contd....

Contd.....

1	2	VII Plan				Total			
		Scheduled Area		Non-Scheduled Area		Scheduled Area		Non-Scheduled Area	
		Tribal	Non-Tribal	Tribal	Non-Tribal	Tribal	Non-Tribal	Tribal	Non-Tribal
		11	12	13	14	15	16	17	18
1.		176.70	--	11.16	--	290.70	--	28.22	--
2.		45.00	--	2.50	--	79.90	--	5.40	--
3.	a)	39.21	4.36	2.64	1.77	93.66	10.41	6.81	4.56
	b)	210.16	23.06	9.34	6.24	502.40	55.80	24.36	16.25
	c)	85.54	-9.51	-4.77	3.18	205.59	22.85	12.62	8.42
4.		5.41	--	--	--	14.32	--	--	--
5.		18.00	--	-2.40	--	31.50	--	-6.00	--
6.		25.00	--	--	--	43.75	--	--	--
7.		2.10	--		--	6.02	--	--	--
8.		2.00	--	0.10	--	-4.80	--	0.25	--
9.		160.00	--	2.00	--	248.00	-4.10	4.40	--
10.		10.00	--	0.16	--	19.00	--	0.40	--
Total:		779.12	36.93	35.07	11.19	540.55	89.06	88.47	29.23

The project area contains both Scheduled and Non-Scheduled villages and the percentage of tribal population varies significantly in these two parts. The Non-Tribal component has been separated while working estimated costs to arrive at the amounts required under Subsidy, Loan and Grant. Based on land records 10% of the land has been excluded while working out these details in Scheduled Area as 10% of the land is under Non-Tribal possession, while in Non-Scheduled Area 40% of the land was kept out for working out the cost details in Non-Scheduled Area for the above mentioned reason. After making allowance to the non-tribal component the estimated amounts under 3 Heads viz., Subsidy, Loan and Grant were arrived at. The Subsidy component has been gradually reduced from 75% to 25% over the three phases of the perspective plan.

In the V Plan the financial outlay for agriculture programme would be Rs.274.40 lakhs of which 182.10, Rs.61.18 lakhs, and Rs.31.12 lakhs is proposed as subsidy, loan and grant respectively. The total requirement under subsidy, loan and grant during VI Plan would be Rs.198.90 lakhs, Rs.198.95 lakhs and 142.56 lakhs respectively. In VII Plan the financial requirements would be Rs.144.16 lakhs, Rs.432.87 lakhs and Rs.237.46 lakhs as subsidy, loan and grant respectively. The details are furnished hereunder:

(b) IRRIGATION AND POWER

AGRICULTURE is still a 'Gamble in Monsoon' as about 88% of the cultivated area is rain fed in the project area. Monsoon has been erratic. As long as the agriculture is predominantly rain-dependent, break through in agricultural technology remains unachieved and agricultural productivity continues to be low.

Irrigation is an essential input for the development of agriculture and is indispensable prerequisite for qualitative shift in cropping pattern as the assured water supply offers freedom to the peasant producer to select those patterns of cultivation that keep the farmer and his farm busy round the year. Increasing the area under high yielding varieties and application of costly inputs like improved seeds, chemical fertilisers, pesticides and insecticides suggested in the agricultural programme will be conditioned by the availability of irrigation facilities.

The successful implementation of this programme depends on the development of irrigation sources. Thus, it plays crucial role in determining the prospects of agricultural development. Surface water and ground water are the two types primary sources of irrigation. In any perspective plan for the development of agriculture, a rational scheme of water use and its conservation form an integral part. As mentioned in Agricultural Chapter, the project area has got limited irrigation facilities as only 12.83 of the net cultivated area is under irrigation sources while it has minor and medium irrigation sources. Tanks, Wells, Hillstreams and Reservoirs are the sources of irrigation. The sourcewise extent of irrigated area is furnished in the following table. Blockwise and Sourcewise extent of irrigated area is furnished in Annexure No.VI(b)(1)

Sl.No.	Source of Irrigation.	Area irrigated	Percentage to the net sown area
1.	Tanks	8,705	61.61
2.	Wells	204	1.45
3.	Reservoir/Ayacut schemes	4,463	31.57
4.	Hillstreams	760	5.37
	Total:	14,132	12.83

It can be seen from the above table that tanks are the main sources followed by small reservoirs, as tanks contribute 61.61% and reservoirs 31.57% to the net irrigated area, while the contribution of wells and hill streams is insignificant. It is also observed that surface water sources are predominant as wells contribute only 1.45% to the irrigated area. The blockwise extent of irrigated area is presented in the following table:

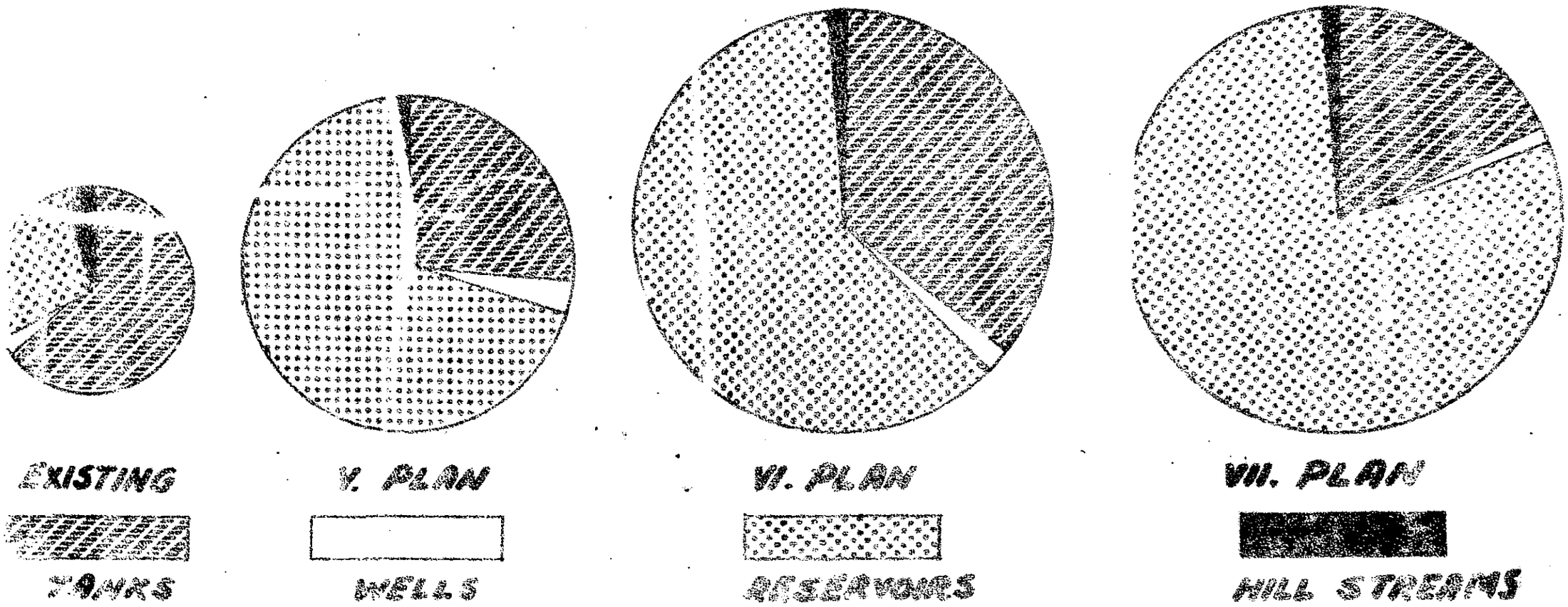
Sl.No.	Block	Net sown area	Irrigated area	Percentage
1.	Rajavommangi	18,566.99	6,516	35.09
2.	Addateegala	39,951.00	2,637	6.60
3.	Rampachodavaram	33,110.35	3,156	9.53
4.	Maredumilli	11,001.38	743	6.75
5.	Sankavaram	7,483.00	1,080	14.43
	Total:	1,10,112.72	14,132	12.83

It is evident that Rajavommangi has maximum percentage of net irrigated area followed by Sankavaram, while Addateegala has the lowest percentage.

The project area is endowed with innumerable perennial and seasonal hill streams and small rivers. But only a small number of them have been harnessed for

AREA UNDER IRRIGATION

(IN ACRES)



irrigation. There is scope for creating fresh potential by way of constructing diversion channels, wiers, lift points both on seasonal and perennial streams, sinking dug-cum-bore wells etc. Further, there is ample scope for improving the existing potential by undertaking different minor irrigation works. It is also observed that there is considerable gap between available irrigation potential and its actual utilisation. This under utilisation is the result of many factors like slow progress of irrigation, slow land development works, inadequate financial allocations, lack of investment capacity of tribal cultivators, lack of credit facilities to meet the cost of inputs, etc. The undulating terrain is also an impediment for optimum utilisation of irrigation potential. Hillstream water on water shed basis can be harnessed to mitigate drought risk and hazards of soil erosion, by planning for suitable water harvesting structures. Extent of harnessed ground water potential is almost negligible.

Dry farming is predominant in the project area as only a small proportion of cultivated area is having irrigation facilities. Paddy is an important irrigated crop which covers more than 90% of the irrigated area while sugarcane and groundnut are next important among the irrigated crops.

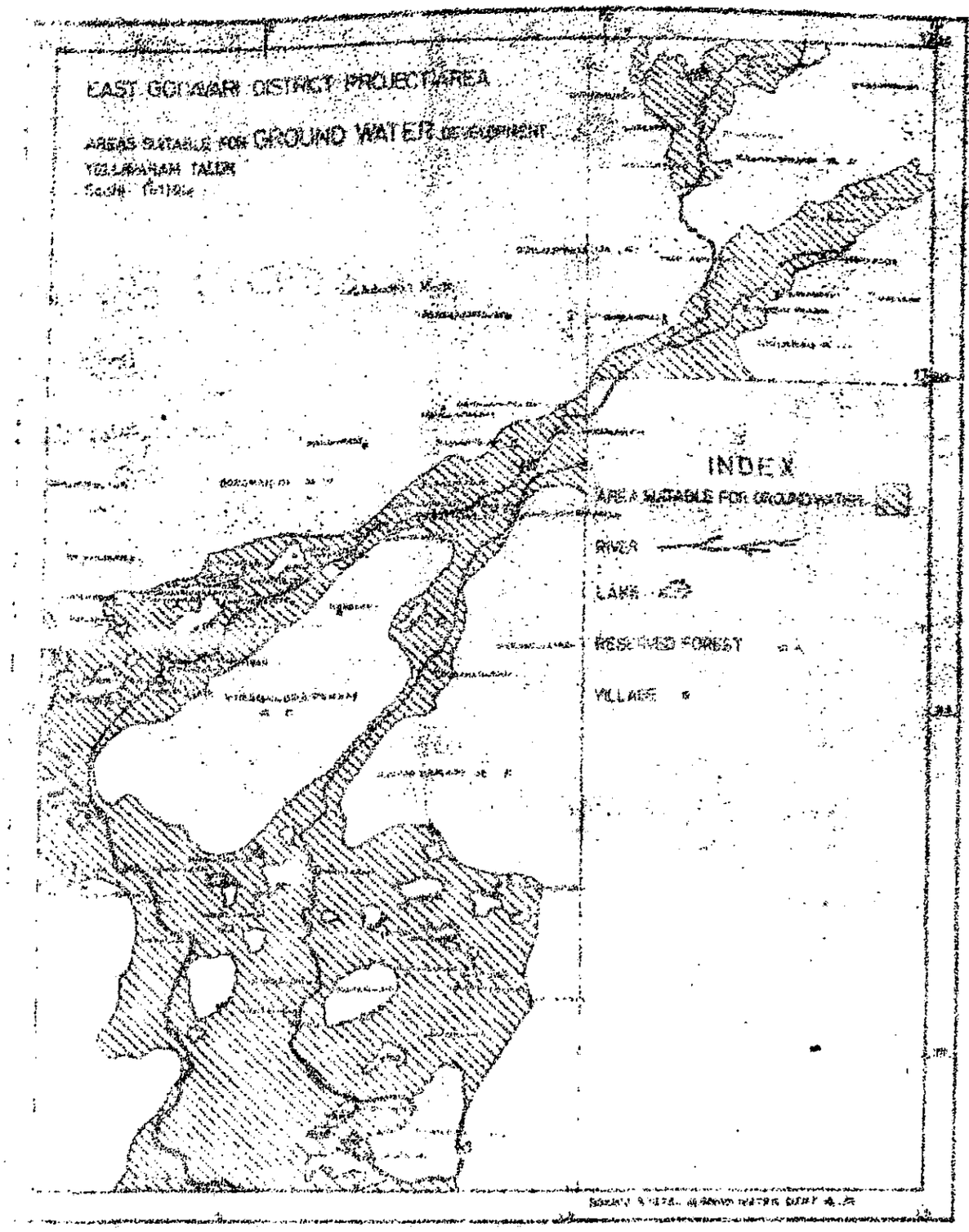
In view of the available potential in the project area, the following irrigation programme is suggested to harness both surface water and ground water potential.

During this perspective plan, it is proposed to bring 32,156.41 acres by harnessing 278 minor irrigation sources at an estimated cost of Rs.3.25 crores and another 15,800 acres under medium irrigation sources at an estimated cost of Rs.2.42 crores. The details of the proposed minor irrigation works in the perspective plan are furnished at the end of the Chapter.

GROUND WATER:

The project area receives good rainfall and it has good sedimentary formation in some parts. The ground water potential is conditioned by factors like physiography, geology, drainage, rainfall etc. No authentic information is available for the entire project area except a rapid reconnaissance survey conducted in Yellavaram taluk by the State Ground Water Department. The results of the survey are briefly discussed hereunder:

Sinking of dug wells of large diametre to the full depth of the weathered mantle in hard rock


EAST GODAVARI DISTRICT PROJECT AREA
AREAS SUITABLE FOR GROUND WATER DEVELOPMENT
INDEX
RIVER
LAKE
RESERVED FOREST
VILLAGE

areas and dug wells, filter points, shallow bore wells in valley-fill areas in such a way as to pierce the entire thickness of the valley zone have been recommended for this area. The areas occupied by hills and rocks have been found unsuitable for sinking wells.

1) Areas covering the villages i.e., Lagarai, Labbarthi, Nellimetla, Rajavommangi, Dusarampadu and Tatikonda are suitable for dug wells.

2) The areas suitable for dug wells/filter points/shallow bore wells are (a) Maderu Valley-fill area covering villages of (1) Chinnampalem (2) Velagalapalem (3) Kinaparthi (4) Kondalova (5) Veerabadrapuram and (6) Yellavaram (b) Eluru Valley-fill area covering the villages of (1) Timmapuram (2) Krishnavaram (3) Kabbalapalem and (4) Lingavaram (c) Area east of Domigadda covering the villages of (1) Gontevanipalem (2) Kinneru (3) Sarampetapadu (4) Lakshmipuram (5) Kothurupadu and (6) Ramanaihpeta.

3) Area under plains towards south-east of the taluk is suitable for dug wells which cover the villages viz., Bayanapalli, Nellipudi, Pidatamamidi, Pedagetlapadu, Gangavaram etc.

WATER YIELD

The average yield of the filter point wells/bore wells sunk to a depth of 10.00 to 20.00 m.bgl. is 26,500 litres per hour (7,000 gallons per hour). The average yield of dug wells is 15,140 litres per hour (4,000 gph).

WATER LEVEL IN WELLS:

The depth and depth to water of the dug wells ranged from 6.202 to 16.00 m.bgl. and 1.00 to 6.00 m.bgl. respectively. The water level fluctuation ranges from 1.00 metre to 3.00 metres.

QUALITY OF WATER:

Ground water in the 'study area' is classified as "Moderately alkaline" whose P.H. value ranges between 7.50 to 8.95. Ground water in Northern and Eastern parts of the taluk generally contains 500 PPM of the total dissolved solids (T.D.S). In Southern parts of the taluk, T.D.S. concentration is reaching to even over 3,000 P.P.M. The value of electrical conductance (E.C) is more than 3,000 micro mhes per cm., in South-West of the taluk, while the values are 500 and 750 micro mhes per cm. in North and East of a taluk. The value of chlorides is more than 500 PPM in South-West

part of the taluk whereas the value of chlorides is less in North and East of the taluk. It is observed that most of the waters have medium salinity hazard except two samples (For details vide Annexure No.VI (b) 8.

Eleven lift irrigation schemes have been proposed in Yellavaram taluk which will bring an area of 570 acres under irrigation. The estimated cost of this proposals works out to Rs.7.40 lakhs. Out of 11 sources, 7 have been proposed for installing energised pumpsets. While for the remaining four, oil engines have been proposed under lift irrigation as these villages are not covered under proposed electrification. The estimated cost of oil engines works out to Rs.1.00 lakh @ Rs.10,000/- each. In addition to these suggested schemes a lift irrigation scheme is proposed at Kutravada village, on Pamuleru a perennial hill stream in Maredumilli Block of Rampachodavaram Taluk. Fertile land measuring about 400 acres on the two flanks of the stream can be brought under wet cultivation. The estimated cost of the scheme works out to Rs.5.80 lakhs. This is proposed to be completed by the end of V Plan. The details are furnished at the end of the Chapter.

Under horticultural development scheme 2 bore wells have been proposed for each Block of 25

acres. It is proposed to bring 0.30 lakh acres under horticultural development programme. At the rate of 2 bore wells for every Block, 2480 bore wells are to be sunk in the project area and the bore wells sinking programme has been phased out as follows:

V Plan				VI Plan				VII Plan			
No.of Bore Wells	Estimated cost. Rs.			No.of Bore Wells	Estimated Cost Rs.			No.of Bore Wells	Estimated Cost Rs.		
	Sub-sidy	Loan	Total		Sub-sidy	Loan	Total		Sub-sidy	Loan	Total
80	3.00	9.00	12.00	800	60.00	60.00	120.00	/	/		240.00
								1600	60.00	180.00	

The total estimated cost of the bore wells works out to Rs.3.72 crores.

The details of estimated cost of each bore well are as follows:

1. Cost of Bore — Rs.8000/-
2. Cost of Oil Engines with pump and accessories — Rs.6000/-
3. Cost of feed channels for water management. — Rs.1000/-

MEDIUM IRRIGATION:

Four medium irrigation sources have been identified in the project area. The details of the schemes which are under investigation are given below:

1) Maddigadda Reservoir Scheme near Addateegala:

The proposed reservoir site is at a distance of 1.5 Km. from Addateegala village of Yellavaram taluk. The total yield available at site is 1122 MCFT. The catchment area is 48.4 Sq. Miles. The estimated ayacut of this source is 3,000 acres for Paddy in Kharif season and 15000 acres for Jowar in Rabi season. The following villages will be benefitted by this Irrigation project: 1) Addateegala, (2) Beemudipakalu (3) China Addateegala (4) Papampeta (5) Chenupakalu (6) Achyapeta (7) Yellavaram (8) Thimmapuram. The cost of the scheme is worked out to Rs.138.5 lakhs. The financial returns of the scheme is 0.49%.

2) Burada Kalva Reservoir Scheme near Surampalem:

The scheme is located at 1 Km. from Surampalem of Yellavaram Taluk. The total yield at site is 900 MCFT and the catchment area is 66.26 Sq. Kms. It is proposed to irrigate 600 acres of stabilised

existing wet land and conversion of 7,200 acres of dry into wet. Thus the total ayacut will be 7,800 acres covering 23 villages. The cost of the scheme is Rs.54.02 lakhs. The financial returns works out to 1.86%.

3) Kanneru Reservoir Scheme near Mohanapuram village of Yellavaram Taluk:

Its source is Kanneru river, a tributory to Eleru river. The proposed utilisation under this scheme is 437.5 MCFT. Under this scheme 3,500 acres of dry land can be converted into wet covering 9 villages. The cost of the scheme is Rs.49.88 lakhs and the financial returns works out to 0.73%

The following is the abstract of medium irrigation works and their ayacut and financial implications:

ABSTRACT

MEDIUM IRRIGATION WORKS

Source	Ayacut (in acres)	Estimated cost (Rs.in lakhs).	Year/Plan of execution.
1. Maddigedda Reservoir scheme	4,500	138.05	V Plan
2. Burada Kalva Reservoir scheme.	7,800	54.02	VI Plan
3. Kanneru Reservoir Scheme.	3,500	49.88	VII Plan
	15,800	241.95	

By implementing the above suggested programme 47,956.41 acres of irrigated area will be added to the existing 14,132 acres by the end of project period. Thus the net irrigated area would increase to 62,088.41 acres and constitutes 32.10% to the net sown area. The total estimated cost of Minor Irrigation and Medium Irrigation works comes to Rs.557.33 lakhs. Besides, special lift irrigation scheme is suggested for irrigating orchards to be raised in an area of 30,000 acres and the estimated cost of this scheme works out to Rs.372.00 lakhs. The abstract of financial implication of irrigation works are furnished hereunder. The list of proposed irrigation works are furnished in Annexure No.VI (b) 2.

ABSTRACT

Sl. No.	Scheme	V Plan			VI Plan			VII Plan			Total		
		No.	Cost	Ayacut	No.	Cost	Ayacut	No.	Cost	Ayacut	No.	Cost	Ayacut
1.	Minor Irrigation works	64	84.79	15,105.00	187	119.91	9,307.41	27	110.68	7,44.00	278	325.38	32,156.41
2.	Medium Irrigation works.	1	138.05	4,500.00	2	103.90	11,300.00	--	--	--	3	241.95	15,800.00
3.	Special schemes for development of Orchards.	80	12.00	--	800	120.00	--	1600	240.00	--	2480	372.00	--
	Total:	145	234.84	19,605.00	989	343.81	20,607.41	1627	350.68	7,744.00	2761	929.33	47,956.41

ABSTRACT

Agency	V Plan			VI Plan			VII Plan			Total		
	No.	Cost	Ayacut	No.	Cost	Ayacut	No.	Cost	Ayacut	No.	Cost	Ayacut
P.W.D. M.I. works	42	70.48	8,368.00	30	89.85	6,233.00	27	110.68	7,744.00	99	271.01	22,345.00
Panchayat Raj M.I. works.	22	14.31	6,737.00	157	30.06	3,074.41	--	--	--	179	44.37	9,811.41
Total:	64	84.79	15,105.00	187	119.91	9,307.41	27	110.68	7,744.00	278	325.38	32,156.41

PERSPECTIVE PLAN

Sl. No.	Taluk	Lift Irrigation scheme			V Plan Anicuts			VI Plan Tanks			VII Plan Reservoirs		
		No.	Cost	Ayacut	No.	Cost	Ayacut	No.	Cost	Ayacut	No.	Cost	Ayacut
1.	Yellavaram (P.W.D.)	11	8.40	560.00	23	47.81	5,463.00	25	69.39	4,978.00	14	66.65	5,514.00
2.	Spillover (PR) works.				12	3.91	4,272.00	18	2.35	196.00	--	--	--
2.	Rampachodavaram (PWD)	1	2.64	300.00	7	11.63	2,045.00	5	20.46	1,305.00	13	44.03	2,230.00
	(P.R)				6	1.90	165.00	139	27.71	2,878.41	--	--	--
3.	Sankavaram (PR)				4	8.50	2,300.00	--	--	--	--	--	--
	Total:	12	11.04	860.00	52	73.75	14,245.00	187	119.91	9,307.41	27	110.68	7,744.00

P O W E R:

Electrification is a vital input in the transformation of the tribal economy as it helps to modernise the farm technology through improved agricultural practices and develop the agro-industrial economy. It is the key factor for initiating simultaneous action in other sectors which form a part of integrated tribal development strategy. Dispersal of industries in the Project area is primarily conditioned by the availibility of power. Electrification, among other activities, helps to harness the ground water and surface water potential in the lift irrigation schemes. It offers ample scope for generating income and employment opportunities in hilly and backward regions.

The Project area has 583 villages. Under rural electrification programme 29 villages have been electrified in the Project area. Taluk-wise distribution of electrified villages is given in the following table:

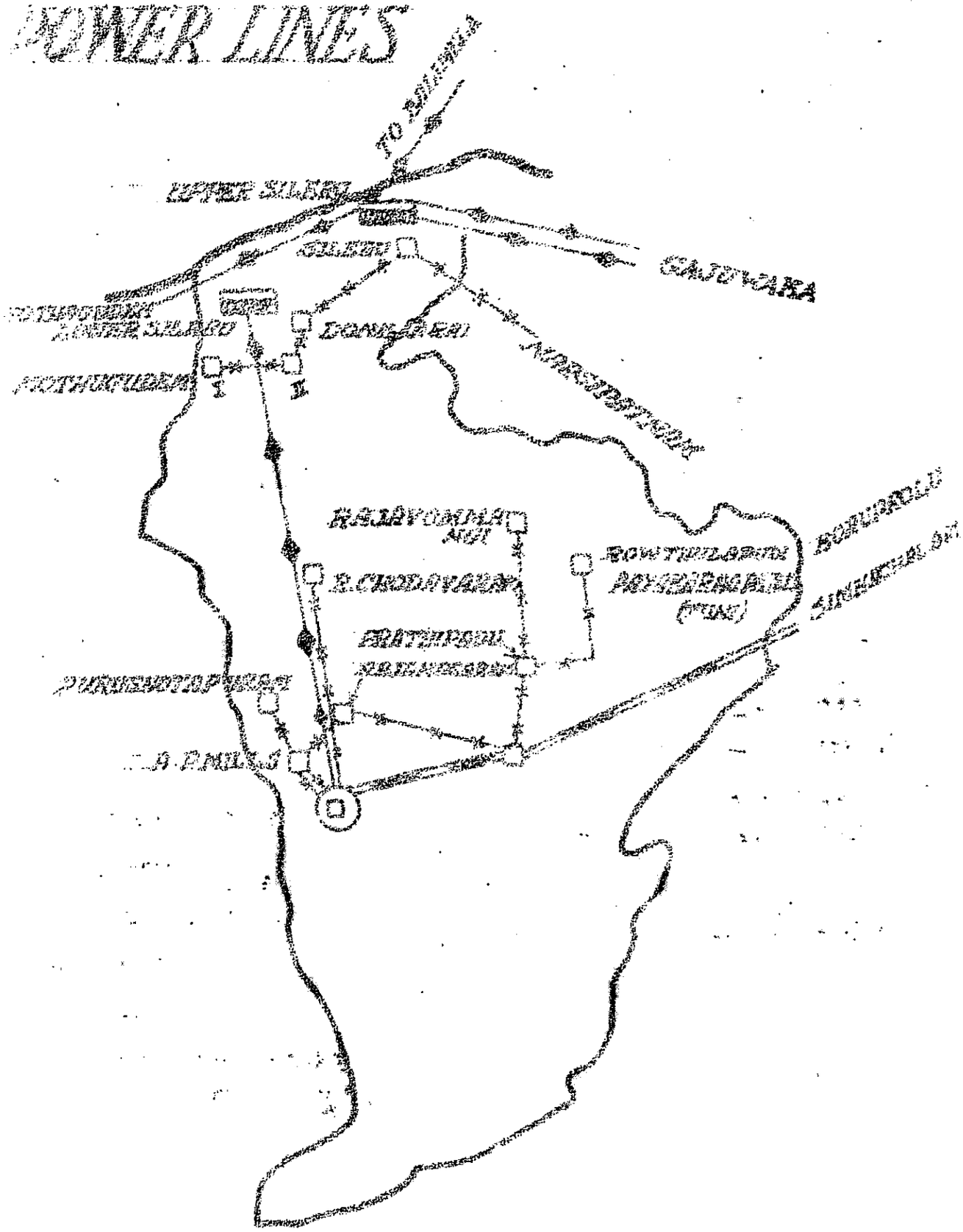
Sl. No.	Taluk.	Total No. of Villages.	No.of Villages Electrified.	% of electrified villages to total No.of Villages.
1.	2.	3.	4.	5.
1.	Rampachodavaram	198	13	6.56
2.	Yellavaram	338	15	4.43
3.	Prathipadu (Sankavaram P.S.) Project Area.	47	1	2.12
	Total:	583	29	4.97

The percentage of the villages electrified to the total number of villages in the Project area works out to 4.97% as against 42.8% in the district. Thus the percentage of electrification in the Project area is very low and it has not touched even the fringe of problem of rural electrification, as a large number of villages still remain to be electrified. There are in all 4 industrial connections and 30 agricultural service connections in the electrified settlements.

Electricity, diesel oil, human and animal draft power constitute the main sources of energy in lift irrigation methods. These sources play a crucial role in harnessing the irrigation potential. Demand

EAST GODAVARI DISTRICT

POWER LINES



220 KV. SINGLE CIRCUIT L.

132 KV. DOUBLE CIRCUIT L.

33 KV SINGLE CIRCUIT L.

SUB STATION

SUB STATION WITH SYNCHRONOUS

HYDRO STATION

for electrification is on increase as farmers prefer energenised pumpsets in view of the increasing cost and difficulty in transportation of diesel oil, availability of power at less cost and the better performance of energised pumpsets over the diesel engines which involves costly maintenance charges complicated operational mechanism etc.

The Yellavaram taluk is covered under Minimum Needs Programme which envisages making electricity available in hilly and desert regions. Under this programme, Rural Electrification Corporation has recently sanctioned a scheme for electrification of 79 villages in Yellavaram taluk, while 28 villages in Rampachodavaram taluk have been proposed for electrification under cluster scheme intended for specially under-developed areas. The list of villages is given at the end of this Chapter. The following criteria were adopted for sanctioning electrification programme:

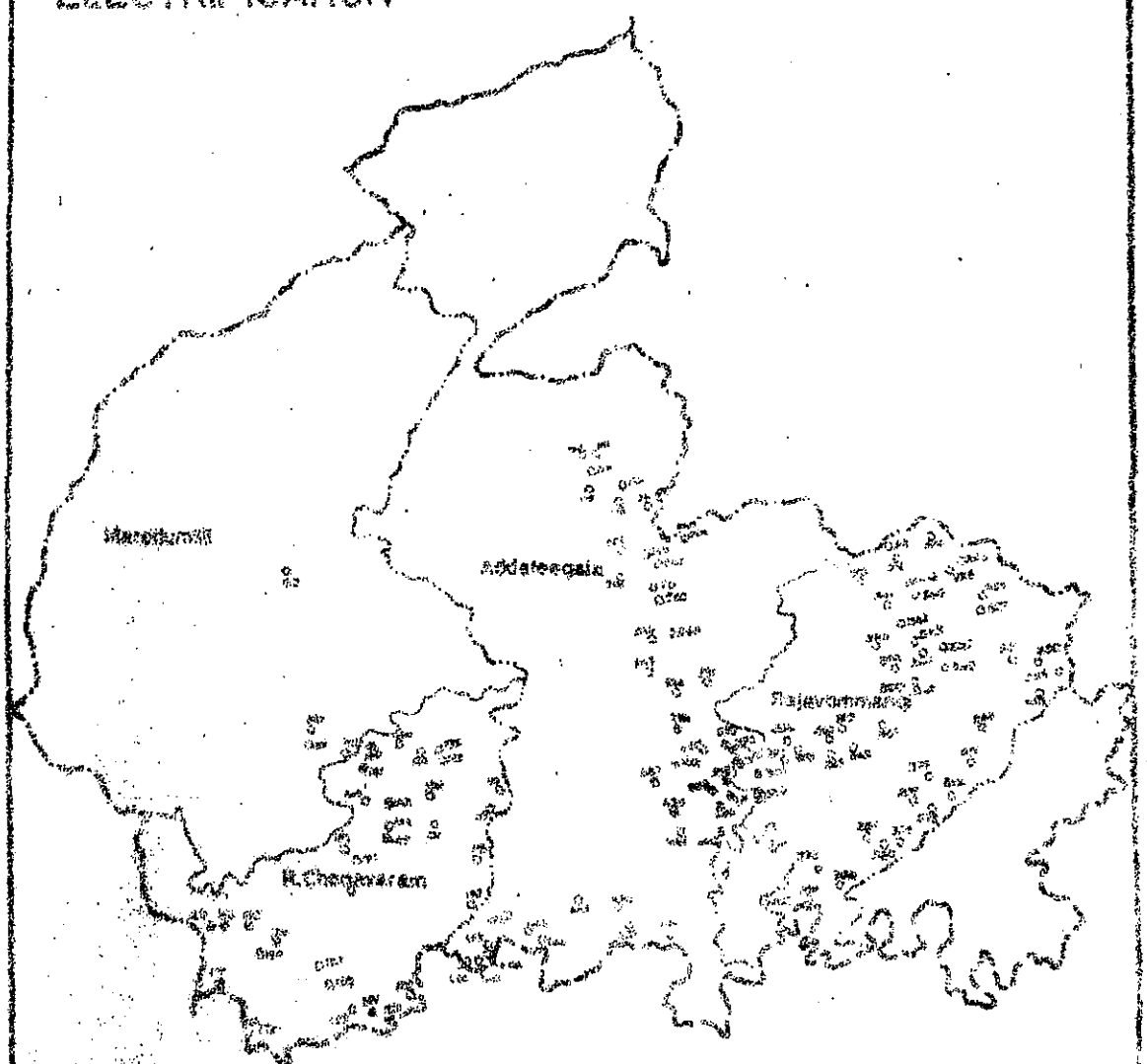
1. Villages already having irrigation facilities with scope for lift-irrigation.
2. Potential for agro-forest based industries.
3. Existing development administrative centres and potential growth centres and
4. Domestic consumption.

Surface water potential is harnessed to a limited extent in the Project area. Presence of a number of hill streams provide scope for energisation of pumpsets in lift irrigation scheme. In order to intensify agriculture, increase per capita yield and bring more area under irrigation, the cultivators have to resort to harnessing of ground water potential. Ground water survey conducted in Yellavaram taluk revealed that there is ample scope for harnessing the sub soil water for irrigation purpose as mentioned in the irrigation Chapter. Filter points, bore wells, dug wells etc., have been suggested for lift irrigation. Electrification is essential for lift irrigation.

Ground Water Survey has been conducted in villages of Yellavaram Taluk. The Rampachodavaram Taluk has yet to be surveyed to assess the ground water potential. 6 bore wells, 8 dug wells, 2 filter points are already existing in the surveyed villages. In view of the low water yield dug wells for domestic purpose have been suggested low in 22 of the total surveyed villages. Out of 16 sample villages only 8 were found suitable for installing pumpsets under lift irrigation scheme, while in 5 villages, 'Mhote' has been suggested and in remaining three villages, filter points have been proposed.

EAST GODAVARI DISTRICT PROJECT AREA

ELECTRIFICATION



• ELECTRIFIED VILLAGE

• TO BE ELECTRIFIED VILLAGES(Proposed)

Irrigation capacity of bore well/filter points and dug well, ranges from 6--10 acres in the surveyed villages of Yellavaram taluk. In view of the potential and yield rates it is proposed to energise 168 pumpsets under lift irrigation scheme in the existing irrigation wells.

In Yellavaram taluk 337 wells are distributed over 55 villages, while 14 villages have no wells. Out of 337 wells, 168 wells have been proposed for energisation of pumpsets in the electrification programme. The total estimated cost for energisation of electric pumpsets works out to 16.80 lakhs Rs.10,000 for each pumpset. The phasing of energisation of pumpsets under Minimum Needs Programme is furnished hereunder:

Block.	Villages	Existing wells.	No. of pumpsets proposed for energisation.											
			V PLAN.	Cost.			VI PLAN	Cost			VII PLAN	Cost		
				S.	L.	T.		S.	L.	T.		S.	L.	T.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
Rajavommangi	45	240	26	0.65	1.95	2.60	50	2.50	2.50	5.00	50	1.25	3.75	5.00
Addateegala	34	97	12	0.30	0.90	1.20	20	1.00	1.00	2.00	20	0.50	1.50	2.00

In addition to this 11 minor irrigation sources under lift irrigation scheme have been proposed. Out of 11 sources proposed, four sources have no electrification facility and also there is no proposal for electrification. Hence 10 oil engines have been suggested. With regard to remaining seven sources, it is proposed to instal energised pumpsets. It is estimated that 50 energised pumpsets would be required and their cost works out to Rs.7.50 lakhs.

There are no irrigation wells in Rampachodavaram taluk. However, the semi perennial hill streams offer ample scope for lift irrigation, 24 villages in Rampachodavaram and 2 villages in Maredumilli block have been proposed under energisation scheme. Thus the total agricultural services proposed comes to 27 in Rampachodavaram and 3 in Maredumilli block. Names of these villages are furnished at the end of the Chapter. The phasing of agricultural services are mentioned hereunder:

It is proposed to give 120 Domestic service connections, 3 Industrial, 10 Commercial and 20 Street light connections besides one H.P. Load for Plywood factory at Rampachodavaram under Rural Electrification

Programme. Similarly in Yellavaram taluk it is proposed to give 700 Domestic service connections, 70 Commercial, 23 Industrial, 79 Street lights services besides 168 Agriculture services mentioned earlier. The details of these programmes are furnished at the end of the Chapter.

It is evident from the data that out of four identified higher order centres, two are electrified, 3 out of 17 identified middle order centres and 1 out of 51 lower order centres are electrified. To fill up the functional gap and also provide power as infrastructure for implementation of other development programmes, electrification of other central places has been proposed. Under Minimum Needs Programme, the Superintending Engineer (Operations), Rajahmundry has suggested the following cluster scheme for the Project area. This power plan is drawn up in such a way that power would be available to village with ground water potential for energisation of lift irrigation sources besides domestic and industrial connections in the Project area.

ELECTRIFICATION PROGRAMME UNDER MINIMUM NEEDS PROGRAMME IN YELLAVARAM TALUK.

Name of the Scheme : Yellavaram taluk Addatigala and Rajavommangi Blocks.

Category of the Scheme : Minimum Needs Programme.

The Project estimate covers extension of supply to the following loads:-

1) H.T.Load	100 KVA 1 No.
2) Domestic service	700 Nos.
3) Commercial services	70 Nos
4) Industrial services	23 Nos.
5) Agricultural services	168 Nos.
6) Street light services consisting of 225 Nos streetlight fixtures.	79 Nos.

The salient features are as follows:-

1. Cost of the project at the end of 3rd year for which loan is required for

	Rs. in Lakhs
a) Transmission part	23.87
b) M.N.P. part:	
i) Line portion	19.71
ii) Distribution portion	21.77
Total:	65.35

2.	33/11 KV Sub-station with transformer capacity	1 No. 1.6 MVA
3.	Length of 33 KV line	50.5 KM
4.	Length of 11 KV line	150.07 KM
5.	Length of 3 phase 5 wire line.	6.9 KM
6.	Length of 3/4 W line	72.35 KM
7.	Length of S/ 3W line	21.60 KM
8.	Length of S/2W line	27.00 KM

9) No.of distribution transformers:

i) 100 KVA transformer	2 Nos ..	200 KVA
ii) 63 KVA transformers	9 Nos ..	567 KVA
iii) 25 KVA transformer	31 Nos ..	775 KVA
	Total:	1542 KVA

10. Loads proposed category-wise:

i) Agricultural	5 HP each 168 Nos.	840 HP =	626.64 KW
ii) Industrial:	23 Nos. (19 Nos. 10 HP) 1 No. 60 HP 1 No.50 HP and 2 Nos. 40 HP each)	380 HP =	283.48KW
iii) Domestic	0.2 KW each 700 Nos.		140-00
iv) Commercial	0.2 KW each 70 Nos.		14-00
v) Street lights	40 W each 225 Nos.		9-00
vi) HP Load	100 KVA 1 No.		80-00
	Total:		1153-12 KW

CLUSTER SCHEME OF ELECTRIFICATION IN RAMPACHODAVARAM TALUK

Name of the Scheme : Rampachodavaram taluk cluster scheme.

Category of scheme : Specially underdeveloped.

No. of villages covered : 28 Nos.

No. of services envisaged:

1. Domestic : 120 Nos.
2. Commercial : 10 "
3. Street lights : 20 "
4. Industrial : 3 "
5. Agricultural : 30 "
6. H.T. Load : 1 Plywood factory.

Length of lines and transformers proposed

33/11 KV line: 60 KMs. 33/11 KV S.S.: 1 No. 1x3 MVA and 33 KV bay 1 No.

1. 11 KV Line: 59.0 KMs.

2. L.T. Line : 3Ø 5 W/Line .. 1.0 KM
3Ø 4 W/Line .. 28.52 KM
SØ 3 W/Line .. 1.0 KM
SØ 2 W/Line .. 19.82 KM

Distribution transformers: 17 Nos. 25 MVA

Cost of the Scheme : 31.23 lakhs of rupees.

Capital outlay:		Amount in lakhs of rupees.
During 1st year	:	9.34
During 2nd year	:	12.44
During 3rd year	:	9.45
At the end of 3rd year during	:	31.23
Revenue Return:		
5th year	: (-)	0.61
15th year	:	14.33
25th year	:	17.66

--:--

THE FINANCIAL IMPLICATIONS OF THE ELECTRIFICATION PROGRAMME AND ENERGISATION OF PUMP SETS IN THE PROJECT AREA ARE FURNISHED HEREUNDER.

FINANCIAL IMPLICATIONS

Sl. No.	Scheme.	V Plan		VI Plan		VII Plan		Total	
		No.	Cost	No.	Cost	No.	Cost	No.	Cost
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1.	Pumpsets proposed for energisation.	38	3.80	70	7.00	70	7.00	178	17.80
2.	Yellavaram Cluster Scheme.	--	23.87	--	41.48	--	--	--	65.35
3.	Rampachodavaram Cluster Scheme.	--	21.78	--	9.45	--	--	--	31.23
	Total:		49.45		57.93		7.00		114.38

VILLAGES TO BE ELECTRIFIED IN RAMPACHODAVARAM TALUK

RAMPACHODAVARAM BLOCK:

1. Nelakota
2. China Bheemapalli
3. Devaram
4. Pothavaram
5. Gopavaram
6. Sithapalli
7. Polavaram
8. Irlapalle
9. Usirikadonnala
10. Beerempalle
11. B.Velamlakota
12. Musirimilli
13. Ginnepalli
14. Noonepalli
15. B.Ramannapalem
16. Tamarapalli
17. Tativada
18. Bandapalli
19. Gajjavelagala
20. Daramadugula
21. Jagametlapalem
22. Burugindalapadu
23. Rampa
24. Marriwada

MAREDUMILLI BLOCK:

25. Chinnageddada
26. Pedagaddada
27. Maredumilli
28. Gandhinagaram.

VILLAGES TO BE ELECTRIFIED AND ENERGISATION OF PUMPSETS
(Yellavaram tank)

Sl. No.	Name of the Village.		No. of proposed wells for energisation.
	Rajavommangi:		
1.	Bandapalli	--	--
2.	Chinnarellangipadu	--	--
3.	Kondapalli	--	3
4.	Dakarayi	--	1
5.	Sarabhavaram	--	5
6.	Vanakarayi	--	2
7.	Boyanapadu	--	3
8.	Tallapalem	--	3
9.	Kirrabu	--	3
10.	Labbarti	--	5
11.	Mollemetla	--	1
12.	Nellimetla	--	3
13.	Legarayi	--	5
14.	Kindne	--	3
15.	Rajavommangi	--	10
16.	Haminabada	--	3
17.	Chillilinta	--	1
18.	Peddagarrangi	--	--
19.	Watangi	--	1
20.	Okuthi	--	1
21.	Lododdi	--	3
22.	Puderu	--	3
23.	Kesavaram	--	2
24.	Pakaveltipadu	--	2
25.	Kodalingaparthy	--	3
26.	Kiridevupalem	--	2
27.	Vanchangi	--	3
28.	Maredubaka	--	1

1.	2.		3.
29.	Baligipadu	--	1
30.	Puligogulapadu	--	3
31.	Kimmuru	--	7
32.	Surempetapadu	--	1
33.	Gontuvanipalem	--	11
34.	Dusaripamu	--	5
35.	Subampadu	--	1
36.	Tantikonda	--	3
37.	Ginjarthi	--	--
38.	Yarrampadu	--	--
39.	Jaddangi	--	5
40.	Cherukumpalem	--	5
41.	Marripalem	--	5
42.	Velagalamapel	--	1
43.	Gavarampeta	--	3
44.	Kottampalem	--	3
45.	Kinaparthy	--	--
Addateegala Block:			
46.	Bhimudupakalu	--	1
47.	Nimmalapalem	--	2
48.	Bhimavaram	--	2
49.	Duppalapalem	--	2
50.	Tungamadugu	--	1
51.	Anukulapalem	--	2
52.	Rayapalli	--	2
53.	Chinavadisakarra	--	1
54.	Vengalamadugu	--	1
55.	Lakavadisakarra (Vedurunagar)	--	1
56.	Devaramadugu	--	1
57.	Veeravaram	--	1

1.	2.		3.
58.	Jaggampalem	--	3
59.	Jiyyampalem	--	1
60.	Rajavaram	--	1
61.	Ozubanda	--	1
62.	Yenamanapalli	--	--
63.	Rajupetaloddi	--	--
64.	Pataramavaram	--	--
65.	Nellipudi	--	3
66.	Bayanapalli	--	--
67.	Pidatamamidi	--	2
68.	Molleru	--	2
69.	Ramaldevapuram	--	1
70.	Uppalapadu	--	2
71.	Naidupakalu	--	1
72.	T.Savitidibbalu	--	3
73.	Panasalapalem	--	1
74.	Y.Ramavaram	--	3
75.	Yarlagadda	--	--
76.	Yerragonda	--	1
77.	Rachapalem	--	--
78.	Mantlapanda	--	--
79.	Komaravaram	--	--
		Total:	168

(c) ANIMAL HUSBANDRY

ANIMAL HUSBANDRY is one of the primary sectors of the project area which has high potential for development next to agriculture. Therefore animal husbandry can make significant contribution to the economy of this area. The development of agriculture is closely linked up with development of livestock as they are used in different ways by the tribals. Settled cultivators use bullocks for agriculture operations and for taking their produce to the shandies. Cattle, Buffaloes, sheep and goat also serve as a source of organic manure and replenish the lost fertility of the soils by their droppings. The tribal group of this project area rear livestock. But they do not pay much attention in rearing them on proper lines. As a result of poor management, inadequate feeding and imbreeding the condition of livestock has deteriorated, consequently animals are generally stunted in growth and their milk yield and work performance is poor. Some of the tribal groups have started milking their cows, which hitherto was not practised. But the milk yield of the average cow and buffaloe is about 1/4 to 1/2 to one

litre to 1 1/2 litres per day respectively. Similarly the egg production of the local hens is about 40-60 eggs per year. As mentioned above the livestock population of the area is mostly non-descript cattle- being predominantly of dimunature size and white in colour. Buffaloes, sheep,goat and poultry are also of non-descriptive type.

The livestock population of the project area is as follows:

I. Cattle:		
Adult	Male	42,637
	Female	35,447
	Total:	78,084
Young Stock	Male	12,090
	Female	14,139
	Total:	26,229
II. Buffaloes		
Adult	Male	1,403
	Female	2,825
	Total:	4,228
Young Stock	Male	834
	Female	1,226
	Total:	2,060
III.Sheep	Male	1,131
	Female	4,129
	Total:	5,260
IV.Goats	Male	9,923
	Female	31,409
	Total:	41,332
V.Pigs		2,817

VI. Poultry	Cocks	18,375
	Hens	70,184
	Chicks	44,695
	Total:	133.254
VII. Total Livestock		264,634

For alround development of the livestock in the area, different schemes were taken up from the beginning of the five year plans. Veterinary Institutions were started to conduct prophylactic vaccinations besides treatment of different ailments and diseases. In addition to this Breeding Bulls, Breeding Rams and Ewes and Poultry were supplied to the tribals. The details are given below:

1. Veterinary Institutions

There are four Primary Veterinary Dispensaries at the following places:

1) Rampachodavaram.
2) Maredumilli.
3) Addateegala
4) Rajavommangi

2. Minor Veterinary Institutions - Three

1) Devipatnam - Rampachodavaram
2) Guntevanipalem - Rajavommangi
3) Cheedumaveedi - Addateegala

3. Rural Veterinary Dispensaries:

1) Narsapuram	-	Rampachodavaram.
2) Geddada	-	Maredumilli
3) Mulleru		Addateegala
4) Thimmapuram		

In addition to these 5 First Aid Centres are functioning in the project area at the following places.

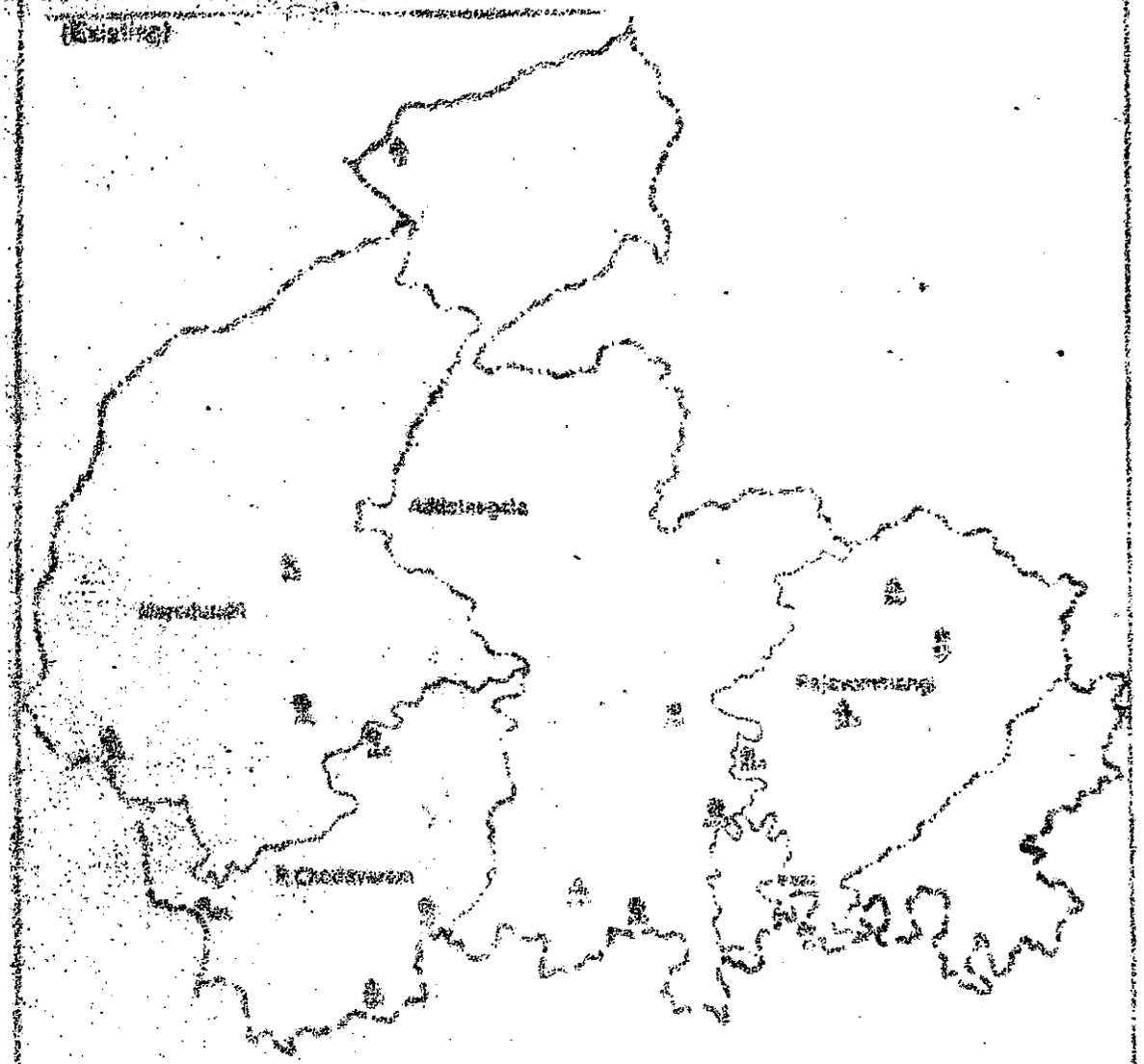
1) Indukurupeta	-	Rampachodavaram
2) Lagarai		
3) Jeddangi		Rajavommangi
4) Nellipadu		
5) Donkarai		Addateegala

Sl. Achievements in Livestock development areas as follows:	Physical Achievements No.	Financial Investments. Rs.
1. Cattle Development		
i) Breeding Bulls supplied		
a) White	43	40,503
b) Black	4	2,812
c) Natural Breeding Centres		
ii) Milch animals supplied.		
a) Cows	Nil	--
b) Buffaloes	32	44,185
2. Sheep Development		
a) Rams	456	1,76,007
b) Ewes supplied	1389	

EAST GODAVARI DISTRICT PROJECT AREA

VETERINARY INSTITUTIONS

(District)



- PRIMARY VETERINARY
- MINOR VETERINARY DISPENSARY
- RURAL VETERINARY DISPENSARY
- VET. FIRST AID CENTRE
- F.P. CHECK POST

3. Poultry Development

a) Cockerals distributed	989	43,774.00
b) Hens	3857	
c) Pullets	--	
d) Chicks	--	
e) Poultry Units	145	7,082.00
f) Hatching eggs	4383	2,192.50
g) Ducks supplied	60	5,35.70

4. Fodder development (Slips supplied) — Nil — --

5. Piggery development

a) Boars	30	13,258.00
b) Sows supplies	89	

The development indicators between the project area and district as a whole revealing the relative levels of development of the area are given below:

Sl.No.	Indicators	District as a whole	Project area.
1.	Total Livestock population	10.71 lakhs	2.65 lakhs
2.	Total Bovine population	5.85 ,,	1.10 ,,
3.	Number of drought Bovine animals for 1000 acres of cropped area.	239	956
4.	Bovine animals in Milch	2.73 ,,	0.18 ,,
5.	Total number/per 1000 persons population.	105 animals	119 animals
6.	Total Poultry population	-- 8.48	1.33 ,,
7.	Number of Veterinary Institutions. Hospitals	15	1
	Dispensaries	75	11

8. Bovine population covered by each Institution.	9,500	10,000
9. Milk Chilling and Cooling Centres.	One	Nil
10. Pasture and Grazing lands	91,400	23,700
11. Average area available for free grazing per thousand grazing livestock.	80 acres	90 Acres
12. Poultry marketing centre/ sub centre,	1/2	Nil
13. Density of livestock	99	63

For all round development of livestock different Animal Husbandry schemes are suggested. While formulating the schemes the potentialities available with the tribals and also the need for intensive development of livestock for raising the economic status is also taken into consideration. The programmes suggested in the Chapter are intended for providing necessary draught power for agricultural operations and employment opportunities besides providing nutritious diet to the tribal people. Most of the tribals are unemployed or under employed for major part of the year. Dairying, Poultry keeping, Sheep rearing etc., could be encouraged as suitable subsidiary occupations among these tribal groups to enable them to augment their income and bring them above the poverty line. But the traditional systems of Animal Husbandry practised by

tribals are not at all remunerative, because of the low productivity of the stock maintained by these farmers. However with the adoption of improved methods of Animal Husbandry suggested in the plan such as better breeding, feeding, proper management and disease control measures and remunerative marketing of produce, these operations will become profitable. The programmes envisaged in the plan can make impact on the tribal economy. The following schemes are suggested for the improvement of the livestock.

I. CATTLE DEVELOPMENT

A) Breeding Bull Centres:

Cattle of the project are mostly non-descript and are of stunted growth. The programmes suggested for cattle development, aim at improvement in the milking capacity and draught efficiency. Measures such as controlled breeding operations effective disease control, proper management and adequate feeding are suggested for their improvement.

Cattle population can be improved by Natural Breeding and by Artificial Insemination. But as the tribals are most backward, genetic improvement of the cattle can be taken up by natural breeding only. Artificial breeding can be taken up from the VII Five Year Plan onwards. For natural service,

Breeding Bull Centres are proposed at higher order and middle order centres identified in the project area. From the 6th plan, these centres will also be established at selected lower order centres. Jersey crossbred and Sindi crossbred bulls are suggested and these will be stationed at the proposed centres. Breeding bulls will be released in the herds for natural service. The idea of stationing bulls at the proposed and existing Veterinary Institutions is to have proper technical control so that these bulls can be maintained well. Along with the establishment of breeding bull centres intensive castration of scrub bulls will be taken up for the prevention of indiscriminate breeding. Disease control and deworming operations of the offsprings will be taken up by the Veterinary Institutions suggested in the Plan.

Financial implications of the Breeding Bull Centre is as follows:

Non-Recurring:

	Rs.
1) Cost of Breeding Bulls -(2 Bulls)	4,000-00
2) Cost of Bull Shed with Attendants room.	5,000-00
3) Cost of Castrator	1,000-00
4) Feed Storing drums, watering equipment etc.	1,000-00
	11,000-00

Recurring:

1) Cost of feeding of 2 breeding bulls at 250/- P.M.	6,000-00
2) Attendants Salary at Rs.200 P.M.	2,400-00
	8,400-00

1st Year of the Plan	19,400-00
2nd Year of the Plan	8,400-00
3rd Year of the Plan	8,400-00
4th Year of the Plan	12,400-00*
5th Year of the Plan	8,500-00

During the 7th Plan, artificial insemination work is proposed at 4 Primary Veterinary Dispensaries and Minor Veterinary Dispensaries, both existing and proposed in the Plan. For this programme an amount of Rs.50,000 is proposed, to equip the Dispensaries, with required equipment for Artificial Insemination work.

B) Dairy Development:

i) Supply of Milch Animals:

There is ample scope for augmenting milk production in the project area by harnessing potential and developing the facilities available with the tribals. Dairy farming has the highest potentiality to benefit the tribal population for economic growth and development. Apart from increasing milk production, this programme with adequate investment would help improve the economy and nutritional status of the tribals.

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*Provision is made for replacement of Bulls.

Most of the tribals own cows and buffaloes, but the animals with them are poor producers and in fact, milking of the cows is done by very few tribals in the project area.

The programme for augmenting milk production comprises distribution of milch animals to the individual families and setting up of milk cooling centres for marketing of milk. Milk requirement could be met by supplying graded buffaloes which give about 4-5 litres of milk. The rearing of cross bred animals by the tribals require some knowledge, hence this can be taken up in the subsequent plans as the tribals would get some experience in rearing of milch animals in the first phase of the plan. Graded buffaloes will be supplied in the selected contiguous villages identified for forming the milk belt in the area around Rajavommangi, Addateegala, Rampachodavaram and Maredumilli. During the 5th Plan milk animals distribution will be taken up in Rajavommangi and Addateegala areas along with establishment of milk cooling centres. Milch animals distribution in the remaining blocks will be taken up during the 6th Plan along with the setting up of milk cooling centres.

Milch animals will be distributed at tribal household level. To start with, one buffaloe will be supplied and the second one will be supplied, when the first one goes dry. In this way each family will be having two buffaloes which will help them having continuous supply of milk and income. Under this scheme 50% of the feeding cost for 3 months and cost of buffaloes will be subsidised, the balance will be available as loan from any of the financial institutions or bank.

It is suggested that supply of crossbred cows and heifers can be taken up in the project area from 4th year of the sixth plan onwards. The details are furnished at the end of this Chapter.

ii) Assistance for Rearing of upgraded Calves:

The tribal farmers are not in a position to rear and feed the calves properly, as a result of which the calves are generally stunted in growth. Therefore financial assistance is proposed to enable the tribal to meet the feeding and rearing expenses of the animals and its offsprings. This is important because, the upgraded calves could replace the indigenous low producing cows and buffaloes. If the upgraded and crossbred heifers are properly reared and fed they could be better producers early. It has

been estimated that the cost of balanced concentrate feeds amounts to about Rs.1,200-00 for a heifer. It is therefore proposed to provide only for the supply of concentrate feeds and that the assistance will be in kind. The tribals who produce upgraded calves will be given financial assistance i.e., two thirds subsidy and one third as loan. The farmer would be able to meet the forage requirements from the by-products of crops stumps, grazing in the forests etc.

It is proposed to give subsidy and loan in kind i.e., premixed concentrate feed to cater the needs of 650 heifer calves. The estimated amount for this scheme would be Rs.7.80 lakhs.out of which 5.20 lakhs will be subsidy and 2.60 lakhs will be loan and this is phased out in the plan. The details are given at the end of the Chapter.

iii) Establishment of Milk Cooling Centres:

For remunerative marketing of the milk produced by the tribals, 4 milk cooling centres are suggested at the following places and they will be opened in a phased manner.

1) Rajavommangi
2) Addateegala
3) Rampachodavaram
4) Maredumilli

The above centres will have collection points where supply of milch animals is proposed. This linkage of milch animals with milk cooling centres will ensure better returns to the tribals. The cost of milk cooling centre would be Rs.2.50 lakhs. Establishment charges of staff and other charges including operational costs will be borne by the Andhra Pradesh Dairy Development Corporation.

iv) Feed Mixing Plant:

It is proposed to establish one feed mixing plant in the project area. This will help in successful implementation of proposed Dairy and Poultry Units in the project area. The tribals are not in the habit of feeding animals with concentrate feed. It is therefore necessary to provide them balanced concentrate feed to the animals. Locally available feed ingredients, farm produce and forest produce can be utilised for the preparation of cheap and balanced feed which will help in maintenance of health of animals. Small feed mixing plant of 3 ton capacity is suggested, which will be able to meet the requirements in the project area.

The financial requirements are as follows:

Non-Recurring:

1. Working Sheds.

a) For Mixing Feed	20,000
b) Rat Proof Godowns to store raw and finished material.	30,000
	50,000
c) Laboratory Cum Office Building	50,000
	1,00,000

2. Machinery

a) Grinder, Mixer etc.	14,000
b) Foundation for machinery coxnveyer belt, electrical installations.	8,000
	22,000

3. Equipment

a) Glass Wares, Chemicals etc.	10,000
b) Vehicle for distribution of feed	80,000
c) Working capital for the purchase of feed ingredients.	2,00,000
	2,90,000

II. Recurring:

For Office Staff	22,000
Contingencies for electricity, diesel oil for vehicle etc.	23,000
	45,000

ABSTRACT

Recurring	45,000
Non-Recurring.	4,12,000

II. VETERINARY HEALTH COVER:

Adequate health cover is necessary for successful implementation of different schemes envisaged in the plan. The terrain is rugged and most of the tribals reside in the interior villages and are not used to taking their sick animals for treatment to veterinary institutions. It is therefore proposed to have veterinary first aid centres and veterinary dispensaries which will to provide prophylactic and treatment services at the door of the tribal farmer at the appropriate time. 34 Veterinary First Aid Centres are proposed at lower order growth centres identified in the project area. These Veterinary First Aid Centres are proposed in view of the scattered tribal habitations. Educated tribal boys will be imparted compounder's training and will be posted at these centres. The idea of posting trained tribal compounders is to have local men (tribals) for the job and ensure better cooperation of the tribals. These First Aid Centres will serve as focal points where other animal husbandry activities are proposed. Veterinary Assistant Surgeons of existing and proposed dispensaries will supervise the activities of the First Aid Centres.

Six more Dispensaries are proposed at selected middle order centres identified in the project area. While selecting the middle order centres

for Dispensaries cattle population of the area is taken into consideration. The Veterinary Assistant Surgeon of the Dispensary in addition to his routine work, will supervise prophylactic vaccinations treatment and development works at first aid centres. These Dispensaries will also serve as depots for storing vaccines and medicines. Provisions is also made for strengthening the existing Dispensaries by proposing buildings and quarters for the Dispensaries and staff respectively. Permanent buildings are proposed in view of the fact that rented buildings and even huts are not available to accommodate dispensaries in the tribal areas. The number of first aid centres and veterinary dispensaries are furnished in Annexure No.VI(c)2.

Requirement of First Aid Centres

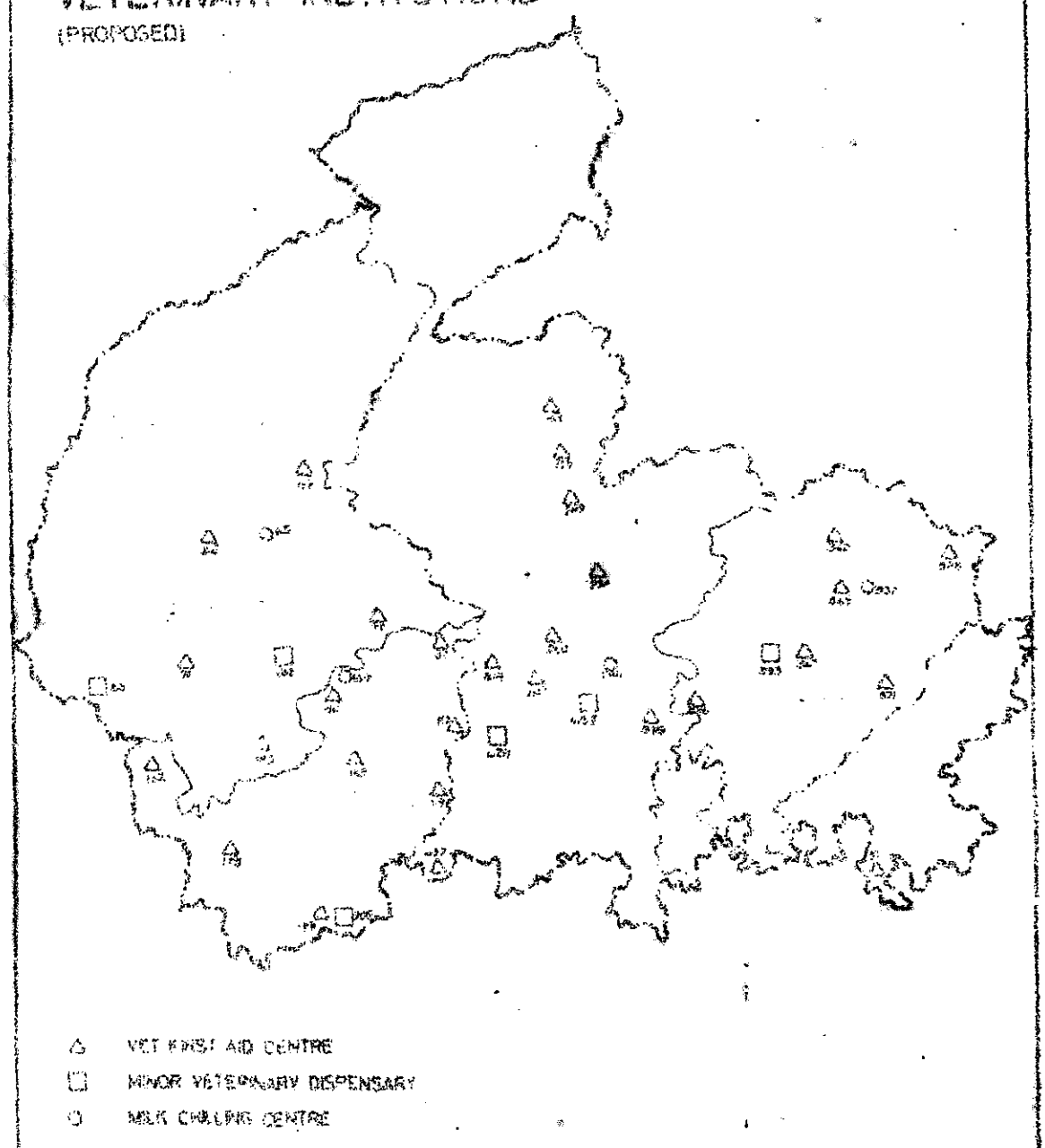
Non-Recurring:	Rs.
Purchase of Equipment.	1,000
Purchase of furniture	2,000
Trevis	1,000
	4,000

Buildings:	
Cost of Dispensary buildings	15,000
Quarters for Compounder	15,000
Quarter for Attender	10,000
	40,000

EAST GODAVARI DISTRICT PROJECT AREA

VETERINARY INSTITUTIONS

(PROPOSED)



△ VET FIRST AID CENTRE

□ MINOR VETERINARY DISPENSARY

○ MILK CHILLING CENTRE

Recurring:

Pay and Allowances of Compounder		2,600
Pay and Allowances of Attender		2,000
Medicines		1,500
Contingencies, Stamps, Stationery		400
		6,500
Non-Recurring	44,000	
Recurring	6,500	

Veterinary Dispensary

Non-Recurring:

Purchase of Equipment.	5,000
Furniture, Almyrahs etc.	3,000
Trevis (Iron)	2,000
	10,000

Cost of Dispensary building, Quarters for the staff (Veterinary Asst. Surgeon, Compounder, & Attender)	1,50,000

Recurring:

Pay and Allowances of Veterinary Assistant Surgeon.	11,000
Pay and Allowances of Compounder	2,500
Pay and Allowances of Attender	2,000
Medicines	5,000
Contingencies, Postage, Stationery etc.	500
	21,000

First Year	1,81,000
Second Year	21,000
Third Year	21,000
Fourth Year	21,000
Fifth Year	21,000

III. PASTURE AND FODDER DEVELOPMENT

The area available under pastures and fodder grasses is 23,701.01 acres which works out to0.09 acres per unit of livestock. Tribals are not in the habit of feeding green fodder to the working and other animals. Fodder crops are also not grown by them. The grazing lands are not maintained properly and most of them are over grazed as a result of which the quantity and quality of grasses is very poor. Rocky terrain, extension of reserve forest boundaries and restrictions on grazing of cattle in forest areas further sets limits to the extent of grazing of cattle and availability of pasture lands for livestock grazing. Moreover, the grazing areas are denuded of good grasses as a result of continuous grazing by over populated animals. For better performance of the livestock, improvement of pasture lands is suggested, along with fodder grasses cultivation in rotational cropping.

The improvement of pastures consists in increasing the producitivity of grass lands or by making hay. Following measures are suggested for improving production of grasses.

a) Bush clearance.

b) Fertilizer use.

c) Reseeding and Planting.

d) Moisture conservation through contour furrows.

e) Controlled grazing or timely harvesting of grass for making hay to preserve its nutritive value.

For reseeding of grass lands, high yielding and perennial grasses are proposed. Next controlled grazing in grass birs is only possible with the cooperation of tribals at village level. It is also suggested that unwanted legumes and shrubs which encroach upon the grass lands and reduce the effective area and producitivity of grasses are to be cleared. Another way to increase the production of grasses is by application of fertilizers. In addition to this, planting of grasses along the margin of the bunds, 'Nallah' sides, river banks and sides of streams etc., is also suggested. The areas under fodder grasses which are not open to grazing are proposed to be utilised for making hay by timely harvest and curing the herbage. The judicious combination of green and dry roughage is most economical. As irrigation facilities are not adequate in the area, large scale production of fodder crops are not proposed and only limited area is proposed for growing fodder crops like lucern, berseem,

cowpea, hybrid napier, poragrass etc., under irrigation wells. It is also proposed to sow these fodder grasses in rotation with other food crops. It will not be possible to develop entire pasture lands at a time, it is proposed to take up in a phased manner in each block. It is suggested that the improvement of pasture and grazing lands can be taken up by forest department as is done in case of drought-prone areas programmes in the State. Fodder development work can be taken up by the agriculture staff of the Blocks.

IV. SHEEP DEVELOPMENT:

The sheep population of this area is 5260 which is mostly non-descript and of hairy type with medium compact body. Rearing of sheep although is not practised on a large scale by the tribals of this area, yet it can be a good source of income to them. It is therefore proposed to improve the sheep of the area by introduction of improved germ plasm through Nellore breed of sheep. 500 families will be selected for rearing of sheep, for improving the flocks already owned by certain tribal families and introduction of good quality sheep with other tribal farmers as a mixed farming system. Each identified farmer will be given a unit of 20 improved Ewes and one improved Ram. This will be a economically viable unit and will

be source of income to the tribals. Middle order centres and some of the lower order growth centres will be selected for sheep rearing by selecting families from among the hinterlands villages as plenty of grazing land is available in the forest area in and around these centres. Provision is made for regular deworming, deticking and vaccinations. Provision is also made for improving the pasture lands for adequate grazing for the sheep flocks.

The working detail of a sheep unit of 20 Ewes and one Ram is as follows:

	Rs.
a) Capital Investment.	
1) Sheep Pen with 250 Sq. ft.	150.00
2) Feed Troughs, Buckets etc.	100.00
3) a) 20 good quality Nellore Ewes	3,000.00
b) One Superior Nellore Ram	200.00
	3,450.00
50% subsidy	Rs. 1,725.00
50% Loan*	Rs. 1,725.00

*Loan component can be had from any of the financial institutions in the project area.

b) Operational Cost.

1) Cost of supplementary feeding for rams for 150 days at ½ Kg. per day [illegible] Kg.	45.00
2) Cost of supplementary feeding 20 Ewes at ¼ Kg. per day.	150.00
3) Cost of supplementary feeding. for 7 rams for 60 days at 1/8 Kg. each per day.	32.00
4) Interest on loan of Rs.3,450 at 10%.	34.50

c) Anticipated Receipts.

1) By sale of ram lambs at Rs.75 each for mutton.	525.00
2) By sale of skin of dead animals (3 x 5)	15.00
3) Manure holding charges	75.00
4) Value of 7 yearling animals at Rs.100.00	700.00
	1,315.00

Planwise financial requirements are furnished at the end of the Chapter.

V. POULTRY DEVELOPMENT:

Project area offers ample scope for development of poultry which helps to augment economic status of the tribals and also provide quality protein in the diet of the tribals. But the poultry population of the area is mostly non-descript, desi type. The birds are of jungle type with coloured plumage but are hardy and resistant to local diseases. The birds are poor layers, yielding about 40 to 60 eggs per year only. The tribal

do not pay much attention on their feeding and management. As part of development programme, some improved birds were supplied to the tribal, but it has no impact on them. Following schemes are suggested for rapid development of poultry. The scheme suggested will provide supplementary income to agriculturists as well as non-agriculturists families.

a) Distribution of Cockerals:

For upgrading the local poultry, it is proposed to supply crossbred cockerals with coloured plumage in the selected contiguous villages. The entire poultry population of the villages selected for upgrading will be covered by improved variety of cockerals. It is also suggested that local cockerals have to be removed to prevent the menace of indescriminate breeding. It is expected that by upgrading programme, there will be increase in egg production by 40-50% in F_1 generation in one year. This programme will be taken up in identified growth centres in a phased manner. The planwise financial and physical requirements are furnished at the end of the Chapter.

b) Poultry Units:

Two types of poultry units are proposed to be established in the selected villages. One of the Units suggested will be of 100 layers capacity and will

be attached to each Ashram School in the project area. The idea of attaching these poultry units to Ashram Schools is that the tribal boys will be able to learn the poultry rearing and it will also provide table eggs. Initially, each unit will be supplied with matured crossbred pullets or 3 to 4 month old pullets in the first year. The advantage of this rearing is that the birds will be protected with Ranikhet, Pox, and Marek's and other medications would also be completed. This system would help these farmers to learn rearing of large sized flocks of poultry of good laying capacity during the first year and gain confidence in rearing day old chicks later. Deep litter system of raising poultry is proposed. The poultry houses are proposed to be constructed with local materials like mud walls, bamboo mesh and thatch roof. The advantage of this type of rearing is that it will provide supplementary income and rich protein food to the tribals and in addition it will provide one tonne of useful manure, which contains 3% nitrogen, 20% trace elements. The tribal farmer can use this manure on his own land which will help him in increasing the farm output.

500 layer poultry units on cooperative basis:

It is observed that small poultry units are uneconomical, and are not yielding any good results

with the tribals, it is proposed to start about 4,500 layer poultry units during the 5th plan and the number of units will be increased in a phased manner. A Cooperative Society can be formed of 10 tribals, which can manage the poultry unit. Deep litter system of raising poultry is suggested for this type of poultry units. The Planwise financial requirements are given at the end of the Chapter. Receipts and expenditure and working details of 500 layer unit is furnished in table [redacted] the end of the Chapter.

VI. PIGGERY DEVELOPMENT:

Tribal groups like Koyas and Konda Reddis rear pigs. The local varieties of pigs are non-descript and less remunerative. Pigs are prolific breeders and if properly reared will be a good source of income to the tribals. This project area has the potentiality for developing the piggery [redacted], as there is ready market at Gannavaram. Taking advantage of this Beecon factory at Gannavaram, 15 Units of 10 pigs are to be taken up at a cost of Rs.2,600/- for each unit. It is therefore proposed to have piggery development units [redacted] 200 landless and non-agricultural families, in a phased manner. These farmers, can dispose off the piglings after 5 months or when the pigs [redacted] 80 Kg weight to Beacon factory.

Thus the tribal can earn about Rs.2,000 in about five months. This amount can be utilised by the tribal for expanding his unit. The feed to be fed to piglings can be attained from Beacon Factory, Gannavaram. But these crossbred piglings require adequate health cover, which will be provided by the existing and proposed veterinary institutions in the area.

An amount of Rs.2.00 lakhs is provided for the Fifth Plan and Rs.4.00 and 4.00 lakhs are proposed for VI and VII Plan respectively.

VII. TRAINING PROGRAMMES:

1) Training of Tribal Farmers:

It is proposed to impart training to the tribal farmers, from the area in all aspects of livestock rearing, feeding and management practices. Training can be conducted at Government Cattle Cum Dairy Farm, Kakinada. Tribals rear their livestock under very primitive conditions due to their backwardness and lack of knowledge of improved methods and economic value of the livestock. It is therefore proposed to train the tribal youths in rearing of milch animals, breeding bulls, bullocks, sheep, goat, poultry and

pigs. All the aspects of animal husbandry will be dealt during the course of training. The training will be imparted for 15 days and each batch comprises of 10 persons. It is proposed to impart training to 20 batches in a year. This training will facilitate in smooth implementation of proposed schemes in the project area. The financial details are as follows:

	Rs.P.
a) Stipend per trainee at Rs.5/- per day for 15 days.	75.00
b) To and fro charges	25.00
	100.00
For two hundred persons	20,000
<u>For Teaching Staff</u>:	
1. Veterinary Assistant Surgeon	11,000
2. Attender	2,400
3. Contingencies, other charges	1,000
	14,400

Non-Recurring: For furniture and Teaching aids.

For one year	39,400-00
2nd year	34,400-00
3rd year	34,400-00
4th year	34,500-00
5th year	35,000-00

TRAINING OF VETERINARY COMPOUNDERS

About 32 trained compounders are required for Veterinary First Aid Centres proposed in the project area. It is therefore proposed to train tribal boys for compounders course. First Aid Centres are proposed for effective health coverage and also for successful implementation of animal husbandry schemes. Tribal boys who have studied upto 8th to 10th class will be selected for training. The training will be conducted at Veterinary Hospital, Kakinada and the duration of training will be 6 months. Traibal boys are proposed for first aid centres with the objective of having local man for the job and that he will stick to his job and be available throughout the year for serving the livestock of that area. After the completion of the training these boys can be absorbed in the Veterinary First Aid Centres.

Financial implications of the training course is as follows:

Recurring:	Rs.
1) Stipend for 32 candidates at Rs.100 PM for 6 months.	19,200
2) Conveyance and other incidental charges.	800
3) Other contingencies.	500
	20,500

II. Pay and other allowances of one 1) Veterinary Assistant Surgeon for 6 months.	9,000
2) T.A. for the above	1,000
	10,000
Non-Recurring:	
Furniture, Teaching material, books etc.	5,000
	36,000

PHYSICAL TARGETS AND FINANCIAL OUTLAYS

Sl. No.	Name of the activity.	V Plan		VI Plan		VII Plan		
		Physical	Financial	Physical	Financial	Physical	Financial	Total.
1.	2.	3.	4.	5.	6.	7.	8.	9.
I.	CATTLE DEVELOPMENT:							
	A) Breeding Bull Centres	15	8.57	30	17.12	--	--	
	B) Artificial Insemination	--	--	--	--	--	0.50	
	C) Dairy Development:							
	i) Supply of Milch Animals.	100	6.00	300	18.00	300	18.00	
	ii) Assistance for rearing of upgraded calves	50	0.60	300	3.60	300	3.60	
	iii) Establishment of Milk Codling Centre.	One	2.50	two	5.00	One	2.50	
	iv) Establishment of Feed mixed ~~of~~ Plant.	One	4.95	--	--	--	--	
II.	VETERINARY HEALTH COVER:							
	a) First Aid Centres	8	4.60	20	14.90	4	3.00	
	b) Opening of New Dispensaries	--	--	3	8.55	3	8.60	
	c) Strengthening of existing Dispensaries.	2	1.00	6	3.00	3	1.50	
III.	Pasture and Fodder Development	100 acres	1.00	500 acres	5.00	5.00 acres	5.00	
IV.	Sheep Development.	100 families	0.34	200 families	0.64	200 families	0.64	
V.	Poultry Development:							
	a) Distribution of Cockerals	2000	0.20	4000	0.40	4000	0.40	

Contd..

Contd...

1.	2.	3.	4.	5.	6.	7.	8.	9.
	b) Poultry Units:							
	i) 100 layer Units	10	0.07	20	0.14	30	0.21	
	ii) 500 layer Units	5 Units	2.00	10 Units	4.00	20 Units.	8.00	
VI	Piggery Development	--	2.00	--	6.00	--	6.00	
VII	Training Programmes:							
	i) Training of Tribal Farmers.	500	1.00	1000	1.78	1000	1.80	
	ii) Training of Veterinary Compounders	32 Nos.	0.36	--	--	--	--	
	Total:		35.19		88.13		59.750	183.070

(d) F O R E S T R Y

NATURE has been bountiful in giving extensive and luxuriant forests measuring 5,11,690.01 acres in the project area. Forests constitute the hub of tribal life and have moulded both his habitat and economy. They are perpetually renewable asset. Well preserved forests of adequate extent, properly dispersed with cultivation and managed scientifically confer many direct and indirect benefits on the people. Forests yield a variety of products of food and medical value and of industrial importance such as timber, gum, tanin etc. The collection and processing of forest produce bring substantial income and also provide employment to most of the tribals. They also preserve the physical features, regulate the flow of sub-soil water, mitigate floods and prevent soil erosion. Forests in the project area are rich in minor forest produce like Addaleaf, Tangedu Bark, Rella Bark, Myrabolams, Mohwa, Rawlifia Serpentina, Nux-vomica, Wood apple, Cashew, Pine apple, Citrus varieties, Jack fruits, Soap nuts, Marking nuts, Broom grass etc. The

collection and sale of minor forest produce offer a major subsidiary source of livelihood to tribals. Besides supplementing the income, the forests are also a source of food as the tribal collect edible roots, fruits and tubers honey leafy vegetables etc., to supplement their diet. The various herbs available in the forests have long served the tribals to alleviate their suffering from various ailments.

In recognition of the vital role played the forests in the life and economy of tribals and their dependence on forests the Government have evolved the forest policy without causing any hardship to the tribal inhabitants. The tribal inhabitants have also been given various concessions from time to time. The following are the forest concessions available to the forest living scheduled tribes in the State:

a) Scheduled Tribes are eligible for the removal of timber, bamboos and forest produce from the protected forests for domestic and agricultural purposes.

i) Timber for agricultural implements.

ii) Bamboo for fencing and roofing of huts and sheds in the field.

iii) Leaves for green manure.

iv) Grazing their own cattle.

v) Shifting cultivation is allowed in unreserves. In addition to the above, 18% of the posts are reserved to Scheduled Tribes and Scheduled Castes in the Forest Department. They are also given 5 years age limit relaxation over and above the maximum age limit, prescribed in the rules for purpose of direct recruitment. In the subordinate services 4% of the vacancies in every category to be filled by direct recruitment are reserved for appointment of the candidates belonging to Scheduled Tribes.

The strategy for forestry development aims at (1) Identification and removal of causes of deforestation and (2) Regeneration of major and minor forest produce yielding species. Shifting cultivation is the major cause of deforestation. The traditional areas of shifting cultivation and shifting cultivators are to be identified and schemes for rehabilitation of 'Podu' cultivators. It is proposed to raise plantation of quick growing species of commercial value along with minor forest produce yielding species to replenish depleted forests and also replenish the dwindling minor forest produce resources to provide sustained source of supplementary income to the tribal inhabitants, while affording adequate protection to the

hilly areas against soil erosion.

The working plan for forests covering the project area is not yet ready. The new working plan will have to accommodate the schemes envisaged for rehabilitation of shifting cultivators, development of coffee and other plantations and soil conservation measures. It is also envisaged to plant minor forest produce yielding species like tamarind, soapnut, shikai etc., in the unreserve forests situated near the tribal settlements. This has two fold advantages (1) the minor forest produce yielding species will augment the income of tribals and (2) it will help conserve forest as the tribals do not destroy to fell the minor forest produce yielding species.

REHABILITATION SCHEME FOR SHIFTING CULTIVATORS:

Shifting cultivation has been an important source of livelihood for several hundreds of Konda Reddi and Konda Dora tribal households in the project area. Due to hilly terrain and forests, the flat land for settled cultivation is limited. With increase in population many tribals have taken to shifting cultivation on the hill slopes either to earn their livelihood or to supplement their meagre income from settled lands. As a consequence, the shifting

cultivation is still practised in the project area. The alarming magnitude of soil erosion and irregular and uncertain rainfall in the project area dictate a strategy to discourage the tribals from this wasteful practice and provide them with alternative but assured means of income.

A two pronged programme is chalked out as a part of the strategy for agricultural development in the project area. Under this programme it is envisaged to gradually wean away the tribals from practising the wasteful 'Podu' and rehabilitate them in the proposed orchards in the hill slopes as a part of overall soil conservation and afforestation programme.

The climate, soil, altitude and topography of the project area are conducive for raising various types of fruit crops. Fibre yielding Agave Sisalana can be grown as hedge plants which not only check soil erosion but also provide a source of subsidiary income for the tribals. It is proposed to organise Cooperative Horticultural Societies with landless and shifting cultivators as members. Suitable hill slopes will first be identified and be given necessary soil conservation treatment. Suitable fruit crops and variety will be selected after survey of micro climate, soil conditions, altitude, gradient etc. Each orchard

comprises about 100 acres. It is proposed to organise 300 horticultural cooperative societies during the perspective plan period. In every society 10 tribal families would be benefitted. The Konda Reddi, Konda Dora tribal members would be given preference in these societies. These tribal members will have the usufructory rights over these farms. The plan for development of orchards was discussed in detail in Agriculture Chapter and special irrigation programme is also suggested with heavy investment. Hence in the rehabilitation programme only subsistence allowance @ Rs.5/- per day for every tribal family for a period of five years is proposed.

Scheme	V Plan	VI Plan	VII Plan
1) Formation horticultural Cooperative Societies (Nos.)	100	100	100
2) Subsistence allowance @ Rs.5/- per day for a period of 5 years.	91.25	91.25	91.25

COFFEE PLANTATION:

The existence of moderate to thick jungles, deep well drained soils, cheap labour optimum annual rainfall, humidity and temperature in the project area

provide ample scope for raising coffee plantation on an extensive scale. The area under coffee plantation gradually increased to 500 acres. Coffee Cultivation in the project area is quite encouraging both in terms of yield and quality of coffee seed produced. The coffee plantations are at present confined to Maredumilli Panchayat Samithi area. An area of 2,000 acres is earmarked for coffee in the project. Out of this, an area of 500 acres is already under coffee plantation. The success achieved so far prompts to think in terms of promoting coffee cultivation amongst the tribals. Coffee could be a paying crop particularly in the small holdings as the tribal can provide the family labour. A scheme for bringing about 1500 acres under coffee by the tribals is proposed. Under this scheme, it is proposed to colonise 1000 tribal families on coffee cultivation alloting one and half acre per family. The cost of raising one acre of coffee plantation works out to Rs.1000/- during the first year and the maintenance costs during the next 7 years comes to Rs.3,500/-. The cost of picking and processing the crop works out to Rs.500/- per tonne and the curing charges Rs.130/- per tonne. Most of the expenditure is incurred on labour. Hence the actual expenditure to be incurred by tribals is negligible. The financial implications are furnished hereunder:

Sl.No.	Scheme	V Plan	VI Plan	VII Plan	Total
a)	Coffee Plantation under private holdings (Acres)	300	600	600	1500
b)	Cost of the programme @ Rs.1500/- per acres	4.50	9.00	9.00	22.50

PLANTATIONS:

The most important forest produce of industrial importance is bamboo. Bamboo is grown abundantly in interior areas of Addateegala and Maredumilli. The bamboo yield is as much as 15 to 20 tonnes per acre. Large quantities of bamboo occur in the project. The estimated potential of bamboo in the project area works out to 1,16,020 tonnes. The average yield of bamboo comes to 70,022 tonnes in every year. Two thirds of bamboo requirement for Paper Mill at Rajahmundry can be met from project area. Hence it is proposed to raise bamboo plantations to cater to requirements of paper industry. The Forest Department proposed another 1,400 hectares during V Plan period at an estimated cost of Rs.9.15 lakhs under Sub-Plan programme.

Teak is the most important timber species

and an important raw material for Industrial purposes. Under Sub Plan programme the Forest Department has proposed to raise teak plantation in 2500 hectares at an estimated cost of Rs.22.18 lakhs.

6. The forests in the project area are rich in various minor and major forest produce items of industrial and commercial value. The potentialities of various forest produce items are furnished in the following table:

	Average Yield tonnes.	Potentiality in tonnes.
1. Bamboo	70,022	1,16,020
2. Thatching Grass	712	--
3. Broomgrass	877	--
4. Tunki Leaf	2,063	4,908
5. Adda Leaf	17,194	1,18,000
6. Rela Bark	378	3,270
7. Ippa Flower	46	475
8. Kanuga Seed	684	4,230
9. Ippa Seed	110	940
10. Koperi	49	350
11. Agave	4.25	33
12. Tamarind	6,076	16,620

13.	Wood Apple	51.3	28
14.	Sitaphal	28.2	140
15.	Amla	57	430
16.	Mango	67	162
17.	Cashew	800 Lbs	
18.	Honey	4 Tons	24.76
19.	Wax	454 Lbs	3400 Lbs

The above table clearly gives the total picture about potentialities of Minor Forest Produce items in the project area. The establishment of various forest based industries suggested in the Chapter on Small Scale and Cottage Industries are expected to utilise the available raw material. The quality of the forest is proposed to improve by undertaking regeneration of economic species to meet the growing demands. Besides the reserved forest, there is considerable area (50,000 acres) under unreserved forest where certain quick growing minor forest produce yielding species are proposed to be raised during the project period. It is proposed to earmark 2 acres each to the landless tribal families in the unreserve forest. It is also proposed to provide necessary implements, sapling and other inputs. The tribal families would water saplings, attend to inter culture

and look after the trees in the assigned plot. It is proposed to pay a subsistence allowance of Rs.5 per day per family for a period of 5 years for the services rendered by the family. This will inculcate a sense of participation in the forest management and responsibility in the tribals and help conserve and regenerate the forest wealth. The financial implications of the Forestry programmes are as follows: ---

Sl.No.	Scheme	V Plan		VI Plan		VII Plan	
		Physical.	Financial	Physical	Financial	Physical.	Financial
1.	Plantations						
	a) Teak	2,500	22.18	--	--	--	--
	b) Quick growing species	1,400	9.15	--	--	--	--
	c) M.F.P. Species	2,000	2.50	2,000	2.50	2,000	2.50
	Subsistence allowance	--	91.25	--	91.25	--	91.25
2.	Coffee Plantations (Acres)	300	4.50	600	9.00	600	9.00
3.	Scheme for shifting cultivators	10,000	91.25	10,000	91.25	10,000	91.25
	Total:		220.83		194.00		194.00

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(e) INDUSTRIES.

The economy of Project area is predominantly agro-based. The growing population coupled with low per capita holding and low per acre yield results in increasing pressure on land. This necessitates diversification of occupational pattern of the project population. The secondary and tertiary sectors have remained undeveloped so far. This phenomenon is attributed to the appalling illiteracy, dearth of skilled personnel and enterpreneurship. Massive education programme in the Project area will soon produce a large number of educated and skilled tribal youth as well as enterpreneurs within the Project area. The State Government's massive programme of industrialisation with a package of incentives for establishing industries in tribal areas will surely attract industrialists to establish industries in the Project area. The Project area offers good scope for various locally available raw material based and labour intensive industries.

The industrialisation programme should be so moulded, that it increases the absorbing capacity of the tribals to retain the benefits generated by this new activity. The local tribal communities lack necessary entrepreneurial skills, technical know-how and investment capacity besides the absence of infrastructure for developing industries. These factors have contributed for the poor progress of industrial development.

The Project area is endowed with rich agro-forest based industrial potentialities. An inventary of various items of forest produce viz., Bamboo, Teak, Nux-vomica seed, Adda leaf, Koperi grass, Tamarind seed, Seekai, Myrobolams etc. has already been made in the Chapter on Forestry. The agricultural potentialities have already been discussed in the Chapter on Agriculture. The agro-climatic conditions in the Project area are ideally suited for raising plantation crops like co-coa, pepper, coffee, cashew, lime, mango, banana Kamala, (Loose Jacket Organge) papaya, pine-apple and tuber crops like Ginger, tapioca etc. With the development of plantation crops, the Project area also offers excellent scope for development of Fruit canning and processing industry. However, the Project area has

no substantial identified mineral deposits except small quantities of graphite located in a small area of Rajavommangi Block. Therefore, there is very limited scope for development of mineral-based industries.

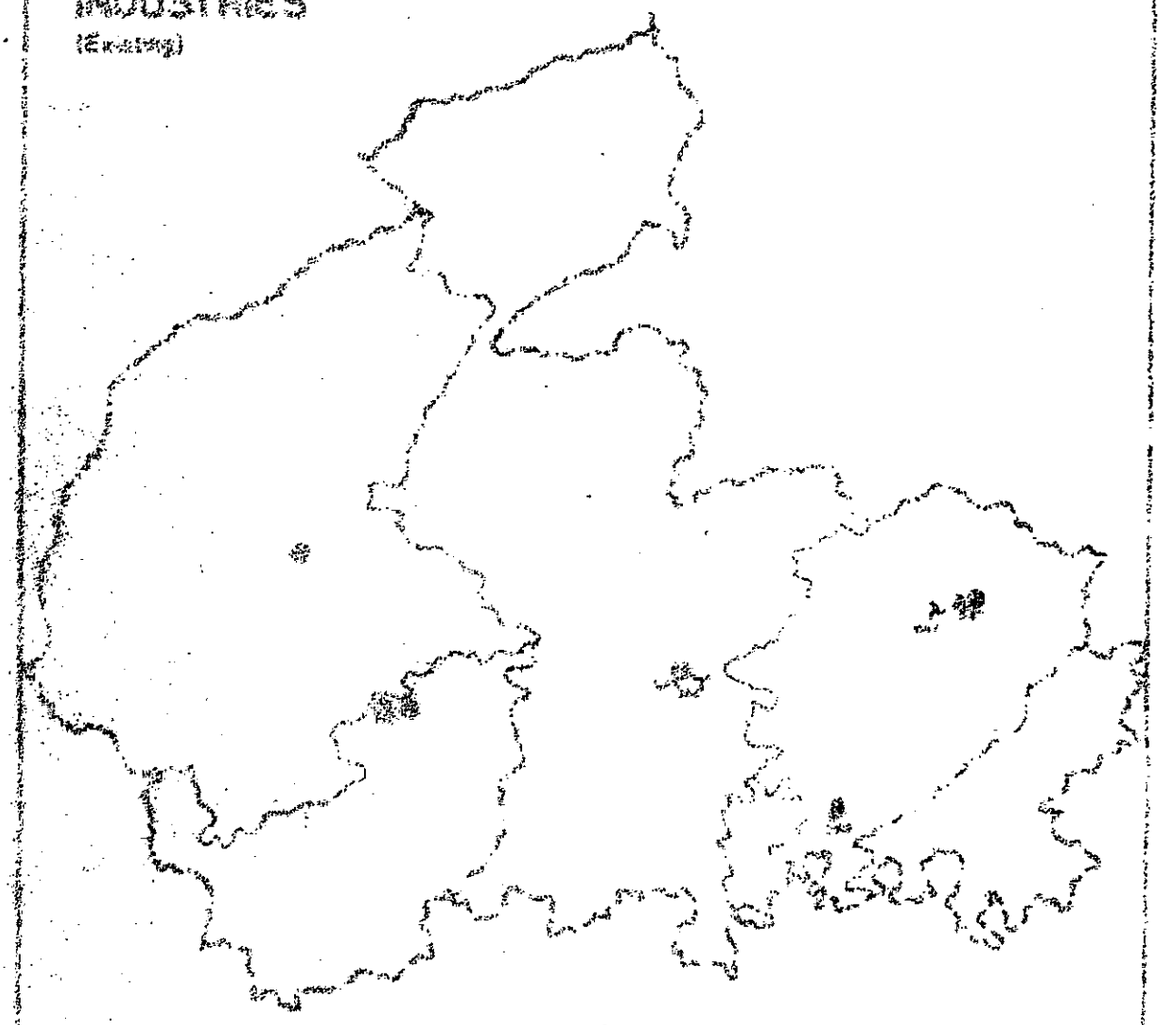
Prior to formation of Girijan Co-operative Corporation minor forest produce was purchased by the private traders at rock bottom prices from the tribals. With the establishment of Girijan Co-operative Corporation the minor forest produce items are being marketed through a net work of Girijan Primary Co-operative Marketing Societies and its D.R.Depots. Girijan Co-operative Corporation has monopoly rights over minor forest produce while it has to compete with the private merchants in open-market for purchasing agricultural produce. All the minor forest produce items are marketed in a unprocessed form only. There is excellent scope for starting processing industries of agro-forest produce in the Project area. power and water are available in the Project area. Labour is cheap and is available in abundance

The industrial sector is very weakly developed in the Project area. Only a small percentage i.e., 0.7 % of population is working in industrial sector, whatever little industrial activity that exists in the Project area is all controlled by relatively advanced non-tribal entrepreneurs. The industrial units functioning in the Project area are Messrs. Venkateswara Fibre and Rope Industry at Addateegala for the manufacture of Koperi grass ropes, M/s. Zilla Gram Swarajya Mandali at Addateegala for the manufacture of cotton slivers and umbar yarn, M/s. Mrugaraju Khandasari Sugars at Rajavommangi, M/s. Rama Gopal Graphite Mining Corporation at Puligogulapadu and M/s. Krishna Rice and flour mill at Dusaripam. Nearly, 200 tribals are employed as unskilled labourers in these industries. However, the industrial activity has been initiated in the Project area with the establishment of "Godavari Ply woods" factory at Rampachodavaram. It is a medium scale forest based industry. It is a joint venture promoted by Andhra Pradesh Industrial Development Corporation, Hyderabad. Besides this, cottage industries like Adda leaf plate stitching centres, bee-keeping units etc. have been started in the project area by Khadi and Village Industries Commission and Girijan Co-operative Corporation.

EAST GOJJAM DISTRICT PROJECT AREA

INDUSTRIES

(Existing)



- [illegible] ROPES CRUSE ROPE MAKING UNIT
- [illegible] FOR TEN SENDER AND UNDER WARN UNIT
- [illegible] KOMBOLCHA SHOAR UNIT
- [illegible] GRAPHITE MINING UNIT
- [illegible] RICE AND FLOUR MILL
- [illegible] ALTHUCC INDUSTRY
- [illegible] BEE KEEPING

The training cumproduction centres which were established in III Five Year Plan period in the Project area were closed for want of funds and there was no follow-up programme for the trainees coming out of these centres after successful completion of their training. There is an artisan community namely, Kammara, who are equipped with traditional skills. If the tribals are to take the advantage of industrial development programme and compete with the advanced section, they have to be equipped with entrepreneurial skills, technical know-how and necessary capital besides necessary infrastructure.

All that is required is training in entrepreneurship, technical know-how, financial assistance and provision of infrastructure facilities like roads, power supply and institutions. A programme for training and assistance for setting cottage and small scale industries which in the long run help to achieve sustained economic growth to diversity the man-power from the agricultural sector, is a necessary adjunct in this perspective plan.

Based on resource and employment potential, the following raw material resource and demand based

industries have been suggested in the Project area.

MINERAL BASED INDUSTRIES:

Crucible Industry: The surrounding areas of Puligogulapadu in Rajavommangi have rich deposits of graphite ore. The ore is mainly used in crucible industry. It can with-stand the heat of 1000°C and useful in electrode industry and also for preparation of pencil rods and lubricants. The graphite deposits near Puligogulapadu offer ample scope for development of this industry. The mineral can be quarried and supplied to the Graphite crucible industries at Rajahmundry and Samalkot. Mining of this ore can be entrusted to A.P.Mining Corporation. An amount of Rs.5.00 lakhs would be required for grafting the raw material. It provides employment to about 1,000 tribals as unskilled workers.

AGRO FOREST BASED INDUSTRIES:

Palm Leaf Products manufacturing Centres: The palm leaf is used as raw material in basket making and mat weaving. The tribals with their indeginous skills are capable of making baskets and mats with palm leaves. There is increasing demand for palm leaf baskets of various household and commercial purposes. The Girijan Co-operative Corporation requires palm mats. and baskets

for packing tamarind. The entire demand of the Girijan Co-operative Corporation can be met within the Project area. Sufficient raw material is available in the Project area. Therefore, five centres have been proposed at Rampa, Yellavaram, Boduluru, Zaddangi and Santhapaidipalem. The estimated cost of each proposed centre works out to Rs.10,000/-.

The total cost of 5 Units = Rs.50,000/-.

ROPE MAKING UNIT:

One Koperi Grass rope making unit is functioning at Addateegala under private sector in the Project area. Koperi and other varieties of wild grass used as fodder, roofing material, and for rope making are available in the Project area. It is also used as raw material in paper and jute industry and there is a good demand for Koperi grass rope from the Andhra Pradesh Paper Mills, Rajahmundry. The A.P.Paper Mills require considerable quantity of grass rope for bundling up of bamboos at the factory for feeding them to chipping machines. Besides there is very good market in the district for various kinds of ropes made in the Project area for domestic purposes. Rope making units can be started at Rampa, Boduluru, Chinarelangipadu,

and Chakirevulapadu. Each unit provides employment to 30 unskilled tribals in collection of grass and manufacture of ropes and twines for country cots. The financial implications for the proposed unit are as follows:

	Rs.
a) Land and Building	15,000
b) Machinery	20,000
c) Working capital	30,000
	65,000
	x 4 Units
	= 2,60,000

ADDA LEAF PLATE STITCHING AND HILL BROOMS:

Adda leaf is available in plenty in the forests of Project area. Adda leaves, among other minor forest produce, are collected by the tribals sold to the Girijan Co-operative Corporation at the weekly shandies as it has monopoly rights to purchase the minor forest produce. A Kilogram of adda leaves is sold at 25 to 30 paise. Collection of adda leaves hill brooms and other minor forest produce items is an important subsidiary occupation to the tribals in the Project area. A part of the adda leaves collected by the tribals can be processed and stitched into leaf plates which provides employment to tribal women

folk. This does not require any specialised skills. In a day one person can stitch 150 plates and the total cost of manufacturing 100 plates would be about Rs.1.25 and they can be sold at Rs.3.00. If the financial assistance is provided to the tribals in the Project area, a good number of tribal women would be benefited by this scheme, and it will help to supplement income of the tribals. In view of the availability of raw material in large quantities and its employment potential for tribal women, 8 Adda leaf plates and broom units are suggested at Addateegala. Rampachodavaram, Maredumilli, Maredubaka, Rayapalli, Indukurpeta, Kundada and Vatangi which will benefit nearly 100 tribals. The financial implications of the scheme are as follows:

	Rs.
a) Land and Building	2,000
b) Equipment and working Capital	10,000
	12,000 x 8 Units
	= Rs.96,000/-

BAMBOO CHIKS UNIT:

Bamboo is used as raw material in Agarbathi industry (scented sticks). The forests of the Project area are rich in Bamboo plantations and the tribals are adept in slicing and making bamboo chiks. . Seven bamboo chiks units are proposed at Rampa, Manturu, Chavitidibbalu, D.Ramavaram, Maredumilli, Aminabada and Rajavommangi. Each unit will provide employment to 14 tribals. The estimated cost for the establishment of the unit is given hereunder:

	Rs.
a) Land and Building	5,000
b) Machinery	2,000
c) Working capital	6,000
	13,000 x 7 Units.
	Rs.91,000/-

FRUIT PULP EXTRACTION UNIT:

Mango, Kamala, Orange, pine-apple and banana are the major fruits grown in the Project area. Due to lack of entrepreneurial talents, capital and technical know-how among the tribal producers, the fruits are sold away to the merchants. Due to inadequate communication and transport facilities and other factors, neither they could be transported to distant

places for export nor it could be processed and preserved for sale. As a result, the producers should not but dispose of the produce at rock bottom prices in weekly shandies and some times at the village to the private merchants. The tribal producers are losing heavily in the transactions. In order to provide employment and to increase the sale value of the produce, two fruit pulp extraction and preservation units are proposed at Addateegala and at Satlavada. Each unit will provide employment to 15 tribals and the financial implications are as follows:

	Rs.
a) Land and Building	25,000
b) Machinery and Equipment.	50,000
c) Working capital	1,00,000
Total:	1,75,000 x 2 Units.
	= Rs.3,50,000

BRICK AND TILE MAKING UNIT:

There is an increasing demand for bricks and tiles for construction of Buildings for Offices. Schools, Institutions, Residential quarters etc. within and outside the Project area. At present they are purchased and brought from Rajahmundry, Kakinada and other distant places. Suitable clay is available at

Devipatnam, Dursaripamu and Bhimudupakalu area. Hence 3 Brick making units can be started under co-operative sector with 25 members. Each member has to take 20 shares worth of Rs.200/-. As the economic condition do not permit to purchase 20 shares it is proposed to get the financial assistance from Khadi and Village Industries and Integrated Tribal Development Agency and the tribal can be asked to contribute one share i.e., Rs.10/- while the rest will be contributed by I.T.D.A., and Khadi and Village Industries Commission. The financial implications are as follows:

	Rs.	
a) Land and Building	3,000	
b) Machinery and Equipment	5,000	
c) Working capital	25,000	
	33,000	x 3 Units.
	Rs.99,000	

MANUFACTURE OF SPLINTS AND VENEERS:

Splints and Veneers are the principal raw material used in the manufacture of matches. Splints (match sticks) and Veneers (Sheet of timber used in the manufacture of match boxes). A large quantity of light wood suitable for making veneers and splints is available in the Project area. 2 Splints and veneers

units with an installed capacity of 20 quintals of splints and 20 grosses of boxes per day per unit is suggested at Rampachodavaram and Mohanapuram. It also provides employment to tribal women as house-hold industry. Each unit will provide employment to 9 skilled and 71 unskilled tribals. The financial implications are as follows:

	Rs.
a) Land and Building	10,000
b) Machinery and Equipment	50,000
c) Working capital	90,000
	1,50,000
	x 2 Units
	Rs.3,00,000

TAMARIND DALL UNIT:

Tamarind, one of the main items of minor forest produce, is abundently available in the project area. Tamarind is multipurpose fruit. Its juicy pulp is used as an in-gradient in preparation of many dishes and has good market, while its kernal powder is used as starch in sizing of textiles, in making gum, paper, etc. The tamarind can be purchased from Girijan Co-operative Corporation for the proposed Tamarind (Pulp) Unit at Gangavaram. It will provide employment for nearly

70 persons. The financial implications of the proposed tamarind dall unit is as follows:

	Rs.
a) Land and Building	50,000
b) Machinery and Equipment	50,000
c) Working capital	1,20,000
	2,20,000

TAMARIND STARCH UNIT:

In view of the availability of raw material in large quantities 4 Tamarind Starch units are proposed at Devipatnam, Y.Ramavaram, Geddada and Kondapalli. The cost of each unit is as follows:-

	Rs.
a) Land and Building	5,000
b) Machinery and Equipment	7,000
c) Working capital	8,000
	20,000 x 4 Units.
	= Rs.80,000

SEEKAI AND SOAP NUT POWDER UNIT:

Large quantities of soapnut is available in the forest areas of Rampachodavaram and Yellavaram taluks. Girijan Co-operative Corporation is purchasing the Seekai and soap nut from the tribals. The other ingradients like castor oil, mohwa oil etc. for the manufacture of soap and shampoo are also grown in the project area. There will be a good market to seekai and soap nut powder in the project as well as in the district. 4 Units are suggested at Bandapalli, Y.Ramavaram, Maredumilli and Bornagudem. Nearly 30 tribals will be benefitted by this scheme and the financial implications are as follows:

	Rs.
a) Land and Building	5,000
b) Machinery and Equipment	5,000
c) Working capital	13,000
	23,000 x 4 Units
	= Rs.92,000

PALM FIBRE EXTRACTION UNIT:

Plenty of palm tree grooves are found in the project as well as outside the project area. Palm fibre is extracted from Palmyrah spades. It is a subsidiary occupation to tribals in the slack season. At

present, the tribals are getting low prices for the fibre as there is no organised markets and healthy competition. The non-tribal merchants are deceiving the tribals by using false weights and also paying low prices. The fibre has good demand in the district and also it is exported to foreign countries from Kakinada. To provide gain-full employment and to eliminate exploitation of middlemen, three small mechanised units are suggested at Rampachodavaram, Bhimudupakalu and Boyapadu. The marketing of the fibre may be taken up by the primary societies of Girijan Co-operative Corporation. Nearly 150 tribals will be benefitted by this scheme. The cost of each centre is as follows:

	Rs.
a) Land and Building	5,000
b) Machinery and Equipment	4,000
c) Working Capital	16,000
	25,000 x 3 Units
	= Rs.75,000

TRAINING CENTRE FOR THE PROPOSED PALM FIBRE EXTRACTION UNITS:

A training programme is also necessary to impart training to the tribals who would be engaged in the proposed mechanised units. This training programme will form an integral part of the proposed mechanised units.

A Society will be formed and exclusively with tribals as its members and they will be given training for a period of one year. After successful completion of training they will be absorbed in the proposed mechanised units. This training unit is proposed to be strated at Rampachodavaram.

	Rs.
a) Land and Building	10,000
b) Tools and Implements	1,000
c) Working Capital	35,600
	46,600

PALMYRAH JAGGERY MAKING UNITS:

3 Jaggery making units are suggested at Gangavaram, Y.Ramavaram and Dursaripalem. Each unit will provide employment to 15 tribals. The financial implications for starting each unit is as follows:

	Rs.
a) Land and Building	5,000
b) Machinery and Equipment	15,000
c) Working capital	25,000
	45,000 x 3 Units
	= Rs.1,35,000

PACKING MATERIAL AND SLATE FRAME INDUSTRY:

Large quantities of soft wood suitable for making slate frame is available in the project area. The scrap of the soft wood is used as packing material. There is a good demand for slate frames from slate manufacturing units of Prakasham District. The waste material of Saw mill will be useful for paper/and other industries located at Rajahmundry and Kakinada. It is proposed to start one unit at Addateegala under Co-operative Sector. This will be a part of light wood complex, which includes a saw mill. The society will be formed with 20 tribals as members and is proposed to collect one share of Rs.10/- from each member. The remaining 19 shares will be financed by Integrated Tribal Development Agency. The total cost of the scheme is as follows:

	Rs.
a) Land and building	20,000
b) Machinery and Equipment	48,200
c) Working capital	25,370
Total:	93,570

MANUFACTURE OF COLOURS AND DYES:

Large quantities of Butea frondosa (Tel Modugga), wrightia tinctoria (Tel pale), Morinda Citrifolia (Tel Maddi), Mallotus philipnensis (Tel vosanta)

etc. are available in the Project area. These are used as raw material in manufacturing dyes. It is proposed to start one unit at Pedageddada. It will provide employment to 30 tribals and an amount of Rs.1.00 lakh is required for the proposed unit.

PREPARATION OF JAMS, JELLYS AND PICKLES:

Mango, Kamala, Orange, Banana, Pine-apple are grown in the Project area. Most of the fruits are sold away in the shandies. This can be processed as Jam, Jelly and Pickles. This industry provide employment to 10 tribals. There is good demand for these products from hotels, restaurants, defence establishments and other higher income group. Women graduates in home science can be appointed to guide and supervise the proposed units at Addateegala and Satlavada. An amount of Rs.15,000 is required for each unit and for two units an amount of Rs.30,000 is required.

MANUFACTURE OF 'APPADAMS' AND BAKERY PRODUCTS:

The scheme is intended to provide part time employment for women. Under this scheme it is proposed to supply equipment to the workers free of cost by the entrepreneur. Raw material will be supplied to them

and finished products will be collected from their houses and marketed by the entrepreneurs. Besides this, one bakery unit for the manufacture of bakery products is suggested. 4 Units are suggested at Rampachodavaram, Maredumilli, Addateegala and Rajavommangi. The financial implications are as follows:

	Rs.
a) Land and Building	5,000
b) Machinery and Equipment	8,000
c) Working capital	15,000
	28,000x4 Units
	= Rs.1,12,000

OIL ROTARY UNITS:

Oil seeds like Groundnut, Gingelly, Seasumum etc. are abundantly grown in the Project area. Oils of these seeds are used for both cooking and lighting purposes by the tribals. In order to cater to the needs of the tribals in their respective areas, eight oil rotary units are proposed at Indukurupeta, Y.Ramavaram, Yellavaram, Boduluru, Kendamodalu, Zaddangi, Rajavommangi and Pedamallapuram. Each unit will provide employment to 3 tribals. The financial implications are as follows:

	Rs.
a) Land and Building	5,000
b) Machinery	10,000
c) Working capital	2,000
	17,000 x 8 Units
	= Rs.1,36,000

RICE AND FLOUR MILLS:

The tribals in the Project area are now taking their paddy and pulses to the distant places for dehusking and flouring purposes. They are facing a lot of hardship in transporting the paddy. It is also proposed to increase the extent of area under paddy and pulses and the out put is expected to increases the project area. Establishment of rice mills will reduce the consumer distance and it is an economic proposition and will provide employment to the tribals under self-employment scheme. 4 Rice and flour mills are proposed at Bandapalli, Yellavaram, Vetukuru and Rajavommangi which provides employment to 16 tribals. The financial implications are as follows:

	Rs.
a) Land and Building	10,500
b) Machinery	20,000
c) Equipment	800
	31,300 x 4 Units
	= Rs.1,25,200

MINI RICE AND FLOUR MILLS:

It is also proposed to start 4 mini rice and flour mills. The Lead Bank will finance the identified tribal entrepreneurs to start the mini rice and flour mills at Chinaramanayyapeta, Chavitidibbalu, Kondamodalu and Raghavapatnam. The margin money will be provided by Integrated Tribal Development Agency funds. 8 tribals will get employment opportunity and the cost of each unit is as follows:

	Rs.
a) Building	5,000
b) Machinery and equipment	16,500
c) Working capital for one month	700
d) Pre-operative expenses	800
	23,000 x 4 Units
	= Rs. 92,000

GENERAL ENGINEERING WORKSHOP FOR SERVICING AND REPAIRING OIL ENGINES, TRACTORS, MOTORS AND AGRICULTURAL IMPLEMENTS:

At present the tribals are facing hardship to transfport oil engines, agriculture implements, motors etc. to distant places for servicing and repairs. Pumpsets are remaining idle for want of servicing and repairing unit at nearby places. The maintenance cost

is increasing as they have to incur heavy expenditure often to transport them to distant urban areas. A model general engineering workshop will cater to the needs of the Project area for servicing of oil engines, tra[illegible], motors, agricultural implements etc. This workshop facilitates tribals in getting repairs done immediately. It is proposed to start workshops at Rampachodavaram, Maredumilli, Rajavommangi and Addateegala which provides employment to 8 tribals. The financial implications of each workshop is given hereunder:

	Rs.
a) Land and Building	5,000
b) Machinery and equipment	20,000
c) Working capital	5,000
	30,000 x 4 Units
	= Rs.1,20,000

SCHEME FOR THE MANUFACTURE OF SAGO FROM TAPIOCA:

The tribals in the project area have taken up cultivation of tuber crops like tapioca. Tapioca is main raw material in the manufacture of sago pellets. Panchayat Samithis are supplying the tapioca seedlings to the farmers to raise in chelaka podu fields at free of cost. It is proposed to increase the area under tapioca [illegible] by the end of the plan. There is a

good demand for this product, and in view of its scope for development, 2 small units are proposed at Rampachodavaram and Thimmapuram. Each unit will provide direct employment for 60 tribals. The financial implications for opening of this unit are as follows:

	Rs.
a) Land and Building	1,20,000
b) Machinery and equipment	1,00,000
c) Working capital	60,000
	2,80,000 x 2 Units
	= Rs.5,60,000

CHARCOAL MANUFACTURING UNIT:

The land less tribals in the Project area are engaged in collection and selling of firewood to the local merchants which is used as fuel for cooking purpose. Eventhough it is one of the subsidiary occupations of tribals, the tribal gets only a meagre amount. The use of charcoal as fuel is common in the towns and countryside. A Co-operative Society is proposed to be organised with 15 tribals as members at the following places. Bandapalli, Y.Ramavaram, Maredumilli and Cherukupalem. Each member will be given 20 shares and each tribal will contribute Rs.10/- for one share and for the remaining 19 shares finances will be given from I.T.D.A.Funds. The financial implications of the scheme are as follows:

	Rs.
a) Building	4,000
b) Machinery and equipment	5,750
c) Working capital	13,050
	22,800 x 4 Units
=	Rs.91,200

BEE-KEEPING INDUSTRY:

The scheme was introduced in the Project area during the year 1960-61 in Maredumilli block and extended to other blocks by the end of 1968. These units are financed and managed by Khadi and Villages Industries Commission, Hyderabad. Now they are run through its recognised agency viz., Kasturba Gandhi National Memorial Trust headed by one Apiarist at Seetanagaram of East Godavari District. 300 colonies have been distributed to both tribals and non-tribals engaged in this industry. Nearly 100 households are benefitted by this scheme. The Commission is distributing boxes on 50% subsidy to non-tribals and on 75% subsidy to tribal bee-keepers. Annually, on average 4 to 5 Kgs. of honey is expected from each colony.

The natural flora and cultivated crops in the project area are suitable for the development of this industry and the present coverage is very small. Hence it is proposed to start two circle units, one for Rampachodavaram taluk and the other for Yellavaram taluk (Addateegala) with a field man at each centre. Each unit will cover the villages of respective blocks. The field man duty is to give technical guidance and to supply the required bee-keeping equipment. Annually 400 bee-hive boxes will be supplied through these units on 75% subsidy to tribals in the project area. Nearly 50 tribals will be benefitted by introduction of this cottage industry. The financial implications are as follows:

	Rs.
a) Land and Building	5,000
b) Cost of 400 boxes I.S.I. Newton, 8 frames @ Rs.60/- per year.	24,000
c) Cost of 4 extractors @ Rs.65/-	260
d) Working cap-ital (Field men scale per year)	2,400
	31,660 x 2 Units
	= Rs.63,320

DISTRIBUTION OF IMPROVED HAND TOOLS TO VILLAGE ARTISANS - CARPENTERS, BLACKSMITHS, AND TAILORS IN RAMPACHODAVARAM, MARELUMILLI, ADDATEEGALA, RAJAVOMMANGI AND SANKAVARAM VILLAGES:

Kammaras, skilled traditional artisans are found in all the Blocks of the Project area. But they are found scattered in all places. Family need based programme is suggested by which necessary tools, financial assistance, technical know how would be provided to the artisan households. It is also proposed to assist them by providing tailoring machines on 90% subsidy basis. Hence it is proposed to assist them by providing improved hand tools and tailoring machines on 90% subsidy basis. Each artisan will be given Rs.200/- worth tools. 40 tribal artisans will be benefitted by this scheme, while 15 tribal women are supplied with tailoring machines. The subsidy amount can be met from the grants of I.T.D.P. The cost of the scheme is as follows:

	Rs.
a) Cost of distribution of tools to 20 carpenters and 20 blacksmiths.	4,000
b) Tailoring machines to 15 tribal women.	7,500
	11,500 x 4 Units
Scheduled Area:	= Rs.46,000/-
c) Cost for distribution of tools to 10 carpenters, 10 blacksmiths and tailoring machines to 8 tribals in Sankavaram villages.	6,000
	52,000

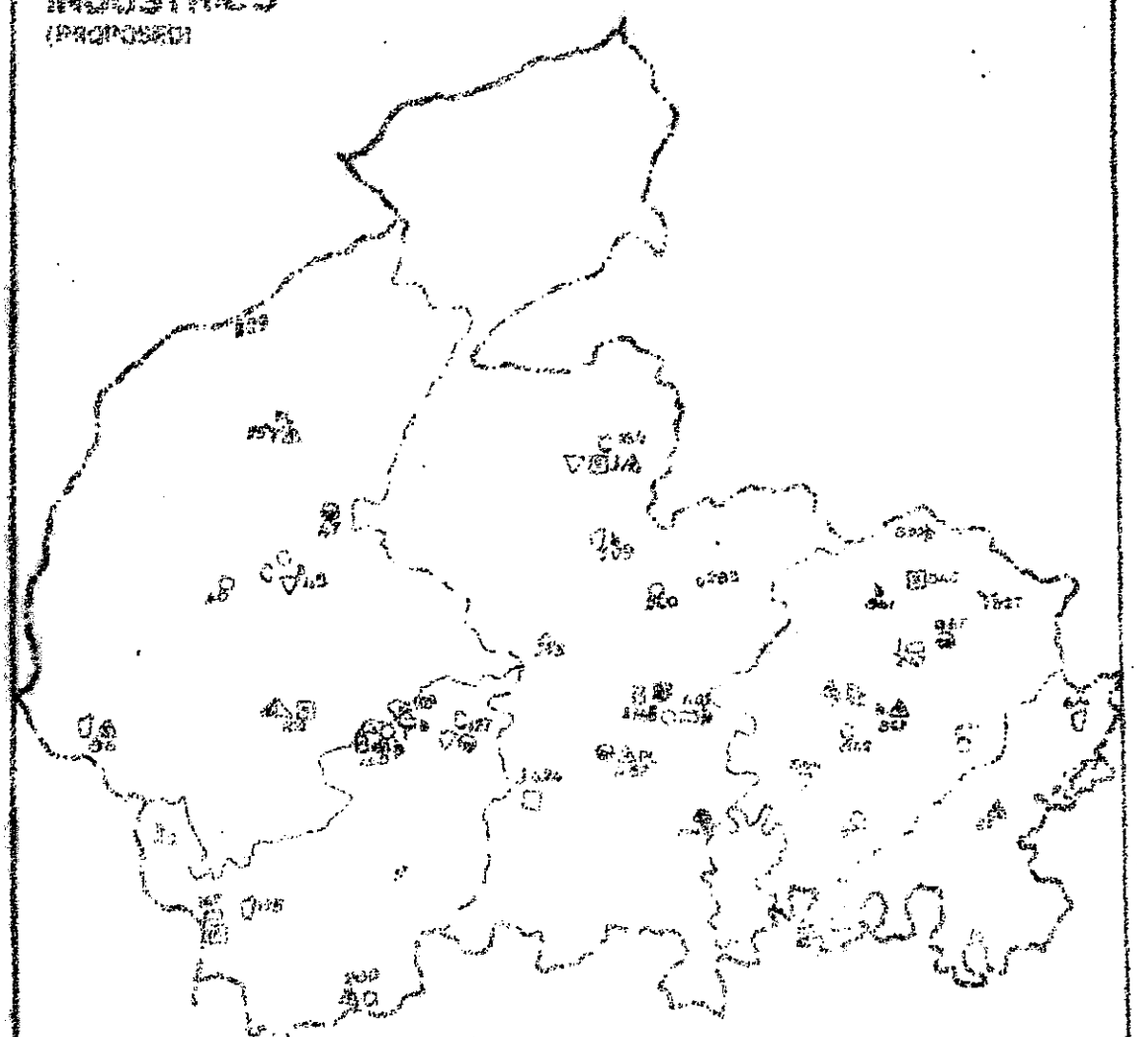
COTTAGE INDUSTRIES CLUSTER:

It is proposed to start four cottage industries clusters one each at the block head-quarters in project area. The industries proposed in the cluster will be accommodated under one roof with all facilities and raw material. Necessary minor forest produce can be purchased from Girijan Primary Co-operative Marketing Societies. The proposed centres will provide gainful employment to tribal youth, men and women, to learn and introduce new techniques in their traditional occupations. An instructor will also be appointed for guidance and supervision of the tribals working in the various units of the cluster. The following are the industries proposed in each cluster.

Sl. No.	Type of Industry.	Estimated cost Rs. M & E	W.C
1.	Wooden furniture workshop with wooden cutting saw mill for the manufacture of doors, windows, ventilators etc.	11,000	25,000
2.	Myrabolam processing	10,000	27,000
3.	Tanning pits	2,000	5,800
4.	Pottery	3,000	2,000
5.	Preparation of paper bags from old paper for women.	600	850
6.	Manufacture of chalk crayons for women.	5,000	7,750
		31,600	68,400

EAST GOGAMAR DISTRICT PROJECT AREA

INDUSTRIES
(PROPOSED)



- PL PALM LEAF PRODUCT UNIT
- SUPER GRASS MATS MAKING UNIT
- ADDA LEAF PLATE STITCHING UNIT
- BAMBOO CHEMS
- FRUIT PULP EXTRACTION UNIT
- BRICK AND TILE MAKING
- SPIRITS AND VENEERS
- TAMAPINO AND DALL UNIT
- TAMAPINO SPANCH UNIT
- SEEKAI AND SOAPNUT POWDER
- PALM FIBRE EXTRACTION
- BOTTLING UNITS
- SLATE FRAME INDUSTRY
- COLOURS AND DYES
- OIL ROTARY
- RICE AND FLOUR MILLS
- MINI RICE AND FLOUR MILLS
- SAND INDUSTRY
- CHARCOAL UNIT
- BEE KEEPING CIRCLE

The financial implications for cottage industries clusters are as follows:

	Per cluster.	For four clusters.
1. Non-recurring expenditure for machinery and equipment	31,600	1,26,400
2. Non-recurring expenditure for Buildings	25,000	1,00,000
3. Working capital	68,400	2,73,600
Total:		5,00,000

It is also proposed to revive the Training-cum-Production Centres at R.Chodavaram and Addateegala and its estimated cost works out to Rs.1.00 lakh for imparting training to tribals.

The total estimated cost for the proposed industrial units during the three plan periods works out to Rs.45.70 lakhs and is given in the Aneexure No. VI (e) 1.

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(f) ROADS AND COMMUNICATIONS

COMMUNICATIONS are life lines of any area for its social and economic development. Inaccessibility is a more formidable impediment in the smooth implementation of development programmes. Key to successful extension lies in the opening up of inaccessible areas with communication facilities to bring about changes in attitudes, knowledge and understanding level of the people to motivate them to accept the improved technology or other economic pursuits. The problem of communication facilities has to be tackled on a priority basis as roads are necessary adjuncts to activise dormant economic potential of the region. Opening of tribal areas facilities percolation of development benefits, fostering of social contacts, development of trade and commerce. The tribal areas have long remained isolated and inaccessible. This isolation resulted in a web of superstitions and present low level of technology in the tribal areas. The communications were not given priority in the previous plans due to the fear that the tribal areas and tribal people are made more

vulnerable to the onslaughts of moneylenders and land grabbers. With the enactment of protective regulations and their stringent implementation, the tribals are no longer sovulnerable as to warrant abandonment of communication development programme in the project area. In recognition of crucial role played by the transport and communication system for the integrated development of the project area, the road construction programme has been evolved in such a way as to provide efficient linkages between all growth centres, where the package of service and functions besides providing road communications to all shandy centres to facilitate movement of men, material and know-how. In the project area during the perspective plan periods provision of postal and telecommunication facilities are also proposed on the same lines.

In the project area out of 726 settlements* only 83 are connected by pucca roads, while 234 villages are linked by katcha roads. The remaining 409 villages do not have road connectivity. The villages connected by katcha roads also remain cut off during rainy season and thus on the whole three fourths of villages of the project area remain isolated during monsoon rendering extension work difficult. The

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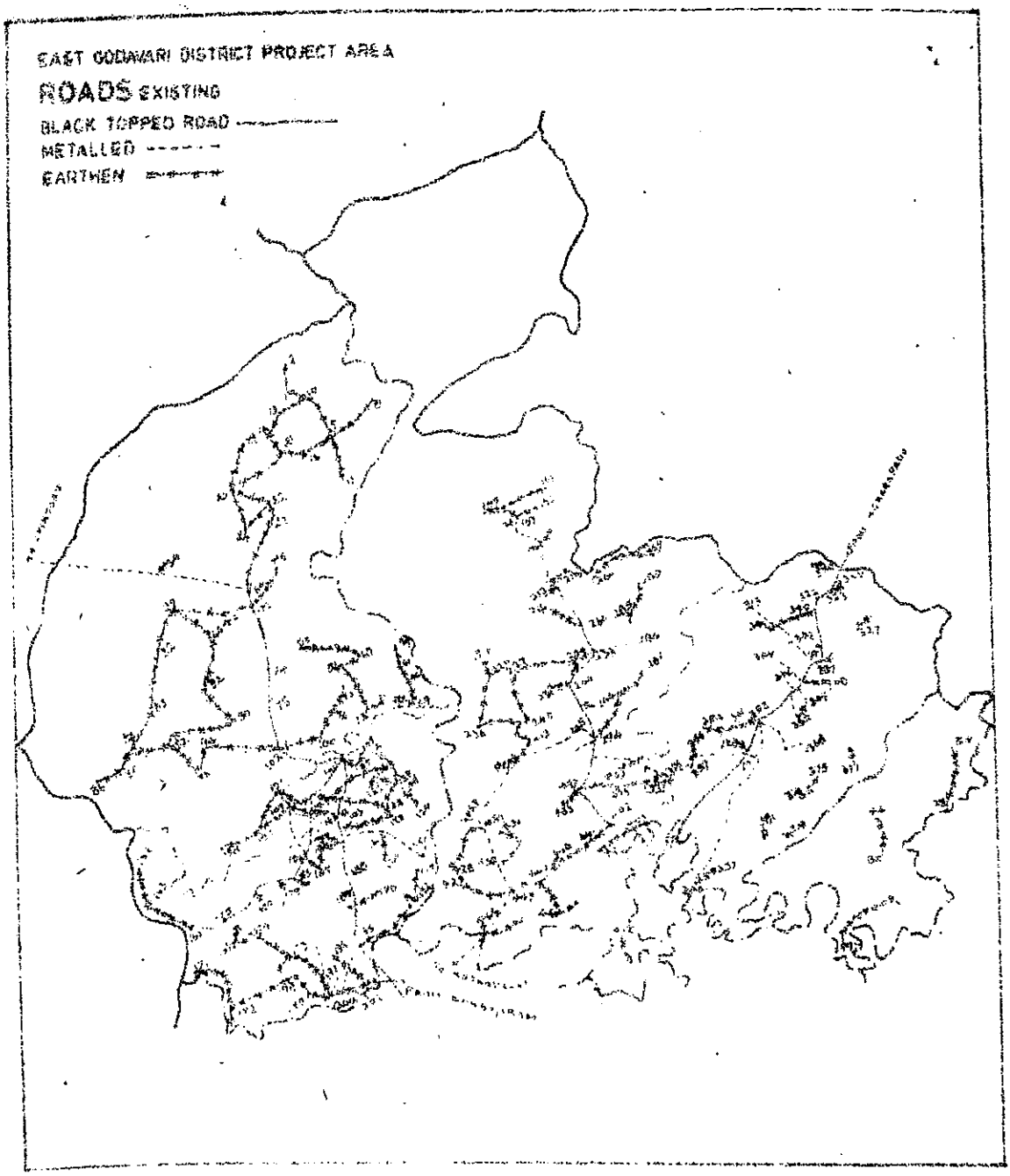
*This includes 143 uninhabited settlements.

following table throws light on the road facilities available in the project area and district.

Sl.No.	Item	Project area		District	
		No.of villages	Per-centage	No.of villa-ges.	Per-centage
1.	No. of villages	726	100.00	1,513	100.00
2.	Villages connected by pucca roads (Sur-faced roads)	83	11.45	505	33.38
3.	Villages connected by katcha roads.	234	32.27	397	26.24
4.	Villages not connected by any road	409	56.28	611	40.38

From the above table it can be seen that a wide gap exists between project area and district in respect of road facilities as 33.38% of the villages in the district are provided with pucca roads while only 11.45% of the villages in the project area are having pucca road facility. Further it can be seen that 43.72% of the villages in the project area are connected by roads, while 59.62% of villages are connected by roads in the district as a whole. Therefore 56.28% of the villages in the project are yet to be provided with roads. Further, the hamlets which are more in number in project area require road connections with main villages and central places.


EAST GODAVARI DISTRICT PROJECT AREA
ROADS EXISTING
BLACK TOPPED ROAD
METALLED
EARTHEN

The following statement clearly shows the relative backwardness of the project area when compared to district in respect of road lengths.

Sl.No.	Type of road	Project Area		District	
		Road Length (Kms)	Road Length per 100 Sq.Kms. (Kms.)	Road length (Kms.)	Road length per 100 Sq. Kms. (Kms.)
1.	Cement Road	--	--	32.19	0.30
2.	Black topped road	126.80	3.0	997.79	9.60
3.	Metal road	70.52	1.7	294.51	2.9
4.	Earthen road	392.50	9.3	474.58	4.5
	Total:	589.82	14.0	1799.07	17.3

The surfaced road length per 100 Sq. Kms. (including Major District roads) works out to 4.65 Kms. in the project area while the corresponding district road length is 9.6 Kms. This wide gap suggests, the need for improving road facilities in the project with the following priorities.

1) Preference is given for the formation of surfaced roads connecting higher order centres with middle order centres during V Five Year Plan period.

2) Metalled roads connecting middle order centres with the lower order centres in the project area during VI Plan.

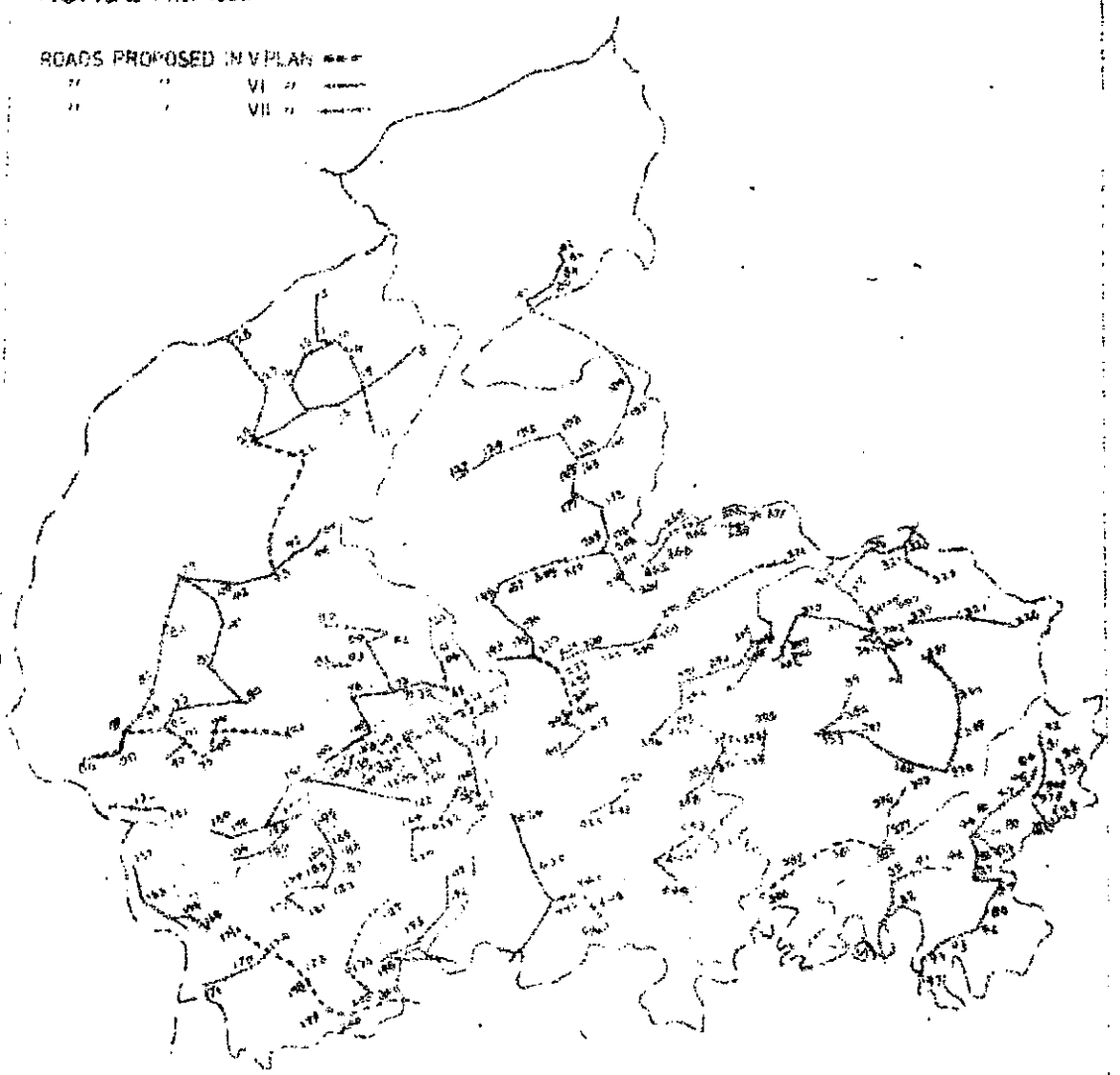
3) Other link roads are proposed to connect most of the villages in the project area in the VII Plan period.

All the four higher order centres are connected by black topped roads. Out of 17 middle order centres, only 8 centres are connected by Black topped road and the rest are proposed to be provided with black topped roads during V Plan. Out of 51 lower order centres only 13 are connected by Pucca roads and 16 centres by earthen roads and the rest (20 villages) are to be provided with road facility. All the lower order centres are proposed to be linked by metal roads during VI Plan. The adjacent villages to these centres and other surrounding villages of economic importance are proposed to be provided with link roads during VII Plan. Nearly 80% of the inhabited villages would be connected by roads by the end of the perspective plan in the project area. The remaining villages would not have road connections as there are natural barriers and the resources are scarce in these villages. However, these villages also would be benefitted by the road programme as the proposed roads are well within the reach of these villages.

EAST GODAVARI DISTRICT PROJECT AREA

ROADS PROPOSED

ROADS PROPOSED IN V PLAN
" " VI "
" " VII "



By implementing the proposed roads programme the road length in the project area would increase from 589.82 Kms. to 1313.02 Kms, by the end of VII Five Year Plan period. The proposed road length details are given hereunder by the end of VII Five Year Plan period.

EXPECTED ROAD LENGTH

Sl.No.	Type of road	Length in Kms.	Length per 100 Sq.Kms.
1.	Black Topped road	247.80	5.9
2.	Metalled road	651.92	15.5
3.	Earthen road	413.30	9.8
		1313.02	31.2

While executing the proposed roads programme, a little bit of caution is to be exercised in respect of constructing the culverts. The culverts are to be taken up before the formation of road, so that the roads can be opened for traffic soon after the formation of the roads is over. This has been suggested in view of the present practice of laying roads first and then starting of construction of culverts which is causing the delay in utilising the road facility.

The financial implications of the proposed roads programme along with road length, planwise is given below and the detailed road programme, planwise is given in the Annexure No.VI (F) 2.

Sl.No.	Plan	Total road length proposed in Kms.	Cost Rs.in lakhs.
1.	V Plan	113.40	39.35
2.	VI Plan	320.10	106.40
3.	VII Plan	289.70	117.35
	Total:	723.20	263.10

POSTAL SERVICES:

At present there are 4* Sub-Post Offices, 38 Branch Post Offices and 2 Telephone Offices in the project area. Telegraph facilities are available in all the 4 Block Headquarters.

With the introduction of various economic development functions and social services under Integrated Tribal Development Project, the demand for postal facilities is likely to increase. In order to cater to these needs Postal Services of various types

* Vide Annexure No.VI (F) 3.

EAST GODAVARI DISTRICT PROJECT AREA

POST & TELEGRAPH SERVICES

EXISTING

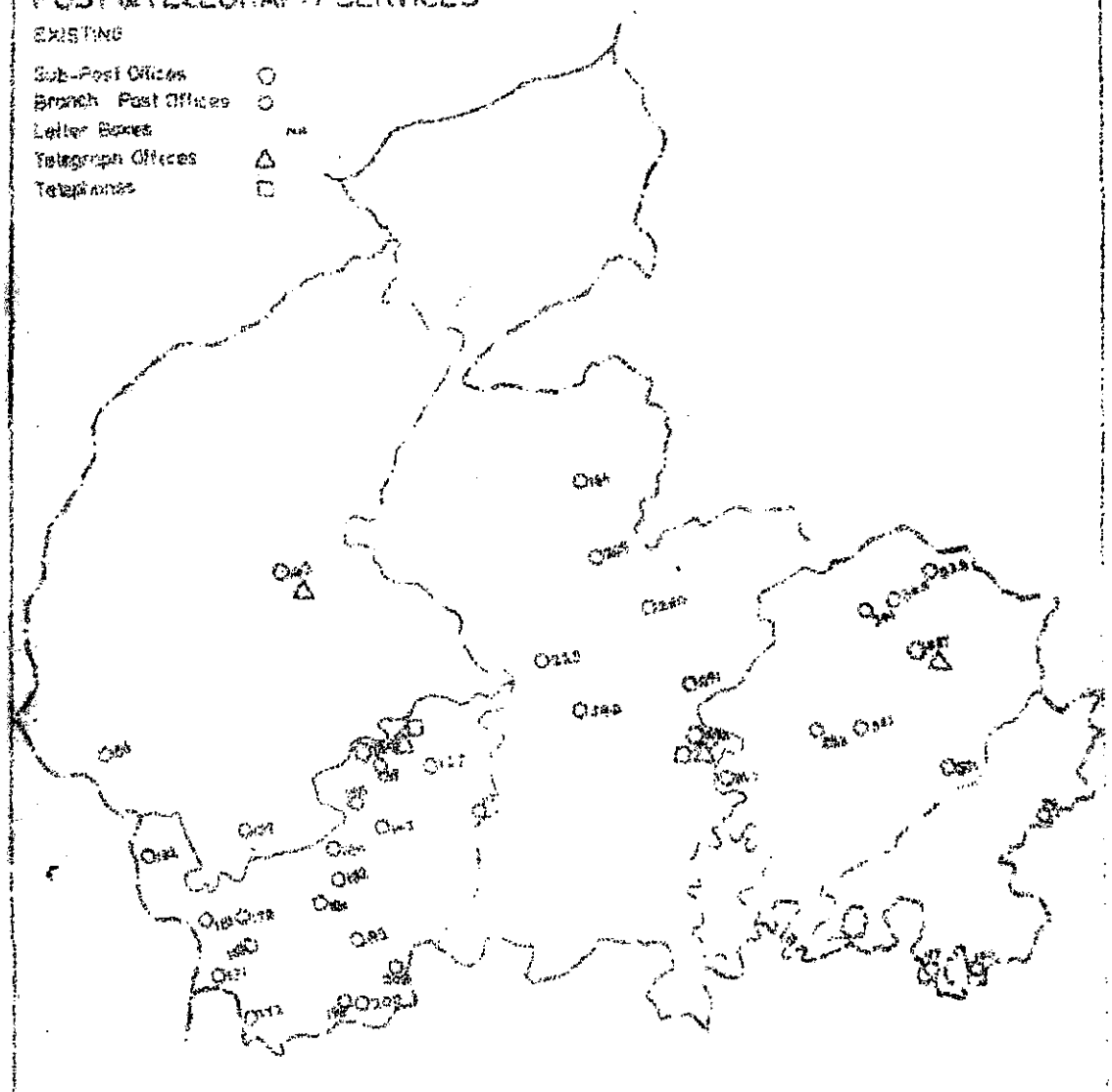
Sub-Post Offices ○

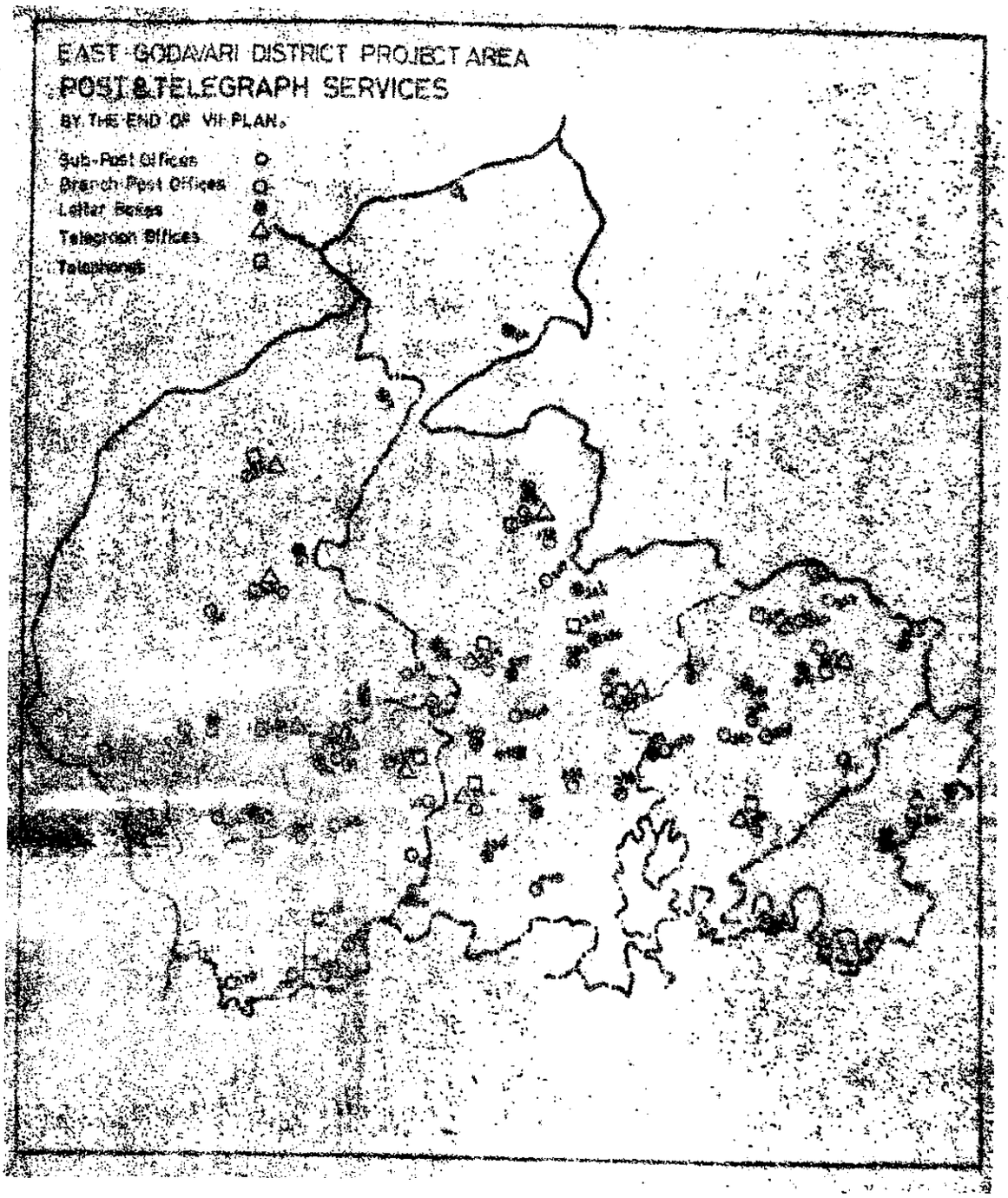
Branch Post Offices ○

Letter Boxes

Telegraph Offices △

Telephones □




EAST GODAVARI DISTRICT PROJECT AREA
POST & TELEGRAPH SERVICES
BY THE END OF VII PLAN.
Sub-Post Offices
Branch Post Offices
Letter Boxes
Telegraph Offices
Telephones

has been suggested in the identified centres of the project area during the three phases of plan periods. Out of 17 middle order centres only 10 centres are having postal facilities while only 15 out of 51 lower order centres are having postal services. All the higher order centres are possessing postal communication facilities. In order to cover all the centres in the project area with postal services a phased programme has been drawn up. This programme envisages opening of 14 Sub-Post Offices and 18 Branch Post Offices. It is proposed to provide post boxes in the remaining villages. The programme involves upgrading of existing and proposed institutions in a phased manner. Thus Branch Post Offices have proposed for upgrading into Sub-Post Offices and villages with letter box facilities are proposed to have Branch Post Offices by VII Plan ending. The type of Postal Services suggested are given below plan-wise. The detailed programme of various Postal institutions and their locations are furnished in the Annexure No. VI (F) 4.

Sl. No.	Plan	Type of Institutions proposed				
		Sub-Post Office.	Branch Post Office	Letter Boxes	Tele-graph Office	Tele-phone faci-lity.
1.	V Plan	4	5	6	2	4
2.	VI Plan	5	6	14	5	5
3.	VII Plan	5	7	14	5	5
	Total:	14	18	34	12	14

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(G) INTEGRATED CREDIT CUM MARKETING

The massive agricultural development programme envisaged in the plan aims at green revolution to achieve the long cherished goal of self-sufficiency in food production and marketable surplus. This transformation requires heavy financial investment which the tribal farmers are unable to do it by themselves for obvious reasons. The successful implementation of the agricultural programmes suggested in the plan largely depends upon the extent to which institutionalised credit resources are moblised to provide loan component proposed in the development programmes. Agriculture in tribal areas continues to be a 'gamble in monsoon'. The natural calamities like drought, floods and heavy burden of expenditure on indispensable social and religious cermonies drive the poor tribal to approach moneylenders and sowcars who charge abnormal rates of interest. Thus the tribal is caught in the web of unending cycle of

borrowing nd repaying. Institution-lised Government credit provided to tribals is diverted mostly to non-productive purposes and consequently it has diluted its impact on productive functions for which it was originally intended to. Therefore, a comprehensive scheme is evolved to meet the credit requirements of the tribals.

The credit needs of tribal can be broadly classified into two categories productive and non-productive credit. The non-productive credit is essential as he has to meet expenditure on consumption and socio-religious ceremonies. The production credit is mainly meant for meeting expenditure on agricultural inputs. The agricultural credit is of three types viz., Short, Medium and Long Term credit or investment credit. Short term loan is meant for defraying expenditure on short term agricultural inputs i.e., seeds, fertilisers, pesticides, payment of wages for labour etc. The duration of short term loan is normally one agricultural year. The amount of loan however depends upon the nature of crop, soil fertility and other agricultural conditions. Medium term loan financial accommodation is meant for the purchase of cattle, sinking new wells, purchase or maintenance of pumpsets, purchase of agricultural implements etc. Whereas, the long term credit ranging from 5 to 15 years is for investment on capital assets like land etc.

The institutionalised credit at present, is catered by various institutions. Short term credit is provided by Girijan Co-operative Corporation through its branches, Samithi Office and Co-operative Central Bank through its primary societies. Medium term credit facilities are extended by District Co-operative Central Bank, Taluk Office (Taccavi loans), Scheduled Banks etc. The long term credit is provided by Agricultural Development Banks. Though some branches of Nationalised banks are situated in the project area, their loaning operations do not cover many tribals, as their business revolves round self employment schemes besides insisting on tangible security. Moreover, the coverage of these banks are restricted to a limited area, as such only a fraction of the tribals' loan requirements are met.

To ensure reasonable price to the primary producer for his agriculture produce and minor forest produce and to provide D.R. at fair prices to tribals. Government have been taking various steps including strengthening of co-operative marketing organisations.

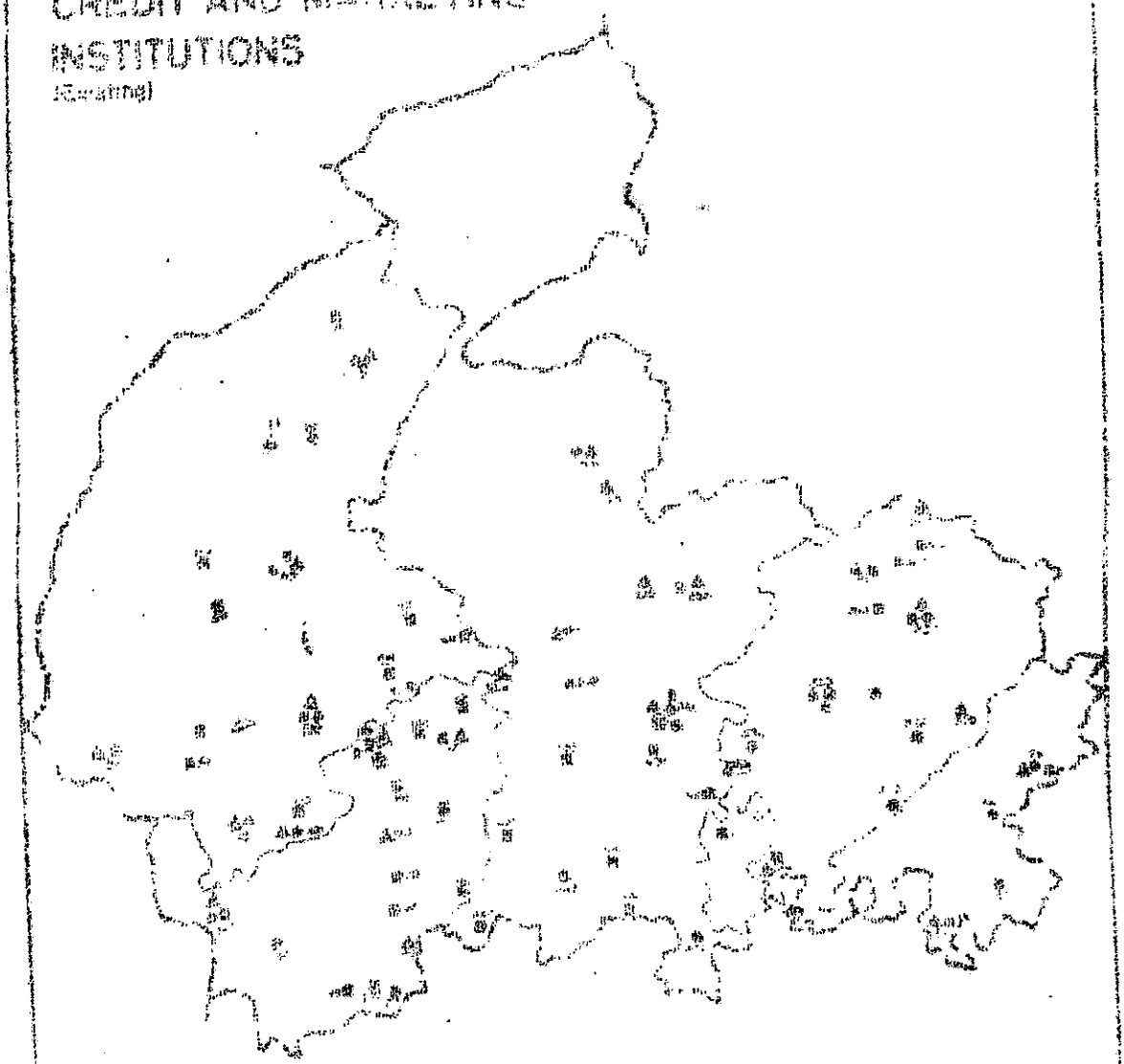
Marketing is an intergral part of production programme, which involves a number of operations like procurement storage, grading, standardisation, transporting, financing etc., the tribal cannot attend to these

processes. The tribals in the project area are depending upon the traditional marketing system for marketing their produce i.e., the weekly shandy centres operating in the area. These weekly shandies are not only purchasing and selling centres but also places of social inter-action like meeting friends and relatives, exchange of views and news, selection of mates etc. There are 16 shandy centres operating in the project area besides 4 shandy centres located in the periphery of project area . The Girijan Co-operative Corporation with its 2 G.P.C.M.S and a net work of D.R. Depots is functioning in the project area to cater to the marketing needs of tribals by purchasing agricultural produce, minor forest produce from tribals, selling daily requirements and providing short term credit facilities. The performance of Girijan Co-operative Corporation was discussed in detail in the review chapter. The Girijan Co-operative Corporation has enrolled many tribals as members, and lent Rs.2.58 lakhs to cater to their credit needs. The business turnover of Girijan Co-operative Corporation in the project area has touched Rs.4.2 lakhs mark in marketing of minor forest produce, agricultural produce and D.Rs. As mentioned earlier, existence of various types institutions to cater to the credit needs of the tribals has resulted in duplication of efforts. The tribal is to approach multiple agencies which have mutually time consuming varying and cumber-

EAST GOGRAFI PROJECT AREA

CREDIT AND MARKETING INSTITUTIONS

(Existing)



- DIS DEPOT
- BRANCH OFFICE
- CO-OP SOCIETIES
- PRIMARY AGRICULTURAL DEVELOPMENT BANK
- COMMERCIAL BANK

some procedures for sanctioning loans. It is to the disadvantage of the illiterate tribal. To obviate these difficulties and avoid duplication of effort by various credit institutions and stream line credit programmes in the project area. It is proposed to integrate Credit with Marketing in the Project area which will ensure easy, adequate and timely credit to clear off the old debts and to finance the new schemes of the tribals.

SUGGE-STED STRUCTURE:

After a detailed study of institutionalised credit operations in the project area, Girijan Development Agency of Srikakulam District. Bawa Committee suggested a frame work of co-operative credit structure for the benefit of tribals. The ma-in feature of basic approach is that a tribal requires a package of services, of which credit is the main component. Credit programme includes provision of consumption and production credit. Credit programme would have to be linked with the supply of agricultural inputs, consumer goods and marketing of minor forest produce and agricultural produce as these constitute the major areas of exploitation of tribals. Therefore, the credit structure should be integrated with marketing structure. The Primary Credit Institutions should provide all these services. The tribal need not

approach many institutions for credit and marketing needs. A suitable organisation has to be created to support, supervise and guide the activities of the primary institutions. The Committee has suggested streamlining of existing institutionalised credit, besides strengthening of the Girijan Co-operative Corporation as credit institution and to make it a multi-functionary unti so as to enable it to offer a package deal of services to the trib-als. It laid emphasis on integrating credit with marketing and on simplification of cumbersome procedures so that timely and easy credit flows to the needy trib-al for its effective utilisation. On the basis of the recommendations of the Committee, the following credit-cum-marketing structure is suggested.

The Bawa Committee suggested the conversion of the existing D.R.Depots into Credit-cum-Marketing Centres and appointment of a cr-edit clerk to look after the credit transactions. Further, they also recommended for the creation of a Credit Supervisor Post for every 5 Credit-cum-Marketing centres for supervising the credit operations of the credit-cum-marketing centres. The existing co-operative primaries are to be converted into Credit-cum-Marketing Societies and each society will cover 50,000 tribal population, while the coverage of each Credit-cum-Marketing Centre will be 2,000 tribal population.

CREDIT CUM MARKETING CENTRES:

At present there are 32 D.R.Depots in the project area supplying consumer goods to 99,845 tribal population. Considering the criteria of establishing a D.R. Depot for every 2,000 tribal population, 50 D.R. Depots are necessary in the project area. In order to cover entire tribal population of the project area, 18 more new D.R.Depots have been sugges-ted and the new places where these depots are to be established in the plan periods in a phased manner are mentioned below:

V P L A N

Sl. No.	Taluk	Code No.	Name of the village where new D.R.Depot is suggested.
1	2	3	4
1.	Rampachodavaram	200	Indukuripeta
2.	-do-	64	Vadapalli
3.	Yellavaram	448	Pidatha-mamidi
4.	-do-	424	Gangavaram
5.	-do-	381	Maredubaka
6.	Rampachodavaram	119	Vootla
7.	-do-	178	Damanapalli
8.	-do-	162	Munturu
9.	-do-	40	Kundada

1	2	3	4
10.	Yellavaram	417	Peda Addapalli
11.	-do-	457	Jaggampalem
12.	-do-	82	Gurtedu
13.	-do-	6	Mangampadu
14.	-do-	444	D.Krishnavaram
15.	-do-	392	Lothuvaripakalu
16.	-do-	302	Chidipalem
17.	-do-	320	Boyapadu
18.	-do-	328	Ammirekula

Three more D.R.Depots have been proposed during last 2 phases of the perspective plan as the population would be increasing at the rate of 2.9% per annum.

VI P L A N

1.	Yellavaram	437	Yellavaram
2.	-do-	262	Pedavadisika-rra
3.	-do-	240	Jaderu

VII P L A N

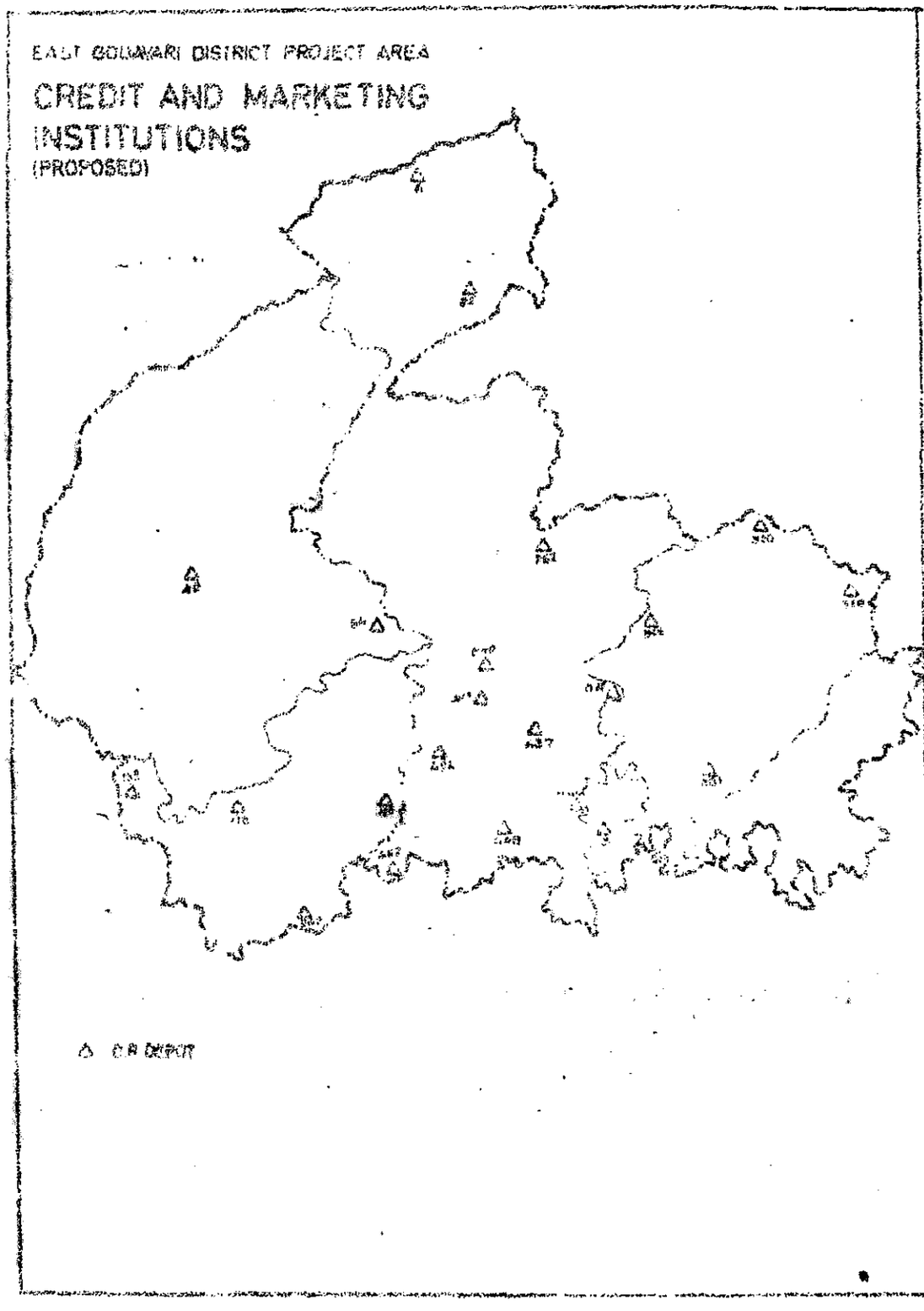
1.	Prathipadu	3	Lakkavaram

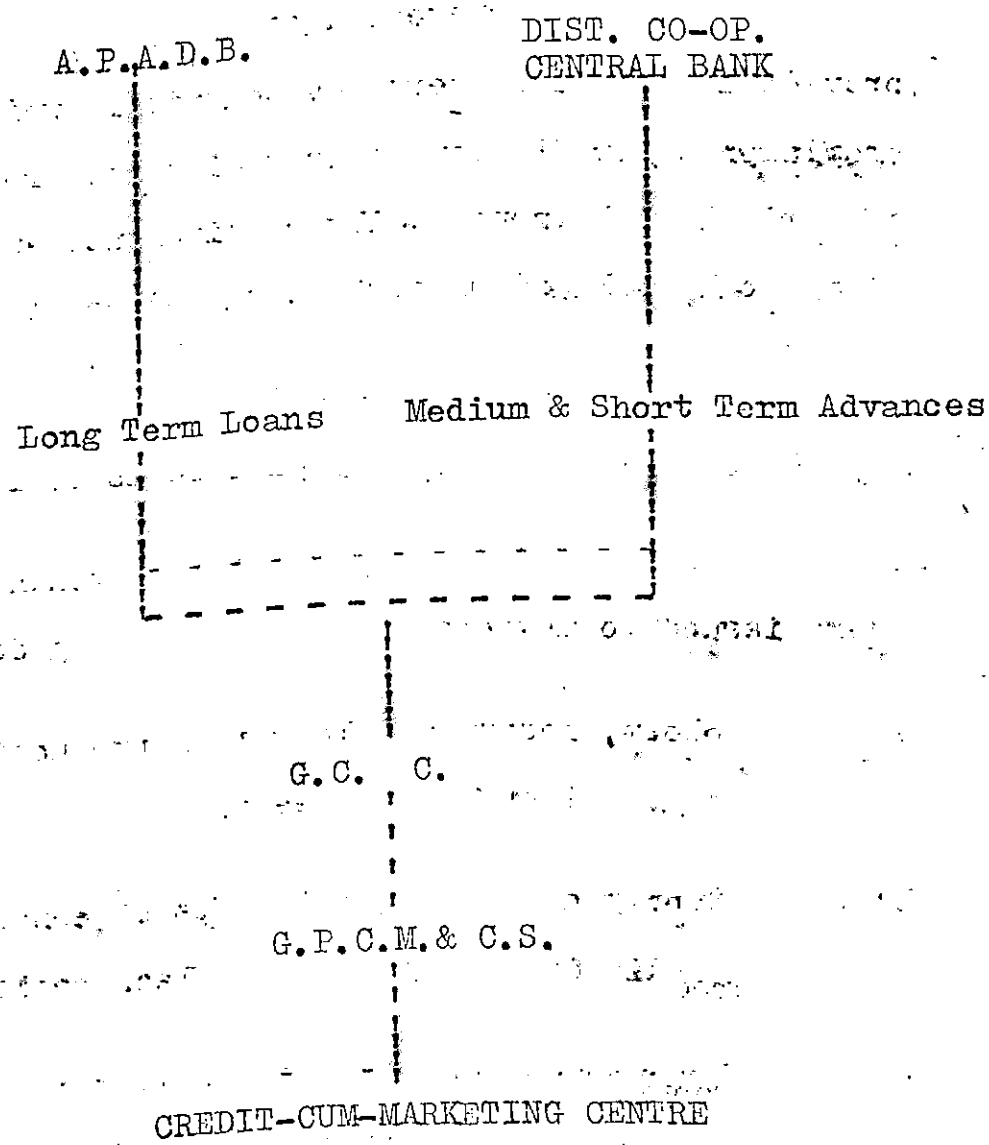
The D.R.Depots existing in the project area are to be uniformly distributed over a space as they have to ensure equitable coverage and package of services to tribals. Some of the depots are not situated in the growth centres where package of other services are made available as such these have to be shifted to the nearest growth centre. To achieve this, the following arrangement is proposed.

Sl. No.	D.R. Depot presently located		D.R.Depot to be shifted to	
	Code No.	Location	Code No.	Location
1.	9	Akumamidi	8	Bodlanka
2.	155	Donlankapalem	153	Palem

All the D.R.Depots are to be converted into Credit-cum-Marketing Centres. The existing multipurpose Co-operative Societies will be merged with the nearest D.R.Depot to form credit-cum-marketing centre. All these centres will be affiliated to the Girijan Primary Co-operative Marketing and Credit Society at secondary level. The Girijan Primary Co-operative Marketing and Credit Society will ensure the proposed flow of long, medium and short term credit besides supplying consumer necessities and purchasing of hill and agricultural produce brought

by tribals. A credit clerk will be appointed at each credit-cum-marketing centre besides the existing salesman and helper who will be responsible for supply of agricultural inputs and daily requirements and purchasing of minor forest produce and agricultural produce. The credit clerk will be responsible for maintaining pass books of the tribal members regarding credit transactions. There will be one credit supervisor in the cadre of U.D.C. for every 5 credit-cum-marketing centres and he will guide and supervise the credit operations in centres under his jurisdiction while the existing shandy inspector will look after the marketing operations of the centres. At the Girijan Primary Co-operative Marketing and Credit Society level, the Manager with the assistance of Accountant will supervise the activities of the credit supervisors and shandy inspectors. All categories of loans viz., short, medium and long term will be channelised through Girijan Co-operative Corporation depending on the needs and requirements of the members of the primaries. It will have necessary linkages with Andhra Pradesh Agricultural Development Bank for financing the long term loans and District Co-operative Central Bank for medium and short term advances. The organisational net-work will be as follows:


EAST GOLWARI DISTRICT PROJECT AREA
CREDIT AND MARKETING INSTITUTIONS
(PROPOSED)
CR DEPOT



At present only two Godowns are availability the society level, but they are situated outside the project area. So, in the 4 higher and 17 middle order centres godowns with 250 Sq.Yds. plinth area and in the remaining 33 credit-cum-marketing centres of lower order, godowns with 50 Sq.Yds. plinth area are proposed to accommodate D.Rs. stock, minor forest produce and agricultural produce procured and agricultural inputs to be supplied to the members.

The above suggested structure will be able to provide a package of services to tribals which includes provision of credit both consumption and productive supply of agricultural inputs daily requirements and marketing of agricultural and minor forest produce at single point.

The functions of Girijan Primary Co-operative Marketing and Credit Society will be as follows:

i) Enrolment of member-s and maintenance of pass books issued to members with the following details:

a) Short, medium and long term production and consumption credit needs.

b) Supply and recovery details of consumption credit distributed during lean periods.

c) Procurement details of agricultural and minor fores-t produce by the society from the member.

ii) Financial assistance to clear off past debts.

iii) Provision of consumption credit during lean periods to meet household expenses and ceremonial overheads.

iv) Procurement of agriculture and minor forest produce by paying fair price and disposal of the same at profitable prices.

v) Purchase and sale of consumer necessities and agricultural inputs to supply to the tribal members.

As suggested by the Bawa Committee, the higher level organisations such as Agricutlral development Bank and Co-operative Central Bank should be pressed into service to support, supervise, and guide the activities of the societies at the Primary level.

The Girijan Co-operative Corporation should also approach other institutions like commercial banks, National Co-operative Development Corporation for necessary financial assistance and especially N.C.D.C. and State ware-housing Corporation for its Godown construction programme. The N.C.D.C. will advance loan through State Government to the tune of 63.5% towards construction cost and the remaining as subs-idy.

According to the existing arrangement, the State Government would subsidise the entire cost of the Girijan Co-operative Corporation including the Staff employed for credit operations and the forest rentals charged to the Girijan Co-oerative Corporation. The Government subsidy, however, is subject to the limit of the actual losses incurred by Girijan Co-operative Corporation on its total transactions and not merely on sale/purchase of minor forest produce.

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